sky130_fd_sc_hs_tt_1.50v_25C.ccs Library

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

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

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

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

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

SKY130_FD_SC_HS__XNOR2x
SKY130_FD_SC_HS__XNOR3x
SKY130_FD_SC_HS__XOR2x
SKY130_FD_SC_HS__XOR3x

SKY130_FD_SC_HS__A2111OIx

sky130_fd_sc_hs_tt_1.50v_25C.ccs
Cell Library: Process , Voltage
1.50, 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	0.00272	0.00260	0.00272	0.00285	0.00284	0.19380
sky130_fd_sc_hs__a2111oi_2	0.00516	0.00497	0.00417	0.00419	0.00419	0.35430
sky130_fd_sc_hs__a2111oi_4	0.01023	0.00995	0.00815	0.00802	0.00820	0.65015

Leakage Information

Cell Name	Leakage(nW)		
	Min.	**Avg**	**Max.**
sky130_fd_sc_hs__a2111oi_1	0.00000	0.00794	0.02973
sky130_fd_sc_hs__a2111oi_2	0.00000	0.01458	0.05947
sky130_fd_sc_hs__a2111oi_4	0.00000	0.02915	0.11893

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)	0.30838	1.51815	10.70330
	A2->Y (FR)	0.36511	1.59904	10.90360
	B1->Y (FR)	0.34033	1.56224	11.23120
	C1->Y (FR)	0.29584	1.53021	11.54610
	D1->Y (FR)	0.22688	1.43274	11.20680
sky130_fd_sc_hs__a2111oi_2	A1->Y (FR)	0.28192	1.31472	10.64860
	A2->Y (FR)	0.35215	1.39472	10.79420
	B1->Y (FR)	0.31393	1.35103	11.09610
	C1->Y (FR)	0.26617	1.31771	11.49420
	D1->Y (FR)	0.16776	1.19406	11.11760
sky130_fd_sc_hs__a2111oi_4	A1->Y (FR)	0.26721	1.12810	10.34640
	A2->Y (FR)	0.34215	1.21750	10.56440
	B1->Y (FR)	0.30514	1.17863	10.92180
	C1->Y (FR)	0.25151	1.13980	11.31670
	D1->Y (FR)	0.15583	1.02229	10.99310

Delay(ns) to Y falling :

Cell Name	Timing Arc(Dir)	Delay(ns)		
		First	Mid	Last
sky130_fd_sc_hs__a2111oi_1	A1->Y (RF)	0.03700	0.40497	3.19581
	A2->Y (RF)	0.04119	0.38100	2.98410
	B1->Y (RF)	0.02827	0.33310	2.66217
	C1->Y (RF)	0.02856	0.32466	2.64544
	D1->Y (RF)	0.02546	0.31159	2.62597
sky130_fd_sc_hs__a2111oi_2	A1->Y (RF)	0.03181	0.37058	3.24578
	A2->Y (RF)	0.03848	0.34809	2.99631
	B1->Y (RF)	0.03961	0.41963	3.84004
	C1->Y (RF)	0.03872	0.40575	3.81015
	D1->Y (RF)	0.03046	0.38418	3.77944
sky130_fd_sc_hs__a2111oi_4	A1->Y (RF)	0.03223	0.34082	3.27492
	A2->Y (RF)	0.03815	0.30676	2.87093
	B1->Y (RF)	0.03489	0.36064	3.61232
	C1->Y (RF)	0.03460	0.34577	3.58284
	D1->Y (RF)	0.02716	0.32585	3.60730

Power Information

Internal switching power(pJ) to Y rising :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__a2111oi_1	A1	0.00044	0.00027	0.00040
	A1	0.00635	0.00619	0.00633
	A2	0.00075	0.00064	0.00077
	A2	0.00742	0.00731	0.00746
	B1	0.00086	0.00070	0.00095
	B1	0.00664	0.00649	0.00672
	C1	0.00085	0.00068	0.00111
	C1	0.00597	0.00581	0.00623
	D1	0.00079	0.00074	0.00215
	D1	0.00531	0.00527	0.00667
sky130_fd_sc_hs__a2111oi_2	A1	0.00026	-0.00003	0.00023
	A1	0.01137	0.01113	0.01139
	A2	0.00139	0.00113	0.00137
	A2	0.01398	0.01373	0.01398
	B1	0.00208	0.00190	0.00212
	B1	0.01211	0.01196	0.01216
	C1	0.00216	0.00198	0.00239
	C1	0.01070	0.01053	0.01092
	D1	0.00207	0.00205	0.00379
	D1	0.00920	0.00919	0.01092

sky130_fd_sc_hs__a2111oi_4	**A1**	-0.00014	-0.00070	-0.00009
	A1	0.02216	0.02164	0.02224
	A2	0.00193	0.00141	0.00198
	A2	0.02719	0.02668	0.02721
	B1	0.00343	0.00309	0.00357
	B1	0.02347	0.02314	0.02363
	C1	0.00348	0.00317	0.00409
	C1	0.02054	0.02025	0.02096
	D1	0.00328	0.00332	0.00684
	D1	0.01750	0.01752	0.02107

Internal switching power(pJ) to Y falling :

Cell Name	**Input**	**Power(pJ)**		
		first	**mid**	**last**
sky130_fd_sc_hs__a2111oi_1	**A1**	0.00826	0.00809	0.00854
	A1	0.00254	0.00236	0.00286
	A2	0.00905	0.00887	0.00913
	A2	0.00253	0.00235	0.00265
	B1	0.00718	0.00707	0.00763
	B1	0.00142	0.00128	0.00189
	C1	0.00588	0.00583	0.00642
	C1	0.00073	0.00064	0.00127
	D1	0.00455	0.00465	0.00522
	D1	-0.00001	0.00005	0.00064

sky130_fd_sc_hs__a2111oi_2	**A1**	0.01541	0.01500	0.01592
	A1	0.00472	0.00431	0.00530
	A2	0.01691	0.01654	0.01703
	A2	0.00467	0.00428	0.00486
	B1	0.01251	0.01226	0.01294
	B1	0.00251	0.00222	0.00297
	C1	0.00973	0.00959	0.01032
	C1	0.00114	0.00091	0.00168
	D1	0.00633	0.00649	0.00728
	D1	-0.00090	-0.00082	-0.00003
sky130_fd_sc_hs__a2111oi_4	**A1**	0.03012	0.02930	0.03125
	A1	0.00868	0.00785	0.00992
	A2	0.03320	0.03246	0.03357
	A2	0.00860	0.00783	0.00910
	B1	0.02453	0.02396	0.02541
	B1	0.00455	0.00389	0.00549
	C1	0.01890	0.01854	0.02019
	C1	0.00179	0.00125	0.00298
	D1	0.01257	0.01289	0.01456
	D1	-0.00186	-0.00169	0.00000

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)**	0.00111	0.00112	0.00110
	(A2 * B1 * D1 * !Y)	-0.00131	-0.00136	-0.00136
	(A2 * B1 * C1 * !D1 * !Y)	0.00111	0.00112	0.00110
	(A2 * B1 * C1 * !D1 * !Y)	-0.00131	-0.00136	-0.00136
	(A2 * B1 * !C1 * !D1 * !Y)	0.00111	0.00112	0.00110
	(A2 * B1 * !C1 * !D1 * !Y)	-0.00131	-0.00136	-0.00136
	(A2 * !B1 * C1 * D1 * !Y)	0.00110	0.00111	0.00110
	(A2 * !B1 * C1 * D1 * !Y)	-0.00123	-0.00132	-0.00131
	(A2 * !B1 * C1 * !D1 * !Y)	0.00110	0.00111	0.00110
	(A2 * !B1 * C1 * !D1 * !Y)	-0.00123	-0.00132	-0.00131
	(A2 * !B1 * !C1 * D1 * !Y)	0.00110	0.00111	0.00110
	(A2 * !B1 * !C1 * D1 * !Y)	-0.00120	-0.00128	-0.00129
	(!A2 * B1 * D1 * !Y)	0.00104	0.00105	0.00104
	(!A2 * B1 * D1 * !Y)	-0.00139	-0.00140	-0.00139
	(!A2 * B1 * C1 * !D1 * !Y)	0.00104	0.00105	0.00104
	(!A2 * B1 * C1 * !D1 * !Y)	-0.00139	-0.00140	-0.00139
	(!A2 * B1 * !C1 * !D1 * !Y)	0.00104	0.00105	0.00104
	(!A2 * B1 * !C1 * !D1 * !Y)	-0.00139	-0.00140	-0.00139
	(!A2 * !B1 * C1 * D1 * !Y)	0.00104	0.00104	0.00105
	(!A2 * !B1 * C1 * D1 * !Y)	-0.00139	-0.00139	-0.00139
	(!A2 * !B1 * C1 * !D1 * !Y)	0.00104	0.00105	0.00104
	(!A2 * !B1 * C1 * !D1 * !Y)	-0.00140	-0.00140	-0.00139
	(!A2 * !B1 * !C1 * D1 * !Y)	0.00104	0.00105	0.00104
	(!A2 * !B1 * !C1 * D1 * !Y)	-0.00139	-0.00140	-0.00139
	(!A2 * !B1 * !C1 * !D1 * Y)	0.00039	0.00039	0.00037
	(!A2 * !B1 * !C1 * !D1 * Y)	-0.00160	-0.00160	-0.00163

sky130_fd_sc_hs__a2111oi_2	**(A2 * B1 * D1 * !Y)**	0.00220	0.00220	0.00220
	(A2 * B1 * D1 * !Y)	-0.00261	-0.00271	-0.00271
	(A2 * B1 * C1 * !D1 * !Y)	0.00219	0.00220	0.00220
	(A2 * B1 * C1 * !D1 * !Y)	-0.00260	-0.00272	-0.00271
	(A2 * B1 * !C1 * !D1 * !Y)	0.00219	0.00220	0.00220
	(A2 * B1 * !C1 * !D1 * !Y)	-0.00258	-0.00271	-0.00271
	(A2 * !B1 * C1 * D1 * !Y)	0.00219	0.00222	0.00220
	(A2 * !B1 * C1 * D1 * !Y)	-0.00243	-0.00261	-0.00260
	(A2 * !B1 * C1 * !D1 * !Y)	0.00219	0.00222	0.00220
	(A2 * !B1 * C1 * !D1 * !Y)	-0.00243	-0.00264	-0.00260
	(A2 * !B1 * !C1 * D1 * !Y)	0.00220	0.00223	0.00220
	(A2 * !B1 * !C1 * D1 * !Y)	-0.00240	-0.00257	-0.00256
	(!A2 * B1 * D1 * !Y)	0.00209	0.00212	0.00210
	(!A2 * B1 * D1 * !Y)	-0.00277	-0.00280	-0.00278
	(!A2 * B1 * C1 * !D1 * !Y)	0.00209	0.00212	0.00210
	(!A2 * B1 * C1 * !D1 * !Y)	-0.00277	-0.00280	-0.00278
	(!A2 * B1 * !C1 * !D1 * !Y)	0.00208	0.00212	0.00210
	(!A2 * B1 * !C1 * !D1 * !Y)	-0.00277	-0.00280	-0.00278
	(!A2 * !B1 * C1 * D1 * !Y)	0.00209	0.00212	0.00210
	(!A2 * !B1 * C1 * D1 * !Y)	-0.00277	-0.00280	-0.00278
	(!A2 * !B1 * C1 * !D1 * !Y)	0.00208	0.00211	0.00209
	(!A2 * !B1 * C1 * !D1 * !Y)	-0.00277	-0.00280	-0.00278
	(!A2 * !B1 * !C1 * D1 * !Y)	0.00208	0.00211	0.00209
	(!A2 * !B1 * !C1 * D1 * !Y)	-0.00277	-0.00279	-0.00278
	(!A2 * !B1 * !C1 * !D1 * Y)	0.00080	0.00080	0.00076
	(!A2 * !B1 * !C1 * !D1 * Y)	-0.00316	-0.00319	-0.00325

sky130_fd_sc_hs__a2111oi_4	**(A2 * B1 * D1 * !Y)**	0.00440	0.00443	0.00442
	(A2 * B1 * D1 * !Y)	-0.00520	-0.00545	-0.00542
	(A2 * B1 * C1 * !D1 * !Y)	0.00440	0.00443	0.00442
	(A2 * B1 * C1 * !D1 * !Y)	-0.00521	-0.00545	-0.00543
	(A2 * B1 * !C1 * !D1 * !Y)	0.00440	0.00443	0.00442
	(A2 * B1 * !C1 * !D1 * !Y)	-0.00518	-0.00545	-0.00542
	(A2 * !B1 * C1 * D1 * !Y)	0.00441	0.00447	0.00441
	(A2 * !B1 * C1 * D1 * !Y)	-0.00491	-0.00526	-0.00523
	(A2 * !B1 * C1 * !D1 * !Y)	0.00441	0.00447	0.00442
	(A2 * !B1 * C1 * !D1 * !Y)	-0.00491	-0.00527	-0.00523
	(A2 * !B1 * !C1 * D1 * !Y)	0.00443	0.00447	0.00442
	(A2 * !B1 * !C1 * D1 * !Y)	-0.00482	-0.00516	-0.00514
	(!A2 * B1 * D1 * !Y)	0.00418	0.00418	0.00420
	(!A2 * B1 * D1 * !Y)	-0.00557	-0.00556	-0.00558
	(!A2 * B1 * C1 * !D1 * !Y)	0.00418	0.00424	0.00419
	(!A2 * B1 * C1 * !D1 * !Y)	-0.00556	-0.00561	-0.00558
	(!A2 * B1 * !C1 * !D1 * !Y)	0.00418	0.00424	0.00419
	(!A2 * B1 * !C1 * !D1 * !Y)	-0.00556	-0.00557	-0.00558
	(!A2 * !B1 * C1 * D1 * !Y)	0.00418	0.00424	0.00420
	(!A2 * !B1 * C1 * D1 * !Y)	-0.00556	-0.00561	-0.00558
	(!A2 * !B1 * C1 * !D1 * !Y)	0.00418	0.00424	0.00419
	(!A2 * !B1 * C1 * !D1 * !Y)	-0.00557	-0.00560	-0.00558
	(!A2 * !B1 * !C1 * D1 * !Y)	0.00417	0.00420	0.00417
	(!A2 * !B1 * !C1 * D1 * !Y)	-0.00559	-0.00560	-0.00557
	(!A2 * !B1 * !C1 * !D1 * Y)	0.00153	0.00154	0.00146
	(!A2 * !B1 * !C1 * !D1 * Y)	-0.00640	-0.00645	-0.00657

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)**	-0.00110	-0.00110	-0.00110
	(A2 * B1 * D1 * !Y)	0.00136	0.00136	0.00136
	(A2 * B1 * C1 * !D1 * !Y)	-0.00110	-0.00110	-0.00110
	(A2 * B1 * C1 * !D1 * !Y)	0.00136	0.00136	0.00136
	(A2 * B1 * !C1 * !D1 * !Y)	-0.00110	-0.00110	-0.00110
	(A2 * B1 * !C1 * !D1 * !Y)	0.00136	0.00136	0.00136
	(A2 * !B1 * C1 * D1 * !Y)	-0.00110	-0.00110	-0.00110
	(A2 * !B1 * C1 * D1 * !Y)	0.00132	0.00132	0.00131
	(A2 * !B1 * C1 * !D1 * !Y)	-0.00110	-0.00110	-0.00110
	(A2 * !B1 * C1 * !D1 * !Y)	0.00132	0.00132	0.00131
	(A2 * !B1 * !C1 * D1 * !Y)	-0.00110	-0.00110	-0.00110
	(A2 * !B1 * !C1 * D1 * !Y)	0.00130	0.00128	0.00129
	(!A2 * B1 * D1 * !Y)	-0.00101	-0.00105	-0.00104
	(!A2 * B1 * D1 * !Y)	0.00139	0.00140	0.00140
	(!A2 * B1 * C1 * !D1 * !Y)	-0.00101	-0.00105	-0.00104
	(!A2 * B1 * C1 * !D1 * !Y)	0.00139	0.00140	0.00140
	(!A2 * B1 * !C1 * !D1 * !Y)	-0.00101	-0.00105	-0.00104
	(!A2 * B1 * !C1 * !D1 * !Y)	0.00139	0.00142	0.00140
	(!A2 * !B1 * C1 * D1 * !Y)	-0.00101	-0.00104	-0.00105
	(!A2 * !B1 * C1 * D1 * !Y)	0.00140	0.00142	0.00140
	(!A2 * !B1 * C1 * !D1 * !Y)	-0.00101	-0.00105	-0.00104
	(!A2 * !B1 * C1 * !D1 * !Y)	0.00140	0.00141	0.00140
	(!A2 * !B1 * !C1 * D1 * !Y)	-0.00101	-0.00105	-0.00104
	(!A2 * !B1 * !C1 * D1 * !Y)	0.00139	0.00141	0.00140
	(!A2 * !B1 * !C1 * !D1 * Y)	-0.00036	-0.00036	-0.00036
	(!A2 * !B1 * !C1 * !D1 * Y)	0.00162	0.00162	0.00163

sky130_fd_sc_hs__a2111oi_2	**(A2 * B1 * D1 * !Y)**	-0.00219	-0.00219	-0.00219
	(A2 * B1 * D1 * !Y)	0.00270	0.00271	0.00271
	(A2 * B1 * C1 * !D1 * !Y)	-0.00219	-0.00220	-0.00219
	(A2 * B1 * C1 * !D1 * !Y)	0.00270	0.00272	0.00271
	(A2 * B1 * !C1 * !D1 * !Y)	-0.00219	-0.00219	-0.00219
	(A2 * B1 * !C1 * !D1 * !Y)	0.00270	0.00271	0.00271
	(A2 * !B1 * C1 * D1 * !Y)	-0.00219	-0.00220	-0.00219
	(A2 * !B1 * C1 * D1 * !Y)	0.00260	0.00261	0.00260
	(A2 * !B1 * C1 * !D1 * !Y)	-0.00219	-0.00221	-0.00219
	(A2 * !B1 * C1 * !D1 * !Y)	0.00260	0.00264	0.00260
	(A2 * !B1 * !C1 * D1 * !Y)	-0.00219	-0.00220	-0.00220
	(A2 * !B1 * !C1 * D1 * !Y)	0.00255	0.00257	0.00256
	(!A2 * B1 * D1 * !Y)	-0.00200	-0.00211	-0.00210
	(!A2 * B1 * D1 * !Y)	0.00278	0.00281	0.00279
	(!A2 * B1 * C1 * !D1 * !Y)	-0.00199	-0.00212	-0.00210
	(!A2 * B1 * C1 * !D1 * !Y)	0.00277	0.00282	0.00279
	(!A2 * B1 * !C1 * !D1 * !Y)	-0.00200	-0.00212	-0.00210
	(!A2 * B1 * !C1 * !D1 * !Y)	0.00279	0.00282	0.00279
	(!A2 * !B1 * C1 * D1 * !Y)	-0.00199	-0.00212	-0.00210
	(!A2 * !B1 * C1 * D1 * !Y)	0.00277	0.00282	0.00279
	(!A2 * !B1 * C1 * !D1 * !Y)	-0.00200	-0.00211	-0.00209
	(!A2 * !B1 * C1 * !D1 * !Y)	0.00279	0.00282	0.00279
	(!A2 * !B1 * !C1 * D1 * !Y)	-0.00200	-0.00211	-0.00209
	(!A2 * !B1 * !C1 * D1 * !Y)	0.00279	0.00282	0.00279
	(!A2 * !B1 * !C1 * !D1 * Y)	-0.00074	-0.00073	-0.00073
	(!A2 * !B1 * !C1 * !D1 * Y)	0.00327	0.00325	0.00326

sky130_fd_sc_hs__a2111oi_4	**(A2 * B1 * D1 * !Y)**	-0.00440	-0.00442	-0.00441
	(A2 * B1 * D1 * !Y)	0.00541	0.00546	0.00542
	(A2 * B1 * C1 * !D1 * !Y)	-0.00440	-0.00442	-0.00441
	(A2 * B1 * C1 * !D1 * !Y)	0.00540	0.00546	0.00543
	(A2 * B1 * !C1 * !D1 * !Y)	-0.00439	-0.00442	-0.00441
	(A2 * B1 * !C1 * !D1 * !Y)	0.00539	0.00545	0.00542
	(A2 * !B1 * C1 * D1 * !Y)	-0.00440	-0.00442	-0.00441
	(A2 * !B1 * C1 * D1 * !Y)	0.00522	0.00526	0.00523
	(A2 * !B1 * C1 * !D1 * !Y)	-0.00440	-0.00442	-0.00441
	(A2 * !B1 * C1 * !D1 * !Y)	0.00522	0.00527	0.00523
	(A2 * !B1 * !C1 * D1 * !Y)	-0.00441	-0.00443	-0.00441
	(A2 * !B1 * !C1 * D1 * !Y)	0.00513	0.00516	0.00514
	(!A2 * B1 * D1 * !Y)	-0.00400	-0.00418	-0.00420
	(!A2 * B1 * D1 * !Y)	0.00557	0.00565	0.00559
	(!A2 * B1 * C1 * !D1 * !Y)	-0.00399	-0.00424	-0.00419
	(!A2 * B1 * C1 * !D1 * !Y)	0.00556	0.00565	0.00559
	(!A2 * B1 * !C1 * !D1 * !Y)	-0.00401	-0.00422	-0.00419
	(!A2 * B1 * !C1 * !D1 * !Y)	0.00561	0.00557	0.00559
	(!A2 * !B1 * C1 * D1 * !Y)	-0.00401	-0.00424	-0.00420
	(!A2 * !B1 * C1 * D1 * !Y)	0.00560	0.00565	0.00559
	(!A2 * !B1 * C1 * !D1 * !Y)	-0.00400	-0.00423	-0.00419
	(!A2 * !B1 * C1 * !D1 * !Y)	0.00560	0.00560	0.00559
	(!A2 * !B1 * !C1 * D1 * !Y)	-0.00400	-0.00420	-0.00417
	(!A2 * !B1 * !C1 * D1 * !Y)	0.00560	0.00561	0.00559
	(!A2 * !B1 * !C1 * !D1 * Y)	-0.00143	-0.00141	-0.00141
	(!A2 * !B1 * !C1 * !D1 * Y)	0.00660	0.00657	0.00658

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)**	0.00117	0.00118	0.00117
	(A1 * B1 * D1 * !Y)	-0.00131	-0.00137	-0.00137
	(A1 * B1 * C1 * !D1 * !Y)	0.00117	0.00118	0.00117
	(A1 * B1 * C1 * !D1 * !Y)	-0.00131	-0.00137	-0.00137
	(A1 * B1 * !C1 * !D1 * !Y)	0.00117	0.00118	0.00117
	(A1 * B1 * !C1 * !D1 * !Y)	-0.00131	-0.00137	-0.00137
	(A1 * !B1 * C1 * D1 * !Y)	0.00117	0.00118	0.00116
	(A1 * !B1 * C1 * D1 * !Y)	-0.00124	-0.00133	-0.00132
	(A1 * !B1 * C1 * !D1 * !Y)	0.00117	0.00118	0.00116
	(A1 * !B1 * C1 * !D1 * !Y)	-0.00124	-0.00133	-0.00132
	(A1 * !B1 * !C1 * D1 * !Y)	0.00117	0.00118	0.00116
	(A1 * !B1 * !C1 * D1 * !Y)	-0.00122	-0.00129	-0.00129
	(!A1 * B1 * !Y)	0.00111	0.00112	0.00111
	(!A1 * B1 * !Y)	-0.00140	-0.00141	-0.00140
	(!A1 * !B1 * C1 * !Y)	0.00111	0.00111	0.00111
	(!A1 * !B1 * C1 * !Y)	-0.00140	-0.00141	-0.00140
	(!A1 * !B1 * !C1 * D1 * !Y)	0.00111	0.00112	0.00111
	(!A1 * !B1 * !C1 * D1 * !Y)	-0.00140	-0.00141	-0.00140
	(!A1 * !B1 * !C1 * !D1 * Y)	0.00111	0.00112	0.00111
	(!A1 * !B1 * !C1 * !D1 * Y)	-0.00140	-0.00141	-0.00140

sky130_fd_sc_hs__a2111oi_2	**(A1 * B1 * D1 * !Y)**	0.00221	0.00222	0.00221
	(A1 * B1 * D1 * !Y)	-0.00260	-0.00271	-0.00270
	(A1 * B1 * C1 * !D1 * !Y)	0.00221	0.00222	0.00221
	(A1 * B1 * C1 * !D1 * !Y)	-0.00260	-0.00271	-0.00270
	(A1 * B1 * !C1 * !D1 * !Y)	0.00221	0.00222	0.00221
	(A1 * B1 * !C1 * !D1 * !Y)	-0.00258	-0.00271	-0.00270
	(A1 * !B1 * C1 * D1 * !Y)	0.00221	0.00224	0.00221
	(A1 * !B1 * C1 * D1 * !Y)	-0.00244	-0.00261	-0.00260
	(A1 * !B1 * C1 * !D1 * !Y)	0.00222	0.00224	0.00221
	(A1 * !B1 * C1 * !D1 * !Y)	-0.00245	-0.00261	-0.00260
	(A1 * !B1 * !C1 * D1 * !Y)	0.00223	0.00224	0.00221
	(A1 * !B1 * !C1 * D1 * !Y)	-0.00242	-0.00257	-0.00256
	(!A1 * B1 * !Y)	0.00209	0.00211	0.00210
	(!A1 * B1 * !Y)	-0.00276	-0.00277	-0.00277
	(!A1 * !B1 * C1 * !Y)	0.00209	0.00213	0.00210
	(!A1 * !B1 * C1 * !Y)	-0.00276	-0.00278	-0.00277
	(!A1 * !B1 * !C1 * D1 * !Y)	0.00209	0.00212	0.00210
	(!A1 * !B1 * !C1 * D1 * !Y)	-0.00276	-0.00278	-0.00277
	(!A1 * !B1 * !C1 * !D1 * Y)	0.00209	0.00211	0.00210
	(!A1 * !B1 * !C1 * !D1 * Y)	-0.00276	-0.00277	-0.00277

sky130_fd_sc_hs__a2111oi_4	**(A1 * B1 * D1 * !Y)**	0.00444	0.00446	0.00444
	(A1 * B1 * D1 * !Y)	-0.00521	-0.00544	-0.00542
	(A1 * B1 * C1 * !D1 * !Y)	0.00444	0.00446	0.00444
	(A1 * B1 * C1 * !D1 * !Y)	-0.00521	-0.00544	-0.00542
	(A1 * B1 * !C1 * !D1 * !Y)	0.00444	0.00446	0.00444
	(A1 * B1 * !C1 * !D1 * !Y)	-0.00518	-0.00544	-0.00542
	(A1 * !B1 * C1 * D1 * !Y)	0.00446	0.00450	0.00444
	(A1 * !B1 * C1 * D1 * !Y)	-0.00493	-0.00525	-0.00522
	(A1 * !B1 * C1 * !D1 * !Y)	0.00446	0.00450	0.00444
	(A1 * !B1 * C1 * !D1 * !Y)	-0.00493	-0.00525	-0.00522
	(A1 * !B1 * !C1 * D1 * !Y)	0.00448	0.00450	0.00445
	(A1 * !B1 * !C1 * D1 * !Y)	-0.00485	-0.00509	-0.00513
	(!A1 * B1 * !Y)	0.00419	0.00422	0.00419
	(!A1 * B1 * !Y)	-0.00556	-0.00559	-0.00557
	(!A1 * !B1 * C1 * !Y)	0.00418	0.00423	0.00419
	(!A1 * !B1 * C1 * !Y)	-0.00555	-0.00560	-0.00557
	(!A1 * !B1 * !C1 * D1 * !Y)	0.00418	0.00422	0.00420
	(!A1 * !B1 * !C1 * D1 * !Y)	-0.00555	-0.00558	-0.00557
	(!A1 * !B1 * !C1 * !D1 * Y)	0.00418	0.00422	0.00420
	(!A1 * !B1 * !C1 * !D1 * Y)	-0.00555	-0.00558	-0.00556

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)**	-0.00117	-0.00117	-0.00117
	(A1 * B1 * D1 * !Y)	0.00137	0.00137	0.00137
	(A1 * B1 * C1 * !D1 * !Y)	-0.00117	-0.00117	-0.00117
	(A1 * B1 * C1 * !D1 * !Y)	0.00137	0.00137	0.00137
	(A1 * B1 * !C1 * !D1 * !Y)	-0.00117	-0.00117	-0.00117
	(A1 * B1 * !C1 * !D1 * !Y)	0.00137	0.00137	0.00137
	(A1 * !B1 * C1 * D1 * !Y)	-0.00117	-0.00117	-0.00116
	(A1 * !B1 * C1 * D1 * !Y)	0.00132	0.00133	0.00132
	(A1 * !B1 * C1 * !D1 * !Y)	-0.00117	-0.00117	-0.00116
	(A1 * !B1 * C1 * !D1 * !Y)	0.00132	0.00133	0.00132
	(A1 * !B1 * !C1 * D1 * !Y)	-0.00116	-0.00116	-0.00116
	(A1 * !B1 * !C1 * D1 * !Y)	0.00130	0.00129	0.00129
	(!A1 * B1 * !Y)	-0.00108	-0.00112	-0.00111
	(!A1 * B1 * !Y)	0.00140	0.00143	0.00141
	(!A1 * !B1 * C1 * !Y)	-0.00107	-0.00111	-0.00111
	(!A1 * !B1 * C1 * !Y)	0.00140	0.00141	0.00141
	(!A1 * !B1 * !C1 * D1 * !Y)	-0.00107	-0.00111	-0.00111
	(!A1 * !B1 * !C1 * D1 * !Y)	0.00140	0.00142	0.00141
	(!A1 * !B1 * !C1 * !D1 * Y)	-0.00105	-0.00111	-0.00111
	(!A1 * !B1 * !C1 * !D1 * Y)	0.00143	0.00142	0.00141

sky130_fd_sc_hs__a2111oi_2	**(A1 * B1 * D1 * !Y)**	-0.00220	-0.00221	-0.00221
	(A1 * B1 * D1 * !Y)	0.00269	0.00271	0.00270
	(A1 * B1 * C1 * !D1 * !Y)	-0.00220	-0.00221	-0.00221
	(A1 * B1 * C1 * !D1 * !Y)	0.00269	0.00271	0.00270
	(A1 * B1 * !C1 * !D1 * !Y)	-0.00220	-0.00221	-0.00221
	(A1 * B1 * !C1 * !D1 * !Y)	0.00269	0.00271	0.00270
	(A1 * !B1 * C1 * D1 * !Y)	-0.00220	-0.00221	-0.00221
	(A1 * !B1 * C1 * D1 * !Y)	0.00259	0.00261	0.00260
	(A1 * !B1 * C1 * !D1 * !Y)	-0.00220	-0.00221	-0.00221
	(A1 * !B1 * C1 * !D1 * !Y)	0.00259	0.00261	0.00260
	(A1 * !B1 * !C1 * D1 * !Y)	-0.00220	-0.00221	-0.00221
	(A1 * !B1 * !C1 * D1 * !Y)	0.00255	0.00257	0.00256
	(!A1 * B1 * !Y)	-0.00202	-0.00211	-0.00210
	(!A1 * B1 * !Y)	0.00276	0.00278	0.00278
	(!A1 * !B1 * C1 * !Y)	-0.00202	-0.00211	-0.00210
	(!A1 * !B1 * C1 * !Y)	0.00276	0.00278	0.00278
	(!A1 * !B1 * !C1 * D1 * !Y)	-0.00202	-0.00211	-0.00210
	(!A1 * !B1 * !C1 * D1 * !Y)	0.00277	0.00278	0.00278
	(!A1 * !B1 * !C1 * !D1 * Y)	-0.00198	-0.00211	-0.00210
	(!A1 * !B1 * !C1 * !D1 * Y)	0.00283	0.00281	0.00278

sky130_fd_sc_hs__a2111oi_4	**(A1 * B1 * D1 * !Y)**	-0.00444	-0.00445	-0.00443
	(A1 * B1 * D1 * !Y)	0.00543	0.00545	0.00542
	(A1 * B1 * C1 * !D1 * !Y)	-0.00444	-0.00445	-0.00443
	(A1 * B1 * C1 * !D1 * !Y)	0.00543	0.00545	0.00542
	(A1 * B1 * !C1 * !D1 * !Y)	-0.00444	-0.00445	-0.00443
	(A1 * B1 * !C1 * !D1 * !Y)	0.00543	0.00545	0.00542
	(A1 * !B1 * C1 * D1 * !Y)	-0.00444	-0.00445	-0.00443
	(A1 * !B1 * C1 * D1 * !Y)	0.00524	0.00525	0.00522
	(A1 * !B1 * C1 * !D1 * !Y)	-0.00443	-0.00445	-0.00443
	(A1 * !B1 * C1 * !D1 * !Y)	0.00521	0.00525	0.00522
	(A1 * !B1 * !C1 * D1 * !Y)	-0.00443	-0.00442	-0.00444
	(A1 * !B1 * !C1 * D1 * !Y)	0.00510	0.00509	0.00513
	(!A1 * B1 * !Y)	-0.00405	-0.00422	-0.00419
	(!A1 * B1 * !Y)	0.00556	0.00561	0.00558
	(!A1 * !B1 * C1 * !Y)	-0.00405	-0.00422	-0.00419
	(!A1 * !B1 * C1 * !Y)	0.00556	0.00560	0.00558
	(!A1 * !B1 * !C1 * D1 * !Y)	-0.00405	-0.00422	-0.00420
	(!A1 * !B1 * !C1 * D1 * !Y)	0.00556	0.00560	0.00558
	(!A1 * !B1 * !C1 * !D1 * Y)	-0.00394	-0.00421	-0.00420
	(!A1 * !B1 * !C1 * !D1 * Y)	0.00571	0.00564	0.00558

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)**	0.00116	0.00117	0.00115
	(A1 * A2 * C1 * D1 * !Y)	-0.00100	-0.00101	-0.00100
	(A1 * A2 * C1 * !D1 * !Y)	0.00116	0.00117	0.00115
	(A1 * A2 * C1 * !D1 * !Y)	-0.00098	-0.00098	-0.00098
	(A1 * A2 * !C1 * D1 * !Y)	0.00115	0.00115	0.00115
	(A1 * A2 * !C1 * D1 * !Y)	-0.00093	-0.00094	-0.00093
	(A1 * A2 * !C1 * !D1 * !Y)	0.00114	0.00116	0.00114
	(A1 * A2 * !C1 * !D1 * !Y)	-0.00078	-0.00080	-0.00078
	(A1 * !A2 * C1 * D1 * !Y)	0.00113	0.00114	0.00114
	(A1 * !A2 * C1 * D1 * !Y)	-0.00130	-0.00134	-0.00134
	(A1 * !A2 * C1 * !D1 * !Y)	0.00116	0.00114	0.00114
	(A1 * !A2 * C1 * !D1 * !Y)	-0.00126	-0.00134	-0.00134
	(A1 * !A2 * !C1 * D1 * !Y)	0.00116	0.00114	0.00114
	(A1 * !A2 * !C1 * D1 * !Y)	-0.00117	-0.00128	-0.00128
	(!A1 * C1 * D1 * !Y)	0.00113	0.00114	0.00114
	(!A1 * C1 * D1 * !Y)	-0.00130	-0.00134	-0.00134
	(!A1 * C1 * !D1 * !Y)	0.00115	0.00114	0.00114
	(!A1 * C1 * !D1 * !Y)	-0.00126	-0.00134	-0.00134
	(!A1 * !C1 * D1 * !Y)	0.00115	0.00114	0.00114
	(!A1 * !C1 * D1 * !Y)	-0.00118	-0.00128	-0.00128

sky130_fd_sc_hs__a2111oi_2	**(A1 * A2 * C1 * D1 * !Y)**	0.00131	0.00131	0.00130
	(A1 * A2 * C1 * D1 * !Y)	-0.00200	-0.00200	-0.00199
	(A1 * A2 * C1 * !D1 * !Y)	0.00131	0.00131	0.00130
	(A1 * A2 * C1 * !D1 * !Y)	-0.00194	-0.00194	-0.00193
	(A1 * A2 * !C1 * D1 * !Y)	0.00131	0.00132	0.00131
	(A1 * A2 * !C1 * D1 * !Y)	-0.00188	-0.00189	-0.00187
	(A1 * A2 * !C1 * !D1 * !Y)	0.00130	0.00132	0.00130
	(A1 * A2 * !C1 * !D1 * !Y)	-0.00157	-0.00159	-0.00157
	(A1 * !A2 * C1 * D1 * !Y)	0.00130	0.00131	0.00129
	(A1 * !A2 * C1 * D1 * !Y)	-0.00259	-0.00269	-0.00268
	(A1 * !A2 * C1 * !D1 * !Y)	0.00132	0.00131	0.00129
	(A1 * !A2 * C1 * !D1 * !Y)	-0.00255	-0.00270	-0.00268
	(A1 * !A2 * !C1 * D1 * !Y)	0.00133	0.00131	0.00130
	(A1 * !A2 * !C1 * D1 * !Y)	-0.00238	-0.00255	-0.00255
	(!A1 * C1 * D1 * !Y)	0.00130	0.00131	0.00129
	(!A1 * C1 * D1 * !Y)	-0.00259	-0.00269	-0.00268
	(!A1 * C1 * !D1 * !Y)	0.00132	0.00131	0.00129
	(!A1 * C1 * !D1 * !Y)	-0.00255	-0.00270	-0.00268
	(!A1 * !C1 * D1 * !Y)	0.00133	0.00131	0.00130
	(!A1 * !C1 * D1 * !Y)	-0.00238	-0.00255	-0.00256

sky130_fd_sc_hs__a2111oi_4	**(A1 * A2 * C1 * D1 * !Y)**	0.00253	0.00255	0.00249
	(A1 * A2 * C1 * D1 * !Y)	-0.00405	-0.00408	-0.00406
	(A1 * A2 * C1 * !D1 * !Y)	0.00255	0.00256	0.00250
	(A1 * A2 * C1 * !D1 * !Y)	-0.00394	-0.00396	-0.00394
	(A1 * A2 * !C1 * D1 * !Y)	0.00251	0.00255	0.00252
	(A1 * A2 * !C1 * D1 * !Y)	-0.00378	-0.00384	-0.00379
	(A1 * A2 * !C1 * !D1 * !Y)	0.00249	0.00253	0.00249
	(A1 * A2 * !C1 * !D1 * !Y)	-0.00325	-0.00330	-0.00325
	(A1 * !A2 * C1 * D1 * !Y)	0.00250	0.00251	0.00249
	(A1 * !A2 * C1 * D1 * !Y)	-0.00532	-0.00550	-0.00551
	(A1 * !A2 * C1 * !D1 * !Y)	0.00256	0.00251	0.00249
	(A1 * !A2 * C1 * !D1 * !Y)	-0.00519	-0.00551	-0.00552
	(A1 * !A2 * !C1 * D1 * !Y)	0.00257	0.00252	0.00249
	(A1 * !A2 * !C1 * D1 * !Y)	-0.00484	-0.00524	-0.00522
	(!A1 * C1 * D1 * !Y)	0.00250	0.00251	0.00249
	(!A1 * C1 * D1 * !Y)	-0.00533	-0.00550	-0.00551
	(!A1 * C1 * !D1 * !Y)	0.00256	0.00251	0.00249
	(!A1 * C1 * !D1 * !Y)	-0.00520	-0.00550	-0.00552
	(!A1 * !C1 * D1 * !Y)	0.00257	0.00252	0.00249
	(!A1 * !C1 * D1 * !Y)	-0.00486	-0.00525	-0.00523

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)**	-0.00115	-0.00115	-0.00115
	(A1 * A2 * C1 * D1 * !Y)	0.00100	0.00101	0.00100
	(A1 * A2 * C1 * !D1 * !Y)	-0.00115	-0.00115	-0.00114
	(A1 * A2 * C1 * !D1 * !Y)	0.00098	0.00098	0.00098
	(A1 * A2 * !C1 * D1 * !Y)	-0.00114	-0.00115	-0.00114
	(A1 * A2 * !C1 * D1 * !Y)	0.00093	0.00094	0.00093
	(A1 * A2 * !C1 * !D1 * !Y)	-0.00105	-0.00106	-0.00107
	(A1 * A2 * !C1 * !D1 * !Y)	0.00086	0.00087	0.00085
	(A1 * !A2 * C1 * D1 * !Y)	-0.00113	-0.00114	-0.00114
	(A1 * !A2 * C1 * D1 * !Y)	0.00135	0.00134	0.00134
	(A1 * !A2 * C1 * !D1 * !Y)	-0.00114	-0.00114	-0.00114
	(A1 * !A2 * C1 * !D1 * !Y)	0.00134	0.00134	0.00134
	(A1 * !A2 * !C1 * D1 * !Y)	-0.00113	-0.00114	-0.00113
	(A1 * !A2 * !C1 * D1 * !Y)	0.00128	0.00128	0.00128
	(!A1 * C1 * D1 * !Y)	-0.00113	-0.00114	-0.00114
	(!A1 * C1 * D1 * !Y)	0.00134	0.00134	0.00134
	(!A1 * C1 * !D1 * !Y)	-0.00114	-0.00114	-0.00114
	(!A1 * C1 * !D1 * !Y)	0.00134	0.00134	0.00134
	(!A1 * !C1 * D1 * !Y)	-0.00113	-0.00114	-0.00113
	(!A1 * !C1 * D1 * !Y)	0.00127	0.00128	0.00128

sky130_fd_sc_hs__a2111oi_2	**(A1 * A2 * C1 * D1 * !Y)**	-0.00130	-0.00130	-0.00129
	(A1 * A2 * C1 * D1 * !Y)	0.00200	0.00200	0.00199
	(A1 * A2 * C1 * !D1 * !Y)	-0.00130	-0.00130	-0.00129
	(A1 * A2 * C1 * !D1 * !Y)	0.00194	0.00194	0.00193
	(A1 * A2 * !C1 * D1 * !Y)	-0.00131	-0.00131	-0.00131
	(A1 * A2 * !C1 * D1 * !Y)	0.00188	0.00189	0.00187
	(A1 * A2 * !C1 * !D1 * !Y)	-0.00113	-0.00114	-0.00113
	(A1 * A2 * !C1 * !D1 * !Y)	0.00173	0.00174	0.00172
	(A1 * !A2 * C1 * D1 * !Y)	-0.00129	-0.00130	-0.00129
	(A1 * !A2 * C1 * D1 * !Y)	0.00267	0.00269	0.00268
	(A1 * !A2 * C1 * !D1 * !Y)	-0.00129	-0.00130	-0.00129
	(A1 * !A2 * C1 * !D1 * !Y)	0.00267	0.00270	0.00268
	(A1 * !A2 * !C1 * D1 * !Y)	-0.00129	-0.00130	-0.00129
	(A1 * !A2 * !C1 * D1 * !Y)	0.00254	0.00255	0.00255
	(!A1 * C1 * D1 * !Y)	-0.00129	-0.00130	-0.00129
	(!A1 * C1 * D1 * !Y)	0.00267	0.00269	0.00268
	(!A1 * C1 * !D1 * !Y)	-0.00129	-0.00130	-0.00129
	(!A1 * C1 * !D1 * !Y)	0.00268	0.00270	0.00268
	(!A1 * !C1 * D1 * !Y)	-0.00129	-0.00130	-0.00129
	(!A1 * !C1 * D1 * !Y)	0.00255	0.00255	0.00256

sky130_fd_sc_hs__a2111oi_4	**(A1 * A2 * C1 * D1 * !Y)**	-0.00248	-0.00249	-0.00248
	(A1 * A2 * C1 * D1 * !Y)	0.00405	0.00408	0.00406
	(A1 * A2 * C1 * !D1 * !Y)	-0.00248	-0.00249	-0.00248
	(A1 * A2 * C1 * !D1 * !Y)	0.00394	0.00396	0.00394
	(A1 * A2 * !C1 * D1 * !Y)	-0.00250	-0.00253	-0.00251
	(A1 * A2 * !C1 * D1 * !Y)	0.00378	0.00384	0.00379
	(A1 * A2 * !C1 * !D1 * !Y)	-0.00217	-0.00221	-0.00219
	(A1 * A2 * !C1 * !D1 * !Y)	0.00349	0.00354	0.00352
	(A1 * !A2 * C1 * D1 * !Y)	-0.00249	-0.00248	-0.00248
	(A1 * !A2 * C1 * D1 * !Y)	0.00554	0.00550	0.00551
	(A1 * !A2 * C1 * !D1 * !Y)	-0.00249	-0.00248	-0.00248
	(A1 * !A2 * C1 * !D1 * !Y)	0.00554	0.00551	0.00552
	(A1 * !A2 * !C1 * D1 * !Y)	-0.00250	-0.00250	-0.00249
	(A1 * !A2 * !C1 * D1 * !Y)	0.00522	0.00524	0.00522
	(!A1 * C1 * D1 * !Y)	-0.00249	-0.00248	-0.00248
	(!A1 * C1 * D1 * !Y)	0.00554	0.00550	0.00551
	(!A1 * C1 * !D1 * !Y)	-0.00247	-0.00248	-0.00248
	(!A1 * C1 * !D1 * !Y)	0.00548	0.00550	0.00552
	(!A1 * !C1 * D1 * !Y)	-0.00250	-0.00250	-0.00249
	(!A1 * !C1 * D1 * !Y)	0.00524	0.00525	0.00523

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)**	0.00126	0.00127	0.00121
	(A1 * B1 * D1 * !Y)	-0.00087	-0.00087	-0.00087
	(A1 * B1 * !D1 * !Y)	0.00120	0.00122	0.00120
	(A1 * B1 * !D1 * !Y)	-0.00074	-0.00076	-0.00075
	(A1 * A2 * !B1 * D1 * !Y)	0.00131	0.00123	0.00120
	(A1 * A2 * !B1 * D1 * !Y)	-0.00090	-0.00094	-0.00093
	(A1 * A2 * !B1 * !D1 * !Y)	0.00120	0.00123	0.00120
	(A1 * A2 * !B1 * !D1 * !Y)	-0.00074	-0.00075	-0.00075
	(A1 * !A2 * !B1 * D1 * !Y)	0.00141	0.00121	0.00120
	(A1 * !A2 * !B1 * D1 * !Y)	-0.00109	-0.00129	-0.00130
	(!A1 * B1 * D1 * !Y)	0.00128	0.00130	0.00123
	(!A1 * B1 * D1 * !Y)	-0.00088	-0.00088	-0.00088
	(!A1 * B1 * !D1 * !Y)	0.00120	0.00122	0.00120
	(!A1 * B1 * !D1 * !Y)	-0.00074	-0.00076	-0.00075
	(!A1 * !B1 * D1 * !Y)	0.00141	0.00121	0.00120
	(!A1 * !B1 * D1 * !Y)	-0.00109	-0.00129	-0.00130

sky130_fd_sc_hs__a2111oi_2	**(A1 * B1 * D1 * !Y)**	0.00128	0.00132	0.00127
	(A1 * B1 * D1 * !Y)	-0.00184	-0.00185	-0.00184
	(A1 * B1 * !D1 * !Y)	0.00123	0.00126	0.00124
	(A1 * B1 * !D1 * !Y)	-0.00161	-0.00164	-0.00162
	(A1 * A2 * !B1 * D1 * !Y)	0.00137	0.00127	0.00125
	(A1 * A2 * !B1 * D1 * !Y)	-0.00196	-0.00198	-0.00196
	(A1 * A2 * !B1 * !D1 * !Y)	0.00125	0.00127	0.00124
	(A1 * A2 * !B1 * !D1 * !Y)	-0.00161	-0.00163	-0.00161
	(A1 * !A2 * !B1 * D1 * !Y)	0.00162	0.00125	0.00123
	(A1 * !A2 * !B1 * D1 * !Y)	-0.00233	-0.00276	-0.00276
	(!A1 * B1 * D1 * !Y)	0.00133	0.00137	0.00129
	(!A1 * B1 * D1 * !Y)	-0.00186	-0.00187	-0.00186
	(!A1 * B1 * !D1 * !Y)	0.00124	0.00126	0.00124
	(!A1 * B1 * !D1 * !Y)	-0.00161	-0.00164	-0.00162
	(!A1 * !B1 * D1 * !Y)	0.00162	0.00125	0.00123
	(!A1 * !B1 * D1 * !Y)	-0.00233	-0.00276	-0.00277

sky130_fd_sc_hs__a2111oi_4	**(A1 * B1 * D1 * !Y)**	0.00257	0.00260	0.00247
	(A1 * B1 * D1 * !Y)	-0.00363	-0.00363	-0.00363
	(A1 * B1 * !D1 * !Y)	0.00241	0.00246	0.00240
	(A1 * B1 * !D1 * !Y)	-0.00315	-0.00322	-0.00317
	(A1 * A2 * !B1 * D1 * !Y)	0.00282	0.00251	0.00241
	(A1 * A2 * !B1 * D1 * !Y)	-0.00378	-0.00384	-0.00382
	(A1 * A2 * !B1 * !D1 * !Y)	0.00244	0.00248	0.00241
	(A1 * A2 * !B1 * !D1 * !Y)	-0.00313	-0.00318	-0.00316
	(A1 * !A2 * !B1 * D1 * !Y)	0.00331	0.00244	0.00238
	(A1 * !A2 * !B1 * D1 * !Y)	-0.00442	-0.00541	-0.00542
	(!A1 * B1 * D1 * !Y)	0.00268	0.00271	0.00251
	(!A1 * B1 * D1 * !Y)	-0.00365	-0.00366	-0.00366
	(!A1 * B1 * !D1 * !Y)	0.00243	0.00247	0.00240
	(!A1 * B1 * !D1 * !Y)	-0.00315	-0.00321	-0.00318
	(!A1 * !B1 * D1 * !Y)	0.00331	0.00244	0.00238
	(!A1 * !B1 * D1 * !Y)	-0.00442	-0.00541	-0.00542

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)**	-0.00119	-0.00120	-0.00120
	(A1 * B1 * D1 * !Y)	0.00087	0.00087	0.00087
	(A1 * B1 * !D1 * !Y)	-0.00119	-0.00119	-0.00118
	(A1 * B1 * !D1 * !Y)	0.00077	0.00078	0.00077
	(A1 * A2 * !B1 * D1 * !Y)	-0.00120	-0.00120	-0.00120
	(A1 * A2 * !B1 * D1 * !Y)	0.00093	0.00094	0.00093
	(A1 * A2 * !B1 * !D1 * !Y)	-0.00108	-0.00110	-0.00118
	(A1 * A2 * !B1 * !D1 * !Y)	0.00084	0.00084	0.00077
	(A1 * !A2 * !B1 * D1 * !Y)	-0.00118	-0.00118	-0.00118
	(A1 * !A2 * !B1 * D1 * !Y)	0.00129	0.00129	0.00130
	(!A1 * B1 * D1 * !Y)	-0.00120	-0.00120	-0.00120
	(!A1 * B1 * D1 * !Y)	0.00088	0.00088	0.00088
	(!A1 * B1 * !D1 * !Y)	-0.00118	-0.00119	-0.00118
	(!A1 * B1 * !D1 * !Y)	0.00077	0.00078	0.00077
	(!A1 * !B1 * D1 * !Y)	-0.00119	-0.00120	-0.00118
	(!A1 * !B1 * D1 * !Y)	0.00129	0.00131	0.00130

sky130_fd_sc_hs__a2111oi_2	**(A1 * B1 * D1 * !Y)**	-0.00124	-0.00125	-0.00125
	(A1 * B1 * D1 * !Y)	0.00184	0.00185	0.00184
	(A1 * B1 * !D1 * !Y)	-0.00121	-0.00122	-0.00120
	(A1 * B1 * !D1 * !Y)	0.00165	0.00166	0.00166
	(A1 * A2 * !B1 * D1 * !Y)	-0.00124	-0.00125	-0.00125
	(A1 * A2 * !B1 * D1 * !Y)	0.00196	0.00198	0.00196
	(A1 * A2 * !B1 * !D1 * !Y)	-0.00103	-0.00104	-0.00117
	(A1 * A2 * !B1 * !D1 * !Y)	0.00175	0.00174	0.00167
	(A1 * !A2 * !B1 * D1 * !Y)	-0.00123	-0.00123	-0.00122
	(A1 * !A2 * !B1 * D1 * !Y)	0.00277	0.00277	0.00276
	(!A1 * B1 * D1 * !Y)	-0.00124	-0.00125	-0.00125
	(!A1 * B1 * D1 * !Y)	0.00186	0.00187	0.00186
	(!A1 * B1 * !D1 * !Y)	-0.00121	-0.00121	-0.00119
	(!A1 * B1 * !D1 * !Y)	0.00166	0.00167	0.00167
	(!A1 * !B1 * D1 * !Y)	-0.00123	-0.00123	-0.00122
	(!A1 * !B1 * D1 * !Y)	0.00276	0.00277	0.00277

sky130_fd_sc_hs__a2111oi_4	**(A1 * B1 * D1 * !Y)**	-0.00241	-0.00241	-0.00242
	(A1 * B1 * D1 * !Y)	0.00363	0.00363	0.00363
	(A1 * B1 * !D1 * !Y)	-0.00235	-0.00236	-0.00231
	(A1 * B1 * !D1 * !Y)	0.00326	0.00328	0.00328
	(A1 * A2 * !B1 * D1 * !Y)	-0.00241	-0.00242	-0.00241
	(A1 * A2 * !B1 * D1 * !Y)	0.00382	0.00384	0.00382
	(A1 * A2 * !B1 * !D1 * !Y)	-0.00208	-0.00211	-0.00229
	(A1 * A2 * !B1 * !D1 * !Y)	0.00339	0.00339	0.00325
	(A1 * !A2 * !B1 * D1 * !Y)	-0.00238	-0.00238	-0.00236
	(A1 * !A2 * !B1 * D1 * !Y)	0.00542	0.00543	0.00542
	(!A1 * B1 * D1 * !Y)	-0.00241	-0.00242	-0.00242
	(!A1 * B1 * D1 * !Y)	0.00365	0.00366	0.00366
	(!A1 * B1 * !D1 * !Y)	-0.00234	-0.00235	-0.00230
	(!A1 * B1 * !D1 * !Y)	0.00327	0.00329	0.00329
	(!A1 * !B1 * D1 * !Y)	-0.00237	-0.00238	-0.00236
	(!A1 * !B1 * D1 * !Y)	0.00537	0.00543	0.00542

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

Cell Name	When	Power(pJ)		
		first	**mid**	**last**
sky130_fd_sc_hs__a2111oi_1	**(A1 * C1 * !Y)**	0.00133	0.00136	0.00133
	(A1 * C1 * !Y)	-0.00069	-0.00070	-0.00069
	(A1 * B1 * !C1 * !Y)	0.00133	0.00136	0.00133
	(A1 * B1 * !C1 * !Y)	-0.00068	-0.00070	-0.00068
	(A1 * A2 * !B1 * !C1 * !Y)	0.00133	0.00133	0.00134
	(A1 * A2 * !B1 * !C1 * !Y)	-0.00068	-0.00068	-0.00068
	(!A1 * C1 * !Y)	0.00133	0.00136	0.00133
	(!A1 * C1 * !Y)	-0.00069	-0.00070	-0.00069
	(!A1 * B1 * !C1 * !Y)	0.00133	0.00136	0.00133
	(!A1 * B1 * !C1 * !Y)	-0.00068	-0.00070	-0.00068

sky130_fd_sc_hs__a2111oi_2	**(A1 * C1 * !Y)**	0.00152	0.00154	0.00152
	(A1 * C1 * !Y)	-0.00139	-0.00142	-0.00139
	(A1 * B1 * !C1 * !Y)	0.00152	0.00154	0.00152
	(A1 * B1 * !C1 * !Y)	-0.00139	-0.00141	-0.00139
	(A1 * A2 * !B1 * !C1 * !Y)	0.00151	0.00154	0.00152
	(A1 * A2 * !B1 * !C1 * !Y)	-0.00139	-0.00141	-0.00139
	(!A1 * C1 * !Y)	0.00152	0.00154	0.00152
	(!A1 * C1 * !Y)	-0.00140	-0.00142	-0.00140
	(!A1 * B1 * !C1 * !Y)	0.00152	0.00154	0.00152
	(!A1 * B1 * !C1 * !Y)	-0.00139	-0.00142	-0.00139
sky130_fd_sc_hs__a2111oi_4	**(A1 * C1 * !Y)**	0.00301	0.00306	0.00301
	(A1 * C1 * !Y)	-0.00275	-0.00279	-0.00274
	(A1 * B1 * !C1 * !Y)	0.00303	0.00306	0.00301
	(A1 * B1 * !C1 * !Y)	-0.00277	-0.00278	-0.00273
	(A1 * A2 * !B1 * !C1 * !Y)	0.00301	0.00301	0.00301
	(A1 * A2 * !B1 * !C1 * !Y)	-0.00274	-0.00274	-0.00273
	(!A1 * C1 * !Y)	0.00302	0.00306	0.00301
	(!A1 * C1 * !Y)	-0.00276	-0.00279	-0.00274
	(!A1 * B1 * !C1 * !Y)	0.00301	0.00306	0.00301
	(!A1 * B1 * !C1 * !Y)	-0.00274	-0.00278	-0.00274

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

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

sky130_fd_sc_hs__a2111oi_1	**(A1 * C1 * !Y)**	-0.00129	-0.00130	-0.00133
	(A1 * C1 * !Y)	0.00073	0.00073	0.00070
	(A1 * B1 * !C1 * !Y)	-0.00122	-0.00123	-0.00132
	(A1 * B1 * !C1 * !Y)	0.00078	0.00078	0.00070
	(A1 * A2 * !B1 * !C1 * !Y)	-0.00104	-0.00106	-0.00127
	(A1 * A2 * !B1 * !C1 * !Y)	0.00088	0.00089	0.00074
	(!A1 * C1 * !Y)	-0.00129	-0.00130	-0.00133
	(!A1 * C1 * !Y)	0.00073	0.00073	0.00070
	(!A1 * B1 * !C1 * !Y)	-0.00121	-0.00123	-0.00132
	(!A1 * B1 * !C1 * !Y)	0.00077	0.00078	0.00070
sky130_fd_sc_hs__a2111oi_2	**(A1 * C1 * !Y)**	-0.00137	-0.00138	-0.00150
	(A1 * C1 * !Y)	0.00154	0.00155	0.00143
	(A1 * B1 * !C1 * !Y)	-0.00121	-0.00123	-0.00147
	(A1 * B1 * !C1 * !Y)	0.00162	0.00162	0.00143
	(A1 * A2 * !B1 * !C1 * !Y)	-0.00089	-0.00092	-0.00138
	(A1 * A2 * !B1 * !C1 * !Y)	0.00182	0.00183	0.00150
	(!A1 * C1 * !Y)	-0.00137	-0.00138	-0.00150
	(!A1 * C1 * !Y)	0.00155	0.00155	0.00143
	(!A1 * B1 * !C1 * !Y)	-0.00121	-0.00123	-0.00147
	(!A1 * B1 * !C1 * !Y)	0.00161	0.00162	0.00144
sky130_fd_sc_hs__a2111oi_4	**(A1 * C1 * !Y)**	-0.00275	-0.00278	-0.00298
	(A1 * C1 * !Y)	0.00299	0.00300	0.00281
	(A1 * B1 * !C1 * !Y)	-0.00243	-0.00246	-0.00291
	(A1 * B1 * !C1 * !Y)	0.00318	0.00318	0.00283
	(A1 * A2 * !B1 * !C1 * !Y)	-0.00183	-0.00187	-0.00274
	(A1 * A2 * !B1 * !C1 * !Y)	0.00356	0.00355	0.00294
	(!A1 * C1 * !Y)	-0.00275	-0.00278	-0.00298
	(!A1 * C1 * !Y)	0.00300	0.00300	0.00281
	(!A1 * B1 * !C1 * !Y)	-0.00243	-0.00246	-0.00291
	(!A1 * B1 * !C1 * !Y)	0.00318	0.00318	0.00283

SKY130_FD_SC_HS__A2111Ox

sky130_fd_sc_hs_tt_1.50v_25C.ccs
Cell Library: Process , Voltage
1.50, 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	0.00249	0.00261	0.00250	0.00255	0.00252	0.85869
sky130_fd_sc_hs__a2111o_2	0.00277	0.00287	0.00272	0.00280	0.00292	1.65090
sky130_fd_sc_hs__a2111o_4	0.00469	0.00460	0.00481	0.00482	0.00476	3.16214

Leakage Information

Cell Name	Leakage(nW)		
	Min.	**Avg**	**Max.**
sky130_fd_sc_hs__a2111o_1	0.00000	0.02362	0.07896
sky130_fd_sc_hs__a2111o_2	0.00000	0.02195	0.07808
sky130_fd_sc_hs__a2111o_4	0.00000	0.06126	0.16890

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)	0.10756	0.77995	6.99159
	A2->X (RR)	0.11254	0.78167	7.08892
	B1->X (RR)	0.08564	0.73331	6.87630
	C1->X (RR)	0.08352	0.71940	6.81994
	D1->X (RR)	0.07735	0.69869	6.79497
sky130_fd_sc_hs__a2111o_2	A1->X (RR)	0.10979	0.69347	7.04010
	A2->X (RR)	0.11452	0.68701	7.10897
	B1->X (RR)	0.08404	0.63933	6.90982
	C1->X (RR)	0.08103	0.62484	6.84562
	D1->X (RR)	0.07662	0.60891	6.80943
sky130_fd_sc_hs__a2111o_4	A1->X (RR)	0.11791	0.62659	7.08929
	A2->X (RR)	0.12448	0.62367	7.17579
	B1->X (RR)	0.08308	0.55483	6.92995
	C1->X (RR)	0.08097	0.54288	6.87480
	D1->X (RR)	0.07470	0.52311	6.83574

Delay(ns) to X falling :

Cell Name	Timing Arc(Dir)	Delay(ns)		
		First	Mid	Last
sky130_fd_sc_hs__a2111o_1	A1->X (FF)	0.42371	0.99839	5.07489
	A2->X (FF)	0.46402	1.04929	5.20467
	B1->X (FF)	0.43120	1.00599	5.27967
	C1->X (FF)	0.39019	0.97618	5.31456
	D1->X (FF)	0.32674	0.89870	5.05067
sky130_fd_sc_hs__a2111o_2	A1->X (FF)	0.50807	1.08364	5.41247
	A2->X (FF)	0.54383	1.13266	5.53444
	B1->X (FF)	0.51207	1.08697	5.61318
	C1->X (FF)	0.46677	1.05410	5.70860
	D1->X (FF)	0.40511	0.97348	5.44248
sky130_fd_sc_hs__a2111o_4	A1->X (FF)	0.53233	1.06637	5.41538
	A2->X (FF)	0.60188	1.15040	5.56360
	B1->X (FF)	0.57359	1.11234	5.69653
	C1->X (FF)	0.52692	1.07913	5.81067
	D1->X (FF)	0.42722	0.96190	5.49524

Power Information

Internal switching power(pJ) to X rising :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__a2111o_1	A1	0.00998	0.01001	0.01284
	A1	0.00468	0.00469	0.00756
	A2	0.01056	0.01055	0.01242
	A2	0.00467	0.00466	0.00659
	B1	0.00884	0.00886	0.01191
	B1	0.00365	0.00367	0.00686
	C1	0.00766	0.00768	0.01087
	C1	0.00305	0.00307	0.00742
	D1	0.00643	0.00644	0.01124
	D1	0.00238	0.00240	0.00748
sky130_fd_sc_hs__a2111o_2	A1	0.01265	0.01283	0.01536
	A1	0.00673	0.00692	0.00953
	A2	0.01342	0.01362	0.01531
	A2	0.00675	0.00695	0.00876
	B1	0.01137	0.01158	0.01429
	B1	0.00557	0.00578	0.00864
	C1	0.00996	0.01018	0.01300
	C1	0.00477	0.00498	0.00999
	D1	0.00876	0.00894	0.01290
	D1	0.00410	0.00429	0.00827

sky130_fd_sc_hs__a2111o_4	**A1**	0.02363	0.02406	0.02962
	A1	0.01330	0.01388	0.01949
	A2	0.02507	0.02553	0.02916
	A2	0.01329	0.01376	0.01767
	B1	0.02181	0.02229	0.02816
	B1	0.01126	0.01178	0.01766
	C1	0.01925	0.01976	0.02576
	C1	0.00998	0.01049	0.02041
	D1	0.01604	0.01655	0.02531
	D1	0.00806	0.00865	0.01792

Internal switching power(pJ) to X falling :

Cell Name	**Input**	**Power(pJ)**		
		first	**mid**	**last**
sky130_fd_sc_hs__a2111o_1	**A1**	0.00296	0.00300	0.00426
	A1	0.00838	0.00843	0.00969
	A2	0.00341	0.00338	0.00458
	A2	0.00937	0.00944	0.01052
	B1	0.00331	0.00339	0.00623
	B1	0.00849	0.00856	0.01035
	C1	0.00332	0.00332	0.00602
	C1	0.00789	0.00796	0.01020
	D1	0.00300	0.00326	0.00857
	D1	0.00736	0.00771	0.01226

sky130_fd_sc_hs__a2111o_2	**A1**	0.00519	0.00521	0.00757
	A1	0.01127	0.01132	0.01229
	A2	0.00555	0.00561	0.00711
	A2	0.01233	0.01239	0.01325
	B1	0.00512	0.00526	0.00806
	B1	0.01140	0.01145	0.01294
	C1	0.00554	0.00558	0.00796
	C1	0.01070	0.01081	0.01282
	D1	0.00551	0.00535	0.01096
	D1	0.01011	0.01036	0.01439
sky130_fd_sc_hs__a2111o_4	**A1**	0.00992	0.00993	0.01224
	A1	0.02054	0.02066	0.02284
	A2	0.01094	0.01096	0.01534
	A2	0.02292	0.02293	0.02495
	B1	0.01094	0.01086	0.01546
	B1	0.02150	0.02143	0.02451
	C1	0.01090	0.01089	0.01529
	C1	0.02015	0.02015	0.02421
	D1	0.01087	0.01124	0.02121
	D1	0.01874	0.01909	0.02790

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)**	0.00114	0.00114	0.00114
	(A2 * B1 * D1 * X)	-0.00118	-0.00123	-0.00122
	(A2 * B1 * C1 * !D1 * X)	0.00114	0.00114	0.00114
	(A2 * B1 * C1 * !D1 * X)	-0.00118	-0.00123	-0.00122
	(A2 * B1 * !C1 * !D1 * X)	0.00114	0.00114	0.00114
	(A2 * B1 * !C1 * !D1 * X)	-0.00117	-0.00123	-0.00122
	(A2 * !B1 * C1 * D1 * X)	0.00114	0.00115	0.00114
	(A2 * !B1 * C1 * D1 * X)	-0.00112	-0.00119	-0.00118
	(A2 * !B1 * C1 * !D1 * X)	0.00114	0.00115	0.00114
	(A2 * !B1 * C1 * !D1 * X)	-0.00112	-0.00119	-0.00118
	(A2 * !B1 * !C1 * D1 * X)	0.00114	0.00115	0.00114
	(A2 * !B1 * !C1 * D1 * X)	-0.00109	-0.00117	-0.00116
	(!A2 * B1 * D1 * X)	0.00108	0.00109	0.00108
	(!A2 * B1 * D1 * X)	-0.00125	-0.00126	-0.00125
	(!A2 * B1 * C1 * !D1 * X)	0.00108	0.00109	0.00108
	(!A2 * B1 * C1 * !D1 * X)	-0.00125	-0.00126	-0.00125
	(!A2 * B1 * !C1 * !D1 * X)	0.00108	0.00109	0.00108
	(!A2 * B1 * !C1 * !D1 * X)	-0.00125	-0.00126	-0.00125
	(!A2 * !B1 * C1 * D1 * X)	0.00108	0.00109	0.00108
	(!A2 * !B1 * C1 * D1 * X)	-0.00125	-0.00126	-0.00125
	(!A2 * !B1 * C1 * !D1 * X)	0.00108	0.00109	0.00108
	(!A2 * !B1 * C1 * !D1 * X)	-0.00125	-0.00126	-0.00125
	(!A2 * !B1 * !C1 * D1 * X)	0.00108	0.00109	0.00108
	(!A2 * !B1 * !C1 * D1 * X)	-0.00125	-0.00126	-0.00125
	(!A2 * !B1 * !C1 * !D1 * !X)	0.00049	0.00049	0.00048
	(!A2 * !B1 * !C1 * !D1 * !X)	-0.00145	-0.00146	-0.00148

sky130_fd_sc_hs__a2111o_2	**(A2 * B1 * D1 * X)**	0.00115	0.00117	0.00116
	(A2 * B1 * D1 * X)	-0.00132	-0.00138	-0.00138
	(A2 * B1 * C1 * !D1 * X)	0.00116	0.00116	0.00116
	(A2 * B1 * C1 * !D1 * X)	-0.00133	-0.00138	-0.00138
	(A2 * B1 * !C1 * !D1 * X)	0.00116	0.00117	0.00116
	(A2 * B1 * !C1 * !D1 * X)	-0.00133	-0.00139	-0.00138
	(A2 * !B1 * C1 * D1 * X)	0.00116	0.00117	0.00116
	(A2 * !B1 * C1 * D1 * X)	-0.00126	-0.00134	-0.00133
	(A2 * !B1 * C1 * !D1 * X)	0.00116	0.00117	0.00116
	(A2 * !B1 * C1 * !D1 * X)	-0.00126	-0.00134	-0.00133
	(A2 * !B1 * !C1 * D1 * X)	0.00116	0.00117	0.00116
	(A2 * !B1 * !C1 * D1 * X)	-0.00123	-0.00133	-0.00131
	(!A2 * B1 * D1 * X)	0.00109	0.00111	0.00110
	(!A2 * B1 * D1 * X)	-0.00141	-0.00142	-0.00141
	(!A2 * B1 * C1 * !D1 * X)	0.00109	0.00110	0.00110
	(!A2 * B1 * C1 * !D1 * X)	-0.00141	-0.00142	-0.00141
	(!A2 * B1 * !C1 * !D1 * X)	0.00109	0.00110	0.00110
	(!A2 * B1 * !C1 * !D1 * X)	-0.00141	-0.00142	-0.00141
	(!A2 * !B1 * C1 * D1 * X)	0.00110	0.00110	0.00110
	(!A2 * !B1 * C1 * D1 * X)	-0.00141	-0.00142	-0.00141
	(!A2 * !B1 * C1 * !D1 * X)	0.00109	0.00110	0.00110
	(!A2 * !B1 * C1 * !D1 * X)	-0.00141	-0.00142	-0.00141
	(!A2 * !B1 * !C1 * D1 * X)	0.00109	0.00111	0.00110
	(!A2 * !B1 * !C1 * D1 * X)	-0.00141	-0.00142	-0.00141
	(!A2 * !B1 * !C1 * !D1 * !X)	0.00041	0.00042	0.00040
	(!A2 * !B1 * !C1 * !D1 * !X)	-0.00164	-0.00164	-0.00167

sky130_fd_sc_hs__a2111o_4	**(A2 * B1 * D1 * X)**	0.00194	0.00193	0.00194
	(A2 * B1 * D1 * X)	-0.00241	-0.00249	-0.00249
	(A2 * B1 * C1 * !D1 * X)	0.00194	0.00193	0.00194
	(A2 * B1 * C1 * !D1 * X)	-0.00241	-0.00249	-0.00249
	(A2 * B1 * !C1 * !D1 * X)	0.00194	0.00193	0.00194
	(A2 * B1 * !C1 * !D1 * X)	-0.00238	-0.00247	-0.00249
	(A2 * !B1 * C1 * D1 * X)	0.00193	0.00196	0.00194
	(A2 * !B1 * C1 * D1 * X)	-0.00224	-0.00240	-0.00239
	(A2 * !B1 * C1 * !D1 * X)	0.00193	0.00196	0.00194
	(A2 * !B1 * C1 * !D1 * X)	-0.00224	-0.00240	-0.00239
	(A2 * !B1 * !C1 * D1 * X)	0.00194	0.00196	0.00194
	(A2 * !B1 * !C1 * D1 * X)	-0.00220	-0.00236	-0.00236
	(!A2 * B1 * D1 * X)	0.00184	0.00186	0.00185
	(!A2 * B1 * D1 * X)	-0.00255	-0.00257	-0.00255
	(!A2 * B1 * C1 * !D1 * X)	0.00184	0.00186	0.00184
	(!A2 * B1 * C1 * !D1 * X)	-0.00255	-0.00257	-0.00255
	(!A2 * B1 * !C1 * !D1 * X)	0.00185	0.00186	0.00184
	(!A2 * B1 * !C1 * !D1 * X)	-0.00255	-0.00257	-0.00255
	(!A2 * !B1 * C1 * D1 * X)	0.00184	0.00186	0.00184
	(!A2 * !B1 * C1 * D1 * X)	-0.00255	-0.00257	-0.00255
	(!A2 * !B1 * C1 * !D1 * X)	0.00184	0.00186	0.00184
	(!A2 * !B1 * C1 * !D1 * X)	-0.00255	-0.00257	-0.00255
	(!A2 * !B1 * !C1 * D1 * X)	0.00184	0.00184	0.00184
	(!A2 * !B1 * !C1 * D1 * X)	-0.00255	-0.00255	-0.00255
	(!A2 * !B1 * !C1 * !D1 * !X)	0.00072	0.00072	0.00068
	(!A2 * !B1 * !C1 * !D1 * !X)	-0.00291	-0.00291	-0.00298

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)**	-0.00113	-0.00114	-0.00114
	(A2 * B1 * D1 * X)	0.00122	0.00123	0.00122
	(A2 * B1 * C1 * !D1 * X)	-0.00113	-0.00114	-0.00114
	(A2 * B1 * C1 * !D1 * X)	0.00122	0.00123	0.00122
	(A2 * B1 * !C1 * !D1 * X)	-0.00113	-0.00114	-0.00114
	(A2 * B1 * !C1 * !D1 * X)	0.00122	0.00123	0.00122
	(A2 * !B1 * C1 * D1 * X)	-0.00113	-0.00114	-0.00114
	(A2 * !B1 * C1 * D1 * X)	0.00118	0.00119	0.00118
	(A2 * !B1 * C1 * !D1 * X)	-0.00113	-0.00114	-0.00114
	(A2 * !B1 * C1 * !D1 * X)	0.00118	0.00119	0.00118
	(A2 * !B1 * !C1 * D1 * X)	-0.00113	-0.00114	-0.00113
	(A2 * !B1 * !C1 * D1 * X)	0.00116	0.00117	0.00116
	(!A2 * B1 * D1 * X)	-0.00107	-0.00109	-0.00108
	(!A2 * B1 * D1 * X)	0.00125	0.00126	0.00126
	(!A2 * B1 * C1 * !D1 * X)	-0.00106	-0.00109	-0.00108
	(!A2 * B1 * C1 * !D1 * X)	0.00125	0.00126	0.00126
	(!A2 * B1 * !C1 * !D1 * X)	-0.00106	-0.00109	-0.00108
	(!A2 * B1 * !C1 * !D1 * X)	0.00125	0.00127	0.00126
	(!A2 * !B1 * C1 * D1 * X)	-0.00106	-0.00109	-0.00108
	(!A2 * !B1 * C1 * D1 * X)	0.00125	0.00127	0.00126
	(!A2 * !B1 * C1 * !D1 * X)	-0.00106	-0.00109	-0.00108
	(!A2 * !B1 * C1 * !D1 * X)	0.00125	0.00127	0.00126
	(!A2 * !B1 * !C1 * D1 * X)	-0.00106	-0.00109	-0.00108
	(!A2 * !B1 * !C1 * D1 * X)	0.00125	0.00127	0.00126
	(!A2 * !B1 * !C1 * !D1 * !X)	-0.00047	-0.00047	-0.00047
	(!A2 * !B1 * !C1 * !D1 * !X)	0.00147	0.00149	0.00148

sky130_fd_sc_hs__a2111o_2	**(A2 * B1 * D1 * X)**	-0.00115	-0.00116	-0.00116
	(A2 * B1 * D1 * X)	0.00138	0.00138	0.00138
	(A2 * B1 * C1 * !D1 * X)	-0.00116	-0.00116	-0.00116
	(A2 * B1 * C1 * !D1 * X)	0.00138	0.00138	0.00138
	(A2 * B1 * !C1 * !D1 * X)	-0.00116	-0.00117	-0.00116
	(A2 * B1 * !C1 * !D1 * X)	0.00138	0.00140	0.00138
	(A2 * !B1 * C1 * D1 * X)	-0.00116	-0.00116	-0.00116
	(A2 * !B1 * C1 * D1 * X)	0.00134	0.00134	0.00133
	(A2 * !B1 * C1 * !D1 * X)	-0.00116	-0.00116	-0.00116
	(A2 * !B1 * C1 * !D1 * X)	0.00134	0.00134	0.00133
	(A2 * !B1 * !C1 * D1 * X)	-0.00116	-0.00116	-0.00116
	(A2 * !B1 * !C1 * D1 * X)	0.00132	0.00133	0.00131
	(!A2 * B1 * D1 * X)	-0.00107	-0.00111	-0.00110
	(!A2 * B1 * D1 * X)	0.00141	0.00143	0.00142
	(!A2 * B1 * C1 * !D1 * X)	-0.00107	-0.00110	-0.00110
	(!A2 * B1 * C1 * !D1 * X)	0.00141	0.00143	0.00142
	(!A2 * B1 * !C1 * !D1 * X)	-0.00107	-0.00110	-0.00110
	(!A2 * B1 * !C1 * !D1 * X)	0.00141	0.00143	0.00142
	(!A2 * !B1 * C1 * D1 * X)	-0.00107	-0.00110	-0.00110
	(!A2 * !B1 * C1 * D1 * X)	0.00141	0.00143	0.00142
	(!A2 * !B1 * C1 * !D1 * X)	-0.00107	-0.00110	-0.00110
	(!A2 * !B1 * C1 * !D1 * X)	0.00142	0.00143	0.00142
	(!A2 * !B1 * !C1 * D1 * X)	-0.00107	-0.00111	-0.00110
	(!A2 * !B1 * !C1 * D1 * X)	0.00142	0.00143	0.00142
	(!A2 * !B1 * !C1 * !D1 * !X)	-0.00039	-0.00040	-0.00039
	(!A2 * !B1 * !C1 * !D1 * !X)	0.00167	0.00170	0.00167

sky130_fd_sc_hs__a2111o_4	**(A2 * B1 * D1 * X)**	-0.00193	-0.00193	-0.00193
	(A2 * B1 * D1 * X)	0.00248	0.00249	0.00249
	(A2 * B1 * C1 * !D1 * X)	-0.00193	-0.00193	-0.00193
	(A2 * B1 * C1 * !D1 * X)	0.00248	0.00249	0.00249
	(A2 * B1 * !C1 * !D1 * X)	-0.00193	-0.00192	-0.00193
	(A2 * B1 * !C1 * !D1 * X)	0.00248	0.00247	0.00249
	(A2 * !B1 * C1 * D1 * X)	-0.00193	-0.00194	-0.00193
	(A2 * !B1 * C1 * D1 * X)	0.00239	0.00240	0.00239
	(A2 * !B1 * C1 * !D1 * X)	-0.00193	-0.00194	-0.00193
	(A2 * !B1 * C1 * !D1 * X)	0.00238	0.00240	0.00239
	(A2 * !B1 * !C1 * D1 * X)	-0.00193	-0.00193	-0.00193
	(A2 * !B1 * !C1 * D1 * X)	0.00235	0.00236	0.00236
	(!A2 * B1 * D1 * X)	-0.00177	-0.00185	-0.00185
	(!A2 * B1 * D1 * X)	0.00255	0.00257	0.00256
	(!A2 * B1 * C1 * !D1 * X)	-0.00177	-0.00186	-0.00184
	(!A2 * B1 * C1 * !D1 * X)	0.00255	0.00258	0.00256
	(!A2 * B1 * !C1 * !D1 * X)	-0.00176	-0.00186	-0.00184
	(!A2 * B1 * !C1 * !D1 * X)	0.00255	0.00258	0.00256
	(!A2 * !B1 * C1 * D1 * X)	-0.00176	-0.00185	-0.00184
	(!A2 * !B1 * C1 * D1 * X)	0.00255	0.00257	0.00256
	(!A2 * !B1 * C1 * !D1 * X)	-0.00176	-0.00186	-0.00184
	(!A2 * !B1 * C1 * !D1 * X)	0.00255	0.00258	0.00256
	(!A2 * !B1 * !C1 * D1 * X)	-0.00176	-0.00184	-0.00184
	(!A2 * !B1 * !C1 * D1 * X)	0.00255	0.00259	0.00256
	(!A2 * !B1 * !C1 * !D1 * !X)	-0.00066	-0.00067	-0.00066
	(!A2 * !B1 * !C1 * !D1 * !X)	0.00300	0.00303	0.00299

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)**	0.00103	0.00105	0.00104
	(A1 * B1 * D1 * X)	-0.00122	-0.00128	-0.00127
	(A1 * B1 * C1 * !D1 * X)	0.00104	0.00105	0.00104
	(A1 * B1 * C1 * !D1 * X)	-0.00123	-0.00128	-0.00127
	(A1 * B1 * !C1 * !D1 * X)	0.00104	0.00105	0.00104
	(A1 * B1 * !C1 * !D1 * X)	-0.00122	-0.00128	-0.00127
	(A1 * !B1 * C1 * D1 * X)	0.00103	0.00105	0.00104
	(A1 * !B1 * C1 * D1 * X)	-0.00115	-0.00123	-0.00123
	(A1 * !B1 * C1 * !D1 * X)	0.00104	0.00105	0.00104
	(A1 * !B1 * C1 * !D1 * X)	-0.00115	-0.00123	-0.00123
	(A1 * !B1 * !C1 * D1 * X)	0.00104	0.00105	0.00104
	(A1 * !B1 * !C1 * D1 * X)	-0.00113	-0.00120	-0.00121
	(!A1 * B1 * X)	0.00098	0.00099	0.00098
	(!A1 * B1 * X)	-0.00130	-0.00131	-0.00131
	(!A1 * !B1 * C1 * X)	0.00098	0.00099	0.00098
	(!A1 * !B1 * C1 * X)	-0.00130	-0.00131	-0.00131
	(!A1 * !B1 * !C1 * D1 * X)	0.00098	0.00098	0.00098
	(!A1 * !B1 * !C1 * D1 * X)	-0.00130	-0.00130	-0.00130
	(!A1 * !B1 * !C1 * !D1 * !X)	0.00086	0.00086	0.00086
	(!A1 * !B1 * !C1 * !D1 * !X)	-0.00143	-0.00143	-0.00143

sky130_fd_sc_hs__a2111o_2	**(A1 * B1 * D1 * X)**	0.00116	0.00118	0.00117
	(A1 * B1 * D1 * X)	-0.00133	-0.00139	-0.00138
	(A1 * B1 * C1 * !D1 * X)	0.00117	0.00118	0.00117
	(A1 * B1 * C1 * !D1 * X)	-0.00133	-0.00139	-0.00138
	(A1 * B1 * !C1 * !D1 * X)	0.00117	0.00118	0.00117
	(A1 * B1 * !C1 * !D1 * X)	-0.00132	-0.00139	-0.00138
	(A1 * !B1 * C1 * D1 * X)	0.00116	0.00118	0.00117
	(A1 * !B1 * C1 * D1 * X)	-0.00125	-0.00134	-0.00133
	(A1 * !B1 * C1 * !D1 * X)	0.00116	0.00118	0.00117
	(A1 * !B1 * C1 * !D1 * X)	-0.00125	-0.00134	-0.00133
	(A1 * !B1 * !C1 * D1 * X)	0.00117	0.00118	0.00117
	(A1 * !B1 * !C1 * D1 * X)	-0.00122	-0.00133	-0.00131
	(!A1 * B1 * X)	0.00110	0.00112	0.00111
	(!A1 * B1 * X)	-0.00142	-0.00143	-0.00142
	(!A1 * !B1 * C1 * X)	0.00110	0.00111	0.00111
	(!A1 * !B1 * C1 * X)	-0.00142	-0.00143	-0.00142
	(!A1 * !B1 * !C1 * D1 * X)	0.00110	0.00112	0.00111
	(!A1 * !B1 * !C1 * D1 * X)	-0.00142	-0.00143	-0.00142
	(!A1 * !B1 * !C1 * !D1 * !X)	0.00102	0.00103	0.00103
	(!A1 * !B1 * !C1 * !D1 * !X)	-0.00150	-0.00151	-0.00150

sky130_fd_sc_hs__a2111o_4	**(A1 * B1 * D1 * X)**	0.00199	0.00199	0.00199
	(A1 * B1 * D1 * X)	-0.00241	-0.00251	-0.00250
	(A1 * B1 * C1 * !D1 * X)	0.00199	0.00199	0.00199
	(A1 * B1 * C1 * !D1 * X)	-0.00241	-0.00249	-0.00250
	(A1 * B1 * !C1 * !D1 * X)	0.00199	0.00199	0.00199
	(A1 * B1 * !C1 * !D1 * X)	-0.00238	-0.00251	-0.00250
	(A1 * !B1 * C1 * D1 * X)	0.00199	0.00201	0.00199
	(A1 * !B1 * C1 * D1 * X)	-0.00226	-0.00242	-0.00241
	(A1 * !B1 * C1 * !D1 * X)	0.00199	0.00201	0.00199
	(A1 * !B1 * C1 * !D1 * X)	-0.00226	-0.00242	-0.00241
	(A1 * !B1 * !C1 * D1 * X)	0.00200	0.00202	0.00199
	(A1 * !B1 * !C1 * D1 * X)	-0.00223	-0.00237	-0.00237
	(!A1 * B1 * X)	0.00189	0.00189	0.00189
	(!A1 * B1 * X)	-0.00257	-0.00257	-0.00257
	(!A1 * !B1 * C1 * X)	0.00189	0.00189	0.00189
	(!A1 * !B1 * C1 * X)	-0.00257	-0.00257	-0.00257
	(!A1 * !B1 * !C1 * D1 * X)	0.00189	0.00191	0.00189
	(!A1 * !B1 * !C1 * D1 * X)	-0.00257	-0.00258	-0.00257
	(!A1 * !B1 * !C1 * !D1 * !X)	0.00187	0.00190	0.00189
	(!A1 * !B1 * !C1 * !D1 * !X)	-0.00256	-0.00258	-0.00257

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)**	-0.00103	-0.00104	-0.00104
	(A1 * B1 * D1 * X)	0.00128	0.00128	0.00127
	(A1 * B1 * C1 * !D1 * X)	-0.00104	-0.00104	-0.00104
	(A1 * B1 * C1 * !D1 * X)	0.00128	0.00128	0.00127
	(A1 * B1 * !C1 * !D1 * X)	-0.00104	-0.00104	-0.00103
	(A1 * B1 * !C1 * !D1 * X)	0.00128	0.00128	0.00127
	(A1 * !B1 * C1 * D1 * X)	-0.00103	-0.00104	-0.00103
	(A1 * !B1 * C1 * D1 * X)	0.00123	0.00123	0.00123
	(A1 * !B1 * C1 * !D1 * X)	-0.00104	-0.00104	-0.00103
	(A1 * !B1 * C1 * !D1 * X)	0.00123	0.00123	0.00123
	(A1 * !B1 * !C1 * D1 * X)	-0.00103	-0.00103	-0.00103
	(A1 * !B1 * !C1 * D1 * X)	0.00121	0.00120	0.00121
	(!A1 * B1 * X)	-0.00096	-0.00099	-0.00098
	(!A1 * B1 * X)	0.00130	0.00132	0.00131
	(!A1 * !B1 * C1 * X)	-0.00097	-0.00099	-0.00098
	(!A1 * !B1 * C1 * X)	0.00131	0.00131	0.00131
	(!A1 * !B1 * !C1 * D1 * X)	-0.00096	-0.00098	-0.00098
	(!A1 * !B1 * !C1 * D1 * X)	0.00131	0.00132	0.00131
	(!A1 * !B1 * !C1 * !D1 * !X)	-0.00080	-0.00086	-0.00086
	(!A1 * !B1 * !C1 * !D1 * !X)	0.00148	0.00146	0.00143

sky130_fd_sc_hs__a2111o_2	**(A1 * B1 * D1 * X)**	-0.00116	-0.00117	-0.00116
	(A1 * B1 * D1 * X)	0.00139	0.00139	0.00138
	(A1 * B1 * C1 * !D1 * X)	-0.00117	-0.00117	-0.00116
	(A1 * B1 * C1 * !D1 * X)	0.00139	0.00139	0.00138
	(A1 * B1 * !C1 * !D1 * X)	-0.00117	-0.00117	-0.00116
	(A1 * B1 * !C1 * !D1 * X)	0.00139	0.00139	0.00138
	(A1 * !B1 * C1 * D1 * X)	-0.00116	-0.00117	-0.00116
	(A1 * !B1 * C1 * D1 * X)	0.00134	0.00134	0.00133
	(A1 * !B1 * C1 * !D1 * X)	-0.00116	-0.00117	-0.00116
	(A1 * !B1 * C1 * !D1 * X)	0.00134	0.00134	0.00133
	(A1 * !B1 * !C1 * D1 * X)	-0.00117	-0.00117	-0.00116
	(A1 * !B1 * !C1 * D1 * X)	0.00131	0.00133	0.00131
	(!A1 * B1 * X)	-0.00108	-0.00111	-0.00111
	(!A1 * B1 * X)	0.00142	0.00143	0.00143
	(!A1 * !B1 * C1 * X)	-0.00108	-0.00111	-0.00111
	(!A1 * !B1 * C1 * X)	0.00143	0.00143	0.00143
	(!A1 * !B1 * !C1 * D1 * X)	-0.00108	-0.00111	-0.00111
	(!A1 * !B1 * !C1 * D1 * X)	0.00143	0.00143	0.00143
	(!A1 * !B1 * !C1 * !D1 * !X)	-0.00097	-0.00103	-0.00103
	(!A1 * !B1 * !C1 * !D1 * !X)	0.00156	0.00154	0.00151

sky130_fd_sc_hs__a2111o_4	**(A1 * B1 * D1 * X)**	-0.00199	-0.00199	-0.00198
	(A1 * B1 * D1 * X)	0.00251	0.00251	0.00250
	(A1 * B1 * C1 * !D1 * X)	-0.00199	-0.00198	-0.00198
	(A1 * B1 * C1 * !D1 * X)	0.00251	0.00249	0.00250
	(A1 * B1 * !C1 * !D1 * X)	-0.00199	-0.00199	-0.00198
	(A1 * B1 * !C1 * !D1 * X)	0.00251	0.00254	0.00250
	(A1 * !B1 * C1 * D1 * X)	-0.00198	-0.00199	-0.00198
	(A1 * !B1 * C1 * D1 * X)	0.00240	0.00242	0.00241
	(A1 * !B1 * C1 * !D1 * X)	-0.00198	-0.00199	-0.00198
	(A1 * !B1 * C1 * !D1 * X)	0.00240	0.00242	0.00241
	(A1 * !B1 * !C1 * D1 * X)	-0.00198	-0.00198	-0.00198
	(A1 * !B1 * !C1 * D1 * X)	0.00236	0.00237	0.00237
	(!A1 * B1 * X)	-0.00182	-0.00189	-0.00189
	(!A1 * B1 * X)	0.00257	0.00259	0.00258
	(!A1 * !B1 * C1 * X)	-0.00182	-0.00189	-0.00189
	(!A1 * !B1 * C1 * X)	0.00257	0.00259	0.00258
	(!A1 * !B1 * !C1 * D1 * X)	-0.00182	-0.00189	-0.00189
	(!A1 * !B1 * !C1 * D1 * X)	0.00257	0.00259	0.00258
	(!A1 * !B1 * !C1 * !D1 * !X)	-0.00176	-0.00189	-0.00189
	(!A1 * !B1 * !C1 * !D1 * !X)	0.00265	0.00260	0.00258

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)**	0.00106	0.00107	0.00106
	(A1 * A2 * C1 * D1 * X)	-0.00090	-0.00090	-0.00090
	(A1 * A2 * C1 * !D1 * X)	0.00108	0.00107	0.00106
	(A1 * A2 * C1 * !D1 * X)	-0.00088	-0.00088	-0.00088
	(A1 * A2 * !C1 * D1 * X)	0.00105	0.00107	0.00106
	(A1 * A2 * !C1 * D1 * X)	-0.00084	-0.00085	-0.00084
	(A1 * A2 * !C1 * !D1 * X)	0.00106	0.00106	0.00106
	(A1 * A2 * !C1 * !D1 * X)	-0.00071	-0.00071	-0.00071
	(A1 * !A2 * C1 * D1 * X)	0.00106	0.00107	0.00106
	(A1 * !A2 * C1 * D1 * X)	-0.00117	-0.00121	-0.00120
	(A1 * !A2 * C1 * !D1 * X)	0.00111	0.00107	0.00106
	(A1 * !A2 * C1 * !D1 * X)	-0.00111	-0.00120	-0.00120
	(A1 * !A2 * !C1 * D1 * X)	0.00109	0.00107	0.00106
	(A1 * !A2 * !C1 * D1 * X)	-0.00105	-0.00115	-0.00115
	(!A1 * C1 * D1 * X)	0.00106	0.00107	0.00106
	(!A1 * C1 * D1 * X)	-0.00117	-0.00121	-0.00120
	(!A1 * C1 * !D1 * X)	0.00111	0.00107	0.00106
	(!A1 * C1 * !D1 * X)	-0.00111	-0.00120	-0.00120
	(!A1 * !C1 * D1 * X)	0.00109	0.00107	0.00106
	(!A1 * !C1 * D1 * X)	-0.00104	-0.00114	-0.00114

sky130_fd_sc_hs__a2111o_2	**(A1 * A2 * C1 * D1 * X)**	0.00113	0.00115	0.00113
	(A1 * A2 * C1 * D1 * X)	-0.00100	-0.00101	-0.00100
	(A1 * A2 * C1 * !D1 * X)	0.00114	0.00115	0.00113
	(A1 * A2 * C1 * !D1 * X)	-0.00097	-0.00098	-0.00098
	(A1 * A2 * !C1 * D1 * X)	0.00112	0.00113	0.00112
	(A1 * A2 * !C1 * D1 * X)	-0.00093	-0.00094	-0.00093
	(A1 * A2 * !C1 * !D1 * X)	0.00112	0.00114	0.00112
	(A1 * A2 * !C1 * !D1 * X)	-0.00078	-0.00080	-0.00078
	(A1 * !A2 * C1 * D1 * X)	0.00112	0.00113	0.00112
	(A1 * !A2 * C1 * D1 * X)	-0.00130	-0.00134	-0.00134
	(A1 * !A2 * C1 * !D1 * X)	0.00114	0.00113	0.00113
	(A1 * !A2 * C1 * !D1 * X)	-0.00126	-0.00134	-0.00134
	(A1 * !A2 * !C1 * D1 * X)	0.00114	0.00113	0.00112
	(A1 * !A2 * !C1 * D1 * X)	-0.00118	-0.00128	-0.00128
	(!A1 * C1 * D1 * X)	0.00112	0.00113	0.00112
	(!A1 * C1 * D1 * X)	-0.00130	-0.00134	-0.00134
	(!A1 * C1 * !D1 * X)	0.00114	0.00113	0.00113
	(!A1 * C1 * !D1 * X)	-0.00126	-0.00134	-0.00134
	(!A1 * !C1 * D1 * X)	0.00114	0.00113	0.00112
	(!A1 * !C1 * D1 * X)	-0.00117	-0.00128	-0.00128

sky130_fd_sc_hs__a2111o_4	**(A1 * A2 * C1 * D1 * X)**	0.00210	0.00212	0.00208
	(A1 * A2 * C1 * D1 * X)	-0.00185	-0.00186	-0.00185
	(A1 * A2 * C1 * !D1 * X)	0.00211	0.00212	0.00208
	(A1 * A2 * C1 * !D1 * X)	-0.00180	-0.00182	-0.00180
	(A1 * A2 * !C1 * D1 * X)	0.00208	0.00211	0.00209
	(A1 * A2 * !C1 * D1 * X)	-0.00175	-0.00176	-0.00176
	(A1 * A2 * !C1 * !D1 * X)	0.00207	0.00211	0.00207
	(A1 * A2 * !C1 * !D1 * X)	-0.00148	-0.00151	-0.00148
	(A1 * !A2 * C1 * D1 * X)	0.00207	0.00209	0.00207
	(A1 * !A2 * C1 * D1 * X)	-0.00239	-0.00248	-0.00247
	(A1 * !A2 * C1 * !D1 * X)	0.00211	0.00209	0.00207
	(A1 * !A2 * C1 * !D1 * X)	-0.00233	-0.00249	-0.00247
	(A1 * !A2 * !C1 * D1 * X)	0.00212	0.00209	0.00207
	(A1 * !A2 * !C1 * D1 * X)	-0.00218	-0.00237	-0.00236
	(!A1 * C1 * D1 * X)	0.00208	0.00209	0.00207
	(!A1 * C1 * D1 * X)	-0.00239	-0.00248	-0.00247
	(!A1 * C1 * !D1 * X)	0.00211	0.00209	0.00207
	(!A1 * C1 * !D1 * X)	-0.00234	-0.00249	-0.00247
	(!A1 * !C1 * D1 * X)	0.00212	0.00209	0.00207
	(!A1 * !C1 * D1 * X)	-0.00218	-0.00237	-0.00236

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)**	-0.00106	-0.00106	-0.00106
	(A1 * A2 * C1 * D1 * X)	0.00090	0.00090	0.00090
	(A1 * A2 * C1 * !D1 * X)	-0.00106	-0.00106	-0.00106
	(A1 * A2 * C1 * !D1 * X)	0.00088	0.00088	0.00088
	(A1 * A2 * !C1 * D1 * X)	-0.00105	-0.00106	-0.00106
	(A1 * A2 * !C1 * D1 * X)	0.00084	0.00085	0.00084
	(A1 * A2 * !C1 * !D1 * X)	-0.00099	-0.00099	-0.00100
	(A1 * A2 * !C1 * !D1 * X)	0.00078	0.00078	0.00077
	(A1 * !A2 * C1 * D1 * X)	-0.00106	-0.00106	-0.00105
	(A1 * !A2 * C1 * D1 * X)	0.00120	0.00121	0.00120
	(A1 * !A2 * C1 * !D1 * X)	-0.00106	-0.00106	-0.00105
	(A1 * !A2 * C1 * !D1 * X)	0.00120	0.00120	0.00120
	(A1 * !A2 * !C1 * D1 * X)	-0.00105	-0.00105	-0.00105
	(A1 * !A2 * !C1 * D1 * X)	0.00114	0.00115	0.00115
	(!A1 * C1 * D1 * X)	-0.00105	-0.00106	-0.00105
	(!A1 * C1 * D1 * X)	0.00119	0.00121	0.00120
	(!A1 * C1 * !D1 * X)	-0.00105	-0.00106	-0.00105
	(!A1 * C1 * !D1 * X)	0.00119	0.00120	0.00120
	(!A1 * !C1 * D1 * X)	-0.00105	-0.00105	-0.00105
	(!A1 * !C1 * D1 * X)	0.00114	0.00114	0.00114

sky130_fd_sc_hs__a2111o_2	**(A1 * A2 * C1 * D1 * X)**	-0.00112	-0.00113	-0.00112
	(A1 * A2 * C1 * D1 * X)	0.00100	0.00101	0.00100
	(A1 * A2 * C1 * !D1 * X)	-0.00112	-0.00113	-0.00112
	(A1 * A2 * C1 * !D1 * X)	0.00097	0.00098	0.00098
	(A1 * A2 * !C1 * D1 * X)	-0.00112	-0.00113	-0.00112
	(A1 * A2 * !C1 * D1 * X)	0.00093	0.00094	0.00093
	(A1 * A2 * !C1 * !D1 * X)	-0.00103	-0.00104	-0.00105
	(A1 * A2 * !C1 * !D1 * X)	0.00086	0.00087	0.00085
	(A1 * !A2 * C1 * D1 * X)	-0.00112	-0.00112	-0.00112
	(A1 * !A2 * C1 * D1 * X)	0.00135	0.00134	0.00134
	(A1 * !A2 * C1 * !D1 * X)	-0.00112	-0.00112	-0.00112
	(A1 * !A2 * C1 * !D1 * X)	0.00134	0.00134	0.00134
	(A1 * !A2 * !C1 * D1 * X)	-0.00112	-0.00112	-0.00112
	(A1 * !A2 * !C1 * D1 * X)	0.00128	0.00128	0.00128
	(!A1 * C1 * D1 * X)	-0.00112	-0.00112	-0.00112
	(!A1 * C1 * D1 * X)	0.00135	0.00134	0.00134
	(!A1 * C1 * !D1 * X)	-0.00112	-0.00112	-0.00112
	(!A1 * C1 * !D1 * X)	0.00135	0.00134	0.00134
	(!A1 * !C1 * D1 * X)	-0.00112	-0.00112	-0.00112
	(!A1 * !C1 * D1 * X)	0.00128	0.00128	0.00128

sky130_fd_sc_hs__a2111o_4	**(A1 * A2 * C1 * D1 * X)**	-0.00207	-0.00208	-0.00207
	(A1 * A2 * C1 * D1 * X)	0.00185	0.00186	0.00185
	(A1 * A2 * C1 * !D1 * X)	-0.00207	-0.00208	-0.00207
	(A1 * A2 * C1 * !D1 * X)	0.00180	0.00182	0.00180
	(A1 * A2 * !C1 * D1 * X)	-0.00207	-0.00208	-0.00208
	(A1 * A2 * !C1 * D1 * X)	0.00175	0.00176	0.00176
	(A1 * A2 * !C1 * !D1 * X)	-0.00191	-0.00192	-0.00192
	(A1 * A2 * !C1 * !D1 * X)	0.00163	0.00163	0.00162
	(A1 * !A2 * C1 * D1 * X)	-0.00206	-0.00207	-0.00207
	(A1 * !A2 * C1 * D1 * X)	0.00245	0.00248	0.00247
	(A1 * !A2 * C1 * !D1 * X)	-0.00206	-0.00208	-0.00207
	(A1 * !A2 * C1 * !D1 * X)	0.00246	0.00249	0.00247
	(A1 * !A2 * !C1 * D1 * X)	-0.00206	-0.00208	-0.00206
	(A1 * !A2 * !C1 * D1 * X)	0.00235	0.00237	0.00236
	(!A1 * C1 * D1 * X)	-0.00206	-0.00207	-0.00207
	(!A1 * C1 * D1 * X)	0.00245	0.00248	0.00247
	(!A1 * C1 * !D1 * X)	-0.00206	-0.00208	-0.00207
	(!A1 * C1 * !D1 * X)	0.00246	0.00249	0.00247
	(!A1 * !C1 * D1 * X)	-0.00206	-0.00208	-0.00206
	(!A1 * !C1 * D1 * X)	0.00235	0.00237	0.00236

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)**	0.00113	0.00114	0.00109
	(A1 * B1 * D1 * X)	-0.00080	-0.00080	-0.00080
	(A1 * B1 * !D1 * X)	0.00107	0.00107	0.00106
	(A1 * B1 * !D1 * X)	-0.00070	-0.00070	-0.00070
	(A1 * A2 * !B1 * D1 * X)	0.00119	0.00110	0.00107
	(A1 * A2 * !B1 * D1 * X)	-0.00082	-0.00086	-0.00086
	(A1 * A2 * !B1 * !D1 * X)	0.00108	0.00108	0.00107
	(A1 * A2 * !B1 * !D1 * X)	-0.00069	-0.00069	-0.00069
	(A1 * !A2 * !B1 * D1 * X)	0.00128	0.00108	0.00106
	(A1 * !A2 * !B1 * D1 * X)	-0.00097	-0.00118	-0.00119
	(!A1 * B1 * D1 * X)	0.00115	0.00116	0.00110
	(!A1 * B1 * D1 * X)	-0.00080	-0.00081	-0.00080
	(!A1 * B1 * !D1 * X)	0.00107	0.00107	0.00106
	(!A1 * B1 * !D1 * X)	-0.00070	-0.00070	-0.00070
	(!A1 * !B1 * D1 * X)	0.00128	0.00108	0.00106
	(!A1 * !B1 * D1 * X)	-0.00097	-0.00118	-0.00119

sky130_fd_sc_hs__a2111o_2	**(A1 * B1 * D1 * X)**	0.00117	0.00119	0.00113
	(A1 * B1 * D1 * X)	-0.00094	-0.00094	-0.00094
	(A1 * B1 * !D1 * X)	0.00112	0.00114	0.00112
	(A1 * B1 * !D1 * X)	-0.00083	-0.00083	-0.00082
	(A1 * A2 * !B1 * D1 * X)	0.00123	0.00114	0.00112
	(A1 * A2 * !B1 * D1 * X)	-0.00096	-0.00099	-0.00099
	(A1 * A2 * !B1 * !D1 * X)	0.00112	0.00114	0.00112
	(A1 * A2 * !B1 * !D1 * X)	-0.00081	-0.00082	-0.00081
	(A1 * !A2 * !B1 * D1 * X)	0.00133	0.00113	0.00112
	(A1 * !A2 * !B1 * D1 * X)	-0.00117	-0.00138	-0.00139
	(!A1 * B1 * D1 * X)	0.00120	0.00121	0.00114
	(!A1 * B1 * D1 * X)	-0.00095	-0.00096	-0.00095
	(!A1 * B1 * !D1 * X)	0.00113	0.00114	0.00112
	(!A1 * B1 * !D1 * X)	-0.00083	-0.00084	-0.00083
	(!A1 * !B1 * D1 * X)	0.00134	0.00113	0.00112
	(!A1 * !B1 * D1 * X)	-0.00117	-0.00138	-0.00139

sky130_fd_sc_hs__a2111o_4	**(A1 * B1 * D1 * X)**	0.00210	0.00216	0.00207
	(A1 * B1 * D1 * X)	-0.00172	-0.00174	-0.00173
	(A1 * B1 * !D1 * X)	0.00203	0.00206	0.00203
	(A1 * B1 * !D1 * X)	-0.00152	-0.00155	-0.00152
	(A1 * A2 * !B1 * D1 * X)	0.00219	0.00207	0.00203
	(A1 * A2 * !B1 * D1 * X)	-0.00184	-0.00184	-0.00184
	(A1 * A2 * !B1 * !D1 * X)	0.00204	0.00207	0.00203
	(A1 * A2 * !B1 * !D1 * X)	-0.00151	-0.00154	-0.00151
	(A1 * !A2 * !B1 * D1 * X)	0.00245	0.00206	0.00202
	(A1 * !A2 * !B1 * D1 * X)	-0.00212	-0.00255	-0.00256
	(!A1 * B1 * D1 * X)	0.00215	0.00221	0.00209
	(!A1 * B1 * D1 * X)	-0.00174	-0.00176	-0.00175
	(!A1 * B1 * !D1 * X)	0.00203	0.00207	0.00203
	(!A1 * B1 * !D1 * X)	-0.00152	-0.00155	-0.00153
	(!A1 * !B1 * D1 * X)	0.00245	0.00206	0.00202
	(!A1 * !B1 * D1 * X)	-0.00212	-0.00255	-0.00256

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)**	-0.00106	-0.00107	-0.00106
	(A1 * B1 * D1 * X)	0.00080	0.00080	0.00080
	(A1 * B1 * !D1 * X)	-0.00105	-0.00106	-0.00104
	(A1 * B1 * !D1 * X)	0.00071	0.00072	0.00072
	(A1 * A2 * !B1 * D1 * X)	-0.00106	-0.00106	-0.00106
	(A1 * A2 * !B1 * D1 * X)	0.00086	0.00086	0.00086
	(A1 * A2 * !B1 * !D1 * X)	-0.00097	-0.00098	-0.00105
	(A1 * A2 * !B1 * !D1 * X)	0.00076	0.00077	0.00071
	(A1 * !A2 * !B1 * D1 * X)	-0.00105	-0.00105	-0.00105
	(A1 * !A2 * !B1 * D1 * X)	0.00118	0.00119	0.00119
	(!A1 * B1 * D1 * X)	-0.00106	-0.00107	-0.00106
	(!A1 * B1 * D1 * X)	0.00080	0.00081	0.00080
	(!A1 * B1 * !D1 * X)	-0.00105	-0.00106	-0.00104
	(!A1 * B1 * !D1 * X)	0.00071	0.00072	0.00072
	(!A1 * !B1 * D1 * X)	-0.00105	-0.00105	-0.00105
	(!A1 * !B1 * D1 * X)	0.00118	0.00119	0.00119

sky130_fd_sc_hs__a2111o_2	**(A1 * B1 * D1 * X)**	-0.00111	-0.00112	-0.00111
	(A1 * B1 * D1 * X)	0.00094	0.00094	0.00094
	(A1 * B1 * !D1 * X)	-0.00110	-0.00111	-0.00110
	(A1 * B1 * !D1 * X)	0.00084	0.00085	0.00085
	(A1 * A2 * !B1 * D1 * X)	-0.00111	-0.00111	-0.00111
	(A1 * A2 * !B1 * D1 * X)	0.00099	0.00099	0.00099
	(A1 * A2 * !B1 * !D1 * X)	-0.00100	-0.00101	-0.00110
	(A1 * A2 * !B1 * !D1 * X)	0.00090	0.00090	0.00083
	(A1 * !A2 * !B1 * D1 * X)	-0.00111	-0.00110	-0.00110
	(A1 * !A2 * !B1 * D1 * X)	0.00139	0.00138	0.00139
	(!A1 * B1 * D1 * X)	-0.00111	-0.00111	-0.00111
	(!A1 * B1 * D1 * X)	0.00095	0.00096	0.00095
	(!A1 * B1 * !D1 * X)	-0.00110	-0.00111	-0.00110
	(!A1 * B1 * !D1 * X)	0.00085	0.00086	0.00086
	(!A1 * !B1 * D1 * X)	-0.00111	-0.00111	-0.00110
	(!A1 * !B1 * D1 * X)	0.00139	0.00138	0.00139

sky130_fd_sc_hs__a2111o_4	**(A1 * B1 * D1 * X)**	-0.00202	-0.00204	-0.00203
	(A1 * B1 * D1 * X)	0.00172	0.00174	0.00173
	(A1 * B1 * !D1 * X)	-0.00200	-0.00201	-0.00199
	(A1 * B1 * !D1 * X)	0.00155	0.00156	0.00157
	(A1 * A2 * !B1 * D1 * X)	-0.00203	-0.00203	-0.00203
	(A1 * A2 * !B1 * D1 * X)	0.00184	0.00184	0.00184
	(A1 * A2 * !B1 * !D1 * X)	-0.00185	-0.00186	-0.00196
	(A1 * A2 * !B1 * !D1 * X)	0.00164	0.00163	0.00158
	(A1 * !A2 * !B1 * D1 * X)	-0.00201	-0.00202	-0.00200
	(A1 * !A2 * !B1 * D1 * X)	0.00255	0.00255	0.00256
	(!A1 * B1 * D1 * X)	-0.00203	-0.00204	-0.00203
	(!A1 * B1 * D1 * X)	0.00174	0.00176	0.00175
	(!A1 * B1 * !D1 * X)	-0.00200	-0.00200	-0.00198
	(!A1 * B1 * !D1 * X)	0.00156	0.00157	0.00158
	(!A1 * !B1 * D1 * X)	-0.00201	-0.00202	-0.00200
	(!A1 * !B1 * D1 * X)	0.00255	0.00255	0.00256

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

Cell Name	When	Power(pJ)		
		first	**mid**	**last**
sky130_fd_sc_hs__a2111o_1	**(A1 * C1 * X)**	0.00113	0.00116	0.00114
	(A1 * C1 * X)	-0.00065	-0.00066	-0.00065
	(A1 * B1 * !C1 * X)	0.00115	0.00116	0.00114
	(A1 * B1 * !C1 * X)	-0.00066	-0.00066	-0.00065
	(A1 * A2 * !B1 * !C1 * X)	0.00114	0.00116	0.00114
	(A1 * A2 * !B1 * !C1 * X)	-0.00065	-0.00066	-0.00065
	(!A1 * C1 * X)	0.00114	0.00116	0.00114
	(!A1 * C1 * X)	-0.00065	-0.00066	-0.00065
	(!A1 * B1 * !C1 * X)	0.00115	0.00116	0.00114
	(!A1 * B1 * !C1 * X)	-0.00066	-0.00066	-0.00065

sky130_fd_sc_hs__a2111o_2	**(A1 * C1 * X)**	0.00137	0.00139	0.00137
	(A1 * C1 * X)	-0.00070	-0.00072	-0.00070
	(A1 * B1 * !C1 * X)	0.00137	0.00139	0.00137
	(A1 * B1 * !C1 * X)	-0.00070	-0.00072	-0.00070
	(A1 * A2 * !B1 * !C1 * X)	0.00137	0.00139	0.00137
	(A1 * A2 * !B1 * !C1 * X)	-0.00070	-0.00072	-0.00070
	(!A1 * C1 * X)	0.00137	0.00139	0.00137
	(!A1 * C1 * X)	-0.00070	-0.00072	-0.00070
	(!A1 * B1 * !C1 * X)	0.00137	0.00139	0.00137
	(!A1 * B1 * !C1 * X)	-0.00070	-0.00072	-0.00070
sky130_fd_sc_hs__a2111o_4	**(A1 * C1 * X)**	0.00222	0.00226	0.00222
	(A1 * C1 * X)	-0.00133	-0.00135	-0.00133
	(A1 * B1 * !C1 * X)	0.00222	0.00226	0.00222
	(A1 * B1 * !C1 * X)	-0.00133	-0.00135	-0.00133
	(A1 * A2 * !B1 * !C1 * X)	0.00222	0.00221	0.00222
	(A1 * A2 * !B1 * !C1 * X)	-0.00132	-0.00132	-0.00133
	(!A1 * C1 * X)	0.00222	0.00226	0.00222
	(!A1 * C1 * X)	-0.00133	-0.00135	-0.00133
	(!A1 * B1 * !C1 * X)	0.00222	0.00226	0.00222
	(!A1 * B1 * !C1 * X)	-0.00133	-0.00135	-0.00133

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

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

sky130_fd_sc_hs__a2111o_1	**(A1 * C1 * X)**	-0.00110	-0.00111	-0.00114
	(A1 * C1 * X)	0.00070	0.00070	0.00067
	(A1 * B1 * !C1 * X)	-0.00104	-0.00105	-0.00113
	(A1 * B1 * !C1 * X)	0.00073	0.00073	0.00067
	(A1 * A2 * !B1 * !C1 * X)	-0.00090	-0.00090	-0.00108
	(A1 * A2 * !B1 * !C1 * X)	0.00083	0.00082	0.00070
	(!A1 * C1 * X)	-0.00110	-0.00111	-0.00114
	(!A1 * C1 * X)	0.00070	0.00070	0.00067
	(!A1 * B1 * !C1 * X)	-0.00104	-0.00105	-0.00113
	(!A1 * B1 * !C1 * X)	0.00073	0.00073	0.00067
sky130_fd_sc_hs__a2111o_2	**(A1 * C1 * X)**	-0.00132	-0.00133	-0.00137
	(A1 * C1 * X)	0.00075	0.00075	0.00072
	(A1 * B1 * !C1 * X)	-0.00125	-0.00126	-0.00135
	(A1 * B1 * !C1 * X)	0.00079	0.00080	0.00072
	(A1 * A2 * !B1 * !C1 * X)	-0.00108	-0.00110	-0.00131
	(A1 * A2 * !B1 * !C1 * X)	0.00091	0.00091	0.00075
	(!A1 * C1 * X)	-0.00132	-0.00133	-0.00137
	(!A1 * C1 * X)	0.00075	0.00075	0.00072
	(!A1 * B1 * !C1 * X)	-0.00125	-0.00126	-0.00135
	(!A1 * B1 * !C1 * X)	0.00079	0.00080	0.00072
sky130_fd_sc_hs__a2111o_4	**(A1 * C1 * X)**	-0.00207	-0.00208	-0.00220
	(A1 * C1 * X)	0.00147	0.00146	0.00136
	(A1 * B1 * !C1 * X)	-0.00194	-0.00195	-0.00217
	(A1 * B1 * !C1 * X)	0.00153	0.00153	0.00136
	(A1 * A2 * !B1 * !C1 * X)	-0.00165	-0.00166	-0.00208
	(A1 * A2 * !B1 * !C1 * X)	0.00173	0.00172	0.00143
	(!A1 * C1 * X)	-0.00207	-0.00208	-0.00220
	(!A1 * C1 * X)	0.00147	0.00146	0.00137
	(!A1 * B1 * !C1 * X)	-0.00194	-0.00195	-0.00217
	(!A1 * B1 * !C1 * X)	0.00154	0.00153	0.00137

SKY130_FD_SC_HS__A211OIx

sky130_fd_sc_hs_tt_1.50v_25C.ccs
Cell Library: Process , Voltage
1.50, 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	0.00276	0.00261	0.00275	0.00281	0.26158
sky130_fd_sc_hs__a211oi_2	0.00505	0.00527	0.00424	0.00403	0.49118
sky130_fd_sc_hs__a211oi_4	0.01016	0.01013	0.00807	0.00820	0.89965

Leakage Information

Cell Name	Leakage(nW)		
	Min.	**Avg**	**Max.**
sky130_fd_sc_hs__a211oi_1	0.00000	0.01223	0.02973
sky130_fd_sc_hs__a211oi_2	0.00000	0.02272	0.05947
sky130_fd_sc_hs__a211oi_4	0.00000	0.04544	0.11893

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)	0.19935	1.31667	10.92270
	A2->Y (FR)	0.23788	1.37869	11.12660
	B1->Y (FR)	0.21207	1.36313	11.57420
	C1->Y (FR)	0.16649	1.29255	11.33340
sky130_fd_sc_hs__a211oi_2	A1->Y (FR)	0.17480	1.13153	10.94990
	A2->Y (FR)	0.22564	1.18270	10.98870
	B1->Y (FR)	0.19443	1.17048	11.49300
	C1->Y (FR)	0.12932	1.08249	11.23980
sky130_fd_sc_hs__a211oi_4	A1->Y (FR)	0.16716	0.97609	10.69940
	A2->Y (FR)	0.22197	1.04413	10.91700
	B1->Y (FR)	0.18567	1.02513	11.45280
	C1->Y (FR)	0.12435	0.94260	11.24780

Delay(ns) to Y falling :

Cell Name	Timing Arc(Dir)	Delay(ns)		
		First	Mid	Last
sky130_fd_sc_hs__a211oi_1	A1->Y (RF)	0.03585	0.42799	3.78637
	A2->Y (RF)	0.03970	0.40371	3.52382
	B1->Y (RF)	0.02697	0.34939	3.15178
	C1->Y (RF)	0.02400	0.33891	3.14541
sky130_fd_sc_hs__a211oi_2	A1->Y (RF)	0.03145	0.39309	3.91332
	A2->Y (RF)	0.03885	0.37191	3.61608
	B1->Y (RF)	0.03775	0.44023	4.55562
	C1->Y (RF)	0.02811	0.41244	4.45220
sky130_fd_sc_hs__a211oi_4	A1->Y (RF)	0.03136	0.35809	3.94981
	A2->Y (RF)	0.03744	0.32333	3.45595
	B1->Y (RF)	0.03632	0.39445	4.53376
	C1->Y (RF)	0.02750	0.37027	4.50313

Power Information

Internal switching power(pJ) to Y rising :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__a211oi_1	A1	0.00039	0.00024	0.00042
	A1	0.00535	0.00521	0.00540
	A2	0.00068	0.00058	0.00076
	A2	0.00636	0.00626	0.00644
	B1	0.00074	0.00059	0.00096
	B1	0.00559	0.00545	0.00581
	C1	0.00016	0.00020	0.00157
	C1	0.00488	0.00487	0.00601
sky130_fd_sc_hs__a211oi_2	A1	-0.00004	-0.00027	0.00012
	A1	0.00944	0.00920	0.00965
	A2	0.00122	0.00094	0.00130
	A2	0.01231	0.01201	0.01241
	B1	0.00193	0.00175	0.00211
	B1	0.01032	0.01013	0.01047
	C1	0.00182	0.00184	0.00338
	C1	0.00870	0.00874	0.01026
sky130_fd_sc_hs__a211oi_4	A1	-0.00041	-0.00089	-0.00004
	A1	0.01844	0.01800	0.01891
	A2	0.00163	0.00112	0.00191
	A2	0.02361	0.02315	0.02395
	B1	0.00323	0.00288	0.00368
	B1	0.01969	0.01937	0.02012
	C1	0.00309	0.00312	0.00625
	C1	0.01668	0.01652	0.01984

Internal switching power(pJ) to Y falling :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__a211oi_1	A1	0.00660	0.00644	0.00691
	A1	0.00176	0.00160	0.00207
	A2	0.00734	0.00720	0.00746
	A2	0.00174	0.00158	0.00189
	B1	0.00548	0.00541	0.00594
	B1	0.00059	0.00048	0.00105
	C1	0.00417	0.00424	0.00475
	C1	-0.00015	-0.00014	0.00040
sky130_fd_sc_hs__a211oi_2	A1	0.01225	0.01195	0.01301
	A1	0.00302	0.00272	0.00368
	A2	0.01395	0.01362	0.01421
	A2	0.00301	0.00264	0.00323
	B1	0.00968	0.00944	0.01014
	B1	0.00123	0.00096	0.00163
	C1	0.00614	0.00625	0.00707
	C1	-0.00085	-0.00083	-0.00011
sky130_fd_sc_hs__a211oi_4	A1	0.02424	0.02350	0.02553
	A1	0.00591	0.00518	0.00717
	A2	0.02751	0.02683	0.02815
	A2	0.00587	0.00514	0.00640
	B1	0.01834	0.01781	0.01952
	B1	0.00174	0.00114	0.00263
	C1	0.01176	0.01194	0.01363
	C1	-0.00206	-0.00203	-0.00049

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)**	0.00111	0.00112	0.00111
	(A2 * B1 * C1 * !Y)	-0.00131	-0.00136	-0.00136
	(A2 * B1 * !C1 * !Y)	0.00111	0.00112	0.00111
	(A2 * B1 * !C1 * !Y)	-0.00131	-0.00136	-0.00136
	(A2 * !B1 * C1 * !Y)	0.00111	0.00112	0.00111
	(A2 * !B1 * C1 * !Y)	-0.00122	-0.00132	-0.00131
	(!A2 * B1 * C1 * !Y)	0.00104	0.00105	0.00104
	(!A2 * B1 * C1 * !Y)	-0.00139	-0.00140	-0.00139
	(!A2 * B1 * !C1 * !Y)	0.00104	0.00105	0.00104
	(!A2 * B1 * !C1 * !Y)	-0.00139	-0.00140	-0.00139
	(!A2 * !B1 * C1 * !Y)	0.00104	0.00105	0.00104
	(!A2 * !B1 * C1 * !Y)	-0.00139	-0.00139	-0.00139
	(!A2 * !B1 * !C1 * Y)	0.00036	0.00037	0.00035
	(!A2 * !B1 * !C1 * Y)	-0.00160	-0.00162	-0.00163
sky130_fd_sc_hs__a211oi_2	**(A2 * B1 * C1 * !Y)**	0.00226	0.00227	0.00226
	(A2 * B1 * C1 * !Y)	-0.00256	-0.00268	-0.00267
	(A2 * B1 * !C1 * !Y)	0.00227	0.00227	0.00226
	(A2 * B1 * !C1 * !Y)	-0.00256	-0.00268	-0.00267
	(A2 * !B1 * C1 * !Y)	0.00228	0.00229	0.00226
	(A2 * !B1 * C1 * !Y)	-0.00243	-0.00260	-0.00258
	(!A2 * B1 * C1 * !Y)	0.00215	0.00218	0.00216
	(!A2 * B1 * C1 * !Y)	-0.00273	-0.00275	-0.00273
	(!A2 * B1 * !C1 * !Y)	0.00215	0.00218	0.00216
	(!A2 * B1 * !C1 * !Y)	-0.00272	-0.00275	-0.00273
	(!A2 * !B1 * C1 * !Y)	0.00215	0.00218	0.00216
	(!A2 * !B1 * C1 * !Y)	-0.00273	-0.00275	-0.00273
	(!A2 * !B1 * !C1 * Y)	0.00087	0.00088	0.00083
	(!A2 * !B1 * !C1 * Y)	-0.00310	-0.00313	-0.00319

sky130_fd_sc_hs__a211oi_4	**(A2 * B1 * C1 * !Y)**	0.00438	0.00440	0.00439
	(A2 * B1 * C1 * !Y)	-0.00520	-0.00544	-0.00541
	(A2 * B1 * !C1 * !Y)	0.00439	0.00440	0.00439
	(A2 * B1 * !C1 * !Y)	-0.00517	-0.00544	-0.00541
	(A2 * !B1 * C1 * !Y)	0.00443	0.00445	0.00440
	(A2 * !B1 * C1 * !Y)	-0.00489	-0.00526	-0.00523
	(!A2 * B1 * C1 * !Y)	0.00416	0.00421	0.00417
	(!A2 * B1 * C1 * !Y)	-0.00554	-0.00560	-0.00557
	(!A2 * B1 * !C1 * !Y)	0.00415	0.00421	0.00417
	(!A2 * B1 * !C1 * !Y)	-0.00554	-0.00558	-0.00556
	(!A2 * !B1 * C1 * !Y)	0.00415	0.00421	0.00417
	(!A2 * !B1 * C1 * !Y)	-0.00555	-0.00559	-0.00557
	(!A2 * !B1 * !C1 * Y)	0.00152	0.00153	0.00145
	(!A2 * !B1 * !C1 * Y)	-0.00638	-0.00644	-0.00654

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)**	-0.00111	-0.00111	-0.00111
	(A2 * B1 * C1 * !Y)	0.00136	0.00136	0.00136
	(A2 * B1 * !C1 * !Y)	-0.00111	-0.00111	-0.00111
	(A2 * B1 * !C1 * !Y)	0.00136	0.00136	0.00136
	(A2 * !B1 * C1 * !Y)	-0.00110	-0.00111	-0.00110
	(A2 * !B1 * C1 * !Y)	0.00131	0.00132	0.00131
	(!A2 * B1 * C1 * !Y)	-0.00102	-0.00105	-0.00104
	(!A2 * B1 * C1 * !Y)	0.00139	0.00141	0.00139
	(!A2 * B1 * !C1 * !Y)	-0.00101	-0.00105	-0.00104
	(!A2 * B1 * !C1 * !Y)	0.00139	0.00141	0.00139
	(!A2 * !B1 * C1 * !Y)	-0.00102	-0.00105	-0.00104
	(!A2 * !B1 * C1 * !Y)	0.00140	0.00140	0.00139
	(!A2 * !B1 * !C1 * Y)	-0.00035	-0.00035	-0.00034
	(!A2 * !B1 * !C1 * Y)	0.00163	0.00165	0.00164
sky130_fd_sc_hs__a211oi_2	**(A2 * B1 * C1 * !Y)**	-0.00226	-0.00227	-0.00226
	(A2 * B1 * C1 * !Y)	0.00267	0.00269	0.00267
	(A2 * B1 * !C1 * !Y)	-0.00225	-0.00227	-0.00226
	(A2 * B1 * !C1 * !Y)	0.00266	0.00270	0.00267
	(A2 * !B1 * C1 * !Y)	-0.00226	-0.00227	-0.00226
	(A2 * !B1 * C1 * !Y)	0.00257	0.00260	0.00258
	(!A2 * B1 * C1 * !Y)	-0.00206	-0.00218	-0.00216
	(!A2 * B1 * C1 * !Y)	0.00273	0.00277	0.00274
	(!A2 * B1 * !C1 * !Y)	-0.00206	-0.00218	-0.00216
	(!A2 * B1 * !C1 * !Y)	0.00275	0.00277	0.00274
	(!A2 * !B1 * C1 * !Y)	-0.00206	-0.00218	-0.00216
	(!A2 * !B1 * C1 * !Y)	0.00275	0.00277	0.00274
	(!A2 * !B1 * !C1 * Y)	-0.00081	-0.00081	-0.00080
	(!A2 * !B1 * !C1 * Y)	0.00321	0.00322	0.00320

sky130_fd_sc_hs__a211oi_4	**(A2 * B1 * C1 * !Y)**	-0.00437	-0.00440	-0.00438
	(A2 * B1 * C1 * !Y)	0.00539	0.00545	0.00541
	(A2 * B1 * !C1 * !Y)	-0.00436	-0.00439	-0.00438
	(A2 * B1 * !C1 * !Y)	0.00537	0.00544	0.00541
	(A2 * !B1 * C1 * !Y)	-0.00438	-0.00441	-0.00438
	(A2 * !B1 * C1 * !Y)	0.00522	0.00526	0.00523
	(!A2 * B1 * C1 * !Y)	-0.00396	-0.00421	-0.00417
	(!A2 * B1 * C1 * !Y)	0.00554	0.00564	0.00558
	(!A2 * B1 * !C1 * !Y)	-0.00398	-0.00420	-0.00417
	(!A2 * B1 * !C1 * !Y)	0.00559	0.00558	0.00558
	(!A2 * !B1 * C1 * !Y)	-0.00397	-0.00420	-0.00417
	(!A2 * !B1 * C1 * !Y)	0.00559	0.00559	0.00558
	(!A2 * !B1 * !C1 * Y)	-0.00141	-0.00141	-0.00140
	(!A2 * !B1 * !C1 * Y)	0.00658	0.00657	0.00656

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)**	0.00112	0.00114	0.00112
	(A1 * B1 * C1 * !Y)	-0.00132	-0.00137	-0.00137
	(A1 * B1 * !C1 * !Y)	0.00112	0.00114	0.00112
	(A1 * B1 * !C1 * !Y)	-0.00131	-0.00137	-0.00137
	(A1 * !B1 * C1 * !Y)	0.00113	0.00113	0.00112
	(A1 * !B1 * C1 * !Y)	-0.00123	-0.00133	-0.00132
	(!A1 * B1 * !Y)	0.00105	0.00107	0.00106
	(!A1 * B1 * !Y)	-0.00140	-0.00141	-0.00140
	(!A1 * !B1 * C1 * !Y)	0.00106	0.00107	0.00106
	(!A1 * !B1 * C1 * !Y)	-0.00140	-0.00141	-0.00140
	(!A1 * !B1 * !C1 * Y)	0.00106	0.00107	0.00107
	(!A1 * !B1 * !C1 * Y)	-0.00140	-0.00140	-0.00140

sky130_fd_sc_hs__a211oi_2	**(A1 * B1 * C1 * !Y)**	0.00232	0.00232	0.00232
	(A1 * B1 * C1 * !Y)	-0.00266	-0.00276	-0.00275
	(A1 * B1 * !C1 * !Y)	0.00233	0.00232	0.00232
	(A1 * B1 * !C1 * !Y)	-0.00264	-0.00276	-0.00275
	(A1 * !B1 * C1 * !Y)	0.00235	0.00235	0.00232
	(A1 * !B1 * C1 * !Y)	-0.00250	-0.00267	-0.00266
	(!A1 * B1 * !Y)	0.00221	0.00223	0.00221
	(!A1 * B1 * !Y)	-0.00283	-0.00285	-0.00283
	(!A1 * !B1 * C1 * !Y)	0.00220	0.00224	0.00222
	(!A1 * !B1 * C1 * !Y)	-0.00282	-0.00285	-0.00283
	(!A1 * !B1 * !C1 * Y)	0.00204	0.00205	0.00203
	(!A1 * !B1 * !C1 * Y)	-0.00302	-0.00303	-0.00301
sky130_fd_sc_hs__a211oi_4	**(A1 * B1 * C1 * !Y)**	0.00452	0.00453	0.00451
	(A1 * B1 * C1 * !Y)	-0.00526	-0.00550	-0.00547
	(A1 * B1 * !C1 * !Y)	0.00453	0.00453	0.00451
	(A1 * B1 * !C1 * !Y)	-0.00523	-0.00549	-0.00547
	(A1 * !B1 * C1 * !Y)	0.00454	0.00458	0.00452
	(A1 * !B1 * C1 * !Y)	-0.00492	-0.00530	-0.00527
	(!A1 * B1 * !Y)	0.00424	0.00427	0.00425
	(!A1 * B1 * !Y)	-0.00561	-0.00564	-0.00563
	(!A1 * !B1 * C1 * !Y)	0.00424	0.00428	0.00425
	(!A1 * !B1 * C1 * !Y)	-0.00561	-0.00564	-0.00563
	(!A1 * !B1 * !C1 * Y)	0.00424	0.00425	0.00426
	(!A1 * !B1 * !C1 * Y)	-0.00561	-0.00561	-0.00562

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)**	-0.00112	-0.00112	-0.00112
	(A1 * B1 * C1 * !Y)	0.00138	0.00137	0.00137
	(A1 * B1 * !C1 * !Y)	-0.00112	-0.00112	-0.00112
	(A1 * B1 * !C1 * !Y)	0.00137	0.00137	0.00137
	(A1 * !B1 * C1 * !Y)	-0.00112	-0.00112	-0.00112
	(A1 * !B1 * C1 * !Y)	0.00132	0.00133	0.00132
	(!A1 * B1 * !Y)	-0.00103	-0.00107	-0.00106
	(!A1 * B1 * !Y)	0.00140	0.00141	0.00141
	(!A1 * !B1 * C1 * !Y)	-0.00103	-0.00107	-0.00106
	(!A1 * !B1 * C1 * !Y)	0.00140	0.00141	0.00141
	(!A1 * !B1 * !C1 * Y)	-0.00100	-0.00107	-0.00107
	(!A1 * !B1 * !C1 * Y)	0.00144	0.00143	0.00141
sky130_fd_sc_hs__a211oi_2	**(A1 * B1 * C1 * !Y)**	-0.00232	-0.00232	-0.00231
	(A1 * B1 * C1 * !Y)	0.00276	0.00277	0.00275
	(A1 * B1 * !C1 * !Y)	-0.00232	-0.00232	-0.00231
	(A1 * B1 * !C1 * !Y)	0.00276	0.00277	0.00275
	(A1 * !B1 * C1 * !Y)	-0.00231	-0.00232	-0.00232
	(A1 * !B1 * C1 * !Y)	0.00265	0.00267	0.00266
	(!A1 * B1 * !Y)	-0.00214	-0.00222	-0.00221
	(!A1 * B1 * !Y)	0.00283	0.00286	0.00284
	(!A1 * !B1 * C1 * !Y)	-0.00214	-0.00222	-0.00222
	(!A1 * !B1 * C1 * !Y)	0.00283	0.00285	0.00284
	(!A1 * !B1 * !C1 * Y)	-0.00192	-0.00204	-0.00203
	(!A1 * !B1 * !C1 * Y)	0.00305	0.00305	0.00302

sky130_fd_sc_hs__a211oi_4	**(A1 * B1 * C1 * !Y)**	-0.00451	-0.00452	-0.00450
	(A1 * B1 * C1 * !Y)	0.00548	0.00550	0.00547
	(A1 * B1 * !C1 * !Y)	-0.00451	-0.00452	-0.00450
	(A1 * B1 * !C1 * !Y)	0.00548	0.00550	0.00547
	(A1 * !B1 * C1 * !Y)	-0.00452	-0.00452	-0.00450
	(A1 * !B1 * C1 * !Y)	0.00529	0.00530	0.00527
	(!A1 * B1 * !Y)	-0.00411	-0.00427	-0.00425
	(!A1 * B1 * !Y)	0.00562	0.00568	0.00564
	(!A1 * !B1 * C1 * !Y)	-0.00411	-0.00428	-0.00425
	(!A1 * !B1 * C1 * !Y)	0.00562	0.00566	0.00564
	(!A1 * !B1 * !C1 * Y)	-0.00398	-0.00425	-0.00426
	(!A1 * !B1 * !C1 * Y)	0.00579	0.00572	0.00564

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)	0.00128	0.00125	0.00119
	(A1 * A2 * C1 * !Y)	-0.00096	-0.00096	-0.00096
	(A1 * A2 * !C1 * !Y)	0.00118	0.00120	0.00117
	(A1 * A2 * !C1 * !Y)	-0.00077	-0.00079	-0.00078
	(A1 * !A2 * C1 * !Y)	0.00136	0.00118	0.00117
	(A1 * !A2 * C1 * !Y)	-0.00112	-0.00133	-0.00134
	(!A1 * C1 * !Y)	0.00135	0.00118	0.00117
	(!A1 * C1 * !Y)	-0.00113	-0.00134	-0.00134
sky130_fd_sc_hs__a211oi_2	(A1 * A2 * C1 * !Y)	0.00153	0.00152	0.00143
	(A1 * A2 * C1 * !Y)	-0.00185	-0.00186	-0.00186
	(A1 * A2 * !C1 * !Y)	0.00138	0.00140	0.00138
	(A1 * A2 * !C1 * !Y)	-0.00151	-0.00155	-0.00153
	(A1 * !A2 * C1 * !Y)	0.00172	0.00138	0.00136
	(A1 * !A2 * C1 * !Y)	-0.00223	-0.00265	-0.00264
	(!A1 * C1 * !Y)	0.00173	0.00139	0.00136
	(!A1 * C1 * !Y)	-0.00223	-0.00265	-0.00264
sky130_fd_sc_hs__a211oi_4	(A1 * A2 * C1 * !Y)	0.00280	0.00276	0.00256
	(A1 * A2 * C1 * !Y)	-0.00383	-0.00384	-0.00384
	(A1 * A2 * !C1 * !Y)	0.00248	0.00253	0.00247
	(A1 * A2 * !C1 * !Y)	-0.00316	-0.00322	-0.00318
	(A1 * !A2 * C1 * !Y)	0.00326	0.00250	0.00245
	(A1 * !A2 * C1 * !Y)	-0.00456	-0.00548	-0.00547
	(!A1 * C1 * !Y)	0.00327	0.00250	0.00245
	(!A1 * C1 * !Y)	-0.00463	-0.00548	-0.00547

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)	-0.00117	-0.00117	-0.00117
	(A1 * A2 * C1 * !Y)	0.00096	0.00096	0.00096
	(A1 * A2 * !C1 * !Y)	-0.00113	-0.00114	-0.00115
	(A1 * A2 * !C1 * !Y)	0.00083	0.00083	0.00081
	(A1 * !A2 * C1 * !Y)	-0.00116	-0.00116	-0.00116
	(A1 * !A2 * C1 * !Y)	0.00133	0.00133	0.00134
	(!A1 * C1 * !Y)	-0.00117	-0.00117	-0.00116
	(!A1 * C1 * !Y)	0.00134	0.00135	0.00134
sky130_fd_sc_hs__a211oi_2	(A1 * A2 * C1 * !Y)	-0.00139	-0.00139	-0.00139
	(A1 * A2 * C1 * !Y)	0.00185	0.00186	0.00186
	(A1 * A2 * !C1 * !Y)	-0.00130	-0.00131	-0.00131
	(A1 * A2 * !C1 * !Y)	0.00160	0.00161	0.00160
	(A1 * !A2 * C1 * !Y)	-0.00137	-0.00137	-0.00136
	(A1 * !A2 * C1 * !Y)	0.00264	0.00265	0.00264
	(!A1 * C1 * !Y)	-0.00136	-0.00137	-0.00136
	(!A1 * C1 * !Y)	0.00262	0.00265	0.00264
sky130_fd_sc_hs__a211oi_4	(A1 * A2 * C1 * !Y)	-0.00247	-0.00248	-0.00248
	(A1 * A2 * C1 * !Y)	0.00383	0.00384	0.00384
	(A1 * A2 * !C1 * !Y)	-0.00233	-0.00234	-0.00235
	(A1 * A2 * !C1 * !Y)	0.00334	0.00335	0.00332
	(A1 * !A2 * C1 * !Y)	-0.00245	-0.00246	-0.00243
	(A1 * !A2 * C1 * !Y)	0.00548	0.00549	0.00547
	(!A1 * C1 * !Y)	-0.00244	-0.00246	-0.00243
	(!A1 * C1 * !Y)	0.00544	0.00550	0.00547

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__a211oi_1	(A1 * B1 * !Y)	0.00138	0.00141	0.00139
	(A1 * B1 * !Y)	-0.00069	-0.00070	-0.00069
	(A1 * A2 * !B1 * !Y)	0.00138	0.00138	0.00139
	(A1 * A2 * !B1 * !Y)	-0.00068	-0.00068	-0.00068
	(!A1 * B1 * !Y)	0.00139	0.00141	0.00139
	(!A1 * B1 * !Y)	-0.00069	-0.00070	-0.00069
sky130_fd_sc_hs__a211oi_2	(A1 * B1 * !Y)	0.00146	0.00149	0.00147
	(A1 * B1 * !Y)	-0.00140	-0.00142	-0.00140
	(A1 * A2 * !B1 * !Y)	0.00146	0.00149	0.00147
	(A1 * A2 * !B1 * !Y)	-0.00139	-0.00142	-0.00140
	(!A1 * B1 * !Y)	0.00146	0.00149	0.00147
	(!A1 * B1 * !Y)	-0.00140	-0.00143	-0.00140
sky130_fd_sc_hs__a211oi_4	(A1 * B1 * !Y)	0.00296	0.00301	0.00296
	(A1 * B1 * !Y)	-0.00282	-0.00286	-0.00282
	(A1 * A2 * !B1 * !Y)	0.00295	0.00296	0.00296
	(A1 * A2 * !B1 * !Y)	-0.00281	-0.00281	-0.00281
	(!A1 * B1 * !Y)	0.00296	0.00301	0.00296
	(!A1 * B1 * !Y)	-0.00283	-0.00287	-0.00282

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__a211oi_1	(A1 * B1 * !Y)	-0.00134	-0.00134	-0.00138
	(A1 * B1 * !Y)	0.00074	0.00074	0.00070
	(A1 * A2 * !B1 * !Y)	-0.00120	-0.00122	-0.00135
	(A1 * A2 * !B1 * !Y)	0.00081	0.00082	0.00071
	(!A1 * B1 * !Y)	-0.00132	-0.00134	-0.00138
	(!A1 * B1 * !Y)	0.00073	0.00074	0.00070
sky130_fd_sc_hs__a211oi_2	(A1 * B1 * !Y)	-0.00131	-0.00133	-0.00145
	(A1 * B1 * !Y)	0.00155	0.00155	0.00144
	(A1 * A2 * !B1 * !Y)	-0.00109	-0.00111	-0.00140
	(A1 * A2 * !B1 * !Y)	0.00168	0.00168	0.00146
	(!A1 * B1 * !Y)	-0.00131	-0.00133	-0.00145
	(!A1 * B1 * !Y)	0.00156	0.00156	0.00144
sky130_fd_sc_hs__a211oi_4	(A1 * B1 * !Y)	-0.00269	-0.00271	-0.00293
	(A1 * B1 * !Y)	0.00308	0.00309	0.00289
	(A1 * A2 * !B1 * !Y)	-0.00220	-0.00225	-0.00282
	(A1 * A2 * !B1 * !Y)	0.00334	0.00337	0.00293
	(!A1 * B1 * !Y)	-0.00267	-0.00268	-0.00293
	(!A1 * B1 * !Y)	0.00307	0.00306	0.00289

SKY130_FD_SC_HS__A211Ox

sky130_fd_sc_hs_tt_1.50v_25C.ccs
Cell Library: Process , Voltage
1.50, 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	0.00255	0.00240	0.00259	0.00257	0.85067
sky130_fd_sc_hs__a211o_2	0.00279	0.00277	0.00275	0.00266	1.64770
sky130_fd_sc_hs__a211o_4	0.00474	0.00485	0.00514	0.00465	3.18741

Leakage Information

Cell Name	Leakage(nW)		
	Min.	**Avg**	**Max.**
sky130_fd_sc_hs__a211o_1	0.00000	0.03572	0.07896
sky130_fd_sc_hs__a211o_2	0.00000	0.04431	0.08361
sky130_fd_sc_hs__a211o_4	0.00000	0.09015	0.16722

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)	0.10054	0.74673	6.79756
	A2->X (RR)	0.10468	0.74929	6.90010
	B1->X (RR)	0.08127	0.70609	6.71375
	C1->X (RR)	0.07659	0.68688	6.70089
sky130_fd_sc_hs__a211o_2	A1->X (RR)	0.10072	0.65974	6.91087
	A2->X (RR)	0.10528	0.65601	6.97408
	B1->X (RR)	0.07908	0.61739	6.81357
	C1->X (RR)	0.07504	0.60279	6.79187
sky130_fd_sc_hs__a211o_4	A1->X (RR)	0.10415	0.58408	6.94780
	A2->X (RR)	0.10970	0.58491	7.03623
	B1->X (RR)	0.07642	0.52812	6.82455
	C1->X (RR)	0.07512	0.51942	6.82574

Delay(ns) to X falling :

Cell Name	Timing Arc(Dir)	Delay(ns)		
		First	Mid	Last
sky130_fd_sc_hs__a211o_1	A1->X (FF)	0.28299	0.82870	4.83244
	A2->X (FF)	0.32539	0.88096	4.96898
	B1->X (FF)	0.29514	0.85374	5.03880
	C1->X (FF)	0.25119	0.79766	4.78652
sky130_fd_sc_hs__a211o_2	A1->X (FF)	0.36969	0.91597	5.18793
	A2->X (FF)	0.42220	0.97995	5.33820
	B1->X (FF)	0.39256	0.96177	5.46515
	C1->X (FF)	0.34512	0.89897	5.20972
sky130_fd_sc_hs__a211o_4	A1->X (FF)	0.34101	0.84419	5.06483
	A2->X (FF)	0.36865	0.88134	5.18359
	B1->X (FF)	0.34465	0.86396	5.28751
	C1->X (FF)	0.29358	0.79957	5.01941

Power Information

Internal switching power(pJ) to X rising :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__a211o_1	A1	0.00863	0.00853	0.01153
	A1	0.00419	0.00409	0.00804
	A2	0.00925	0.00913	0.01115
	A2	0.00418	0.00406	0.00609
	B1	0.00766	0.00767	0.01111
	B1	0.00316	0.00317	0.00684
	C1	0.00648	0.00647	0.01174
	C1	0.00254	0.00255	0.00824
sky130_fd_sc_hs__a211o_2	A1	0.01069	0.01076	0.01348
	A1	0.00584	0.00593	0.00865
	A2	0.01150	0.01155	0.01342
	A2	0.00583	0.00590	0.00776
	B1	0.00983	0.01004	0.01317
	B1	0.00490	0.00511	0.00827
	C1	0.00861	0.00882	0.01354
	C1	0.00422	0.00444	0.01117
sky130_fd_sc_hs__a211o_4	A1	0.01984	0.02025	0.02660
	A1	0.01112	0.01155	0.01789
	A2	0.02146	0.02196	0.02630
	A2	0.01114	0.01167	0.01613
	B1	0.01796	0.01825	0.02494
	B1	0.00910	0.00945	0.01616
	C1	0.01496	0.01548	0.02559
	C1	0.00760	0.00811	0.01890

Internal switching power(pJ) to X falling :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__a211o_1	A1	0.00284	0.00283	0.00497
	A1	0.00737	0.00739	0.00912
	A2	0.00312	0.00322	0.00486
	A2	0.00824	0.00834	0.00991
	B1	0.00296	0.00300	0.00572
	B1	0.00741	0.00749	0.00996
	C1	0.00251	0.00284	0.00877
	C1	0.00680	0.00708	0.01223
sky130_fd_sc_hs__a211o_2	A1	0.00460	0.00419	0.00741
	A1	0.00951	0.00967	0.01140
	A2	0.00492	0.00492	0.00749
	A2	0.01060	0.01077	0.01240
	B1	0.00502	0.00511	0.00874
	B1	0.00991	0.01000	0.01240
	C1	0.00450	0.00484	0.01145
	C1	0.00925	0.00968	0.01456
sky130_fd_sc_hs__a211o_4	A1	0.00875	0.00916	0.01326
	A1	0.01764	0.01810	0.02165
	A2	0.00895	0.00935	0.01500
	A2	0.01933	0.01989	0.02317
	B1	0.00936	0.00956	0.01555
	B1	0.01814	0.01851	0.02322
	C1	0.00941	0.01019	0.02125
	C1	0.01667	0.01752	0.02750

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)**	0.00099	0.00099	0.00098
	(A2 * B1 * C1 * X)	-0.00122	-0.00126	-0.00126
	(A2 * B1 * !C1 * X)	0.00099	0.00099	0.00098
	(A2 * B1 * !C1 * X)	-0.00121	-0.00126	-0.00126
	(A2 * !B1 * C1 * X)	0.00100	0.00099	0.00098
	(A2 * !B1 * C1 * X)	-0.00112	-0.00123	-0.00122
	(!A2 * B1 * C1 * X)	0.00093	0.00094	0.00093
	(!A2 * B1 * C1 * X)	-0.00129	-0.00131	-0.00130
	(!A2 * B1 * !C1 * X)	0.00093	0.00094	0.00093
	(!A2 * B1 * !C1 * X)	-0.00130	-0.00131	-0.00130
	(!A2 * !B1 * C1 * X)	0.00093	0.00093	0.00093
	(!A2 * !B1 * C1 * X)	-0.00130	-0.00130	-0.00130
	(!A2 * !B1 * !C1 * !X)	0.00031	0.00031	0.00029
	(!A2 * !B1 * !C1 * !X)	-0.00154	-0.00154	-0.00156
sky130_fd_sc_hs__a211o_2	**(A2 * B1 * C1 * X)**	0.00120	0.00120	0.00120
	(A2 * B1 * C1 * X)	-0.00116	-0.00121	-0.00121
	(A2 * B1 * !C1 * X)	0.00121	0.00120	0.00120
	(A2 * B1 * !C1 * X)	-0.00116	-0.00121	-0.00121
	(A2 * !B1 * C1 * X)	0.00121	0.00121	0.00120
	(A2 * !B1 * C1 * X)	-0.00108	-0.00117	-0.00117
	(!A2 * B1 * C1 * X)	0.00113	0.00114	0.00113
	(!A2 * B1 * C1 * X)	-0.00123	-0.00124	-0.00124
	(!A2 * B1 * !C1 * X)	0.00113	0.00113	0.00113
	(!A2 * B1 * !C1 * X)	-0.00123	-0.00124	-0.00124
	(!A2 * !B1 * C1 * X)	0.00113	0.00114	0.00113
	(!A2 * !B1 * C1 * X)	-0.00124	-0.00125	-0.00124
	(!A2 * !B1 * !C1 * !X)	0.00037	0.00038	0.00036
	(!A2 * !B1 * !C1 * !X)	-0.00153	-0.00154	-0.00156

sky130_fd_sc_hs__a211o_4	**(A2 * B1 * C1 * X)**	0.00193	0.00191	0.00191
	(A2 * B1 * C1 * X)	-0.00243	-0.00251	-0.00251
	(A2 * B1 * !C1 * X)	0.00192	0.00191	0.00191
	(A2 * B1 * !C1 * X)	-0.00239	-0.00251	-0.00251
	(A2 * !B1 * C1 * X)	0.00194	0.00194	0.00191
	(A2 * !B1 * C1 * X)	-0.00226	-0.00244	-0.00243
	(!A2 * B1 * C1 * X)	0.00180	0.00182	0.00181
	(!A2 * B1 * C1 * X)	-0.00257	-0.00260	-0.00258
	(!A2 * B1 * !C1 * X)	0.00181	0.00181	0.00181
	(!A2 * B1 * !C1 * X)	-0.00258	-0.00259	-0.00258
	(!A2 * !B1 * C1 * X)	0.00181	0.00180	0.00181
	(!A2 * !B1 * C1 * X)	-0.00258	-0.00257	-0.00258
	(!A2 * !B1 * !C1 * !X)	0.00061	0.00062	0.00059
	(!A2 * !B1 * !C1 * !X)	-0.00299	-0.00301	-0.00305

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)**	-0.00098	-0.00098	-0.00098
	(A2 * B1 * C1 * X)	0.00127	0.00126	0.00126
	(A2 * B1 * !C1 * X)	-0.00098	-0.00098	-0.00098
	(A2 * B1 * !C1 * X)	0.00127	0.00126	0.00126
	(A2 * !B1 * C1 * X)	-0.00098	-0.00098	-0.00097
	(A2 * !B1 * C1 * X)	0.00123	0.00123	0.00122
	(!A2 * B1 * C1 * X)	-0.00090	-0.00094	-0.00093
	(!A2 * B1 * C1 * X)	0.00129	0.00131	0.00130
	(!A2 * B1 * !C1 * X)	-0.00091	-0.00093	-0.00093
	(!A2 * B1 * !C1 * X)	0.00131	0.00131	0.00130
	(!A2 * !B1 * C1 * X)	-0.00091	-0.00093	-0.00093
	(!A2 * !B1 * C1 * X)	0.00131	0.00132	0.00130
	(!A2 * !B1 * !C1 * !X)	-0.00028	-0.00029	-0.00028
	(!A2 * !B1 * !C1 * !X)	0.00156	0.00157	0.00157
sky130_fd_sc_hs__a211o_2	**(A2 * B1 * C1 * X)**	-0.00120	-0.00120	-0.00120
	(A2 * B1 * C1 * X)	0.00121	0.00121	0.00121
	(A2 * B1 * !C1 * X)	-0.00120	-0.00120	-0.00120
	(A2 * B1 * !C1 * X)	0.00121	0.00121	0.00121
	(A2 * !B1 * C1 * X)	-0.00120	-0.00120	-0.00119
	(A2 * !B1 * C1 * X)	0.00118	0.00117	0.00117
	(!A2 * B1 * C1 * X)	-0.00110	-0.00114	-0.00113
	(!A2 * B1 * C1 * X)	0.00123	0.00125	0.00124
	(!A2 * B1 * !C1 * X)	-0.00110	-0.00113	-0.00113
	(!A2 * B1 * !C1 * X)	0.00123	0.00125	0.00124
	(!A2 * !B1 * C1 * X)	-0.00111	-0.00114	-0.00113
	(!A2 * !B1 * C1 * X)	0.00125	0.00125	0.00124
	(!A2 * !B1 * !C1 * !X)	-0.00035	-0.00036	-0.00035
	(!A2 * !B1 * !C1 * !X)	0.00156	0.00159	0.00156

sky130_fd_sc_hs__a211o_4	**(A2 * B1 * C1 * X)**	-0.00192	-0.00191	-0.00191
	(A2 * B1 * C1 * X)	0.00251	0.00252	0.00251
	(A2 * B1 * !C1 * X)	-0.00192	-0.00191	-0.00191
	(A2 * B1 * !C1 * X)	0.00251	0.00252	0.00251
	(A2 * !B1 * C1 * X)	-0.00190	-0.00191	-0.00190
	(A2 * !B1 * C1 * X)	0.00242	0.00244	0.00243
	(!A2 * B1 * C1 * X)	-0.00175	-0.00182	-0.00181
	(!A2 * B1 * C1 * X)	0.00258	0.00260	0.00259
	(!A2 * B1 * !C1 * X)	-0.00175	-0.00181	-0.00181
	(!A2 * B1 * !C1 * X)	0.00258	0.00261	0.00259
	(!A2 * !B1 * C1 * X)	-0.00174	-0.00180	-0.00181
	(!A2 * !B1 * C1 * X)	0.00258	0.00261	0.00259
	(!A2 * !B1 * !C1 * !X)	-0.00057	-0.00058	-0.00057
	(!A2 * !B1 * !C1 * !X)	0.00307	0.00311	0.00306

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)**	0.00100	0.00102	0.00100
	(A1 * B1 * C1 * X)	-0.00119	-0.00125	-0.00125
	(A1 * B1 * !C1 * X)	0.00100	0.00102	0.00100
	(A1 * B1 * !C1 * X)	-0.00119	-0.00125	-0.00125
	(A1 * !B1 * C1 * X)	0.00102	0.00101	0.00100
	(A1 * !B1 * C1 * X)	-0.00112	-0.00121	-0.00121
	(!A1 * B1 * X)	0.00095	0.00096	0.00095
	(!A1 * B1 * X)	-0.00128	-0.00129	-0.00128
	(!A1 * !B1 * C1 * X)	0.00095	0.00096	0.00095
	(!A1 * !B1 * C1 * X)	-0.00128	-0.00129	-0.00128
	(!A1 * !B1 * !C1 * !X)	0.00086	0.00087	0.00086
	(!A1 * !B1 * !C1 * !X)	-0.00137	-0.00138	-0.00137

sky130_fd_sc_hs__a211o_2	**(A1 * B1 * C1 * X)**	0.00129	0.00129	0.00128
	(A1 * B1 * C1 * X)	-0.00117	-0.00122	-0.00122
	(A1 * B1 * !C1 * X)	0.00130	0.00129	0.00128
	(A1 * B1 * !C1 * X)	-0.00116	-0.00122	-0.00122
	(A1 * !B1 * C1 * X)	0.00130	0.00130	0.00128
	(A1 * !B1 * C1 * X)	-0.00110	-0.00118	-0.00118
	(!A1 * B1 * X)	0.00121	0.00122	0.00122
	(!A1 * B1 * X)	-0.00124	-0.00125	-0.00125
	(!A1 * !B1 * C1 * X)	0.00122	0.00123	0.00122
	(!A1 * !B1 * C1 * X)	-0.00124	-0.00125	-0.00125
	(!A1 * !B1 * !C1 * !X)	0.00103	0.00104	0.00104
	(!A1 * !B1 * !C1 * !X)	-0.00143	-0.00143	-0.00143
sky130_fd_sc_hs__a211o_4	**(A1 * B1 * C1 * X)**	0.00231	0.00231	0.00230
	(A1 * B1 * C1 * X)	-0.00233	-0.00244	-0.00243
	(A1 * B1 * !C1 * X)	0.00231	0.00231	0.00230
	(A1 * B1 * !C1 * X)	-0.00232	-0.00244	-0.00243
	(A1 * !B1 * C1 * X)	0.00233	0.00231	0.00230
	(A1 * !B1 * C1 * X)	-0.00220	-0.00238	-0.00236
	(!A1 * B1 * X)	0.00219	0.00222	0.00219
	(!A1 * B1 * X)	-0.00248	-0.00251	-0.00249
	(!A1 * !B1 * C1 * X)	0.00219	0.00220	0.00220
	(!A1 * !B1 * C1 * X)	-0.00248	-0.00250	-0.00249
	(!A1 * !B1 * !C1 * !X)	0.00216	0.00217	0.00216
	(!A1 * !B1 * !C1 * !X)	-0.00253	-0.00254	-0.00253

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)**	-0.00100	-0.00100	-0.00100
	(A1 * B1 * C1 * X)	0.00125	0.00125	0.00125
	(A1 * B1 * !C1 * X)	-0.00100	-0.00100	-0.00100
	(A1 * B1 * !C1 * X)	0.00125	0.00125	0.00125
	(A1 * !B1 * C1 * X)	-0.00100	-0.00100	-0.00100
	(A1 * !B1 * C1 * X)	0.00121	0.00121	0.00121
	(!A1 * B1 * X)	-0.00093	-0.00096	-0.00095
	(!A1 * B1 * X)	0.00128	0.00129	0.00129
	(!A1 * !B1 * C1 * X)	-0.00093	-0.00096	-0.00095
	(!A1 * !B1 * C1 * X)	0.00129	0.00129	0.00129
	(!A1 * !B1 * !C1 * !X)	-0.00081	-0.00086	-0.00086
	(!A1 * !B1 * !C1 * !X)	0.00142	0.00139	0.00138
sky130_fd_sc_hs__a211o_2	**(A1 * B1 * C1 * X)**	-0.00129	-0.00129	-0.00128
	(A1 * B1 * C1 * X)	0.00122	0.00122	0.00122
	(A1 * B1 * !C1 * X)	-0.00129	-0.00129	-0.00128
	(A1 * B1 * !C1 * X)	0.00122	0.00122	0.00122
	(A1 * !B1 * C1 * X)	-0.00128	-0.00128	-0.00128
	(A1 * !B1 * C1 * X)	0.00119	0.00118	0.00118
	(!A1 * B1 * X)	-0.00119	-0.00122	-0.00122
	(!A1 * B1 * X)	0.00124	0.00126	0.00125
	(!A1 * !B1 * C1 * X)	-0.00119	-0.00123	-0.00122
	(!A1 * !B1 * C1 * X)	0.00125	0.00126	0.00125
	(!A1 * !B1 * !C1 * !X)	-0.00097	-0.00104	-0.00104
	(!A1 * !B1 * !C1 * !X)	0.00147	0.00146	0.00144

sky130_fd_sc_hs__a211o_4	**(A1 * B1 * C1 * X)**	-0.00230	-0.00231	-0.00230
	(A1 * B1 * C1 * X)	0.00242	0.00244	0.00243
	(A1 * B1 * !C1 * X)	-0.00229	-0.00230	-0.00230
	(A1 * B1 * !C1 * X)	0.00242	0.00244	0.00243
	(A1 * !B1 * C1 * X)	-0.00229	-0.00231	-0.00229
	(A1 * !B1 * C1 * X)	0.00235	0.00238	0.00236
	(!A1 * B1 * X)	-0.00214	-0.00222	-0.00219
	(!A1 * B1 * X)	0.00248	0.00252	0.00250
	(!A1 * !B1 * C1 * X)	-0.00214	-0.00220	-0.00220
	(!A1 * !B1 * C1 * X)	0.00249	0.00252	0.00250
	(!A1 * !B1 * !C1 * !X)	-0.00204	-0.00217	-0.00216
	(!A1 * !B1 * !C1 * !X)	0.00260	0.00257	0.00255

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)	0.00129	0.00125	0.00120
	(A1 * A2 * C1 * X)	-0.00087	-0.00087	-0.00087
	(A1 * A2 * !C1 * X)	0.00118	0.00119	0.00117
	(A1 * A2 * !C1 * X)	-0.00070	-0.00070	-0.00071
	(A1 * !A2 * C1 * X)	0.00137	0.00119	0.00117
	(A1 * !A2 * C1 * X)	-0.00100	-0.00120	-0.00121
	(!A1 * C1 * X)	0.00137	0.00119	0.00117
	(!A1 * C1 * X)	-0.00100	-0.00120	-0.00121
sky130_fd_sc_hs__a211o_2	(A1 * A2 * C1 * X)	0.00134	0.00129	0.00125
	(A1 * A2 * C1 * X)	-0.00087	-0.00088	-0.00087
	(A1 * A2 * !C1 * X)	0.00123	0.00124	0.00121
	(A1 * A2 * !C1 * X)	-0.00071	-0.00071	-0.00071
	(A1 * !A2 * C1 * X)	0.00141	0.00123	0.00121
	(A1 * !A2 * C1 * X)	-0.00099	-0.00120	-0.00121
	(!A1 * C1 * X)	0.00140	0.00122	0.00121
	(!A1 * C1 * X)	-0.00100	-0.00120	-0.00121
sky130_fd_sc_hs__a211o_4	(A1 * A2 * C1 * X)	0.00235	0.00232	0.00220
	(A1 * A2 * C1 * X)	-0.00183	-0.00183	-0.00182
	(A1 * A2 * !C1 * X)	0.00216	0.00220	0.00215
	(A1 * A2 * !C1 * X)	-0.00149	-0.00151	-0.00150
	(A1 * !A2 * C1 * X)	0.00253	0.00217	0.00214
	(A1 * !A2 * C1 * X)	-0.00208	-0.00250	-0.00251
	(!A1 * C1 * X)	0.00253	0.00217	0.00214
	(!A1 * C1 * X)	-0.00208	-0.00250	-0.00251

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)	-0.00117	-0.00117	-0.00117
	(A1 * A2 * C1 * X)	0.00087	0.00087	0.00087
	(A1 * A2 * !C1 * X)	-0.00113	-0.00114	-0.00115
	(A1 * A2 * !C1 * X)	0.00075	0.00075	0.00073
	(A1 * !A2 * C1 * X)	-0.00116	-0.00116	-0.00115
	(A1 * !A2 * C1 * X)	0.00120	0.00121	0.00121
	(!A1 * C1 * X)	-0.00116	-0.00116	-0.00115
	(!A1 * C1 * X)	0.00120	0.00121	0.00121
sky130_fd_sc_hs__a211o_2	(A1 * A2 * C1 * X)	-0.00122	-0.00123	-0.00122
	(A1 * A2 * C1 * X)	0.00087	0.00088	0.00087
	(A1 * A2 * !C1 * X)	-0.00118	-0.00119	-0.00120
	(A1 * A2 * !C1 * X)	0.00075	0.00076	0.00073
	(A1 * !A2 * C1 * X)	-0.00120	-0.00120	-0.00119
	(A1 * !A2 * C1 * X)	0.00121	0.00121	0.00121
	(!A1 * C1 * X)	-0.00120	-0.00120	-0.00119
	(!A1 * C1 * X)	0.00121	0.00121	0.00121
sky130_fd_sc_hs__a211o_4	(A1 * A2 * C1 * X)	-0.00215	-0.00216	-0.00215
	(A1 * A2 * C1 * X)	0.00183	0.00183	0.00182
	(A1 * A2 * !C1 * X)	-0.00208	-0.00209	-0.00210
	(A1 * A2 * !C1 * X)	0.00158	0.00158	0.00156
	(A1 * !A2 * C1 * X)	-0.00212	-0.00213	-0.00211
	(A1 * !A2 * C1 * X)	0.00250	0.00252	0.00251
	(!A1 * C1 * X)	-0.00212	-0.00213	-0.00211
	(!A1 * C1 * X)	0.00250	0.00252	0.00251

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__a211o_1	(A1 * B1 * X)	0.00128	0.00129	0.00128
	(A1 * B1 * X)	-0.00065	-0.00065	-0.00065
	(A1 * A2 * !B1 * X)	0.00127	0.00129	0.00128
	(A1 * A2 * !B1 * X)	-0.00064	-0.00065	-0.00064
	(!A1 * B1 * X)	0.00128	0.00129	0.00128
	(!A1 * B1 * X)	-0.00065	-0.00065	-0.00065
sky130_fd_sc_hs__a211o_2	(A1 * B1 * X)	0.00128	0.00131	0.00129
	(A1 * B1 * X)	-0.00067	-0.00068	-0.00067
	(A1 * A2 * !B1 * X)	0.00128	0.00131	0.00129
	(A1 * A2 * !B1 * X)	-0.00067	-0.00068	-0.00067
	(!A1 * B1 * X)	0.00128	0.00131	0.00129
	(!A1 * B1 * X)	-0.00067	-0.00068	-0.00067
sky130_fd_sc_hs__a211o_4	(A1 * B1 * X)	0.00208	0.00212	0.00208
	(A1 * B1 * X)	-0.00130	-0.00132	-0.00130
	(A1 * A2 * !B1 * X)	0.00208	0.00212	0.00208
	(A1 * A2 * !B1 * X)	-0.00129	-0.00132	-0.00129
	(!A1 * B1 * X)	0.00208	0.00212	0.00208
	(!A1 * B1 * X)	-0.00131	-0.00133	-0.00131

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__a211o_1	(A1 * B1 * X)	-0.00123	-0.00124	-0.00127
	(A1 * B1 * X)	0.00068	0.00069	0.00066
	(A1 * A2 * !B1 * X)	-0.00111	-0.00112	-0.00125
	(A1 * A2 * !B1 * X)	0.00076	0.00077	0.00067
	(!A1 * B1 * X)	-0.00123	-0.00124	-0.00127
	(!A1 * B1 * X)	0.00068	0.00069	0.00066
sky130_fd_sc_hs__a211o_2	(A1 * B1 * X)	-0.00124	-0.00125	-0.00128
	(A1 * B1 * X)	0.00071	0.00072	0.00068
	(A1 * A2 * !B1 * X)	-0.00114	-0.00115	-0.00126
	(A1 * A2 * !B1 * X)	0.00079	0.00079	0.00070
	(!A1 * B1 * X)	-0.00124	-0.00125	-0.00128
	(!A1 * B1 * X)	0.00072	0.00072	0.00068
sky130_fd_sc_hs__a211o_4	(A1 * B1 * X)	-0.00197	-0.00197	-0.00207
	(A1 * B1 * X)	0.00140	0.00139	0.00133
	(A1 * A2 * !B1 * X)	-0.00175	-0.00176	-0.00202
	(A1 * A2 * !B1 * X)	0.00154	0.00153	0.00135
	(!A1 * B1 * X)	-0.00197	-0.00197	-0.00207
	(!A1 * B1 * X)	0.00141	0.00140	0.00134

SKY130_FD_SC_HS__A21BOIx

sky130_fd_sc_hs_tt_1.50v_25C.ccs
Cell Library: Process , Voltage
1.50, 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	0.00271	0.00261	0.00251	0.40024
sky130_fd_sc_hs__a21boi_2	0.00513	0.00495	0.00246	0.76600
sky130_fd_sc_hs__a21boi_4	0.01018	0.01009	0.00361	1.40058

Leakage Information

Cell Name	Leakage(nW)		
	Min.	**Avg**	**Max.**
sky130_fd_sc_hs__a21boi_1	0.00000	0.09433	0.17675
sky130_fd_sc_hs__a21boi_2	0.00000	0.07511	0.12557
sky130_fd_sc_hs__a21boi_4	0.00000	0.22312	0.40477

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)	0.10712	1.12923	11.33910
	A2->Y (FR)	0.13403	1.18272	11.60850
	B1_N->Y (RR)	0.13204	0.92859	7.22915
sky130_fd_sc_hs__a21boi_2	A1->Y (FR)	0.09697	0.98038	11.43390
	A2->Y (FR)	0.12515	1.00755	11.42910
	B1_N->Y (RR)	0.12267	0.76930	7.02900
sky130_fd_sc_hs__a21boi_4	A1->Y (FR)	0.09687	0.85767	11.29010
	A2->Y (FR)	0.12412	0.87599	11.13070
	B1_N->Y (RR)	0.10779	0.68578	7.38308

Delay(ns) to Y falling :

Cell Name	Timing Arc(Dir)	Delay(ns)		
		First	Mid	Last
sky130_fd_sc_hs__a21boi_1	A1->Y (RF)	0.03297	0.47244	4.83860
	A2->Y (RF)	0.03693	0.44446	4.46678
	B1_N->Y (FF)	0.09028	0.48684	2.78418
sky130_fd_sc_hs__a21boi_2	A1->Y (RF)	0.03053	0.43139	5.04239
	A2->Y (RF)	0.03652	0.40563	4.61438
	B1_N->Y (FF)	0.10125	0.52135	3.08230
sky130_fd_sc_hs__a21boi_4	A1->Y (RF)	0.03154	0.39007	5.09273
	A2->Y (RF)	0.03736	0.35086	4.45007
	B1_N->Y (FF)	0.10489	0.49170	2.82155

Power Information

Internal switching power(pJ) to Y rising :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__a21boi_1	A1	0.00071	0.00061	0.00086
	A1	0.00376	0.00366	0.00391
	A2	0.00112	0.00104	0.00128
	A2	0.00486	0.00477	0.00502
	B1_N	0.00584	0.00575	0.01251
	B1_N	0.00391	0.00381	0.01059
sky130_fd_sc_hs__a21boi_2	A1	0.00149	0.00134	0.00186
	A1	0.00740	0.00727	0.00779
	A2	0.00275	0.00254	0.00304
	A2	0.01005	0.00986	0.01034
	B1_N	0.00878	0.00872	0.01509
	B1_N	0.00792	0.00785	0.01424
sky130_fd_sc_hs__a21boi_4	A1	0.00307	0.00271	0.00389
	A1	0.01508	0.01476	0.01580
	A2	0.00508	0.00462	0.00569
	A2	0.01995	0.01951	0.02056
	B1_N	0.01527	0.01523	0.02625
	B1_N	0.01515	0.01517	0.02617

Internal switching power(pJ) to Y falling :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__a21boi_1	A1	0.00411	0.00406	0.00456
	A1	0.00110	0.00100	0.00138
	A2	0.00483	0.00474	0.00503
	A2	0.00109	0.00096	0.00123
	B1_N	0.00329	0.00370	0.01060
	B1_N	0.00516	0.00555	0.01249
sky130_fd_sc_hs__a21boi_2	A1	0.00741	0.00718	0.00800
	A1	0.00158	0.00131	0.00213
	A2	0.00888	0.00861	0.00919
	A2	0.00155	0.00127	0.00181
	B1_N	0.00617	0.00669	0.01305
	B1_N	0.00682	0.00729	0.01367
sky130_fd_sc_hs__a21boi_4	A1	0.01451	0.01396	0.01638
	A1	0.00266	0.00208	0.00384
	A2	0.01767	0.01709	0.01868
	A2	0.00275	0.00208	0.00331
	B1_N	0.01253	0.01360	0.02570
	B1_N	0.01226	0.01327	0.02542

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)	0.00123	0.00116	0.00114
	(A2 * !B1_N * !Y)	-0.00132	-0.00142	-0.00142
	(!A2 * B1_N * Y)	0.00047	0.00047	0.00045
	(!A2 * B1_N * Y)	-0.00160	-0.00161	-0.00163
	(!A2 * !B1_N * !Y)	0.00107	0.00109	0.00108
	(!A2 * !B1_N * !Y)	-0.00143	-0.00145	-0.00144
sky130_fd_sc_hs__a21boi_2	(A2 * !B1_N * !Y)	0.00240	0.00225	0.00224
	(A2 * !B1_N * !Y)	-0.00251	-0.00273	-0.00274
	(!A2 * B1_N * Y)	0.00084	0.00084	0.00079
	(!A2 * B1_N * Y)	-0.00319	-0.00321	-0.00326
	(!A2 * !B1_N * !Y)	0.00213	0.00216	0.00214
	(!A2 * !B1_N * !Y)	-0.00277	-0.00280	-0.00278
sky130_fd_sc_hs__a21boi_4	(A2 * !B1_N * !Y)	0.00480	0.00444	0.00441
	(A2 * !B1_N * !Y)	-0.00501	-0.00551	-0.00552
	(!A2 * B1_N * Y)	0.00155	0.00157	0.00148
	(!A2 * B1_N * Y)	-0.00642	-0.00648	-0.00657
	(!A2 * !B1_N * !Y)	0.00419	0.00422	0.00420
	(!A2 * !B1_N * !Y)	-0.00559	-0.00562	-0.00560

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)	-0.00114	-0.00114	-0.00113
	(A2 * !B1_N * !Y)	0.00142	0.00142	0.00142
	(!A2 * B1_N * Y)	-0.00044	-0.00044	-0.00044
	(!A2 * B1_N * Y)	0.00163	0.00164	0.00164
	(!A2 * !B1_N * !Y)	-0.00104	-0.00109	-0.00108
	(!A2 * !B1_N * !Y)	0.00144	0.00146	0.00144
sky130_fd_sc_hs__a21boi_2	(A2 * !B1_N * !Y)	-0.00224	-0.00224	-0.00223
	(A2 * !B1_N * !Y)	0.00274	0.00274	0.00274
	(!A2 * B1_N * Y)	-0.00077	-0.00077	-0.00077
	(!A2 * B1_N * Y)	0.00328	0.00329	0.00327
	(!A2 * !B1_N * !Y)	-0.00204	-0.00216	-0.00214
	(!A2 * !B1_N * !Y)	0.00278	0.00282	0.00279
sky130_fd_sc_hs__a21boi_4	(A2 * !B1_N * !Y)	-0.00439	-0.00441	-0.00439
	(A2 * !B1_N * !Y)	0.00549	0.00554	0.00552
	(!A2 * B1_N * Y)	-0.00145	-0.00144	-0.00143
	(!A2 * B1_N * Y)	0.00661	0.00663	0.00659
	(!A2 * !B1_N * !Y)	-0.00401	-0.00422	-0.00420
	(!A2 * !B1_N * !Y)	0.00559	0.00568	0.00562

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)	0.00128	0.00118	0.00118
	(A1 * !B1_N * !Y)	-0.00125	-0.00136	-0.00137
	(!A1 * B1_N * Y)	0.00112	0.00114	0.00112
	(!A1 * B1_N * Y)	-0.00139	-0.00140	-0.00139
	(!A1 * !B1_N * !Y)	0.00113	0.00114	0.00113
	(!A1 * !B1_N * !Y)	-0.00139	-0.00140	-0.00139
sky130_fd_sc_hs__a21boi_2	(A1 * !B1_N * !Y)	0.00237	0.00221	0.00220
	(A1 * !B1_N * !Y)	-0.00252	-0.00272	-0.00273
	(!A1 * B1_N * Y)	0.00208	0.00211	0.00209
	(!A1 * B1_N * Y)	-0.00276	-0.00279	-0.00277
	(!A1 * !B1_N * !Y)	0.00208	0.00211	0.00209
	(!A1 * !B1_N * !Y)	-0.00276	-0.00278	-0.00277
sky130_fd_sc_hs__a21boi_4	(A1 * !B1_N * !Y)	0.00487	0.00449	0.00446
	(A1 * !B1_N * !Y)	-0.00498	-0.00548	-0.00549
	(!A1 * B1_N * Y)	0.00404	0.00408	0.00405
	(!A1 * B1_N * Y)	-0.00577	-0.00580	-0.00577
	(!A1 * !B1_N * !Y)	0.00424	0.00426	0.00426
	(!A1 * !B1_N * !Y)	-0.00556	-0.00557	-0.00557

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)	-0.00119	-0.00118	-0.00118
	(A1 * !B1_N * !Y)	0.00138	0.00137	0.00137
	(!A1 * B1_N * Y)	-0.00106	-0.00112	-0.00112
	(!A1 * B1_N * Y)	0.00143	0.00141	0.00140
	(!A1 * !B1_N * !Y)	-0.00109	-0.00114	-0.00113
	(!A1 * !B1_N * !Y)	0.00139	0.00142	0.00139
sky130_fd_sc_hs__a21boi_2	(A1 * !B1_N * !Y)	-0.00220	-0.00220	-0.00220
	(A1 * !B1_N * !Y)	0.00273	0.00274	0.00273
	(!A1 * B1_N * Y)	-0.00197	-0.00210	-0.00209
	(!A1 * B1_N * Y)	0.00283	0.00281	0.00278
	(!A1 * !B1_N * !Y)	-0.00202	-0.00210	-0.00209
	(!A1 * !B1_N * !Y)	0.00277	0.00280	0.00278
sky130_fd_sc_hs__a21boi_4	(A1 * !B1_N * !Y)	-0.00446	-0.00446	-0.00444
	(A1 * !B1_N * !Y)	0.00550	0.00552	0.00549
	(!A1 * B1_N * Y)	-0.00380	-0.00405	-0.00405
	(!A1 * B1_N * Y)	0.00589	0.00586	0.00580
	(!A1 * !B1_N * !Y)	-0.00410	-0.00426	-0.00426
	(!A1 * !B1_N * !Y)	0.00557	0.00562	0.00559

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)	0.00358	0.00347	0.01019
	(A1 * A2 * !Y)	0.00067	0.00054	0.00726
sky130_fd_sc_hs__a21boi_2	(A1 * A2 * !Y)	0.00425	0.00412	0.01035
	(A1 * A2 * !Y)	0.00138	0.00125	0.00749
sky130_fd_sc_hs__a21boi_4	(A1 * A2 * !Y)	0.00656	0.00629	0.01689
	(A1 * A2 * !Y)	0.00232	0.00205	0.01269

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)	0.00073	0.00100	0.00839
	(A1 * A2 * !Y)	0.00363	0.00392	0.01129
sky130_fd_sc_hs__a21boi_2	(A1 * A2 * !Y)	0.00213	0.00229	0.00917
	(A1 * A2 * !Y)	0.00495	0.00512	0.01200
sky130_fd_sc_hs__a21boi_4	(A1 * A2 * !Y)	0.00454	0.00495	0.01755
	(A1 * A2 * !Y)	0.00871	0.00913	0.02172

SKY130_FD_SC_HS__A21BOx

sky130_fd_sc_hs_tt_1.50v_25C.ccs
Cell Library: Process , Voltage
1.50, 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	0.00252	0.00241	0.00212	0.78904
sky130_fd_sc_hs__a21bo_2	0.00269	0.00253	0.00222	1.48419
sky130_fd_sc_hs__a21bo_4	0.00464	0.00492	0.00257	2.81889

Leakage Information

Cell Name	Leakage(nW)		
	Min.	**Avg**	**Max.**
sky130_fd_sc_hs__a21bo_1	0.00000	0.13001	0.21233
sky130_fd_sc_hs__a21bo_2	0.00000	0.14312	0.21990
sky130_fd_sc_hs__a21bo_4	0.00000	0.17459	0.21822

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)	0.09913	0.75113	6.83995
	A2->X (RR)	0.10279	0.75742	6.94121
	B1_N->X (FR)	0.15059	0.92758	8.39838
sky130_fd_sc_hs__a21bo_2	A1->X (RR)	0.09451	0.64480	6.72923
	A2->X (RR)	0.09863	0.64410	6.80134
	B1_N->X (FR)	0.15618	0.82307	8.23548
sky130_fd_sc_hs__a21bo_4	A1->X (RR)	0.09719	0.56718	6.78402
	A2->X (RR)	0.10371	0.57321	6.87906
	B1_N->X (FR)	0.17732	0.79934	8.58037

Delay(ns) to X falling :

Cell Name	Timing Arc(Dir)	Delay(ns)		
		First	Mid	Last
sky130_fd_sc_hs__a21bo_1	A1->X (FF)	0.17808	0.70244	4.55940
	A2->X (FF)	0.20348	0.73998	4.66603
	B1_N->X (RF)	0.20172	0.50243	2.36503
sky130_fd_sc_hs__a21bo_2	A1->X (FF)	0.22665	0.74475	4.69822
	A2->X (FF)	0.25899	0.78851	4.82835
	B1_N->X (RF)	0.26550	0.55664	2.34433
sky130_fd_sc_hs__a21bo_4	A1->X (FF)	0.21459	0.69366	4.61985
	A2->X (FF)	0.23644	0.72787	4.74300
	B1_N->X (RF)	0.23868	0.50489	2.28677

Power Information

Internal switching power(pJ) to X rising :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__a21bo_1	A1	0.00643	0.00646	0.01010
	A1	0.00353	0.00356	0.00723
	A2	0.00710	0.00718	0.00973
	A2	0.00353	0.00361	0.00618
	B1_N	0.00591	0.00631	0.01358
	B1_N	0.00735	0.00774	0.01585
sky130_fd_sc_hs__a21bo_2	A1	0.00834	0.00856	0.01194
	A1	0.00532	0.00554	0.00892
	A2	0.00899	0.00927	0.01165
	A2	0.00530	0.00558	0.00994
	B1_N	0.00815	0.00858	0.01572
	B1_N	0.00962	0.01003	0.01731
sky130_fd_sc_hs__a21bo_4	A1	0.01534	0.01577	0.02305
	A1	0.01009	0.01054	0.02159
	A2	0.01711	0.01762	0.02264
	A2	0.01010	0.01063	0.01574
	B1_N	0.01446	0.01517	0.02224
	B1_N	0.01546	0.01615	0.02340

Internal switching power(pJ) to X falling :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__a21bo_1	A1	0.00341	0.00345	0.00647
	A1	0.00635	0.00637	0.00907
	A2	0.00353	0.00365	0.00607
	A2	0.00708	0.00719	0.00959
	B1_N	0.00771	0.00772	0.01380
	B1_N	0.00623	0.00623	0.01225
sky130_fd_sc_hs__a21bo_2	A1	0.00493	0.00519	0.00818
	A1	0.00799	0.00824	0.01078
	A2	0.00535	0.00564	0.00845
	A2	0.00902	0.00938	0.01171
	B1_N	0.01009	0.01031	0.01635
	B1_N	0.00854	0.00864	0.01473
sky130_fd_sc_hs__a21bo_4	A1	0.00977	0.01040	0.01569
	A1	0.01506	0.01570	0.02074
	A2	0.01000	0.01072	0.01624
	A2	0.01695	0.01767	0.02234
	B1_N	0.01685	0.01751	0.02387
	B1_N	0.01567	0.01629	0.02246

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)	0.00111	0.00100	0.00098
	(A2 * !B1_N * X)	-0.00121	-0.00135	-0.00135
	(!A2 * B1_N * !X)	0.00038	0.00038	0.00037
	(!A2 * B1_N * !X)	-0.00153	-0.00153	-0.00155
	(!A2 * !B1_N * X)	0.00092	0.00093	0.00093
	(!A2 * !B1_N * X)	-0.00136	-0.00138	-0.00137
sky130_fd_sc_hs__a21bo_2	(A2 * !B1_N * X)	0.00128	0.00117	0.00116
	(A2 * !B1_N * X)	-0.00119	-0.00131	-0.00132
	(!A2 * B1_N * !X)	0.00048	0.00048	0.00046
	(!A2 * B1_N * !X)	-0.00151	-0.00152	-0.00154
	(!A2 * !B1_N * X)	0.00110	0.00111	0.00110
	(!A2 * !B1_N * X)	-0.00133	-0.00134	-0.00134
sky130_fd_sc_hs__a21bo_4	(A2 * !B1_N * X)	0.00209	0.00188	0.00187
	(A2 * !B1_N * X)	-0.00228	-0.00249	-0.00252
	(!A2 * B1_N * !X)	0.00062	0.00062	0.00059
	(!A2 * B1_N * !X)	-0.00292	-0.00294	-0.00299
	(!A2 * !B1_N * X)	0.00176	0.00178	0.00176
	(!A2 * !B1_N * X)	-0.00255	-0.00257	-0.00255

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)	-0.00098	-0.00098	-0.00097
	(A2 * !B1_N * X)	0.00136	0.00135	0.00135
	(!A2 * B1_N * !X)	-0.00036	-0.00036	-0.00036
	(!A2 * B1_N * !X)	0.00155	0.00156	0.00155
	(!A2 * !B1_N * X)	-0.00090	-0.00093	-0.00093
	(!A2 * !B1_N * X)	0.00136	0.00139	0.00137
sky130_fd_sc_hs__a21bo_2	(A2 * !B1_N * X)	-0.00116	-0.00116	-0.00116
	(A2 * !B1_N * X)	0.00132	0.00132	0.00132
	(!A2 * B1_N * !X)	-0.00045	-0.00045	-0.00045
	(!A2 * B1_N * !X)	0.00154	0.00155	0.00155
	(!A2 * !B1_N * X)	-0.00107	-0.00111	-0.00110
	(!A2 * !B1_N * X)	0.00133	0.00135	0.00134
sky130_fd_sc_hs__a21bo_4	(A2 * !B1_N * X)	-0.00186	-0.00188	-0.00186
	(A2 * !B1_N * X)	0.00252	0.00256	0.00252
	(!A2 * B1_N * !X)	-0.00057	-0.00057	-0.00057
	(!A2 * B1_N * !X)	0.00301	0.00300	0.00300
	(!A2 * !B1_N * X)	-0.00169	-0.00178	-0.00176
	(!A2 * !B1_N * X)	0.00255	0.00259	0.00256

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)	0.00124	0.00115	0.00114
	(A1 * !B1_N * X)	-0.00112	-0.00123	-0.00124
	(!A1 * B1_N * !X)	0.00110	0.00110	0.00110
	(!A1 * B1_N * !X)	-0.00125	-0.00125	-0.00125
	(!A1 * !B1_N * X)	0.00109	0.00110	0.00109
	(!A1 * !B1_N * X)	-0.00125	-0.00126	-0.00125
sky130_fd_sc_hs__a21bo_2	(A1 * !B1_N * X)	0.00125	0.00114	0.00113
	(A1 * !B1_N * X)	-0.00114	-0.00127	-0.00129
	(!A1 * B1_N * !X)	0.00108	0.00109	0.00108
	(!A1 * B1_N * !X)	-0.00130	-0.00131	-0.00130
	(!A1 * !B1_N * X)	0.00108	0.00108	0.00108
	(!A1 * !B1_N * X)	-0.00130	-0.00131	-0.00131
sky130_fd_sc_hs__a21bo_4	(A1 * !B1_N * X)	0.00248	0.00233	0.00231
	(A1 * !B1_N * X)	-0.00228	-0.00249	-0.00250
	(!A1 * B1_N * !X)	0.00220	0.00222	0.00220
	(!A1 * B1_N * !X)	-0.00253	-0.00254	-0.00253
	(!A1 * !B1_N * X)	0.00219	0.00221	0.00219
	(!A1 * !B1_N * X)	-0.00253	-0.00254	-0.00253

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)	-0.00114	-0.00114	-0.00114
	(A1 * !B1_N * X)	0.00123	0.00123	0.00124
	(!A1 * B1_N * !X)	-0.00103	-0.00110	-0.00110
	(!A1 * B1_N * !X)	0.00130	0.00128	0.00126
	(!A1 * !B1_N * X)	-0.00107	-0.00110	-0.00109
	(!A1 * !B1_N * X)	0.00125	0.00126	0.00126
sky130_fd_sc_hs__a21bo_2	(A1 * !B1_N * X)	-0.00113	-0.00113	-0.00113
	(A1 * !B1_N * X)	0.00129	0.00129	0.00129
	(!A1 * B1_N * !X)	-0.00102	-0.00108	-0.00108
	(!A1 * B1_N * !X)	0.00134	0.00132	0.00131
	(!A1 * !B1_N * X)	-0.00104	-0.00108	-0.00108
	(!A1 * !B1_N * X)	0.00130	0.00132	0.00131
sky130_fd_sc_hs__a21bo_4	(A1 * !B1_N * X)	-0.00230	-0.00231	-0.00230
	(A1 * !B1_N * X)	0.00249	0.00251	0.00250
	(!A1 * B1_N * !X)	-0.00209	-0.00222	-0.00220
	(!A1 * B1_N * !X)	0.00262	0.00257	0.00254
	(!A1 * !B1_N * X)	-0.00214	-0.00221	-0.00219
	(!A1 * !B1_N * X)	0.00254	0.00257	0.00254

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)	0.00298	0.00292	0.00969
	(A1 * A2 * X)	0.00051	0.00044	0.00722
sky130_fd_sc_hs__a21bo_2	(A1 * A2 * X)	0.00337	0.00327	0.00986
	(A1 * A2 * X)	0.00078	0.00066	0.00727
sky130_fd_sc_hs__a21bo_4	(A1 * A2 * X)	0.00455	0.00442	0.01063
	(A1 * A2 * X)	0.00156	0.00142	0.00764

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)	0.00089	0.00121	0.00856
	(A1 * A2 * X)	0.00335	0.00368	0.01102
sky130_fd_sc_hs__a21bo_2	(A1 * A2 * X)	0.00108	0.00136	0.00863
	(A1 * A2 * X)	0.00365	0.00394	0.01122
sky130_fd_sc_hs__a21bo_4	(A1 * A2 * X)	0.00173	0.00191	0.00869
	(A1 * A2 * X)	0.00469	0.00488	0.01165

SKY130_FD_SC_HS__A21OIx

sky130_fd_sc_hs_tt_1.50v_25C.ccs
Cell Library: Process , Voltage
1.50, 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	0.00281	0.00262	0.00274	0.39402
sky130_fd_sc_hs__a21oi_2	0.00509	0.00528	0.00408	0.69841
sky130_fd_sc_hs__a21oi_4	0.01036	0.01006	0.00804	1.35837

Leakage Information

Cell Name	Leakage(nW)		
	Min.	**Avg**	**Max.**
sky130_fd_sc_hs__a21oi_1	0.00000	0.01742	0.02973
sky130_fd_sc_hs__a21oi_2	0.00000	0.03309	0.05947
sky130_fd_sc_hs__a21oi_4	0.00000	0.06618	0.11893

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)	0.10720	1.12418	11.23180
	A2->Y (FR)	0.13184	1.17331	11.49330
	B1->Y (FR)	0.10301	1.13293	11.50470
sky130_fd_sc_hs__a21oi_2	A1->Y (FR)	0.10062	1.00163	11.41190
	A2->Y (FR)	0.13305	1.02114	11.27090
	B1->Y (FR)	0.05693	0.94933	11.37050
sky130_fd_sc_hs__a21oi_4	A1->Y (FR)	0.09350	0.86348	11.32330
	A2->Y (FR)	0.12126	0.88056	11.15830
	B1->Y (FR)	0.05183	0.81618	11.30860

Delay(ns) to Y falling :

Cell Name	Timing Arc(Dir)	Delay(ns)		
		First	Mid	Last
sky130_fd_sc_hs__a21oi_1	A1->Y (RF)	0.03318	0.46971	4.78688
	A2->Y (RF)	0.03647	0.44222	4.42920
	B1->Y (RF)	0.02129	0.37458	3.91887
sky130_fd_sc_hs__a21oi_2	A1->Y (RF)	0.03068	0.42374	4.82708
	A2->Y (RF)	0.03816	0.39814	4.39977
	B1->Y (RF)	0.02580	0.45146	5.39199
sky130_fd_sc_hs__a21oi_4	A1->Y (RF)	0.03033	0.38581	5.00426
	A2->Y (RF)	0.03572	0.34591	4.36221
	B1->Y (RF)	0.02608	0.41410	5.65604

Power Information

Internal switching power(pJ) to Y rising :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__a21oi_1	A1	-0.00014	-0.00024	0.00000
	A1	0.00391	0.00380	0.00405
	A2	0.00015	0.00007	0.00032
	A2	0.00490	0.00477	0.00506
	B1	-0.00034	-0.00024	0.00090
	B1	0.00408	0.00411	0.00519
sky130_fd_sc_hs__a21oi_2	A1	-0.00037	-0.00054	0.00001
	A1	0.00718	0.00704	0.00757
	A2	0.00071	0.00047	0.00103
	A2	0.00999	0.00975	0.01026
	B1	0.00006	0.00014	0.00160
	B1	0.00801	0.00798	0.00897
sky130_fd_sc_hs__a21oi_4	A1	-0.00130	-0.00163	-0.00038
	A1	0.01420	0.01387	0.01485
	A2	0.00092	0.00049	0.00165
	A2	0.01941	0.01899	0.02013
	B1	-0.00009	0.00003	0.00292
	B1	0.01545	0.01559	0.01743

Internal switching power(pJ) to Y falling :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__a21oi_1	A1	0.00501	0.00493	0.00545
	A1	0.00103	0.00092	0.00130
	A2	0.00574	0.00563	0.00588
	A2	0.00103	0.00090	0.00117
	B1	0.00386	0.00392	0.00439
	B1	-0.00018	-0.00021	0.00028
sky130_fd_sc_hs__a21oi_2	A1	0.00900	0.00873	0.00973
	A1	0.00155	0.00128	0.00214
	A2	0.01087	0.01056	0.01127
	A2	0.00158	0.00127	0.00184
	B1	0.00582	0.00587	0.00698
	B1	-0.00116	-0.00119	-0.00052
sky130_fd_sc_hs__a21oi_4	A1	0.01804	0.01739	0.01970
	A1	0.00277	0.00210	0.00388
	A2	0.02113	0.02054	0.02222
	A2	0.00266	0.00201	0.00323
	B1	0.01132	0.01132	0.01412
	B1	-0.00204	-0.00208	-0.00076

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__a21oi_1	(A2 * B1 * !Y)	0.00125	0.00118	0.00116
	(A2 * B1 * !Y)	-0.00123	-0.00136	-0.00135
	(!A2 * B1 * !Y)	0.00109	0.00110	0.00109
	(!A2 * B1 * !Y)	-0.00138	-0.00139	-0.00139
	(!A2 * !B1 * Y)	0.00038	0.00038	0.00036
	(!A2 * !B1 * Y)	-0.00165	-0.00166	-0.00167
sky130_fd_sc_hs__a21oi_2	(A2 * B1 * !Y)	0.00248	0.00231	0.00229
	(A2 * B1 * !Y)	-0.00237	-0.00264	-0.00265
	(!A2 * B1 * !Y)	0.00213	0.00215	0.00213
	(!A2 * B1 * !Y)	-0.00273	-0.00274	-0.00273
	(!A2 * !B1 * Y)	0.00081	0.00081	0.00077
	(!A2 * !B1 * Y)	-0.00313	-0.00315	-0.00321
sky130_fd_sc_hs__a21oi_4	(A2 * B1 * !Y)	0.00502	0.00466	0.00462
	(A2 * B1 * !Y)	-0.00474	-0.00530	-0.00529
	(!A2 * B1 * !Y)	0.00437	0.00441	0.00439
	(!A2 * B1 * !Y)	-0.00539	-0.00543	-0.00541
	(!A2 * !B1 * Y)	0.00152	0.00153	0.00145
	(!A2 * !B1 * Y)	-0.00645	-0.00652	-0.00661

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__a21oi_1	(A2 * B1 * !Y)	-0.00116	-0.00116	-0.00115
	(A2 * B1 * !Y)	0.00136	0.00136	0.00135
	(!A2 * B1 * !Y)	-0.00106	-0.00110	-0.00109
	(!A2 * B1 * !Y)	0.00139	0.00140	0.00139
	(!A2 * !B1 * Y)	-0.00035	-0.00035	-0.00035
	(!A2 * !B1 * Y)	0.00167	0.00168	0.00167
sky130_fd_sc_hs__a21oi_2	(A2 * B1 * !Y)	-0.00230	-0.00229	-0.00229
	(A2 * B1 * !Y)	0.00265	0.00264	0.00265
	(!A2 * B1 * !Y)	-0.00201	-0.00215	-0.00213
	(!A2 * B1 * !Y)	0.00275	0.00276	0.00273
	(!A2 * !B1 * Y)	-0.00075	-0.00074	-0.00074
	(!A2 * !B1 * Y)	0.00322	0.00323	0.00322
sky130_fd_sc_hs__a21oi_4	(A2 * B1 * !Y)	-0.00463	-0.00463	-0.00461
	(A2 * B1 * !Y)	0.00530	0.00531	0.00529
	(!A2 * B1 * !Y)	-0.00420	-0.00441	-0.00439
	(!A2 * B1 * !Y)	0.00544	0.00544	0.00543
	(!A2 * !B1 * Y)	-0.00141	-0.00141	-0.00140
	(!A2 * !B1 * Y)	0.00664	0.00667	0.00663

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__a21oi_1	(A1 * B1 * !Y)	0.00125	0.00118	0.00116
	(A1 * B1 * !Y)	-0.00122	-0.00136	-0.00135
	(!A1 * B1 * !Y)	0.00110	0.00110	0.00110
	(!A1 * B1 * !Y)	-0.00138	-0.00139	-0.00139
	(!A1 * !B1 * Y)	0.00110	0.00110	0.00110
	(!A1 * !B1 * Y)	-0.00138	-0.00139	-0.00138
sky130_fd_sc_hs__a21oi_2	(A1 * B1 * !Y)	0.00256	0.00240	0.00238
	(A1 * B1 * !Y)	-0.00238	-0.00266	-0.00266
	(!A1 * B1 * !Y)	0.00223	0.00225	0.00223
	(!A1 * B1 * !Y)	-0.00273	-0.00275	-0.00273
	(!A1 * !B1 * Y)	0.00213	0.00214	0.00213
	(!A1 * !B1 * Y)	-0.00283	-0.00283	-0.00282
sky130_fd_sc_hs__a21oi_4	(A1 * B1 * !Y)	0.00493	0.00454	0.00450
	(A1 * B1 * !Y)	-0.00489	-0.00544	-0.00544
	(!A1 * B1 * !Y)	0.00426	0.00430	0.00426
	(!A1 * B1 * !Y)	-0.00557	-0.00560	-0.00558
	(!A1 * !B1 * Y)	0.00420	0.00425	0.00421
	(!A1 * !B1 * Y)	-0.00560	-0.00564	-0.00561

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__a21oi_1	(A1 * B1 * !Y)	-0.00116	-0.00116	-0.00116
	(A1 * B1 * !Y)	0.00135	0.00136	0.00135
	(!A1 * B1 * !Y)	-0.00107	-0.00110	-0.00110
	(!A1 * B1 * !Y)	0.00138	0.00140	0.00139
	(!A1 * !B1 * Y)	-0.00104	-0.00110	-0.00110
	(!A1 * !B1 * Y)	0.00142	0.00142	0.00139
sky130_fd_sc_hs__a21oi_2	(A1 * B1 * !Y)	-0.00237	-0.00238	-0.00237
	(A1 * B1 * !Y)	0.00265	0.00266	0.00266
	(!A1 * B1 * !Y)	-0.00212	-0.00224	-0.00223
	(!A1 * B1 * !Y)	0.00274	0.00276	0.00274
	(!A1 * !B1 * Y)	-0.00199	-0.00214	-0.00213
	(!A1 * !B1 * Y)	0.00289	0.00286	0.00283
sky130_fd_sc_hs__a21oi_4	(A1 * B1 * !Y)	-0.00451	-0.00451	-0.00449
	(A1 * B1 * !Y)	0.00545	0.00546	0.00544
	(!A1 * B1 * !Y)	-0.00410	-0.00427	-0.00426
	(!A1 * B1 * !Y)	0.00558	0.00563	0.00560
	(!A1 * !B1 * Y)	-0.00394	-0.00422	-0.00421
	(!A1 * !B1 * Y)	0.00576	0.00569	0.00563

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__a21oi_1	(A1 * A2 * !Y)	0.00135	0.00138	0.00136
	(A1 * A2 * !Y)	-0.00069	-0.00071	-0.00070
sky130_fd_sc_hs__a21oi_2	(A1 * A2 * !Y)	0.00150	0.00151	0.00151
	(A1 * A2 * !Y)	-0.00143	-0.00144	-0.00144
sky130_fd_sc_hs__a21oi_4	(A1 * A2 * !Y)	0.00291	0.00296	0.00291
	(A1 * A2 * !Y)	-0.00277	-0.00282	-0.00277

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__a21oi_1	(A1 * A2 * !Y)	-0.00126	-0.00127	-0.00134
	(A1 * A2 * !Y)	0.00079	0.00079	0.00072
sky130_fd_sc_hs__a21oi_2	(A1 * A2 * !Y)	-0.00130	-0.00132	-0.00148
	(A1 * A2 * !Y)	0.00161	0.00162	0.00148
sky130_fd_sc_hs__a21oi_4	(A1 * A2 * !Y)	-0.00251	-0.00256	-0.00287
	(A1 * A2 * !Y)	0.00310	0.00312	0.00285

SKY130_FD_SC_HS__A21Ox

sky130_fd_sc_hs_tt_1.50v_25C.ccs
Cell Library: Process , Voltage 1.50, 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	0.00235	0.00240	0.00241	0.85082
sky130_fd_sc_hs__a21o_2	0.00263	0.00252	0.00267	1.66774
sky130_fd_sc_hs__a21o_4	0.00475	0.00452	0.00485	3.17785

Leakage Information

Cell Name	Leakage(nW)		
	Min.	**Avg**	**Max.**
sky130_fd_sc_hs__a21o_1	0.00000	0.05310	0.07896
sky130_fd_sc_hs__a21o_2	0.00000	0.06621	0.08361
sky130_fd_sc_hs__a21o_4	0.00000	0.13431	0.16722

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)	0.09362	0.71936	6.70229
	A2->X (RR)	0.09844	0.72816	6.80781
	B1->X (RR)	0.07051	0.67066	6.67968
sky130_fd_sc_hs__a21o_2	A1->X (RR)	0.09165	0.62835	6.79486
	A2->X (RR)	0.09586	0.62824	6.86774
	B1->X (RR)	0.06769	0.57933	6.73902
sky130_fd_sc_hs__a21o_4	A1->X (RR)	0.10370	0.57193	6.89381
	A2->X (RR)	0.10972	0.57483	6.98319
	B1->X (RR)	0.07049	0.50776	6.81900

Delay(ns) to X falling :

Cell Name	Timing Arc(Dir)	Delay(ns)		
		First	Mid	Last
sky130_fd_sc_hs__a21o_1	A1->X (FF)	0.16937	0.69866	4.70751
	A2->X (FF)	0.19814	0.74062	4.83492
	B1->X (FF)	0.16839	0.69205	4.58544
sky130_fd_sc_hs__a21o_2	A1->X (FF)	0.21258	0.73471	4.86177
	A2->X (FF)	0.24434	0.77721	5.00064
	B1->X (FF)	0.21662	0.73974	4.77560
sky130_fd_sc_hs__a21o_4	A1->X (FF)	0.21592	0.70815	4.94097
	A2->X (FF)	0.24771	0.75105	5.07120
	B1->X (FF)	0.21546	0.70863	4.84460

Power Information

Internal switching power(pJ) to X rising :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__a21o_1	A1	0.00697	0.00699	0.01062
	A1	0.00353	0.00356	0.00720
	A2	0.00781	0.00783	0.01037
	A2	0.00353	0.00356	0.00611
	B1	0.00583	0.00575	0.01145
	B1	0.00237	0.00231	0.00859
sky130_fd_sc_hs__a21o_2	A1	0.00912	0.00934	0.01273
	A1	0.00536	0.00558	0.00899
	A2	0.00991	0.01016	0.01256
	A2	0.00535	0.00561	0.00808
	B1	0.00811	0.00821	0.01351
	B1	0.00427	0.00438	0.00996
sky130_fd_sc_hs__a21o_4	A1	0.01734	0.01773	0.02489
	A1	0.01016	0.01056	0.01789
	A2	0.01861	0.01914	0.02397
	A2	0.01013	0.01065	0.01549
	B1	0.01501	0.01536	0.02619
	B1	0.00776	0.00805	0.01999

Internal switching power(pJ) to X falling :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__a21o_1	A1	0.00253	0.00257	0.00560
	A1	0.00601	0.00604	0.00879
	A2	0.00261	0.00271	0.00537
	A2	0.00688	0.00701	0.00942
	B1	0.00243	0.00279	0.00892
	B1	0.00620	0.00650	0.01189
sky130_fd_sc_hs__a21o_2	A1	0.00411	0.00439	0.00701
	A1	0.00793	0.00820	0.01074
	A2	0.00440	0.00477	0.00722
	A2	0.00896	0.00931	0.01168
	B1	0.00401	0.00454	0.01081
	B1	0.00824	0.00871	0.01429
sky130_fd_sc_hs__a21o_4	A1	0.00831	0.00890	0.01599
	A1	0.01557	0.01617	0.02123
	A2	0.00925	0.00992	0.01589
	A2	0.01771	0.01845	0.02303
	B1	0.00924	0.01034	0.02177
	B1	0.01634	0.01744	0.02817

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__a21o_1	(A2 * B1 * X)	0.00104	0.00095	0.00093
	(A2 * B1 * X)	-0.00111	-0.00125	-0.00124
	(!A2 * B1 * X)	0.00087	0.00088	0.00087
	(!A2 * B1 * X)	-0.00127	-0.00128	-0.00127
	(!A2 * !B1 * !X)	0.00033	0.00033	0.00032
	(!A2 * !B1 * !X)	-0.00144	-0.00144	-0.00146
sky130_fd_sc_hs__a21o_2	(A2 * B1 * X)	0.00121	0.00113	0.00110
	(A2 * B1 * X)	-0.00111	-0.00126	-0.00126
	(!A2 * B1 * X)	0.00104	0.00105	0.00104
	(!A2 * B1 * X)	-0.00129	-0.00130	-0.00129
	(!A2 * !B1 * !X)	0.00040	0.00040	0.00039
	(!A2 * !B1 * !X)	-0.00148	-0.00149	-0.00151
sky130_fd_sc_hs__a21o_4	(A2 * B1 * X)	0.00222	0.00201	0.00199
	(A2 * B1 * X)	-0.00222	-0.00247	-0.00249
	(!A2 * B1 * X)	0.00189	0.00192	0.00190
	(!A2 * B1 * X)	-0.00253	-0.00256	-0.00255
	(!A2 * !B1 * !X)	0.00073	0.00073	0.00069
	(!A2 * !B1 * !X)	-0.00296	-0.00297	-0.00303

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__a21o_1	(A2 * B1 * X)	-0.00093	-0.00093	-0.00092
	(A2 * B1 * X)	0.00125	0.00125	0.00124
	(!A2 * B1 * X)	-0.00085	-0.00088	-0.00087
	(!A2 * B1 * X)	0.00128	0.00128	0.00128
	(!A2 * !B1 * !X)	-0.00031	-0.00031	-0.00031
	(!A2 * !B1 * !X)	0.00146	0.00147	0.00146
sky130_fd_sc_hs__a21o_2	(A2 * B1 * X)	-0.00111	-0.00111	-0.00110
	(A2 * B1 * X)	0.00126	0.00126	0.00126
	(!A2 * B1 * X)	-0.00101	-0.00105	-0.00104
	(!A2 * B1 * X)	0.00129	0.00130	0.00130
	(!A2 * !B1 * !X)	-0.00038	-0.00038	-0.00038
	(!A2 * !B1 * !X)	0.00151	0.00152	0.00151
sky130_fd_sc_hs__a21o_4	(A2 * B1 * X)	-0.00198	-0.00198	-0.00198
	(A2 * B1 * X)	0.00247	0.00247	0.00249
	(!A2 * B1 * X)	-0.00182	-0.00191	-0.00190
	(!A2 * B1 * X)	0.00254	0.00257	0.00256
	(!A2 * !B1 * !X)	-0.00067	-0.00066	-0.00066
	(!A2 * !B1 * !X)	0.00305	0.00304	0.00304

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__a21o_1	(A1 * B1 * X)	0.00126	0.00117	0.00116
	(A1 * B1 * X)	-0.00110	-0.00122	-0.00123
	(!A1 * B1 * X)	0.00112	0.00112	0.00111
	(!A1 * B1 * X)	-0.00125	-0.00126	-0.00125
	(!A1 * !B1 * !X)	0.00112	0.00112	0.00112
	(!A1 * !B1 * !X)	-0.00125	-0.00126	-0.00125
sky130_fd_sc_hs__a21o_2	(A1 * B1 * X)	0.00127	0.00119	0.00117
	(A1 * B1 * X)	-0.00112	-0.00126	-0.00126
	(!A1 * B1 * X)	0.00111	0.00112	0.00111
	(!A1 * B1 * X)	-0.00129	-0.00130	-0.00129
	(!A1 * !B1 * !X)	0.00110	0.00111	0.00111
	(!A1 * !B1 * !X)	-0.00128	-0.00129	-0.00129
sky130_fd_sc_hs__a21o_4	(A1 * B1 * X)	0.00217	0.00197	0.00196
	(A1 * B1 * X)	-0.00221	-0.00247	-0.00248
	(!A1 * B1 * X)	0.00186	0.00187	0.00186
	(!A1 * B1 * X)	-0.00254	-0.00254	-0.00254
	(!A1 * !B1 * !X)	0.00186	0.00185	0.00186
	(!A1 * !B1 * !X)	-0.00255	-0.00254	-0.00254

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__a21o_1	(A1 * B1 * X)	-0.00116	-0.00116	-0.00116
	(A1 * B1 * X)	0.00122	0.00122	0.00123
	(!A1 * B1 * X)	-0.00109	-0.00112	-0.00111
	(!A1 * B1 * X)	0.00125	0.00127	0.00126
	(!A1 * !B1 * !X)	-0.00106	-0.00112	-0.00112
	(!A1 * !B1 * !X)	0.00129	0.00127	0.00126
sky130_fd_sc_hs__a21o_2	(A1 * B1 * X)	-0.00116	-0.00117	-0.00116
	(A1 * B1 * X)	0.00126	0.00126	0.00126
	(!A1 * B1 * X)	-0.00107	-0.00112	-0.00111
	(!A1 * B1 * X)	0.00129	0.00132	0.00129
	(!A1 * !B1 * !X)	-0.00105	-0.00111	-0.00111
	(!A1 * !B1 * !X)	0.00132	0.00131	0.00129
sky130_fd_sc_hs__a21o_4	(A1 * B1 * X)	-0.00195	-0.00197	-0.00195
	(A1 * B1 * X)	0.00248	0.00252	0.00248
	(!A1 * B1 * X)	-0.00179	-0.00186	-0.00186
	(!A1 * B1 * X)	0.00254	0.00256	0.00255
	(!A1 * !B1 * !X)	-0.00174	-0.00185	-0.00186
	(!A1 * !B1 * !X)	0.00261	0.00257	0.00255

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__a21o_1	(A1 * A2 * X)	0.00111	0.00113	0.00111
	(A1 * A2 * X)	-0.00066	-0.00067	-0.00066
sky130_fd_sc_hs__a21o_2	(A1 * A2 * X)	0.00132	0.00134	0.00132
	(A1 * A2 * X)	-0.00065	-0.00067	-0.00065
sky130_fd_sc_hs__a21o_4	(A1 * A2 * X)	0.00230	0.00231	0.00231
	(A1 * A2 * X)	-0.00136	-0.00136	-0.00136

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__a21o_1	(A1 * A2 * X)	-0.00102	-0.00103	-0.00110
	(A1 * A2 * X)	0.00075	0.00075	0.00068
sky130_fd_sc_hs__a21o_2	(A1 * A2 * X)	-0.00122	-0.00123	-0.00131
	(A1 * A2 * X)	0.00074	0.00074	0.00068
sky130_fd_sc_hs__a21o_4	(A1 * A2 * X)	-0.00210	-0.00211	-0.00228
	(A1 * A2 * X)	0.00154	0.00153	0.00140

SKY130_FD_SC_HS__A221OIx

sky130_fd_sc_hs_tt_1.50v_25C.ccs
Cell Library: Process , Voltage
1.50, 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	0.00270	0.00264	0.00275	0.00283	0.00284	0.25031
sky130_fd_sc_hs__a221oi_2	0.00572	0.00513	0.00562	0.00508	0.00521	0.43528
sky130_fd_sc_hs__a221oi_4	0.01051	0.01039	0.01042	0.01007	0.01032	0.77991

Leakage Information

Cell Name	Leakage(nW)		
	Min.	**Avg**	**Max.**
sky130_fd_sc_hs__a221oi_1	0.00000	0.01633	0.02973
sky130_fd_sc_hs__a221oi_2	0.00000	0.03267	0.05947
sky130_fd_sc_hs__a221oi_4	0.00000	0.06533	0.11893

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)	0.29045	1.43646	11.03980
	A2->Y (FR)	0.32599	1.47904	11.10080
	B1->Y (FR)	0.25166	1.39746	11.42410
	B2->Y (FR)	0.29200	1.44857	11.53750
	C1->Y (FR)	0.22100	1.35413	11.32610
sky130_fd_sc_hs__a221oi_2	A1->Y (FR)	0.26387	1.20796	10.49500
	A2->Y (FR)	0.33194	1.31489	10.97090
	B1->Y (FR)	0.24095	1.20712	11.17110
	B2->Y (FR)	0.29162	1.28101	11.41660
	C1->Y (FR)	0.21112	1.18146	11.26820
sky130_fd_sc_hs__a221oi_4	A1->Y (FR)	0.28812	1.11426	10.59410
	A2->Y (FR)	0.34519	1.18495	10.76990
	B1->Y (FR)	0.24189	1.06755	10.98780
	B2->Y (FR)	0.30250	1.14792	11.28140
	C1->Y (FR)	0.22189	1.06284	11.24220

Delay(ns) to Y falling :

Cell Name	Timing Arc(Dir)	Delay(ns)		
		First	Mid	Last
sky130_fd_sc_hs__a221oi_1	A1->Y (RF)	0.03845	0.43523	3.71668
	A2->Y (RF)	0.04236	0.41130	3.45917
	B1->Y (RF)	0.04025	0.42610	3.74458
	B2->Y (RF)	0.04517	0.40460	3.49606
	C1->Y (RF)	0.02560	0.33740	3.07538
sky130_fd_sc_hs__a221oi_2	A1->Y (RF)	0.03386	0.38422	3.57451
	A2->Y (RF)	0.04031	0.36900	3.36703
	B1->Y (RF)	0.03506	0.36613	3.53991
	B2->Y (RF)	0.04055	0.35135	3.33667
	C1->Y (RF)	0.02278	0.28983	2.94030
sky130_fd_sc_hs__a221oi_4	A1->Y (RF)	0.03556	0.36140	3.64116
	A2->Y (RF)	0.04133	0.32472	3.18964
	B1->Y (RF)	0.03922	0.34349	3.63191
	B2->Y (RF)	0.04473	0.31160	3.17505
	C1->Y (RF)	0.02082	0.24317	2.75149

Power Information

Internal switching power(pJ) to Y rising :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__a221oi_1	A1	0.00137	0.00118	0.00130
	A1	0.00727	0.00709	0.00720
	A2	0.00158	0.00147	0.00159
	A2	0.00826	0.00816	0.00827
	B1	0.00138	0.00118	0.00146
	B1	0.00636	0.00616	0.00643
	B2	0.00167	0.00153	0.00181
	B2	0.00743	0.00728	0.00755
	C1	0.00076	0.00081	0.00224
	C1	0.00663	0.00658	0.00773
sky130_fd_sc_hs__a221oi_2	A1	0.00163	0.00123	0.00154
	A1	0.01369	0.01333	0.01366
	A2	0.00270	0.00238	0.00268
	A2	0.01585	0.01556	0.01584
	B1	0.00189	0.00150	0.00213
	B1	0.01198	0.01158	0.01220
	B2	0.00270	0.00240	0.00303
	B2	0.01395	0.01363	0.01424
	C1	0.00035	0.00040	0.00353
	C1	0.01239	0.01209	0.01491

sky130_fd_sc_hs__a221oi_4	**A1**	0.00304	0.00220	0.00287
	A1	0.02698	0.02614	0.02690
	A2	0.00470	0.00407	0.00471
	A2	0.03154	0.03099	0.03164
	B1	0.00285	0.00205	0.00341
	B1	0.02326	0.02245	0.02379
	B2	0.00462	0.00408	0.00538
	B2	0.02798	0.02725	0.02866
	C1	-0.00007	0.00041	0.00640
	C1	0.02408	0.02404	0.02932

Internal switching power(pJ) to Y falling :

Cell Name	**Input**	**Power(pJ)**		
		first	**mid**	**last**
sky130_fd_sc_hs__a221oi_1	**A1**	0.00841	0.00829	0.00866
	A1	0.00287	0.00274	0.00314
	A2	0.00921	0.00906	0.00926
	A2	0.00285	0.00268	0.00294
	B1	0.00609	0.00605	0.00652
	B1	0.00113	0.00101	0.00151
	B2	0.00689	0.00680	0.00710
	B2	0.00111	0.00097	0.00130
	C1	0.00490	0.00499	0.00549
	C1	-0.00022	-0.00026	0.00035

sky130_fd_sc_hs__a221oi_2	**A1**	0.01580	0.01551	0.01638
	A1	0.00440	0.00410	0.00502
	A2	0.01712	0.01677	0.01727
	A2	0.00457	0.00419	0.00475
	B1	0.01162	0.01142	0.01248
	B1	0.00155	0.00124	0.00236
	B2	0.01299	0.01280	0.01346
	B2	0.00164	0.00137	0.00209
	C1	0.00906	0.00924	0.01040
	C1	-0.00096	-0.00101	0.00034
sky130_fd_sc_hs__a221oi_4	**A1**	0.03153	0.03070	0.03262
	A1	0.00932	0.00848	0.01047
	A2	0.03457	0.03376	0.03494
	A2	0.00927	0.00842	0.00964
	B1	0.02336	0.02290	0.02524
	B1	0.00305	0.00241	0.00478
	B2	0.02654	0.02605	0.02762
	B2	0.00307	0.00244	0.00403
	C1	0.01879	0.01881	0.02155
	C1	-0.00129	-0.00151	0.00140

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)**	0.00110	0.00111	0.00109
	(A2 * B1 * B2 * C1 * !Y)	-0.00129	-0.00135	-0.00134
	(A2 * B1 * B2 * !C1 * !Y)	0.00110	0.00111	0.00109
	(A2 * B1 * B2 * !C1 * !Y)	-0.00129	-0.00135	-0.00134
	(A2 * B1 * !B2 * C1 * !Y)	0.00110	0.00111	0.00110
	(A2 * B1 * !B2 * C1 * !Y)	-0.00123	-0.00130	-0.00130
	(A2 * !B1 * C1 * !Y)	0.00110	0.00111	0.00110
	(A2 * !B1 * C1 * !Y)	-0.00123	-0.00130	-0.00130
	(!A2 * B1 * B2 * C1 * !Y)	0.00103	0.00104	0.00104
	(!A2 * B1 * B2 * C1 * !Y)	-0.00137	-0.00138	-0.00138
	(!A2 * B1 * B2 * !C1 * !Y)	0.00103	0.00104	0.00103
	(!A2 * B1 * B2 * !C1 * !Y)	-0.00137	-0.00138	-0.00138
	(!A2 * B1 * !B2 * C1 * !Y)	0.00103	0.00104	0.00103
	(!A2 * B1 * !B2 * C1 * !Y)	-0.00137	-0.00138	-0.00138
	(!A2 * B1 * !B2 * !C1 * Y)	0.00038	0.00038	0.00036
	(!A2 * B1 * !B2 * !C1 * Y)	-0.00158	-0.00158	-0.00160
	(!A2 * !B1 * C1 * !Y)	0.00103	0.00104	0.00103
	(!A2 * !B1 * C1 * !Y)	-0.00137	-0.00138	-0.00138
	(!A2 * !B1 * !C1 * Y)	0.00038	0.00038	0.00036
	(!A2 * !B1 * !C1 * Y)	-0.00158	-0.00158	-0.00160

sky130_fd_sc_hs__a221oi_2	**(A2 * B1 * B2 * C1 * !Y)**	0.00232	0.00233	0.00233
	(A2 * B1 * B2 * C1 * !Y)	-0.00270	-0.00284	-0.00283
	(A2 * B1 * B2 * !C1 * !Y)	0.00233	0.00233	0.00233
	(A2 * B1 * B2 * !C1 * !Y)	-0.00269	-0.00283	-0.00283
	(A2 * B1 * !B2 * C1 * !Y)	0.00234	0.00236	0.00233
	(A2 * B1 * !B2 * C1 * !Y)	-0.00259	-0.00276	-0.00274
	(A2 * !B1 * C1 * !Y)	0.00234	0.00236	0.00233
	(A2 * !B1 * C1 * !Y)	-0.00259	-0.00276	-0.00274
	(!A2 * B1 * B2 * C1 * !Y)	0.00223	0.00226	0.00223
	(!A2 * B1 * B2 * C1 * !Y)	-0.00292	-0.00294	-0.00292
	(!A2 * B1 * B2 * !C1 * !Y)	0.00223	0.00226	0.00224
	(!A2 * B1 * B2 * !C1 * !Y)	-0.00292	-0.00294	-0.00292
	(!A2 * B1 * !B2 * C1 * !Y)	0.00223	0.00226	0.00224
	(!A2 * B1 * !B2 * C1 * !Y)	-0.00292	-0.00294	-0.00292
	(!A2 * B1 * !B2 * !C1 * Y)	0.00085	0.00086	0.00081
	(!A2 * B1 * !B2 * !C1 * Y)	-0.00341	-0.00344	-0.00349
	(!A2 * !B1 * C1 * !Y)	0.00223	0.00226	0.00224
	(!A2 * !B1 * C1 * !Y)	-0.00292	-0.00294	-0.00292
	(!A2 * !B1 * !C1 * Y)	0.00085	0.00086	0.00081
	(!A2 * !B1 * !C1 * Y)	-0.00341	-0.00344	-0.00349

sky130_fd_sc_hs__a221oi_4	**(A2 * B1 * B2 * C1 * !Y)**	0.00449	0.00450	0.00449
	(A2 * B1 * B2 * C1 * !Y)	-0.00525	-0.00548	-0.00545
	(A2 * B1 * B2 * !C1 * !Y)	0.00449	0.00450	0.00449
	(A2 * B1 * B2 * !C1 * !Y)	-0.00515	-0.00546	-0.00543
	(A2 * B1 * !B2 * C1 * !Y)	0.00453	0.00448	0.00449
	(A2 * B1 * !B2 * C1 * !Y)	-0.00494	-0.00528	-0.00525
	(A2 * !B1 * C1 * !Y)	0.00451	0.00447	0.00449
	(A2 * !B1 * C1 * !Y)	-0.00491	-0.00528	-0.00525
	(!A2 * B1 * B2 * C1 * !Y)	0.00425	0.00431	0.00427
	(!A2 * B1 * B2 * C1 * !Y)	-0.00557	-0.00561	-0.00558
	(!A2 * B1 * B2 * !C1 * !Y)	0.00426	0.00429	0.00427
	(!A2 * B1 * B2 * !C1 * !Y)	-0.00556	-0.00558	-0.00557
	(!A2 * B1 * !B2 * C1 * !Y)	0.00427	0.00427	0.00427
	(!A2 * B1 * !B2 * C1 * !Y)	-0.00564	-0.00564	-0.00564
	(!A2 * B1 * !B2 * !C1 * Y)	0.00153	0.00154	0.00146
	(!A2 * B1 * !B2 * !C1 * Y)	-0.00656	-0.00662	-0.00672
	(!A2 * !B1 * C1 * !Y)	0.00426	0.00428	0.00427
	(!A2 * !B1 * C1 * !Y)	-0.00562	-0.00565	-0.00564
	(!A2 * !B1 * !C1 * Y)	0.00153	0.00155	0.00146
	(!A2 * !B1 * !C1 * Y)	-0.00656	-0.00662	-0.00672

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)**	-0.00110	-0.00110	-0.00109
	(A2 * B1 * B2 * C1 * !Y)	0.00135	0.00135	0.00134
	(A2 * B1 * B2 * !C1 * !Y)	-0.00110	-0.00110	-0.00109
	(A2 * B1 * B2 * !C1 * !Y)	0.00135	0.00135	0.00134
	(A2 * B1 * !B2 * C1 * !Y)	-0.00110	-0.00109	-0.00109
	(A2 * B1 * !B2 * C1 * !Y)	0.00131	0.00130	0.00130
	(A2 * !B1 * C1 * !Y)	-0.00110	-0.00109	-0.00109
	(A2 * !B1 * C1 * !Y)	0.00131	0.00130	0.00130
	(!A2 * B1 * B2 * C1 * !Y)	-0.00100	-0.00104	-0.00104
	(!A2 * B1 * B2 * C1 * !Y)	0.00137	0.00139	0.00138
	(!A2 * B1 * B2 * !C1 * !Y)	-0.00101	-0.00104	-0.00103
	(!A2 * B1 * B2 * !C1 * !Y)	0.00138	0.00140	0.00138
	(!A2 * B1 * !B2 * C1 * !Y)	-0.00101	-0.00104	-0.00103
	(!A2 * B1 * !B2 * C1 * !Y)	0.00139	0.00139	0.00138
	(!A2 * B1 * !B2 * !C1 * Y)	-0.00035	-0.00035	-0.00035
	(!A2 * B1 * !B2 * !C1 * Y)	0.00160	0.00160	0.00160
	(!A2 * !B1 * C1 * !Y)	-0.00100	-0.00104	-0.00103
	(!A2 * !B1 * C1 * !Y)	0.00138	0.00139	0.00138
	(!A2 * !B1 * !C1 * Y)	-0.00035	-0.00035	-0.00035
	(!A2 * !B1 * !C1 * Y)	0.00160	0.00160	0.00160

sky130_fd_sc_hs__a221oi_2	**(A2 * B1 * B2 * C1 * !Y)**	-0.00232	-0.00233	-0.00232
	(A2 * B1 * B2 * C1 * !Y)	0.00282	0.00288	0.00283
	(A2 * B1 * B2 * !C1 * !Y)	-0.00233	-0.00232	-0.00232
	(A2 * B1 * B2 * !C1 * !Y)	0.00284	0.00283	0.00283
	(A2 * B1 * !B2 * C1 * !Y)	-0.00232	-0.00233	-0.00233
	(A2 * B1 * !B2 * C1 * !Y)	0.00273	0.00276	0.00274
	(A2 * !B1 * C1 * !Y)	-0.00232	-0.00233	-0.00233
	(A2 * !B1 * C1 * !Y)	0.00274	0.00276	0.00274
	(!A2 * B1 * B2 * C1 * !Y)	-0.00215	-0.00225	-0.00223
	(!A2 * B1 * B2 * C1 * !Y)	0.00292	0.00295	0.00293
	(!A2 * B1 * B2 * !C1 * !Y)	-0.00215	-0.00226	-0.00224
	(!A2 * B1 * B2 * !C1 * !Y)	0.00294	0.00296	0.00293
	(!A2 * B1 * !B2 * C1 * !Y)	-0.00216	-0.00226	-0.00224
	(!A2 * B1 * !B2 * C1 * !Y)	0.00294	0.00296	0.00293
	(!A2 * B1 * !B2 * !C1 * Y)	-0.00080	-0.00079	-0.00079
	(!A2 * B1 * !B2 * !C1 * Y)	0.00351	0.00351	0.00350
	(!A2 * !B1 * C1 * !Y)	-0.00215	-0.00226	-0.00224
	(!A2 * !B1 * C1 * !Y)	0.00294	0.00296	0.00293
	(!A2 * !B1 * !C1 * Y)	-0.00080	-0.00079	-0.00079
	(!A2 * !B1 * !C1 * Y)	0.00351	0.00351	0.00350

sky130_fd_sc_hs__a221oi_4	**(A2 * B1 * B2 * C1 * !Y)**	-0.00447	-0.00450	-0.00448
	(A2 * B1 * B2 * C1 * !Y)	0.00544	0.00554	0.00545
	(A2 * B1 * B2 * !C1 * !Y)	-0.00447	-0.00450	-0.00448
	(A2 * B1 * B2 * !C1 * !Y)	0.00541	0.00548	0.00543
	(A2 * B1 * !B2 * C1 * !Y)	-0.00449	-0.00448	-0.00447
	(A2 * B1 * !B2 * C1 * !Y)	0.00527	0.00528	0.00525
	(A2 * !B1 * C1 * !Y)	-0.00447	-0.00447	-0.00447
	(A2 * !B1 * C1 * !Y)	0.00524	0.00528	0.00525
	(!A2 * B1 * B2 * C1 * !Y)	-0.00410	-0.00431	-0.00427
	(!A2 * B1 * B2 * C1 * !Y)	0.00557	0.00564	0.00560
	(!A2 * B1 * B2 * !C1 * !Y)	-0.00411	-0.00429	-0.00427
	(!A2 * B1 * B2 * !C1 * !Y)	0.00560	0.00565	0.00558
	(!A2 * B1 * !B2 * C1 * !Y)	-0.00411	-0.00427	-0.00427
	(!A2 * B1 * !B2 * C1 * !Y)	0.00567	0.00571	0.00565
	(!A2 * B1 * !B2 * !C1 * Y)	-0.00143	-0.00142	-0.00141
	(!A2 * B1 * !B2 * !C1 * Y)	0.00675	0.00676	0.00673
	(!A2 * !B1 * C1 * !Y)	-0.00410	-0.00428	-0.00427
	(!A2 * !B1 * C1 * !Y)	0.00566	0.00571	0.00565
	(!A2 * !B1 * !C1 * Y)	-0.00143	-0.00142	-0.00142
	(!A2 * !B1 * !C1 * Y)	0.00675	0.00676	0.00673

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)**	0.00116	0.00118	0.00117
	(A1 * B1 * B2 * C1 * !Y)	-0.00131	-0.00138	-0.00137
	(A1 * B1 * B2 * !C1 * !Y)	0.00117	0.00118	0.00117
	(A1 * B1 * B2 * !C1 * !Y)	-0.00130	-0.00138	-0.00136
	(A1 * B1 * !B2 * C1 * !Y)	0.00117	0.00118	0.00117
	(A1 * B1 * !B2 * C1 * !Y)	-0.00125	-0.00133	-0.00132
	(A1 * !B1 * C1 * !Y)	0.00117	0.00118	0.00117
	(A1 * !B1 * C1 * !Y)	-0.00125	-0.00133	-0.00132
	(!A1 * B1 * B2 * !Y)	0.00110	0.00111	0.00110
	(!A1 * B1 * B2 * !Y)	-0.00140	-0.00141	-0.00140
	(!A1 * B1 * !B2 * C1 * !Y) + (!A1 * !B1 * C1 * !Y)	0.00110	0.00112	0.00110
	(!A1 * B1 * !B2 * C1 * !Y) + (!A1 * !B1 * C1 * !Y)	-0.00140	-0.00141	-0.00140
	(!A1 * B1 * !B2 * !C1 * Y)	0.00110	0.00111	0.00111
	(!A1 * B1 * !B2 * !C1 * Y)	-0.00139	-0.00140	-0.00140
	(!A1 * !B1 * !C1 * Y)	0.00110	0.00111	0.00111
	(!A1 * !B1 * !C1 * Y)	-0.00139	-0.00140	-0.00140

sky130_fd_sc_hs__a221oi_2	**(A1 * B1 * B2 * C1 * !Y)**	0.00221	0.00222	0.00221
	(A1 * B1 * B2 * C1 * !Y)	-0.00251	-0.00263	-0.00263
	(A1 * B1 * B2 * !C1 * !Y)	0.00222	0.00222	0.00221
	(A1 * B1 * B2 * !C1 * !Y)	-0.00249	-0.00263	-0.00263
	(A1 * B1 * !B2 * C1 * !Y)	0.00224	0.00225	0.00222
	(A1 * B1 * !B2 * C1 * !Y)	-0.00240	-0.00255	-0.00254
	(A1 * !B1 * C1 * !Y)	0.00224	0.00225	0.00222
	(A1 * !B1 * C1 * !Y)	-0.00240	-0.00255	-0.00254
	(!A1 * B1 * B2 * !Y)	0.00213	0.00214	0.00212
	(!A1 * B1 * B2 * !Y)	-0.00270	-0.00272	-0.00271
	(!A1 * B1 * !B2 * C1 * !Y) + (!A1 * !B1 * C1 * !Y)	0.00211	0.00215	0.00212
	(!A1 * B1 * !B2 * C1 * !Y) + (!A1 * !B1 * C1 * !Y)	-0.00270	-0.00272	-0.00271
	(!A1 * B1 * !B2 * !C1 * Y)	0.00201	0.00204	0.00202
	(!A1 * B1 * !B2 * !C1 * Y)	-0.00280	-0.00282	-0.00281
	(!A1 * !B1 * !C1 * Y)	0.00201	0.00204	0.00202
	(!A1 * !B1 * !C1 * Y)	-0.00280	-0.00282	-0.00281

sky130_fd_sc_hs__a221oi_4	**(A1 * B1 * B2 * C1 * !Y)**	0.00452	0.00456	0.00454
	(A1 * B1 * B2 * C1 * !Y)	-0.00524	-0.00551	-0.00547
	(A1 * B1 * B2 * !C1 * !Y)	0.00454	0.00456	0.00454
	(A1 * B1 * B2 * !C1 * !Y)	-0.00517	-0.00548	-0.00546
	(A1 * B1 * !B2 * C1 * !Y)	0.00455	0.00453	0.00453
	(A1 * B1 * !B2 * C1 * !Y)	-0.00493	-0.00529	-0.00528
	(A1 * !B1 * C1 * !Y)	0.00455	0.00453	0.00453
	(A1 * !B1 * C1 * !Y)	-0.00493	-0.00529	-0.00528
	(!A1 * B1 * B2 * !Y)	0.00431	0.00436	0.00432
	(!A1 * B1 * B2 * !Y)	-0.00559	-0.00564	-0.00561
	(!A1 * B1 * !B2 * C1 * !Y) + (!A1 * !B1 * C1 * !Y)	0.00431	0.00434	0.00433
	(!A1 * B1 * !B2 * C1 * !Y) + (!A1 * !B1 * C1 * !Y)	-0.00566	-0.00568	-0.00567
	(!A1 * B1 * !B2 * !C1 * Y)	0.00402	0.00402	0.00404
	(!A1 * B1 * !B2 * !C1 * Y)	-0.00594	-0.00594	-0.00595
	(!A1 * !B1 * !C1 * Y)	0.00403	0.00405	0.00404
	(!A1 * !B1 * !C1 * Y)	-0.00594	-0.00596	-0.00595

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)**	-0.00116	-0.00117	-0.00116
	(A1 * B1 * B2 * C1 * !Y)	0.00137	0.00138	0.00137
	(A1 * B1 * B2 * !C1 * !Y)	-0.00116	-0.00117	-0.00116
	(A1 * B1 * B2 * !C1 * !Y)	0.00137	0.00138	0.00136
	(A1 * B1 * !B2 * C1 * !Y)	-0.00117	-0.00117	-0.00117
	(A1 * B1 * !B2 * C1 * !Y)	0.00132	0.00133	0.00132
	(A1 * !B1 * C1 * !Y)	-0.00117	-0.00117	-0.00117
	(A1 * !B1 * C1 * !Y)	0.00132	0.00133	0.00132
	(!A1 * B1 * B2 * !Y)	-0.00109	-0.00111	-0.00110
	(!A1 * B1 * B2 * !Y)	0.00141	0.00142	0.00141
	(!A1 * B1 * !B2 * C1 * !Y) + (!A1 * !B1 * C1 * !Y)	-0.00109	-0.00111	-0.00110
	(!A1 * B1 * !B2 * C1 * !Y) + (!A1 * !B1 * C1 * !Y)	0.00141	0.00142	0.00141
	(!A1 * B1 * !B2 * !C1 * Y)	-0.00106	-0.00111	-0.00111
	(!A1 * B1 * !B2 * !C1 * Y)	0.00145	0.00143	0.00141
	(!A1 * !B1 * !C1 * Y)	-0.00106	-0.00111	-0.00111
	(!A1 * !B1 * !C1 * Y)	0.00145	0.00143	0.00141

sky130_fd_sc_hs__a221oi_2	**(A1 * B1 * B2 * C1 * !Y)**	-0.00220	-0.00221	-0.00221
	(A1 * B1 * B2 * C1 * !Y)	0.00262	0.00263	0.00263
	(A1 * B1 * B2 * !C1 * !Y)	-0.00220	-0.00221	-0.00221
	(A1 * B1 * B2 * !C1 * !Y)	0.00262	0.00263	0.00263
	(A1 * B1 * !B2 * C1 * !Y)	-0.00221	-0.00222	-0.00221
	(A1 * B1 * !B2 * C1 * !Y)	0.00253	0.00255	0.00254
	(A1 * !B1 * C1 * !Y)	-0.00221	-0.00222	-0.00221
	(A1 * !B1 * C1 * !Y)	0.00253	0.00255	0.00254
	(!A1 * B1 * B2 * !Y)	-0.00205	-0.00213	-0.00212
	(!A1 * B1 * B2 * !Y)	0.00270	0.00273	0.00271
	(!A1 * B1 * !B2 * C1 * !Y) + (!A1 * !B1 * C1 * !Y)	-0.00205	-0.00213	-0.00212
	(!A1 * B1 * !B2 * C1 * !Y) + (!A1 * !B1 * C1 * !Y)	0.00270	0.00273	0.00272
	(!A1 * B1 * !B2 * !C1 * Y)	-0.00190	-0.00202	-0.00202
	(!A1 * B1 * !B2 * !C1 * Y)	0.00286	0.00284	0.00282
	(!A1 * !B1 * !C1 * Y)	-0.00190	-0.00202	-0.00202
	(!A1 * !B1 * !C1 * Y)	0.00286	0.00284	0.00282

sky130_fd_sc_hs__a221oi_4	**(A1 * B1 * B2 * C1 * !Y)**	-0.00452	-0.00456	-0.00453
	(A1 * B1 * B2 * C1 * !Y)	0.00549	0.00556	0.00547
	(A1 * B1 * B2 * !C1 * !Y)	-0.00454	-0.00456	-0.00453
	(A1 * B1 * B2 * !C1 * !Y)	0.00547	0.00554	0.00546
	(A1 * B1 * !B2 * C1 * !Y)	-0.00454	-0.00453	-0.00452
	(A1 * B1 * !B2 * C1 * !Y)	0.00530	0.00529	0.00528
	(A1 * !B1 * C1 * !Y)	-0.00452	-0.00453	-0.00452
	(A1 * !B1 * C1 * !Y)	0.00527	0.00529	0.00528
	(!A1 * B1 * B2 * !Y)	-0.00418	-0.00435	-0.00432
	(!A1 * B1 * B2 * !Y)	0.00560	0.00565	0.00562
	(!A1 * B1 * !B2 * C1 * !Y) + (!A1 * !B1 * C1 * !Y)	-0.00418	-0.00434	-0.00433
	(!A1 * B1 * !B2 * C1 * !Y) + (!A1 * !B1 * C1 * !Y)	0.00567	0.00571	0.00569
	(!A1 * B1 * !B2 * !C1 * Y)	-0.00380	-0.00402	-0.00404
	(!A1 * B1 * !B2 * !C1 * Y)	0.00607	0.00602	0.00597
	(!A1 * !B1 * !C1 * Y)	-0.00380	-0.00405	-0.00404
	(!A1 * !B1 * !C1 * Y)	0.00607	0.00602	0.00597

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)**	0.00115	0.00116	0.00113
	(A1 * A2 * B2 * C1 * !Y)	-0.00102	-0.00103	-0.00102
	(A1 * A2 * B2 * !C1 * !Y)	0.00112	0.00114	0.00112
	(A1 * A2 * B2 * !C1 * !Y)	-0.00080	-0.00081	-0.00080
	(A1 * A2 * !B2 * C1 * !Y)	0.00106	0.00107	0.00107
	(A1 * A2 * !B2 * C1 * !Y)	-0.00096	-0.00096	-0.00096
	(A1 * A2 * !B2 * !C1 * !Y)	0.00106	0.00107	0.00106
	(A1 * A2 * !B2 * !C1 * !Y)	-0.00080	-0.00080	-0.00080
	(A1 * !A2 * B2 * C1 * !Y)	0.00121	0.00113	0.00112
	(A1 * !A2 * B2 * C1 * !Y)	-0.00123	-0.00136	-0.00135
	(A1 * !A2 * !B2 * C1 * !Y)	0.00105	0.00106	0.00106
	(A1 * !A2 * !B2 * C1 * !Y)	-0.00138	-0.00139	-0.00139
	(A1 * !A2 * !B2 * !C1 * Y)	0.00037	0.00037	0.00036
	(A1 * !A2 * !B2 * !C1 * Y)	-0.00161	-0.00162	-0.00164
	(!A1 * B2 * C1 * !Y)	0.00121	0.00113	0.00112
	(!A1 * B2 * C1 * !Y)	-0.00124	-0.00136	-0.00135
	(!A1 * !B2 * C1 * !Y)	0.00105	0.00106	0.00106
	(!A1 * !B2 * C1 * !Y)	-0.00138	-0.00139	-0.00139
	(!A1 * !B2 * !C1 * Y)	0.00037	0.00037	0.00036
	(!A1 * !B2 * !C1 * Y)	-0.00161	-0.00162	-0.00164

sky130_fd_sc_hs__a221oi_2	**(A1 * A2 * B2 * C1 * !Y)**	0.00235	0.00237	0.00229
	(A1 * A2 * B2 * C1 * !Y)	-0.00205	-0.00206	-0.00205
	(A1 * A2 * B2 * !C1 * !Y)	0.00227	0.00231	0.00227
	(A1 * A2 * B2 * !C1 * !Y)	-0.00167	-0.00169	-0.00166
	(A1 * A2 * !B2 * C1 * !Y)	0.00217	0.00218	0.00217
	(A1 * A2 * !B2 * C1 * !Y)	-0.00193	-0.00194	-0.00193
	(A1 * A2 * !B2 * !C1 * !Y)	0.00216	0.00218	0.00216
	(A1 * A2 * !B2 * !C1 * !Y)	-0.00165	-0.00167	-0.00166
	(A1 * !A2 * B2 * C1 * !Y)	0.00252	0.00229	0.00226
	(A1 * !A2 * B2 * C1 * !Y)	-0.00252	-0.00282	-0.00281
	(A1 * !A2 * !B2 * C1 * !Y)	0.00215	0.00217	0.00215
	(A1 * !A2 * !B2 * C1 * !Y)	-0.00288	-0.00289	-0.00288
	(A1 * !A2 * !B2 * !C1 * Y)	0.00077	0.00077	0.00073
	(A1 * !A2 * !B2 * !C1 * Y)	-0.00337	-0.00339	-0.00343
	(!A1 * B2 * C1 * !Y)	0.00250	0.00229	0.00226
	(!A1 * B2 * C1 * !Y)	-0.00249	-0.00282	-0.00281
	(!A1 * !B2 * C1 * !Y)	0.00215	0.00217	0.00215
	(!A1 * !B2 * C1 * !Y)	-0.00287	-0.00289	-0.00288
	(!A1 * !B2 * !C1 * Y)	0.00077	0.00076	0.00073
	(!A1 * !B2 * !C1 * Y)	-0.00337	-0.00336	-0.00343

sky130_fd_sc_hs__a221oi_4	**(A1 * A2 * B2 * C1 * !Y)**	0.00466	0.00468	0.00451
	(A1 * A2 * B2 * C1 * !Y)	-0.00394	-0.00393	-0.00391
	(A1 * A2 * B2 * !C1 * !Y)	0.00451	0.00457	0.00447
	(A1 * A2 * B2 * !C1 * !Y)	-0.00316	-0.00319	-0.00315
	(A1 * A2 * !B2 * C1 * !Y)	0.00426	0.00428	0.00425
	(A1 * A2 * !B2 * C1 * !Y)	-0.00367	-0.00373	-0.00369
	(A1 * A2 * !B2 * !C1 * !Y)	0.00425	0.00428	0.00425
	(A1 * A2 * !B2 * !C1 * !Y)	-0.00312	-0.00314	-0.00314
	(A1 * !A2 * B2 * C1 * !Y)	0.00504	0.00452	0.00446
	(A1 * !A2 * B2 * C1 * !Y)	-0.00461	-0.00537	-0.00537
	(A1 * !A2 * !B2 * C1 * !Y)	0.00422	0.00426	0.00423
	(A1 * !A2 * !B2 * C1 * !Y)	-0.00558	-0.00561	-0.00559
	(A1 * !A2 * !B2 * !C1 * Y)	0.00152	0.00153	0.00144
	(A1 * !A2 * !B2 * !C1 * Y)	-0.00648	-0.00653	-0.00663
	(!A1 * B2 * C1 * !Y)	0.00503	0.00451	0.00446
	(!A1 * B2 * C1 * !Y)	-0.00464	-0.00537	-0.00537
	(!A1 * !B2 * C1 * !Y)	0.00424	0.00427	0.00423
	(!A1 * !B2 * C1 * !Y)	-0.00560	-0.00561	-0.00559
	(!A1 * !B2 * !C1 * Y)	0.00153	0.00153	0.00145
	(!A1 * !B2 * !C1 * Y)	-0.00649	-0.00653	-0.00663

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)**	-0.00112	-0.00113	-0.00113
	(A1 * A2 * B2 * C1 * !Y)	0.00102	0.00103	0.00102
	(A1 * A2 * B2 * !C1 * !Y)	-0.00104	-0.00104	-0.00107
	(A1 * A2 * B2 * !C1 * !Y)	0.00088	0.00087	0.00086
	(A1 * A2 * !B2 * C1 * !Y)	-0.00104	-0.00107	-0.00107
	(A1 * A2 * !B2 * C1 * !Y)	0.00096	0.00096	0.00096
	(A1 * A2 * !B2 * !C1 * !Y)	-0.00104	-0.00107	-0.00106
	(A1 * A2 * !B2 * !C1 * !Y)	0.00080	0.00081	0.00080
	(A1 * !A2 * B2 * C1 * !Y)	-0.00112	-0.00112	-0.00112
	(A1 * !A2 * B2 * C1 * !Y)	0.00136	0.00136	0.00135
	(A1 * !A2 * !B2 * C1 * !Y)	-0.00103	-0.00106	-0.00106
	(A1 * !A2 * !B2 * C1 * !Y)	0.00139	0.00140	0.00139
	(A1 * !A2 * !B2 * !C1 * Y)	-0.00035	-0.00035	-0.00035
	(A1 * !A2 * !B2 * !C1 * Y)	0.00164	0.00164	0.00164
	(!A1 * B2 * C1 * !Y)	-0.00112	-0.00112	-0.00112
	(!A1 * B2 * C1 * !Y)	0.00136	0.00136	0.00135
	(!A1 * !B2 * C1 * !Y)	-0.00103	-0.00106	-0.00106
	(!A1 * !B2 * C1 * !Y)	0.00138	0.00140	0.00139
	(!A1 * !B2 * !C1 * Y)	-0.00035	-0.00035	-0.00035
	(!A1 * !B2 * !C1 * Y)	0.00163	0.00164	0.00164

sky130_fd_sc_hs__a221oi_2	**(A1 * A2 * B2 * C1 * !Y)**	-0.00227	-0.00228	-0.00227
	(A1 * A2 * B2 * C1 * !Y)	0.00205	0.00206	0.00205
	(A1 * A2 * B2 * !C1 * !Y)	-0.00216	-0.00218	-0.00218
	(A1 * A2 * B2 * !C1 * !Y)	0.00175	0.00176	0.00176
	(A1 * A2 * !B2 * C1 * !Y)	-0.00209	-0.00218	-0.00217
	(A1 * A2 * !B2 * C1 * !Y)	0.00193	0.00194	0.00193
	(A1 * A2 * !B2 * !C1 * !Y)	-0.00209	-0.00218	-0.00216
	(A1 * A2 * !B2 * !C1 * !Y)	0.00167	0.00167	0.00166
	(A1 * !A2 * B2 * C1 * !Y)	-0.00225	-0.00227	-0.00226
	(A1 * !A2 * B2 * C1 * !Y)	0.00279	0.00282	0.00281
	(A1 * !A2 * !B2 * C1 * !Y)	-0.00208	-0.00217	-0.00215
	(A1 * !A2 * !B2 * C1 * !Y)	0.00289	0.00291	0.00288
	(A1 * !A2 * !B2 * !C1 * Y)	-0.00072	-0.00071	-0.00071
	(A1 * !A2 * !B2 * !C1 * Y)	0.00344	0.00343	0.00343
	(!A1 * B2 * C1 * !Y)	-0.00226	-0.00227	-0.00226
	(!A1 * B2 * C1 * !Y)	0.00280	0.00282	0.00281
	(!A1 * !B2 * C1 * !Y)	-0.00207	-0.00217	-0.00215
	(!A1 * !B2 * C1 * !Y)	0.00287	0.00291	0.00288
	(!A1 * !B2 * !C1 * Y)	-0.00072	-0.00071	-0.00071
	(!A1 * !B2 * !C1 * Y)	0.00344	0.00344	0.00343

sky130_fd_sc_hs__a221oi_4	**(A1 * A2 * B2 * C1 * !Y)**	-0.00448	-0.00448	-0.00447
	(A1 * A2 * B2 * C1 * !Y)	0.00394	0.00393	0.00391
	(A1 * A2 * B2 * !C1 * !Y)	-0.00431	-0.00434	-0.00432
	(A1 * A2 * B2 * !C1 * !Y)	0.00336	0.00338	0.00332
	(A1 * A2 * !B2 * C1 * !Y)	-0.00405	-0.00428	-0.00425
	(A1 * A2 * !B2 * C1 * !Y)	0.00367	0.00373	0.00369
	(A1 * A2 * !B2 * !C1 * !Y)	-0.00406	-0.00428	-0.00425
	(A1 * A2 * !B2 * !C1 * !Y)	0.00316	0.00317	0.00314
	(A1 * !A2 * B2 * C1 * !Y)	-0.00443	-0.00445	-0.00443
	(A1 * !A2 * B2 * C1 * !Y)	0.00533	0.00537	0.00537
	(A1 * !A2 * !B2 * C1 * !Y)	-0.00405	-0.00426	-0.00423
	(A1 * !A2 * !B2 * C1 * !Y)	0.00561	0.00564	0.00560
	(A1 * !A2 * !B2 * !C1 * Y)	-0.00141	-0.00140	-0.00140
	(A1 * !A2 * !B2 * !C1 * Y)	0.00665	0.00664	0.00663
	(!A1 * B2 * C1 * !Y)	-0.00444	-0.00445	-0.00443
	(!A1 * B2 * C1 * !Y)	0.00534	0.00537	0.00537
	(!A1 * !B2 * C1 * !Y)	-0.00404	-0.00427	-0.00423
	(!A1 * !B2 * C1 * !Y)	0.00561	0.00565	0.00560
	(!A1 * !B2 * !C1 * Y)	-0.00142	-0.00141	-0.00140
	(!A1 * !B2 * !C1 * Y)	0.00665	0.00664	0.00663

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)**	0.00119	0.00120	0.00117
	(A1 * A2 * B1 * C1 * !Y)	-0.00105	-0.00106	-0.00105
	(A1 * A2 * B1 * !C1 * !Y)	0.00116	0.00118	0.00116
	(A1 * A2 * B1 * !C1 * !Y)	-0.00083	-0.00085	-0.00083
	(A1 * A2 * !B1 * C1 * !Y)	0.00110	0.00111	0.00111
	(A1 * A2 * !B1 * C1 * !Y)	-0.00099	-0.00099	-0.00099
	(A1 * A2 * !B1 * !C1 * !Y)	0.00110	0.00112	0.00110
	(A1 * A2 * !B1 * !C1 * !Y)	-0.00083	-0.00084	-0.00083
	(A1 * !A2 * B1 * C1 * !Y)	0.00126	0.00117	0.00116
	(A1 * !A2 * B1 * C1 * !Y)	-0.00126	-0.00139	-0.00140
	(A1 * !A2 * !B1 * C1 * !Y) + (!A1 * !B1 * C1 * !Y)	0.00109	0.00110	0.00109
	(A1 * !A2 * !B1 * C1 * !Y) + (!A1 * !B1 * C1 * !Y)	-0.00143	-0.00143	-0.00143
	(A1 * !A2 * !B1 * !C1 * Y)	0.00101	0.00102	0.00101
	(A1 * !A2 * !B1 * !C1 * Y)	-0.00151	-0.00152	-0.00151
	(!A1 * B1 * C1 * !Y)	0.00126	0.00117	0.00116
	(!A1 * B1 * C1 * !Y)	-0.00126	-0.00139	-0.00140
	(!A1 * !B1 * !C1 * Y)	0.00101	0.00102	0.00101
	(!A1 * !B1 * !C1 * Y)	-0.00151	-0.00152	-0.00151

sky130_fd_sc_hs__a221oi_2	**(A1 * A2 * B1 * C1 * !Y)**	0.00224	0.00226	0.00223
	(A1 * A2 * B1 * C1 * !Y)	-0.00193	-0.00194	-0.00193
	(A1 * A2 * B1 * !C1 * !Y)	0.00220	0.00225	0.00221
	(A1 * A2 * B1 * !C1 * !Y)	-0.00152	-0.00155	-0.00153
	(A1 * A2 * !B1 * C1 * !Y)	0.00210	0.00215	0.00211
	(A1 * A2 * !B1 * C1 * !Y)	-0.00181	-0.00183	-0.00181
	(A1 * A2 * !B1 * !C1 * !Y)	0.00209	0.00214	0.00210
	(A1 * A2 * !B1 * !C1 * !Y)	-0.00151	-0.00153	-0.00152
	(A1 * !A2 * B1 * C1 * !Y)	0.00242	0.00223	0.00220
	(A1 * !A2 * B1 * C1 * !Y)	-0.00237	-0.00264	-0.00263
	(A1 * !A2 * !B1 * C1 * !Y) + (!A1 * !B1 * C1 * !Y)	0.00208	0.00211	0.00209
	(A1 * !A2 * !B1 * C1 * !Y) + (!A1 * !B1 * C1 * !Y)	-0.00268	-0.00271	-0.00269
	(A1 * !A2 * !B1 * !C1 * Y)	0.00201	0.00204	0.00202
	(A1 * !A2 * !B1 * !C1 * Y)	-0.00276	-0.00278	-0.00276
	(!A1 * B1 * C1 * !Y)	0.00242	0.00222	0.00220
	(!A1 * B1 * C1 * !Y)	-0.00238	-0.00264	-0.00263
	(!A1 * !B1 * !C1 * Y)	0.00201	0.00203	0.00202
	(!A1 * !B1 * !C1 * Y)	-0.00276	-0.00278	-0.00276

sky130_fd_sc_hs__a221oi_4	**(A1 * A2 * B1 * C1 * !Y)**	0.00469	0.00469	0.00452
	(A1 * A2 * B1 * C1 * !Y)	-0.00394	-0.00394	-0.00392
	(A1 * A2 * B1 * !C1 * !Y)	0.00448	0.00450	0.00448
	(A1 * A2 * B1 * !C1 * !Y)	-0.00312	-0.00313	-0.00315
	(A1 * A2 * !B1 * C1 * !Y)	0.00426	0.00434	0.00426
	(A1 * A2 * !B1 * C1 * !Y)	-0.00368	-0.00371	-0.00369
	(A1 * A2 * !B1 * !C1 * !Y)	0.00426	0.00433	0.00424
	(A1 * A2 * !B1 * !C1 * !Y)	-0.00313	-0.00315	-0.00314
	(A1 * !A2 * B1 * C1 * !Y)	0.00508	0.00454	0.00447
	(A1 * !A2 * B1 * C1 * !Y)	-0.00464	-0.00537	-0.00537
	(A1 * !A2 * !B1 * C1 * !Y) + (!A1 * !B1 * C1 * !Y)	0.00420	0.00426	0.00421
	(A1 * !A2 * !B1 * C1 * !Y) + (!A1 * !B1 * C1 * !Y)	-0.00557	-0.00561	-0.00558
	(A1 * !A2 * !B1 * !C1 * Y)	0.00420	0.00427	0.00422
	(A1 * !A2 * !B1 * !C1 * Y)	-0.00557	-0.00561	-0.00558
	(!A1 * B1 * C1 * !Y)	0.00508	0.00454	0.00447
	(!A1 * B1 * C1 * !Y)	-0.00466	-0.00537	-0.00537
	(!A1 * !B1 * !C1 * Y)	0.00421	0.00427	0.00422
	(!A1 * !B1 * !C1 * Y)	-0.00557	-0.00561	-0.00558

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)**	-0.00116	-0.00117	-0.00116
	(A1 * A2 * B1 * C1 * !Y)	0.00105	0.00106	0.00105
	(A1 * A2 * B1 * !C1 * !Y)	-0.00109	-0.00110	-0.00111
	(A1 * A2 * B1 * !C1 * !Y)	0.00090	0.00090	0.00089
	(A1 * A2 * !B1 * C1 * !Y)	-0.00107	-0.00111	-0.00111
	(A1 * A2 * !B1 * C1 * !Y)	0.00099	0.00099	0.00099
	(A1 * A2 * !B1 * !C1 * !Y)	-0.00107	-0.00110	-0.00110
	(A1 * A2 * !B1 * !C1 * !Y)	0.00084	0.00084	0.00083
	(A1 * !A2 * B1 * C1 * !Y)	-0.00116	-0.00115	-0.00115
	(A1 * !A2 * B1 * C1 * !Y)	0.00140	0.00139	0.00140
	(A1 * !A2 * !B1 * C1 * !Y) + (!A1 * !B1 * C1 * !Y)	-0.00107	-0.00110	-0.00109
	(A1 * !A2 * !B1 * C1 * !Y) + (!A1 * !B1 * C1 * !Y)	0.00143	0.00144	0.00143
	(A1 * !A2 * !B1 * !C1 * Y)	-0.00096	-0.00102	-0.00101
	(A1 * !A2 * !B1 * !C1 * Y)	0.00156	0.00152	0.00151
	(!A1 * B1 * C1 * !Y)	-0.00116	-0.00115	-0.00115
	(!A1 * B1 * C1 * !Y)	0.00140	0.00139	0.00140
	(!A1 * !B1 * !C1 * Y)	-0.00096	-0.00102	-0.00101
	(!A1 * !B1 * !C1 * Y)	0.00156	0.00152	0.00151

sky130_fd_sc_hs__a221oi_2	**(A1 * A2 * B1 * C1 * !Y)**	-0.00221	-0.00222	-0.00221
	(A1 * A2 * B1 * C1 * !Y)	0.00193	0.00194	0.00193
	(A1 * A2 * B1 * !C1 * !Y)	-0.00207	-0.00209	-0.00211
	(A1 * A2 * B1 * !C1 * !Y)	0.00162	0.00163	0.00162
	(A1 * A2 * !B1 * C1 * !Y)	-0.00203	-0.00211	-0.00211
	(A1 * A2 * !B1 * C1 * !Y)	0.00181	0.00183	0.00181
	(A1 * A2 * !B1 * !C1 * !Y)	-0.00202	-0.00210	-0.00210
	(A1 * A2 * !B1 * !C1 * !Y)	0.00152	0.00153	0.00152
	(A1 * !A2 * B1 * C1 * !Y)	-0.00219	-0.00220	-0.00219
	(A1 * !A2 * B1 * C1 * !Y)	0.00261	0.00264	0.00263
	(A1 * !A2 * !B1 * C1 * !Y) + (!A1 * !B1 * C1 * !Y)	-0.00202	-0.00210	-0.00209
	(A1 * !A2 * !B1 * C1 * !Y) + (!A1 * !B1 * C1 * !Y)	0.00269	0.00271	0.00270
	(A1 * !A2 * !B1 * !C1 * Y)	-0.00188	-0.00202	-0.00202
	(A1 * !A2 * !B1 * !C1 * Y)	0.00284	0.00279	0.00277
	(!A1 * B1 * C1 * !Y)	-0.00219	-0.00220	-0.00219
	(!A1 * B1 * C1 * !Y)	0.00262	0.00264	0.00263
	(!A1 * !B1 * !C1 * Y)	-0.00188	-0.00203	-0.00202
	(!A1 * !B1 * !C1 * Y)	0.00284	0.00280	0.00277

sky130_fd_sc_hs__a221oi_4	**(A1 * A2 * B1 * C1 * !Y)**	-0.00449	-0.00450	-0.00448
	(A1 * A2 * B1 * C1 * !Y)	0.00394	0.00394	0.00392
	(A1 * A2 * B1 * !C1 * !Y)	-0.00431	-0.00435	-0.00432
	(A1 * A2 * B1 * !C1 * !Y)	0.00337	0.00340	0.00332
	(A1 * A2 * !B1 * C1 * !Y)	-0.00409	-0.00426	-0.00426
	(A1 * A2 * !B1 * C1 * !Y)	0.00368	0.00371	0.00369
	(A1 * A2 * !B1 * !C1 * !Y)	-0.00408	-0.00425	-0.00424
	(A1 * A2 * !B1 * !C1 * !Y)	0.00313	0.00315	0.00314
	(A1 * !A2 * B1 * C1 * !Y)	-0.00445	-0.00446	-0.00444
	(A1 * !A2 * B1 * C1 * !Y)	0.00534	0.00537	0.00537
	(A1 * !A2 * !B1 * C1 * !Y) + (!A1 * !B1 * C1 * !Y)	-0.00407	-0.00425	-0.00421
	(A1 * !A2 * !B1 * C1 * !Y) + (!A1 * !B1 * C1 * !Y)	0.00557	0.00562	0.00559
	(A1 * !A2 * !B1 * !C1 * Y)	-0.00394	-0.00423	-0.00422
	(A1 * !A2 * !B1 * !C1 * Y)	0.00573	0.00564	0.00559
	(!A1 * B1 * C1 * !Y)	-0.00445	-0.00446	-0.00444
	(!A1 * B1 * C1 * !Y)	0.00534	0.00537	0.00537
	(!A1 * !B1 * !C1 * Y)	-0.00394	-0.00423	-0.00422
	(!A1 * !B1 * !C1 * Y)	0.00573	0.00564	0.00559

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)	0.00134	0.00137	0.00135
	(A1 * B1 * B2 * !Y)	-0.00076	-0.00077	-0.00076
	(A1 * A2 * B1 * !B2 * !Y)	0.00134	0.00137	0.00135
	(A1 * A2 * B1 * !B2 * !Y)	-0.00076	-0.00077	-0.00076
	(A1 * A2 * !B1 * !Y)	0.00134	0.00134	0.00135
	(A1 * A2 * !B1 * !Y)	-0.00075	-0.00075	-0.00076
	(!A1 * B1 * B2 * !Y)	0.00134	0.00135	0.00135
	(!A1 * B1 * B2 * !Y)	-0.00076	-0.00076	-0.00076
sky130_fd_sc_hs__a221oi_2	(A1 * B1 * B2 * !Y)	0.00252	0.00256	0.00252
	(A1 * B1 * B2 * !Y)	-0.00139	-0.00141	-0.00139
	(A1 * A2 * B1 * !B2 * !Y)	0.00251	0.00251	0.00252
	(A1 * A2 * B1 * !B2 * !Y)	-0.00139	-0.00139	-0.00139
	(A1 * A2 * !B1 * !Y)	0.00252	0.00252	0.00252
	(A1 * A2 * !B1 * !Y)	-0.00139	-0.00139	-0.00139
	(!A1 * B1 * B2 * !Y)	0.00252	0.00252	0.00252
	(!A1 * B1 * B2 * !Y)	-0.00139	-0.00139	-0.00139
sky130_fd_sc_hs__a221oi_4	(A1 * B1 * B2 * !Y)	0.00497	0.00507	0.00498
	(A1 * B1 * B2 * !Y)	-0.00279	-0.00284	-0.00279
	(A1 * A2 * B1 * !B2 * !Y)	0.00496	0.00500	0.00498
	(A1 * A2 * B1 * !B2 * !Y)	-0.00278	-0.00280	-0.00279
	(A1 * A2 * !B1 * !Y)	0.00497	0.00501	0.00498
	(A1 * A2 * !B1 * !Y)	-0.00279	-0.00280	-0.00279
	(!A1 * B1 * B2 * !Y)	0.00497	0.00501	0.00498
	(!A1 * B1 * B2 * !Y)	-0.00280	-0.00282	-0.00280

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)	-0.00124	-0.00125	-0.00133
	(A1 * B1 * B2 * !Y)	0.00086	0.00086	0.00078
	(A1 * A2 * B1 * !B2 * !Y)	-0.00107	-0.00109	-0.00129
	(A1 * A2 * B1 * !B2 * !Y)	0.00097	0.00097	0.00081
	(A1 * A2 * !B1 * !Y)	-0.00107	-0.00109	-0.00129
	(A1 * A2 * !B1 * !Y)	0.00096	0.00097	0.00081
	(!A1 * B1 * B2 * !Y)	-0.00123	-0.00125	-0.00133
	(!A1 * B1 * B2 * !Y)	0.00086	0.00086	0.00079
sky130_fd_sc_hs__a221oi_2	(A1 * B1 * B2 * !Y)	-0.00230	-0.00233	-0.00249
	(A1 * B1 * B2 * !Y)	0.00157	0.00158	0.00144
	(A1 * A2 * B1 * !B2 * !Y)	-0.00202	-0.00205	-0.00243
	(A1 * A2 * B1 * !B2 * !Y)	0.00174	0.00174	0.00147
	(A1 * A2 * !B1 * !Y)	-0.00203	-0.00205	-0.00243
	(A1 * A2 * !B1 * !Y)	0.00175	0.00174	0.00147
	(!A1 * B1 * B2 * !Y)	-0.00230	-0.00232	-0.00249
	(!A1 * B1 * B2 * !Y)	0.00158	0.00158	0.00144
sky130_fd_sc_hs__a221oi_4	(A1 * B1 * B2 * !Y)	-0.00459	-0.00461	-0.00493
	(A1 * B1 * B2 * !Y)	0.00308	0.00307	0.00287
	(A1 * A2 * B1 * !B2 * !Y)	-0.00403	-0.00405	-0.00480
	(A1 * A2 * B1 * !B2 * !Y)	0.00349	0.00347	0.00297
	(A1 * A2 * !B1 * !Y)	-0.00404	-0.00407	-0.00480
	(A1 * A2 * !B1 * !Y)	0.00349	0.00348	0.00297
	(!A1 * B1 * B2 * !Y)	-0.00459	-0.00461	-0.00493
	(!A1 * B1 * B2 * !Y)	0.00310	0.00309	0.00288

SKY130_FD_SC_HS__A221Ox

sky130_fd_sc_hs_tt_1.50v_25C.ccs
Cell Library: Process , Voltage
1.50, 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	0.00254	0.00263	0.00252	0.00252	0.00249	0.86057
sky130_fd_sc_hs__a221o_2	0.00266	0.00272	0.00273	0.00273	0.00264	1.66225
sky130_fd_sc_hs__a221o_4	0.00468	0.00466	0.00483	0.00492	0.00478	2.68347

Leakage Information

Cell Name	Leakage(nW)		
	Min.	**Avg**	**Max.**
sky130_fd_sc_hs__a221o_1	0.00000	0.04720	0.07896
sky130_fd_sc_hs__a221o_2	0.00000	0.05794	0.08361
sky130_fd_sc_hs__a221o_4	0.00000	0.11782	0.16722

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)	0.11074	0.77949	6.97276
	A2->X (RR)	0.11561	0.77652	7.04855
	B1->X (RR)	0.10663	0.75689	6.87244
	B2->X (RR)	0.11131	0.75732	6.95192
	C1->X (RR)	0.08047	0.70407	6.80439
sky130_fd_sc_hs__a221o_2	A1->X (RR)	0.11419	0.69976	7.12245
	A2->X (RR)	0.11927	0.69083	7.17184
	B1->X (RR)	0.11080	0.68197	7.03939
	B2->X (RR)	0.11532	0.67552	7.09363
	C1->X (RR)	0.08151	0.62635	6.94665
sky130_fd_sc_hs__a221o_4	A1->X (RR)	0.13527	0.66524	6.95132
	A2->X (RR)	0.14173	0.64071	6.95517
	B1->X (RR)	0.12790	0.63583	6.81699
	B2->X (RR)	0.13535	0.61972	6.84383
	C1->X (RR)	0.08170	0.54682	6.65446

Delay(ns) to X falling :

Cell Name	Timing Arc(Dir)	Delay(ns)		
		First	Mid	Last
sky130_fd_sc_hs__a221o_1	A1->X (FF)	0.35801	0.92022	5.04149
	A2->X (FF)	0.39255	0.96021	5.13759
	B1->X (FF)	0.32985	0.89586	5.10363
	B2->X (FF)	0.35905	0.93563	5.22702
	C1->X (FF)	0.28687	0.84951	4.93204
sky130_fd_sc_hs__a221o_2	A1->X (FF)	0.45305	1.02057	5.48274
	A2->X (FF)	0.49026	1.06728	5.57118
	B1->X (FF)	0.43475	1.00833	5.61526
	B2->X (FF)	0.45932	1.04599	5.73452
	C1->X (FF)	0.38819	0.95526	5.43789
sky130_fd_sc_hs__a221o_4	A1->X (FF)	0.45403	0.95981	4.98291
	A2->X (FF)	0.49899	1.01810	5.12224
	B1->X (FF)	0.42958	0.94764	5.15970
	B2->X (FF)	0.46746	0.99911	5.28674
	C1->X (FF)	0.38157	0.89316	4.99053

Power Information

Internal switching power(pJ) to X rising :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__a221o_1	A1	0.01015	0.01005	0.01290
	A1	0.00489	0.00479	0.00766
	A2	0.01091	0.01078	0.01246
	A2	0.00491	0.00477	0.00650
	B1	0.00822	0.00821	0.01119
	B1	0.00356	0.00356	0.00772
	B2	0.00890	0.00888	0.01091
	B2	0.00363	0.00359	0.00591
	C1	0.00716	0.00717	0.01165
	C1	0.00243	0.00243	0.00789
sky130_fd_sc_hs__a221o_2	A1	0.01230	0.01230	0.01486
	A1	0.00676	0.00677	0.00938
	A2	0.01314	0.01311	0.01465
	A2	0.00678	0.00675	0.00834
	B1	0.01060	0.01083	0.01360
	B1	0.00543	0.00567	0.00853
	B2	0.01138	0.01163	0.01353
	B2	0.00553	0.00579	0.00780
	C1	0.00954	0.00978	0.01383
	C1	0.00436	0.00457	0.00948

sky130_fd_sc_hs__a221o_4	**A1**	0.02411	0.02433	0.02998
	A1	0.01419	0.01448	0.02007
	A2	0.02547	0.02580	0.02917
	A2	0.01422	0.01452	0.01786
	B1	0.02039	0.02081	0.02655
	B1	0.01136	0.01178	0.02165
	B2	0.02200	0.02249	0.02635
	B2	0.01142	0.01192	0.01585
	C1	0.01754	0.01801	0.02619
	C1	0.00849	0.00898	0.01927

Internal switching power(pJ) to X falling :

Cell Name	**Input**	**Power(pJ)**		
		first	**mid**	**last**
sky130_fd_sc_hs__a221o_1	**A1**	0.00334	0.00332	0.00476
	A1	0.00884	0.00887	0.01018
	A2	0.00351	0.00331	0.00497
	A2	0.00971	0.00963	0.01080
	B1	0.00301	0.00299	0.00569
	B1	0.00798	0.00792	0.01000
	B2	0.00358	0.00357	0.00602
	B2	0.00881	0.00880	0.01072
	C1	0.00275	0.00309	0.00924
	C1	0.00804	0.00825	0.01305

sky130_fd_sc_hs__a221o_2	**A1**	0.00577	0.00565	0.00713
	A1	0.01166	0.01173	0.01300
	A2	0.00595	0.00594	0.00754
	A2	0.01261	0.01263	0.01381
	B1	0.00568	0.00550	0.00837
	B1	0.01082	0.01082	0.01282
	B2	0.00597	0.00587	0.00860
	B2	0.01174	0.01179	0.01370
	C1	0.00595	0.00622	0.01096
	C1	0.01103	0.01137	0.01597
sky130_fd_sc_hs__a221o_4	**A1**	0.01038	0.01039	0.01370
	A1	0.02097	0.02125	0.02378
	A2	0.01137	0.01140	0.01413
	A2	0.02318	0.02325	0.02547
	B1	0.01052	0.01031	0.01491
	B1	0.01951	0.01956	0.02326
	B2	0.01110	0.01116	0.01553
	B2	0.02152	0.02165	0.02516
	C1	0.01150	0.01205	0.02112
	C1	0.02020	0.02074	0.02952

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)**	0.00099	0.00100	0.00099
	(A2 * B1 * B2 * C1 * X)	-0.00122	-0.00127	-0.00127
	(A2 * B1 * B2 * !C1 * X)	0.00100	0.00100	0.00099
	(A2 * B1 * B2 * !C1 * X)	-0.00121	-0.00127	-0.00127
	(A2 * B1 * !B2 * C1 * X)	0.00101	0.00100	0.00099
	(A2 * B1 * !B2 * C1 * X)	-0.00117	-0.00124	-0.00123
	(A2 * !B1 * C1 * X)	0.00101	0.00100	0.00099
	(A2 * !B1 * C1 * X)	-0.00117	-0.00124	-0.00123
	(!A2 * B1 * B2 * C1 * X)	0.00094	0.00095	0.00094
	(!A2 * B1 * B2 * C1 * X)	-0.00130	-0.00132	-0.00131
	(!A2 * B1 * B2 * !C1 * X)	0.00094	0.00095	0.00094
	(!A2 * B1 * B2 * !C1 * X)	-0.00131	-0.00132	-0.00131
	(!A2 * B1 * !B2 * C1 * X)	0.00093	0.00095	0.00094
	(!A2 * B1 * !B2 * C1 * X)	-0.00130	-0.00132	-0.00131
	(!A2 * B1 * !B2 * !C1 * !X)	0.00034	0.00034	0.00033
	(!A2 * B1 * !B2 * !C1 * !X)	-0.00152	-0.00152	-0.00154
	(!A2 * !B1 * C1 * X)	0.00094	0.00094	0.00094
	(!A2 * !B1 * C1 * X)	-0.00131	-0.00131	-0.00131
	(!A2 * !B1 * !C1 * !X)	0.00034	0.00034	0.00033
	(!A2 * !B1 * !C1 * !X)	-0.00152	-0.00152	-0.00154

sky130_fd_sc_hs__a221o_2	**(A2 * B1 * B2 * C1 * X)**	0.00113	0.00114	0.00113
	(A2 * B1 * B2 * C1 * X)	-0.00121	-0.00126	-0.00126
	(A2 * B1 * B2 * !C1 * X)	0.00113	0.00114	0.00113
	(A2 * B1 * B2 * !C1 * X)	-0.00120	-0.00126	-0.00126
	(A2 * B1 * !B2 * C1 * X)	0.00114	0.00114	0.00113
	(A2 * B1 * !B2 * C1 * X)	-0.00115	-0.00123	-0.00122
	(A2 * !B1 * C1 * X)	0.00114	0.00114	0.00113
	(A2 * !B1 * C1 * X)	-0.00115	-0.00123	-0.00122
	(!A2 * B1 * B2 * C1 * X)	0.00106	0.00107	0.00106
	(!A2 * B1 * B2 * C1 * X)	-0.00130	-0.00131	-0.00130
	(!A2 * B1 * B2 * !C1 * X)	0.00105	0.00106	0.00106
	(!A2 * B1 * B2 * !C1 * X)	-0.00129	-0.00130	-0.00130
	(!A2 * B1 * !B2 * C1 * X)	0.00106	0.00107	0.00106
	(!A2 * B1 * !B2 * C1 * X)	-0.00129	-0.00131	-0.00130
	(!A2 * B1 * !B2 * !C1 * !X)	0.00038	0.00038	0.00037
	(!A2 * B1 * !B2 * !C1 * !X)	-0.00153	-0.00153	-0.00155
	(!A2 * !B1 * C1 * X)	0.00106	0.00107	0.00106
	(!A2 * !B1 * C1 * X)	-0.00129	-0.00131	-0.00130
	(!A2 * !B1 * !C1 * !X)	0.00038	0.00038	0.00037
	(!A2 * !B1 * !C1 * !X)	-0.00153	-0.00153	-0.00155

sky130_fd_sc_hs__a221o_4	**(A2 * B1 * B2 * C1 * X)**	0.00224	0.00223	0.00221
	(A2 * B1 * B2 * C1 * X)	-0.00237	-0.00248	-0.00246
	(A2 * B1 * B2 * !C1 * X)	0.00224	0.00223	0.00222
	(A2 * B1 * B2 * !C1 * X)	-0.00237	-0.00248	-0.00246
	(A2 * B1 * !B2 * C1 * X)	0.00222	0.00221	0.00221
	(A2 * B1 * !B2 * C1 * X)	-0.00228	-0.00242	-0.00240
	(A2 * !B1 * C1 * X)	0.00222	0.00224	0.00221
	(A2 * !B1 * C1 * X)	-0.00228	-0.00243	-0.00240
	(!A2 * B1 * B2 * C1 * X)	0.00208	0.00211	0.00209
	(!A2 * B1 * B2 * C1 * X)	-0.00254	-0.00256	-0.00254
	(!A2 * B1 * B2 * !C1 * X)	0.00208	0.00209	0.00209
	(!A2 * B1 * B2 * !C1 * X)	-0.00253	-0.00255	-0.00254
	(!A2 * B1 * !B2 * C1 * X)	0.00208	0.00211	0.00209
	(!A2 * B1 * !B2 * C1 * X)	-0.00254	-0.00255	-0.00254
	(!A2 * B1 * !B2 * !C1 * !X)	0.00104	0.00105	0.00101
	(!A2 * B1 * !B2 * !C1 * !X)	-0.00280	-0.00283	-0.00288
	(!A2 * !B1 * C1 * X)	0.00208	0.00211	0.00209
	(!A2 * !B1 * C1 * X)	-0.00254	-0.00255	-0.00254
	(!A2 * !B1 * !C1 * !X)	0.00104	0.00105	0.00101
	(!A2 * !B1 * !C1 * !X)	-0.00281	-0.00283	-0.00288

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)**	-0.00099	-0.00099	-0.00099
	(A2 * B1 * B2 * C1 * X)	0.00128	0.00127	0.00127
	(A2 * B1 * B2 * !C1 * X)	-0.00099	-0.00099	-0.00099
	(A2 * B1 * B2 * !C1 * X)	0.00128	0.00127	0.00127
	(A2 * B1 * !B2 * C1 * X)	-0.00099	-0.00099	-0.00099
	(A2 * B1 * !B2 * C1 * X)	0.00124	0.00124	0.00123
	(A2 * !B1 * C1 * X)	-0.00099	-0.00099	-0.00099
	(A2 * !B1 * C1 * X)	0.00124	0.00124	0.00123
	(!A2 * B1 * B2 * C1 * X)	-0.00091	-0.00094	-0.00094
	(!A2 * B1 * B2 * C1 * X)	0.00130	0.00132	0.00131
	(!A2 * B1 * B2 * !C1 * X)	-0.00092	-0.00095	-0.00094
	(!A2 * B1 * B2 * !C1 * X)	0.00132	0.00133	0.00131
	(!A2 * B1 * !B2 * C1 * X)	-0.00092	-0.00094	-0.00094
	(!A2 * B1 * !B2 * C1 * X)	0.00132	0.00132	0.00131
	(!A2 * B1 * !B2 * !C1 * !X)	-0.00032	-0.00033	-0.00032
	(!A2 * B1 * !B2 * !C1 * !X)	0.00153	0.00156	0.00154
	(!A2 * !B1 * C1 * X)	-0.00092	-0.00094	-0.00094
	(!A2 * !B1 * C1 * X)	0.00132	0.00132	0.00131
	(!A2 * !B1 * !C1 * !X)	-0.00032	-0.00033	-0.00032
	(!A2 * !B1 * !C1 * !X)	0.00153	0.00156	0.00154

sky130_fd_sc_hs__a221o_2	**(A2 * B1 * B2 * C1 * X)**	-0.00113	-0.00113	-0.00112
	(A2 * B1 * B2 * C1 * X)	0.00127	0.00126	0.00126
	(A2 * B1 * B2 * !C1 * X)	-0.00113	-0.00113	-0.00112
	(A2 * B1 * B2 * !C1 * X)	0.00126	0.00126	0.00126
	(A2 * B1 * !B2 * C1 * X)	-0.00113	-0.00113	-0.00112
	(A2 * B1 * !B2 * C1 * X)	0.00123	0.00123	0.00122
	(A2 * !B1 * C1 * X)	-0.00113	-0.00113	-0.00112
	(A2 * !B1 * C1 * X)	0.00123	0.00123	0.00122
	(!A2 * B1 * B2 * C1 * X)	-0.00104	-0.00107	-0.00106
	(!A2 * B1 * B2 * C1 * X)	0.00131	0.00131	0.00130
	(!A2 * B1 * B2 * !C1 * X)	-0.00104	-0.00106	-0.00106
	(!A2 * B1 * B2 * !C1 * X)	0.00131	0.00132	0.00130
	(!A2 * B1 * !B2 * C1 * X)	-0.00104	-0.00107	-0.00106
	(!A2 * B1 * !B2 * C1 * X)	0.00131	0.00132	0.00130
	(!A2 * B1 * !B2 * !C1 * !X)	-0.00035	-0.00036	-0.00035
	(!A2 * B1 * !B2 * !C1 * !X)	0.00155	0.00158	0.00155
	(!A2 * !B1 * C1 * X)	-0.00104	-0.00107	-0.00106
	(!A2 * !B1 * C1 * X)	0.00131	0.00131	0.00130
	(!A2 * !B1 * !C1 * !X)	-0.00035	-0.00036	-0.00035
	(!A2 * !B1 * !C1 * !X)	0.00155	0.00158	0.00155

sky130_fd_sc_hs__a221o_4	**(A2 * B1 * B2 * C1 * X)**	-0.00222	-0.00223	-0.00221
	(A2 * B1 * B2 * C1 * X)	0.00246	0.00248	0.00246
	(A2 * B1 * B2 * !C1 * X)	-0.00222	-0.00223	-0.00222
	(A2 * B1 * B2 * !C1 * X)	0.00246	0.00248	0.00246
	(A2 * B1 * !B2 * C1 * X)	-0.00220	-0.00221	-0.00221
	(A2 * B1 * !B2 * C1 * X)	0.00239	0.00243	0.00240
	(A2 * !B1 * C1 * X)	-0.00220	-0.00222	-0.00221
	(A2 * !B1 * C1 * X)	0.00239	0.00243	0.00240
	(!A2 * B1 * B2 * C1 * X)	-0.00202	-0.00211	-0.00209
	(!A2 * B1 * B2 * C1 * X)	0.00255	0.00257	0.00255
	(!A2 * B1 * B2 * !C1 * X)	-0.00201	-0.00209	-0.00209
	(!A2 * B1 * B2 * !C1 * X)	0.00255	0.00256	0.00255
	(!A2 * B1 * !B2 * C1 * X)	-0.00202	-0.00211	-0.00209
	(!A2 * B1 * !B2 * C1 * X)	0.00255	0.00257	0.00255
	(!A2 * B1 * !B2 * !C1 * !X)	-0.00099	-0.00099	-0.00099
	(!A2 * B1 * !B2 * !C1 * !X)	0.00289	0.00291	0.00289
	(!A2 * !B1 * C1 * X)	-0.00202	-0.00211	-0.00209
	(!A2 * !B1 * C1 * X)	0.00255	0.00257	0.00255
	(!A2 * !B1 * !C1 * !X)	-0.00099	-0.00099	-0.00099
	(!A2 * !B1 * !C1 * !X)	0.00289	0.00291	0.00289

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)**	0.00115	0.00116	0.00115
	(A1 * B1 * B2 * C1 * X)	-0.00117	-0.00123	-0.00123
	(A1 * B1 * B2 * !C1 * X)	0.00115	0.00116	0.00115
	(A1 * B1 * B2 * !C1 * X)	-0.00117	-0.00123	-0.00123
	(A1 * B1 * !B2 * C1 * X)	0.00116	0.00116	0.00115
	(A1 * B1 * !B2 * C1 * X)	-0.00112	-0.00120	-0.00119
	(A1 * !B1 * C1 * X)	0.00116	0.00116	0.00115
	(A1 * !B1 * C1 * X)	-0.00112	-0.00120	-0.00119
	(!A1 * B1 * B2 * X)	0.00109	0.00111	0.00110
	(!A1 * B1 * B2 * X)	-0.00126	-0.00127	-0.00127
	(!A1 * B1 * !B2 * C1 * X) + (!A1 * !B1 * C1 * X)	0.00109	0.00110	0.00110
	(!A1 * B1 * !B2 * C1 * X) + (!A1 * !B1 * C1 * X)	-0.00126	-0.00127	-0.00126
	(!A1 * B1 * !B2 * !C1 * !X)	0.00092	0.00093	0.00093
	(!A1 * B1 * !B2 * !C1 * !X)	-0.00143	-0.00144	-0.00143
	(!A1 * !B1 * !C1 * !X)	0.00092	0.00093	0.00093
	(!A1 * !B1 * !C1 * !X)	-0.00143	-0.00144	-0.00143

sky130_fd_sc_hs__a221o_2	**(A1 * B1 * B2 * C1 * X)**	0.00126	0.00127	0.00126
	(A1 * B1 * B2 * C1 * X)	-0.00117	-0.00122	-0.00122
	(A1 * B1 * B2 * !C1 * X)	0.00126	0.00127	0.00126
	(A1 * B1 * B2 * !C1 * X)	-0.00116	-0.00122	-0.00122
	(A1 * B1 * !B2 * C1 * X)	0.00127	0.00127	0.00126
	(A1 * B1 * !B2 * C1 * X)	-0.00111	-0.00119	-0.00118
	(A1 * !B1 * C1 * X)	0.00127	0.00127	0.00126
	(A1 * !B1 * C1 * X)	-0.00111	-0.00119	-0.00118
	(!A1 * B1 * B2 * X)	0.00120	0.00119	0.00120
	(!A1 * B1 * B2 * X)	-0.00125	-0.00125	-0.00125
	(!A1 * B1 * !B2 * C1 * X) + (!A1 * !B1 * C1 * X)	0.00119	0.00120	0.00120
	(!A1 * B1 * !B2 * C1 * X) + (!A1 * !B1 * C1 * X)	-0.00125	-0.00126	-0.00125
	(!A1 * B1 * !B2 * !C1 * !X)	0.00103	0.00104	0.00103
	(!A1 * B1 * !B2 * !C1 * !X)	-0.00142	-0.00142	-0.00142
	(!A1 * !B1 * !C1 * !X)	0.00103	0.00104	0.00103
	(!A1 * !B1 * !C1 * !X)	-0.00142	-0.00142	-0.00142

sky130_fd_sc_hs__a221o_4	**(A1 * B1 * B2 * C1 * X)**	0.00220	0.00220	0.00219
	(A1 * B1 * B2 * C1 * X)	-0.00233	-0.00243	-0.00244
	(A1 * B1 * B2 * !C1 * X)	0.00220	0.00220	0.00219
	(A1 * B1 * B2 * !C1 * X)	-0.00233	-0.00246	-0.00244
	(A1 * B1 * !B2 * C1 * X)	0.00220	0.00219	0.00218
	(A1 * B1 * !B2 * C1 * X)	-0.00226	-0.00240	-0.00238
	(A1 * !B1 * C1 * X)	0.00220	0.00219	0.00218
	(A1 * !B1 * C1 * X)	-0.00226	-0.00240	-0.00238
	(!A1 * B1 * B2 * X)	0.00206	0.00208	0.00207
	(!A1 * B1 * B2 * X)	-0.00252	-0.00253	-0.00252
	(!A1 * B1 * !B2 * C1 * X) + (!A1 * !B1 * C1 * X)	0.00206	0.00208	0.00207
	(!A1 * B1 * !B2 * C1 * X) + (!A1 * !B1 * C1 * X)	-0.00252	-0.00253	-0.00252
	(!A1 * B1 * !B2 * !C1 * !X)	0.00201	0.00204	0.00202
	(!A1 * B1 * !B2 * !C1 * !X)	-0.00257	-0.00259	-0.00258
	(!A1 * !B1 * !C1 * !X)	0.00201	0.00204	0.00202
	(!A1 * !B1 * !C1 * !X)	-0.00257	-0.00259	-0.00258

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)**	-0.00115	-0.00115	-0.00115
	(A1 * B1 * B2 * C1 * X)	0.00124	0.00123	0.00123
	(A1 * B1 * B2 * !C1 * X)	-0.00115	-0.00115	-0.00115
	(A1 * B1 * B2 * !C1 * X)	0.00124	0.00123	0.00123
	(A1 * B1 * !B2 * C1 * X)	-0.00115	-0.00115	-0.00115
	(A1 * B1 * !B2 * C1 * X)	0.00120	0.00120	0.00119
	(A1 * !B1 * C1 * X)	-0.00115	-0.00115	-0.00115
	(A1 * !B1 * C1 * X)	0.00120	0.00120	0.00119
	(!A1 * B1 * B2 * X)	-0.00108	-0.00110	-0.00110
	(!A1 * B1 * B2 * X)	0.00127	0.00128	0.00127
	(!A1 * B1 * !B2 * C1 * X) + (!A1 * !B1 * C1 * X)	-0.00108	-0.00110	-0.00110
	(!A1 * B1 * !B2 * C1 * X) + (!A1 * !B1 * C1 * X)	0.00127	0.00128	0.00127
	(!A1 * B1 * !B2 * !C1 * !X)	-0.00088	-0.00093	-0.00093
	(!A1 * B1 * !B2 * !C1 * !X)	0.00149	0.00147	0.00144
	(!A1 * !B1 * !C1 * !X)	-0.00088	-0.00093	-0.00093
	(!A1 * !B1 * !C1 * !X)	0.00149	0.00146	0.00144

sky130_fd_sc_hs__a221o_2	**(A1 * B1 * B2 * C1 * X)**	-0.00126	-0.00126	-0.00126
	(A1 * B1 * B2 * C1 * X)	0.00123	0.00122	0.00122
	(A1 * B1 * B2 * !C1 * X)	-0.00126	-0.00126	-0.00126
	(A1 * B1 * B2 * !C1 * X)	0.00123	0.00122	0.00122
	(A1 * B1 * !B2 * C1 * X)	-0.00126	-0.00126	-0.00126
	(A1 * B1 * !B2 * C1 * X)	0.00119	0.00119	0.00118
	(A1 * !B1 * C1 * X)	-0.00126	-0.00126	-0.00126
	(A1 * !B1 * C1 * X)	0.00119	0.00119	0.00118
	(!A1 * B1 * B2 * X)	-0.00117	-0.00119	-0.00120
	(!A1 * B1 * B2 * X)	0.00125	0.00128	0.00126
	(!A1 * B1 * !B2 * C1 * X) + (!A1 * !B1 * C1 * X)	-0.00117	-0.00120	-0.00120
	(!A1 * B1 * !B2 * C1 * X) + (!A1 * !B1 * C1 * X)	0.00126	0.00128	0.00126
	(!A1 * B1 * !B2 * !C1 * !X)	-0.00097	-0.00104	-0.00103
	(!A1 * B1 * !B2 * !C1 * !X)	0.00147	0.00145	0.00143
	(!A1 * !B1 * !C1 * !X)	-0.00097	-0.00104	-0.00103
	(!A1 * !B1 * !C1 * !X)	0.00147	0.00145	0.00143

sky130_fd_sc_hs__a221o_4	**(A1 * B1 * B2 * C1 * X)**	-0.00219	-0.00218	-0.00219
	(A1 * B1 * B2 * C1 * X)	0.00244	0.00243	0.00244
	(A1 * B1 * B2 * !C1 * X)	-0.00219	-0.00220	-0.00219
	(A1 * B1 * B2 * !C1 * X)	0.00244	0.00246	0.00244
	(A1 * B1 * !B2 * C1 * X)	-0.00217	-0.00219	-0.00218
	(A1 * B1 * !B2 * C1 * X)	0.00237	0.00240	0.00238
	(A1 * !B1 * C1 * X)	-0.00217	-0.00219	-0.00218
	(A1 * !B1 * C1 * X)	0.00237	0.00240	0.00238
	(!A1 * B1 * B2 * X)	-0.00201	-0.00208	-0.00207
	(!A1 * B1 * B2 * X)	0.00253	0.00256	0.00253
	(!A1 * B1 * !B2 * C1 * X) + (!A1 * !B1 * C1 * X)	-0.00201	-0.00208	-0.00207
	(!A1 * B1 * !B2 * C1 * X) + (!A1 * !B1 * C1 * X)	0.00253	0.00256	0.00253
	(!A1 * B1 * !B2 * !C1 * !X)	-0.00192	-0.00204	-0.00202
	(!A1 * B1 * !B2 * !C1 * !X)	0.00264	0.00261	0.00259
	(!A1 * !B1 * !C1 * !X)	-0.00192	-0.00204	-0.00202
	(!A1 * !B1 * !C1 * !X)	0.00264	0.00261	0.00259

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)**	0.00103	0.00105	0.00101
	(A1 * A2 * B2 * C1 * X)	-0.00094	-0.00095	-0.00094
	(A1 * A2 * B2 * !C1 * X)	0.00099	0.00102	0.00100
	(A1 * A2 * B2 * !C1 * X)	-0.00076	-0.00077	-0.00076
	(A1 * A2 * !B2 * C1 * X)	0.00095	0.00096	0.00095
	(A1 * A2 * !B2 * C1 * X)	-0.00089	-0.00089	-0.00088
	(A1 * A2 * !B2 * !C1 * X)	0.00094	0.00095	0.00095
	(A1 * A2 * !B2 * !C1 * X)	-0.00076	-0.00076	-0.00076
	(A1 * !A2 * B2 * C1 * X)	0.00111	0.00100	0.00100
	(A1 * !A2 * B2 * C1 * X)	-0.00113	-0.00126	-0.00127
	(A1 * !A2 * !B2 * C1 * X)	0.00094	0.00094	0.00094
	(A1 * !A2 * !B2 * C1 * X)	-0.00129	-0.00130	-0.00129
	(A1 * !A2 * !B2 * !C1 * !X)	0.00032	0.00033	0.00031
	(A1 * !A2 * !B2 * !C1 * !X)	-0.00152	-0.00153	-0.00154
	(!A1 * B2 * C1 * X)	0.00111	0.00101	0.00100
	(!A1 * B2 * C1 * X)	-0.00113	-0.00127	-0.00127
	(!A1 * !B2 * C1 * X)	0.00094	0.00095	0.00094
	(!A1 * !B2 * C1 * X)	-0.00129	-0.00130	-0.00129
	(!A1 * !B2 * !C1 * !X)	0.00032	0.00033	0.00031
	(!A1 * !B2 * !C1 * !X)	-0.00152	-0.00153	-0.00154

sky130_fd_sc_hs__a221o_2	**(A1 * A2 * B2 * C1 * X)**	0.00124	0.00126	0.00122
	(A1 * A2 * B2 * C1 * X)	-0.00095	-0.00096	-0.00096
	(A1 * A2 * B2 * !C1 * X)	0.00120	0.00122	0.00120
	(A1 * A2 * B2 * !C1 * X)	-0.00078	-0.00079	-0.00078
	(A1 * A2 * !B2 * C1 * X)	0.00115	0.00116	0.00115
	(A1 * A2 * !B2 * C1 * X)	-0.00090	-0.00090	-0.00090
	(A1 * A2 * !B2 * !C1 * X)	0.00114	0.00115	0.00114
	(A1 * A2 * !B2 * !C1 * X)	-0.00077	-0.00078	-0.00078
	(A1 * !A2 * B2 * C1 * X)	0.00131	0.00121	0.00120
	(A1 * !A2 * B2 * C1 * X)	-0.00114	-0.00128	-0.00128
	(A1 * !A2 * !B2 * C1 * X)	0.00113	0.00114	0.00113
	(A1 * !A2 * !B2 * C1 * X)	-0.00131	-0.00131	-0.00131
	(A1 * !A2 * !B2 * !C1 * !X)	0.00038	0.00039	0.00037
	(A1 * !A2 * !B2 * !C1 * !X)	-0.00159	-0.00161	-0.00162
	(!A1 * B2 * C1 * X)	0.00131	0.00121	0.00120
	(!A1 * B2 * C1 * X)	-0.00114	-0.00128	-0.00128
	(!A1 * !B2 * C1 * X)	0.00113	0.00114	0.00113
	(!A1 * !B2 * C1 * X)	-0.00131	-0.00131	-0.00131
	(!A1 * !B2 * !C1 * !X)	0.00038	0.00039	0.00037
	(!A1 * !B2 * !C1 * !X)	-0.00159	-0.00161	-0.00162

sky130_fd_sc_hs__a221o_4	**(A1 * A2 * B2 * C1 * X)**	0.00220	0.00220	0.00217
	(A1 * A2 * B2 * C1 * X)	-0.00197	-0.00197	-0.00195
	(A1 * A2 * B2 * !C1 * X)	0.00214	0.00218	0.00214
	(A1 * A2 * B2 * !C1 * X)	-0.00155	-0.00159	-0.00156
	(A1 * A2 * !B2 * C1 * X)	0.00206	0.00208	0.00207
	(A1 * A2 * !B2 * C1 * X)	-0.00182	-0.00183	-0.00183
	(A1 * A2 * !B2 * !C1 * X)	0.00204	0.00206	0.00205
	(A1 * A2 * !B2 * !C1 * X)	-0.00155	-0.00157	-0.00156
	(A1 * !A2 * B2 * C1 * X)	0.00236	0.00215	0.00212
	(A1 * !A2 * B2 * C1 * X)	-0.00225	-0.00256	-0.00256
	(A1 * !A2 * !B2 * C1 * X)	0.00204	0.00205	0.00204
	(A1 * !A2 * !B2 * C1 * X)	-0.00260	-0.00261	-0.00260
	(A1 * !A2 * !B2 * !C1 * !X)	0.00083	0.00084	0.00079
	(A1 * !A2 * !B2 * !C1 * !X)	-0.00302	-0.00306	-0.00311
	(!A1 * B2 * C1 * X)	0.00236	0.00215	0.00212
	(!A1 * B2 * C1 * X)	-0.00225	-0.00256	-0.00256
	(!A1 * !B2 * C1 * X)	0.00204	0.00205	0.00204
	(!A1 * !B2 * C1 * X)	-0.00260	-0.00261	-0.00260
	(!A1 * !B2 * !C1 * !X)	0.00083	0.00084	0.00079
	(!A1 * !B2 * !C1 * !X)	-0.00302	-0.00306	-0.00311

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)**	-0.00100	-0.00101	-0.00100
	(A1 * A2 * B2 * C1 * X)	0.00094	0.00095	0.00094
	(A1 * A2 * B2 * !C1 * X)	-0.00094	-0.00095	-0.00095
	(A1 * A2 * B2 * !C1 * X)	0.00081	0.00082	0.00081
	(A1 * A2 * !B2 * C1 * X)	-0.00093	-0.00096	-0.00095
	(A1 * A2 * !B2 * C1 * X)	0.00089	0.00089	0.00088
	(A1 * A2 * !B2 * !C1 * X)	-0.00092	-0.00095	-0.00095
	(A1 * A2 * !B2 * !C1 * X)	0.00077	0.00077	0.00076
	(A1 * !A2 * B2 * C1 * X)	-0.00100	-0.00099	-0.00099
	(A1 * !A2 * B2 * C1 * X)	0.00127	0.00126	0.00127
	(A1 * !A2 * !B2 * C1 * X)	-0.00092	-0.00094	-0.00094
	(A1 * !A2 * !B2 * C1 * X)	0.00130	0.00131	0.00130
	(A1 * !A2 * !B2 * !C1 * !X)	-0.00030	-0.00031	-0.00030
	(A1 * !A2 * !B2 * !C1 * !X)	0.00154	0.00154	0.00154
	(!A1 * B2 * C1 * X)	-0.00100	-0.00099	-0.00099
	(!A1 * B2 * C1 * X)	0.00127	0.00127	0.00127
	(!A1 * !B2 * C1 * X)	-0.00092	-0.00095	-0.00094
	(!A1 * !B2 * C1 * X)	0.00130	0.00130	0.00130
	(!A1 * !B2 * !C1 * !X)	-0.00030	-0.00031	-0.00030
	(!A1 * !B2 * !C1 * !X)	0.00154	0.00154	0.00154

sky130_fd_sc_hs__a221o_2	**(A1 * A2 * B2 * C1 * X)**	-0.00121	-0.00121	-0.00121
	(A1 * A2 * B2 * C1 * X)	0.00095	0.00096	0.00096
	(A1 * A2 * B2 * !C1 * X)	-0.00115	-0.00116	-0.00116
	(A1 * A2 * B2 * !C1 * X)	0.00082	0.00083	0.00082
	(A1 * A2 * !B2 * C1 * X)	-0.00112	-0.00115	-0.00115
	(A1 * A2 * !B2 * C1 * X)	0.00090	0.00090	0.00090
	(A1 * A2 * !B2 * !C1 * X)	-0.00111	-0.00115	-0.00114
	(A1 * A2 * !B2 * !C1 * X)	0.00078	0.00078	0.00078
	(A1 * !A2 * B2 * C1 * X)	-0.00120	-0.00120	-0.00119
	(A1 * !A2 * B2 * C1 * X)	0.00129	0.00128	0.00128
	(A1 * !A2 * !B2 * C1 * X)	-0.00111	-0.00114	-0.00113
	(A1 * !A2 * !B2 * C1 * X)	0.00132	0.00132	0.00131
	(A1 * !A2 * !B2 * !C1 * !X)	-0.00036	-0.00037	-0.00036
	(A1 * !A2 * !B2 * !C1 * !X)	0.00162	0.00165	0.00163
	(!A1 * B2 * C1 * X)	-0.00120	-0.00120	-0.00119
	(!A1 * B2 * C1 * X)	0.00129	0.00128	0.00128
	(!A1 * !B2 * C1 * X)	-0.00111	-0.00114	-0.00113
	(!A1 * !B2 * C1 * X)	0.00132	0.00132	0.00131
	(!A1 * !B2 * !C1 * !X)	-0.00036	-0.00037	-0.00036
	(!A1 * !B2 * !C1 * !X)	0.00162	0.00165	0.00163

sky130_fd_sc_hs__a221o_4	**(A1 * A2 * B2 * C1 * X)**	-0.00216	-0.00216	-0.00215
	(A1 * A2 * B2 * C1 * X)	0.00197	0.00197	0.00195
	(A1 * A2 * B2 * !C1 * X)	-0.00204	-0.00205	-0.00205
	(A1 * A2 * B2 * !C1 * X)	0.00165	0.00166	0.00166
	(A1 * A2 * !B2 * C1 * X)	-0.00198	-0.00207	-0.00207
	(A1 * A2 * !B2 * C1 * X)	0.00182	0.00183	0.00183
	(A1 * A2 * !B2 * !C1 * X)	-0.00197	-0.00206	-0.00205
	(A1 * A2 * !B2 * !C1 * X)	0.00157	0.00158	0.00156
	(A1 * !A2 * B2 * C1 * X)	-0.00211	-0.00211	-0.00210
	(A1 * !A2 * B2 * C1 * X)	0.00254	0.00256	0.00256
	(A1 * !A2 * !B2 * C1 * X)	-0.00195	-0.00205	-0.00204
	(A1 * !A2 * !B2 * C1 * X)	0.00260	0.00263	0.00261
	(A1 * !A2 * !B2 * !C1 * !X)	-0.00077	-0.00079	-0.00077
	(A1 * !A2 * !B2 * !C1 * !X)	0.00313	0.00315	0.00312
	(!A1 * B2 * C1 * X)	-0.00211	-0.00211	-0.00210
	(!A1 * B2 * C1 * X)	0.00254	0.00256	0.00256
	(!A1 * !B2 * C1 * X)	-0.00195	-0.00205	-0.00204
	(!A1 * !B2 * C1 * X)	0.00260	0.00263	0.00261
	(!A1 * !B2 * !C1 * !X)	-0.00077	-0.00079	-0.00077
	(!A1 * !B2 * !C1 * !X)	0.00313	0.00315	0.00312

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)**	0.00107	0.00108	0.00105
	(A1 * A2 * B1 * C1 * X)	-0.00092	-0.00094	-0.00092
	(A1 * A2 * B1 * !C1 * X)	0.00104	0.00105	0.00103
	(A1 * A2 * B1 * !C1 * X)	-0.00074	-0.00075	-0.00074
	(A1 * A2 * !B1 * C1 * X)	0.00098	0.00101	0.00099
	(A1 * A2 * !B1 * C1 * X)	-0.00087	-0.00087	-0.00087
	(A1 * A2 * !B1 * !C1 * X)	0.00098	0.00100	0.00098
	(A1 * A2 * !B1 * !C1 * X)	-0.00074	-0.00075	-0.00074
	(A1 * !A2 * B1 * C1 * X)	0.00116	0.00104	0.00103
	(A1 * !A2 * B1 * C1 * X)	-0.00109	-0.00123	-0.00124
	(A1 * !A2 * !B1 * C1 * X) + (!A1 * !B1 * C1 * X)	0.00098	0.00098	0.00098
	(A1 * !A2 * !B1 * C1 * X) + (!A1 * !B1 * C1 * X)	-0.00127	-0.00127	-0.00127
	(A1 * !A2 * !B1 * !C1 * !X)	0.00087	0.00088	0.00088
	(A1 * !A2 * !B1 * !C1 * !X)	-0.00136	-0.00137	-0.00137
	(!A1 * B1 * C1 * X)	0.00116	0.00104	0.00103
	(!A1 * B1 * C1 * X)	-0.00109	-0.00123	-0.00124
	(!A1 * !B1 * !C1 * !X)	0.00087	0.00088	0.00088
	(!A1 * !B1 * !C1 * !X)	-0.00136	-0.00137	-0.00137

sky130_fd_sc_hs__a221o_2	**(A1 * A2 * B1 * C1 * X)**	0.00127	0.00129	0.00125
	(A1 * A2 * B1 * C1 * X)	-0.00088	-0.00090	-0.00089
	(A1 * A2 * B1 * !C1 * X)	0.00124	0.00126	0.00123
	(A1 * A2 * B1 * !C1 * X)	-0.00071	-0.00072	-0.00071
	(A1 * A2 * !B1 * C1 * X)	0.00119	0.00119	0.00118
	(A1 * A2 * !B1 * C1 * X)	-0.00084	-0.00085	-0.00083
	(A1 * A2 * !B1 * !C1 * X)	0.00117	0.00120	0.00117
	(A1 * A2 * !B1 * !C1 * X)	-0.00070	-0.00071	-0.00070
	(A1 * !A2 * B1 * C1 * X)	0.00135	0.00124	0.00123
	(A1 * !A2 * B1 * C1 * X)	-0.00105	-0.00119	-0.00120
	(A1 * !A2 * !B1 * C1 * X) + (!A1 * !B1 * C1 * X)	0.00116	0.00118	0.00117
	(A1 * !A2 * !B1 * C1 * X) + (!A1 * !B1 * C1 * X)	-0.00122	-0.00123	-0.00122
	(A1 * !A2 * !B1 * !C1 * !X)	0.00101	0.00102	0.00102
	(A1 * !A2 * !B1 * !C1 * !X)	-0.00137	-0.00138	-0.00137
	(!A1 * B1 * C1 * X)	0.00135	0.00124	0.00123
	(!A1 * B1 * C1 * X)	-0.00105	-0.00119	-0.00120
	(!A1 * !B1 * !C1 * !X)	0.00101	0.00102	0.00102
	(!A1 * !B1 * !C1 * !X)	-0.00137	-0.00138	-0.00137

sky130_fd_sc_hs__a221o_4	**(A1 * A2 * B1 * C1 * X)**	0.00243	0.00246	0.00240
	(A1 * A2 * B1 * C1 * X)	-0.00187	-0.00189	-0.00187
	(A1 * A2 * B1 * !C1 * X)	0.00238	0.00240	0.00237
	(A1 * A2 * B1 * !C1 * X)	-0.00148	-0.00149	-0.00148
	(A1 * A2 * !B1 * C1 * X)	0.00229	0.00234	0.00230
	(A1 * A2 * !B1 * C1 * X)	-0.00175	-0.00177	-0.00175
	(A1 * A2 * !B1 * !C1 * X)	0.00228	0.00230	0.00228
	(A1 * A2 * !B1 * !C1 * X)	-0.00147	-0.00149	-0.00148
	(A1 * !A2 * B1 * C1 * X)	0.00257	0.00238	0.00236
	(A1 * !A2 * B1 * C1 * X)	-0.00219	-0.00248	-0.00248
	(A1 * !A2 * !B1 * C1 * X) + (!A1 * !B1 * C1 * X)	0.00227	0.00229	0.00227
	(A1 * !A2 * !B1 * C1 * X) + (!A1 * !B1 * C1 * X)	-0.00251	-0.00252	-0.00252
	(A1 * !A2 * !B1 * !C1 * !X)	0.00221	0.00223	0.00221
	(A1 * !A2 * !B1 * !C1 * !X)	-0.00258	-0.00259	-0.00258
	(!A1 * B1 * C1 * X)	0.00257	0.00238	0.00236
	(!A1 * B1 * C1 * X)	-0.00219	-0.00248	-0.00248
	(!A1 * !B1 * !C1 * !X)	0.00221	0.00223	0.00221
	(!A1 * !B1 * !C1 * !X)	-0.00258	-0.00259	-0.00258

Passive power(pJ) for B2 falling (conditional):

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

sky130_fd_sc_hs__a221o_1	**(A1 * A2 * B1 * C1 * X)**	-0.00103	-0.00104	-0.00104
	(A1 * A2 * B1 * C1 * X)	0.00092	0.00094	0.00092
	(A1 * A2 * B1 * !C1 * X)	-0.00099	-0.00099	-0.00099
	(A1 * A2 * B1 * !C1 * X)	0.00078	0.00079	0.00079
	(A1 * A2 * !B1 * C1 * X)	-0.00097	-0.00099	-0.00099
	(A1 * A2 * !B1 * C1 * X)	0.00087	0.00087	0.00087
	(A1 * A2 * !B1 * !C1 * X)	-0.00096	-0.00099	-0.00098
	(A1 * A2 * !B1 * !C1 * X)	0.00075	0.00075	0.00074
	(A1 * !A2 * B1 * C1 * X)	-0.00103	-0.00102	-0.00102
	(A1 * !A2 * B1 * C1 * X)	0.00125	0.00123	0.00124
	(A1 * !A2 * !B1 * C1 * X) + (!A1 * !B1 * C1 * X)	-0.00096	-0.00098	-0.00098
	(A1 * !A2 * !B1 * C1 * X) + (!A1 * !B1 * C1 * X)	0.00127	0.00127	0.00127
	(A1 * !A2 * !B1 * !C1 * !X)	-0.00083	-0.00088	-0.00088
	(A1 * !A2 * !B1 * !C1 * !X)	0.00142	0.00139	0.00137
	(!A1 * B1 * C1 * X)	-0.00103	-0.00102	-0.00102
	(!A1 * B1 * C1 * X)	0.00125	0.00123	0.00124
	(!A1 * !B1 * !C1 * !X)	-0.00083	-0.00088	-0.00088
	(!A1 * !B1 * !C1 * !X)	0.00142	0.00139	0.00137

sky130_fd_sc_hs__a221o_2	**(A1 * A2 * B1 * C1 * X)**	-0.00124	-0.00125	-0.00124
	(A1 * A2 * B1 * C1 * X)	0.00088	0.00090	0.00089
	(A1 * A2 * B1 * !C1 * X)	-0.00118	-0.00119	-0.00119
	(A1 * A2 * B1 * !C1 * X)	0.00075	0.00076	0.00075
	(A1 * A2 * !B1 * C1 * X)	-0.00116	-0.00119	-0.00118
	(A1 * A2 * !B1 * C1 * X)	0.00084	0.00085	0.00083
	(A1 * A2 * !B1 * !C1 * X)	-0.00115	-0.00119	-0.00117
	(A1 * A2 * !B1 * !C1 * X)	0.00071	0.00071	0.00071
	(A1 * !A2 * B1 * C1 * X)	-0.00123	-0.00123	-0.00122
	(A1 * !A2 * B1 * C1 * X)	0.00120	0.00119	0.00120
	(A1 * !A2 * !B1 * C1 * X) + (!A1 * !B1 * C1 * X)	-0.00114	-0.00118	-0.00117
	(A1 * !A2 * !B1 * C1 * X) + (!A1 * !B1 * C1 * X)	0.00123	0.00123	0.00123
	(A1 * !A2 * !B1 * !C1 * !X)	-0.00096	-0.00102	-0.00102
	(A1 * !A2 * !B1 * !C1 * !X)	0.00142	0.00140	0.00138
	(!A1 * B1 * C1 * X)	-0.00123	-0.00123	-0.00122
	(!A1 * B1 * C1 * X)	0.00120	0.00119	0.00120
	(!A1 * !B1 * !C1 * !X)	-0.00096	-0.00102	-0.00102
	(!A1 * !B1 * !C1 * !X)	0.00142	0.00140	0.00138

sky130_fd_sc_hs__a221o_4	**(A1 * A2 * B1 * C1 * X)**	-0.00239	-0.00240	-0.00238
	(A1 * A2 * B1 * C1 * X)	0.00187	0.00189	0.00187
	(A1 * A2 * B1 * !C1 * X)	-0.00226	-0.00228	-0.00227
	(A1 * A2 * B1 * !C1 * X)	0.00158	0.00159	0.00158
	(A1 * A2 * !B1 * C1 * X)	-0.00224	-0.00232	-0.00230
	(A1 * A2 * !B1 * C1 * X)	0.00175	0.00177	0.00175
	(A1 * A2 * !B1 * !C1 * X)	-0.00222	-0.00230	-0.00228
	(A1 * A2 * !B1 * !C1 * X)	0.00148	0.00149	0.00148
	(A1 * !A2 * B1 * C1 * X)	-0.00234	-0.00236	-0.00234
	(A1 * !A2 * B1 * C1 * X)	0.00246	0.00250	0.00248
	(A1 * !A2 * !B1 * C1 * X) + (!A1 * !B1 * C1 * X)	-0.00221	-0.00228	-0.00227
	(A1 * !A2 * !B1 * C1 * X) + (!A1 * !B1 * C1 * X)	0.00252	0.00252	0.00252
	(A1 * !A2 * !B1 * !C1 * !X)	-0.00211	-0.00223	-0.00221
	(A1 * !A2 * !B1 * !C1 * !X)	0.00263	0.00261	0.00259
	(!A1 * B1 * C1 * X)	-0.00234	-0.00236	-0.00234
	(!A1 * B1 * C1 * X)	0.00246	0.00250	0.00248
	(!A1 * !B1 * !C1 * !X)	-0.00211	-0.00223	-0.00221
	(!A1 * !B1 * !C1 * !X)	0.00263	0.00261	0.00259

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)	0.00126	0.00126	0.00126
	(A1 * B1 * B2 * X)	-0.00065	-0.00065	-0.00065
	(A1 * A2 * B1 * !B2 * X)	0.00126	0.00126	0.00126
	(A1 * A2 * B1 * !B2 * X)	-0.00065	-0.00065	-0.00065
	(A1 * A2 * !B1 * X)	0.00126	0.00126	0.00126
	(A1 * A2 * !B1 * X)	-0.00065	-0.00065	-0.00065
	(!A1 * B1 * B2 * X)	0.00126	0.00126	0.00126
	(!A1 * B1 * B2 * X)	-0.00065	-0.00066	-0.00065
sky130_fd_sc_hs__a221o_2	(A1 * B1 * B2 * X)	0.00132	0.00134	0.00132
	(A1 * B1 * B2 * X)	-0.00066	-0.00066	-0.00065
	(A1 * A2 * B1 * !B2 * X)	0.00131	0.00134	0.00132
	(A1 * A2 * B1 * !B2 * X)	-0.00065	-0.00066	-0.00065
	(A1 * A2 * !B1 * X)	0.00131	0.00134	0.00132
	(A1 * A2 * !B1 * X)	-0.00065	-0.00066	-0.00065
	(!A1 * B1 * B2 * X)	0.00131	0.00134	0.00132
	(!A1 * B1 * B2 * X)	-0.00065	-0.00066	-0.00065
sky130_fd_sc_hs__a221o_4	(A1 * B1 * B2 * X)	0.00222	0.00226	0.00222
	(A1 * B1 * B2 * X)	-0.00138	-0.00141	-0.00138
	(A1 * A2 * B1 * !B2 * X)	0.00222	0.00222	0.00222
	(A1 * A2 * B1 * !B2 * X)	-0.00138	-0.00138	-0.00138
	(A1 * A2 * !B1 * X)	0.00222	0.00222	0.00222
	(A1 * A2 * !B1 * X)	-0.00138	-0.00137	-0.00138
	(!A1 * B1 * B2 * X)	0.00222	0.00221	0.00222
	(!A1 * B1 * B2 * X)	-0.00140	-0.00140	-0.00140

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)	-0.00115	-0.00116	-0.00124
	(A1 * B1 * B2 * X)	0.00073	0.00074	0.00067
	(A1 * A2 * B1 * !B2 * X)	-0.00103	-0.00104	-0.00121
	(A1 * A2 * B1 * !B2 * X)	0.00082	0.00082	0.00069
	(A1 * A2 * !B1 * X)	-0.00103	-0.00104	-0.00121
	(A1 * A2 * !B1 * X)	0.00082	0.00082	0.00069
	(!A1 * B1 * B2 * X)	-0.00115	-0.00116	-0.00124
	(!A1 * B1 * B2 * X)	0.00074	0.00074	0.00067
sky130_fd_sc_hs__a221o_2	(A1 * B1 * B2 * X)	-0.00122	-0.00123	-0.00130
	(A1 * B1 * B2 * X)	0.00074	0.00074	0.00067
	(A1 * A2 * B1 * !B2 * X)	-0.00109	-0.00111	-0.00127
	(A1 * A2 * B1 * !B2 * X)	0.00082	0.00082	0.00069
	(A1 * A2 * !B1 * X)	-0.00109	-0.00111	-0.00127
	(A1 * A2 * !B1 * X)	0.00082	0.00082	0.00069
	(!A1 * B1 * B2 * X)	-0.00122	-0.00123	-0.00130
	(!A1 * B1 * B2 * X)	0.00074	0.00074	0.00067
sky130_fd_sc_hs__a221o_4	(A1 * B1 * B2 * X)	-0.00201	-0.00202	-0.00219
	(A1 * B1 * B2 * X)	0.00158	0.00157	0.00143
	(A1 * A2 * B1 * !B2 * X)	-0.00173	-0.00175	-0.00213
	(A1 * A2 * B1 * !B2 * X)	0.00176	0.00175	0.00147
	(A1 * A2 * !B1 * X)	-0.00174	-0.00175	-0.00213
	(A1 * A2 * !B1 * X)	0.00177	0.00175	0.00147
	(!A1 * B1 * B2 * X)	-0.00200	-0.00201	-0.00219
	(!A1 * B1 * B2 * X)	0.00161	0.00160	0.00145

SKY130_FD_SC_HS__A222OIx

sky130_fd_sc_hs_tt_1.50v_25C.ccs
Cell Library: Process , Voltage 1.50, 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	0.00257	0.00241	0.00251	0.00253	0.00254	0.00263	0.22551
sky130_fd_sc_hs__a222oi_2	0.00516	0.00455	0.00510	0.00467	0.00462	0.00524	0.39979

Leakage Information

Cell Name	Leakage(nW)		
	Min.	Avg	Max.
sky130_fd_sc_hs__a222oi_1	0.00000	0.04174	0.14860
sky130_fd_sc_hs__a222oi_2	0.00000	0.08348	0.29721

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)	0.35547	1.51843	10.94830
	A2->Y (FR)	0.38871	1.55923	11.01260
	B1->Y (FR)	0.31546	1.47626	11.32320
	B2->Y (FR)	0.35440	1.52486	11.42580
	C1->Y (FR)	0.23931	1.37801	11.10520
	C2->Y (FR)	0.27549	1.41644	11.14450
sky130_fd_sc_hs__a222oi_2	A1->Y (FR)	0.34068	1.30802	10.59640
	A2->Y (FR)	0.38577	1.36861	10.76340
	B1->Y (FR)	0.29771	1.25435	10.88840
	B2->Y (FR)	0.35124	1.34575	11.29110
	C1->Y (FR)	0.21822	1.18723	10.97080
	C2->Y (FR)	0.26720	1.23329	11.01160

Delay(ns) to Y falling :

Cell Name	Timing Arc(Dir)	Delay(ns)		
		First	Mid	Last
sky130_fd_sc_hs__a222oi_1	A1->Y (RF)	0.05524	0.46791	3.74654
	A2->Y (RF)	0.05940	0.44384	3.53859
	B1->Y (RF)	0.05105	0.44297	3.68623
	B2->Y (RF)	0.05574	0.42326	3.47895
	C1->Y (RF)	0.03858	0.41909	3.65613
	C2->Y (RF)	0.04295	0.40092	3.44933
sky130_fd_sc_hs__a222oi_2	A1->Y (RF)	0.05216	0.41479	3.63199
	A2->Y (RF)	0.05685	0.40050	3.45771
	B1->Y (RF)	0.04925	0.39720	3.60591
	B2->Y (RF)	0.05459	0.38380	3.44269
	C1->Y (RF)	0.03226	0.35104	3.44025
	C2->Y (RF)	0.03809	0.34160	3.26700

Power Information

Internal switching power(pJ) to Y rising :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__a222oi_1	A1	0.00148	0.00129	0.00143
	A1	0.00774	0.00757	0.00770
	A2	0.00168	0.00158	0.00172
	A2	0.00856	0.00847	0.00860
	B1	0.00151	0.00132	0.00164
	B1	0.00686	0.00667	0.00691
	B2	0.00174	0.00160	0.00192
	B2	0.00777	0.00764	0.00794
	C1	0.00066	0.00066	0.00225
	C1	0.00610	0.00602	0.00742
	C2	0.00094	0.00096	0.00256
	C2	0.00700	0.00698	0.00842
sky130_fd_sc_hs__a222oi_2	A1	0.00239	0.00201	0.00235
	A1	0.01490	0.01453	0.01487
	A2	0.00309	0.00283	0.00317
	A2	0.01648	0.01623	0.01657
	B1	0.00247	0.00206	0.00276
	B1	0.01326	0.01287	0.01355
	B2	0.00307	0.00278	0.00349
	B2	0.01483	0.01456	0.01511
	C1	0.00060	0.00068	0.00398
	C1	0.01124	0.01120	0.01410
	C2	0.00123	0.00129	0.00455
	C2	0.01347	0.01342	0.01626

Internal switching power(pJ) to Y falling :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__a222oi_1	A1	0.00966	0.00953	0.01001
	A1	0.00381	0.00366	0.00417
	A2	0.01029	0.01017	0.01041
	A2	0.00378	0.00365	0.00393
	B1	0.00739	0.00736	0.00788
	B1	0.00216	0.00211	0.00264
	B2	0.00811	0.00802	0.00834
	B2	0.00217	0.00205	0.00240
	C1	0.00534	0.00537	0.00594
	C1	0.00059	0.00055	0.00117
	C2	0.00602	0.00601	0.00639
	C2	0.00058	0.00051	0.00091
sky130_fd_sc_hs__a222oi_2	A1	0.01815	0.01792	0.01894
	A1	0.00647	0.00623	0.00727
	A2	0.01914	0.01886	0.01948
	A2	0.00649	0.00621	0.00686
	B1	0.01403	0.01389	0.01510
	B1	0.00350	0.00329	0.00453
	B2	0.01529	0.01514	0.01584
	B2	0.00371	0.00347	0.00423
	C1	0.00965	0.00980	0.01099
	C1	0.00052	0.00045	0.00182
	C2	0.01133	0.01127	0.01216
	C2	0.00049	0.00031	0.00122

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)**	0.00099	0.00099	0.00098
	(A2 * B1 * B2 * C1 * C2 * !Y)	-0.00121	-0.00127	-0.00126
	(A2 * B1 * B2 * C1 * !C2 * !Y)	0.00099	0.00099	0.00098
	(A2 * B1 * B2 * C1 * !C2 * !Y)	-0.00120	-0.00127	-0.00126
	(A2 * B1 * B2 * !C1 * !Y)	0.00099	0.00099	0.00098
	(A2 * B1 * B2 * !C1 * !Y)	-0.00120	-0.00127	-0.00126
	(A2 * B1 * !B2 * C1 * C2 * !Y)	0.00100	0.00100	0.00098
	(A2 * B1 * !B2 * C1 * C2 * !Y)	-0.00116	-0.00122	-0.00123
	(A2 * !B1 * C1 * C2 * !Y)	0.00100	0.00100	0.00098
	(A2 * !B1 * C1 * C2 * !Y)	-0.00116	-0.00122	-0.00123
	(!A2 * B1 * B2 * C1 * C2 * !Y)	0.00092	0.00093	0.00093
	(!A2 * B1 * B2 * C1 * C2 * !Y)	-0.00130	-0.00131	-0.00130
	(!A2 * B1 * B2 * C1 * !C2 * !Y)	0.00092	0.00093	0.00093
	(!A2 * B1 * B2 * C1 * !C2 * !Y)	-0.00130	-0.00130	-0.00130
	(!A2 * B1 * B2 * !C1 * !Y)	0.00092	0.00093	0.00093
	(!A2 * B1 * B2 * !C1 * !Y)	-0.00130	-0.00131	-0.00130
	(!A2 * B1 * !B2 * C1 * C2 * !Y)	0.00093	0.00094	0.00093
	(!A2 * B1 * !B2 * C1 * C2 * !Y)	-0.00130	-0.00131	-0.00130
	(!A2 * B1 * !B2 * C1 * !C2 * Y)	0.00036	0.00036	0.00035
	(!A2 * B1 * !B2 * C1 * !C2 * Y)	-0.00149	-0.00149	-0.00150
	(!A2 * B1 * !B2 * !C1 * Y)	0.00036	0.00036	0.00035
	(!A2 * B1 * !B2 * !C1 * Y)	-0.00149	-0.00149	-0.00150
	(!A2 * !B1 * C1 * C2 * !Y)	0.00093	0.00094	0.00093
	(!A2 * !B1 * C1 * C2 * !Y)	-0.00130	-0.00131	-0.00130
	(!A2 * !B1 * C1 * !C2 * Y)	0.00036	0.00036	0.00035
	(!A2 * !B1 * C1 * !C2 * Y)	-0.00149	-0.00149	-0.00150
	(!A2 * !B1 * !C1 * Y)	0.00036	0.00036	0.00035
	(!A2 * !B1 * !C1 * Y)	-0.00149	-0.00149	-0.00150

sky130_fd_sc_hs__a222oi_2	**(A2 * B1 * B2 * C1 * C2 * !Y)**	0.00205	0.00206	0.00203
	(A2 * B1 * B2 * C1 * C2 * !Y)	-0.00246	-0.00259	-0.00255
	(A2 * B1 * B2 * C1 * !C2 * !Y)	0.00205	0.00206	0.00203
	(A2 * B1 * B2 * C1 * !C2 * !Y)	-0.00244	-0.00255	-0.00255
	(A2 * B1 * B2 * !C1 * !Y)	0.00205	0.00206	0.00203
	(A2 * B1 * B2 * !C1 * !Y)	-0.00244	-0.00258	-0.00255
	(A2 * B1 * !B2 * C1 * C2 * !Y)	0.00207	0.00206	0.00203
	(A2 * B1 * !B2 * C1 * C2 * !Y)	-0.00232	-0.00249	-0.00248
	(A2 * !B1 * C1 * C2 * !Y)	0.00207	0.00206	0.00203
	(A2 * !B1 * C1 * C2 * !Y)	-0.00231	-0.00249	-0.00248
	(!A2 * B1 * B2 * C1 * C2 * !Y)	0.00194	0.00193	0.00194
	(!A2 * B1 * B2 * C1 * C2 * !Y)	-0.00263	-0.00263	-0.00264
	(!A2 * B1 * B2 * C1 * !C2 * !Y)	0.00194	0.00193	0.00194
	(!A2 * B1 * B2 * C1 * !C2 * !Y)	-0.00265	-0.00264	-0.00264
	(!A2 * B1 * B2 * !C1 * !Y)	0.00194	0.00196	0.00194
	(!A2 * B1 * B2 * !C1 * !Y)	-0.00265	-0.00266	-0.00264
	(!A2 * B1 * !B2 * C1 * C2 * !Y)	0.00194	0.00194	0.00194
	(!A2 * B1 * !B2 * C1 * C2 * !Y)	-0.00264	-0.00264	-0.00264
	(!A2 * B1 * !B2 * C1 * !C2 * Y)	0.00070	0.00071	0.00068
	(!A2 * B1 * !B2 * C1 * !C2 * Y)	-0.00309	-0.00312	-0.00316
	(!A2 * B1 * !B2 * !C1 * Y)	0.00070	0.00071	0.00068
	(!A2 * B1 * !B2 * !C1 * Y)	-0.00309	-0.00312	-0.00316
	(!A2 * !B1 * C1 * C2 * !Y)	0.00193	0.00194	0.00194
	(!A2 * !B1 * C1 * C2 * !Y)	-0.00263	-0.00265	-0.00264
	(!A2 * !B1 * C1 * !C2 * Y)	0.00071	0.00071	0.00068
	(!A2 * !B1 * C1 * !C2 * Y)	-0.00311	-0.00312	-0.00316
	(!A2 * !B1 * !C1 * Y)	0.00071	0.00071	0.00068
	(!A2 * !B1 * !C1 * Y)	-0.00311	-0.00312	-0.00316

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)	-0.00099	-0.00099	-0.00098
	(A2 * B1 * B2 * C1 * C2 * !Y)	0.00127	0.00127	0.00126
	(A2 * B1 * B2 * C1 * !C2 * !Y)	-0.00099	-0.00099	-0.00098
	(A2 * B1 * B2 * C1 * !C2 * !Y)	0.00127	0.00127	0.00126
	(A2 * B1 * B2 * !C1 * !Y)	-0.00099	-0.00099	-0.00098
	(A2 * B1 * B2 * !C1 * !Y)	0.00127	0.00127	0.00126
	(A2 * B1 * !B2 * C1 * C2 * !Y)	-0.00098	-0.00098	-0.00098
	(A2 * B1 * !B2 * C1 * C2 * !Y)	0.00123	0.00122	0.00123
	(A2 * !B1 * C1 * C2 * !Y)	-0.00098	-0.00098	-0.00098
	(A2 * !B1 * C1 * C2 * !Y)	0.00123	0.00122	0.00123
	(!A2 * B1 * B2 * C1 * C2 * !Y)	-0.00091	-0.00093	-0.00093
	(!A2 * B1 * B2 * C1 * C2 * !Y)	0.00131	0.00131	0.00131
	(!A2 * B1 * B2 * C1 * !C2 * !Y)	-0.00091	-0.00093	-0.00093
	(!A2 * B1 * B2 * C1 * !C2 * !Y)	0.00131	0.00132	0.00131
	(!A2 * B1 * B2 * !C1 * !Y)	-0.00091	-0.00093	-0.00093
	(!A2 * B1 * B2 * !C1 * !Y)	0.00131	0.00132	0.00131
	(!A2 * B1 * !B2 * C1 * C2 * !Y)	-0.00091	-0.00094	-0.00093
	(!A2 * B1 * !B2 * C1 * C2 * !Y)	0.00131	0.00132	0.00131
	(!A2 * B1 * !B2 * C1 * !C2 * Y)	-0.00034	-0.00034	-0.00034
	(!A2 * B1 * !B2 * C1 * !C2 * Y)	0.00150	0.00150	0.00151
	(!A2 * B1 * !B2 * !C1 * Y)	-0.00034	-0.00034	-0.00034
	(!A2 * B1 * !B2 * !C1 * Y)	0.00150	0.00150	0.00151
	(!A2 * !B1 * C1 * C2 * !Y)	-0.00090	-0.00094	-0.00093
	(!A2 * !B1 * C1 * C2 * !Y)	0.00131	0.00132	0.00131
	(!A2 * !B1 * C1 * !C2 * Y)	-0.00034	-0.00034	-0.00034
	(!A2 * !B1 * C1 * !C2 * Y)	0.00150	0.00150	0.00151
	(!A2 * !B1 * !C1 * Y)	-0.00034	-0.00034	-0.00034
	(!A2 * !B1 * !C1 * Y)	0.00150	0.00150	0.00151

sky130_fd_sc_hs__a222oi_2	**(A2 * B1 * B2 * C1 * C2 * !Y)**	-0.00203	-0.00205	-0.00203
	(A2 * B1 * B2 * C1 * C2 * !Y)	0.00256	0.00259	0.00255
	(A2 * B1 * B2 * C1 * !C2 * !Y)	-0.00203	-0.00203	-0.00203
	(A2 * B1 * B2 * C1 * !C2 * !Y)	0.00256	0.00255	0.00255
	(A2 * B1 * B2 * !C1 * !Y)	-0.00203	-0.00205	-0.00203
	(A2 * B1 * B2 * !C1 * !Y)	0.00255	0.00260	0.00255
	(A2 * B1 * !B2 * C1 * C2 * !Y)	-0.00202	-0.00203	-0.00202
	(A2 * B1 * !B2 * C1 * C2 * !Y)	0.00246	0.00249	0.00248
	(A2 * !B1 * C1 * C2 * !Y)	-0.00202	-0.00203	-0.00202
	(A2 * !B1 * C1 * C2 * !Y)	0.00247	0.00249	0.00248
	(!A2 * B1 * B2 * C1 * C2 * !Y)	-0.00187	-0.00193	-0.00194
	(!A2 * B1 * B2 * C1 * C2 * !Y)	0.00263	0.00267	0.00265
	(!A2 * B1 * B2 * C1 * !C2 * !Y)	-0.00188	-0.00193	-0.00194
	(!A2 * B1 * B2 * C1 * !C2 * !Y)	0.00266	0.00268	0.00265
	(!A2 * B1 * B2 * !C1 * !Y)	-0.00188	-0.00196	-0.00194
	(!A2 * B1 * B2 * !C1 * !Y)	0.00266	0.00268	0.00265
	(!A2 * B1 * !B2 * C1 * C2 * !Y)	-0.00187	-0.00194	-0.00194
	(!A2 * B1 * !B2 * C1 * C2 * !Y)	0.00266	0.00268	0.00265
	(!A2 * B1 * !B2 * C1 * !C2 * Y)	-0.00067	-0.00066	-0.00066
	(!A2 * B1 * !B2 * C1 * !C2 * Y)	0.00318	0.00317	0.00316
	(!A2 * B1 * !B2 * !C1 * Y)	-0.00067	-0.00066	-0.00066
	(!A2 * B1 * !B2 * !C1 * Y)	0.00318	0.00317	0.00316
	(!A2 * !B1 * C1 * C2 * !Y)	-0.00187	-0.00194	-0.00194
	(!A2 * !B1 * C1 * C2 * !Y)	0.00266	0.00268	0.00265
	(!A2 * !B1 * C1 * !C2 * Y)	-0.00067	-0.00066	-0.00066
	(!A2 * !B1 * C1 * !C2 * Y)	0.00318	0.00317	0.00316
	(!A2 * !B1 * !C1 * Y)	-0.00067	-0.00067	-0.00066
	(!A2 * !B1 * !C1 * Y)	0.00318	0.00317	0.00316

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)	0.00102	0.00103	0.00102
	(A1 * B1 * B2 * C1 * C2 * !Y)	-0.00120	-0.00127	-0.00126
	(A1 * B1 * B2 * C1 * !C2 * !Y)	0.00103	0.00103	0.00102
	(A1 * B1 * B2 * C1 * !C2 * !Y)	-0.00120	-0.00127	-0.00126
	(A1 * B1 * B2 * !C1 * !Y)	0.00103	0.00103	0.00102
	(A1 * B1 * B2 * !C1 * !Y)	-0.00120	-0.00127	-0.00126
	(A1 * B1 * !B2 * C1 * C2 * !Y)	0.00104	0.00103	0.00102
	(A1 * B1 * !B2 * C1 * C2 * !Y)	-0.00115	-0.00122	-0.00123
	(A1 * !B1 * C1 * C2 * !Y)	0.00104	0.00103	0.00102
	(A1 * !B1 * C1 * C2 * !Y)	-0.00115	-0.00122	-0.00123
	(!A1 * B1 * B2 * !Y)	0.00096	0.00097	0.00097
	(!A1 * B1 * B2 * !Y)	-0.00130	-0.00130	-0.00130
	(!A1 * B1 * !B2 * C1 * C2 * !Y) + (!A1 * !B1 * C1 * C2 * !Y)	0.00096	0.00098	0.00097
	(!A1 * B1 * !B2 * C1 * C2 * !Y) + (!A1 * !B1 * C1 * C2 * !Y)	-0.00129	-0.00131	-0.00130
	(!A1 * B1 * !B2 * C1 * !C2 * Y)	0.00097	0.00097	0.00097
	(!A1 * B1 * !B2 * C1 * !C2 * Y)	-0.00129	-0.00130	-0.00130
	(!A1 * B1 * !B2 * !C1 * Y)	0.00097	0.00097	0.00097
	(!A1 * B1 * !B2 * !C1 * Y)	-0.00129	-0.00130	-0.00130
	(!A1 * !B1 * C1 * !C2 * Y)	0.00097	0.00097	0.00097
	(!A1 * !B1 * C1 * !C2 * Y)	-0.00129	-0.00129	-0.00130
	(!A1 * !B1 * !C1 * Y)	0.00097	0.00097	0.00097
	(!A1 * !B1 * !C1 * Y)	-0.00129	-0.00129	-0.00130

sky130_fd_sc_hs__a222oi_2	**(A1 * B1 * B2 * C1 * C2 * !Y)**	0.00191	0.00193	0.00191
	(A1 * B1 * B2 * C1 * C2 * !Y)	-0.00227	-0.00240	-0.00238
	(A1 * B1 * B2 * C1 * !C2 * !Y)	0.00192	0.00193	0.00191
	(A1 * B1 * B2 * C1 * !C2 * !Y)	-0.00226	-0.00240	-0.00238
	(A1 * B1 * B2 * !C1 * !Y)	0.00192	0.00193	0.00191
	(A1 * B1 * B2 * !C1 * !Y)	-0.00226	-0.00240	-0.00238
	(A1 * B1 * !B2 * C1 * C2 * !Y)	0.00194	0.00194	0.00191
	(A1 * B1 * !B2 * C1 * C2 * !Y)	-0.00218	-0.00233	-0.00231
	(A1 * !B1 * C1 * C2 * !Y)	0.00194	0.00194	0.00191
	(A1 * !B1 * C1 * C2 * !Y)	-0.00217	-0.00232	-0.00231
	(!A1 * B1 * B2 * !Y)	0.00181	0.00183	0.00182
	(!A1 * B1 * B2 * !Y)	-0.00244	-0.00246	-0.00245
	(!A1 * B1 * !B2 * C1 * C2 * !Y) + (!A1 * !B1 * C1 * C2 * !Y)	0.00181	0.00183	0.00182
	(!A1 * B1 * !B2 * C1 * C2 * !Y) + (!A1 * !B1 * C1 * C2 * !Y)	-0.00244	-0.00245	-0.00244
	(!A1 * B1 * !B2 * C1 * !C2 * Y)	0.00175	0.00177	0.00175
	(!A1 * B1 * !B2 * C1 * !C2 * Y)	-0.00250	-0.00252	-0.00251
	(!A1 * B1 * !B2 * !C1 * Y)	0.00175	0.00177	0.00175
	(!A1 * B1 * !B2 * !C1 * Y)	-0.00250	-0.00252	-0.00251
	(!A1 * !B1 * C1 * !C2 * Y)	0.00175	0.00177	0.00175
	(!A1 * !B1 * C1 * !C2 * Y)	-0.00250	-0.00253	-0.00251
	(!A1 * !B1 * !C1 * Y)	0.00175	0.00177	0.00175
	(!A1 * !B1 * !C1 * Y)	-0.00250	-0.00253	-0.00251

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)**	-0.00102	-0.00102	-0.00102
	(A1 * B1 * B2 * C1 * C2 * !Y)	0.00126	0.00127	0.00126
	(A1 * B1 * B2 * C1 * !C2 * !Y)	-0.00102	-0.00102	-0.00102
	(A1 * B1 * B2 * C1 * !C2 * !Y)	0.00126	0.00127	0.00126
	(A1 * B1 * B2 * !C1 * !Y)	-0.00102	-0.00102	-0.00102
	(A1 * B1 * B2 * !C1 * !Y)	0.00126	0.00127	0.00126
	(A1 * B1 * !B2 * C1 * C2 * !Y)	-0.00102	-0.00102	-0.00102
	(A1 * B1 * !B2 * C1 * C2 * !Y)	0.00123	0.00122	0.00123
	(A1 * !B1 * C1 * C2 * !Y)	-0.00102	-0.00102	-0.00102
	(A1 * !B1 * C1 * C2 * !Y)	0.00123	0.00122	0.00123
	(!A1 * B1 * B2 * !Y)	-0.00095	-0.00097	-0.00097
	(!A1 * B1 * B2 * !Y)	0.00130	0.00132	0.00130
	(!A1 * B1 * !B2 * C1 * C2 * !Y) + (!A1 * !B1 * C1 * C2 * !Y)	-0.00095	-0.00098	-0.00097
	(!A1 * B1 * !B2 * C1 * C2 * !Y) + (!A1 * !B1 * C1 * C2 * !Y)	0.00130	0.00133	0.00130
	(!A1 * B1 * !B2 * C1 * !C2 * Y)	-0.00092	-0.00097	-0.00097
	(!A1 * B1 * !B2 * C1 * !C2 * Y)	0.00135	0.00133	0.00130
	(!A1 * B1 * !B2 * !C1 * Y)	-0.00092	-0.00097	-0.00097
	(!A1 * B1 * !B2 * !C1 * Y)	0.00135	0.00133	0.00130
	(!A1 * !B1 * C1 * !C2 * Y)	-0.00092	-0.00097	-0.00097
	(!A1 * !B1 * C1 * !C2 * Y)	0.00135	0.00133	0.00130
	(!A1 * !B1 * !C1 * Y)	-0.00092	-0.00097	-0.00097
	(!A1 * !B1 * !C1 * Y)	0.00135	0.00133	0.00130

sky130_fd_sc_hs__a222oi_2	**(A1 * B1 * B2 * C1 * C2 * !Y)**	-0.00191	-0.00192	-0.00191
	(A1 * B1 * B2 * C1 * C2 * !Y)	0.00238	0.00240	0.00238
	(A1 * B1 * B2 * C1 * !C2 * !Y)	-0.00190	-0.00192	-0.00191
	(A1 * B1 * B2 * C1 * !C2 * !Y)	0.00236	0.00240	0.00238
	(A1 * B1 * B2 * !C1 * !Y)	-0.00191	-0.00192	-0.00191
	(A1 * B1 * B2 * !C1 * !Y)	0.00238	0.00240	0.00238
	(A1 * B1 * !B2 * C1 * C2 * !Y)	-0.00190	-0.00191	-0.00190
	(A1 * B1 * !B2 * C1 * C2 * !Y)	0.00231	0.00233	0.00231
	(A1 * !B1 * C1 * C2 * !Y)	-0.00190	-0.00191	-0.00190
	(A1 * !B1 * C1 * C2 * !Y)	0.00231	0.00232	0.00231
	(!A1 * B1 * B2 * !Y)	-0.00176	-0.00182	-0.00182
	(!A1 * B1 * B2 * !Y)	0.00244	0.00247	0.00245
	(!A1 * B1 * !B2 * C1 * C2 * !Y) + (!A1 * !B1 * C1 * C2 * !Y)	-0.00175	-0.00182	-0.00182
	(!A1 * B1 * !B2 * C1 * C2 * !Y) + (!A1 * !B1 * C1 * C2 * !Y)	0.00244	0.00247	0.00245
	(!A1 * B1 * !B2 * C1 * !C2 * Y)	-0.00163	-0.00175	-0.00175
	(!A1 * B1 * !B2 * C1 * !C2 * Y)	0.00258	0.00254	0.00252
	(!A1 * B1 * !B2 * !C1 * Y)	-0.00163	-0.00175	-0.00175
	(!A1 * B1 * !B2 * !C1 * Y)	0.00258	0.00254	0.00252
	(!A1 * !B1 * C1 * !C2 * Y)	-0.00163	-0.00175	-0.00175
	(!A1 * !B1 * C1 * !C2 * Y)	0.00258	0.00254	0.00252
	(!A1 * !B1 * !C1 * Y)	-0.00163	-0.00175	-0.00175
	(!A1 * !B1 * !C1 * Y)	0.00258	0.00254	0.00252

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)**	0.00100	0.00101	0.00099
	(A1 * A2 * B2 * C1 * C2 * !Y)	-0.00093	-0.00094	-0.00093
	(A1 * A2 * B2 * C1 * !C2 * !Y)	0.00099	0.00100	0.00098
	(A1 * A2 * B2 * C1 * !C2 * !Y)	-0.00076	-0.00076	-0.00075
	(A1 * A2 * B2 * !C1 * !Y)	0.00098	0.00100	0.00098
	(A1 * A2 * B2 * !C1 * !Y)	-0.00074	-0.00076	-0.00075
	(A1 * A2 * !B2 * C1 * C2 * !Y)	0.00094	0.00095	0.00094
	(A1 * A2 * !B2 * C1 * C2 * !Y)	-0.00089	-0.00089	-0.00088
	(A1 * A2 * !B2 * C1 * !C2 * !Y)	0.00093	0.00094	0.00093
	(A1 * A2 * !B2 * C1 * !C2 * !Y)	-0.00075	-0.00076	-0.00075
	(A1 * A2 * !B2 * !C1 * !Y)	0.00093	0.00093	0.00093
	(A1 * A2 * !B2 * !C1 * !Y)	-0.00075	-0.00075	-0.00075
	(A1 * !A2 * B2 * C1 * C2 * !Y)	0.00110	0.00099	0.00098
	(A1 * !A2 * B2 * C1 * C2 * !Y)	-0.00109	-0.00125	-0.00125
	(A1 * !A2 * !B2 * C1 * C2 * !Y)	0.00092	0.00093	0.00092
	(A1 * !A2 * !B2 * C1 * C2 * !Y)	-0.00127	-0.00128	-0.00127
	(A1 * !A2 * !B2 * C1 * !C2 * Y)	0.00033	0.00034	0.00032
	(A1 * !A2 * !B2 * C1 * !C2 * Y)	-0.00147	-0.00148	-0.00149
	(A1 * !A2 * !B2 * !C1 * Y)	0.00033	0.00034	0.00032
	(A1 * !A2 * !B2 * !C1 * Y)	-0.00147	-0.00148	-0.00149
	(!A1 * B2 * C1 * C2 * !Y)	0.00109	0.00099	0.00098
	(!A1 * B2 * C1 * C2 * !Y)	-0.00110	-0.00124	-0.00125
	(!A1 * !B2 * C1 * C2 * !Y)	0.00092	0.00093	0.00092
	(!A1 * !B2 * C1 * C2 * !Y)	-0.00127	-0.00128	-0.00127
	(!A1 * !B2 * C1 * !C2 * Y)	0.00033	0.00034	0.00032
	(!A1 * !B2 * C1 * !C2 * Y)	-0.00147	-0.00148	-0.00149
	(!A1 * !B2 * !C1 * Y)	0.00033	0.00034	0.00032
	(!A1 * !B2 * !C1 * Y)	-0.00147	-0.00148	-0.00149

sky130_fd_sc_hs__a222oi_2	**(A1 * A2 * B2 * C1 * C2 * !Y)**	0.00207	0.00210	0.00206
	(A1 * A2 * B2 * C1 * C2 * !Y)	-0.00187	-0.00188	-0.00188
	(A1 * A2 * B2 * C1 * !C2 * !Y)	0.00204	0.00207	0.00204
	(A1 * A2 * B2 * C1 * !C2 * !Y)	-0.00156	-0.00158	-0.00156
	(A1 * A2 * B2 * !C1 * !Y)	0.00204	0.00207	0.00204
	(A1 * A2 * B2 * !C1 * !Y)	-0.00156	-0.00158	-0.00156
	(A1 * A2 * !B2 * C1 * C2 * !Y)	0.00195	0.00199	0.00196
	(A1 * A2 * !B2 * C1 * C2 * !Y)	-0.00177	-0.00180	-0.00179
	(A1 * A2 * !B2 * C1 * !C2 * !Y)	0.00195	0.00196	0.00195
	(A1 * A2 * !B2 * C1 * !C2 * !Y)	-0.00156	-0.00156	-0.00155
	(A1 * A2 * !B2 * !C1 * !Y)	0.00194	0.00196	0.00195
	(A1 * A2 * !B2 * !C1 * !Y)	-0.00155	-0.00156	-0.00155
	(A1 * !A2 * B2 * C1 * C2 * !Y)	0.00230	0.00205	0.00203
	(A1 * !A2 * B2 * C1 * C2 * !Y)	-0.00224	-0.00257	-0.00257
	(A1 * !A2 * !B2 * C1 * C2 * !Y)	0.00193	0.00194	0.00193
	(A1 * !A2 * !B2 * C1 * C2 * !Y)	-0.00263	-0.00264	-0.00263
	(A1 * !A2 * !B2 * C1 * !C2 * Y)	0.00069	0.00069	0.00066
	(A1 * !A2 * !B2 * C1 * !C2 * Y)	-0.00311	-0.00313	-0.00316
	(A1 * !A2 * !B2 * !C1 * Y)	0.00069	0.00069	0.00066
	(A1 * !A2 * !B2 * !C1 * Y)	-0.00311	-0.00313	-0.00316
	(!A1 * B2 * C1 * C2 * !Y)	0.00230	0.00205	0.00203
	(!A1 * B2 * C1 * C2 * !Y)	-0.00226	-0.00256	-0.00257
	(!A1 * !B2 * C1 * C2 * !Y)	0.00192	0.00195	0.00193
	(!A1 * !B2 * C1 * C2 * !Y)	-0.00262	-0.00264	-0.00263
	(!A1 * !B2 * C1 * !C2 * Y)	0.00069	0.00069	0.00066
	(!A1 * !B2 * C1 * !C2 * Y)	-0.00311	-0.00313	-0.00316
	(!A1 * !B2 * !C1 * Y)	0.00069	0.00069	0.00066
	(!A1 * !B2 * !C1 * Y)	-0.00311	-0.00313	-0.00316

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)	-0.00099	-0.00100	-0.00099
	(A1 * A2 * B2 * C1 * C2 * !Y)	0.00093	0.00094	0.00093
	(A1 * A2 * B2 * C1 * !C2 * !Y)	-0.00089	-0.00090	-0.00093
	(A1 * A2 * B2 * C1 * !C2 * !Y)	0.00083	0.00083	0.00081
	(A1 * A2 * B2 * !C1 * !Y)	-0.00089	-0.00090	-0.00093
	(A1 * A2 * B2 * !C1 * !Y)	0.00083	0.00083	0.00081
	(A1 * A2 * !B2 * C1 * C2 * !Y)	-0.00092	-0.00095	-0.00094
	(A1 * A2 * !B2 * C1 * C2 * !Y)	0.00089	0.00089	0.00088
	(A1 * A2 * !B2 * C1 * !C2 * !Y)	-0.00091	-0.00094	-0.00093
	(A1 * A2 * !B2 * C1 * !C2 * !Y)	0.00075	0.00076	0.00075
	(A1 * A2 * !B2 * !C1 * !Y)	-0.00091	-0.00093	-0.00093
	(A1 * A2 * !B2 * !C1 * !Y)	0.00075	0.00076	0.00075
	(A1 * !A2 * B2 * C1 * C2 * !Y)	-0.00097	-0.00098	-0.00097
	(A1 * !A2 * B2 * C1 * C2 * !Y)	0.00125	0.00126	0.00125
	(A1 * !A2 * !B2 * C1 * C2 * !Y)	-0.00090	-0.00093	-0.00092
	(A1 * !A2 * !B2 * C1 * C2 * !Y)	0.00128	0.00130	0.00128
	(A1 * !A2 * !B2 * C1 * !C2 * Y)	-0.00032	-0.00032	-0.00032
	(A1 * !A2 * !B2 * C1 * !C2 * Y)	0.00149	0.00150	0.00150
	(A1 * !A2 * !B2 * !C1 * Y)	-0.00032	-0.00032	-0.00032
	(A1 * !A2 * !B2 * !C1 * Y)	0.00149	0.00150	0.00150
	(!A1 * B2 * C1 * C2 * !Y)	-0.00097	-0.00098	-0.00097
	(!A1 * B2 * C1 * C2 * !Y)	0.00125	0.00126	0.00125
	(!A1 * !B2 * C1 * C2 * !Y)	-0.00090	-0.00093	-0.00092
	(!A1 * !B2 * C1 * C2 * !Y)	0.00128	0.00129	0.00128
	(!A1 * !B2 * C1 * !C2 * Y)	-0.00032	-0.00032	-0.00032
	(!A1 * !B2 * C1 * !C2 * Y)	0.00149	0.00150	0.00150
	(!A1 * !B2 * !C1 * Y)	-0.00032	-0.00032	-0.00032
	(!A1 * !B2 * !C1 * Y)	0.00149	0.00150	0.00150

sky130_fd_sc_hs__a222oi_2	**(A1 * A2 * B2 * C1 * C2 * !Y)**	-0.00204	-0.00205	-0.00205
	(A1 * A2 * B2 * C1 * C2 * !Y)	0.00187	0.00188	0.00188
	(A1 * A2 * B2 * C1 * !C2 * !Y)	-0.00190	-0.00191	-0.00193
	(A1 * A2 * B2 * C1 * !C2 * !Y)	0.00169	0.00168	0.00166
	(A1 * A2 * B2 * !C1 * !Y)	-0.00189	-0.00191	-0.00193
	(A1 * A2 * B2 * !C1 * !Y)	0.00167	0.00168	0.00166
	(A1 * A2 * !B2 * C1 * C2 * !Y)	-0.00188	-0.00197	-0.00196
	(A1 * A2 * !B2 * C1 * C2 * !Y)	0.00177	0.00180	0.00179
	(A1 * A2 * !B2 * C1 * !C2 * !Y)	-0.00189	-0.00196	-0.00195
	(A1 * A2 * !B2 * C1 * !C2 * !Y)	0.00156	0.00157	0.00155
	(A1 * A2 * !B2 * !C1 * !Y)	-0.00188	-0.00196	-0.00195
	(A1 * A2 * !B2 * !C1 * !Y)	0.00156	0.00157	0.00155
	(A1 * !A2 * B2 * C1 * C2 * !Y)	-0.00200	-0.00202	-0.00200
	(A1 * !A2 * B2 * C1 * C2 * !Y)	0.00254	0.00258	0.00257
	(A1 * !A2 * !B2 * C1 * C2 * !Y)	-0.00187	-0.00194	-0.00193
	(A1 * !A2 * !B2 * C1 * C2 * !Y)	0.00265	0.00266	0.00264
	(A1 * !A2 * !B2 * C1 * !C2 * Y)	-0.00065	-0.00064	-0.00064
	(A1 * !A2 * !B2 * C1 * !C2 * Y)	0.00318	0.00317	0.00317
	(A1 * !A2 * !B2 * !C1 * Y)	-0.00065	-0.00064	-0.00064
	(A1 * !A2 * !B2 * !C1 * Y)	0.00318	0.00317	0.00317
	(!A1 * B2 * C1 * C2 * !Y)	-0.00201	-0.00201	-0.00200
	(!A1 * B2 * C1 * C2 * !Y)	0.00255	0.00256	0.00257
	(!A1 * !B2 * C1 * C2 * !Y)	-0.00186	-0.00195	-0.00193
	(!A1 * !B2 * C1 * C2 * !Y)	0.00265	0.00266	0.00264
	(!A1 * !B2 * C1 * !C2 * Y)	-0.00065	-0.00064	-0.00064
	(!A1 * !B2 * C1 * !C2 * Y)	0.00318	0.00317	0.00317
	(!A1 * !B2 * !C1 * Y)	-0.00065	-0.00064	-0.00064
	(!A1 * !B2 * !C1 * Y)	0.00318	0.00317	0.00317

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)	0.00109	0.00110	0.00108
	(A1 * A2 * B1 * C1 * C2 * !Y)	-0.00093	-0.00094	-0.00093
	(A1 * A2 * B1 * C1 * !C2 * !Y)	0.00107	0.00109	0.00107
	(A1 * A2 * B1 * C1 * !C2 * !Y)	-0.00075	-0.00076	-0.00075
	(A1 * A2 * B1 * !C1 * !Y)	0.00107	0.00109	0.00107
	(A1 * A2 * B1 * !C1 * !Y)	-0.00075	-0.00076	-0.00075
	(A1 * A2 * !B1 * C1 * C2 * !Y)	0.00103	0.00103	0.00103
	(A1 * A2 * !B1 * C1 * C2 * !Y)	-0.00088	-0.00089	-0.00088
	(A1 * A2 * !B1 * C1 * !C2 * !Y)	0.00102	0.00103	0.00102
	(A1 * A2 * !B1 * C1 * !C2 * !Y)	-0.00075	-0.00076	-0.00075
	(A1 * A2 * !B1 * !C1 * !Y)	0.00102	0.00103	0.00102
	(A1 * A2 * !B1 * !C1 * !Y)	-0.00075	-0.00076	-0.00075
	(A1 * !A2 * B1 * C1 * C2 * !Y)	0.00120	0.00108	0.00106
	(A1 * !A2 * B1 * C1 * C2 * !Y)	-0.00110	-0.00125	-0.00125
	(A1 * !A2 * !B1 * C1 * C2 * !Y) + (!A1 * !B1 * C1 * C2 * !Y)	0.00101	0.00102	0.00101
	(A1 * !A2 * !B1 * C1 * C2 * !Y) + (!A1 * !B1 * C1 * C2 * !Y)	-0.00127	-0.00128	-0.00128
	(A1 * !A2 * !B1 * C1 * !C2 * Y)	0.00089	0.00090	0.00089
	(A1 * !A2 * !B1 * C1 * !C2 * Y)	-0.00139	-0.00140	-0.00140
	(A1 * !A2 * !B1 * !C1 * Y)	0.00089	0.00090	0.00089
	(A1 * !A2 * !B1 * !C1 * Y)	-0.00139	-0.00140	-0.00140
	(!A1 * B1 * C1 * C2 * !Y)	0.00120	0.00108	0.00106
	(!A1 * B1 * C1 * C2 * !Y)	-0.00110	-0.00125	-0.00125
	(!A1 * !B1 * C1 * !C2 * Y)	0.00089	0.00090	0.00089
	(!A1 * !B1 * C1 * !C2 * Y)	-0.00139	-0.00140	-0.00140
	(!A1 * !B1 * !C1 * Y)	0.00089	0.00090	0.00089
	(!A1 * !B1 * !C1 * Y)	-0.00139	-0.00140	-0.00140

	(A1 * A2 * B1 * C1 * C2 * !Y)	0.00201	0.00202	0.00200
	(A1 * A2 * B1 * C1 * C2 * !Y)	-0.00173	-0.00175	-0.00174
	(A1 * A2 * B1 * C1 * !C2 * !Y)	0.00198	0.00202	0.00198
	(A1 * A2 * B1 * C1 * !C2 * !Y)	-0.00141	-0.00143	-0.00141
	(A1 * A2 * B1 * !C1 * !Y)	0.00198	0.00202	0.00198
	(A1 * A2 * B1 * !C1 * !Y)	-0.00141	-0.00143	-0.00141
	(A1 * A2 * !B1 * C1 * C2 * !Y)	0.00189	0.00193	0.00190
	(A1 * A2 * !B1 * C1 * C2 * !Y)	-0.00165	-0.00166	-0.00166
	(A1 * A2 * !B1 * C1 * !C2 * !Y)	0.00189	0.00192	0.00189
	(A1 * A2 * !B1 * C1 * !C2 * !Y)	-0.00141	-0.00141	-0.00141
	(A1 * A2 * !B1 * !C1 * !Y)	0.00189	0.00192	0.00189
	(A1 * A2 * !B1 * !C1 * !Y)	-0.00141	-0.00141	-0.00141
	(A1 * !A2 * B1 * C1 * C2 * !Y)	0.00227	0.00201	0.00198
sky130_fd_sc_hs__a222oi_2	**(A1 * !A2 * B1 * C1 * C2 * !Y)**	-0.00203	-0.00238	-0.00239
	(A1 * !A2 * !B1 * C1 * C2 * !Y) + (!A1 * !B1 * C1 * C2 * !Y)	0.00187	0.00190	0.00188
	(A1 * !A2 * !B1 * C1 * C2 * !Y) + (!A1 * !B1 * C1 * C2 * !Y)	-0.00244	-0.00246	-0.00244
	(A1 * !A2 * !B1 * C1 * !C2 * Y)	0.00178	0.00180	0.00179
	(A1 * !A2 * !B1 * C1 * !C2 * Y)	-0.00253	-0.00255	-0.00253
	(A1 * !A2 * !B1 * !C1 * Y)	0.00178	0.00180	0.00179
	(A1 * !A2 * !B1 * !C1 * Y)	-0.00253	-0.00255	-0.00253
	(!A1 * B1 * C1 * C2 * !Y)	0.00227	0.00201	0.00198
	(!A1 * B1 * C1 * C2 * !Y)	-0.00203	-0.00237	-0.00239
	(!A1 * !B1 * C1 * !C2 * Y)	0.00178	0.00181	0.00179
	(!A1 * !B1 * C1 * !C2 * Y)	-0.00253	-0.00255	-0.00253
	(!A1 * !B1 * !C1 * Y)	0.00178	0.00181	0.00179
	(!A1 * !B1 * !C1 * Y)	-0.00253	-0.00255	-0.00253

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)	-0.00108	-0.00108	-0.00108
	(A1 * A2 * B1 * C1 * C2 * !Y)	0.00093	0.00094	0.00093
	(A1 * A2 * B1 * C1 * !C2 * !Y)	-0.00098	-0.00100	-0.00102
	(A1 * A2 * B1 * C1 * !C2 * !Y)	0.00083	0.00083	0.00081
	(A1 * A2 * B1 * !C1 * !Y)	-0.00098	-0.00100	-0.00102
	(A1 * A2 * B1 * !C1 * !Y)	0.00083	0.00083	0.00081
	(A1 * A2 * !B1 * C1 * C2 * !Y)	-0.00100	-0.00103	-0.00103
	(A1 * A2 * !B1 * C1 * C2 * !Y)	0.00088	0.00089	0.00088
	(A1 * A2 * !B1 * C1 * !C2 * !Y)	-0.00099	-0.00103	-0.00102
	(A1 * A2 * !B1 * C1 * !C2 * !Y)	0.00075	0.00076	0.00075
	(A1 * A2 * !B1 * !C1 * !Y)	-0.00099	-0.00103	-0.00102
	(A1 * A2 * !B1 * !C1 * !Y)	0.00075	0.00076	0.00075
	(A1 * !A2 * B1 * C1 * C2 * !Y)	-0.00106	-0.00107	-0.00105
	(A1 * !A2 * B1 * C1 * C2 * !Y)	0.00125	0.00127	0.00125
	(A1 * !A2 * !B1 * C1 * C2 * !Y) + (!A1 * !B1 * C1 * C2 * !Y)	-0.00098	-0.00101	-0.00101
	(A1 * !A2 * !B1 * C1 * C2 * !Y) + (!A1 * !B1 * C1 * C2 * !Y)	0.00127	0.00128	0.00128
	(A1 * !A2 * !B1 * C1 * !C2 * Y)	-0.00084	-0.00090	-0.00089
	(A1 * !A2 * !B1 * C1 * !C2 * Y)	0.00143	0.00142	0.00140
	(A1 * !A2 * !B1 * !C1 * Y)	-0.00084	-0.00090	-0.00089
	(A1 * !A2 * !B1 * !C1 * Y)	0.00143	0.00142	0.00140
	(!A1 * B1 * C1 * C2 * !Y)	-0.00106	-0.00107	-0.00105
	(!A1 * B1 * C1 * C2 * !Y)	0.00125	0.00127	0.00125
	(!A1 * !B1 * C1 * !C2 * Y)	-0.00084	-0.00090	-0.00089
	(!A1 * !B1 * C1 * !C2 * Y)	0.00143	0.00142	0.00140
	(!A1 * !B1 * !C1 * Y)	-0.00084	-0.00090	-0.00089
	(!A1 * !B1 * !C1 * Y)	0.00143	0.00142	0.00140

	(A1 * A2 * B1 * C1 * C2 * !Y)	-0.00199	-0.00200	-0.00199
	(A1 * A2 * B1 * C1 * C2 * !Y)	0.00173	0.00175	0.00174
	(A1 * A2 * B1 * C1 * !C2 * !Y)	-0.00184	-0.00185	-0.00188
	(A1 * A2 * B1 * C1 * !C2 * !Y)	0.00154	0.00153	0.00151
	(A1 * A2 * B1 * !C1 * !Y)	-0.00184	-0.00185	-0.00188
	(A1 * A2 * B1 * !C1 * !Y)	0.00154	0.00153	0.00151
	(A1 * A2 * !B1 * C1 * C2 * !Y)	-0.00184	-0.00190	-0.00190
	(A1 * A2 * !B1 * C1 * C2 * !Y)	0.00165	0.00166	0.00166
	(A1 * A2 * !B1 * C1 * !C2 * !Y)	-0.00184	-0.00189	-0.00189
	(A1 * A2 * !B1 * C1 * !C2 * !Y)	0.00141	0.00141	0.00141
	(A1 * A2 * !B1 * !C1 * !Y)	-0.00184	-0.00189	-0.00189
	(A1 * A2 * !B1 * !C1 * !Y)	0.00141	0.00141	0.00141
	(A1 * !A2 * B1 * C1 * C2 * !Y)	-0.00196	-0.00196	-0.00195
sky130_fd_sc_hs__a222oi_2	**(A1 * !A2 * B1 * C1 * C2 * !Y)**	0.00236	0.00238	0.00239
	(A1 * !A2 * !B1 * C1 * C2 * !Y) + (!A1 * !B1 * C1 * C2 * !Y)	-0.00182	-0.00188	-0.00188
	(A1 * !A2 * !B1 * C1 * C2 * !Y) + (!A1 * !B1 * C1 * C2 * !Y)	0.00244	0.00247	0.00245
	(A1 * !A2 * !B1 * C1 * !C2 * Y)	-0.00167	-0.00179	-0.00179
	(A1 * !A2 * !B1 * C1 * !C2 * Y)	0.00261	0.00256	0.00254
	(A1 * !A2 * !B1 * !C1 * Y)	-0.00167	-0.00179	-0.00179
	(A1 * !A2 * !B1 * !C1 * Y)	0.00261	0.00256	0.00254
	(!A1 * B1 * C1 * C2 * !Y)	-0.00196	-0.00196	-0.00195
	(!A1 * B1 * C1 * C2 * !Y)	0.00236	0.00237	0.00239
	(!A1 * !B1 * C1 * !C2 * Y)	-0.00167	-0.00179	-0.00179
	(!A1 * !B1 * C1 * !C2 * Y)	0.00261	0.00256	0.00254
	(!A1 * !B1 * !C1 * Y)	-0.00167	-0.00179	-0.00179
	(!A1 * !B1 * !C1 * Y)	0.00261	0.00256	0.00254

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)	0.00117	0.00120	0.00118
	(A1 * B1 * B2 * C2 * !Y)	-0.00066	-0.00067	-0.00066
	(A1 * B1 * B2 * !C2 * !Y)	0.00112	0.00113	0.00113
	(A1 * B1 * B2 * !C2 * !Y)	-0.00066	-0.00066	-0.00066
	(A1 * A2 * B1 * !B2 * C2 * !Y)	0.00117	0.00120	0.00118
	(A1 * A2 * B1 * !B2 * C2 * !Y)	-0.00066	-0.00067	-0.00066
	(A1 * A2 * B1 * !B2 * !C2 * !Y)	0.00113	0.00113	0.00113
	(A1 * A2 * B1 * !B2 * !C2 * !Y)	-0.00066	-0.00066	-0.00066
	(A1 * A2 * !B1 * C2 * !Y)	0.00117	0.00120	0.00118
	(A1 * A2 * !B1 * C2 * !Y)	-0.00066	-0.00067	-0.00066
	(A1 * A2 * !B1 * !C2 * !Y)	0.00113	0.00113	0.00113
	(A1 * A2 * !B1 * !C2 * !Y)	-0.00066	-0.00066	-0.00066
	(A1 * !A2 * B1 * !B2 * !C2 * Y)	0.00038	0.00038	0.00036
	(A1 * !A2 * B1 * !B2 * !C2 * Y)	-0.00151	-0.00152	-0.00153
	(A1 * !A2 * !B1 * !C2 * Y)	0.00038	0.00038	0.00036
	(A1 * !A2 * !B1 * !C2 * Y)	-0.00151	-0.00152	-0.00153
	(!A1 * B1 * B2 * C2 * !Y)	0.00117	0.00120	0.00118
	(!A1 * B1 * B2 * C2 * !Y)	-0.00066	-0.00067	-0.00066
	(!A1 * B1 * B2 * !C2 * !Y)	0.00113	0.00113	0.00113
	(!A1 * B1 * B2 * !C2 * !Y)	-0.00066	-0.00066	-0.00066
	(!A1 * B1 * !B2 * !C2 * Y)	0.00038	0.00038	0.00036
	(!A1 * B1 * !B2 * !C2 * Y)	-0.00151	-0.00152	-0.00153
	(!A1 * !B1 * !C2 * Y)	0.00038	0.00038	0.00036
	(!A1 * !B1 * !C2 * Y)	-0.00151	-0.00152	-0.00153

sky130_fd_sc_hs__a222oi_2	**(A1 * B1 * B2 * C2 * !Y)**	0.00207	0.00211	0.00207
	(A1 * B1 * B2 * C2 * !Y)	-0.00129	-0.00131	-0.00129
	(A1 * B1 * B2 * !C2 * !Y)	0.00197	0.00201	0.00198
	(A1 * B1 * B2 * !C2 * !Y)	-0.00128	-0.00130	-0.00129
	(A1 * A2 * B1 * !B2 * C2 * !Y)	0.00207	0.00211	0.00207
	(A1 * A2 * B1 * !B2 * C2 * !Y)	-0.00129	-0.00131	-0.00129
	(A1 * A2 * B1 * !B2 * !C2 * !Y)	0.00197	0.00198	0.00198
	(A1 * A2 * B1 * !B2 * !C2 * !Y)	-0.00128	-0.00129	-0.00129
	(A1 * A2 * !B1 * C2 * !Y)	0.00208	0.00206	0.00207
	(A1 * A2 * !B1 * C2 * !Y)	-0.00130	-0.00128	-0.00129
	(A1 * A2 * !B1 * !C2 * !Y)	0.00197	0.00198	0.00198
	(A1 * A2 * !B1 * !C2 * !Y)	-0.00128	-0.00129	-0.00129
	(A1 * !A2 * B1 * !B2 * !C2 * Y)	0.00067	0.00067	0.00064
	(A1 * !A2 * B1 * !B2 * !C2 * Y)	-0.00281	-0.00282	-0.00286
	(A1 * !A2 * !B1 * !C2 * Y)	0.00067	0.00067	0.00064
	(A1 * !A2 * !B1 * !C2 * Y)	-0.00281	-0.00282	-0.00286
	(!A1 * B1 * B2 * C2 * !Y)	0.00207	0.00211	0.00207
	(!A1 * B1 * B2 * C2 * !Y)	-0.00130	-0.00131	-0.00129
	(!A1 * B1 * B2 * !C2 * !Y)	0.00197	0.00198	0.00198
	(!A1 * B1 * B2 * !C2 * !Y)	-0.00128	-0.00129	-0.00129
	(!A1 * B1 * !B2 * !C2 * Y)	0.00067	0.00067	0.00064
	(!A1 * B1 * !B2 * !C2 * Y)	-0.00281	-0.00282	-0.00286
	(!A1 * !B1 * !C2 * Y)	0.00067	0.00066	0.00064
	(!A1 * !B1 * !C2 * Y)	-0.00281	-0.00280	-0.00286

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)**	-0.00107	-0.00108	-0.00116
	(A1 * B1 * B2 * C2 * !Y)	0.00076	0.00076	0.00068
	(A1 * B1 * B2 * !C2 * !Y)	-0.00111	-0.00113	-0.00113
	(A1 * B1 * B2 * !C2 * !Y)	0.00066	0.00066	0.00066
	(A1 * A2 * B1 * !B2 * C2 * !Y)	-0.00090	-0.00091	-0.00112
	(A1 * A2 * B1 * !B2 * C2 * !Y)	0.00088	0.00087	0.00071
	(A1 * A2 * B1 * !B2 * !C2 * !Y)	-0.00110	-0.00113	-0.00113
	(A1 * A2 * B1 * !B2 * !C2 * !Y)	0.00066	0.00067	0.00066
	(A1 * A2 * !B1 * C2 * !Y)	-0.00090	-0.00090	-0.00112
	(A1 * A2 * !B1 * C2 * !Y)	0.00088	0.00087	0.00071
	(A1 * A2 * !B1 * !C2 * !Y)	-0.00110	-0.00113	-0.00113
	(A1 * A2 * !B1 * !C2 * !Y)	0.00066	0.00067	0.00066
	(A1 * !A2 * B1 * !B2 * !C2 * Y)	-0.00036	-0.00036	-0.00035
	(A1 * !A2 * B1 * !B2 * !C2 * Y)	0.00153	0.00154	0.00153
	(A1 * !A2 * !B1 * !C2 * Y)	-0.00036	-0.00036	-0.00035
	(A1 * !A2 * !B1 * !C2 * Y)	0.00153	0.00154	0.00153
	(!A1 * B1 * B2 * C2 * !Y)	-0.00107	-0.00107	-0.00116
	(!A1 * B1 * B2 * C2 * !Y)	0.00076	0.00076	0.00069
	(!A1 * B1 * B2 * !C2 * !Y)	-0.00110	-0.00113	-0.00113
	(!A1 * B1 * B2 * !C2 * !Y)	0.00066	0.00067	0.00066
	(!A1 * B1 * !B2 * !C2 * Y)	-0.00036	-0.00036	-0.00035
	(!A1 * B1 * !B2 * !C2 * Y)	0.00153	0.00154	0.00153
	(!A1 * !B1 * !C2 * Y)	-0.00036	-0.00036	-0.00035
	(!A1 * !B1 * !C2 * Y)	0.00153	0.00153	0.00153

sky130_fd_sc_hs__a222oi_2	**(A1 * B1 * B2 * C2 * !Y)**	-0.00185	-0.00188	-0.00205
	(A1 * B1 * B2 * C2 * !Y)	0.00147	0.00148	0.00133
	(A1 * B1 * B2 * !C2 * !Y)	-0.00191	-0.00200	-0.00198
	(A1 * B1 * B2 * !C2 * !Y)	0.00128	0.00130	0.00129
	(A1 * A2 * B1 * !B2 * C2 * !Y)	-0.00157	-0.00160	-0.00198
	(A1 * A2 * B1 * !B2 * C2 * !Y)	0.00165	0.00166	0.00138
	(A1 * A2 * B1 * !B2 * !C2 * !Y)	-0.00191	-0.00198	-0.00198
	(A1 * A2 * B1 * !B2 * !C2 * !Y)	0.00128	0.00130	0.00129
	(A1 * A2 * !B1 * C2 * !Y)	-0.00158	-0.00160	-0.00198
	(A1 * A2 * !B1 * C2 * !Y)	0.00166	0.00165	0.00138
	(A1 * A2 * !B1 * !C2 * !Y)	-0.00192	-0.00198	-0.00198
	(A1 * A2 * !B1 * !C2 * !Y)	0.00129	0.00130	0.00129
	(A1 * !A2 * B1 * !B2 * !C2 * Y)	-0.00063	-0.00062	-0.00062
	(A1 * !A2 * B1 * !B2 * !C2 * Y)	0.00286	0.00286	0.00286
	(A1 * !A2 * !B1 * !C2 * Y)	-0.00063	-0.00063	-0.00062
	(A1 * !A2 * !B1 * !C2 * Y)	0.00286	0.00287	0.00286
	(!A1 * B1 * B2 * C2 * !Y)	-0.00185	-0.00186	-0.00205
	(!A1 * B1 * B2 * C2 * !Y)	0.00148	0.00147	0.00134
	(!A1 * B1 * B2 * !C2 * !Y)	-0.00192	-0.00198	-0.00198
	(!A1 * B1 * B2 * !C2 * !Y)	0.00130	0.00130	0.00129
	(!A1 * B1 * !B2 * !C2 * Y)	-0.00063	-0.00063	-0.00062
	(!A1 * B1 * !B2 * !C2 * Y)	0.00286	0.00286	0.00286
	(!A1 * !B1 * !C2 * Y)	-0.00063	-0.00063	-0.00062
	(!A1 * !B1 * !C2 * Y)	0.00286	0.00287	0.00286

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)**	0.00123	0.00125	0.00123
	(A1 * B1 * B2 * C1 * !Y)	-0.00067	-0.00068	-0.00067
	(A1 * B1 * B2 * !C1 * !Y)	0.00117	0.00118	0.00117
	(A1 * B1 * B2 * !C1 * !Y)	-0.00067	-0.00067	-0.00067
	(A1 * A2 * B1 * !B2 * C1 * !Y)	0.00123	0.00125	0.00123
	(A1 * A2 * B1 * !B2 * C1 * !Y)	-0.00068	-0.00068	-0.00067
	(A1 * A2 * B1 * !B2 * !C1 * !Y)	0.00117	0.00118	0.00117
	(A1 * A2 * B1 * !B2 * !C1 * !Y)	-0.00067	-0.00067	-0.00067
	(A1 * A2 * !B1 * C1 * !Y)	0.00123	0.00125	0.00123
	(A1 * A2 * !B1 * C1 * !Y)	-0.00068	-0.00068	-0.00067
	(A1 * A2 * !B1 * !C1 * !Y)	0.00117	0.00118	0.00117
	(A1 * A2 * !B1 * !C1 * !Y)	-0.00067	-0.00067	-0.00067
	(A1 * !A2 * B1 * !B2 * !C1 * Y)	0.00091	0.00092	0.00091
	(A1 * !A2 * B1 * !B2 * !C1 * Y)	-0.00143	-0.00143	-0.00143
	(A1 * !A2 * !B1 * !C1 * Y)	0.00091	0.00092	0.00091
	(A1 * !A2 * !B1 * !C1 * Y)	-0.00143	-0.00143	-0.00143
	(!A1 * B1 * B2 * C1 * !Y)	0.00123	0.00125	0.00123
	(!A1 * B1 * B2 * C1 * !Y)	-0.00068	-0.00069	-0.00067
	(!A1 * B1 * B2 * !C1 * !Y)	0.00117	0.00118	0.00117
	(!A1 * B1 * B2 * !C1 * !Y)	-0.00067	-0.00068	-0.00067
	(!A1 * B1 * !B2 * !C1 * Y)	0.00091	0.00092	0.00091
	(!A1 * B1 * !B2 * !C1 * Y)	-0.00143	-0.00143	-0.00143
	(!A1 * !B1 * !C1 * Y)	0.00091	0.00092	0.00091
	(!A1 * !B1 * !C1 * Y)	-0.00143	-0.00143	-0.00143

sky130_fd_sc_hs__a222oi_2	**(A1 * B1 * B2 * C1 * !Y)**	0.00247	0.00250	0.00245
	(A1 * B1 * B2 * C1 * !Y)	-0.00135	-0.00136	-0.00134
	(A1 * B1 * B2 * !C1 * !Y)	0.00236	0.00238	0.00236
	(A1 * B1 * B2 * !C1 * !Y)	-0.00134	-0.00134	-0.00133
	(A1 * A2 * B1 * !B2 * C1 * !Y)	0.00247	0.00246	0.00246
	(A1 * A2 * B1 * !B2 * C1 * !Y)	-0.00135	-0.00134	-0.00134
	(A1 * A2 * B1 * !B2 * !C1 * !Y)	0.00237	0.00238	0.00236
	(A1 * A2 * B1 * !B2 * !C1 * !Y)	-0.00134	-0.00134	-0.00133
	(A1 * A2 * !B1 * C1 * !Y)	0.00247	0.00247	0.00246
	(A1 * A2 * !B1 * C1 * !Y)	-0.00135	-0.00135	-0.00134
	(A1 * A2 * !B1 * !C1 * !Y)	0.00236	0.00241	0.00237
	(A1 * A2 * !B1 * !C1 * !Y)	-0.00133	-0.00134	-0.00133
	(A1 * !A2 * B1 * !B2 * !C1 * Y)	0.00182	0.00183	0.00182
	(A1 * !A2 * B1 * !B2 * !C1 * Y)	-0.00285	-0.00286	-0.00286
	(A1 * !A2 * !B1 * !C1 * Y)	0.00182	0.00183	0.00182
	(A1 * !A2 * !B1 * !C1 * Y)	-0.00285	-0.00286	-0.00286
	(!A1 * B1 * B2 * C1 * !Y)	0.00247	0.00247	0.00245
	(!A1 * B1 * B2 * C1 * !Y)	-0.00135	-0.00135	-0.00134
	(!A1 * B1 * B2 * !C1 * !Y)	0.00237	0.00238	0.00236
	(!A1 * B1 * B2 * !C1 * !Y)	-0.00134	-0.00134	-0.00134
	(!A1 * B1 * !B2 * !C1 * Y)	0.00182	0.00184	0.00182
	(!A1 * B1 * !B2 * !C1 * Y)	-0.00285	-0.00287	-0.00286
	(!A1 * !B1 * !C1 * Y)	0.00182	0.00184	0.00182
	(!A1 * !B1 * !C1 * Y)	-0.00285	-0.00287	-0.00286

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)**	-0.00111	-0.00113	-0.00121
	(A1 * B1 * B2 * C1 * !Y)	0.00077	0.00077	0.00070
	(A1 * B1 * B2 * !C1 * !Y)	-0.00115	-0.00118	-0.00117
	(A1 * B1 * B2 * !C1 * !Y)	0.00067	0.00067	0.00067
	(A1 * A2 * B1 * !B2 * C1 * !Y)	-0.00095	-0.00097	-0.00117
	(A1 * A2 * B1 * !B2 * C1 * !Y)	0.00089	0.00089	0.00072
	(A1 * A2 * B1 * !B2 * !C1 * !Y)	-0.00115	-0.00118	-0.00117
	(A1 * A2 * B1 * !B2 * !C1 * !Y)	0.00067	0.00067	0.00067
	(A1 * A2 * !B1 * C1 * !Y)	-0.00095	-0.00097	-0.00117
	(A1 * A2 * !B1 * C1 * !Y)	0.00089	0.00089	0.00072
	(A1 * A2 * !B1 * !C1 * !Y)	-0.00115	-0.00118	-0.00117
	(A1 * A2 * !B1 * !C1 * !Y)	0.00067	0.00067	0.00067
	(A1 * !A2 * B1 * !B2 * !C1 * Y)	-0.00085	-0.00091	-0.00091
	(A1 * !A2 * B1 * !B2 * !C1 * Y)	0.00146	0.00143	0.00143
	(A1 * !A2 * !B1 * !C1 * Y)	-0.00085	-0.00091	-0.00091
	(A1 * !A2 * !B1 * !C1 * Y)	0.00146	0.00143	0.00143
	(!A1 * B1 * B2 * C1 * !Y)	-0.00111	-0.00113	-0.00121
	(!A1 * B1 * B2 * C1 * !Y)	0.00078	0.00078	0.00070
	(!A1 * B1 * B2 * !C1 * !Y)	-0.00115	-0.00118	-0.00117
	(!A1 * B1 * B2 * !C1 * !Y)	0.00067	0.00068	0.00067
	(!A1 * B1 * !B2 * !C1 * Y)	-0.00085	-0.00091	-0.00091
	(!A1 * B1 * !B2 * !C1 * Y)	0.00146	0.00143	0.00143
	(!A1 * !B1 * !C1 * Y)	-0.00085	-0.00091	-0.00091
	(!A1 * !B1 * !C1 * Y)	0.00146	0.00143	0.00143

sky130_fd_sc_hs__a222oi_2	**(A1 * B1 * B2 * C1 * !Y)**	-0.00224	-0.00226	-0.00243
	(A1 * B1 * B2 * C1 * !Y)	0.00153	0.00153	0.00138
	(A1 * B1 * B2 * !C1 * !Y)	-0.00232	-0.00237	-0.00236
	(A1 * B1 * B2 * !C1 * !Y)	0.00134	0.00134	0.00133
	(A1 * A2 * B1 * !B2 * C1 * !Y)	-0.00196	-0.00199	-0.00236
	(A1 * A2 * B1 * !B2 * C1 * !Y)	0.00171	0.00171	0.00143
	(A1 * A2 * B1 * !B2 * !C1 * !Y)	-0.00232	-0.00237	-0.00236
	(A1 * A2 * B1 * !B2 * !C1 * !Y)	0.00134	0.00134	0.00134
	(A1 * A2 * !B1 * C1 * !Y)	-0.00197	-0.00199	-0.00236
	(A1 * A2 * !B1 * C1 * !Y)	0.00171	0.00171	0.00143
	(A1 * A2 * !B1 * !C1 * !Y)	-0.00232	-0.00237	-0.00237
	(A1 * A2 * !B1 * !C1 * !Y)	0.00134	0.00134	0.00134
	(A1 * !A2 * B1 * !B2 * !C1 * Y)	-0.00173	-0.00183	-0.00182
	(A1 * !A2 * B1 * !B2 * !C1 * Y)	0.00294	0.00288	0.00286
	(A1 * !A2 * !B1 * !C1 * Y)	-0.00173	-0.00183	-0.00182
	(A1 * !A2 * !B1 * !C1 * Y)	0.00294	0.00289	0.00286
	(!A1 * B1 * B2 * C1 * !Y)	-0.00224	-0.00226	-0.00243
	(!A1 * B1 * B2 * C1 * !Y)	0.00153	0.00153	0.00139
	(!A1 * B1 * B2 * !C1 * !Y)	-0.00232	-0.00237	-0.00236
	(!A1 * B1 * B2 * !C1 * !Y)	0.00135	0.00134	0.00134
	(!A1 * B1 * !B2 * !C1 * Y)	-0.00173	-0.00183	-0.00182
	(!A1 * B1 * !B2 * !C1 * Y)	0.00294	0.00288	0.00286
	(!A1 * !B1 * !C1 * Y)	-0.00173	-0.00183	-0.00182
	(!A1 * !B1 * !C1 * Y)	0.00294	0.00289	0.00286

SKY130_FD_SC_HS__A222Ox

sky130_fd_sc_hs_tt_1.50v_25C.ccs
Cell Library: Process , Voltage
1.50, 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	0.00248	0.00252	0.00257	0.00246	0.00255	0.00261	0.85213
sky130_fd_sc_hs__a222o_2	0.00252	0.00237	0.00250	0.00246	0.00252	0.00266	1.49310

Leakage Information

Cell Name	Leakage(nW)		
	Min.	Avg	Max.
sky130_fd_sc_hs__a222o_1	0.00000	0.05698	0.15326
sky130_fd_sc_hs__a222o_2	0.00000	0.07221	0.15791

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)	0.12663	0.82057	7.12049
	A2->X (RR)	0.13165	0.81338	7.18200
	B1->X (RR)	0.11980	0.79646	7.01781
	B2->X (RR)	0.12379	0.79064	7.07943
	C1->X (RR)	0.10812	0.76216	6.93705
	C2->X (RR)	0.11246	0.75940	6.98189
sky130_fd_sc_hs__a222o_2	A1->X (RR)	0.14548	0.77602	7.20388
	A2->X (RR)	0.15201	0.75704	7.23586
	B1->X (RR)	0.13240	0.74040	7.10326
	B2->X (RR)	0.13673	0.73044	7.14904
	C1->X (RR)	0.11978	0.71136	7.04430
	C2->X (RR)	0.12487	0.70366	7.07490

Delay(ns) to X falling :

Cell Name	Timing Arc(Dir)	Delay(ns)		
		First	Mid	Last
sky130_fd_sc_hs__a222o_1	A1->X (FF)	0.44425	1.03921	5.40528
	A2->X (FF)	0.47705	1.07839	5.50352
	B1->X (FF)	0.41453	1.01304	5.49002
	B2->X (FF)	0.43834	1.04874	5.60322
	C1->X (FF)	0.31598	0.90184	5.16647
	C2->X (FF)	0.34335	0.93485	5.25289
sky130_fd_sc_hs__a222o_2	A1->X (FF)	0.52460	1.10098	5.40968
	A2->X (FF)	0.53997	1.12958	5.52440
	B1->X (FF)	0.49558	1.07965	5.58448
	B2->X (FF)	0.50415	1.09399	5.63280
	C1->X (FF)	0.39710	0.95980	5.24795
	C2->X (FF)	0.43413	1.00555	5.35798

Power Information

Internal switching power(pJ) to X rising :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__a222o_1	A1	0.01193	0.01169	0.01423
	A1	0.00591	0.00568	0.00826
	A2	0.01264	0.01235	0.01380
	A2	0.00592	0.00564	0.00716
	B1	0.00996	0.00998	0.01278
	B1	0.00446	0.00447	0.00752
	B2	0.01055	0.01058	0.01247
	B2	0.00454	0.00456	0.00665
	C1	0.00738	0.00743	0.01160
	C1	0.00247	0.00251	0.00863
	C2	0.00800	0.00801	0.01124
	C2	0.00251	0.00248	0.00646
sky130_fd_sc_hs__a222o_2	A1	0.01358	0.01377	0.01635
	A1	0.00806	0.00827	0.01089
	A2	0.01428	0.01457	0.01637
	A2	0.00801	0.00831	0.01021
	B1	0.01161	0.01187	0.01491
	B1	0.00639	0.00668	0.00978
	B2	0.01223	0.01252	0.01468
	B2	0.00639	0.00668	0.00894
	C1	0.00963	0.00974	0.01392
	C1	0.00483	0.00494	0.00905
	C2	0.01032	0.01037	0.01362
	C2	0.00479	0.00483	0.00827

Internal switching power(pJ) to X falling :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__a222o_1	A1	0.00407	0.00398	0.00536
	A1	0.01044	0.01045	0.01135
	A2	0.00430	0.00411	0.00556
	A2	0.01133	0.01121	0.01201
	B1	0.00367	0.00364	0.00595
	B1	0.00966	0.00954	0.01122
	B2	0.00429	0.00423	0.00589
	B2	0.01040	0.01037	0.01195
	C1	0.00361	0.00375	0.00940
	C1	0.00879	0.00891	0.01346
	C2	0.00389	0.00409	0.00943
	C2	0.00960	0.00974	0.01424
sky130_fd_sc_hs__a222o_2	A1	0.00575	0.00547	0.00660
	A1	0.01192	0.01169	0.01262
	A2	0.00638	0.00651	0.00790
	A2	0.01322	0.01339	0.01441
	B1	0.00617	0.00622	0.00914
	B1	0.01162	0.01168	0.01352
	B2	0.00641	0.00650	0.00839
	B2	0.01245	0.01261	0.01440
	C1	0.00608	0.00610	0.01178
	C1	0.01079	0.01095	0.01548
	C2	0.00635	0.00644	0.01131
	C2	0.01171	0.01204	0.01642

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)**	0.00099	0.00100	0.00099
	(A2 * B1 * B2 * C1 * C2 * X)	-0.00120	-0.00125	-0.00125
	(A2 * B1 * B2 * C1 * !C2 * X)	0.00100	0.00100	0.00099
	(A2 * B1 * B2 * C1 * !C2 * X)	-0.00120	-0.00125	-0.00125
	(A2 * B1 * B2 * !C1 * X)	0.00100	0.00100	0.00099
	(A2 * B1 * B2 * !C1 * X)	-0.00120	-0.00125	-0.00125
	(A2 * B1 * !B2 * C1 * C2 * X)	0.00101	0.00100	0.00099
	(A2 * B1 * !B2 * C1 * C2 * X)	-0.00115	-0.00121	-0.00122
	(A2 * !B1 * C1 * C2 * X)	0.00100	0.00100	0.00099
	(A2 * !B1 * C1 * C2 * X)	-0.00114	-0.00121	-0.00122
	(!A2 * B1 * B2 * C1 * C2 * X)	0.00093	0.00094	0.00094
	(!A2 * B1 * B2 * C1 * C2 * X)	-0.00128	-0.00129	-0.00129
	(!A2 * B1 * B2 * C1 * !C2 * X)	0.00094	0.00095	0.00094
	(!A2 * B1 * B2 * C1 * !C2 * X)	-0.00128	-0.00129	-0.00128
	(!A2 * B1 * B2 * !C1 * X)	0.00094	0.00095	0.00094
	(!A2 * B1 * B2 * !C1 * X)	-0.00128	-0.00129	-0.00128
	(!A2 * B1 * !B2 * C1 * C2 * X)	0.00093	0.00094	0.00094
	(!A2 * B1 * !B2 * C1 * C2 * X)	-0.00128	-0.00129	-0.00128
	(!A2 * B1 * !B2 * C1 * !C2 * !X)	0.00035	0.00035	0.00034
	(!A2 * B1 * !B2 * C1 * !C2 * !X)	-0.00149	-0.00149	-0.00151
	(!A2 * B1 * !B2 * !C1 * !X)	0.00035	0.00035	0.00034
	(!A2 * B1 * !B2 * !C1 * !X)	-0.00149	-0.00149	-0.00151
	(!A2 * !B1 * C1 * C2 * X)	0.00094	0.00094	0.00094
	(!A2 * !B1 * C1 * C2 * X)	-0.00128	-0.00128	-0.00128
	(!A2 * !B1 * C1 * !C2 * !X)	0.00035	0.00035	0.00034
	(!A2 * !B1 * C1 * !C2 * !X)	-0.00149	-0.00149	-0.00151
	(!A2 * !B1 * !C1 * !X)	0.00035	0.00035	0.00034
	(!A2 * !B1 * !C1 * !X)	-0.00149	-0.00149	-0.00151

sky130_fd_sc_hs__a222o_2	**(A2 * B1 * B2 * C1 * C2 * X)**	0.00106	0.00107	0.00106
	(A2 * B1 * B2 * C1 * C2 * X)	-0.00121	-0.00125	-0.00124
	(A2 * B1 * B2 * C1 * !C2 * X)	0.00107	0.00107	0.00106
	(A2 * B1 * B2 * C1 * !C2 * X)	-0.00119	-0.00125	-0.00124
	(A2 * B1 * B2 * !C1 * X)	0.00107	0.00107	0.00106
	(A2 * B1 * B2 * !C1 * X)	-0.00119	-0.00125	-0.00124
	(A2 * B1 * !B2 * C1 * C2 * X)	0.00108	0.00108	0.00106
	(A2 * B1 * !B2 * C1 * C2 * X)	-0.00114	-0.00120	-0.00120
	(A2 * !B1 * C1 * C2 * X)	0.00108	0.00108	0.00106
	(A2 * !B1 * C1 * C2 * X)	-0.00113	-0.00120	-0.00120
	(!A2 * B1 * B2 * C1 * C2 * X)	0.00102	0.00103	0.00102
	(!A2 * B1 * B2 * C1 * C2 * X)	-0.00126	-0.00127	-0.00126
	(!A2 * B1 * B2 * C1 * !C2 * X)	0.00101	0.00102	0.00102
	(!A2 * B1 * B2 * C1 * !C2 * X)	-0.00126	-0.00127	-0.00126
	(!A2 * B1 * B2 * !C1 * X)	0.00102	0.00103	0.00102
	(!A2 * B1 * B2 * !C1 * X)	-0.00125	-0.00127	-0.00126
	(!A2 * B1 * !B2 * C1 * C2 * X)	0.00101	0.00102	0.00102
	(!A2 * B1 * !B2 * C1 * C2 * X)	-0.00126	-0.00128	-0.00127
	(!A2 * B1 * !B2 * C1 * !C2 * !X)	0.00040	0.00041	0.00038
	(!A2 * B1 * !B2 * C1 * !C2 * !X)	-0.00150	-0.00151	-0.00156
	(!A2 * B1 * !B2 * !C1 * !X)	0.00040	0.00041	0.00038
	(!A2 * B1 * !B2 * !C1 * !X)	-0.00150	-0.00151	-0.00156
	(!A2 * !B1 * C1 * C2 * X)	0.00101	0.00102	0.00102
	(!A2 * !B1 * C1 * C2 * X)	-0.00127	-0.00128	-0.00127
	(!A2 * !B1 * C1 * !C2 * !X)	0.00041	0.00041	0.00038
	(!A2 * !B1 * C1 * !C2 * !X)	-0.00151	-0.00151	-0.00156
	(!A2 * !B1 * !C1 * !X)	0.00041	0.00041	0.00038
	(!A2 * !B1 * !C1 * !X)	-0.00151	-0.00151	-0.00156

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)	-0.00099	-0.00099	-0.00099
	(A2 * B1 * B2 * C1 * C2 * X)	0.00125	0.00125	0.00125
	(A2 * B1 * B2 * C1 * !C2 * X)	-0.00099	-0.00099	-0.00099
	(A2 * B1 * B2 * C1 * !C2 * X)	0.00125	0.00125	0.00125
	(A2 * B1 * B2 * !C1 * X)	-0.00099	-0.00099	-0.00099
	(A2 * B1 * B2 * !C1 * X)	0.00125	0.00125	0.00125
	(A2 * B1 * !B2 * C1 * C2 * X)	-0.00099	-0.00099	-0.00099
	(A2 * B1 * !B2 * C1 * C2 * X)	0.00122	0.00121	0.00122
	(A2 * !B1 * C1 * C2 * X)	-0.00099	-0.00099	-0.00099
	(A2 * !B1 * C1 * C2 * X)	0.00122	0.00121	0.00122
	(!A2 * B1 * B2 * C1 * C2 * X)	-0.00092	-0.00094	-0.00094
	(!A2 * B1 * B2 * C1 * C2 * X)	0.00129	0.00130	0.00129
	(!A2 * B1 * B2 * C1 * !C2 * X)	-0.00092	-0.00094	-0.00094
	(!A2 * B1 * B2 * C1 * !C2 * X)	0.00129	0.00130	0.00129
	(!A2 * B1 * B2 * !C1 * X)	-0.00092	-0.00095	-0.00094
	(!A2 * B1 * B2 * !C1 * X)	0.00129	0.00130	0.00129
	(!A2 * B1 * !B2 * C1 * C2 * X)	-0.00091	-0.00094	-0.00094
	(!A2 * B1 * !B2 * C1 * C2 * X)	0.00129	0.00131	0.00129
	(!A2 * B1 * !B2 * C1 * !C2 * !X)	-0.00033	-0.00034	-0.00033
	(!A2 * B1 * !B2 * C1 * !C2 * !X)	0.00151	0.00153	0.00151
	(!A2 * B1 * !B2 * !C1 * !X)	-0.00033	-0.00034	-0.00033
	(!A2 * B1 * !B2 * !C1 * !X)	0.00151	0.00153	0.00151
	(!A2 * !B1 * C1 * C2 * X)	-0.00091	-0.00094	-0.00094
	(!A2 * !B1 * C1 * C2 * X)	0.00129	0.00131	0.00129
	(!A2 * !B1 * C1 * !C2 * !X)	-0.00033	-0.00034	-0.00033
	(!A2 * !B1 * C1 * !C2 * !X)	0.00151	0.00153	0.00151
	(!A2 * !B1 * !C1 * !X)	-0.00033	-0.00034	-0.00033
	(!A2 * !B1 * !C1 * !X)	0.00151	0.00153	0.00151

sky130_fd_sc_hs__a222o_2	**(A2 * B1 * B2 * C1 * C2 * X)**	-0.00106	-0.00107	-0.00106
	(A2 * B1 * B2 * C1 * C2 * X)	0.00125	0.00125	0.00124
	(A2 * B1 * B2 * C1 * !C2 * X)	-0.00106	-0.00107	-0.00106
	(A2 * B1 * B2 * C1 * !C2 * X)	0.00125	0.00125	0.00124
	(A2 * B1 * B2 * !C1 * X)	-0.00106	-0.00107	-0.00106
	(A2 * B1 * B2 * !C1 * X)	0.00125	0.00125	0.00124
	(A2 * B1 * !B2 * C1 * C2 * X)	-0.00106	-0.00106	-0.00106
	(A2 * B1 * !B2 * C1 * C2 * X)	0.00121	0.00120	0.00120
	(A2 * !B1 * C1 * C2 * X)	-0.00106	-0.00106	-0.00106
	(A2 * !B1 * C1 * C2 * X)	0.00121	0.00120	0.00120
	(!A2 * B1 * B2 * C1 * C2 * X)	-0.00098	-0.00103	-0.00102
	(!A2 * B1 * B2 * C1 * C2 * X)	0.00127	0.00127	0.00127
	(!A2 * B1 * B2 * C1 * !C2 * X)	-0.00098	-0.00102	-0.00102
	(!A2 * B1 * B2 * C1 * !C2 * X)	0.00127	0.00129	0.00127
	(!A2 * B1 * B2 * !C1 * X)	-0.00098	-0.00103	-0.00102
	(!A2 * B1 * B2 * !C1 * X)	0.00126	0.00128	0.00127
	(!A2 * B1 * !B2 * C1 * C2 * X)	-0.00097	-0.00102	-0.00102
	(!A2 * B1 * !B2 * C1 * C2 * X)	0.00128	0.00129	0.00128
	(!A2 * B1 * !B2 * C1 * !C2 * !X)	-0.00036	-0.00037	-0.00036
	(!A2 * B1 * !B2 * C1 * !C2 * !X)	0.00156	0.00159	0.00156
	(!A2 * B1 * !B2 * !C1 * !X)	-0.00036	-0.00037	-0.00036
	(!A2 * B1 * !B2 * !C1 * !X)	0.00156	0.00159	0.00156
	(!A2 * !B1 * C1 * C2 * X)	-0.00097	-0.00102	-0.00102
	(!A2 * !B1 * C1 * C2 * X)	0.00128	0.00129	0.00128
	(!A2 * !B1 * C1 * !C2 * !X)	-0.00036	-0.00037	-0.00036
	(!A2 * !B1 * C1 * !C2 * !X)	0.00156	0.00159	0.00156
	(!A2 * !B1 * !C1 * !X)	-0.00036	-0.00037	-0.00036
	(!A2 * !B1 * !C1 * !X)	0.00156	0.00159	0.00156

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)	0.00110	0.00112	0.00111
	(A1 * B1 * B2 * C1 * C2 * X)	-0.00115	-0.00122	-0.00121
	(A1 * B1 * B2 * C1 * !C2 * X)	0.00111	0.00112	0.00111
	(A1 * B1 * B2 * C1 * !C2 * X)	-0.00115	-0.00122	-0.00121
	(A1 * B1 * B2 * !C1 * X)	0.00111	0.00112	0.00111
	(A1 * B1 * B2 * !C1 * X)	-0.00115	-0.00122	-0.00121
	(A1 * B1 * !B2 * C1 * C2 * X)	0.00112	0.00112	0.00111
	(A1 * B1 * !B2 * C1 * C2 * X)	-0.00111	-0.00119	-0.00118
	(A1 * !B1 * C1 * C2 * X)	0.00112	0.00112	0.00111
	(A1 * !B1 * C1 * C2 * X)	-0.00111	-0.00119	-0.00118
	(!A1 * B1 * B2 * X)	0.00106	0.00105	0.00106
	(!A1 * B1 * B2 * X)	-0.00124	-0.00124	-0.00124
	(!A1 * B1 * !B2 * C1 * C2 * X) + (!A1 * !B1 * C1 * C2 * X)	0.00105	0.00106	0.00106
	(!A1 * B1 * !B2 * C1 * C2 * X) + (!A1 * !B1 * C1 * C2 * X)	-0.00123	-0.00124	-0.00124
	(!A1 * B1 * !B2 * C1 * !C2 * !X)	0.00089	0.00091	0.00090
	(!A1 * B1 * !B2 * C1 * !C2 * !X)	-0.00140	-0.00141	-0.00140
	(!A1 * B1 * !B2 * !C1 * !X)	0.00089	0.00089	0.00090
	(!A1 * B1 * !B2 * !C1 * !X)	-0.00140	-0.00140	-0.00140
	(!A1 * !B1 * C1 * !C2 * !X)	0.00089	0.00091	0.00090
	(!A1 * !B1 * C1 * !C2 * !X)	-0.00140	-0.00141	-0.00140
	(!A1 * !B1 * !C1 * !X)	0.00089	0.00091	0.00090
	(!A1 * !B1 * !C1 * !X)	-0.00140	-0.00141	-0.00140

sky130_fd_sc_hs__a222o_2	**(A1 * B1 * B2 * C1 * C2 * X)**	0.00104	0.00105	0.00104
	(A1 * B1 * B2 * C1 * C2 * X)	-0.00121	-0.00125	-0.00124
	(A1 * B1 * B2 * C1 * !C2 * X)	0.00104	0.00105	0.00104
	(A1 * B1 * B2 * C1 * !C2 * X)	-0.00120	-0.00125	-0.00124
	(A1 * B1 * B2 * !C1 * X)	0.00104	0.00105	0.00104
	(A1 * B1 * B2 * !C1 * X)	-0.00120	-0.00125	-0.00124
	(A1 * B1 * !B2 * C1 * C2 * X)	0.00105	0.00105	0.00104
	(A1 * B1 * !B2 * C1 * C2 * X)	-0.00113	-0.00120	-0.00120
	(A1 * !B1 * C1 * C2 * X)	0.00105	0.00105	0.00104
	(A1 * !B1 * C1 * C2 * X)	-0.00114	-0.00120	-0.00121
	(!A1 * B1 * B2 * X)	0.00098	0.00099	0.00099
	(!A1 * B1 * B2 * X)	-0.00126	-0.00127	-0.00127
	(!A1 * B1 * !B2 * C1 * C2 * X) + (!A1 * !B1 * C1 * C2 * X)	0.00099	0.00100	0.00099
	(!A1 * B1 * !B2 * C1 * C2 * X) + (!A1 * !B1 * C1 * C2 * X)	-0.00126	-0.00127	-0.00126
	(!A1 * B1 * !B2 * C1 * !C2 * !X)	0.00098	0.00099	0.00098
	(!A1 * B1 * !B2 * C1 * !C2 * !X)	-0.00127	-0.00128	-0.00127
	(!A1 * B1 * !B2 * !C1 * !X)	0.00098	0.00099	0.00098
	(!A1 * B1 * !B2 * !C1 * !X)	-0.00127	-0.00128	-0.00127
	(!A1 * !B1 * C1 * !C2 * !X)	0.00098	0.00099	0.00098
	(!A1 * !B1 * C1 * !C2 * !X)	-0.00127	-0.00128	-0.00127
	(!A1 * !B1 * !C1 * !X)	0.00098	0.00099	0.00098
	(!A1 * !B1 * !C1 * !X)	-0.00127	-0.00128	-0.00127

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)**	-0.00110	-0.00111	-0.00110
	(A1 * B1 * B2 * C1 * C2 * X)	0.00121	0.00122	0.00121
	(A1 * B1 * B2 * C1 * !C2 * X)	-0.00111	-0.00111	-0.00110
	(A1 * B1 * B2 * C1 * !C2 * X)	0.00121	0.00122	0.00121
	(A1 * B1 * B2 * !C1 * X)	-0.00111	-0.00111	-0.00110
	(A1 * B1 * B2 * !C1 * X)	0.00121	0.00122	0.00121
	(A1 * B1 * !B2 * C1 * C2 * X)	-0.00111	-0.00111	-0.00110
	(A1 * B1 * !B2 * C1 * C2 * X)	0.00118	0.00119	0.00118
	(A1 * !B1 * C1 * C2 * X)	-0.00111	-0.00111	-0.00110
	(A1 * !B1 * C1 * C2 * X)	0.00118	0.00119	0.00118
	(!A1 * B1 * B2 * X)	-0.00104	-0.00105	-0.00106
	(!A1 * B1 * B2 * X)	0.00124	0.00127	0.00124
	(!A1 * B1 * !B2 * C1 * C2 * X) + (!A1 * !B1 * C1 * C2 * X)	-0.00104	-0.00106	-0.00106
	(!A1 * B1 * !B2 * C1 * C2 * X) + (!A1 * !B1 * C1 * C2 * X)	0.00125	0.00127	0.00124
	(!A1 * B1 * !B2 * C1 * !C2 * !X)	-0.00084	-0.00090	-0.00090
	(!A1 * B1 * !B2 * C1 * !C2 * !X)	0.00145	0.00143	0.00141
	(!A1 * B1 * !B2 * !C1 * !X)	-0.00084	-0.00089	-0.00090
	(!A1 * B1 * !B2 * !C1 * !X)	0.00145	0.00143	0.00141
	(!A1 * !B1 * C1 * !C2 * !X)	-0.00084	-0.00090	-0.00090
	(!A1 * !B1 * C1 * !C2 * !X)	0.00145	0.00143	0.00141
	(!A1 * !B1 * !C1 * !X)	-0.00084	-0.00090	-0.00090
	(!A1 * !B1 * !C1 * !X)	0.00145	0.00143	0.00141

sky130_fd_sc_hs__a222o_2	**(A1 * B1 * B2 * C1 * C2 * X)**	-0.00104	-0.00104	-0.00103
	(A1 * B1 * B2 * C1 * C2 * X)	0.00125	0.00125	0.00124
	(A1 * B1 * B2 * C1 * !C2 * X)	-0.00104	-0.00104	-0.00103
	(A1 * B1 * B2 * C1 * !C2 * X)	0.00125	0.00125	0.00124
	(A1 * B1 * B2 * !C1 * X)	-0.00104	-0.00104	-0.00103
	(A1 * B1 * B2 * !C1 * X)	0.00125	0.00125	0.00124
	(A1 * B1 * !B2 * C1 * C2 * X)	-0.00104	-0.00103	-0.00104
	(A1 * B1 * !B2 * C1 * C2 * X)	0.00121	0.00120	0.00120
	(A1 * !B1 * C1 * C2 * X)	-0.00104	-0.00103	-0.00104
	(A1 * !B1 * C1 * C2 * X)	0.00122	0.00120	0.00121
	(!A1 * B1 * B2 * X)	-0.00095	-0.00099	-0.00099
	(!A1 * B1 * B2 * X)	0.00126	0.00128	0.00127
	(!A1 * B1 * !B2 * C1 * C2 * X) + (!A1 * !B1 * C1 * C2 * X)	-0.00096	-0.00099	-0.00099
	(!A1 * B1 * !B2 * C1 * C2 * X) + (!A1 * !B1 * C1 * C2 * X)	0.00128	0.00127	0.00127
	(!A1 * B1 * !B2 * C1 * !C2 * !X)	-0.00093	-0.00099	-0.00098
	(!A1 * B1 * !B2 * C1 * !C2 * !X)	0.00130	0.00128	0.00128
	(!A1 * B1 * !B2 * !C1 * !X)	-0.00093	-0.00099	-0.00098
	(!A1 * B1 * !B2 * !C1 * !X)	0.00130	0.00128	0.00128
	(!A1 * !B1 * C1 * !C2 * !X)	-0.00093	-0.00099	-0.00098
	(!A1 * !B1 * C1 * !C2 * !X)	0.00130	0.00129	0.00128
	(!A1 * !B1 * !C1 * !X)	-0.00093	-0.00099	-0.00098
	(!A1 * !B1 * !C1 * !X)	0.00130	0.00129	0.00128

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)**	0.00103	0.00106	0.00104
	(A1 * A2 * B2 * C1 * C2 * X)	-0.00096	-0.00097	-0.00095
	(A1 * A2 * B2 * C1 * !C2 * X)	0.00102	0.00105	0.00103
	(A1 * A2 * B2 * C1 * !C2 * X)	-0.00078	-0.00080	-0.00079
	(A1 * A2 * B2 * !C1 * X)	0.00104	0.00105	0.00103
	(A1 * A2 * B2 * !C1 * X)	-0.00081	-0.00080	-0.00079
	(A1 * A2 * !B2 * C1 * C2 * X)	0.00098	0.00099	0.00099
	(A1 * A2 * !B2 * C1 * C2 * X)	-0.00093	-0.00093	-0.00092
	(A1 * A2 * !B2 * C1 * !C2 * X)	0.00098	0.00099	0.00098
	(A1 * A2 * !B2 * C1 * !C2 * X)	-0.00079	-0.00080	-0.00079
	(A1 * A2 * !B2 * !C1 * X)	0.00098	0.00099	0.00098
	(A1 * A2 * !B2 * !C1 * X)	-0.00079	-0.00080	-0.00079
	(A1 * !A2 * B2 * C1 * C2 * X)	0.00112	0.00104	0.00103
	(A1 * !A2 * B2 * C1 * C2 * X)	-0.00117	-0.00130	-0.00129
	(A1 * !A2 * !B2 * C1 * C2 * X)	0.00097	0.00097	0.00097
	(A1 * !A2 * !B2 * C1 * C2 * X)	-0.00132	-0.00132	-0.00132
	(A1 * !A2 * !B2 * C1 * !C2 * !X)	0.00036	0.00036	0.00035
	(A1 * !A2 * !B2 * C1 * !C2 * !X)	-0.00155	-0.00155	-0.00157
	(A1 * !A2 * !B2 * !C1 * !X)	0.00036	0.00036	0.00035
	(A1 * !A2 * !B2 * !C1 * !X)	-0.00155	-0.00155	-0.00157
	(!A1 * B2 * C1 * C2 * X)	0.00112	0.00104	0.00103
	(!A1 * B2 * C1 * C2 * X)	-0.00117	-0.00130	-0.00129
	(!A1 * !B2 * C1 * C2 * X)	0.00097	0.00098	0.00097
	(!A1 * !B2 * C1 * C2 * X)	-0.00132	-0.00133	-0.00132
	(!A1 * !B2 * C1 * !C2 * !X)	0.00036	0.00036	0.00035
	(!A1 * !B2 * C1 * !C2 * !X)	-0.00155	-0.00155	-0.00157
	(!A1 * !B2 * !C1 * !X)	0.00036	0.00036	0.00035
	(!A1 * !B2 * !C1 * !X)	-0.00155	-0.00155	-0.00157

sky130_fd_sc_hs__a222o_2	**(A1 * A2 * B2 * C1 * C2 * X)**	0.00102	0.00103	0.00101
	(A1 * A2 * B2 * C1 * C2 * X)	-0.00090	-0.00091	-0.00090
	(A1 * A2 * B2 * C1 * !C2 * X)	0.00099	0.00101	0.00100
	(A1 * A2 * B2 * C1 * !C2 * X)	-0.00072	-0.00074	-0.00073
	(A1 * A2 * B2 * !C1 * X)	0.00099	0.00101	0.00100
	(A1 * A2 * B2 * !C1 * X)	-0.00072	-0.00074	-0.00073
	(A1 * A2 * !B2 * C1 * C2 * X)	0.00095	0.00095	0.00095
	(A1 * A2 * !B2 * C1 * C2 * X)	-0.00086	-0.00086	-0.00086
	(A1 * A2 * !B2 * C1 * !C2 * X)	0.00094	0.00095	0.00094
	(A1 * A2 * !B2 * C1 * !C2 * X)	-0.00072	-0.00073	-0.00073
	(A1 * A2 * !B2 * !C1 * X)	0.00094	0.00095	0.00094
	(A1 * A2 * !B2 * !C1 * X)	-0.00072	-0.00073	-0.00073
	(A1 * !A2 * B2 * C1 * C2 * X)	0.00113	0.00100	0.00099
	(A1 * !A2 * B2 * C1 * C2 * X)	-0.00103	-0.00121	-0.00121
	(A1 * !A2 * !B2 * C1 * C2 * X)	0.00093	0.00094	0.00093
	(A1 * !A2 * !B2 * C1 * C2 * X)	-0.00125	-0.00126	-0.00125
	(A1 * !A2 * !B2 * C1 * !C2 * !X)	0.00034	0.00035	0.00034
	(A1 * !A2 * !B2 * C1 * !C2 * !X)	-0.00144	-0.00145	-0.00146
	(A1 * !A2 * !B2 * !C1 * !X)	0.00034	0.00035	0.00034
	(A1 * !A2 * !B2 * !C1 * !X)	-0.00143	-0.00145	-0.00146
	(!A1 * B2 * C1 * C2 * X)	0.00113	0.00100	0.00099
	(!A1 * B2 * C1 * C2 * X)	-0.00104	-0.00121	-0.00121
	(!A1 * !B2 * C1 * C2 * X)	0.00093	0.00094	0.00093
	(!A1 * !B2 * C1 * C2 * X)	-0.00124	-0.00126	-0.00125
	(!A1 * !B2 * C1 * !C2 * !X)	0.00035	0.00036	0.00034
	(!A1 * !B2 * C1 * !C2 * !X)	-0.00143	-0.00145	-0.00146
	(!A1 * !B2 * !C1 * !X)	0.00035	0.00036	0.00034
	(!A1 * !B2 * !C1 * !X)	-0.00143	-0.00145	-0.00146

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)	-0.00103	-0.00104	-0.00103
	(A1 * A2 * B2 * C1 * C2 * X)	0.00096	0.00097	0.00095
	(A1 * A2 * B2 * C1 * !C2 * X)	-0.00095	-0.00096	-0.00096
	(A1 * A2 * B2 * C1 * !C2 * X)	0.00085	0.00086	0.00085
	(A1 * A2 * B2 * !C1 * X)	-0.00096	-0.00096	-0.00096
	(A1 * A2 * B2 * !C1 * X)	0.00085	0.00086	0.00085
	(A1 * A2 * !B2 * C1 * C2 * X)	-0.00096	-0.00099	-0.00099
	(A1 * A2 * !B2 * C1 * C2 * X)	0.00093	0.00093	0.00092
	(A1 * A2 * !B2 * C1 * !C2 * X)	-0.00096	-0.00099	-0.00098
	(A1 * A2 * !B2 * C1 * !C2 * X)	0.00079	0.00080	0.00079
	(A1 * A2 * !B2 * !C1 * X)	-0.00096	-0.00099	-0.00098
	(A1 * A2 * !B2 * !C1 * X)	0.00079	0.00080	0.00079
	(A1 * !A2 * B2 * C1 * C2 * X)	-0.00103	-0.00103	-0.00102
	(A1 * !A2 * B2 * C1 * C2 * X)	0.00129	0.00130	0.00129
	(A1 * !A2 * !B2 * C1 * C2 * X)	-0.00095	-0.00097	-0.00097
	(A1 * !A2 * !B2 * C1 * C2 * X)	0.00133	0.00135	0.00133
	(A1 * !A2 * !B2 * C1 * !C2 * !X)	-0.00034	-0.00034	-0.00034
	(A1 * !A2 * !B2 * C1 * !C2 * !X)	0.00157	0.00156	0.00157
	(A1 * !A2 * !B2 * !C1 * !X)	-0.00034	-0.00034	-0.00034
	(A1 * !A2 * !B2 * !C1 * !X)	0.00157	0.00156	0.00157
	(!A1 * B2 * C1 * C2 * X)	-0.00103	-0.00103	-0.00102
	(!A1 * B2 * C1 * C2 * X)	0.00129	0.00130	0.00129
	(!A1 * !B2 * C1 * C2 * X)	-0.00095	-0.00098	-0.00097
	(!A1 * !B2 * C1 * C2 * X)	0.00133	0.00135	0.00133
	(!A1 * !B2 * C1 * !C2 * !X)	-0.00034	-0.00034	-0.00034
	(!A1 * !B2 * C1 * !C2 * !X)	0.00157	0.00156	0.00157
	(!A1 * !B2 * !C1 * !X)	-0.00034	-0.00035	-0.00034
	(!A1 * !B2 * !C1 * !X)	0.00157	0.00159	0.00157

sky130_fd_sc_hs__a222o_2	**(A1 * A2 * B2 * C1 * C2 * X)**	-0.00100	-0.00101	-0.00100
	(A1 * A2 * B2 * C1 * C2 * X)	0.00090	0.00091	0.00090
	(A1 * A2 * B2 * C1 * !C2 * X)	-0.00092	-0.00093	-0.00094
	(A1 * A2 * B2 * C1 * !C2 * X)	0.00080	0.00081	0.00078
	(A1 * A2 * B2 * !C1 * X)	-0.00092	-0.00093	-0.00094
	(A1 * A2 * B2 * !C1 * X)	0.00080	0.00081	0.00078
	(A1 * A2 * !B2 * C1 * C2 * X)	-0.00093	-0.00095	-0.00095
	(A1 * A2 * !B2 * C1 * C2 * X)	0.00086	0.00086	0.00086
	(A1 * A2 * !B2 * C1 * !C2 * X)	-0.00092	-0.00095	-0.00094
	(A1 * A2 * !B2 * C1 * !C2 * X)	0.00073	0.00073	0.00073
	(A1 * A2 * !B2 * !C1 * X)	-0.00092	-0.00095	-0.00094
	(A1 * A2 * !B2 * !C1 * X)	0.00073	0.00073	0.00073
	(A1 * !A2 * B2 * C1 * C2 * X)	-0.00099	-0.00100	-0.00098
	(A1 * !A2 * B2 * C1 * C2 * X)	0.00121	0.00122	0.00121
	(A1 * !A2 * !B2 * C1 * C2 * X)	-0.00091	-0.00094	-0.00093
	(A1 * !A2 * !B2 * C1 * C2 * X)	0.00126	0.00127	0.00125
	(A1 * !A2 * !B2 * C1 * !C2 * !X)	-0.00033	-0.00033	-0.00033
	(A1 * !A2 * !B2 * C1 * !C2 * !X)	0.00146	0.00148	0.00147
	(A1 * !A2 * !B2 * !C1 * !X)	-0.00033	-0.00033	-0.00033
	(A1 * !A2 * !B2 * !C1 * !X)	0.00146	0.00148	0.00147
	(!A1 * B2 * C1 * C2 * X)	-0.00099	-0.00100	-0.00098
	(!A1 * B2 * C1 * C2 * X)	0.00121	0.00122	0.00121
	(!A1 * !B2 * C1 * C2 * X)	-0.00091	-0.00094	-0.00093
	(!A1 * !B2 * C1 * C2 * X)	0.00126	0.00127	0.00125
	(!A1 * !B2 * C1 * !C2 * !X)	-0.00033	-0.00034	-0.00033
	(!A1 * !B2 * C1 * !C2 * !X)	0.00146	0.00148	0.00147
	(!A1 * !B2 * !C1 * !X)	-0.00033	-0.00034	-0.00033
	(!A1 * !B2 * !C1 * !X)	0.00146	0.00148	0.00147

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)	0.00101	0.00102	0.00100
	(A1 * A2 * B1 * C1 * C2 * X)	-0.00091	-0.00092	-0.00091
	(A1 * A2 * B1 * C1 * !C2 * X)	0.00099	0.00101	0.00099
	(A1 * A2 * B1 * C1 * !C2 * X)	-0.00074	-0.00076	-0.00074
	(A1 * A2 * B1 * !C1 * X)	0.00099	0.00101	0.00099
	(A1 * A2 * B1 * !C1 * X)	-0.00074	-0.00076	-0.00074
	(A1 * A2 * !B1 * C1 * C2 * X)	0.00094	0.00095	0.00095
	(A1 * A2 * !B1 * C1 * C2 * X)	-0.00088	-0.00088	-0.00088
	(A1 * A2 * !B1 * C1 * !C2 * X)	0.00094	0.00096	0.00094
	(A1 * A2 * !B1 * C1 * !C2 * X)	-0.00074	-0.00075	-0.00074
	(A1 * A2 * !B1 * !C1 * X)	0.00094	0.00096	0.00094
	(A1 * A2 * !B1 * !C1 * X)	-0.00074	-0.00075	-0.00074
	(A1 * !A2 * B1 * C1 * C2 * X)	0.00108	0.00100	0.00099
	(A1 * !A2 * B1 * C1 * C2 * X)	-0.00110	-0.00123	-0.00123
	(A1 * !A2 * !B1 * C1 * C2 * X) + (!A1 * !B1 * C1 * C2 * X)	0.00093	0.00094	0.00093
	(A1 * !A2 * !B1 * C1 * C2 * X) + (!A1 * !B1 * C1 * C2 * X)	-0.00126	-0.00127	-0.00126
	(A1 * !A2 * !B1 * C1 * !C2 * !X)	0.00089	0.00090	0.00089
	(A1 * !A2 * !B1 * C1 * !C2 * !X)	-0.00130	-0.00131	-0.00130
	(A1 * !A2 * !B1 * !C1 * !X)	0.00089	0.00090	0.00089
	(A1 * !A2 * !B1 * !C1 * !X)	-0.00130	-0.00131	-0.00130
	(!A1 * B1 * C1 * C2 * X)	0.00108	0.00100	0.00099
	(!A1 * B1 * C1 * C2 * X)	-0.00110	-0.00123	-0.00123
	(!A1 * !B1 * C1 * !C2 * !X)	0.00089	0.00090	0.00089
	(!A1 * !B1 * C1 * !C2 * !X)	-0.00130	-0.00131	-0.00130
	(!A1 * !B1 * !C1 * !X)	0.00089	0.00090	0.00089
	(!A1 * !B1 * !C1 * !X)	-0.00130	-0.00131	-0.00130

	(A1 * A2 * B1 * C1 * C2 * X)	0.00103	0.00104	0.00102
	(A1 * A2 * B1 * C1 * C2 * X)	-0.00090	-0.00091	-0.00090
	(A1 * A2 * B1 * C1 * !C2 * X)	0.00101	0.00102	0.00101
	(A1 * A2 * B1 * C1 * !C2 * X)	-0.00073	-0.00074	-0.00073
	(A1 * A2 * B1 * !C1 * X)	0.00101	0.00102	0.00101
	(A1 * A2 * B1 * !C1 * X)	-0.00073	-0.00074	-0.00073
	(A1 * A2 * !B1 * C1 * C2 * X)	0.00096	0.00098	0.00096
	(A1 * A2 * !B1 * C1 * C2 * X)	-0.00085	-0.00086	-0.00085
	(A1 * A2 * !B1 * C1 * !C2 * X)	0.00096	0.00097	0.00096
	(A1 * A2 * !B1 * C1 * !C2 * X)	-0.00072	-0.00073	-0.00073
	(A1 * A2 * !B1 * !C1 * X)	0.00096	0.00097	0.00096
	(A1 * A2 * !B1 * !C1 * X)	-0.00072	-0.00073	-0.00073
	(A1 * !A2 * B1 * C1 * C2 * X)	0.00113	0.00102	0.00100
sky130_fd_sc_hs__a222o_2	**(A1 * !A2 * B1 * C1 * C2 * X)**	-0.00105	-0.00121	-0.00121
	(A1 * !A2 * !B1 * C1 * C2 * X) + (!A1 * !B1 * C1 * C2 * X)	0.00095	0.00096	0.00095
	(A1 * !A2 * !B1 * C1 * C2 * X) + (!A1 * !B1 * C1 * C2 * X)	-0.00125	-0.00125	-0.00125
	(A1 * !A2 * !B1 * C1 * !C2 * !X)	0.00093	0.00093	0.00093
	(A1 * !A2 * !B1 * C1 * !C2 * !X)	-0.00125	-0.00125	-0.00125
	(A1 * !A2 * !B1 * !C1 * !X)	0.00093	0.00093	0.00092
	(A1 * !A2 * !B1 * !C1 * !X)	-0.00125	-0.00125	-0.00125
	(!A1 * B1 * C1 * C2 * X)	0.00114	0.00102	0.00100
	(!A1 * B1 * C1 * C2 * X)	-0.00104	-0.00121	-0.00121
	(!A1 * !B1 * C1 * !C2 * !X)	0.00095	0.00096	0.00095
	(!A1 * !B1 * C1 * !C2 * !X)	-0.00124	-0.00125	-0.00124
	(!A1 * !B1 * !C1 * !X)	0.00095	0.00096	0.00095
	(!A1 * !B1 * !C1 * !X)	-0.00125	-0.00125	-0.00124

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)	-0.00099	-0.00100	-0.00099
	(A1 * A2 * B1 * C1 * C2 * X)	0.00091	0.00092	0.00091
	(A1 * A2 * B1 * C1 * !C2 * X)	-0.00091	-0.00092	-0.00092
	(A1 * A2 * B1 * C1 * !C2 * X)	0.00081	0.00081	0.00081
	(A1 * A2 * B1 * !C1 * X)	-0.00091	-0.00092	-0.00092
	(A1 * A2 * B1 * !C1 * X)	0.00081	0.00081	0.00081
	(A1 * A2 * !B1 * C1 * C2 * X)	-0.00093	-0.00095	-0.00095
	(A1 * A2 * !B1 * C1 * C2 * X)	0.00088	0.00088	0.00088
	(A1 * A2 * !B1 * C1 * !C2 * X)	-0.00091	-0.00095	-0.00094
	(A1 * A2 * !B1 * C1 * !C2 * X)	0.00074	0.00075	0.00074
	(A1 * A2 * !B1 * !C1 * X)	-0.00091	-0.00095	-0.00094
	(A1 * A2 * !B1 * !C1 * X)	0.00074	0.00075	0.00074
	(A1 * !A2 * B1 * C1 * C2 * X)	-0.00099	-0.00099	-0.00098
	(A1 * !A2 * B1 * C1 * C2 * X)	0.00123	0.00124	0.00123
	(A1 * !A2 * !B1 * C1 * C2 * X) + (!A1 * !B1 * C1 * C2 * X)	-0.00091	-0.00094	-0.00093
	(A1 * !A2 * !B1 * C1 * C2 * X) + (!A1 * !B1 * C1 * C2 * X)	0.00127	0.00128	0.00127
	(A1 * !A2 * !B1 * C1 * !C2 * !X)	-0.00084	-0.00089	-0.00089
	(A1 * !A2 * !B1 * C1 * !C2 * !X)	0.00136	0.00132	0.00131
	(A1 * !A2 * !B1 * !C1 * !X)	-0.00084	-0.00089	-0.00089
	(A1 * !A2 * !B1 * !C1 * !X)	0.00136	0.00132	0.00131
	(!A1 * B1 * C1 * C2 * X)	-0.00099	-0.00099	-0.00098
	(!A1 * B1 * C1 * C2 * X)	0.00123	0.00124	0.00123
	(!A1 * !B1 * C1 * !C2 * !X)	-0.00084	-0.00089	-0.00089
	(!A1 * !B1 * C1 * !C2 * !X)	0.00136	0.00132	0.00131
	(!A1 * !B1 * !C1 * !X)	-0.00084	-0.00089	-0.00089
	(!A1 * !B1 * !C1 * !X)	0.00136	0.00132	0.00131

	(A1 * A2 * B1 * C1 * C2 * X)	-0.00101	-0.00102	-0.00101
	(A1 * A2 * B1 * C1 * C2 * X)	0.00090	0.00091	0.00090
	(A1 * A2 * B1 * C1 * !C2 * X)	-0.00093	-0.00094	-0.00095
	(A1 * A2 * B1 * C1 * !C2 * X)	0.00081	0.00081	0.00078
	(A1 * A2 * B1 * !C1 * X)	-0.00093	-0.00094	-0.00095
	(A1 * A2 * B1 * !C1 * X)	0.00081	0.00081	0.00078
	(A1 * A2 * !B1 * C1 * C2 * X)	-0.00094	-0.00097	-0.00096
	(A1 * A2 * !B1 * C1 * C2 * X)	0.00085	0.00086	0.00085
	(A1 * A2 * !B1 * C1 * !C2 * X)	-0.00094	-0.00096	-0.00096
	(A1 * A2 * !B1 * C1 * !C2 * X)	0.00073	0.00073	0.00073
	(A1 * A2 * !B1 * !C1 * X)	-0.00094	-0.00096	-0.00096
	(A1 * A2 * !B1 * !C1 * X)	0.00073	0.00073	0.00073
	(A1 * !A2 * B1 * C1 * C2 * X)	-0.00100	-0.00100	-0.00100
sky130_fd_sc_hs__a222o_2	**(A1 * !A2 * B1 * C1 * C2 * X)**	0.00121	0.00122	0.00121
	(A1 * !A2 * !B1 * C1 * C2 * X) + (!A1 * !B1 * C1 * C2 * X)	-0.00093	-0.00095	-0.00095
	(A1 * !A2 * !B1 * C1 * C2 * X) + (!A1 * !B1 * C1 * C2 * X)	0.00126	0.00126	0.00125
	(A1 * !A2 * !B1 * C1 * !C2 * !X)	-0.00087	-0.00093	-0.00093
	(A1 * !A2 * !B1 * C1 * !C2 * !X)	0.00130	0.00128	0.00125
	(A1 * !A2 * !B1 * !C1 * !X)	-0.00087	-0.00093	-0.00092
	(A1 * !A2 * !B1 * !C1 * !X)	0.00130	0.00127	0.00125
	(!A1 * B1 * C1 * C2 * X)	-0.00100	-0.00101	-0.00100
	(!A1 * B1 * C1 * C2 * X)	0.00121	0.00122	0.00121
	(!A1 * !B1 * C1 * !C2 * !X)	-0.00090	-0.00096	-0.00095
	(!A1 * !B1 * C1 * !C2 * !X)	0.00130	0.00127	0.00125
	(!A1 * !B1 * !C1 * !X)	-0.00090	-0.00096	-0.00095
	(!A1 * !B1 * !C1 * !X)	0.00130	0.00127	0.00125

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)	0.00119	0.00121	0.00119
	(A1 * B1 * B2 * C2 * X)	-0.00070	-0.00071	-0.00070
	(A1 * B1 * B2 * !C2 * X)	0.00114	0.00114	0.00114
	(A1 * B1 * B2 * !C2 * X)	-0.00070	-0.00070	-0.00070
	(A1 * A2 * B1 * !B2 * C2 * X)	0.00119	0.00121	0.00119
	(A1 * A2 * B1 * !B2 * C2 * X)	-0.00070	-0.00071	-0.00070
	(A1 * A2 * B1 * !B2 * !C2 * X)	0.00115	0.00115	0.00114
	(A1 * A2 * B1 * !B2 * !C2 * X)	-0.00070	-0.00070	-0.00070
	(A1 * A2 * !B1 * C2 * X)	0.00119	0.00121	0.00119
	(A1 * A2 * !B1 * C2 * X)	-0.00070	-0.00071	-0.00070
	(A1 * A2 * !B1 * !C2 * X)	0.00115	0.00115	0.00114
	(A1 * A2 * !B1 * !C2 * X)	-0.00070	-0.00070	-0.00070
	(A1 * !A2 * B1 * !B2 * !C2 * !X)	0.00039	0.00039	0.00037
	(A1 * !A2 * B1 * !B2 * !C2 * !X)	-0.00157	-0.00157	-0.00159
	(A1 * !A2 * !B1 * !C2 * !X)	0.00039	0.00039	0.00037
	(A1 * !A2 * !B1 * !C2 * !X)	-0.00157	-0.00157	-0.00159
	(!A1 * B1 * B2 * C2 * X)	0.00119	0.00121	0.00119
	(!A1 * B1 * B2 * C2 * X)	-0.00070	-0.00071	-0.00070
	(!A1 * B1 * B2 * !C2 * X)	0.00115	0.00115	0.00114
	(!A1 * B1 * B2 * !C2 * X)	-0.00070	-0.00070	-0.00070
	(!A1 * B1 * !B2 * !C2 * !X)	0.00039	0.00039	0.00037
	(!A1 * B1 * !B2 * !C2 * !X)	-0.00157	-0.00157	-0.00159
	(!A1 * !B1 * !C2 * !X)	0.00039	0.00039	0.00037
	(!A1 * !B1 * !C2 * !X)	-0.00157	-0.00157	-0.00159

sky130_fd_sc_hs__a222o_2	**(A1 * B1 * B2 * C2 * X)**	0.00116	0.00118	0.00116
	(A1 * B1 * B2 * C2 * X)	-0.00066	-0.00067	-0.00066
	(A1 * B1 * B2 * !C2 * X)	0.00111	0.00111	0.00111
	(A1 * B1 * B2 * !C2 * X)	-0.00065	-0.00066	-0.00065
	(A1 * A2 * B1 * !B2 * C2 * X)	0.00116	0.00118	0.00116
	(A1 * A2 * B1 * !B2 * C2 * X)	-0.00066	-0.00067	-0.00066
	(A1 * A2 * B1 * !B2 * !C2 * X)	0.00111	0.00111	0.00111
	(A1 * A2 * B1 * !B2 * !C2 * X)	-0.00065	-0.00066	-0.00065
	(A1 * A2 * !B1 * C2 * X)	0.00116	0.00118	0.00116
	(A1 * A2 * !B1 * C2 * X)	-0.00065	-0.00067	-0.00066
	(A1 * A2 * !B1 * !C2 * X)	0.00111	0.00111	0.00111
	(A1 * A2 * !B1 * !C2 * X)	-0.00065	-0.00066	-0.00065
	(A1 * !A2 * B1 * !B2 * !C2 * !X)	0.00038	0.00038	0.00037
	(A1 * !A2 * B1 * !B2 * !C2 * !X)	-0.00149	-0.00149	-0.00151
	(A1 * !A2 * !B1 * !C2 * !X)	0.00038	0.00038	0.00037
	(A1 * !A2 * !B1 * !C2 * !X)	-0.00149	-0.00149	-0.00151
	(!A1 * B1 * B2 * C2 * X)	0.00116	0.00118	0.00116
	(!A1 * B1 * B2 * C2 * X)	-0.00066	-0.00067	-0.00066
	(!A1 * B1 * B2 * !C2 * X)	0.00111	0.00111	0.00111
	(!A1 * B1 * B2 * !C2 * X)	-0.00065	-0.00066	-0.00066
	(!A1 * B1 * !B2 * !C2 * !X)	0.00038	0.00038	0.00037
	(!A1 * B1 * !B2 * !C2 * !X)	-0.00149	-0.00149	-0.00151
	(!A1 * !B1 * !C2 * !X)	0.00038	0.00038	0.00037
	(!A1 * !B1 * !C2 * !X)	-0.00149	-0.00149	-0.00151

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)**	-0.00105	-0.00106	-0.00118
	(A1 * B1 * B2 * C2 * X)	0.00083	0.00083	0.00073
	(A1 * B1 * B2 * !C2 * X)	-0.00112	-0.00114	-0.00114
	(A1 * B1 * B2 * !C2 * X)	0.00070	0.00070	0.00070
	(A1 * A2 * B1 * !B2 * C2 * X)	-0.00091	-0.00091	-0.00114
	(A1 * A2 * B1 * !B2 * C2 * X)	0.00092	0.00091	0.00075
	(A1 * A2 * B1 * !B2 * !C2 * X)	-0.00112	-0.00115	-0.00114
	(A1 * A2 * B1 * !B2 * !C2 * X)	0.00070	0.00070	0.00070
	(A1 * A2 * !B1 * C2 * X)	-0.00091	-0.00093	-0.00114
	(A1 * A2 * !B1 * C2 * X)	0.00092	0.00092	0.00075
	(A1 * A2 * !B1 * !C2 * X)	-0.00112	-0.00115	-0.00114
	(A1 * A2 * !B1 * !C2 * X)	0.00070	0.00070	0.00070
	(A1 * !A2 * B1 * !B2 * !C2 * !X)	-0.00036	-0.00037	-0.00036
	(A1 * !A2 * B1 * !B2 * !C2 * !X)	0.00159	0.00159	0.00159
	(A1 * !A2 * !B1 * !C2 * !X)	-0.00036	-0.00037	-0.00036
	(A1 * !A2 * !B1 * !C2 * !X)	0.00159	0.00159	0.00159
	(!A1 * B1 * B2 * C2 * X)	-0.00105	-0.00106	-0.00117
	(!A1 * B1 * B2 * C2 * X)	0.00083	0.00083	0.00073
	(!A1 * B1 * B2 * !C2 * X)	-0.00112	-0.00115	-0.00114
	(!A1 * B1 * B2 * !C2 * X)	0.00070	0.00071	0.00070
	(!A1 * B1 * !B2 * !C2 * !X)	-0.00036	-0.00037	-0.00036
	(!A1 * B1 * !B2 * !C2 * !X)	0.00159	0.00159	0.00159
	(!A1 * !B1 * !C2 * !X)	-0.00036	-0.00037	-0.00036
	(!A1 * !B1 * !C2 * !X)	0.00159	0.00159	0.00159

sky130_fd_sc_hs__a222o_2	**(A1 * B1 * B2 * C2 * X)**	-0.00105	-0.00106	-0.00115
	(A1 * B1 * B2 * C2 * X)	0.00075	0.00075	0.00068
	(A1 * B1 * B2 * !C2 * X)	-0.00109	-0.00111	-0.00111
	(A1 * B1 * B2 * !C2 * X)	0.00066	0.00066	0.00065
	(A1 * A2 * B1 * !B2 * C2 * X)	-0.00090	-0.00092	-0.00111
	(A1 * A2 * B1 * !B2 * C2 * X)	0.00086	0.00086	0.00071
	(A1 * A2 * B1 * !B2 * !C2 * X)	-0.00109	-0.00111	-0.00111
	(A1 * A2 * B1 * !B2 * !C2 * X)	0.00066	0.00066	0.00066
	(A1 * A2 * !B1 * C2 * X)	-0.00090	-0.00092	-0.00111
	(A1 * A2 * !B1 * C2 * X)	0.00086	0.00086	0.00071
	(A1 * A2 * !B1 * !C2 * X)	-0.00109	-0.00111	-0.00111
	(A1 * A2 * !B1 * !C2 * X)	0.00066	0.00066	0.00066
	(A1 * !A2 * B1 * !B2 * !C2 * !X)	-0.00036	-0.00037	-0.00036
	(A1 * !A2 * B1 * !B2 * !C2 * !X)	0.00151	0.00153	0.00151
	(A1 * !A2 * !B1 * !C2 * !X)	-0.00036	-0.00037	-0.00036
	(A1 * !A2 * !B1 * !C2 * !X)	0.00151	0.00153	0.00151
	(!A1 * B1 * B2 * C2 * X)	-0.00105	-0.00106	-0.00115
	(!A1 * B1 * B2 * C2 * X)	0.00075	0.00075	0.00068
	(!A1 * B1 * B2 * !C2 * X)	-0.00109	-0.00111	-0.00111
	(!A1 * B1 * B2 * !C2 * X)	0.00066	0.00066	0.00066
	(!A1 * B1 * !B2 * !C2 * !X)	-0.00036	-0.00037	-0.00036
	(!A1 * B1 * !B2 * !C2 * !X)	0.00151	0.00153	0.00151
	(!A1 * !B1 * !C2 * !X)	-0.00036	-0.00037	-0.00036
	(!A1 * !B1 * !C2 * !X)	0.00151	0.00153	0.00151

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)**	0.00119	0.00121	0.00119
	(A1 * B1 * B2 * C1 * X)	-0.00067	-0.00068	-0.00067
	(A1 * B1 * B2 * !C1 * X)	0.00114	0.00115	0.00114
	(A1 * B1 * B2 * !C1 * X)	-0.00066	-0.00067	-0.00067
	(A1 * A2 * B1 * !B2 * C1 * X)	0.00120	0.00121	0.00119
	(A1 * A2 * B1 * !B2 * C1 * X)	-0.00067	-0.00068	-0.00067
	(A1 * A2 * B1 * !B2 * !C1 * X)	0.00114	0.00116	0.00114
	(A1 * A2 * B1 * !B2 * !C1 * X)	-0.00066	-0.00067	-0.00067
	(A1 * A2 * !B1 * C1 * X)	0.00120	0.00121	0.00119
	(A1 * A2 * !B1 * C1 * X)	-0.00067	-0.00068	-0.00067
	(A1 * A2 * !B1 * !C1 * X)	0.00114	0.00116	0.00114
	(A1 * A2 * !B1 * !C1 * X)	-0.00066	-0.00067	-0.00067
	(A1 * !A2 * B1 * !B2 * !C1 * !X)	0.00091	0.00092	0.00091
	(A1 * !A2 * B1 * !B2 * !C1 * !X)	-0.00139	-0.00140	-0.00139
	(A1 * !A2 * !B1 * !C1 * !X)	0.00091	0.00092	0.00091
	(A1 * !A2 * !B1 * !C1 * !X)	-0.00139	-0.00140	-0.00139
	(!A1 * B1 * B2 * C1 * X)	0.00120	0.00121	0.00119
	(!A1 * B1 * B2 * C1 * X)	-0.00068	-0.00068	-0.00067
	(!A1 * B1 * B2 * !C1 * X)	0.00114	0.00116	0.00114
	(!A1 * B1 * B2 * !C1 * X)	-0.00066	-0.00067	-0.00067
	(!A1 * B1 * !B2 * !C1 * !X)	0.00091	0.00092	0.00091
	(!A1 * B1 * !B2 * !C1 * !X)	-0.00139	-0.00140	-0.00139
	(!A1 * !B1 * !C1 * !X)	0.00091	0.00092	0.00091
	(!A1 * !B1 * !C1 * !X)	-0.00139	-0.00140	-0.00139

sky130_fd_sc_hs__a222o_2	**(A1 * B1 * B2 * C1 * X)**	0.00123	0.00125	0.00123
	(A1 * B1 * B2 * C1 * X)	-0.00067	-0.00068	-0.00067
	(A1 * B1 * B2 * !C1 * X)	0.00118	0.00120	0.00118
	(A1 * B1 * B2 * !C1 * X)	-0.00067	-0.00067	-0.00067
	(A1 * A2 * B1 * !B2 * C1 * X)	0.00123	0.00125	0.00123
	(A1 * A2 * B1 * !B2 * C1 * X)	-0.00067	-0.00068	-0.00067
	(A1 * A2 * B1 * !B2 * !C1 * X)	0.00118	0.00120	0.00118
	(A1 * A2 * B1 * !B2 * !C1 * X)	-0.00067	-0.00067	-0.00067
	(A1 * A2 * !B1 * C1 * X)	0.00124	0.00123	0.00123
	(A1 * A2 * !B1 * C1 * X)	-0.00068	-0.00067	-0.00067
	(A1 * A2 * !B1 * !C1 * X)	0.00118	0.00120	0.00118
	(A1 * A2 * !B1 * !C1 * X)	-0.00067	-0.00067	-0.00067
	(A1 * !A2 * B1 * !B2 * !C1 * !X)	0.00090	0.00090	0.00090
	(A1 * !A2 * B1 * !B2 * !C1 * !X)	-0.00145	-0.00145	-0.00145
	(A1 * !A2 * !B1 * !C1 * !X)	0.00090	0.00090	0.00090
	(A1 * !A2 * !B1 * !C1 * !X)	-0.00145	-0.00145	-0.00145
	(!A1 * B1 * B2 * C1 * X)	0.00124	0.00125	0.00123
	(!A1 * B1 * B2 * C1 * X)	-0.00068	-0.00068	-0.00067
	(!A1 * B1 * B2 * !C1 * X)	0.00118	0.00120	0.00118
	(!A1 * B1 * B2 * !C1 * X)	-0.00067	-0.00068	-0.00067
	(!A1 * B1 * !B2 * !C1 * !X)	0.00090	0.00090	0.00090
	(!A1 * B1 * !B2 * !C1 * !X)	-0.00145	-0.00145	-0.00145
	(!A1 * !B1 * !C1 * !X)	0.00090	0.00091	0.00090
	(!A1 * !B1 * !C1 * !X)	-0.00145	-0.00146	-0.00145

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)**	-0.00105	-0.00106	-0.00117
	(A1 * B1 * B2 * C1 * X)	0.00080	0.00080	0.00070
	(A1 * B1 * B2 * !C1 * X)	-0.00112	-0.00115	-0.00114
	(A1 * B1 * B2 * !C1 * X)	0.00066	0.00067	0.00067
	(A1 * A2 * B1 * !B2 * C1 * X)	-0.00091	-0.00093	-0.00114
	(A1 * A2 * B1 * !B2 * C1 * X)	0.00089	0.00089	0.00072
	(A1 * A2 * B1 * !B2 * !C1 * X)	-0.00111	-0.00115	-0.00114
	(A1 * A2 * B1 * !B2 * !C1 * X)	0.00066	0.00067	0.00067
	(A1 * A2 * !B1 * C1 * X)	-0.00091	-0.00093	-0.00114
	(A1 * A2 * !B1 * C1 * X)	0.00089	0.00089	0.00072
	(A1 * A2 * !B1 * !C1 * X)	-0.00112	-0.00115	-0.00114
	(A1 * A2 * !B1 * !C1 * X)	0.00066	0.00067	0.00067
	(A1 * !A2 * B1 * !B2 * !C1 * !X)	-0.00086	-0.00092	-0.00091
	(A1 * !A2 * B1 * !B2 * !C1 * !X)	0.00144	0.00141	0.00140
	(A1 * !A2 * !B1 * !C1 * !X)	-0.00086	-0.00092	-0.00091
	(A1 * !A2 * !B1 * !C1 * !X)	0.00144	0.00141	0.00140
	(!A1 * B1 * B2 * C1 * X)	-0.00104	-0.00106	-0.00117
	(!A1 * B1 * B2 * C1 * X)	0.00080	0.00080	0.00070
	(!A1 * B1 * B2 * !C1 * X)	-0.00111	-0.00115	-0.00114
	(!A1 * B1 * B2 * !C1 * X)	0.00066	0.00067	0.00067
	(!A1 * B1 * !B2 * !C1 * !X)	-0.00086	-0.00092	-0.00091
	(!A1 * B1 * !B2 * !C1 * !X)	0.00144	0.00141	0.00140
	(!A1 * !B1 * !C1 * !X)	-0.00086	-0.00092	-0.00091
	(!A1 * !B1 * !C1 * !X)	0.00144	0.00141	0.00140

sky130_fd_sc_hs__a222o_2	**(A1 * B1 * B2 * C1 * X)**	-0.00112	-0.00113	-0.00122
	(A1 * B1 * B2 * C1 * X)	0.00077	0.00077	0.00069
	(A1 * B1 * B2 * !C1 * X)	-0.00116	-0.00119	-0.00118
	(A1 * B1 * B2 * !C1 * X)	0.00067	0.00067	0.00067
	(A1 * A2 * B1 * !B2 * C1 * X)	-0.00097	-0.00099	-0.00118
	(A1 * A2 * B1 * !B2 * C1 * X)	0.00088	0.00088	0.00072
	(A1 * A2 * B1 * !B2 * !C1 * X)	-0.00116	-0.00119	-0.00118
	(A1 * A2 * B1 * !B2 * !C1 * X)	0.00067	0.00067	0.00067
	(A1 * A2 * !B1 * C1 * X)	-0.00097	-0.00099	-0.00118
	(A1 * A2 * !B1 * C1 * X)	0.00088	0.00088	0.00072
	(A1 * A2 * !B1 * !C1 * X)	-0.00116	-0.00119	-0.00118
	(A1 * A2 * !B1 * !C1 * X)	0.00067	0.00067	0.00067
	(A1 * !A2 * B1 * !B2 * !C1 * !X)	-0.00084	-0.00090	-0.00090
	(A1 * !A2 * B1 * !B2 * !C1 * !X)	0.00150	0.00147	0.00146
	(A1 * !A2 * !B1 * !C1 * !X)	-0.00084	-0.00090	-0.00090
	(A1 * !A2 * !B1 * !C1 * !X)	0.00150	0.00147	0.00146
	(!A1 * B1 * B2 * C1 * X)	-0.00112	-0.00113	-0.00122
	(!A1 * B1 * B2 * C1 * X)	0.00077	0.00077	0.00070
	(!A1 * B1 * B2 * !C1 * X)	-0.00116	-0.00119	-0.00118
	(!A1 * B1 * B2 * !C1 * X)	0.00067	0.00068	0.00067
	(!A1 * B1 * !B2 * !C1 * !X)	-0.00084	-0.00090	-0.00090
	(!A1 * B1 * !B2 * !C1 * !X)	0.00150	0.00147	0.00146
	(!A1 * !B1 * !C1 * !X)	-0.00084	-0.00090	-0.00090
	(!A1 * !B1 * !C1 * !X)	0.00150	0.00147	0.00146

SKY130_FD_SC_HS__A22OIx

sky130_fd_sc_hs_tt_1.50v_25C.ccs
Cell Library: Process , Voltage
1.50, 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	0.00268	0.00265	0.00278	0.00279	0.38835
sky130_fd_sc_hs__a22oi_2	0.00588	0.00512	0.00561	0.00510	0.70234
sky130_fd_sc_hs__a22oi_4	0.01026	0.01008	0.01038	0.01020	1.32059

Leakage Information

Cell Name	Leakage(nW)		
	Min.	**Avg**	**Max.**
sky130_fd_sc_hs__a22oi_1	0.00000	0.01963	0.05947
sky130_fd_sc_hs__a22oi_2	0.00000	0.03927	0.11893
sky130_fd_sc_hs__a22oi_4	0.00000	0.07853	0.23786

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)	0.14739	1.18783	11.42590
	A2->Y (FR)	0.17308	1.21870	11.49190
	B1->Y (FR)	0.10837	1.12701	11.36840
	B2->Y (FR)	0.13393	1.16363	11.49930
sky130_fd_sc_hs__a22oi_2	A1->Y (FR)	0.15402	1.03160	11.15240
	A2->Y (FR)	0.18309	1.07758	11.36720
	B1->Y (FR)	0.11008	0.98120	11.20850
	B2->Y (FR)	0.14239	1.03211	11.47040
sky130_fd_sc_hs__a22oi_4	A1->Y (FR)	0.14100	0.89448	10.99810
	A2->Y (FR)	0.17599	0.94250	11.22050
	B1->Y (FR)	0.10111	0.85273	11.10840
	B2->Y (FR)	0.13701	0.89977	11.39440

Delay(ns) to Y falling :

Cell Name	Timing Arc(Dir)	Delay(ns)		
		First	Mid	Last
sky130_fd_sc_hs__a22oi_1	A1->Y (RF)	0.04088	0.48421	4.78205
	A2->Y (RF)	0.04564	0.45383	4.41170
	B1->Y (RF)	0.02948	0.46323	4.80739
	B2->Y (RF)	0.03421	0.43886	4.46173
sky130_fd_sc_hs__a22oi_2	A1->Y (RF)	0.04242	0.42779	4.69334
	A2->Y (RF)	0.04698	0.40935	4.38826
	B1->Y (RF)	0.02910	0.40127	4.66737
	B2->Y (RF)	0.03512	0.38497	4.36017
sky130_fd_sc_hs__a22oi_4	A1->Y (RF)	0.04221	0.39898	4.92493
	A2->Y (RF)	0.04784	0.36177	4.32114
	B1->Y (RF)	0.02776	0.36921	4.92135
	B2->Y (RF)	0.03371	0.33214	4.28613

Power Information

Internal switching power(pJ) to Y rising :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__a22oi_1	A1	0.00035	0.00020	0.00040
	A1	0.00526	0.00511	0.00531
	A2	0.00071	0.00060	0.00081
	A2	0.00642	0.00632	0.00652
	B1	-0.00016	-0.00010	0.00097
	B1	0.00446	0.00442	0.00539
	B2	0.00066	0.00064	0.00165
	B2	0.00549	0.00547	0.00647
sky130_fd_sc_hs__a22oi_2	A1	0.00132	0.00096	0.00145
	A1	0.01176	0.01140	0.01187
	A2	0.00219	0.00192	0.00240
	A2	0.01360	0.01331	0.01377
	B1	-0.00004	0.00003	0.00237
	B1	0.00934	0.00925	0.01105
	B2	0.00119	0.00116	0.00348
	B2	0.01162	0.01155	0.01375
sky130_fd_sc_hs__a22oi_4	A1	0.00146	0.00077	0.00185
	A1	0.02115	0.02043	0.02154
	A2	0.00331	0.00279	0.00381
	A2	0.02596	0.02543	0.02646
	B1	-0.00137	-0.00123	0.00342
	B1	0.01719	0.01691	0.02115
	B2	0.00087	0.00114	0.00530
	B2	0.02207	0.02180	0.02604

Internal switching power(pJ) to Y falling :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__a22oi_1	A1	0.00658	0.00648	0.00707
	A1	0.00192	0.00178	0.00218
	A2	0.00740	0.00729	0.00750
	A2	0.00188	0.00175	0.00200
	B1	0.00397	0.00403	0.00455
	B1	-0.00011	-0.00015	0.00031
	B2	0.00485	0.00484	0.00516
	B2	-0.00009	-0.00015	0.00016
sky130_fd_sc_hs__a22oi_2	A1	0.01327	0.01302	0.01409
	A1	0.00341	0.00317	0.00394
	A2	0.01439	0.01411	0.01464
	A2	0.00346	0.00318	0.00374
	B1	0.00836	0.00841	0.00963
	B1	-0.00008	-0.00021	0.00084
	B2	0.00971	0.00963	0.01033
	B2	0.00000	-0.00017	0.00055
sky130_fd_sc_hs__a22oi_4	A1	0.02508	0.02464	0.02671
	A1	0.00652	0.00600	0.00766
	A2	0.02826	0.02765	0.02883
	A2	0.00644	0.00583	0.00703
	B1	0.01569	0.01565	0.01799
	B1	-0.00055	-0.00056	0.00131
	B2	0.01904	0.01880	0.02092
	B2	-0.00037	-0.00075	0.00078

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)	0.00116	0.00111	0.00110
	(A2 * B1 * B2 * !Y)	-0.00124	-0.00135	-0.00134
	(!A2 * B1 * B2 * !Y)	0.00104	0.00104	0.00104
	(!A2 * B1 * B2 * !Y)	-0.00138	-0.00137	-0.00137
	(!A2 * B1 * !B2 * Y)	0.00040	0.00040	0.00039
	(!A2 * B1 * !B2 * Y)	-0.00157	-0.00158	-0.00160
	(!A2 * !B1 * Y)	0.00040	0.00040	0.00039
	(!A2 * !B1 * Y)	-0.00157	-0.00158	-0.00160
sky130_fd_sc_hs__a22oi_2	(A2 * B1 * B2 * !Y)	0.00263	0.00240	0.00240
	(A2 * B1 * B2 * !Y)	-0.00254	-0.00284	-0.00285
	(!A2 * B1 * B2 * !Y)	0.00227	0.00229	0.00228
	(!A2 * B1 * B2 * !Y)	-0.00294	-0.00296	-0.00295
	(!A2 * B1 * !B2 * Y)	0.00079	0.00081	0.00077
	(!A2 * B1 * !B2 * Y)	-0.00350	-0.00355	-0.00359
	(!A2 * !B1 * Y)	0.00081	0.00081	0.00077
	(!A2 * !B1 * Y)	-0.00354	-0.00355	-0.00359
sky130_fd_sc_hs__a22oi_4	(A2 * B1 * B2 * !Y)	0.00483	0.00447	0.00444
	(A2 * B1 * B2 * !Y)	-0.00487	-0.00541	-0.00542
	(!A2 * B1 * B2 * !Y)	0.00420	0.00421	0.00421
	(!A2 * B1 * B2 * !Y)	-0.00558	-0.00558	-0.00558
	(!A2 * B1 * !B2 * Y)	0.00152	0.00154	0.00146
	(!A2 * B1 * !B2 * Y)	-0.00641	-0.00649	-0.00658
	(!A2 * !B1 * Y)	0.00153	0.00154	0.00146
	(!A2 * !B1 * Y)	-0.00642	-0.00649	-0.00658

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)	-0.00109	-0.00110	-0.00109
	(A2 * B1 * B2 * !Y)	0.00133	0.00135	0.00134
	(!A2 * B1 * B2 * !Y)	-0.00101	-0.00104	-0.00104
	(!A2 * B1 * B2 * !Y)	0.00138	0.00139	0.00138
	(!A2 * B1 * !B2 * Y)	-0.00037	-0.00038	-0.00037
	(!A2 * B1 * !B2 * Y)	0.00159	0.00160	0.00160
	(!A2 * !B1 * Y)	-0.00037	-0.00038	-0.00037
	(!A2 * !B1 * Y)	0.00159	0.00160	0.00160
sky130_fd_sc_hs__a22oi_2	(A2 * B1 * B2 * !Y)	-0.00239	-0.00240	-0.00239
	(A2 * B1 * B2 * !Y)	0.00284	0.00290	0.00285
	(!A2 * B1 * B2 * !Y)	-0.00221	-0.00229	-0.00228
	(!A2 * B1 * B2 * !Y)	0.00297	0.00299	0.00296
	(!A2 * B1 * !B2 * Y)	-0.00076	-0.00075	-0.00075
	(!A2 * B1 * !B2 * Y)	0.00360	0.00361	0.00359
	(!A2 * !B1 * Y)	-0.00076	-0.00075	-0.00075
	(!A2 * !B1 * Y)	0.00360	0.00361	0.00359
sky130_fd_sc_hs__a22oi_4	(A2 * B1 * B2 * !Y)	-0.00444	-0.00446	-0.00443
	(A2 * B1 * B2 * !Y)	0.00542	0.00547	0.00542
	(!A2 * B1 * B2 * !Y)	-0.00402	-0.00421	-0.00421
	(!A2 * B1 * B2 * !Y)	0.00561	0.00559	0.00559
	(!A2 * B1 * !B2 * Y)	-0.00142	-0.00142	-0.00141
	(!A2 * B1 * !B2 * Y)	0.00662	0.00663	0.00660
	(!A2 * !B1 * Y)	-0.00143	-0.00142	-0.00141
	(!A2 * !B1 * Y)	0.00662	0.00663	0.00660

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)	0.00123	0.00118	0.00116
	(A1 * B1 * B2 * !Y)	-0.00127	-0.00140	-0.00139
	(!A1 * B1 * B2 * !Y)	0.00110	0.00111	0.00110
	(!A1 * B1 * B2 * !Y)	-0.00142	-0.00144	-0.00143
	(!A1 * B1 * !B2 * Y)	0.00110	0.00111	0.00111
	(!A1 * B1 * !B2 * Y)	-0.00143	-0.00143	-0.00143
	(!A1 * !B1 * Y)	0.00110	0.00111	0.00111
	(!A1 * !B1 * Y)	-0.00143	-0.00144	-0.00143
sky130_fd_sc_hs__a22oi_2	(A1 * B1 * B2 * !Y)	0.00234	0.00224	0.00220
	(A1 * B1 * B2 * !Y)	-0.00241	-0.00266	-0.00264
	(!A1 * B1 * B2 * !Y)	0.00208	0.00210	0.00208
	(!A1 * B1 * B2 * !Y)	-0.00271	-0.00273	-0.00271
	(!A1 * B1 * !B2 * Y)	0.00200	0.00203	0.00201
	(!A1 * B1 * !B2 * Y)	-0.00278	-0.00280	-0.00279
	(!A1 * !B1 * Y)	0.00200	0.00203	0.00201
	(!A1 * !B1 * Y)	-0.00278	-0.00281	-0.00279
sky130_fd_sc_hs__a22oi_4	(A1 * B1 * B2 * !Y)	0.00486	0.00456	0.00447
	(A1 * B1 * B2 * !Y)	-0.00490	-0.00547	-0.00544
	(!A1 * B1 * B2 * !Y)	0.00420	0.00423	0.00422
	(!A1 * B1 * B2 * !Y)	-0.00558	-0.00561	-0.00560
	(!A1 * B1 * !B2 * Y)	0.00420	0.00423	0.00422
	(!A1 * B1 * !B2 * Y)	-0.00558	-0.00560	-0.00559
	(!A1 * !B1 * Y)	0.00420	0.00422	0.00421
	(!A1 * !B1 * Y)	-0.00558	-0.00560	-0.00559

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)	-0.00116	-0.00116	-0.00116
	(A1 * B1 * B2 * !Y)	0.00140	0.00140	0.00139
	(!A1 * B1 * B2 * !Y)	-0.00107	-0.00111	-0.00110
	(!A1 * B1 * B2 * !Y)	0.00142	0.00144	0.00144
	(!A1 * B1 * !B2 * Y)	-0.00106	-0.00111	-0.00111
	(!A1 * B1 * !B2 * Y)	0.00147	0.00144	0.00144
	(!A1 * !B1 * Y)	-0.00106	-0.00111	-0.00111
	(!A1 * !B1 * Y)	0.00147	0.00144	0.00144
sky130_fd_sc_hs__a22oi_2	(A1 * B1 * B2 * !Y)	-0.00219	-0.00221	-0.00219
	(A1 * B1 * B2 * !Y)	0.00263	0.00266	0.00264
	(!A1 * B1 * B2 * !Y)	-0.00201	-0.00209	-0.00208
	(!A1 * B1 * B2 * !Y)	0.00271	0.00274	0.00272
	(!A1 * B1 * !B2 * Y)	-0.00188	-0.00202	-0.00201
	(!A1 * B1 * !B2 * Y)	0.00286	0.00283	0.00280
	(!A1 * !B1 * Y)	-0.00188	-0.00202	-0.00201
	(!A1 * !B1 * Y)	0.00286	0.00283	0.00280
sky130_fd_sc_hs__a22oi_4	(A1 * B1 * B2 * !Y)	-0.00447	-0.00450	-0.00446
	(A1 * B1 * B2 * !Y)	0.00544	0.00552	0.00544
	(!A1 * B1 * B2 * !Y)	-0.00406	-0.00423	-0.00422
	(!A1 * B1 * B2 * !Y)	0.00559	0.00563	0.00562
	(!A1 * B1 * !B2 * Y)	-0.00393	-0.00422	-0.00422
	(!A1 * B1 * !B2 * Y)	0.00576	0.00568	0.00561
	(!A1 * !B1 * Y)	-0.00393	-0.00422	-0.00421
	(!A1 * !B1 * Y)	0.00576	0.00568	0.00561

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)	0.00126	0.00128	0.00126
	(A1 * A2 * B2 * !Y)	-0.00071	-0.00072	-0.00071
	(A1 * A2 * !B2 * !Y)	0.00120	0.00120	0.00120
	(A1 * A2 * !B2 * !Y)	-0.00071	-0.00071	-0.00071
	(A1 * !A2 * !B2 * Y)	0.00037	0.00037	0.00035
	(A1 * !A2 * !B2 * Y)	-0.00164	-0.00164	-0.00167
	(!A1 * !B2 * Y)	0.00037	0.00036	0.00035
	(!A1 * !B2 * Y)	-0.00164	-0.00164	-0.00167
sky130_fd_sc_hs__a22oi_2	(A1 * A2 * B2 * !Y)	0.00270	0.00270	0.00270
	(A1 * A2 * B2 * !Y)	-0.00138	-0.00138	-0.00138
	(A1 * A2 * !B2 * !Y)	0.00256	0.00261	0.00257
	(A1 * A2 * !B2 * !Y)	-0.00137	-0.00139	-0.00137
	(A1 * !A2 * !B2 * Y)	0.00086	0.00086	0.00083
	(A1 * !A2 * !B2 * Y)	-0.00326	-0.00327	-0.00333
	(!A1 * !B2 * Y)	0.00086	0.00086	0.00083
	(!A1 * !B2 * Y)	-0.00326	-0.00327	-0.00333
sky130_fd_sc_hs__a22oi_4	(A1 * A2 * B2 * !Y)	0.00498	0.00502	0.00500
	(A1 * A2 * B2 * !Y)	-0.00278	-0.00280	-0.00278
	(A1 * A2 * !B2 * !Y)	0.00478	0.00479	0.00478
	(A1 * A2 * !B2 * !Y)	-0.00279	-0.00278	-0.00278
	(A1 * !A2 * !B2 * Y)	0.00151	0.00152	0.00144
	(A1 * !A2 * !B2 * Y)	-0.00643	-0.00647	-0.00661
	(!A1 * !B2 * Y)	0.00151	0.00152	0.00145
	(!A1 * !B2 * Y)	-0.00643	-0.00647	-0.00661

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)	-0.00111	-0.00112	-0.00124
	(A1 * A2 * B2 * !Y)	0.00084	0.00084	0.00074
	(A1 * A2 * !B2 * !Y)	-0.00117	-0.00120	-0.00120
	(A1 * A2 * !B2 * !Y)	0.00071	0.00071	0.00071
	(A1 * !A2 * !B2 * Y)	-0.00035	-0.00035	-0.00034
	(A1 * !A2 * !B2 * Y)	0.00167	0.00167	0.00167
	(!A1 * !B2 * Y)	-0.00035	-0.00035	-0.00034
	(!A1 * !B2 * Y)	0.00167	0.00167	0.00167
sky130_fd_sc_hs__a22oi_2	(A1 * A2 * B2 * !Y)	-0.00243	-0.00245	-0.00267
	(A1 * A2 * B2 * !Y)	0.00160	0.00160	0.00143
	(A1 * A2 * !B2 * !Y)	-0.00250	-0.00261	-0.00257
	(A1 * A2 * !B2 * !Y)	0.00138	0.00139	0.00137
	(A1 * !A2 * !B2 * Y)	-0.00081	-0.00081	-0.00080
	(A1 * !A2 * !B2 * Y)	0.00334	0.00335	0.00334
	(!A1 * !B2 * Y)	-0.00081	-0.00081	-0.00080
	(!A1 * !B2 * Y)	0.00334	0.00335	0.00334
sky130_fd_sc_hs__a22oi_4	(A1 * A2 * B2 * !Y)	-0.00450	-0.00453	-0.00494
	(A1 * A2 * B2 * !Y)	0.00322	0.00321	0.00288
	(A1 * A2 * !B2 * !Y)	-0.00459	-0.00479	-0.00478
	(A1 * A2 * !B2 * !Y)	0.00279	0.00278	0.00278
	(A1 * !A2 * !B2 * Y)	-0.00139	-0.00141	-0.00140
	(A1 * !A2 * !B2 * Y)	0.00659	0.00665	0.00662
	(!A1 * !B2 * Y)	-0.00139	-0.00141	-0.00140
	(!A1 * !B2 * Y)	0.00659	0.00664	0.00662

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)	0.00138	0.00138	0.00138
	(A1 * A2 * B1 * !Y)	-0.00072	-0.00072	-0.00072
	(A1 * A2 * !B1 * !Y)	0.00131	0.00132	0.00132
	(A1 * A2 * !B1 * !Y)	-0.00071	-0.00072	-0.00071
	(A1 * !A2 * !B1 * Y)	0.00110	0.00112	0.00111
	(A1 * !A2 * !B1 * Y)	-0.00147	-0.00148	-0.00148
	(!A1 * !B1 * Y)	0.00110	0.00112	0.00111
	(!A1 * !B1 * Y)	-0.00147	-0.00148	-0.00148
sky130_fd_sc_hs__a22oi_2	(A1 * A2 * B1 * !Y)	0.00237	0.00237	0.00238
	(A1 * A2 * B1 * !Y)	-0.00138	-0.00138	-0.00138
	(A1 * A2 * !B1 * !Y)	0.00226	0.00231	0.00227
	(A1 * A2 * !B1 * !Y)	-0.00137	-0.00139	-0.00138
	(A1 * !A2 * !B1 * Y)	0.00199	0.00202	0.00200
	(A1 * !A2 * !B1 * Y)	-0.00276	-0.00278	-0.00276
	(!A1 * !B1 * Y)	0.00199	0.00202	0.00200
	(!A1 * !B1 * Y)	-0.00276	-0.00278	-0.00276
sky130_fd_sc_hs__a22oi_4	(A1 * A2 * B1 * !Y)	0.00498	0.00503	0.00500
	(A1 * A2 * B1 * !Y)	-0.00278	-0.00280	-0.00279
	(A1 * A2 * !B1 * !Y)	0.00476	0.00478	0.00476
	(A1 * A2 * !B1 * !Y)	-0.00277	-0.00279	-0.00278
	(A1 * !A2 * !B1 * Y)	0.00419	0.00426	0.00421
	(A1 * !A2 * !B1 * Y)	-0.00555	-0.00560	-0.00556
	(!A1 * !B1 * Y)	0.00419	0.00424	0.00419
	(!A1 * !B1 * Y)	-0.00557	-0.00560	-0.00556

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)	-0.00123	-0.00124	-0.00136
	(A1 * A2 * B1 * !Y)	0.00085	0.00085	0.00075
	(A1 * A2 * !B1 * !Y)	-0.00129	-0.00132	-0.00132
	(A1 * A2 * !B1 * !Y)	0.00072	0.00072	0.00071
	(A1 * !A2 * !B1 * Y)	-0.00105	-0.00111	-0.00111
	(A1 * !A2 * !B1 * Y)	0.00152	0.00150	0.00148
	(!A1 * !B1 * Y)	-0.00105	-0.00111	-0.00111
	(!A1 * !B1 * Y)	0.00152	0.00150	0.00148
sky130_fd_sc_hs__a22oi_2	(A1 * A2 * B1 * !Y)	-0.00211	-0.00213	-0.00235
	(A1 * A2 * B1 * !Y)	0.00160	0.00161	0.00144
	(A1 * A2 * !B1 * !Y)	-0.00219	-0.00228	-0.00227
	(A1 * A2 * !B1 * !Y)	0.00138	0.00139	0.00138
	(A1 * !A2 * !B1 * Y)	-0.00188	-0.00201	-0.00200
	(A1 * !A2 * !B1 * Y)	0.00282	0.00279	0.00277
	(!A1 * !B1 * Y)	-0.00188	-0.00201	-0.00200
	(!A1 * !B1 * Y)	0.00282	0.00279	0.00277
sky130_fd_sc_hs__a22oi_4	(A1 * A2 * B1 * !Y)	-0.00448	-0.00454	-0.00493
	(A1 * A2 * B1 * !Y)	0.00321	0.00322	0.00289
	(A1 * A2 * !B1 * !Y)	-0.00460	-0.00478	-0.00476
	(A1 * A2 * !B1 * !Y)	0.00277	0.00279	0.00278
	(A1 * !A2 * !B1 * Y)	-0.00393	-0.00422	-0.00421
	(A1 * !A2 * !B1 * Y)	0.00571	0.00563	0.00558
	(!A1 * !B1 * Y)	-0.00393	-0.00422	-0.00419
	(!A1 * !B1 * Y)	0.00570	0.00563	0.00558

SKY130_FD_SC_HS__A22Ox

sky130_fd_sc_hs_tt_1.50v_25C.ccs
Cell Library: Process , Voltage 1.50, 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	0.00262	0.00240	0.00256	0.00262	0.83860
sky130_fd_sc_hs__a22o_2	0.00273	0.00251	0.00269	0.00262	1.64843
sky130_fd_sc_hs__a22o_4	0.00464	0.00487	0.00465	0.00511	3.31722

Leakage Information

Cell Name	Leakage(nW)		
	Min.	Avg	Max.
sky130_fd_sc_hs__a22o_1	0.00000	0.06216	0.15326
sky130_fd_sc_hs__a22o_2	0.00000	0.07988	0.15791
sky130_fd_sc_hs__a22o_4	0.00000	0.16183	0.31582

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)	0.11164	0.77261	6.91594
	A2->X (RR)	0.11761	0.76939	6.99060
	B1->X (RR)	0.09679	0.73318	6.89468
	B2->X (RR)	0.10179	0.73660	6.94381
sky130_fd_sc_hs__a22o_2	A1->X (RR)	0.11190	0.68572	7.04996
	A2->X (RR)	0.11841	0.67507	7.09241
	B1->X (RR)	0.09718	0.64883	7.00430
	B2->X (RR)	0.10155	0.64544	7.03980
sky130_fd_sc_hs__a22o_4	A1->X (RR)	0.10905	0.59053	7.04870
	A2->X (RR)	0.11485	0.58917	7.11662
	B1->X (RR)	0.09635	0.55658	6.98676
	B2->X (RR)	0.10165	0.55735	7.04217

Delay(ns) to X falling :

Cell Name	Timing Arc(Dir)	Delay(ns)		
		First	Mid	Last
sky130_fd_sc_hs__a22o_1	A1->X (FF)	0.21119	0.75136	4.81718
	A2->X (FF)	0.23188	0.78859	4.95310
	B1->X (FF)	0.18420	0.71380	4.62325
	B2->X (FF)	0.20040	0.73808	4.68086
sky130_fd_sc_hs__a22o_2	A1->X (FF)	0.26244	0.79412	5.04800
	A2->X (FF)	0.28803	0.83552	5.20168
	B1->X (FF)	0.23864	0.76830	4.86912
	B2->X (FF)	0.25433	0.78954	4.93796
sky130_fd_sc_hs__a22o_4	A1->X (FF)	0.25321	0.76210	5.20191
	A2->X (FF)	0.27100	0.79037	5.30033
	B1->X (FF)	0.22597	0.72945	5.00051
	B2->X (FF)	0.23566	0.74327	5.04066

Power Information

Internal switching power(pJ) to X rising :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__a22o_1	A1	0.00842	0.00841	0.01152
	A1	0.00406	0.00405	0.00721
	A2	0.00921	0.00926	0.01157
	A2	0.00407	0.00411	0.00643
	B1	0.00638	0.00640	0.01194
	B1	0.00254	0.00256	0.00809
	B2	0.00707	0.00708	0.01156
	B2	0.00250	0.00268	0.00688
sky130_fd_sc_hs__a22o_2	A1	0.01032	0.01051	0.01354
	A1	0.00586	0.00605	0.00902
	A2	0.01110	0.01139	0.01358
	A2	0.00582	0.00611	0.00837
	B1	0.00837	0.00858	0.01367
	B1	0.00429	0.00450	0.00961
	B2	0.00909	0.00934	0.01344
	B2	0.00428	0.00452	0.00851
sky130_fd_sc_hs__a22o_4	A1	0.02000	0.02045	0.02753
	A1	0.01130	0.01180	0.01900
	A2	0.02167	0.02216	0.02709
	A2	0.01196	0.01249	0.01751
	B1	0.01587	0.01619	0.02635
	B1	0.00889	0.00925	0.01976
	B2	0.01732	0.01756	0.02567
	B2	0.00868	0.00897	0.01763

Internal switching power(pJ) to X falling :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__a22o_1	A1	0.00275	0.00259	0.00514
	A1	0.00726	0.00710	0.00949
	A2	0.00316	0.00330	0.00561
	A2	0.00839	0.00851	0.01070
	B1	0.00241	0.00272	0.00923
	B1	0.00680	0.00704	0.01264
	B2	0.00329	0.00367	0.00921
	B2	0.00775	0.00810	0.01341
sky130_fd_sc_hs__a22o_2	A1	0.00463	0.00457	0.00740
	A1	0.00940	0.00944	0.01166
	A2	0.00492	0.00526	0.00850
	A2	0.01089	0.01119	0.01335
	B1	0.00505	0.00548	0.01112
	B1	0.00905	0.00946	0.01493
	B2	0.00538	0.00577	0.01133
	B2	0.01006	0.01051	0.01593
sky130_fd_sc_hs__a22o_4	A1	0.00898	0.00957	0.01541
	A1	0.01772	0.01828	0.02291
	A2	0.00915	0.00964	0.01599
	A2	0.01943	0.02013	0.02445
	B1	0.00890	0.00974	0.02204
	B1	0.01581	0.01665	0.02710
	B2	0.00951	0.01037	0.02229
	B2	0.01797	0.01881	0.02935

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)	0.00126	0.00118	0.00116
	(A2 * B1 * B2 * X)	-0.00108	-0.00121	-0.00120
	(!A2 * B1 * B2 * X)	0.00111	0.00111	0.00111
	(!A2 * B1 * B2 * X)	-0.00123	-0.00123	-0.00123
	(!A2 * B1 * !B2 * !X)	0.00040	0.00040	0.00037
	(!A2 * B1 * !B2 * !X)	-0.00156	-0.00156	-0.00160
	(!A2 * !B1 * !X)	0.00040	0.00040	0.00037
	(!A2 * !B1 * !X)	-0.00156	-0.00157	-0.00160
sky130_fd_sc_hs__a22o_2	(A2 * B1 * B2 * X)	0.00137	0.00129	0.00128
	(A2 * B1 * B2 * X)	-0.00107	-0.00119	-0.00119
	(!A2 * B1 * B2 * X)	0.00122	0.00123	0.00122
	(!A2 * B1 * B2 * X)	-0.00122	-0.00122	-0.00121
	(!A2 * B1 * !B2 * !X)	0.00044	0.00044	0.00040
	(!A2 * B1 * !B2 * !X)	-0.00156	-0.00157	-0.00161
	(!A2 * !B1 * !X)	0.00044	0.00044	0.00040
	(!A2 * !B1 * !X)	-0.00156	-0.00157	-0.00161
sky130_fd_sc_hs__a22o_4	(A2 * B1 * B2 * X)	0.00208	0.00191	0.00187
	(A2 * B1 * B2 * X)	-0.00219	-0.00249	-0.00249
	(!A2 * B1 * B2 * X)	0.00176	0.00178	0.00176
	(!A2 * B1 * B2 * X)	-0.00256	-0.00258	-0.00256
	(!A2 * B1 * !B2 * !X)	0.00061	0.00062	0.00059
	(!A2 * B1 * !B2 * !X)	-0.00293	-0.00295	-0.00299
	(!A2 * !B1 * !X)	0.00061	0.00062	0.00059
	(!A2 * !B1 * !X)	-0.00292	-0.00295	-0.00299

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)	-0.00116	-0.00117	-0.00115
	(A2 * B1 * B2 * X)	0.00121	0.00122	0.00120
	(!A2 * B1 * B2 * X)	-0.00105	-0.00111	-0.00111
	(!A2 * B1 * B2 * X)	0.00123	0.00126	0.00123
	(!A2 * B1 * !B2 * !X)	-0.00036	-0.00036	-0.00036
	(!A2 * B1 * !B2 * !X)	0.00160	0.00161	0.00161
	(!A2 * !B1 * !X)	-0.00036	-0.00036	-0.00036
	(!A2 * !B1 * !X)	0.00160	0.00161	0.00161
sky130_fd_sc_hs__a22o_2	(A2 * B1 * B2 * X)	-0.00127	-0.00128	-0.00127
	(A2 * B1 * B2 * X)	0.00119	0.00121	0.00119
	(!A2 * B1 * B2 * X)	-0.00117	-0.00123	-0.00122
	(!A2 * B1 * B2 * X)	0.00123	0.00123	0.00122
	(!A2 * B1 * !B2 * !X)	-0.00038	-0.00039	-0.00039
	(!A2 * B1 * !B2 * !X)	0.00161	0.00163	0.00162
	(!A2 * !B1 * !X)	-0.00039	-0.00039	-0.00039
	(!A2 * !B1 * !X)	0.00163	0.00162	0.00162
sky130_fd_sc_hs__a22o_4	(A2 * B1 * B2 * X)	-0.00187	-0.00187	-0.00186
	(A2 * B1 * B2 * X)	0.00249	0.00251	0.00249
	(!A2 * B1 * B2 * X)	-0.00170	-0.00178	-0.00176
	(!A2 * B1 * B2 * X)	0.00256	0.00260	0.00257
	(!A2 * B1 * !B2 * !X)	-0.00057	-0.00057	-0.00057
	(!A2 * B1 * !B2 * !X)	0.00300	0.00299	0.00300
	(!A2 * !B1 * !X)	-0.00057	-0.00057	-0.00057
	(!A2 * !B1 * !X)	0.00300	0.00299	0.00300

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)	0.00124	0.00116	0.00114
	(A1 * B1 * B2 * X)	-0.00108	-0.00121	-0.00121
	(!A1 * B1 * B2 * X)	0.00109	0.00109	0.00108
	(!A1 * B1 * B2 * X)	-0.00123	-0.00124	-0.00123
	(!A1 * B1 * !B2 * !X)	0.00108	0.00109	0.00108
	(!A1 * B1 * !B2 * !X)	-0.00123	-0.00124	-0.00123
	(!A1 * !B1 * !X)	0.00108	0.00109	0.00108
	(!A1 * !B1 * !X)	-0.00123	-0.00124	-0.00123
sky130_fd_sc_hs__a22o_2	(A1 * B1 * B2 * X)	0.00126	0.00119	0.00117
	(A1 * B1 * B2 * X)	-0.00111	-0.00125	-0.00125
	(!A1 * B1 * B2 * X)	0.00111	0.00112	0.00112
	(!A1 * B1 * B2 * X)	-0.00127	-0.00128	-0.00127
	(!A1 * B1 * !B2 * !X)	0.00110	0.00111	0.00111
	(!A1 * B1 * !B2 * !X)	-0.00127	-0.00128	-0.00127
	(!A1 * !B1 * !X)	0.00111	0.00112	0.00111
	(!A1 * !B1 * !X)	-0.00127	-0.00128	-0.00127
sky130_fd_sc_hs__a22o_4	(A1 * B1 * B2 * X)	0.00248	0.00231	0.00229
	(A1 * B1 * B2 * X)	-0.00217	-0.00244	-0.00245
	(!A1 * B1 * B2 * X)	0.00218	0.00219	0.00218
	(!A1 * B1 * B2 * X)	-0.00250	-0.00251	-0.00251
	(!A1 * B1 * !B2 * !X)	0.00214	0.00215	0.00214
	(!A1 * B1 * !B2 * !X)	-0.00255	-0.00256	-0.00255
	(!A1 * !B1 * !X)	0.00214	0.00215	0.00214
	(!A1 * !B1 * !X)	-0.00255	-0.00256	-0.00255

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)	-0.00113	-0.00114	-0.00113
	(A1 * B1 * B2 * X)	0.00120	0.00121	0.00121
	(!A1 * B1 * B2 * X)	-0.00104	-0.00109	-0.00108
	(!A1 * B1 * B2 * X)	0.00123	0.00125	0.00124
	(!A1 * B1 * !B2 * !X)	-0.00103	-0.00109	-0.00108
	(!A1 * B1 * !B2 * !X)	0.00125	0.00125	0.00124
	(!A1 * !B1 * !X)	-0.00103	-0.00109	-0.00108
	(!A1 * !B1 * !X)	0.00125	0.00125	0.00124
sky130_fd_sc_hs__a22o_2	(A1 * B1 * B2 * X)	-0.00117	-0.00117	-0.00116
	(A1 * B1 * B2 * X)	0.00125	0.00126	0.00125
	(!A1 * B1 * B2 * X)	-0.00107	-0.00112	-0.00112
	(!A1 * B1 * B2 * X)	0.00127	0.00128	0.00128
	(!A1 * B1 * !B2 * !X)	-0.00106	-0.00111	-0.00111
	(!A1 * B1 * !B2 * !X)	0.00130	0.00129	0.00128
	(!A1 * !B1 * !X)	-0.00106	-0.00112	-0.00111
	(!A1 * !B1 * !X)	0.00130	0.00129	0.00128
sky130_fd_sc_hs__a22o_4	(A1 * B1 * B2 * X)	-0.00228	-0.00228	-0.00227
	(A1 * B1 * B2 * X)	0.00243	0.00245	0.00245
	(!A1 * B1 * B2 * X)	-0.00213	-0.00219	-0.00218
	(!A1 * B1 * B2 * X)	0.00252	0.00254	0.00252
	(!A1 * B1 * !B2 * !X)	-0.00202	-0.00215	-0.00214
	(!A1 * B1 * !B2 * !X)	0.00262	0.00259	0.00256
	(!A1 * !B1 * !X)	-0.00204	-0.00215	-0.00214
	(!A1 * !B1 * !X)	0.00263	0.00259	0.00256

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)	0.00111	0.00113	0.00111
	(A1 * A2 * B2 * X)	-0.00065	-0.00066	-0.00065
	(A1 * A2 * !B2 * X)	0.00106	0.00106	0.00106
	(A1 * A2 * !B2 * X)	-0.00065	-0.00065	-0.00065
	(A1 * !A2 * !B2 * !X)	0.00034	0.00034	0.00033
	(A1 * !A2 * !B2 * !X)	-0.00145	-0.00146	-0.00147
	(!A1 * !B2 * !X)	0.00036	0.00036	0.00035
	(!A1 * !B2 * !X)	-0.00145	-0.00145	-0.00147
sky130_fd_sc_hs__a22o_2	(A1 * A2 * B2 * X)	0.00124	0.00126	0.00124
	(A1 * A2 * B2 * X)	-0.00064	-0.00065	-0.00064
	(A1 * A2 * !B2 * X)	0.00118	0.00118	0.00118
	(A1 * A2 * !B2 * X)	-0.00064	-0.00064	-0.00064
	(A1 * !A2 * !B2 * !X)	0.00037	0.00038	0.00036
	(A1 * !A2 * !B2 * !X)	-0.00147	-0.00148	-0.00150
	(!A1 * !B2 * !X)	0.00038	0.00038	0.00037
	(!A1 * !B2 * !X)	-0.00147	-0.00148	-0.00150
sky130_fd_sc_hs__a22o_4	(A1 * A2 * B2 * X)	0.00206	0.00209	0.00206
	(A1 * A2 * B2 * X)	-0.00127	-0.00129	-0.00127
	(A1 * A2 * !B2 * X)	0.00196	0.00199	0.00197
	(A1 * A2 * !B2 * X)	-0.00127	-0.00128	-0.00127
	(A1 * !A2 * !B2 * !X)	0.00063	0.00064	0.00061
	(A1 * !A2 * !B2 * !X)	-0.00279	-0.00282	-0.00286
	(!A1 * !B2 * !X)	0.00063	0.00064	0.00061
	(!A1 * !B2 * !X)	-0.00279	-0.00282	-0.00286

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)	-0.00100	-0.00101	-0.00110
	(A1 * A2 * B2 * X)	0.00075	0.00074	0.00067
	(A1 * A2 * !B2 * X)	-0.00104	-0.00106	-0.00106
	(A1 * A2 * !B2 * X)	0.00065	0.00065	0.00065
	(A1 * !A2 * !B2 * !X)	-0.00032	-0.00033	-0.00032
	(A1 * !A2 * !B2 * !X)	0.00147	0.00147	0.00147
	(!A1 * !B2 * !X)	-0.00034	-0.00034	-0.00034
	(!A1 * !B2 * !X)	0.00147	0.00147	0.00147
sky130_fd_sc_hs__a22o_2	(A1 * A2 * B2 * X)	-0.00113	-0.00113	-0.00123
	(A1 * A2 * B2 * X)	0.00074	0.00073	0.00066
	(A1 * A2 * !B2 * X)	-0.00115	-0.00118	-0.00118
	(A1 * A2 * !B2 * X)	0.00064	0.00064	0.00064
	(A1 * !A2 * !B2 * !X)	-0.00035	-0.00035	-0.00035
	(A1 * !A2 * !B2 * !X)	0.00150	0.00151	0.00150
	(!A1 * !B2 * !X)	-0.00036	-0.00036	-0.00036
	(!A1 * !B2 * !X)	0.00150	0.00151	0.00150
sky130_fd_sc_hs__a22o_4	(A1 * A2 * B2 * X)	-0.00183	-0.00184	-0.00203
	(A1 * A2 * B2 * X)	0.00147	0.00146	0.00131
	(A1 * A2 * !B2 * X)	-0.00191	-0.00199	-0.00197
	(A1 * A2 * !B2 * X)	0.00128	0.00128	0.00127
	(A1 * !A2 * !B2 * !X)	-0.00060	-0.00060	-0.00059
	(A1 * !A2 * !B2 * !X)	0.00287	0.00286	0.00286
	(!A1 * !B2 * !X)	-0.00060	-0.00060	-0.00059
	(!A1 * !B2 * !X)	0.00287	0.00286	0.00286

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)	0.00116	0.00118	0.00116
	(A1 * A2 * B1 * X)	-0.00071	-0.00072	-0.00070
	(A1 * A2 * !B1 * X)	0.00111	0.00113	0.00111
	(A1 * A2 * !B1 * X)	-0.00070	-0.00071	-0.00070
	(A1 * !A2 * !B1 * !X)	0.00095	0.00096	0.00095
	(A1 * !A2 * !B1 * !X)	-0.00130	-0.00131	-0.00130
	(!A1 * !B1 * !X)	0.00101	0.00102	0.00101
	(!A1 * !B1 * !X)	-0.00129	-0.00130	-0.00130
sky130_fd_sc_hs__a22o_2	(A1 * A2 * B1 * X)	0.00122	0.00124	0.00122
	(A1 * A2 * B1 * X)	-0.00067	-0.00068	-0.00067
	(A1 * A2 * !B1 * X)	0.00116	0.00117	0.00116
	(A1 * A2 * !B1 * X)	-0.00066	-0.00067	-0.00067
	(A1 * !A2 * !B1 * !X)	0.00105	0.00106	0.00105
	(A1 * !A2 * !B1 * !X)	-0.00125	-0.00125	-0.00125
	(!A1 * !B1 * !X)	0.00108	0.00109	0.00108
	(!A1 * !B1 * !X)	-0.00124	-0.00125	-0.00124
sky130_fd_sc_hs__a22o_4	(A1 * A2 * B1 * X)	0.00225	0.00229	0.00225
	(A1 * A2 * B1 * X)	-0.00140	-0.00142	-0.00139
	(A1 * A2 * !B1 * X)	0.00218	0.00216	0.00217
	(A1 * A2 * !B1 * X)	-0.00139	-0.00138	-0.00139
	(A1 * !A2 * !B1 * !X)	0.00171	0.00174	0.00173
	(A1 * !A2 * !B1 * !X)	-0.00282	-0.00284	-0.00283
	(!A1 * !B1 * !X)	0.00171	0.00172	0.00173
	(!A1 * !B1 * !X)	-0.00282	-0.00283	-0.00283

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)	-0.00105	-0.00106	-0.00115
	(A1 * A2 * B1 * X)	0.00080	0.00080	0.00073
	(A1 * A2 * !B1 * X)	-0.00109	-0.00113	-0.00111
	(A1 * A2 * !B1 * X)	0.00070	0.00071	0.00070
	(A1 * !A2 * !B1 * !X)	-0.00089	-0.00095	-0.00095
	(A1 * !A2 * !B1 * !X)	0.00135	0.00131	0.00131
	(!A1 * !B1 * !X)	-0.00096	-0.00101	-0.00101
	(!A1 * !B1 * !X)	0.00135	0.00130	0.00130
sky130_fd_sc_hs__a22o_2	(A1 * A2 * B1 * X)	-0.00110	-0.00112	-0.00120
	(A1 * A2 * B1 * X)	0.00077	0.00077	0.00069
	(A1 * A2 * !B1 * X)	-0.00113	-0.00117	-0.00116
	(A1 * A2 * !B1 * X)	0.00067	0.00068	0.00067
	(A1 * !A2 * !B1 * !X)	-0.00099	-0.00106	-0.00105
	(A1 * !A2 * !B1 * !X)	0.00129	0.00127	0.00125
	(!A1 * !B1 * !X)	-0.00102	-0.00109	-0.00108
	(!A1 * !B1 * !X)	0.00129	0.00127	0.00125
sky130_fd_sc_hs__a22o_4	(A1 * A2 * B1 * X)	-0.00201	-0.00204	-0.00222
	(A1 * A2 * B1 * X)	0.00160	0.00160	0.00144
	(A1 * A2 * !B1 * X)	-0.00211	-0.00216	-0.00217
	(A1 * A2 * !B1 * X)	0.00140	0.00140	0.00139
	(A1 * !A2 * !B1 * !X)	-0.00163	-0.00173	-0.00173
	(A1 * !A2 * !B1 * !X)	0.00291	0.00286	0.00284
	(!A1 * !B1 * !X)	-0.00163	-0.00172	-0.00173
	(!A1 * !B1 * !X)	0.00291	0.00286	0.00284

SKY130_FD_SC_HS__A2BB2OIx

sky130_fd_sc_hs_tt_1.50v_25C.ccs
Cell Library: Process , Voltage 1.50, 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	0.00226	0.00245	0.00261	0.00281	0.37711
sky130_fd_sc_hs__a2bb2oi_2	0.00248	0.00258	0.00508	0.00514	0.76040
sky130_fd_sc_hs__a2bb2oi_4	0.00389	0.00410	0.01009	0.01033	1.41331

Leakage Information

Cell Name	Leakage(nW)		
	Min.	**Avg**	**Max.**
sky130_fd_sc_hs__a2bb2oi_1	0.00000	0.04260	0.09994
sky130_fd_sc_hs__a2bb2oi_2	0.00000	0.05918	0.12557
sky130_fd_sc_hs__a2bb2oi_4	0.00000	0.11444	0.25113

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)	0.14713	0.98416	7.23507
	A2_N->Y (RR)	0.14112	0.95823	7.19116
	B1->Y (FR)	0.14016	1.20077	11.56050
	B2->Y (FR)	0.11042	1.13223	11.17530
sky130_fd_sc_hs__a2bb2oi_2	A1_N->Y (RR)	0.13206	0.80760	7.17755
	A2_N->Y (RR)	0.12752	0.78935	7.15404
	B1->Y (FR)	0.12836	1.02163	11.55530
	B2->Y (FR)	0.09579	0.97750	11.38440
sky130_fd_sc_hs__a2bb2oi_4	A1_N->Y (RR)	0.15602	0.76680	7.56494
	A2_N->Y (RR)	0.14419	0.73304	7.47906
	B1->Y (FR)	0.12666	0.89430	11.42600
	B2->Y (FR)	0.09283	0.84634	11.15640

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)	0.15728	0.59889	3.21634
	A2_N->Y (FF)	0.14130	0.56289	2.97561
	B1->Y (RF)	0.03669	0.43666	4.32111
	B2->Y (RF)	0.03285	0.46307	4.67831
sky130_fd_sc_hs__a2bb2oi_2	A1_N->Y (FF)	0.20314	0.66064	3.59720
	A2_N->Y (FF)	0.18714	0.63484	3.36996
	B1->Y (RF)	0.03740	0.40792	4.62331
	B2->Y (RF)	0.03068	0.43284	5.05102
sky130_fd_sc_hs__a2bb2oi_4	A1_N->Y (FF)	0.20158	0.63382	3.41282
	A2_N->Y (FF)	0.17412	0.58930	3.16509
	B1->Y (RF)	0.03662	0.35215	4.48044
	B2->Y (RF)	0.03089	0.39004	5.10480

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	0.00698	0.00689	0.00995
	A1_N	0.00457	0.00448	0.00755
	A2_N	0.00584	0.00566	0.01071
	A2_N	0.00396	0.00378	0.00885
	B1	0.00121	0.00112	0.00138
	B1	0.00492	0.00483	0.00510
	B2	0.00074	0.00064	0.00090
	B2	0.00386	0.00375	0.00391
sky130_fd_sc_hs__a2bb2oi_2	A1_N	0.01036	0.01037	0.01412
	A1_N	0.00869	0.00869	0.01248
	A2_N	0.00902	0.00891	0.01449
	A2_N	0.00800	0.00788	0.01350
	B1	0.00274	0.00252	0.00302
	B1	0.01017	0.00996	0.01045
	B2	0.00149	0.00134	0.00187
	B2	0.00740	0.00726	0.00778
sky130_fd_sc_hs__a2bb2oi_4	A1_N	0.01872	0.01854	0.02340
	A1_N	0.01675	0.01655	0.02155
	A2_N	0.01610	0.01596	0.02424
	A2_N	0.01512	0.01499	0.02328
	B1	0.00506	0.00461	0.00570
	B1	0.02003	0.01958	0.02064
	B2	0.00290	0.00254	0.00374
	B2	0.01490	0.01459	0.01577

Internal switching power(pJ) to Y falling :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__a2bb2oi_1	A1_N	0.00363	0.00385	0.00635
	A1_N	0.00601	0.00613	0.00873
	A2_N	0.00363	0.00397	0.00915
	A2_N	0.00540	0.00572	0.01092
	B1	0.00469	0.00460	0.00491
	B1	0.00098	0.00085	0.00113
	B2	0.00405	0.00393	0.00434
	B2	0.00098	0.00086	0.00127
sky130_fd_sc_hs__a2bb2oi_2	A1_N	0.00605	0.00643	0.00933
	A1_N	0.00762	0.00799	0.01089
	A2_N	0.00621	0.00678	0.01230
	A2_N	0.00705	0.00756	0.01308
	B1	0.00897	0.00869	0.00922
	B1	0.00152	0.00123	0.00177
	B2	0.00738	0.00715	0.00794
	B2	0.00155	0.00128	0.00210
sky130_fd_sc_hs__a2bb2oi_4	A1_N	0.01266	0.01349	0.01731
	A1_N	0.01430	0.01507	0.01884
	A2_N	0.01233	0.01349	0.02267
	A2_N	0.01288	0.01398	0.02317
	B1	0.01773	0.01715	0.01875
	B1	0.00270	0.00209	0.00327
	B2	0.01457	0.01400	0.01628
	B2	0.00273	0.00210	0.00386

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)	0.00105	0.00090	0.00089
	(A2_N * B1 * B2 * !Y) + (A2_N * B1 * !B2 * Y) + (A2_N * !B1 * Y)	-0.00110	-0.00125	-0.00127
	(!A2_N * B1 * B2 * !Y)	0.00454	0.00440	0.00725
	(!A2_N * B1 * B2 * !Y)	0.00115	0.00099	0.00387
sky130_fd_sc_hs__a2bb2oi_2	(A2_N * B1 * B2 * !Y) + (A2_N * B1 * !B2 * Y) + (A2_N * !B1 * Y)	0.00135	0.00120	0.00118
	(A2_N * B1 * B2 * !Y) + (A2_N * B1 * !B2 * Y) + (A2_N * !B1 * Y)	-0.00106	-0.00121	-0.00123
	(!A2_N * B1 * B2 * !Y)	0.00577	0.00566	0.00907
	(!A2_N * B1 * B2 * !Y)	0.00207	0.00194	0.00538
sky130_fd_sc_hs__a2bb2oi_4	(A2_N * B1 * B2 * !Y) + (A2_N * B1 * !B2 * Y) + (A2_N * !B1 * Y)	0.00156	0.00127	0.00124
	(A2_N * B1 * B2 * !Y) + (A2_N * B1 * !B2 * Y) + (A2_N * !B1 * Y)	-0.00213	-0.00248	-0.00250
	(!A2_N * B1 * B2 * !Y)	0.01003	0.00964	0.01409
	(!A2_N * B1 * B2 * !Y)	0.00397	0.00356	0.00808

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)	-0.00088	-0.00088	-0.00088
	(A2_N * B1 * B2 * !Y) + (A2_N * B1 * !B2 * Y) + (A2_N * !B1 * Y)	0.00126	0.00128	0.00127
	(!A2_N * B1 * B2 * !Y)	0.00122	0.00111	0.00383
	(!A2_N * B1 * B2 * !Y)	0.00459	0.00448	0.00721
sky130_fd_sc_hs__a2bb2oi_2	(A2_N * B1 * B2 * !Y) + (A2_N * B1 * !B2 * Y) + (A2_N * !B1 * Y)	-0.00117	-0.00117	-0.00117
	(A2_N * B1 * B2 * !Y) + (A2_N * B1 * !B2 * Y) + (A2_N * !B1 * Y)	0.00122	0.00123	0.00123
	(!A2_N * B1 * B2 * !Y)	0.00210	0.00195	0.00494
	(!A2_N * B1 * B2 * !Y)	0.00576	0.00563	0.00861
sky130_fd_sc_hs__a2bb2oi_4	(A2_N * B1 * B2 * !Y) + (A2_N * B1 * !B2 * Y) + (A2_N * !B1 * Y)	-0.00124	-0.00124	-0.00123
	(A2_N * B1 * B2 * !Y) + (A2_N * B1 * !B2 * Y) + (A2_N * !B1 * Y)	0.00250	0.00251	0.00250
	(!A2_N * B1 * B2 * !Y)	0.00479	0.00455	0.00876
	(!A2_N * B1 * B2 * !Y)	0.01077	0.01056	0.01475

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)	0.00105	0.00107	0.00105
	(A1_N * B1 * B2 * !Y) + (A1_N * B1 * !B2 * Y) + (A1_N * !B1 * Y)	-0.00066	-0.00068	-0.00067
	(!A1_N * B1 * B2 * !Y)	0.00345	0.00325	0.00823
	(!A1_N * B1 * B2 * !Y)	0.00058	0.00037	0.00536
sky130_fd_sc_hs__a2bb2oi_2	(A1_N * B1 * B2 * !Y) + (A1_N * B1 * !B2 * Y) + (A1_N * !B1 * Y)	0.00118	0.00121	0.00119
	(A1_N * B1 * B2 * !Y) + (A1_N * B1 * !B2 * Y) + (A1_N * !B1 * Y)	-0.00066	-0.00067	-0.00066
	(!A1_N * B1 * B2 * !Y)	0.00455	0.00435	0.00983
	(!A1_N * B1 * B2 * !Y)	0.00148	0.00127	0.00678
sky130_fd_sc_hs__a2bb2oi_4	(A1_N * B1 * B2 * !Y) + (A1_N * B1 * !B2 * Y) + (A1_N * !B1 * Y)	0.00171	0.00173	0.00170
	(A1_N * B1 * B2 * !Y) + (A1_N * B1 * !B2 * Y) + (A1_N * !B1 * Y)	-0.00136	-0.00137	-0.00135
	(!A1_N * B1 * B2 * !Y)	0.00735	0.00695	0.01469
	(!A1_N * B1 * B2 * !Y)	0.00225	0.00184	0.00964

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)	-0.00101	-0.00102	-0.00105
	(A1_N * B1 * B2 * !Y) + (A1_N * B1 * !B2 * Y) + (A1_N * !B1 * Y)	0.00071	0.00071	0.00068
	(!A1_N * B1 * B2 * !Y)	0.00120	0.00142	0.00682
	(!A1_N * B1 * B2 * !Y)	0.00405	0.00428	0.00967
sky130_fd_sc_hs__a2bb2oi_2	(A1_N * B1 * B2 * !Y) + (A1_N * B1 * !B2 * Y) + (A1_N * !B1 * Y)	-0.00114	-0.00115	-0.00118
	(A1_N * B1 * B2 * !Y) + (A1_N * B1 * !B2 * Y) + (A1_N * !B1 * Y)	0.00071	0.00071	0.00068
	(!A1_N * B1 * B2 * !Y)	0.00226	0.00246	0.00827
	(!A1_N * B1 * B2 * !Y)	0.00530	0.00550	0.01130
sky130_fd_sc_hs__a2bb2oi_4	(A1_N * B1 * B2 * !Y) + (A1_N * B1 * !B2 * Y) + (A1_N * !B1 * Y)	-0.00156	-0.00158	-0.00169
	(A1_N * B1 * B2 * !Y) + (A1_N * B1 * !B2 * Y) + (A1_N * !B1 * Y)	0.00149	0.00149	0.00139
	(!A1_N * B1 * B2 * !Y)	0.00443	0.00459	0.01381
	(!A1_N * B1 * B2 * !Y)	0.00944	0.00960	0.01884

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)	0.00111	0.00111	0.00111
	(A1_N * !B2 * Y) + (!A1_N * A2_N * !B2 * Y)	-0.00138	-0.00138	-0.00138
	(!A1_N * !A2_N * B2 * !Y)	0.00126	0.00117	0.00117
	(!A1_N * !A2_N * B2 * !Y)	-0.00124	-0.00135	-0.00136
	(!A1_N * !A2_N * !B2 * !Y)	0.00111	0.00112	0.00111
	(!A1_N * !A2_N * !B2 * !Y)	-0.00138	-0.00138	-0.00138
sky130_fd_sc_hs__a2bb2oi_2	(A1_N * !B2 * Y) + (!A1_N * A2_N * !B2 * Y)	0.00212	0.00213	0.00213
	(A1_N * !B2 * Y) + (!A1_N * A2_N * !B2 * Y)	-0.00279	-0.00279	-0.00279
	(!A1_N * !A2_N * B2 * !Y)	0.00243	0.00226	0.00225
	(!A1_N * !A2_N * B2 * !Y)	-0.00252	-0.00275	-0.00275
	(!A1_N * !A2_N * !B2 * !Y)	0.00212	0.00214	0.00213
	(!A1_N * !A2_N * !B2 * !Y)	-0.00279	-0.00281	-0.00280
sky130_fd_sc_hs__a2bb2oi_4	(A1_N * !B2 * Y) + (!A1_N * A2_N * !B2 * Y)	0.00422	0.00424	0.00424
	(A1_N * !B2 * Y) + (!A1_N * A2_N * !B2 * Y)	-0.00559	-0.00561	-0.00560
	(!A1_N * !A2_N * B2 * !Y)	0.00491	0.00453	0.00450
	(!A1_N * !A2_N * B2 * !Y)	-0.00500	-0.00549	-0.00551
	(!A1_N * !A2_N * !B2 * !Y)	0.00421	0.00427	0.00423
	(!A1_N * !A2_N * !B2 * !Y)	-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__a2bb2oi_1	(A1_N * !B2 * Y) + (!A1_N * A2_N * !B2 * Y)	-0.00105	-0.00111	-0.00111
	(A1_N * !B2 * Y) + (!A1_N * A2_N * !B2 * Y)	0.00141	0.00140	0.00138
	(!A1_N * !A2_N * B2 * !Y)	-0.00117	-0.00117	-0.00116
	(!A1_N * !A2_N * B2 * !Y)	0.00137	0.00136	0.00136
	(!A1_N * !A2_N * !B2 * !Y)	-0.00108	-0.00112	-0.00111
	(!A1_N * !A2_N * !B2 * !Y)	0.00138	0.00141	0.00138
sky130_fd_sc_hs__a2bb2oi_2	(A1_N * !B2 * Y) + (!A1_N * A2_N * !B2 * Y)	-0.00199	-0.00213	-0.00213
	(A1_N * !B2 * Y) + (!A1_N * A2_N * !B2 * Y)	0.00287	0.00284	0.00280
	(!A1_N * !A2_N * B2 * !Y)	-0.00224	-0.00225	-0.00224
	(!A1_N * !A2_N * B2 * !Y)	0.00274	0.00276	0.00275
	(!A1_N * !A2_N * !B2 * !Y)	-0.00205	-0.00214	-0.00213
	(!A1_N * !A2_N * !B2 * !Y)	0.00280	0.00283	0.00281
sky130_fd_sc_hs__a2bb2oi_4	(A1_N * !B2 * Y) + (!A1_N * A2_N * !B2 * Y)	-0.00396	-0.00424	-0.00424
	(A1_N * !B2 * Y) + (!A1_N * A2_N * !B2 * Y)	0.00577	0.00570	0.00562
	(!A1_N * !A2_N * B2 * !Y)	-0.00450	-0.00450	-0.00448
	(!A1_N * !A2_N * B2 * !Y)	0.00552	0.00553	0.00551
	(!A1_N * !A2_N * !B2 * !Y)	-0.00409	-0.00426	-0.00423
	(!A1_N * !A2_N * !B2 * !Y)	0.00560	0.00567	0.00562

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)	0.00050	0.00050	0.00048
	(A1_N * !B1 * Y) + (!A1_N * A2_N * !B1 * Y)	-0.00163	-0.00164	-0.00166
	(!A1_N * !A2_N * B1 * !Y)	0.00126	0.00117	0.00116
	(!A1_N * !A2_N * B1 * !Y)	-0.00134	-0.00145	-0.00145
	(!A1_N * !A2_N * !B1 * !Y)	0.00109	0.00111	0.00110
	(!A1_N * !A2_N * !B1 * !Y)	-0.00147	-0.00148	-0.00147
sky130_fd_sc_hs__a2bb2oi_2	(A1_N * !B1 * Y) + (!A1_N * A2_N * !B1 * Y)	0.00083	0.00084	0.00079
	(A1_N * !B1 * Y) + (!A1_N * A2_N * !B1 * Y)	-0.00318	-0.00320	-0.00325
	(!A1_N * !A2_N * B1 * !Y)	0.00240	0.00225	0.00224
	(!A1_N * !A2_N * B1 * !Y)	-0.00250	-0.00272	-0.00273
	(!A1_N * !A2_N * !B1 * !Y)	0.00212	0.00213	0.00212
	(!A1_N * !A2_N * !B1 * !Y)	-0.00277	-0.00278	-0.00277
sky130_fd_sc_hs__a2bb2oi_4	(A1_N * !B1 * Y) + (!A1_N * A2_N * !B1 * Y)	0.00155	0.00157	0.00149
	(A1_N * !B1 * Y) + (!A1_N * A2_N * !B1 * Y)	-0.00647	-0.00654	-0.00663
	(!A1_N * !A2_N * B1 * !Y)	0.00487	0.00450	0.00447
	(!A1_N * !A2_N * B1 * !Y)	-0.00501	-0.00552	-0.00553
	(!A1_N * !A2_N * !B1 * !Y)	0.00422	0.00428	0.00424
	(!A1_N * !A2_N * !B1 * !Y)	-0.00561	-0.00566	-0.00563

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)	-0.00047	-0.00047	-0.00047
	(A1_N * !B1 * Y) + (!A1_N * A2_N * !B1 * Y)	0.00166	0.00167	0.00166
	(!A1_N * !A2_N * B1 * !Y)	-0.00116	-0.00116	-0.00116
	(!A1_N * !A2_N * B1 * !Y)	0.00145	0.00146	0.00145
	(!A1_N * !A2_N * !B1 * !Y)	-0.00107	-0.00111	-0.00110
	(!A1_N * !A2_N * !B1 * !Y)	0.00147	0.00150	0.00148
sky130_fd_sc_hs__a2bb2oi_2	(A1_N * !B1 * Y) + (!A1_N * A2_N * !B1 * Y)	-0.00077	-0.00077	-0.00076
	(A1_N * !B1 * Y) + (!A1_N * A2_N * !B1 * Y)	0.00327	0.00327	0.00326
	(!A1_N * !A2_N * B1 * !Y)	-0.00224	-0.00224	-0.00224
	(!A1_N * !A2_N * B1 * !Y)	0.00273	0.00273	0.00273
	(!A1_N * !A2_N * !B1 * !Y)	-0.00203	-0.00213	-0.00212
	(!A1_N * !A2_N * !B1 * !Y)	0.00277	0.00281	0.00278
sky130_fd_sc_hs__a2bb2oi_4	(A1_N * !B1 * Y) + (!A1_N * A2_N * !B1 * Y)	-0.00145	-0.00145	-0.00144
	(A1_N * !B1 * Y) + (!A1_N * A2_N * !B1 * Y)	0.00666	0.00668	0.00665
	(!A1_N * !A2_N * B1 * !Y)	-0.00445	-0.00447	-0.00445
	(!A1_N * !A2_N * B1 * !Y)	0.00550	0.00554	0.00553
	(!A1_N * !A2_N * !B1 * !Y)	-0.00403	-0.00428	-0.00424
	(!A1_N * !A2_N * !B1 * !Y)	0.00561	0.00571	0.00565

SKY130_FD_SC_HS__A2BB2Ox

sky130_fd_sc_hs_tt_1.50v_25C.ccs
Cell Library: Process , Voltage
1.50, 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	0.00223	0.00231	0.00244	0.00237	0.83780
sky130_fd_sc_hs__a2bb2o_2	0.00235	0.00241	0.00256	0.00276	1.49627
sky130_fd_sc_hs__a2bb2o_4	0.00256	0.00272	0.00462	0.00466	3.15357

Leakage Information

Cell Name	Leakage(nW)		
	Min.	**Avg**	**Max.**
sky130_fd_sc_hs__a2bb2o_1	0.00000	0.07698	0.13552
sky130_fd_sc_hs__a2bb2o_2	0.00000	0.09432	0.14308
sky130_fd_sc_hs__a2bb2o_4	0.00000	0.14564	0.17971

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)	0.22215	1.01622	8.79795
	A2_N->X (FR)	0.20443	0.97984	8.54951
	B1->X (RR)	0.10262	0.74231	6.87789
	B2->X (RR)	0.09755	0.73374	6.77535
sky130_fd_sc_hs__a2bb2o_2	A1_N->X (FR)	0.22805	0.92002	8.69808
	A2_N->X (FR)	0.21064	0.88386	8.45837
	B1->X (RR)	0.10078	0.64938	6.84712
	B2->X (RR)	0.09738	0.65151	6.77928
sky130_fd_sc_hs__a2bb2o_4	A1_N->X (FR)	0.28211	0.90866	9.08662
	A2_N->X (FR)	0.26629	0.88212	8.87148
	B1->X (RR)	0.11294	0.57996	6.98555
	B2->X (RR)	0.10644	0.57757	6.90364

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)	0.21512	0.54250	2.43449
	A2_N->X (RF)	0.20724	0.51735	2.37405
	B1->X (FF)	0.20720	0.74511	4.71532
	B2->X (FF)	0.17697	0.70261	4.59419
sky130_fd_sc_hs__a2bb2o_2	A1_N->X (RF)	0.26316	0.57416	2.32856
	A2_N->X (RF)	0.25543	0.54466	2.26475
	B1->X (FF)	0.25505	0.78608	4.83660
	B2->X (FF)	0.22597	0.74669	4.70351
sky130_fd_sc_hs__a2bb2o_4	A1_N->X (RF)	0.25276	0.54040	2.51782
	A2_N->X (RF)	0.24379	0.51535	2.45871
	B1->X (FF)	0.25458	0.75790	5.05548
	B2->X (FF)	0.22026	0.71272	4.91789

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	0.00634	0.00636	0.00895
	A1_N	0.00852	0.00854	0.01128
	A2_N	0.00629	0.00658	0.01221
	A2_N	0.00789	0.00813	0.01391
	B1	0.00725	0.00729	0.00979
	B1	0.00356	0.00359	0.00613
	B2	0.00647	0.00651	0.01010
	B2	0.00356	0.00360	0.00812
sky130_fd_sc_hs__a2bb2o_2	A1_N	0.00831	0.00868	0.01125
	A1_N	0.01066	0.01105	0.01369
	A2_N	0.00835	0.00890	0.01459
	A2_N	0.01003	0.01060	0.01631
	B1	0.00935	0.00963	0.01204
	B1	0.00562	0.00591	0.00835
	B2	0.00868	0.00889	0.01228
	B2	0.00562	0.00585	0.01126
sky130_fd_sc_hs__a2bb2o_4	A1_N	0.01366	0.01451	0.01727
	A1_N	0.01546	0.01629	0.01938
	A2_N	0.01361	0.01451	0.02016
	A2_N	0.01473	0.01568	0.02161
	B1	0.01709	0.01766	0.02252
	B1	0.01015	0.01074	0.01558
	B2	0.01567	0.01615	0.02333
	B2	0.01015	0.01067	0.01783

Internal switching power(pJ) to X falling :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__a2bb2o_1	A1_N	0.00918	0.00911	0.01201
	A1_N	0.00697	0.00689	0.00980
	A2_N	0.00794	0.00797	0.01291
	A2_N	0.00629	0.00625	0.01123
	B1	0.00352	0.00364	0.00623
	B1	0.00719	0.00731	0.00969
	B2	0.00333	0.00338	0.00646
	B2	0.00627	0.00631	0.00901
sky130_fd_sc_hs__a2bb2o_2	A1_N	0.01105	0.01140	0.01425
	A1_N	0.00867	0.00888	0.01178
	A2_N	0.00979	0.01010	0.01508
	A2_N	0.00805	0.00829	0.01326
	B1	0.00531	0.00559	0.00878
	B1	0.00902	0.00936	0.01170
	B2	0.00500	0.00527	0.00808
	B2	0.00810	0.00836	0.01086
sky130_fd_sc_hs__a2bb2o_4	A1_N	0.01860	0.01954	0.02340
	A1_N	0.01672	0.01754	0.02129
	A2_N	0.01715	0.01807	0.02363
	A2_N	0.01589	0.01682	0.02228
	B1	0.01122	0.01171	0.01835
	B1	0.01812	0.01880	0.02340
	B2	0.01032	0.01096	0.01686
	B2	0.01591	0.01652	0.02157

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)	0.00112	0.00097	0.00095
	(A2_N * B1 * B2 * X) + (A2_N * B1 * !B2 * !X) + (A2_N * !B1 * !X)	-0.00102	-0.00118	-0.00120
	(!A2_N * B1 * B2 * X)	0.00438	0.00423	0.00710
	(!A2_N * B1 * B2 * X)	0.00112	0.00097	0.00386
sky130_fd_sc_hs__a2bb2o_2	(A2_N * B1 * B2 * X) + (A2_N * B1 * !B2 * !X) + (A2_N * !B1 * !X)	0.00115	0.00100	0.00099
	(A2_N * B1 * B2 * X) + (A2_N * B1 * !B2 * !X) + (A2_N * !B1 * !X)	-0.00109	-0.00125	-0.00126
	(!A2_N * B1 * B2 * X)	0.00448	0.00432	0.00718
	(!A2_N * B1 * B2 * X)	0.00106	0.00088	0.00376
sky130_fd_sc_hs__a2bb2o_4	(A2_N * B1 * B2 * X) + (A2_N * B1 * !B2 * !X) + (A2_N * !B1 * !X)	0.00127	0.00112	0.00111
	(A2_N * B1 * B2 * X) + (A2_N * B1 * !B2 * !X) + (A2_N * !B1 * !X)	-0.00119	-0.00134	-0.00136
	(!A2_N * B1 * B2 * X)	0.00585	0.00570	0.00903
	(!A2_N * B1 * B2 * X)	0.00200	0.00183	0.00519

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)	-0.00094	-0.00095	-0.00094
	(A2_N * B1 * B2 * X) + (A2_N * B1 * !B2 * !X) + (A2_N * !B1 * !X)	0.00119	0.00121	0.00120
	(!A2_N * B1 * B2 * X)	0.00120	0.00110	0.00384
	(!A2_N * B1 * B2 * X)	0.00445	0.00435	0.00709
sky130_fd_sc_hs__a2bb2o_2	(A2_N * B1 * B2 * X) + (A2_N * B1 * !B2 * !X) + (A2_N * !B1 * !X)	-0.00098	-0.00098	-0.00098
	(A2_N * B1 * B2 * X) + (A2_N * B1 * !B2 * !X) + (A2_N * !B1 * !X)	0.00126	0.00127	0.00127
	(!A2_N * B1 * B2 * X)	0.00113	0.00101	0.00374
	(!A2_N * B1 * B2 * X)	0.00454	0.00444	0.00716
sky130_fd_sc_hs__a2bb2o_4	(A2_N * B1 * B2 * X) + (A2_N * B1 * !B2 * !X) + (A2_N * !B1 * !X)	-0.00110	-0.00111	-0.00110
	(A2_N * B1 * B2 * X) + (A2_N * B1 * !B2 * !X) + (A2_N * !B1 * !X)	0.00135	0.00137	0.00136
	(!A2_N * B1 * B2 * X)	0.00104	0.00088	0.00374
	(!A2_N * B1 * B2 * X)	0.00485	0.00471	0.00756

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)	0.00105	0.00106	0.00105
	(A1_N * B1 * B2 * X) + (A1_N * B1 * !B2 * !X) + (A1_N * !B1 * !X)	-0.00064	-0.00064	-0.00063
	(!A1_N * B1 * B2 * X)	0.00322	0.00306	0.00807
	(!A1_N * B1 * B2 * X)	0.00051	0.00035	0.00537
sky130_fd_sc_hs__a2bb2o_2	(A1_N * B1 * B2 * X) + (A1_N * B1 * !B2 * !X) + (A1_N * !B1 * !X)	0.00105	0.00108	0.00106
	(A1_N * B1 * B2 * X) + (A1_N * B1 * !B2 * !X) + (A1_N * !B1 * !X)	-0.00063	-0.00064	-0.00063
	(!A1_N * B1 * B2 * X)	0.00329	0.00310	0.00810
	(!A1_N * B1 * B2 * X)	0.00050	0.00031	0.00532
sky130_fd_sc_hs__a2bb2o_4	(A1_N * B1 * B2 * X) + (A1_N * B1 * !B2 * !X) + (A1_N * !B1 * !X)	0.00125	0.00127	0.00125
	(A1_N * B1 * B2 * X) + (A1_N * B1 * !B2 * !X) + (A1_N * !B1 * !X)	-0.00070	-0.00071	-0.00070
	(!A1_N * B1 * B2 * X)	0.00461	0.00441	0.00952
	(!A1_N * B1 * B2 * X)	0.00137	0.00115	0.00628

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)	-0.00100	-0.00101	-0.00104
	(A1_N * B1 * B2 * X) + (A1_N * B1 * !B2 * !X) + (A1_N * !B1 * !X)	0.00068	0.00068	0.00065
	(!A1_N * B1 * B2 * X)	0.00119	0.00145	0.00682
	(!A1_N * B1 * B2 * X)	0.00388	0.00414	0.00951
sky130_fd_sc_hs__a2bb2o_2	(A1_N * B1 * B2 * X) + (A1_N * B1 * !B2 * !X) + (A1_N * !B1 * !X)	-0.00101	-0.00102	-0.00105
	(A1_N * B1 * B2 * X) + (A1_N * B1 * !B2 * !X) + (A1_N * !B1 * !X)	0.00067	0.00068	0.00064
	(!A1_N * B1 * B2 * X)	0.00117	0.00141	0.00678
	(!A1_N * B1 * B2 * X)	0.00393	0.00417	0.00955
sky130_fd_sc_hs__a2bb2o_4	(A1_N * B1 * B2 * X) + (A1_N * B1 * !B2 * !X) + (A1_N * !B1 * !X)	-0.00120	-0.00121	-0.00124
	(A1_N * B1 * B2 * X) + (A1_N * B1 * !B2 * !X) + (A1_N * !B1 * !X)	0.00075	0.00075	0.00072
	(!A1_N * B1 * B2 * X)	0.00103	0.00117	0.00645
	(!A1_N * B1 * B2 * X)	0.00423	0.00438	0.00967

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)	0.00117	0.00117	0.00116
	(A1_N * !B2 * !X) + (!A1_N * A2_N * !B2 * !X)	-0.00126	-0.00126	-0.00125
	(!A1_N * !A2_N * B2 * X)	0.00130	0.00121	0.00121
	(!A1_N * !A2_N * B2 * X)	-0.00113	-0.00124	-0.00124
	(!A1_N * !A2_N * !B2 * X)	0.00117	0.00117	0.00116
	(!A1_N * !A2_N * !B2 * X)	-0.00126	-0.00126	-0.00126
sky130_fd_sc_hs__a2bb2o_2	(A1_N * !B2 * !X) + (!A1_N * A2_N * !B2 * !X)	0.00111	0.00113	0.00112
	(A1_N * !B2 * !X) + (!A1_N * A2_N * !B2 * !X)	-0.00128	-0.00129	-0.00128
	(!A1_N * !A2_N * B2 * X)	0.00128	0.00120	0.00118
	(!A1_N * !A2_N * B2 * X)	-0.00113	-0.00126	-0.00126
	(!A1_N * !A2_N * !B2 * X)	0.00111	0.00112	0.00111
	(!A1_N * !A2_N * !B2 * X)	-0.00128	-0.00129	-0.00128
sky130_fd_sc_hs__a2bb2o_4	(A1_N * !B2 * !X) + (!A1_N * A2_N * !B2 * !X)	0.00186	0.00189	0.00187
	(A1_N * !B2 * !X) + (!A1_N * A2_N * !B2 * !X)	-0.00256	-0.00258	-0.00257
	(!A1_N * !A2_N * B2 * X)	0.00222	0.00200	0.00199
	(!A1_N * !A2_N * B2 * X)	-0.00226	-0.00251	-0.00253
	(!A1_N * !A2_N * !B2 * X)	0.00188	0.00189	0.00188
	(!A1_N * !A2_N * !B2 * X)	-0.00256	-0.00257	-0.00257

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)	-0.00111	-0.00117	-0.00116
	(A1_N * !B2 * !X) + (!A1_N * A2_N * !B2 * !X)	0.00129	0.00127	0.00126
	(!A1_N * !A2_N * B2 * X)	-0.00120	-0.00121	-0.00120
	(!A1_N * !A2_N * B2 * X)	0.00124	0.00125	0.00124
	(!A1_N * !A2_N * !B2 * X)	-0.00114	-0.00117	-0.00116
	(!A1_N * !A2_N * !B2 * X)	0.00126	0.00127	0.00126
sky130_fd_sc_hs__a2bb2o_2	(A1_N * !B2 * !X) + (!A1_N * A2_N * !B2 * !X)	-0.00105	-0.00112	-0.00112
	(A1_N * !B2 * !X) + (!A1_N * A2_N * !B2 * !X)	0.00132	0.00131	0.00129
	(!A1_N * !A2_N * B2 * X)	-0.00118	-0.00118	-0.00117
	(!A1_N * !A2_N * B2 * X)	0.00126	0.00126	0.00126
	(!A1_N * !A2_N * !B2 * X)	-0.00108	-0.00112	-0.00111
	(!A1_N * !A2_N * !B2 * X)	0.00128	0.00130	0.00129
sky130_fd_sc_hs__a2bb2o_4	(A1_N * !B2 * !X) + (!A1_N * A2_N * !B2 * !X)	-0.00175	-0.00188	-0.00187
	(A1_N * !B2 * !X) + (!A1_N * A2_N * !B2 * !X)	0.00264	0.00260	0.00258
	(!A1_N * !A2_N * B2 * X)	-0.00198	-0.00199	-0.00197
	(!A1_N * !A2_N * B2 * X)	0.00253	0.00257	0.00253
	(!A1_N * !A2_N * !B2 * X)	-0.00181	-0.00188	-0.00188
	(!A1_N * !A2_N * !B2 * X)	0.00256	0.00259	0.00258

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)	0.00046	0.00046	0.00044
	(A1_N * !B1 * !X) + (!A1_N * A2_N * !B1 * !X)	-0.00143	-0.00143	-0.00145
	(!A1_N * !A2_N * B1 * X)	0.00105	0.00095	0.00094
	(!A1_N * !A2_N * B1 * X)	-0.00124	-0.00136	-0.00136
	(!A1_N * !A2_N * !B1 * X)	0.00089	0.00089	0.00089
	(!A1_N * !A2_N * !B1 * X)	-0.00136	-0.00138	-0.00137
sky130_fd_sc_hs__a2bb2o_2	(A1_N * !B1 * !X) + (!A1_N * A2_N * !B1 * !X)	0.00045	0.00045	0.00043
	(A1_N * !B1 * !X) + (!A1_N * A2_N * !B1 * !X)	-0.00156	-0.00156	-0.00158
	(!A1_N * !A2_N * B1 * X)	0.00128	0.00118	0.00116
	(!A1_N * !A2_N * B1 * X)	-0.00121	-0.00134	-0.00134
	(!A1_N * !A2_N * !B1 * X)	0.00109	0.00110	0.00109
	(!A1_N * !A2_N * !B1 * X)	-0.00136	-0.00138	-0.00137
sky130_fd_sc_hs__a2bb2o_4	(A1_N * !B1 * !X) + (!A1_N * A2_N * !B1 * !X)	0.00077	0.00077	0.00073
	(A1_N * !B1 * !X) + (!A1_N * A2_N * !B1 * !X)	-0.00289	-0.00290	-0.00295
	(!A1_N * !A2_N * B1 * X)	0.00221	0.00200	0.00199
	(!A1_N * !A2_N * B1 * X)	-0.00228	-0.00251	-0.00253
	(!A1_N * !A2_N * !B1 * X)	0.00187	0.00189	0.00188
	(!A1_N * !A2_N * !B1 * X)	-0.00255	-0.00258	-0.00256

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)	-0.00043	-0.00043	-0.00043
	(A1_N * !B1 * !X) + (!A1_N * A2_N * !B1 * !X)	0.00145	0.00146	0.00146
	(!A1_N * !A2_N * B1 * X)	-0.00094	-0.00093	-0.00093
	(!A1_N * !A2_N * B1 * X)	0.00136	0.00136	0.00136
	(!A1_N * !A2_N * !B1 * X)	-0.00086	-0.00089	-0.00089
	(!A1_N * !A2_N * !B1 * X)	0.00136	0.00138	0.00138
sky130_fd_sc_hs__a2bb2o_2	(A1_N * !B1 * !X) + (!A1_N * A2_N * !B1 * !X)	-0.00042	-0.00042	-0.00042
	(A1_N * !B1 * !X) + (!A1_N * A2_N * !B1 * !X)	0.00158	0.00158	0.00158
	(!A1_N * !A2_N * B1 * X)	-0.00116	-0.00116	-0.00115
	(!A1_N * !A2_N * B1 * X)	0.00135	0.00135	0.00134
	(!A1_N * !A2_N * !B1 * X)	-0.00106	-0.00110	-0.00109
	(!A1_N * !A2_N * !B1 * X)	0.00136	0.00138	0.00137
sky130_fd_sc_hs__a2bb2o_4	(A1_N * !B1 * !X) + (!A1_N * A2_N * !B1 * !X)	-0.00071	-0.00070	-0.00070
	(A1_N * !B1 * !X) + (!A1_N * A2_N * !B1 * !X)	0.00297	0.00296	0.00296
	(!A1_N * !A2_N * B1 * X)	-0.00198	-0.00198	-0.00197
	(!A1_N * !A2_N * B1 * X)	0.00253	0.00253	0.00253
	(!A1_N * !A2_N * !B1 * X)	-0.00179	-0.00189	-0.00188
	(!A1_N * !A2_N * !B1 * X)	0.00255	0.00260	0.00257

SKY130_FD_SC_HS__A311OIx

sky130_fd_sc_hs_tt_1.50v_25C.ccs
Cell Library: Process , Voltage
1.50, 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	0.00281	0.00285	0.00276	0.00293	0.00279	0.25114
sky130_fd_sc_hs__a311oi_2	0.00532	0.00509	0.00491	0.00424	0.00413	0.48333
sky130_fd_sc_hs__a311oi_4	0.01028	0.00994	0.00995	0.00795	0.00808	0.88336

Leakage Information

Cell Name	Leakage(nW)		
	Min.	**Avg**	**Max.**
sky130_fd_sc_hs__a311oi_1	0.00000	0.01332	0.03376
sky130_fd_sc_hs__a311oi_2	0.00000	0.02461	0.06752
sky130_fd_sc_hs__a311oi_4	0.00000	0.04922	0.13503

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)	0.22032	1.33618	10.82750
	A2->Y (FR)	0.27213	1.41729	11.10320
	A3->Y (FR)	0.29581	1.42834	10.97580
	B1->Y (FR)	0.23783	1.39564	11.55570
	C1->Y (FR)	0.18611	1.32017	11.30060
sky130_fd_sc_hs__a311oi_2	A1->Y (FR)	0.18535	1.14246	10.85940
	A2->Y (FR)	0.22971	1.19268	10.95900
	A3->Y (FR)	0.27113	1.24012	11.01420
	B1->Y (FR)	0.23297	1.21676	11.52620
	C1->Y (FR)	0.16961	1.13089	11.27600
sky130_fd_sc_hs__a311oi_4	A1->Y (FR)	0.17332	0.97663	10.53680
	A2->Y (FR)	0.22347	1.03688	10.72350
	A3->Y (FR)	0.27166	1.10024	10.90010
	B1->Y (FR)	0.23007	1.07654	11.48200
	C1->Y (FR)	0.16800	0.99509	11.26900

Delay(ns) to Y falling :

Cell Name	Timing Arc(Dir)	Delay(ns)		
		First	Mid	Last
sky130_fd_sc_hs__a311oi_1	A1->Y (RF)	0.05211	0.50215	4.36185
	A2->Y (RF)	0.06118	0.48935	4.15445
	A3->Y (RF)	0.06465	0.45058	3.68414
	B1->Y (RF)	0.02865	0.34898	3.08873
	C1->Y (RF)	0.02549	0.33835	3.08296
sky130_fd_sc_hs__a311oi_2	A1->Y (RF)	0.04573	0.48364	4.78905
	A2->Y (RF)	0.05474	0.44672	4.29107
	A3->Y (RF)	0.06054	0.41340	3.79266
	B1->Y (RF)	0.03612	0.42974	4.43113
	C1->Y (RF)	0.02832	0.40972	4.40138
sky130_fd_sc_hs__a311oi_4	A1->Y (RF)	0.04485	0.44055	4.80851
	A2->Y (RF)	0.05488	0.40410	4.27950
	A3->Y (RF)	0.06038	0.36280	3.66166
	B1->Y (RF)	0.03285	0.37079	4.24688
	C1->Y (RF)	0.02720	0.36983	4.45634

Power Information

Internal switching power(pJ) to Y rising :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__a311oi_1	A1	0.00051	0.00032	0.00049
	A1	0.00584	0.00566	0.00585
	A2	0.00098	0.00078	0.00096
	A2	0.00706	0.00687	0.00704
	A3	0.00119	0.00103	0.00122
	A3	0.00800	0.00786	0.00803
	B1	0.00130	0.00112	0.00149
	B1	0.00720	0.00703	0.00738
	C1	0.00084	0.00084	0.00221
	C1	0.00646	0.00644	0.00770
sky130_fd_sc_hs__a311oi_2	A1	0.00012	-0.00016	0.00016
	A1	0.00998	0.00968	0.01005
	A2	0.00108	0.00077	0.00108
	A2	0.01227	0.01197	0.01230
	A3	0.00214	0.00187	0.00217
	A3	0.01460	0.01436	0.01465
	B1	0.00288	0.00271	0.00305
	B1	0.01257	0.01240	0.01270
	C1	0.00280	0.00277	0.00432
	C1	0.01099	0.01097	0.01248

sky130_fd_sc_hs__a311oi_4	**A1**	-0.00024	-0.00080	-0.00001
	A1	0.01899	0.01846	0.01931
	A2	0.00171	0.00102	0.00175
	A2	0.02369	0.02306	0.02382
	A3	0.00356	0.00301	0.00369
	A3	0.02842	0.02789	0.02858
	B1	0.00506	0.00473	0.00551
	B1	0.02410	0.02379	0.02450
	C1	0.00495	0.00494	0.00798
	C1	0.02116	0.02114	0.02415

Internal switching power(pJ) to Y falling :

Cell Name	**Input**	**Power(pJ)**		
		first	**mid**	**last**
sky130_fd_sc_hs__a311oi_1	**A1**	0.00707	0.00692	0.00737
	A1	0.00185	0.00167	0.00212
	A2	0.00784	0.00769	0.00799
	A2	0.00183	0.00165	0.00192
	A3	0.00860	0.00844	0.00872
	A3	0.00180	0.00163	0.00188
	B1	0.00670	0.00663	0.00715
	B1	0.00069	0.00056	0.00115
	C1	0.00528	0.00533	0.00586
	C1	-0.00007	-0.00007	0.00048

sky130_fd_sc_hs__a311oi_2	**A1**	0.01314	0.01283	0.01358
	A1	0.00361	0.00325	0.00410
	A2	0.01459	0.01424	0.01493
	A2	0.00364	0.00328	0.00381
	A3	0.01603	0.01571	0.01614
	A3	0.00361	0.00327	0.00375
	B1	0.01099	0.01078	0.01165
	B1	0.00110	0.00080	0.00150
	C1	0.00750	0.00761	0.00834
	C1	-0.00094	-0.00095	-0.00020
sky130_fd_sc_hs__a311oi_4	**A1**	0.02533	0.02461	0.02657
	A1	0.00672	0.00594	0.00775
	A2	0.02829	0.02761	0.02893
	A2	0.00670	0.00596	0.00711
	A3	0.03142	0.03072	0.03183
	A3	0.00664	0.00594	0.00698
	B1	0.02121	0.02072	0.02240
	B1	0.00173	0.00109	0.00267
	C1	0.01477	0.01477	0.01672
	C1	-0.00197	-0.00216	-0.00041

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)**	0.00117	0.00118	0.00116
	(A2 * A3 * B1 * C1 * !Y)	-0.00126	-0.00133	-0.00132
	(A2 * A3 * B1 * !C1 * !Y)	0.00117	0.00118	0.00116
	(A2 * A3 * B1 * !C1 * !Y)	-0.00125	-0.00134	-0.00132
	(A2 * A3 * !B1 * C1 * !Y)	0.00117	0.00118	0.00116
	(A2 * A3 * !B1 * C1 * !Y)	-0.00119	-0.00128	-0.00128
	(A2 * !A3 * B1 * C1 * !Y)	0.00108	0.00108	0.00108
	(A2 * !A3 * B1 * C1 * !Y)	-0.00136	-0.00136	-0.00136
	(A2 * !A3 * B1 * !C1 * !Y)	0.00107	0.00108	0.00107
	(A2 * !A3 * B1 * !C1 * !Y)	-0.00136	-0.00136	-0.00136
	(A2 * !A3 * !B1 * C1 * !Y)	0.00107	0.00108	0.00107
	(A2 * !A3 * !B1 * C1 * !Y)	-0.00136	-0.00137	-0.00136
	(A2 * !A3 * !B1 * !C1 * Y)	0.00038	0.00038	0.00035
	(A2 * !A3 * !B1 * !C1 * Y)	-0.00159	-0.00160	-0.00166
	(!A2 * B1 * C1 * !Y)	0.00111	0.00111	0.00111
	(!A2 * B1 * C1 * !Y)	-0.00136	-0.00136	-0.00136
	(!A2 * B1 * !C1 * !Y)	0.00111	0.00111	0.00111
	(!A2 * B1 * !C1 * !Y)	-0.00136	-0.00136	-0.00136
	(!A2 * !B1 * C1 * !Y)	0.00111	0.00111	0.00111
	(!A2 * !B1 * C1 * !Y)	-0.00136	-0.00136	-0.00136
	(!A2 * !B1 * !C1 * Y)	0.00039	0.00039	0.00037
	(!A2 * !B1 * !C1 * Y)	-0.00163	-0.00164	-0.00166

sky130_fd_sc_hs__a311oi_2	**(A2 * A3 * B1 * C1 * !Y)**	0.00227	0.00230	0.00227
	(A2 * A3 * B1 * C1 * !Y)	-0.00263	-0.00278	-0.00275
	(A2 * A3 * B1 * !C1 * !Y)	0.00228	0.00230	0.00227
	(A2 * A3 * B1 * !C1 * !Y)	-0.00264	-0.00275	-0.00275
	(A2 * A3 * !B1 * C1 * !Y)	0.00229	0.00230	0.00228
	(A2 * A3 * !B1 * C1 * !Y)	-0.00250	-0.00268	-0.00266
	(A2 * !A3 * B1 * C1 * !Y)	0.00210	0.00213	0.00211
	(A2 * !A3 * B1 * C1 * !Y)	-0.00284	-0.00286	-0.00284
	(A2 * !A3 * B1 * !C1 * !Y)	0.00210	0.00213	0.00211
	(A2 * !A3 * B1 * !C1 * !Y)	-0.00284	-0.00286	-0.00284
	(A2 * !A3 * !B1 * C1 * !Y)	0.00210	0.00213	0.00211
	(A2 * !A3 * !B1 * C1 * !Y)	-0.00284	-0.00286	-0.00284
	(A2 * !A3 * !B1 * !C1 * Y)	0.00083	0.00084	0.00076
	(A2 * !A3 * !B1 * !C1 * Y)	-0.00317	-0.00320	-0.00334
	(!A2 * B1 * C1 * !Y)	0.00216	0.00218	0.00216
	(!A2 * B1 * C1 * !Y)	-0.00284	-0.00286	-0.00284
	(!A2 * B1 * !C1 * !Y)	0.00216	0.00218	0.00216
	(!A2 * B1 * !C1 * !Y)	-0.00284	-0.00285	-0.00284
	(!A2 * !B1 * C1 * !Y)	0.00216	0.00219	0.00217
	(!A2 * !B1 * C1 * !Y)	-0.00283	-0.00285	-0.00284
	(!A2 * !B1 * !C1 * Y)	0.00081	0.00082	0.00078
	(!A2 * !B1 * !C1 * Y)	-0.00328	-0.00331	-0.00336

sky130_fd_sc_hs__a311oi_4	**(A2 * A3 * B1 * C1 * !Y)**	0.00445	0.00445	0.00444
	(A2 * A3 * B1 * C1 * !Y)	-0.00523	-0.00546	-0.00545
	(A2 * A3 * B1 * !C1 * !Y)	0.00445	0.00445	0.00445
	(A2 * A3 * B1 * !C1 * !Y)	-0.00521	-0.00547	-0.00545
	(A2 * A3 * !B1 * C1 * !Y)	0.00448	0.00451	0.00445
	(A2 * A3 * !B1 * C1 * !Y)	-0.00495	-0.00531	-0.00527
	(A2 * !A3 * B1 * C1 * !Y)	0.00412	0.00417	0.00413
	(A2 * !A3 * B1 * C1 * !Y)	-0.00561	-0.00565	-0.00562
	(A2 * !A3 * B1 * !C1 * !Y)	0.00411	0.00416	0.00412
	(A2 * !A3 * B1 * !C1 * !Y)	-0.00561	-0.00565	-0.00562
	(A2 * !A3 * !B1 * C1 * !Y)	0.00408	0.00414	0.00411
	(A2 * !A3 * !B1 * C1 * !Y)	-0.00559	-0.00564	-0.00562
	(A2 * !A3 * !B1 * !C1 * Y)	0.00157	0.00158	0.00143
	(A2 * !A3 * !B1 * !C1 * Y)	-0.00629	-0.00633	-0.00659
	(!A2 * B1 * C1 * !Y)	0.00419	0.00426	0.00421
	(!A2 * B1 * C1 * !Y)	-0.00560	-0.00566	-0.00562
	(!A2 * B1 * !C1 * !Y)	0.00420	0.00426	0.00421
	(!A2 * B1 * !C1 * !Y)	-0.00561	-0.00566	-0.00562
	(!A2 * !B1 * C1 * !Y)	0.00419	0.00424	0.00421
	(!A2 * !B1 * C1 * !Y)	-0.00559	-0.00565	-0.00562
	(!A2 * !B1 * !C1 * Y)	0.00156	0.00156	0.00149
	(!A2 * !B1 * !C1 * Y)	-0.00650	-0.00654	-0.00662

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)**	-0.00117	-0.00117	-0.00116
	(A2 * A3 * B1 * C1 * !Y)	0.00132	0.00133	0.00132
	(A2 * A3 * B1 * !C1 * !Y)	-0.00117	-0.00118	-0.00116
	(A2 * A3 * B1 * !C1 * !Y)	0.00132	0.00134	0.00132
	(A2 * A3 * !B1 * C1 * !Y)	-0.00117	-0.00116	-0.00116
	(A2 * A3 * !B1 * C1 * !Y)	0.00129	0.00128	0.00128
	(A2 * !A3 * B1 * C1 * !Y)	-0.00100	-0.00108	-0.00108
	(A2 * !A3 * B1 * C1 * !Y)	0.00136	0.00137	0.00136
	(A2 * !A3 * B1 * !C1 * !Y)	-0.00099	-0.00108	-0.00107
	(A2 * !A3 * B1 * !C1 * !Y)	0.00136	0.00138	0.00136
	(A2 * !A3 * !B1 * C1 * !Y)	-0.00098	-0.00108	-0.00107
	(A2 * !A3 * !B1 * C1 * !Y)	0.00136	0.00138	0.00136
	(A2 * !A3 * !B1 * !C1 * Y)	-0.00035	-0.00035	-0.00035
	(A2 * !A3 * !B1 * !C1 * Y)	0.00166	0.00167	0.00167
	(!A2 * B1 * C1 * !Y)	-0.00107	-0.00111	-0.00111
	(!A2 * B1 * C1 * !Y)	0.00136	0.00137	0.00136
	(!A2 * B1 * !C1 * !Y)	-0.00108	-0.00111	-0.00111
	(!A2 * B1 * !C1 * !Y)	0.00137	0.00137	0.00136
	(!A2 * !B1 * C1 * !Y)	-0.00107	-0.00111	-0.00111
	(!A2 * !B1 * C1 * !Y)	0.00137	0.00137	0.00136
	(!A2 * !B1 * !C1 * Y)	-0.00036	-0.00036	-0.00036
	(!A2 * !B1 * !C1 * Y)	0.00166	0.00167	0.00167

sky130_fd_sc_hs__a311oi_2	**(A2 * A3 * B1 * C1 * !Y)**	-0.00227	-0.00229	-0.00227
	(A2 * A3 * B1 * C1 * !Y)	0.00276	0.00279	0.00275
	(A2 * A3 * B1 * !C1 * !Y)	-0.00227	-0.00227	-0.00227
	(A2 * A3 * B1 * !C1 * !Y)	0.00276	0.00275	0.00275
	(A2 * A3 * !B1 * C1 * !Y)	-0.00227	-0.00228	-0.00227
	(A2 * A3 * !B1 * C1 * !Y)	0.00265	0.00268	0.00266
	(A2 * !A3 * B1 * C1 * !Y)	-0.00194	-0.00213	-0.00211
	(A2 * !A3 * B1 * C1 * !Y)	0.00286	0.00287	0.00285
	(A2 * !A3 * B1 * !C1 * !Y)	-0.00191	-0.00213	-0.00211
	(A2 * !A3 * B1 * !C1 * !Y)	0.00284	0.00288	0.00285
	(A2 * !A3 * !B1 * C1 * !Y)	-0.00189	-0.00213	-0.00211
	(A2 * !A3 * !B1 * C1 * !Y)	0.00284	0.00288	0.00285
	(A2 * !A3 * !B1 * !C1 * Y)	-0.00074	-0.00074	-0.00073
	(A2 * !A3 * !B1 * !C1 * Y)	0.00335	0.00338	0.00336
	(!A2 * B1 * C1 * !Y)	-0.00209	-0.00218	-0.00216
	(!A2 * B1 * C1 * !Y)	0.00284	0.00287	0.00285
	(!A2 * B1 * !C1 * !Y)	-0.00209	-0.00218	-0.00216
	(!A2 * B1 * !C1 * !Y)	0.00286	0.00288	0.00285
	(!A2 * !B1 * C1 * !Y)	-0.00209	-0.00219	-0.00217
	(!A2 * !B1 * C1 * !Y)	0.00285	0.00288	0.00285
	(!A2 * !B1 * !C1 * Y)	-0.00076	-0.00076	-0.00076
	(!A2 * !B1 * !C1 * Y)	0.00336	0.00337	0.00336

sky130_fd_sc_hs__a311oi_4	**(A2 * A3 * B1 * C1 * !Y)**	-0.00445	-0.00444	-0.00444
	(A2 * A3 * B1 * C1 * !Y)	0.00546	0.00546	0.00545
	(A2 * A3 * B1 * !C1 * !Y)	-0.00444	-0.00445	-0.00444
	(A2 * A3 * B1 * !C1 * !Y)	0.00546	0.00549	0.00545
	(A2 * A3 * !B1 * C1 * !Y)	-0.00444	-0.00446	-0.00444
	(A2 * A3 * !B1 * C1 * !Y)	0.00526	0.00531	0.00527
	(A2 * !A3 * B1 * C1 * !Y)	-0.00374	-0.00417	-0.00413
	(A2 * !A3 * B1 * C1 * !Y)	0.00565	0.00569	0.00563
	(A2 * !A3 * B1 * !C1 * !Y)	-0.00369	-0.00416	-0.00412
	(A2 * !A3 * B1 * !C1 * !Y)	0.00565	0.00570	0.00564
	(A2 * !A3 * !B1 * C1 * !Y)	-0.00364	-0.00414	-0.00411
	(A2 * !A3 * !B1 * C1 * !Y)	0.00565	0.00570	0.00564
	(A2 * !A3 * !B1 * !C1 * Y)	-0.00140	-0.00141	-0.00140
	(A2 * !A3 * !B1 * !C1 * Y)	0.00661	0.00665	0.00663
	(!A2 * B1 * C1 * !Y)	-0.00407	-0.00426	-0.00421
	(!A2 * B1 * C1 * !Y)	0.00563	0.00570	0.00563
	(!A2 * B1 * !C1 * !Y)	-0.00406	-0.00426	-0.00421
	(!A2 * B1 * !C1 * !Y)	0.00562	0.00570	0.00564
	(!A2 * !B1 * C1 * !Y)	-0.00404	-0.00424	-0.00421
	(!A2 * !B1 * C1 * !Y)	0.00559	0.00567	0.00564
	(!A2 * !B1 * !C1 * Y)	-0.00144	-0.00145	-0.00144
	(!A2 * !B1 * !C1 * Y)	0.00661	0.00666	0.00664

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)**	0.00123	0.00123	0.00122
	(A1 * A3 * B1 * C1 * !Y)	-0.00127	-0.00134	-0.00132
	(A1 * A3 * B1 * !C1 * !Y)	0.00122	0.00123	0.00122
	(A1 * A3 * B1 * !C1 * !Y)	-0.00126	-0.00134	-0.00132
	(A1 * A3 * !B1 * C1 * !Y)	0.00122	0.00123	0.00121
	(A1 * A3 * !B1 * C1 * !Y)	-0.00119	-0.00129	-0.00128
	(A1 * !A3 * B1 * C1 * !Y)	0.00114	0.00116	0.00115
	(A1 * !A3 * B1 * C1 * !Y)	-0.00136	-0.00137	-0.00136
	(A1 * !A3 * B1 * !C1 * !Y)	0.00115	0.00114	0.00115
	(A1 * !A3 * B1 * !C1 * !Y)	-0.00136	-0.00136	-0.00136
	(A1 * !A3 * !B1 * C1 * !Y)	0.00115	0.00116	0.00115
	(A1 * !A3 * !B1 * C1 * !Y)	-0.00136	-0.00137	-0.00136
	(A1 * !A3 * !B1 * !C1 * Y)	0.00045	0.00045	0.00045
	(A1 * !A3 * !B1 * !C1 * Y)	-0.00151	-0.00151	-0.00150
	(!A1 * A3 * B1 * !Y)	0.00115	0.00116	0.00116
	(!A1 * A3 * B1 * !Y)	-0.00135	-0.00136	-0.00136
	(!A1 * A3 * !B1 * C1 * !Y)	0.00116	0.00117	0.00116
	(!A1 * A3 * !B1 * C1 * !Y)	-0.00135	-0.00136	-0.00136
	(!A1 * A3 * !B1 * !C1 * Y)	0.00100	0.00102	0.00101
	(!A1 * A3 * !B1 * !C1 * Y)	-0.00151	-0.00152	-0.00151
	(!A1 * !A3 * B1 * !Y)	0.00071	0.00072	0.00072
	(!A1 * !A3 * B1 * !Y)	-0.00135	-0.00137	-0.00136
	(!A1 * !A3 * !B1 * C1 * !Y)	0.00072	0.00072	0.00072
	(!A1 * !A3 * !B1 * C1 * !Y)	-0.00136	-0.00137	-0.00136
	(!A1 * !A3 * !B1 * !C1 * Y)	0.00052	0.00053	0.00052
	(!A1 * !A3 * !B1 * !C1 * Y)	-0.00151	-0.00152	-0.00151

sky130_fd_sc_hs__a311oi_2	**(A1 * A3 * B1 * C1 * !Y)**	0.00223	0.00226	0.00224
	(A1 * A3 * B1 * C1 * !Y)	-0.00260	-0.00275	-0.00272
	(A1 * A3 * B1 * !C1 * !Y)	0.00224	0.00226	0.00224
	(A1 * A3 * B1 * !C1 * !Y)	-0.00259	-0.00275	-0.00272
	(A1 * A3 * !B1 * C1 * !Y)	0.00226	0.00227	0.00224
	(A1 * A3 * !B1 * C1 * !Y)	-0.00247	-0.00265	-0.00263
	(A1 * !A3 * B1 * C1 * !Y)	0.00211	0.00213	0.00211
	(A1 * !A3 * B1 * C1 * !Y)	-0.00282	-0.00283	-0.00281
	(A1 * !A3 * B1 * !C1 * !Y)	0.00212	0.00213	0.00212
	(A1 * !A3 * B1 * !C1 * !Y)	-0.00282	-0.00281	-0.00281
	(A1 * !A3 * !B1 * C1 * !Y)	0.00212	0.00213	0.00212
	(A1 * !A3 * !B1 * C1 * !Y)	-0.00282	-0.00281	-0.00281
	(A1 * !A3 * !B1 * !C1 * Y)	0.00100	0.00101	0.00101
	(A1 * !A3 * !B1 * !C1 * Y)	-0.00281	-0.00283	-0.00281
	(!A1 * A3 * B1 * !Y)	0.00212	0.00215	0.00213
	(!A1 * A3 * B1 * !Y)	-0.00280	-0.00283	-0.00281
	(!A1 * A3 * !B1 * C1 * !Y)	0.00212	0.00215	0.00213
	(!A1 * A3 * !B1 * C1 * !Y)	-0.00280	-0.00283	-0.00281
	(!A1 * A3 * !B1 * !C1 * Y)	0.00212	0.00215	0.00213
	(!A1 * A3 * !B1 * !C1 * Y)	-0.00280	-0.00283	-0.00281
	(!A1 * !A3 * B1 * !Y)	0.00126	0.00127	0.00127
	(!A1 * !A3 * B1 * !Y)	-0.00281	-0.00282	-0.00281
	(!A1 * !A3 * !B1 * C1 * !Y)	0.00126	0.00127	0.00127
	(!A1 * !A3 * !B1 * C1 * !Y)	-0.00281	-0.00282	-0.00281
	(!A1 * !A3 * !B1 * !C1 * Y)	0.00116	0.00117	0.00117
	(!A1 * !A3 * !B1 * !C1 * Y)	-0.00283	-0.00284	-0.00284

sky130_fd_sc_hs__a311oi_4	**(A1 * A3 * B1 * C1 * !Y)**	0.00444	0.00451	0.00446
	(A1 * A3 * B1 * C1 * !Y)	-0.00517	-0.00542	-0.00541
	(A1 * A3 * B1 * !C1 * !Y)	0.00445	0.00451	0.00446
	(A1 * A3 * B1 * !C1 * !Y)	-0.00516	-0.00542	-0.00541
	(A1 * A3 * !B1 * C1 * !Y)	0.00450	0.00452	0.00446
	(A1 * A3 * !B1 * C1 * !Y)	-0.00492	-0.00526	-0.00523
	(A1 * !A3 * B1 * C1 * !Y)	0.00417	0.00423	0.00419
	(A1 * !A3 * B1 * C1 * !Y)	-0.00556	-0.00561	-0.00558
	(A1 * !A3 * B1 * !C1 * !Y)	0.00414	0.00416	0.00417
	(A1 * !A3 * B1 * !C1 * !Y)	-0.00555	-0.00558	-0.00558
	(A1 * !A3 * !B1 * C1 * !Y)	0.00414	0.00417	0.00416
	(A1 * !A3 * !B1 * C1 * !Y)	-0.00555	-0.00559	-0.00558
	(A1 * !A3 * !B1 * !C1 * Y)	0.00192	0.00194	0.00194
	(A1 * !A3 * !B1 * !C1 * Y)	-0.00557	-0.00560	-0.00556
	(!A1 * A3 * B1 * !Y)	0.00423	0.00429	0.00425
	(!A1 * A3 * B1 * !Y)	-0.00557	-0.00561	-0.00558
	(!A1 * A3 * !B1 * C1 * !Y)	0.00424	0.00427	0.00425
	(!A1 * A3 * !B1 * C1 * !Y)	-0.00557	-0.00559	-0.00557
	(!A1 * A3 * !B1 * !C1 * Y)	0.00423	0.00426	0.00425
	(!A1 * A3 * !B1 * !C1 * Y)	-0.00557	-0.00559	-0.00557
	(!A1 * !A3 * B1 * !Y)	0.00241	0.00243	0.00242
	(!A1 * !A3 * B1 * !Y)	-0.00557	-0.00560	-0.00558
	(!A1 * !A3 * !B1 * C1 * !Y)	0.00241	0.00243	0.00242
	(!A1 * !A3 * !B1 * C1 * !Y)	-0.00557	-0.00560	-0.00558
	(!A1 * !A3 * !B1 * !C1 * Y)	0.00223	0.00224	0.00223
	(!A1 * !A3 * !B1 * !C1 * Y)	-0.00561	-0.00563	-0.00562

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)**	-0.00122	-0.00123	-0.00122
	(A1 * A3 * B1 * C1 * !Y)	0.00132	0.00134	0.00132
	(A1 * A3 * B1 * !C1 * !Y)	-0.00122	-0.00123	-0.00122
	(A1 * A3 * B1 * !C1 * !Y)	0.00132	0.00134	0.00132
	(A1 * A3 * !B1 * C1 * !Y)	-0.00121	-0.00122	-0.00121
	(A1 * A3 * !B1 * C1 * !Y)	0.00128	0.00129	0.00128
	(A1 * !A3 * B1 * C1 * !Y)	-0.00112	-0.00116	-0.00115
	(A1 * !A3 * B1 * C1 * !Y)	0.00136	0.00138	0.00136
	(A1 * !A3 * B1 * !C1 * !Y)	-0.00112	-0.00114	-0.00115
	(A1 * !A3 * B1 * !C1 * !Y)	0.00137	0.00138	0.00136
	(A1 * !A3 * !B1 * C1 * !Y)	-0.00112	-0.00116	-0.00115
	(A1 * !A3 * !B1 * C1 * !Y)	0.00137	0.00138	0.00136
	(A1 * !A3 * !B1 * !C1 * Y)	-0.00042	-0.00043	-0.00044
	(A1 * !A3 * !B1 * !C1 * Y)	0.00154	0.00157	0.00152
	(!A1 * A3 * B1 * !Y)	-0.00112	-0.00116	-0.00116
	(!A1 * A3 * B1 * !Y)	0.00136	0.00137	0.00136
	(!A1 * A3 * !B1 * C1 * !Y)	-0.00112	-0.00117	-0.00116
	(!A1 * A3 * !B1 * C1 * !Y)	0.00136	0.00137	0.00136
	(!A1 * A3 * !B1 * !C1 * Y)	-0.00094	-0.00102	-0.00101
	(!A1 * A3 * !B1 * !C1 * Y)	0.00155	0.00153	0.00152
	(!A1 * !A3 * B1 * !Y)	-0.00071	-0.00072	-0.00072
	(!A1 * !A3 * B1 * !Y)	0.00136	0.00138	0.00136
	(!A1 * !A3 * !B1 * C1 * !Y)	-0.00072	-0.00072	-0.00072
	(!A1 * !A3 * !B1 * C1 * !Y)	0.00136	0.00138	0.00136
	(!A1 * !A3 * !B1 * !C1 * Y)	-0.00052	-0.00053	-0.00052
	(!A1 * !A3 * !B1 * !C1 * Y)	0.00158	0.00160	0.00153

sky130_fd_sc_hs__a311oi_2	**(A1 * A3 * B1 * C1 * !Y)**	-0.00223	-0.00225	-0.00223
	(A1 * A3 * B1 * C1 * !Y)	0.00273	0.00276	0.00272
	(A1 * A3 * B1 * !C1 * !Y)	-0.00224	-0.00225	-0.00223
	(A1 * A3 * B1 * !C1 * !Y)	0.00273	0.00276	0.00272
	(A1 * A3 * !B1 * C1 * !Y)	-0.00223	-0.00224	-0.00223
	(A1 * A3 * !B1 * C1 * !Y)	0.00262	0.00265	0.00263
	(A1 * !A3 * B1 * C1 * !Y)	-0.00203	-0.00213	-0.00211
	(A1 * !A3 * B1 * C1 * !Y)	0.00282	0.00285	0.00282
	(A1 * !A3 * B1 * !C1 * !Y)	-0.00203	-0.00213	-0.00212
	(A1 * !A3 * B1 * !C1 * !Y)	0.00282	0.00281	0.00282
	(A1 * !A3 * !B1 * C1 * !Y)	-0.00202	-0.00213	-0.00212
	(A1 * !A3 * !B1 * C1 * !Y)	0.00282	0.00281	0.00282
	(A1 * !A3 * !B1 * !C1 * Y)	-0.00094	-0.00096	-0.00097
	(A1 * !A3 * !B1 * !C1 * Y)	0.00290	0.00295	0.00285
	(!A1 * A3 * B1 * !Y)	-0.00205	-0.00215	-0.00213
	(!A1 * A3 * B1 * !Y)	0.00280	0.00284	0.00282
	(!A1 * A3 * !B1 * C1 * !Y)	-0.00205	-0.00215	-0.00213
	(!A1 * A3 * !B1 * C1 * !Y)	0.00280	0.00284	0.00282
	(!A1 * A3 * !B1 * !C1 * Y)	-0.00196	-0.00214	-0.00213
	(!A1 * A3 * !B1 * !C1 * Y)	0.00291	0.00286	0.00282
	(!A1 * !A3 * B1 * !Y)	-0.00126	-0.00127	-0.00127
	(!A1 * !A3 * B1 * !Y)	0.00281	0.00285	0.00282
	(!A1 * !A3 * !B1 * C1 * !Y)	-0.00126	-0.00127	-0.00127
	(!A1 * !A3 * !B1 * C1 * !Y)	0.00281	0.00285	0.00282
	(!A1 * !A3 * !B1 * !C1 * Y)	-0.00116	-0.00117	-0.00117
	(!A1 * !A3 * !B1 * !C1 * Y)	0.00297	0.00300	0.00287

sky130_fd_sc_hs__a311oi_4	**(A1 * A3 * B1 * C1 * !Y)**	-0.00444	-0.00445	-0.00445
	(A1 * A3 * B1 * C1 * !Y)	0.00539	0.00542	0.00541
	(A1 * A3 * B1 * !C1 * !Y)	-0.00444	-0.00445	-0.00445
	(A1 * A3 * B1 * !C1 * !Y)	0.00539	0.00542	0.00541
	(A1 * A3 * !B1 * C1 * !Y)	-0.00445	-0.00447	-0.00445
	(A1 * A3 * !B1 * C1 * !Y)	0.00522	0.00526	0.00523
	(A1 * !A3 * B1 * C1 * !Y)	-0.00401	-0.00423	-0.00419
	(A1 * !A3 * B1 * C1 * !Y)	0.00560	0.00561	0.00559
	(A1 * !A3 * B1 * !C1 * !Y)	-0.00401	-0.00416	-0.00417
	(A1 * !A3 * B1 * !C1 * !Y)	0.00561	0.00562	0.00559
	(A1 * !A3 * !B1 * C1 * !Y)	-0.00401	-0.00417	-0.00416
	(A1 * !A3 * !B1 * C1 * !Y)	0.00561	0.00561	0.00559
	(A1 * !A3 * !B1 * !C1 * Y)	-0.00181	-0.00185	-0.00186
	(A1 * !A3 * !B1 * !C1 * Y)	0.00574	0.00583	0.00563
	(!A1 * A3 * B1 * !Y)	-0.00407	-0.00429	-0.00425
	(!A1 * A3 * B1 * !Y)	0.00557	0.00565	0.00559
	(!A1 * A3 * !B1 * C1 * !Y)	-0.00407	-0.00427	-0.00425
	(!A1 * A3 * !B1 * C1 * !Y)	0.00557	0.00565	0.00559
	(!A1 * A3 * !B1 * !C1 * Y)	-0.00387	-0.00426	-0.00425
	(!A1 * A3 * !B1 * !C1 * Y)	0.00581	0.00566	0.00559
	(!A1 * !A3 * B1 * !Y)	-0.00241	-0.00243	-0.00242
	(!A1 * !A3 * B1 * !Y)	0.00562	0.00566	0.00560
	(!A1 * !A3 * !B1 * C1 * !Y)	-0.00241	-0.00243	-0.00242
	(!A1 * !A3 * !B1 * C1 * !Y)	0.00562	0.00566	0.00560
	(!A1 * !A3 * !B1 * !C1 * Y)	-0.00223	-0.00224	-0.00223
	(!A1 * !A3 * !B1 * !C1 * Y)	0.00592	0.00596	0.00568

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)**	0.00130	0.00131	0.00129
	(A1 * A2 * B1 * C1 * !Y)	-0.00127	-0.00135	-0.00133
	(A1 * A2 * B1 * !C1 * !Y)	0.00130	0.00131	0.00129
	(A1 * A2 * B1 * !C1 * !Y)	-0.00127	-0.00134	-0.00133
	(A1 * A2 * !B1 * C1 * !Y)	0.00130	0.00130	0.00129
	(A1 * A2 * !B1 * C1 * !Y)	-0.00121	-0.00130	-0.00129
	(A1 * !A2 * !B1 * !C1 * Y)	0.00110	0.00111	0.00111
	(A1 * !A2 * !B1 * !C1 * Y)	-0.00148	-0.00149	-0.00148
	(!A2 * B1 * !Y)	0.00122	0.00124	0.00122
	(!A2 * B1 * !Y)	-0.00136	-0.00137	-0.00137
	(!A2 * !B1 * C1 * !Y)	0.00122	0.00124	0.00122
	(!A2 * !B1 * C1 * !Y)	-0.00136	-0.00137	-0.00137
	(!A1 * A2 * B1 * !Y)	0.00121	0.00120	0.00120
	(!A1 * A2 * B1 * !Y)	-0.00137	-0.00137	-0.00137
	(!A1 * A2 * !B1 * C1 * !Y)	0.00121	0.00120	0.00120
	(!A1 * A2 * !B1 * C1 * !Y)	-0.00137	-0.00137	-0.00137
	(!A1 * A2 * !B1 * !C1 * Y)	0.00109	0.00109	0.00108
	(!A1 * A2 * !B1 * !C1 * Y)	-0.00149	-0.00148	-0.00148
	(!A1 * !A2 * !B1 * !C1 * Y)	0.00110	0.00111	0.00111
	(!A1 * !A2 * !B1 * !C1 * Y)	-0.00148	-0.00148	-0.00148

sky130_fd_sc_hs__a311oi_2	**(A1 * A2 * B1 * C1 * !Y)**	0.00219	0.00222	0.00219
	(A1 * A2 * B1 * C1 * !Y)	-0.00255	-0.00270	-0.00266
	(A1 * A2 * B1 * !C1 * !Y)	0.00219	0.00222	0.00219
	(A1 * A2 * B1 * !C1 * !Y)	-0.00254	-0.00269	-0.00266
	(A1 * A2 * !B1 * C1 * !Y)	0.00221	0.00222	0.00219
	(A1 * A2 * !B1 * C1 * !Y)	-0.00243	-0.00260	-0.00258
	(A1 * !A2 * !B1 * !C1 * Y)	0.00206	0.00210	0.00208
	(A1 * !A2 * !B1 * !C1 * Y)	-0.00273	-0.00276	-0.00275
	(!A2 * B1 * !Y)	0.00207	0.00209	0.00208
	(!A2 * B1 * !Y)	-0.00273	-0.00275	-0.00274
	(!A2 * !B1 * C1 * !Y)	0.00207	0.00209	0.00208
	(!A2 * !B1 * C1 * !Y)	-0.00273	-0.00275	-0.00274
	(!A1 * A2 * B1 * !Y)	0.00203	0.00205	0.00202
	(!A1 * A2 * B1 * !Y)	-0.00275	-0.00276	-0.00274
	(!A1 * A2 * !B1 * C1 * !Y)	0.00203	0.00205	0.00203
	(!A1 * A2 * !B1 * C1 * !Y)	-0.00275	-0.00276	-0.00274
	(!A1 * A2 * !B1 * !C1 * Y)	0.00202	0.00204	0.00202
	(!A1 * A2 * !B1 * !C1 * Y)	-0.00275	-0.00276	-0.00275
	(!A1 * !A2 * !B1 * !C1 * Y)	0.00206	0.00210	0.00208
	(!A1 * !A2 * !B1 * !C1 * Y)	-0.00274	-0.00276	-0.00275

sky130_fd_sc_hs__a311oi_4	**(A1 * A2 * B1 * C1 * !Y)**	0.00445	0.00450	0.00444
	(A1 * A2 * B1 * C1 * !Y)	-0.00516	-0.00545	-0.00538
	(A1 * A2 * B1 * !C1 * !Y)	0.00445	0.00450	0.00444
	(A1 * A2 * B1 * !C1 * !Y)	-0.00515	-0.00545	-0.00538
	(A1 * A2 * !B1 * C1 * !Y)	0.00449	0.00451	0.00445
	(A1 * A2 * !B1 * C1 * !Y)	-0.00492	-0.00523	-0.00521
	(A1 * !A2 * !B1 * !C1 * Y)	0.00417	0.00419	0.00418
	(A1 * !A2 * !B1 * !C1 * Y)	-0.00554	-0.00555	-0.00555
	(!A2 * B1 * !Y)	0.00416	0.00422	0.00418
	(!A2 * B1 * !Y)	-0.00554	-0.00558	-0.00555
	(!A2 * !B1 * C1 * !Y)	0.00416	0.00421	0.00417
	(!A2 * !B1 * C1 * !Y)	-0.00553	-0.00558	-0.00555
	(!A1 * A2 * B1 * !Y)	0.00408	0.00411	0.00407
	(!A1 * A2 * B1 * !Y)	-0.00556	-0.00558	-0.00555
	(!A1 * A2 * !B1 * C1 * !Y)	0.00408	0.00411	0.00407
	(!A1 * A2 * !B1 * C1 * !Y)	-0.00556	-0.00558	-0.00555
	(!A1 * A2 * !B1 * !C1 * Y)	0.00408	0.00406	0.00406
	(!A1 * A2 * !B1 * !C1 * Y)	-0.00557	-0.00555	-0.00555
	(!A1 * !A2 * !B1 * !C1 * Y)	0.00415	0.00419	0.00417
	(!A1 * !A2 * !B1 * !C1 * Y)	-0.00554	-0.00557	-0.00555

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)**	-0.00129	-0.00130	-0.00129
	(A1 * A2 * B1 * C1 * !Y)	0.00133	0.00135	0.00133
	(A1 * A2 * B1 * !C1 * !Y)	-0.00129	-0.00129	-0.00129
	(A1 * A2 * B1 * !C1 * !Y)	0.00133	0.00134	0.00133
	(A1 * A2 * !B1 * C1 * !Y)	-0.00129	-0.00129	-0.00129
	(A1 * A2 * !B1 * C1 * !Y)	0.00130	0.00130	0.00129
	(A1 * !A2 * !B1 * !C1 * Y)	-0.00107	-0.00111	-0.00111
	(A1 * !A2 * !B1 * !C1 * Y)	0.00149	0.00151	0.00149
	(!A2 * B1 * !Y)	-0.00120	-0.00123	-0.00122
	(!A2 * B1 * !Y)	0.00137	0.00138	0.00137
	(!A2 * !B1 * C1 * !Y)	-0.00120	-0.00123	-0.00122
	(!A2 * !B1 * C1 * !Y)	0.00137	0.00138	0.00137
	(!A1 * A2 * B1 * !Y)	-0.00114	-0.00120	-0.00120
	(!A1 * A2 * B1 * !Y)	0.00137	0.00137	0.00137
	(!A1 * A2 * !B1 * C1 * !Y)	-0.00114	-0.00120	-0.00120
	(!A1 * A2 * !B1 * C1 * !Y)	0.00137	0.00137	0.00137
	(!A1 * A2 * !B1 * !C1 * Y)	-0.00102	-0.00109	-0.00108
	(!A1 * A2 * !B1 * !C1 * Y)	0.00149	0.00149	0.00149
	(!A1 * !A2 * !B1 * !C1 * Y)	-0.00108	-0.00111	-0.00111
	(!A1 * !A2 * !B1 * !C1 * Y)	0.00149	0.00148	0.00149

sky130_fd_sc_hs__a311oi_2	**(A1 * A2 * B1 * C1 * !Y)**	-0.00219	-0.00220	-0.00219
	(A1 * A2 * B1 * C1 * !Y)	0.00267	0.00271	0.00266
	(A1 * A2 * B1 * !C1 * !Y)	-0.00219	-0.00220	-0.00219
	(A1 * A2 * B1 * !C1 * !Y)	0.00267	0.00271	0.00266
	(A1 * A2 * !B1 * C1 * !Y)	-0.00218	-0.00220	-0.00219
	(A1 * A2 * !B1 * C1 * !Y)	0.00257	0.00260	0.00258
	(A1 * !A2 * !B1 * !C1 * Y)	-0.00199	-0.00209	-0.00208
	(A1 * !A2 * !B1 * !C1 * Y)	0.00275	0.00278	0.00275
	(!A2 * B1 * !Y)	-0.00200	-0.00209	-0.00208
	(!A2 * B1 * !Y)	0.00274	0.00277	0.00275
	(!A2 * !B1 * C1 * !Y)	-0.00200	-0.00209	-0.00208
	(!A2 * !B1 * C1 * !Y)	0.00274	0.00277	0.00275
	(!A1 * A2 * B1 * !Y)	-0.00189	-0.00205	-0.00202
	(!A1 * A2 * B1 * !Y)	0.00275	0.00276	0.00275
	(!A1 * A2 * !B1 * C1 * !Y)	-0.00189	-0.00205	-0.00203
	(!A1 * A2 * !B1 * C1 * !Y)	0.00275	0.00276	0.00275
	(!A1 * A2 * !B1 * !C1 * Y)	-0.00188	-0.00204	-0.00202
	(!A1 * A2 * !B1 * !C1 * Y)	0.00275	0.00277	0.00275
	(!A1 * !A2 * !B1 * !C1 * Y)	-0.00199	-0.00209	-0.00208
	(!A1 * !A2 * !B1 * !C1 * Y)	0.00275	0.00278	0.00275

sky130_fd_sc_hs__a311oi_4	**(A1 * A2 * B1 * C1 * !Y)**	-0.00444	-0.00447	-0.00443
	(A1 * A2 * B1 * C1 * !Y)	0.00540	0.00547	0.00538
	(A1 * A2 * B1 * !C1 * !Y)	-0.00444	-0.00447	-0.00443
	(A1 * A2 * B1 * !C1 * !Y)	0.00540	0.00547	0.00538
	(A1 * A2 * !B1 * C1 * !Y)	-0.00444	-0.00445	-0.00444
	(A1 * A2 * !B1 * C1 * !Y)	0.00520	0.00523	0.00521
	(A1 * !A2 * !B1 * !C1 * Y)	-0.00399	-0.00419	-0.00418
	(A1 * !A2 * !B1 * !C1 * Y)	0.00555	0.00562	0.00557
	(!A2 * B1 * !Y)	-0.00403	-0.00420	-0.00418
	(!A2 * B1 * !Y)	0.00555	0.00559	0.00556
	(!A2 * !B1 * C1 * !Y)	-0.00403	-0.00420	-0.00417
	(!A2 * !B1 * C1 * !Y)	0.00555	0.00559	0.00557
	(!A1 * A2 * B1 * !Y)	-0.00380	-0.00411	-0.00407
	(!A1 * A2 * B1 * !Y)	0.00556	0.00560	0.00556
	(!A1 * A2 * !B1 * C1 * !Y)	-0.00380	-0.00411	-0.00407
	(!A1 * A2 * !B1 * C1 * !Y)	0.00556	0.00560	0.00557
	(!A1 * A2 * !B1 * !C1 * Y)	-0.00378	-0.00406	-0.00406
	(!A1 * A2 * !B1 * !C1 * Y)	0.00557	0.00560	0.00557
	(!A1 * !A2 * !B1 * !C1 * Y)	-0.00400	-0.00419	-0.00417
	(!A1 * !A2 * !B1 * !C1 * Y)	0.00555	0.00563	0.00557

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)**	0.00138	0.00132	0.00128
	(A1 * A2 * A3 * C1 * !Y)	-0.00096	-0.00096	-0.00095
	(A1 * A2 * A3 * !C1 * !Y)	0.00125	0.00124	0.00124
	(A1 * A2 * A3 * !C1 * !Y)	-0.00076	-0.00075	-0.00076
	(A1 * A2 * !A3 * C1 * !Y)	0.00143	0.00125	0.00123
	(A1 * A2 * !A3 * C1 * !Y)	-0.00111	-0.00132	-0.00133
	(A1 * !A2 * C1 * !Y)	0.00143	0.00125	0.00123
	(A1 * !A2 * C1 * !Y)	-0.00111	-0.00132	-0.00133
	(!A1 * C1 * !Y)	0.00142	0.00125	0.00123
	(!A1 * C1 * !Y)	-0.00112	-0.00133	-0.00133
sky130_fd_sc_hs__a311oi_2	**(A1 * A2 * A3 * C1 * !Y)**	0.00144	0.00138	0.00129
	(A1 * A2 * A3 * C1 * !Y)	-0.00198	-0.00199	-0.00198
	(A1 * A2 * A3 * !C1 * !Y)	0.00127	0.00129	0.00126
	(A1 * A2 * A3 * !C1 * !Y)	-0.00160	-0.00163	-0.00161
	(A1 * A2 * !A3 * C1 * !Y)	0.00163	0.00127	0.00125
	(A1 * A2 * !A3 * C1 * !Y)	-0.00234	-0.00275	-0.00275
	(A1 * !A2 * C1 * !Y)	0.00163	0.00127	0.00125
	(A1 * !A2 * C1 * !Y)	-0.00235	-0.00275	-0.00275
	(!A1 * C1 * !Y)	0.00163	0.00127	0.00125
	(!A1 * C1 * !Y)	-0.00235	-0.00275	-0.00275
sky130_fd_sc_hs__a311oi_4	**(A1 * A2 * A3 * C1 * !Y)**	0.00281	0.00269	0.00249
	(A1 * A2 * A3 * C1 * !Y)	-0.00387	-0.00388	-0.00387
	(A1 * A2 * A3 * !C1 * !Y)	0.00243	0.00248	0.00242
	(A1 * A2 * A3 * !C1 * !Y)	-0.00312	-0.00317	-0.00314
	(A1 * A2 * !A3 * C1 * !Y)	0.00321	0.00245	0.00239
	(A1 * A2 * !A3 * C1 * !Y)	-0.00451	-0.00543	-0.00542
	(A1 * !A2 * C1 * !Y)	0.00320	0.00245	0.00239
	(A1 * !A2 * C1 * !Y)	-0.00452	-0.00543	-0.00542
	(!A1 * C1 * !Y)	0.00319	0.00245	0.00239
	(!A1 * C1 * !Y)	-0.00454	-0.00543	-0.00542

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)	-0.00125	-0.00126	-0.00125
	(A1 * A2 * A3 * C1 * !Y)	0.00096	0.00096	0.00095
	(A1 * A2 * A3 * !C1 * !Y)	-0.00120	-0.00121	-0.00122
	(A1 * A2 * A3 * !C1 * !Y)	0.00082	0.00082	0.00079
	(A1 * A2 * !A3 * C1 * !Y)	-0.00123	-0.00123	-0.00123
	(A1 * A2 * !A3 * C1 * !Y)	0.00132	0.00132	0.00133
	(A1 * !A2 * C1 * !Y)	-0.00123	-0.00123	-0.00123
	(A1 * !A2 * C1 * !Y)	0.00132	0.00132	0.00133
	(!A1 * C1 * !Y)	-0.00123	-0.00124	-0.00123
	(!A1 * C1 * !Y)	0.00133	0.00134	0.00133
sky130_fd_sc_hs__a311oi_2	(A1 * A2 * A3 * C1 * !Y)	-0.00126	-0.00127	-0.00127
	(A1 * A2 * A3 * C1 * !Y)	0.00198	0.00199	0.00198
	(A1 * A2 * A3 * !C1 * !Y)	-0.00116	-0.00117	-0.00119
	(A1 * A2 * A3 * !C1 * !Y)	0.00170	0.00171	0.00169
	(A1 * A2 * !A3 * C1 * !Y)	-0.00125	-0.00125	-0.00124
	(A1 * A2 * !A3 * C1 * !Y)	0.00275	0.00275	0.00275
	(A1 * !A2 * C1 * !Y)	-0.00125	-0.00125	-0.00124
	(A1 * !A2 * C1 * !Y)	0.00275	0.00275	0.00275
	(!A1 * C1 * !Y)	-0.00124	-0.00125	-0.00124
	(!A1 * C1 * !Y)	0.00272	0.00276	0.00275

sky130_fd_sc_hs__a311oi_4	**(A1 * A2 * A3 * C1 * !Y)**	-0.00243	-0.00243	-0.00243
	(A1 * A2 * A3 * C1 * !Y)	0.00387	0.00388	0.00387
	(A1 * A2 * A3 * !C1 * !Y)	-0.00220	-0.00223	-0.00229
	(A1 * A2 * A3 * !C1 * !Y)	0.00334	0.00335	0.00329
	(A1 * A2 * !A3 * C1 * !Y)	-0.00238	-0.00240	-0.00238
	(A1 * A2 * !A3 * C1 * !Y)	0.00537	0.00543	0.00542
	(A1 * !A2 * C1 * !Y)	-0.00238	-0.00240	-0.00238
	(A1 * !A2 * C1 * !Y)	0.00537	0.00543	0.00542
	(!A1 * C1 * !Y)	-0.00238	-0.00240	-0.00238
	(!A1 * C1 * !Y)	0.00537	0.00544	0.00542

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)	0.00131	0.00133	0.00131
	(A1 * A2 * B1 * !Y)	-0.00072	-0.00073	-0.00072
	(A1 * A2 * A3 * !B1 * !Y)	0.00131	0.00132	0.00131
	(A1 * A2 * A3 * !B1 * !Y)	-0.00072	-0.00072	-0.00072
	(A1 * !A2 * B1 * !Y)	0.00131	0.00133	0.00131
	(A1 * !A2 * B1 * !Y)	-0.00072	-0.00073	-0.00072
	(!A1 * B1 * !Y)	0.00131	0.00134	0.00131
	(!A1 * B1 * !Y)	-0.00072	-0.00073	-0.00072
sky130_fd_sc_hs__a311oi_2	(A1 * A2 * B1 * !Y)	0.00148	0.00150	0.00148
	(A1 * A2 * B1 * !Y)	-0.00140	-0.00143	-0.00140
	(A1 * A2 * A3 * !B1 * !Y)	0.00147	0.00148	0.00148
	(A1 * A2 * A3 * !B1 * !Y)	-0.00139	-0.00140	-0.00140
	(A1 * !A2 * B1 * !Y)	0.00147	0.00150	0.00148
	(A1 * !A2 * B1 * !Y)	-0.00140	-0.00143	-0.00140
	(!A1 * B1 * !Y)	0.00149	0.00150	0.00148
	(!A1 * B1 * !Y)	-0.00142	-0.00143	-0.00140
sky130_fd_sc_hs__a311oi_4	(A1 * A2 * B1 * !Y)	0.00294	0.00299	0.00294
	(A1 * A2 * B1 * !Y)	-0.00279	-0.00283	-0.00278
	(A1 * A2 * A3 * !B1 * !Y)	0.00293	0.00295	0.00294
	(A1 * A2 * A3 * !B1 * !Y)	-0.00278	-0.00279	-0.00278
	(A1 * !A2 * B1 * !Y)	0.00293	0.00299	0.00294
	(A1 * !A2 * B1 * !Y)	-0.00279	-0.00283	-0.00279
	(!A1 * B1 * !Y)	0.00296	0.00299	0.00294
	(!A1 * B1 * !Y)	-0.00282	-0.00283	-0.00279

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)	-0.00126	-0.00127	-0.00131
	(A1 * A2 * B1 * !Y)	0.00077	0.00077	0.00073
	(A1 * A2 * A3 * !B1 * !Y)	-0.00112	-0.00114	-0.00128
	(A1 * A2 * A3 * !B1 * !Y)	0.00085	0.00086	0.00075
	(A1 * !A2 * B1 * !Y)	-0.00125	-0.00127	-0.00131
	(A1 * !A2 * B1 * !Y)	0.00076	0.00077	0.00073
	(!A1 * B1 * !Y)	-0.00126	-0.00127	-0.00131
	(!A1 * B1 * !Y)	0.00077	0.00077	0.00073
sky130_fd_sc_hs__a311oi_2	(A1 * A2 * B1 * !Y)	-0.00132	-0.00132	-0.00146
	(A1 * A2 * B1 * !Y)	0.00155	0.00154	0.00144
	(A1 * A2 * A3 * !B1 * !Y)	-0.00102	-0.00103	-0.00139
	(A1 * A2 * A3 * !B1 * !Y)	0.00174	0.00172	0.00148
	(A1 * !A2 * B1 * !Y)	-0.00132	-0.00132	-0.00146
	(A1 * !A2 * B1 * !Y)	0.00156	0.00154	0.00144
	(!A1 * B1 * !Y)	-0.00132	-0.00132	-0.00146
	(!A1 * B1 * !Y)	0.00155	0.00154	0.00144
sky130_fd_sc_hs__a311oi_4	(A1 * A2 * B1 * !Y)	-0.00266	-0.00269	-0.00291
	(A1 * A2 * B1 * !Y)	0.00305	0.00305	0.00285
	(A1 * A2 * A3 * !B1 * !Y)	-0.00206	-0.00211	-0.00277
	(A1 * A2 * A3 * !B1 * !Y)	0.00339	0.00341	0.00292
	(A1 * !A2 * B1 * !Y)	-0.00266	-0.00269	-0.00291
	(A1 * !A2 * B1 * !Y)	0.00305	0.00306	0.00286
	(!A1 * B1 * !Y)	-0.00265	-0.00269	-0.00291
	(!A1 * B1 * !Y)	0.00303	0.00306	0.00286

SKY130_FD_SC_HS__A311Ox

sky130_fd_sc_hs_tt_1.50v_25C.ccs
Cell Library: Process , Voltage
1.50, 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	0.00256	0.00241	0.00242	0.00251	0.00260	0.84997
sky130_fd_sc_hs__a311o_2	0.00264	0.00263	0.00278	0.00283	0.00268	1.49582
sky130_fd_sc_hs__a311o_4	0.00483	0.00447	0.00474	0.00464	0.00464	2.68575

Leakage Information

Cell Name	Leakage(nW)		
	Min.	**Avg**	**Max.**
sky130_fd_sc_hs__a311o_1	0.00000	0.03905	0.07896
sky130_fd_sc_hs__a311o_2	0.00000	0.04837	0.08361
sky130_fd_sc_hs__a311o_4	0.00000	0.09838	0.16722

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)	0.12476	0.78928	6.91071
	A2->X (RR)	0.13282	0.79959	7.02600
	A3->X (RR)	0.13774	0.78419	6.99756
	B1->X (RR)	0.08296	0.71971	6.79557
	C1->X (RR)	0.07883	0.70248	6.77755
sky130_fd_sc_hs__a311o_2	A1->X (RR)	0.13511	0.72787	7.00657
	A2->X (RR)	0.14342	0.73376	7.09010
	A3->X (RR)	0.14888	0.71453	7.04130
	B1->X (RR)	0.08610	0.64870	6.85364
	C1->X (RR)	0.08200	0.63555	6.82036
sky130_fd_sc_hs__a311o_4	A1->X (RR)	0.16189	0.69526	6.99364
	A2->X (RR)	0.17494	0.70841	7.11062
	A3->X (RR)	0.18002	0.66375	6.97734
	B1->X (RR)	0.08500	0.56270	6.71245
	C1->X (RR)	0.07978	0.54561	6.67593

Delay(ns) to X falling :

Cell Name	Timing Arc(Dir)	Delay(ns)		
		First	Mid	Last
sky130_fd_sc_hs__a311o_1	A1->X (FF)	0.28255	0.83555	4.91684
	A2->X (FF)	0.32599	0.88822	5.05076
	A3->X (FF)	0.35845	0.92644	5.16644
	B1->X (FF)	0.32598	0.89897	5.25049
	C1->X (FF)	0.28359	0.84428	4.98456
sky130_fd_sc_hs__a311o_2	A1->X (FF)	0.38235	0.92431	5.00332
	A2->X (FF)	0.43846	0.99100	5.15321
	A3->X (FF)	0.47912	1.03719	5.26788
	B1->X (FF)	0.44762	1.01542	5.42669
	C1->X (FF)	0.39804	0.94867	5.14969
sky130_fd_sc_hs__a311o_4	A1->X (FF)	0.39318	0.88534	4.78360
	A2->X (FF)	0.44771	0.94908	4.94376
	A3->X (FF)	0.49289	1.00480	5.06686
	B1->X (FF)	0.45910	0.98406	5.26965
	C1->X (FF)	0.39027	0.89904	4.98566

Power Information

Internal switching power(pJ) to X rising :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__a311o_1	A1	0.00866	0.00850	0.01130
	A1	0.00407	0.00390	0.00672
	A2	0.00917	0.00896	0.01080
	A2	0.00406	0.00385	0.00573
	A3	0.00984	0.00958	0.01099
	A3	0.00405	0.00378	0.00521
	B1	0.00810	0.00812	0.01132
	B1	0.00303	0.00305	0.00719
	C1	0.00704	0.00703	0.01160
	C1	0.00240	0.00242	0.00793
sky130_fd_sc_hs__a311o_2	A1	0.01110	0.01119	0.01370
	A1	0.00616	0.00625	0.00877
	A2	0.01183	0.01184	0.01355
	A2	0.00616	0.00618	0.00798
	A3	0.01271	0.01266	0.01382
	A3	0.00617	0.00612	0.00735
	B1	0.01097	0.01120	0.01389
	B1	0.00517	0.00541	0.01047
	C1	0.00970	0.00995	0.01342
	C1	0.00449	0.00474	0.01145

sky130_fd_sc_hs__a311o_4	**A1**	0.02172	0.02200	0.02767
	A1	0.01303	0.01333	0.01902
	A2	0.02291	0.02325	0.02686
	A2	0.01297	0.01332	0.01718
	A3	0.02449	0.02480	0.02771
	A3	0.01306	0.01339	0.01631
	B1	0.02061	0.02084	0.02661
	B1	0.01071	0.01098	0.01675
	C1	0.01737	0.01786	0.02612
	C1	0.00865	0.00910	0.01947

Internal switching power(pJ) to X falling :

Cell Name	**Input**	**Power(pJ)**		
		first	**mid**	**last**
sky130_fd_sc_hs__a311o_1	**A1**	0.00253	0.00253	0.00437
	A1	0.00721	0.00720	0.00880
	A2	0.00301	0.00305	0.00465
	A2	0.00816	0.00821	0.00968
	A3	0.00328	0.00324	0.00492
	A3	0.00906	0.00901	0.01038
	B1	0.00284	0.00286	0.00633
	B1	0.00820	0.00817	0.01044
	C1	0.00305	0.00325	0.00880
	C1	0.00758	0.00778	0.01261

sky130_fd_sc_hs__a311o_2	**A1**	0.00474	0.00445	0.00649
	A1	0.00976	0.00990	0.01151
	A2	0.00520	0.00519	0.00694
	A2	0.01088	0.01104	0.01258
	A3	0.00543	0.00516	0.00704
	A3	0.01191	0.01176	0.01307
	B1	0.00548	0.00514	0.00929
	B1	0.01116	0.01107	0.01310
	C1	0.00542	0.00528	0.01008
	C1	0.01051	0.01070	0.01510
sky130_fd_sc_hs__a311o_4	**A1**	0.00960	0.00911	0.01418
	A1	0.01845	0.01876	0.02177
	A2	0.01114	0.01120	0.01459
	A2	0.02112	0.02138	0.02411
	A3	0.01144	0.01133	0.01497
	A3	0.02280	0.02286	0.02537
	B1	0.01163	0.01133	0.01551
	B1	0.02131	0.02132	0.02515
	C1	0.01151	0.01163	0.02089
	C1	0.01995	0.02032	0.02917

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)**	0.00110	0.00109	0.00109
	(A2 * A3 * B1 * C1 * X)	-0.00116	-0.00121	-0.00121
	(A2 * A3 * B1 * !C1 * X)	0.00110	0.00109	0.00109
	(A2 * A3 * B1 * !C1 * X)	-0.00115	-0.00121	-0.00121
	(A2 * A3 * !B1 * C1 * X)	0.00111	0.00111	0.00109
	(A2 * A3 * !B1 * C1 * X)	-0.00109	-0.00118	-0.00117
	(A2 * !A3 * B1 * C1 * X)	0.00102	0.00103	0.00102
	(A2 * !A3 * B1 * C1 * X)	-0.00124	-0.00125	-0.00124
	(A2 * !A3 * B1 * !C1 * X)	0.00102	0.00103	0.00102
	(A2 * !A3 * B1 * !C1 * X)	-0.00124	-0.00125	-0.00124
	(A2 * !A3 * !B1 * C1 * X)	0.00102	0.00103	0.00102
	(A2 * !A3 * !B1 * C1 * X)	-0.00124	-0.00125	-0.00124
	(A2 * !A3 * !B1 * !C1 * !X)	0.00046	0.00046	0.00043
	(A2 * !A3 * !B1 * !C1 * !X)	-0.00141	-0.00142	-0.00147
	(!A2 * B1 * C1 * X)	0.00104	0.00104	0.00104
	(!A2 * B1 * C1 * X)	-0.00124	-0.00124	-0.00124
	(!A2 * B1 * !C1 * X)	0.00104	0.00105	0.00104
	(!A2 * B1 * !C1 * X)	-0.00124	-0.00125	-0.00124
	(!A2 * !B1 * C1 * X)	0.00104	0.00105	0.00104
	(!A2 * !B1 * C1 * X)	-0.00124	-0.00125	-0.00124
	(!A2 * !B1 * !C1 * !X)	0.00045	0.00046	0.00044
	(!A2 * !B1 * !C1 * !X)	-0.00145	-0.00145	-0.00147

sky130_fd_sc_hs__a311o_2	**(A2 * A3 * B1 * C1 * X)**	0.00116	0.00117	0.00115
	(A2 * A3 * B1 * C1 * X)	-0.00114	-0.00121	-0.00120
	(A2 * A3 * B1 * !C1 * X)	0.00116	0.00117	0.00115
	(A2 * A3 * B1 * !C1 * X)	-0.00114	-0.00121	-0.00120
	(A2 * A3 * !B1 * C1 * X)	0.00117	0.00117	0.00115
	(A2 * A3 * !B1 * C1 * X)	-0.00108	-0.00117	-0.00116
	(A2 * !A3 * B1 * C1 * X)	0.00106	0.00106	0.00107
	(A2 * !A3 * B1 * C1 * X)	-0.00123	-0.00123	-0.00123
	(A2 * !A3 * B1 * !C1 * X)	0.00106	0.00106	0.00107
	(A2 * !A3 * B1 * !C1 * X)	-0.00123	-0.00123	-0.00123
	(A2 * !A3 * !B1 * C1 * X)	0.00106	0.00107	0.00106
	(A2 * !A3 * !B1 * C1 * X)	-0.00123	-0.00124	-0.00123
	(A2 * !A3 * !B1 * !C1 * !X)	0.00039	0.00039	0.00036
	(A2 * !A3 * !B1 * !C1 * !X)	-0.00145	-0.00146	-0.00152
	(!A2 * B1 * C1 * X)	0.00109	0.00110	0.00110
	(!A2 * B1 * C1 * X)	-0.00123	-0.00123	-0.00123
	(!A2 * B1 * !C1 * X)	0.00109	0.00110	0.00110
	(!A2 * B1 * !C1 * X)	-0.00123	-0.00123	-0.00123
	(!A2 * !B1 * C1 * X)	0.00110	0.00110	0.00110
	(!A2 * !B1 * C1 * X)	-0.00124	-0.00123	-0.00123
	(!A2 * !B1 * !C1 * !X)	0.00039	0.00039	0.00038
	(!A2 * !B1 * !C1 * !X)	-0.00149	-0.00149	-0.00152

sky130_fd_sc_hs__a311o_4	**(A2 * A3 * B1 * C1 * X)**	0.00200	0.00201	0.00199
	(A2 * A3 * B1 * C1 * X)	-0.00240	-0.00253	-0.00250
	(A2 * A3 * B1 * !C1 * X)	0.00200	0.00201	0.00199
	(A2 * A3 * B1 * !C1 * X)	-0.00240	-0.00253	-0.00250
	(A2 * A3 * !B1 * C1 * X)	0.00201	0.00201	0.00198
	(A2 * A3 * !B1 * C1 * X)	-0.00228	-0.00244	-0.00243
	(A2 * !A3 * B1 * C1 * X)	0.00183	0.00184	0.00184
	(A2 * !A3 * B1 * C1 * X)	-0.00258	-0.00259	-0.00258
	(A2 * !A3 * B1 * !C1 * X)	0.00183	0.00184	0.00183
	(A2 * !A3 * B1 * !C1 * X)	-0.00257	-0.00259	-0.00258
	(A2 * !A3 * !B1 * C1 * X)	0.00183	0.00184	0.00183
	(A2 * !A3 * !B1 * C1 * X)	-0.00257	-0.00259	-0.00258
	(A2 * !A3 * !B1 * !C1 * !X)	0.00073	0.00074	0.00066
	(A2 * !A3 * !B1 * !C1 * !X)	-0.00285	-0.00288	-0.00301
	(!A2 * B1 * C1 * X)	0.00190	0.00191	0.00190
	(!A2 * B1 * C1 * X)	-0.00257	-0.00260	-0.00258
	(!A2 * B1 * !C1 * X)	0.00190	0.00191	0.00189
	(!A2 * B1 * !C1 * X)	-0.00259	-0.00260	-0.00258
	(!A2 * !B1 * C1 * X)	0.00188	0.00191	0.00190
	(!A2 * !B1 * C1 * X)	-0.00257	-0.00260	-0.00258
	(!A2 * !B1 * !C1 * !X)	0.00078	0.00079	0.00073
	(!A2 * !B1 * !C1 * !X)	-0.00292	-0.00294	-0.00302

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)**	-0.00109	-0.00109	-0.00109
	(A2 * A3 * B1 * C1 * X)	0.00120	0.00122	0.00121
	(A2 * A3 * B1 * !C1 * X)	-0.00109	-0.00109	-0.00109
	(A2 * A3 * B1 * !C1 * X)	0.00120	0.00121	0.00121
	(A2 * A3 * !B1 * C1 * X)	-0.00109	-0.00109	-0.00109
	(A2 * A3 * !B1 * C1 * X)	0.00117	0.00118	0.00117
	(A2 * !A3 * B1 * C1 * X)	-0.00096	-0.00103	-0.00102
	(A2 * !A3 * B1 * C1 * X)	0.00125	0.00126	0.00125
	(A2 * !A3 * B1 * !C1 * X)	-0.00096	-0.00103	-0.00102
	(A2 * !A3 * B1 * !C1 * X)	0.00125	0.00126	0.00125
	(A2 * !A3 * !B1 * C1 * X)	-0.00095	-0.00103	-0.00102
	(A2 * !A3 * !B1 * C1 * X)	0.00124	0.00126	0.00125
	(A2 * !A3 * !B1 * !C1 * !X)	-0.00043	-0.00043	-0.00042
	(A2 * !A3 * !B1 * !C1 * !X)	0.00148	0.00148	0.00147
	(!A2 * B1 * C1 * X)	-0.00102	-0.00104	-0.00104
	(!A2 * B1 * C1 * X)	0.00124	0.00126	0.00125
	(!A2 * B1 * !C1 * X)	-0.00102	-0.00105	-0.00104
	(!A2 * B1 * !C1 * X)	0.00124	0.00125	0.00125
	(!A2 * !B1 * C1 * X)	-0.00101	-0.00105	-0.00104
	(!A2 * !B1 * C1 * X)	0.00124	0.00126	0.00125
	(!A2 * !B1 * !C1 * !X)	-0.00044	-0.00043	-0.00043
	(!A2 * !B1 * !C1 * !X)	0.00148	0.00148	0.00147

sky130_fd_sc_hs__a311o_2	**(A2 * A3 * B1 * C1 * X)**	-0.00116	-0.00117	-0.00115
	(A2 * A3 * B1 * C1 * X)	0.00120	0.00122	0.00120
	(A2 * A3 * B1 * !C1 * X)	-0.00116	-0.00117	-0.00115
	(A2 * A3 * B1 * !C1 * X)	0.00120	0.00122	0.00120
	(A2 * A3 * !B1 * C1 * X)	-0.00116	-0.00115	-0.00115
	(A2 * A3 * !B1 * C1 * X)	0.00117	0.00117	0.00116
	(A2 * !A3 * B1 * C1 * X)	-0.00099	-0.00106	-0.00107
	(A2 * !A3 * B1 * C1 * X)	0.00123	0.00124	0.00124
	(A2 * !A3 * B1 * !C1 * X)	-0.00099	-0.00106	-0.00107
	(A2 * !A3 * B1 * !C1 * X)	0.00123	0.00124	0.00124
	(A2 * !A3 * !B1 * C1 * X)	-0.00098	-0.00107	-0.00106
	(A2 * !A3 * !B1 * C1 * X)	0.00123	0.00125	0.00124
	(A2 * !A3 * !B1 * !C1 * !X)	-0.00035	-0.00036	-0.00035
	(A2 * !A3 * !B1 * !C1 * !X)	0.00152	0.00155	0.00152
	(!A2 * B1 * C1 * X)	-0.00106	-0.00110	-0.00110
	(!A2 * B1 * C1 * X)	0.00123	0.00124	0.00124
	(!A2 * B1 * !C1 * X)	-0.00106	-0.00110	-0.00110
	(!A2 * B1 * !C1 * X)	0.00123	0.00124	0.00124
	(!A2 * !B1 * C1 * X)	-0.00107	-0.00110	-0.00110
	(!A2 * !B1 * C1 * X)	0.00124	0.00125	0.00124
	(!A2 * !B1 * !C1 * !X)	-0.00036	-0.00037	-0.00036
	(!A2 * !B1 * !C1 * !X)	0.00152	0.00155	0.00152

sky130_fd_sc_hs__a311o_4	**(A2 * A3 * B1 * C1 * X)**	-0.00199	-0.00201	-0.00199
	(A2 * A3 * B1 * C1 * X)	0.00251	0.00254	0.00250
	(A2 * A3 * B1 * !C1 * X)	-0.00199	-0.00200	-0.00199
	(A2 * A3 * B1 * !C1 * X)	0.00251	0.00254	0.00250
	(A2 * A3 * !B1 * C1 * X)	-0.00198	-0.00198	-0.00198
	(A2 * A3 * !B1 * C1 * X)	0.00242	0.00244	0.00243
	(A2 * !A3 * B1 * C1 * X)	-0.00167	-0.00184	-0.00184
	(A2 * !A3 * B1 * C1 * X)	0.00258	0.00261	0.00259
	(A2 * !A3 * B1 * !C1 * X)	-0.00166	-0.00184	-0.00183
	(A2 * !A3 * B1 * !C1 * X)	0.00258	0.00261	0.00259
	(A2 * !A3 * !B1 * C1 * X)	-0.00166	-0.00184	-0.00183
	(A2 * !A3 * !B1 * C1 * X)	0.00258	0.00261	0.00259
	(A2 * !A3 * !B1 * !C1 * !X)	-0.00066	-0.00067	-0.00066
	(A2 * !A3 * !B1 * !C1 * !X)	0.00304	0.00308	0.00303
	(!A2 * B1 * C1 * X)	-0.00181	-0.00191	-0.00190
	(!A2 * B1 * C1 * X)	0.00257	0.00261	0.00259
	(!A2 * B1 * !C1 * X)	-0.00182	-0.00191	-0.00189
	(!A2 * B1 * !C1 * X)	0.00260	0.00262	0.00259
	(!A2 * !B1 * C1 * X)	-0.00182	-0.00191	-0.00190
	(!A2 * !B1 * C1 * X)	0.00260	0.00262	0.00259
	(!A2 * !B1 * !C1 * !X)	-0.00071	-0.00072	-0.00070
	(!A2 * !B1 * !C1 * !X)	0.00304	0.00308	0.00303

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)**	0.00096	0.00096	0.00095
	(A1 * A3 * B1 * C1 * X)	-0.00119	-0.00124	-0.00124
	(A1 * A3 * B1 * !C1 * X)	0.00096	0.00096	0.00095
	(A1 * A3 * B1 * !C1 * X)	-0.00119	-0.00124	-0.00124
	(A1 * A3 * !B1 * C1 * X)	0.00096	0.00096	0.00095
	(A1 * A3 * !B1 * C1 * X)	-0.00111	-0.00121	-0.00120
	(A1 * !A3 * B1 * C1 * X)	0.00090	0.00090	0.00090
	(A1 * !A3 * B1 * C1 * X)	-0.00128	-0.00128	-0.00128
	(A1 * !A3 * B1 * !C1 * X)	0.00090	0.00090	0.00090
	(A1 * !A3 * B1 * !C1 * X)	-0.00128	-0.00128	-0.00128
	(A1 * !A3 * !B1 * C1 * X)	0.00090	0.00090	0.00090
	(A1 * !A3 * !B1 * C1 * X)	-0.00128	-0.00128	-0.00128
	(A1 * !A3 * !B1 * !C1 * !X)	0.00038	0.00038	0.00038
	(A1 * !A3 * !B1 * !C1 * !X)	-0.00134	-0.00133	-0.00133
	(!A1 * A3 * B1 * X)	0.00090	0.00091	0.00090
	(!A1 * A3 * B1 * X)	-0.00128	-0.00128	-0.00128
	(!A1 * A3 * !B1 * C1 * X)	0.00090	0.00091	0.00090
	(!A1 * A3 * !B1 * C1 * X)	-0.00127	-0.00128	-0.00128
	(!A1 * A3 * !B1 * !C1 * !X)	0.00084	0.00085	0.00085
	(!A1 * A3 * !B1 * !C1 * !X)	-0.00133	-0.00134	-0.00133
	(!A1 * !A3 * B1 * X)	0.00054	0.00054	0.00053
	(!A1 * !A3 * B1 * X)	-0.00128	-0.00128	-0.00128
	(!A1 * !A3 * !B1 * C1 * X)	0.00054	0.00054	0.00053
	(!A1 * !A3 * !B1 * C1 * X)	-0.00128	-0.00128	-0.00128
	(!A1 * !A3 * !B1 * !C1 * !X)	0.00045	0.00044	0.00044
	(!A1 * !A3 * !B1 * !C1 * !X)	-0.00135	-0.00134	-0.00134

sky130_fd_sc_hs__a311o_2	**(A1 * A3 * B1 * C1 * X)**	0.00116	0.00116	0.00115
	(A1 * A3 * B1 * C1 * X)	-0.00115	-0.00121	-0.00120
	(A1 * A3 * B1 * !C1 * X)	0.00116	0.00116	0.00115
	(A1 * A3 * B1 * !C1 * X)	-0.00115	-0.00121	-0.00120
	(A1 * A3 * !B1 * C1 * X)	0.00116	0.00116	0.00114
	(A1 * A3 * !B1 * C1 * X)	-0.00108	-0.00117	-0.00116
	(A1 * !A3 * B1 * C1 * X)	0.00108	0.00109	0.00108
	(A1 * !A3 * B1 * C1 * X)	-0.00123	-0.00124	-0.00123
	(A1 * !A3 * B1 * !C1 * X)	0.00108	0.00109	0.00108
	(A1 * !A3 * B1 * !C1 * X)	-0.00123	-0.00124	-0.00123
	(A1 * !A3 * !B1 * C1 * X)	0.00108	0.00109	0.00108
	(A1 * !A3 * !B1 * C1 * X)	-0.00123	-0.00124	-0.00123
	(A1 * !A3 * !B1 * !C1 * !X)	0.00046	0.00045	0.00046
	(A1 * !A3 * !B1 * !C1 * !X)	-0.00131	-0.00131	-0.00131
	(!A1 * A3 * B1 * X)	0.00109	0.00109	0.00109
	(!A1 * A3 * B1 * X)	-0.00123	-0.00123	-0.00123
	(!A1 * A3 * !B1 * C1 * X)	0.00109	0.00109	0.00109
	(!A1 * A3 * !B1 * C1 * X)	-0.00123	-0.00123	-0.00123
	(!A1 * A3 * !B1 * !C1 * !X)	0.00100	0.00101	0.00101
	(!A1 * A3 * !B1 * !C1 * !X)	-0.00130	-0.00131	-0.00131
	(!A1 * !A3 * B1 * X)	0.00065	0.00066	0.00065
	(!A1 * !A3 * B1 * X)	-0.00123	-0.00124	-0.00123
	(!A1 * !A3 * !B1 * C1 * X)	0.00066	0.00066	0.00065
	(!A1 * !A3 * !B1 * C1 * X)	-0.00124	-0.00124	-0.00123
	(!A1 * !A3 * !B1 * !C1 * !X)	0.00053	0.00052	0.00053
	(!A1 * !A3 * !B1 * !C1 * !X)	-0.00133	-0.00132	-0.00132

sky130_fd_sc_hs__a311o_4	**(A1 * A3 * B1 * C1 * X)**	0.00192	0.00192	0.00190
	(A1 * A3 * B1 * C1 * X)	-0.00239	-0.00247	-0.00247
	(A1 * A3 * B1 * !C1 * X)	0.00191	0.00192	0.00190
	(A1 * A3 * B1 * !C1 * X)	-0.00237	-0.00250	-0.00247
	(A1 * A3 * !B1 * C1 * X)	0.00191	0.00192	0.00190
	(A1 * A3 * !B1 * C1 * X)	-0.00228	-0.00242	-0.00241
	(A1 * !A3 * B1 * C1 * X)	0.00180	0.00182	0.00181
	(A1 * !A3 * B1 * C1 * X)	-0.00253	-0.00255	-0.00254
	(A1 * !A3 * B1 * !C1 * X)	0.00180	0.00182	0.00181
	(A1 * !A3 * B1 * !C1 * X)	-0.00253	-0.00255	-0.00254
	(A1 * !A3 * !B1 * C1 * X)	0.00180	0.00182	0.00181
	(A1 * !A3 * !B1 * C1 * X)	-0.00253	-0.00255	-0.00254
	(A1 * !A3 * !B1 * !C1 * !X)	0.00087	0.00087	0.00089
	(A1 * !A3 * !B1 * !C1 * !X)	-0.00253	-0.00254	-0.00252
	(!A1 * A3 * B1 * X)	0.00181	0.00183	0.00182
	(!A1 * A3 * B1 * X)	-0.00253	-0.00255	-0.00254
	(!A1 * A3 * !B1 * C1 * X)	0.00181	0.00183	0.00182
	(!A1 * A3 * !B1 * C1 * X)	-0.00253	-0.00255	-0.00254
	(!A1 * A3 * !B1 * !C1 * !X)	0.00181	0.00183	0.00182
	(!A1 * A3 * !B1 * !C1 * !X)	-0.00252	-0.00254	-0.00253
	(!A1 * !A3 * B1 * X)	0.00113	0.00114	0.00113
	(!A1 * !A3 * B1 * X)	-0.00253	-0.00255	-0.00254
	(!A1 * !A3 * !B1 * C1 * X)	0.00113	0.00114	0.00113
	(!A1 * !A3 * !B1 * C1 * X)	-0.00253	-0.00255	-0.00254
	(!A1 * !A3 * !B1 * !C1 * !X)	0.00103	0.00104	0.00103
	(!A1 * !A3 * !B1 * !C1 * !X)	-0.00255	-0.00256	-0.00255

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)**	-0.00095	-0.00095	-0.00095
	(A1 * A3 * B1 * C1 * X)	0.00124	0.00124	0.00124
	(A1 * A3 * B1 * !C1 * X)	-0.00095	-0.00095	-0.00095
	(A1 * A3 * B1 * !C1 * X)	0.00124	0.00124	0.00124
	(A1 * A3 * !B1 * C1 * X)	-0.00095	-0.00095	-0.00094
	(A1 * A3 * !B1 * C1 * X)	0.00121	0.00121	0.00120
	(A1 * !A3 * B1 * C1 * X)	-0.00087	-0.00090	-0.00090
	(A1 * !A3 * B1 * C1 * X)	0.00129	0.00129	0.00128
	(A1 * !A3 * B1 * !C1 * X)	-0.00087	-0.00090	-0.00090
	(A1 * !A3 * B1 * !C1 * X)	0.00129	0.00129	0.00128
	(A1 * !A3 * !B1 * C1 * X)	-0.00087	-0.00090	-0.00090
	(A1 * !A3 * !B1 * C1 * X)	0.00129	0.00130	0.00128
	(A1 * !A3 * !B1 * !C1 * !X)	-0.00035	-0.00036	-0.00036
	(A1 * !A3 * !B1 * !C1 * !X)	0.00136	0.00139	0.00134
	(!A1 * A3 * B1 * X)	-0.00087	-0.00091	-0.00090
	(!A1 * A3 * B1 * X)	0.00128	0.00129	0.00128
	(!A1 * A3 * !B1 * C1 * X)	-0.00087	-0.00091	-0.00090
	(!A1 * A3 * !B1 * C1 * X)	0.00128	0.00130	0.00128
	(!A1 * A3 * !B1 * !C1 * !X)	-0.00077	-0.00085	-0.00085
	(!A1 * A3 * !B1 * !C1 * !X)	0.00138	0.00135	0.00134
	(!A1 * !A3 * B1 * X)	-0.00054	-0.00054	-0.00053
	(!A1 * !A3 * B1 * X)	0.00128	0.00130	0.00128
	(!A1 * !A3 * !B1 * C1 * X)	-0.00054	-0.00054	-0.00053
	(!A1 * !A3 * !B1 * C1 * X)	0.00128	0.00130	0.00128
	(!A1 * !A3 * !B1 * !C1 * !X)	-0.00045	-0.00044	-0.00044
	(!A1 * !A3 * !B1 * !C1 * !X)	0.00140	0.00142	0.00136

sky130_fd_sc_hs__a311o_2	**(A1 * A3 * B1 * C1 * X)**	-0.00115	-0.00116	-0.00115
	(A1 * A3 * B1 * C1 * X)	0.00120	0.00122	0.00120
	(A1 * A3 * B1 * !C1 * X)	-0.00115	-0.00116	-0.00115
	(A1 * A3 * B1 * !C1 * X)	0.00120	0.00122	0.00120
	(A1 * A3 * !B1 * C1 * X)	-0.00114	-0.00115	-0.00114
	(A1 * A3 * !B1 * C1 * X)	0.00116	0.00117	0.00116
	(A1 * !A3 * B1 * C1 * X)	-0.00105	-0.00109	-0.00108
	(A1 * !A3 * B1 * C1 * X)	0.00123	0.00124	0.00124
	(A1 * !A3 * B1 * !C1 * X)	-0.00105	-0.00109	-0.00108
	(A1 * !A3 * B1 * !C1 * X)	0.00123	0.00125	0.00124
	(A1 * !A3 * !B1 * C1 * X)	-0.00105	-0.00109	-0.00108
	(A1 * !A3 * !B1 * C1 * X)	0.00123	0.00125	0.00124
	(A1 * !A3 * !B1 * !C1 * !X)	-0.00043	-0.00044	-0.00044
	(A1 * !A3 * !B1 * !C1 * !X)	0.00135	0.00137	0.00132
	(!A1 * A3 * B1 * X)	-0.00105	-0.00109	-0.00109
	(!A1 * A3 * B1 * X)	0.00123	0.00124	0.00124
	(!A1 * A3 * !B1 * C1 * X)	-0.00105	-0.00109	-0.00109
	(!A1 * A3 * !B1 * C1 * X)	0.00123	0.00124	0.00124
	(!A1 * A3 * !B1 * !C1 * !X)	-0.00094	-0.00101	-0.00101
	(!A1 * A3 * !B1 * !C1 * !X)	0.00136	0.00133	0.00131
	(!A1 * !A3 * B1 * X)	-0.00065	-0.00066	-0.00065
	(!A1 * !A3 * B1 * X)	0.00124	0.00125	0.00124
	(!A1 * !A3 * !B1 * C1 * X)	-0.00066	-0.00066	-0.00065
	(!A1 * !A3 * !B1 * C1 * X)	0.00124	0.00125	0.00124
	(!A1 * !A3 * !B1 * !C1 * !X)	-0.00053	-0.00052	-0.00053
	(!A1 * !A3 * !B1 * !C1 * !X)	0.00138	0.00140	0.00134

sky130_fd_sc_hs__a311o_4	**(A1 * A3 * B1 * C1 * X)**	-0.00190	-0.00190	-0.00190
	(A1 * A3 * B1 * C1 * X)	0.00247	0.00247	0.00247
	(A1 * A3 * B1 * !C1 * X)	-0.00190	-0.00192	-0.00190
	(A1 * A3 * B1 * !C1 * X)	0.00247	0.00252	0.00247
	(A1 * A3 * !B1 * C1 * X)	-0.00189	-0.00190	-0.00189
	(A1 * A3 * !B1 * C1 * X)	0.00241	0.00242	0.00241
	(A1 * !A3 * B1 * C1 * X)	-0.00173	-0.00182	-0.00181
	(A1 * !A3 * B1 * C1 * X)	0.00253	0.00257	0.00254
	(A1 * !A3 * B1 * !C1 * X)	-0.00174	-0.00182	-0.00181
	(A1 * !A3 * B1 * !C1 * X)	0.00255	0.00257	0.00255
	(A1 * !A3 * !B1 * C1 * X)	-0.00174	-0.00182	-0.00181
	(A1 * !A3 * !B1 * C1 * X)	0.00255	0.00257	0.00255
	(A1 * !A3 * !B1 * !C1 * !X)	-0.00082	-0.00083	-0.00084
	(A1 * !A3 * !B1 * !C1 * !X)	0.00264	0.00267	0.00257
	(!A1 * A3 * B1 * X)	-0.00172	-0.00183	-0.00182
	(!A1 * A3 * B1 * X)	0.00253	0.00257	0.00255
	(!A1 * A3 * !B1 * C1 * X)	-0.00172	-0.00183	-0.00182
	(!A1 * A3 * !B1 * C1 * X)	0.00253	0.00257	0.00255
	(!A1 * A3 * !B1 * !C1 * !X)	-0.00165	-0.00183	-0.00182
	(!A1 * A3 * !B1 * !C1 * !X)	0.00262	0.00257	0.00254
	(!A1 * !A3 * B1 * X)	-0.00113	-0.00114	-0.00113
	(!A1 * !A3 * B1 * X)	0.00256	0.00255	0.00255
	(!A1 * !A3 * !B1 * C1 * X)	-0.00113	-0.00114	-0.00113
	(!A1 * !A3 * !B1 * C1 * X)	0.00256	0.00255	0.00255
	(!A1 * !A3 * !B1 * !C1 * !X)	-0.00103	-0.00104	-0.00103
	(!A1 * !A3 * !B1 * !C1 * !X)	0.00266	0.00265	0.00258

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)**	0.00104	0.00106	0.00104
	(A1 * A2 * B1 * C1 * X)	-0.00116	-0.00123	-0.00122
	(A1 * A2 * B1 * !C1 * X)	0.00104	0.00106	0.00104
	(A1 * A2 * B1 * !C1 * X)	-0.00116	-0.00123	-0.00122
	(A1 * A2 * !B1 * C1 * X)	0.00105	0.00105	0.00104
	(A1 * A2 * !B1 * C1 * X)	-0.00110	-0.00119	-0.00118
	(A1 * !A2 * !B1 * !C1 * !X)	0.00086	0.00086	0.00086
	(A1 * !A2 * !B1 * !C1 * !X)	-0.00138	-0.00139	-0.00139
	(!A2 * B1 * X)	0.00099	0.00100	0.00099
	(!A2 * B1 * X)	-0.00125	-0.00126	-0.00125
	(!A2 * !B1 * C1 * X)	0.00099	0.00099	0.00099
	(!A2 * !B1 * C1 * X)	-0.00125	-0.00125	-0.00125
	(!A1 * A2 * B1 * X)	0.00098	0.00099	0.00099
	(!A1 * A2 * B1 * X)	-0.00125	-0.00125	-0.00125
	(!A1 * A2 * !B1 * C1 * X)	0.00098	0.00098	0.00098
	(!A1 * A2 * !B1 * C1 * X)	-0.00125	-0.00125	-0.00125
	(!A1 * A2 * !B1 * !C1 * !X)	0.00084	0.00084	0.00084
	(!A1 * A2 * !B1 * !C1 * !X)	-0.00138	-0.00139	-0.00139
	(!A1 * !A2 * !B1 * !C1 * !X)	0.00086	0.00086	0.00086
	(!A1 * !A2 * !B1 * !C1 * !X)	-0.00138	-0.00139	-0.00139

sky130_fd_sc_hs__a311o_2	**(A1 * A2 * B1 * C1 * X)**	0.00132	0.00133	0.00131
	(A1 * A2 * B1 * C1 * X)	-0.00114	-0.00120	-0.00119
	(A1 * A2 * B1 * !C1 * X)	0.00132	0.00133	0.00131
	(A1 * A2 * B1 * !C1 * X)	-0.00113	-0.00120	-0.00119
	(A1 * A2 * !B1 * C1 * X)	0.00133	0.00132	0.00131
	(A1 * A2 * !B1 * C1 * X)	-0.00108	-0.00116	-0.00116
	(A1 * !A2 * !B1 * !C1 * !X)	0.00102	0.00102	0.00102
	(A1 * !A2 * !B1 * !C1 * !X)	-0.00145	-0.00145	-0.00145
	(!A2 * B1 * X)	0.00124	0.00125	0.00124
	(!A2 * B1 * X)	-0.00122	-0.00123	-0.00122
	(!A2 * !B1 * C1 * X)	0.00124	0.00125	0.00124
	(!A2 * !B1 * C1 * X)	-0.00122	-0.00123	-0.00122
	(!A1 * A2 * B1 * X)	0.00124	0.00125	0.00124
	(!A1 * A2 * B1 * X)	-0.00122	-0.00122	-0.00122
	(!A1 * A2 * !B1 * C1 * X)	0.00123	0.00123	0.00122
	(!A1 * A2 * !B1 * C1 * X)	-0.00122	-0.00122	-0.00122
	(!A1 * A2 * !B1 * !C1 * !X)	0.00100	0.00100	0.00100
	(!A1 * A2 * !B1 * !C1 * !X)	-0.00145	-0.00145	-0.00145
	(!A1 * !A2 * !B1 * !C1 * !X)	0.00101	0.00102	0.00102
	(!A1 * !A2 * !B1 * !C1 * !X)	-0.00145	-0.00146	-0.00145

sky130_fd_sc_hs__a311o_4	**(A1 * A2 * B1 * C1 * X)**	0.00219	0.00221	0.00218
	(A1 * A2 * B1 * C1 * X)	-0.00230	-0.00243	-0.00240
	(A1 * A2 * B1 * !C1 * X)	0.00220	0.00221	0.00218
	(A1 * A2 * B1 * !C1 * X)	-0.00230	-0.00242	-0.00240
	(A1 * A2 * !B1 * C1 * X)	0.00221	0.00221	0.00218
	(A1 * A2 * !B1 * C1 * X)	-0.00221	-0.00235	-0.00233
	(A1 * !A2 * !B1 * !C1 * !X)	0.00183	0.00185	0.00184
	(A1 * !A2 * !B1 * !C1 * !X)	-0.00269	-0.00271	-0.00270
	(!A2 * B1 * X)	0.00208	0.00210	0.00208
	(!A2 * B1 * X)	-0.00246	-0.00248	-0.00246
	(!A2 * !B1 * C1 * X)	0.00208	0.00208	0.00208
	(!A2 * !B1 * C1 * X)	-0.00246	-0.00246	-0.00246
	(!A1 * A2 * B1 * X)	0.00205	0.00207	0.00205
	(!A1 * A2 * B1 * X)	-0.00246	-0.00247	-0.00246
	(!A1 * A2 * !B1 * C1 * X)	0.00206	0.00207	0.00205
	(!A1 * A2 * !B1 * C1 * X)	-0.00246	-0.00247	-0.00246
	(!A1 * A2 * !B1 * !C1 * !X)	0.00182	0.00183	0.00181
	(!A1 * A2 * !B1 * !C1 * !X)	-0.00270	-0.00271	-0.00270
	(!A1 * !A2 * !B1 * !C1 * !X)	0.00184	0.00185	0.00184
	(!A1 * !A2 * !B1 * !C1 * !X)	-0.00269	-0.00271	-0.00270

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)**	-0.00104	-0.00105	-0.00104
	(A1 * A2 * B1 * C1 * X)	0.00123	0.00124	0.00122
	(A1 * A2 * B1 * !C1 * X)	-0.00104	-0.00105	-0.00104
	(A1 * A2 * B1 * !C1 * X)	0.00122	0.00124	0.00122
	(A1 * A2 * !B1 * C1 * X)	-0.00104	-0.00104	-0.00104
	(A1 * A2 * !B1 * C1 * X)	0.00119	0.00119	0.00118
	(A1 * !A2 * !B1 * !C1 * !X)	-0.00083	-0.00086	-0.00086
	(A1 * !A2 * !B1 * !C1 * !X)	0.00139	0.00140	0.00139
	(!A2 * B1 * X)	-0.00097	-0.00100	-0.00099
	(!A2 * B1 * X)	0.00125	0.00126	0.00126
	(!A2 * !B1 * C1 * X)	-0.00097	-0.00099	-0.00099
	(!A2 * !B1 * C1 * X)	0.00126	0.00126	0.00126
	(!A1 * A2 * B1 * X)	-0.00092	-0.00099	-0.00099
	(!A1 * A2 * B1 * X)	0.00125	0.00126	0.00126
	(!A1 * A2 * !B1 * C1 * X)	-0.00092	-0.00098	-0.00098
	(!A1 * A2 * !B1 * C1 * X)	0.00125	0.00126	0.00126
	(!A1 * A2 * !B1 * !C1 * !X)	-0.00078	-0.00084	-0.00084
	(!A1 * A2 * !B1 * !C1 * !X)	0.00139	0.00139	0.00139
	(!A1 * !A2 * !B1 * !C1 * !X)	-0.00083	-0.00086	-0.00086
	(!A1 * !A2 * !B1 * !C1 * !X)	0.00140	0.00140	0.00139

sky130_fd_sc_hs__a311o_2	**(A1 * A2 * B1 * C1 * X)**	-0.00131	-0.00131	-0.00131
	(A1 * A2 * B1 * C1 * X)	0.00119	0.00120	0.00119
	(A1 * A2 * B1 * !C1 * X)	-0.00131	-0.00132	-0.00131
	(A1 * A2 * B1 * !C1 * X)	0.00119	0.00121	0.00119
	(A1 * A2 * !B1 * C1 * X)	-0.00131	-0.00131	-0.00131
	(A1 * A2 * !B1 * C1 * X)	0.00116	0.00116	0.00116
	(A1 * !A2 * !B1 * !C1 * !X)	-0.00098	-0.00102	-0.00102
	(A1 * !A2 * !B1 * !C1 * !X)	0.00146	0.00148	0.00146
	(!A2 * B1 * X)	-0.00122	-0.00125	-0.00124
	(!A2 * B1 * X)	0.00123	0.00123	0.00123
	(!A2 * !B1 * C1 * X)	-0.00122	-0.00125	-0.00124
	(!A2 * !B1 * C1 * X)	0.00123	0.00124	0.00123
	(!A1 * A2 * B1 * X)	-0.00116	-0.00124	-0.00124
	(!A1 * A2 * B1 * X)	0.00122	0.00122	0.00123
	(!A1 * A2 * !B1 * C1 * X)	-0.00116	-0.00123	-0.00122
	(!A1 * A2 * !B1 * C1 * X)	0.00122	0.00122	0.00123
	(!A1 * A2 * !B1 * !C1 * !X)	-0.00093	-0.00100	-0.00100
	(!A1 * A2 * !B1 * !C1 * !X)	0.00145	0.00145	0.00146
	(!A1 * !A2 * !B1 * !C1 * !X)	-0.00099	-0.00102	-0.00102
	(!A1 * !A2 * !B1 * !C1 * !X)	0.00146	0.00148	0.00146

sky130_fd_sc_hs__a311o_4	**(A1 * A2 * B1 * C1 * X)**	-0.00218	-0.00220	-0.00218
	(A1 * A2 * B1 * C1 * X)	0.00240	0.00244	0.00240
	(A1 * A2 * B1 * !C1 * X)	-0.00218	-0.00220	-0.00218
	(A1 * A2 * B1 * !C1 * X)	0.00240	0.00244	0.00240
	(A1 * A2 * !B1 * C1 * X)	-0.00217	-0.00218	-0.00217
	(A1 * A2 * !B1 * C1 * X)	0.00233	0.00235	0.00233
	(A1 * !A2 * !B1 * !C1 * !X)	-0.00177	-0.00185	-0.00184
	(A1 * !A2 * !B1 * !C1 * !X)	0.00270	0.00273	0.00271
	(!A2 * B1 * X)	-0.00202	-0.00209	-0.00208
	(!A2 * B1 * X)	0.00246	0.00248	0.00247
	(!A2 * !B1 * C1 * X)	-0.00202	-0.00208	-0.00208
	(!A2 * !B1 * C1 * X)	0.00246	0.00248	0.00247
	(!A1 * A2 * B1 * X)	-0.00195	-0.00207	-0.00205
	(!A1 * A2 * B1 * X)	0.00246	0.00248	0.00247
	(!A1 * A2 * !B1 * C1 * X)	-0.00195	-0.00207	-0.00205
	(!A1 * A2 * !B1 * C1 * X)	0.00246	0.00248	0.00247
	(!A1 * A2 * !B1 * !C1 * !X)	-0.00171	-0.00183	-0.00181
	(!A1 * A2 * !B1 * !C1 * !X)	0.00270	0.00271	0.00271
	(!A1 * !A2 * !B1 * !C1 * !X)	-0.00177	-0.00185	-0.00184
	(!A1 * !A2 * !B1 * !C1 * !X)	0.00270	0.00273	0.00271

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)**	0.00120	0.00115	0.00110
	(A1 * A2 * A3 * C1 * X)	-0.00087	-0.00088	-0.00088
	(A1 * A2 * A3 * !C1 * X)	0.00109	0.00109	0.00107
	(A1 * A2 * A3 * !C1 * X)	-0.00070	-0.00070	-0.00070
	(A1 * A2 * !A3 * C1 * X)	0.00127	0.00109	0.00107
	(A1 * A2 * !A3 * C1 * X)	-0.00100	-0.00120	-0.00121
	(A1 * !A2 * C1 * X)	0.00127	0.00109	0.00107
	(A1 * !A2 * C1 * X)	-0.00100	-0.00120	-0.00121
	(!A1 * C1 * X)	0.00126	0.00109	0.00107
	(!A1 * C1 * X)	-0.00101	-0.00120	-0.00121
sky130_fd_sc_hs__a311o_2	**(A1 * A2 * A3 * C1 * X)**	0.00139	0.00133	0.00129
	(A1 * A2 * A3 * C1 * X)	-0.00088	-0.00088	-0.00088
	(A1 * A2 * A3 * !C1 * X)	0.00126	0.00128	0.00125
	(A1 * A2 * A3 * !C1 * X)	-0.00069	-0.00071	-0.00070
	(A1 * A2 * !A3 * C1 * X)	0.00144	0.00126	0.00124
	(A1 * A2 * !A3 * C1 * X)	-0.00099	-0.00120	-0.00121
	(A1 * !A2 * C1 * X)	0.00144	0.00126	0.00124
	(A1 * !A2 * C1 * X)	-0.00099	-0.00120	-0.00121
	(!A1 * C1 * X)	0.00143	0.00126	0.00124
	(!A1 * C1 * X)	-0.00100	-0.00120	-0.00121
sky130_fd_sc_hs__a311o_4	**(A1 * A2 * A3 * C1 * X)**	0.00217	0.00209	0.00203
	(A1 * A2 * A3 * C1 * X)	-0.00191	-0.00191	-0.00190
	(A1 * A2 * A3 * !C1 * X)	0.00200	0.00203	0.00199
	(A1 * A2 * A3 * !C1 * X)	-0.00152	-0.00154	-0.00153
	(A1 * A2 * !A3 * C1 * X)	0.00236	0.00201	0.00198
	(A1 * A2 * !A3 * C1 * X)	-0.00208	-0.00251	-0.00252
	(A1 * !A2 * C1 * X)	0.00236	0.00201	0.00198
	(A1 * !A2 * C1 * X)	-0.00208	-0.00251	-0.00252
	(!A1 * C1 * X)	0.00236	0.00201	0.00198
	(!A1 * C1 * X)	-0.00208	-0.00251	-0.00252

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)	-0.00108	-0.00108	-0.00107
	(A1 * A2 * A3 * C1 * X)	0.00088	0.00088	0.00088
	(A1 * A2 * A3 * !C1 * X)	-0.00102	-0.00103	-0.00105
	(A1 * A2 * A3 * !C1 * X)	0.00075	0.00075	0.00073
	(A1 * A2 * !A3 * C1 * X)	-0.00106	-0.00106	-0.00105
	(A1 * A2 * !A3 * C1 * X)	0.00120	0.00121	0.00121
	(A1 * !A2 * C1 * X)	-0.00106	-0.00106	-0.00105
	(A1 * !A2 * C1 * X)	0.00120	0.00121	0.00121
	(!A1 * C1 * X)	-0.00106	-0.00106	-0.00105
	(!A1 * C1 * X)	0.00120	0.00121	0.00121
sky130_fd_sc_hs__a311o_2	(A1 * A2 * A3 * C1 * X)	-0.00126	-0.00127	-0.00126
	(A1 * A2 * A3 * C1 * X)	0.00088	0.00088	0.00088
	(A1 * A2 * A3 * !C1 * X)	-0.00121	-0.00122	-0.00123
	(A1 * A2 * A3 * !C1 * X)	0.00075	0.00076	0.00073
	(A1 * A2 * !A3 * C1 * X)	-0.00124	-0.00124	-0.00123
	(A1 * A2 * !A3 * C1 * X)	0.00121	0.00121	0.00121
	(A1 * !A2 * C1 * X)	-0.00124	-0.00124	-0.00123
	(A1 * !A2 * C1 * X)	0.00121	0.00121	0.00121
	(!A1 * C1 * X)	-0.00124	-0.00124	-0.00123
	(!A1 * C1 * X)	0.00121	0.00121	0.00121

sky130_fd_sc_hs__a311o_4	**(A1 * A2 * A3 * C1 * X)**	-0.00199	-0.00200	-0.00199
	(A1 * A2 * A3 * C1 * X)	0.00191	0.00191	0.00190
	(A1 * A2 * A3 * !C1 * X)	-0.00189	-0.00190	-0.00193
	(A1 * A2 * A3 * !C1 * X)	0.00162	0.00162	0.00160
	(A1 * A2 * !A3 * C1 * X)	-0.00196	-0.00197	-0.00195
	(A1 * A2 * !A3 * C1 * X)	0.00250	0.00253	0.00252
	(A1 * !A2 * C1 * X)	-0.00196	-0.00197	-0.00195
	(A1 * !A2 * C1 * X)	0.00250	0.00253	0.00252
	(!A1 * C1 * X)	-0.00196	-0.00197	-0.00195
	(!A1 * C1 * X)	0.00250	0.00253	0.00252

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)	0.00131	0.00131	0.00130
	(A1 * A2 * B1 * X)	-0.00065	-0.00065	-0.00064
	(A1 * A2 * A3 * !B1 * X)	0.00130	0.00131	0.00130
	(A1 * A2 * A3 * !B1 * X)	-0.00064	-0.00065	-0.00064
	(A1 * !A2 * B1 * X)	0.00131	0.00131	0.00130
	(A1 * !A2 * B1 * X)	-0.00065	-0.00065	-0.00065
	(!A1 * B1 * X)	0.00129	0.00131	0.00130
	(!A1 * B1 * X)	-0.00064	-0.00065	-0.00065
sky130_fd_sc_hs__a311o_2	(A1 * A2 * B1 * X)	0.00128	0.00131	0.00128
	(A1 * A2 * B1 * X)	-0.00068	-0.00070	-0.00068
	(A1 * A2 * A3 * !B1 * X)	0.00128	0.00131	0.00129
	(A1 * A2 * A3 * !B1 * X)	-0.00068	-0.00069	-0.00068
	(A1 * !A2 * B1 * X)	0.00128	0.00131	0.00128
	(A1 * !A2 * B1 * X)	-0.00068	-0.00070	-0.00068
	(!A1 * B1 * X)	0.00128	0.00131	0.00128
	(!A1 * B1 * X)	-0.00068	-0.00070	-0.00068
sky130_fd_sc_hs__a311o_4	(A1 * A2 * B1 * X)	0.00211	0.00215	0.00211
	(A1 * A2 * B1 * X)	-0.00146	-0.00148	-0.00145
	(A1 * A2 * A3 * !B1 * X)	0.00211	0.00210	0.00211
	(A1 * A2 * A3 * !B1 * X)	-0.00146	-0.00145	-0.00145
	(A1 * !A2 * B1 * X)	0.00211	0.00215	0.00211
	(A1 * !A2 * B1 * X)	-0.00146	-0.00148	-0.00146
	(!A1 * B1 * X)	0.00211	0.00215	0.00211
	(!A1 * B1 * X)	-0.00146	-0.00148	-0.00146

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)	-0.00126	-0.00127	-0.00130
	(A1 * A2 * B1 * X)	0.00068	0.00069	0.00066
	(A1 * A2 * A3 * !B1 * X)	-0.00113	-0.00114	-0.00127
	(A1 * A2 * A3 * !B1 * X)	0.00077	0.00077	0.00067
	(A1 * !A2 * B1 * X)	-0.00126	-0.00127	-0.00130
	(A1 * !A2 * B1 * X)	0.00068	0.00069	0.00066
	(!A1 * B1 * X)	-0.00126	-0.00127	-0.00130
	(!A1 * B1 * X)	0.00068	0.00069	0.00066
sky130_fd_sc_hs__a311o_2	(A1 * A2 * B1 * X)	-0.00124	-0.00124	-0.00128
	(A1 * A2 * B1 * X)	0.00073	0.00072	0.00070
	(A1 * A2 * A3 * !B1 * X)	-0.00112	-0.00112	-0.00125
	(A1 * A2 * A3 * !B1 * X)	0.00081	0.00080	0.00071
	(A1 * !A2 * B1 * X)	-0.00124	-0.00124	-0.00128
	(A1 * !A2 * B1 * X)	0.00073	0.00072	0.00070
	(!A1 * B1 * X)	-0.00124	-0.00124	-0.00128
	(!A1 * B1 * X)	0.00073	0.00072	0.00070
sky130_fd_sc_hs__a311o_4	(A1 * A2 * B1 * X)	-0.00197	-0.00198	-0.00209
	(A1 * A2 * B1 * X)	0.00159	0.00159	0.00149
	(A1 * A2 * A3 * !B1 * X)	-0.00171	-0.00172	-0.00203
	(A1 * A2 * A3 * !B1 * X)	0.00177	0.00177	0.00152
	(A1 * !A2 * B1 * X)	-0.00197	-0.00198	-0.00209
	(A1 * !A2 * B1 * X)	0.00160	0.00159	0.00149
	(!A1 * B1 * X)	-0.00197	-0.00198	-0.00209
	(!A1 * B1 * X)	0.00160	0.00159	0.00149

SKY130_FD_SC_HS__A31OIx

sky130_fd_sc_hs_tt_1.50v_25C.ccs
Cell Library: Process , Voltage
1.50, 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	0.00276	0.00283	0.00273	0.00280	0.39578
sky130_fd_sc_hs__a31oi_2	0.00526	0.00510	0.00544	0.00417	0.76447
sky130_fd_sc_hs__a31oi_4	0.01065	0.01005	0.01002	0.00843	1.33140

Leakage Information

Cell Name	Leakage(nW)		
	Min.	**Avg**	**Max.**
sky130_fd_sc_hs__a31oi_1	0.00000	0.01841	0.03718
sky130_fd_sc_hs__a31oi_2	0.00000	0.03479	0.07436
sky130_fd_sc_hs__a31oi_4	0.00000	0.06958	0.14872

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)	0.11817	1.13750	11.28360
	A2->Y (FR)	0.14996	1.19020	11.51720
	A3->Y (FR)	0.16584	1.20216	11.45210
	B1->Y (FR)	0.11231	1.14062	11.50880
sky130_fd_sc_hs__a31oi_2	A1->Y (FR)	0.10615	0.99079	11.42940
	A2->Y (FR)	0.12913	1.01272	11.41320
	A3->Y (FR)	0.14878	1.02106	11.23590
	B1->Y (FR)	0.08589	0.96024	11.43090
sky130_fd_sc_hs__a31oi_4	A1->Y (FR)	0.10548	0.87014	11.15400
	A2->Y (FR)	0.13337	0.88924	11.05320
	A3->Y (FR)	0.16252	0.93332	11.23090
	B1->Y (FR)	0.11874	0.88604	11.37820

Delay(ns) to Y falling :

Cell Name	Timing Arc(Dir)	Delay(ns)		
		First	Mid	Last
sky130_fd_sc_hs__a31oi_1	A1->Y (RF)	0.04625	0.55677	5.62961
	A2->Y (RF)	0.05539	0.53969	5.32169
	A3->Y (RF)	0.05856	0.49839	4.77120
	B1->Y (RF)	0.02279	0.37777	3.93531
sky130_fd_sc_hs__a31oi_2	A1->Y (RF)	0.04379	0.52421	6.09281
	A2->Y (RF)	0.05068	0.47549	5.36240
	A3->Y (RF)	0.05599	0.44560	4.87817
	B1->Y (RF)	0.02746	0.47889	5.78664
sky130_fd_sc_hs__a31oi_4	A1->Y (RF)	0.04581	0.48229	6.19085
	A2->Y (RF)	0.05578	0.44118	5.47527
	A3->Y (RF)	0.06098	0.39718	4.78559
	B1->Y (RF)	0.02536	0.39448	5.29335

Power Information

Internal switching power(pJ) to Y rising :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__a31oi_1	A1	0.00007	-0.00005	0.00017
	A1	0.00433	0.00418	0.00443
	A2	0.00058	0.00042	0.00063
	A2	0.00560	0.00543	0.00566
	A3	0.00080	0.00068	0.00090
	A3	0.00656	0.00644	0.00666
	B1	0.00035	0.00038	0.00148
	B1	0.00564	0.00563	0.00665
sky130_fd_sc_hs__a31oi_2	A1	0.00014	-0.00007	0.00039
	A1	0.00816	0.00795	0.00840
	A2	0.00105	0.00080	0.00125
	A2	0.01039	0.01017	0.01059
	A3	0.00182	0.00158	0.00201
	A3	0.01273	0.01250	0.01271
	B1	0.00264	0.00264	0.00383
	B1	0.01053	0.01052	0.01131
sky130_fd_sc_hs__a31oi_4	A1	-0.00090	-0.00133	-0.00022
	A1	0.01553	0.01511	0.01622
	A2	0.00158	0.00093	0.00194
	A2	0.02069	0.01995	0.02110
	A3	0.00339	0.00289	0.00382
	A3	0.02541	0.02490	0.02582
	B1	0.00474	0.00478	0.00729
	B1	0.02113	0.02079	0.02360

Internal switching power(pJ) to Y falling :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__a31oi_1	A1	0.00549	0.00539	0.00614
	A1	0.00130	0.00119	0.00154
	A2	0.00630	0.00616	0.00661
	A2	0.00129	0.00115	0.00138
	A3	0.00704	0.00691	0.00728
	A3	0.00123	0.00109	0.00131
	B1	0.00499	0.00504	0.00553
	B1	-0.00003	-0.00008	0.00042
sky130_fd_sc_hs__a31oi_2	A1	0.01001	0.00975	0.01040
	A1	0.00217	0.00185	0.00259
	A2	0.01144	0.01123	0.01191
	A2	0.00214	0.00184	0.00233
	A3	0.01316	0.01289	0.01327
	A3	0.00217	0.00185	0.00231
	B1	0.00713	0.00722	0.00823
	B1	-0.00104	-0.00114	-0.00048
sky130_fd_sc_hs__a31oi_4	A1	0.02025	0.01955	0.02275
	A1	0.00415	0.00341	0.00493
	A2	0.02310	0.02242	0.02340
	A2	0.00405	0.00335	0.00440
	A3	0.02626	0.02561	0.02785
	A3	0.00400	0.00332	0.00429
	B1	0.01486	0.01490	0.01741
	B1	-0.00216	-0.00220	-0.00087

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)**	0.00121	0.00116	0.00114
	(A2 * A3 * B1 * !Y)	-0.00123	-0.00134	-0.00132
	(A2 * !A3 * B1 * !Y)	0.00107	0.00108	0.00107
	(A2 * !A3 * B1 * !Y)	-0.00136	-0.00137	-0.00136
	(A2 * !A3 * !B1 * Y)	0.00039	0.00039	0.00036
	(A2 * !A3 * !B1 * Y)	-0.00157	-0.00157	-0.00163
	(!A2 * B1 * !Y)	0.00109	0.00110	0.00109
	(!A2 * B1 * !Y)	-0.00135	-0.00137	-0.00136
	(!A2 * !B1 * Y)	0.00040	0.00040	0.00038
	(!A2 * !B1 * Y)	-0.00161	-0.00161	-0.00164
sky130_fd_sc_hs__a31oi_2	**(A2 * A3 * B1 * !Y)**	0.00240	0.00234	0.00231
	(A2 * A3 * B1 * !Y)	-0.00251	-0.00272	-0.00271
	(A2 * !A3 * B1 * !Y)	0.00215	0.00216	0.00215
	(A2 * !A3 * B1 * !Y)	-0.00279	-0.00279	-0.00277
	(A2 * !A3 * !B1 * Y)	0.00076	0.00077	0.00070
	(A2 * !A3 * !B1 * Y)	-0.00319	-0.00323	-0.00336
	(!A2 * B1 * !Y)	0.00218	0.00219	0.00218
	(!A2 * B1 * !Y)	-0.00277	-0.00278	-0.00277
	(!A2 * !B1 * Y)	0.00074	0.00074	0.00071
	(!A2 * !B1 * Y)	-0.00330	-0.00334	-0.00338
sky130_fd_sc_hs__a31oi_4	**(A2 * A3 * B1 * !Y)**	0.00500	0.00481	0.00478
	(A2 * A3 * B1 * !Y)	-0.00495	-0.00535	-0.00533
	(A2 * !A3 * B1 * !Y)	0.00443	0.00447	0.00445
	(A2 * !A3 * B1 * !Y)	-0.00546	-0.00549	-0.00547
	(A2 * !A3 * !B1 * Y)	0.00162	0.00163	0.00147
	(A2 * !A3 * !B1 * Y)	-0.00638	-0.00641	-0.00672
	(!A2 * B1 * !Y)	0.00453	0.00456	0.00455
	(!A2 * B1 * !Y)	-0.00546	-0.00548	-0.00547
	(!A2 * !B1 * Y)	0.00164	0.00163	0.00156
	(!A2 * !B1 * Y)	-0.00659	-0.00661	-0.00676

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)	-0.00115	-0.00116	-0.00114
	(A2 * A3 * B1 * !Y)	0.00133	0.00134	0.00132
	(A2 * !A3 * B1 * !Y)	-0.00097	-0.00107	-0.00107
	(A2 * !A3 * B1 * !Y)	0.00136	0.00138	0.00136
	(A2 * !A3 * !B1 * Y)	-0.00036	-0.00036	-0.00036
	(A2 * !A3 * !B1 * Y)	0.00163	0.00165	0.00164
	(!A2 * B1 * !Y)	-0.00105	-0.00110	-0.00109
	(!A2 * B1 * !Y)	0.00135	0.00137	0.00136
	(!A2 * !B1 * Y)	-0.00037	-0.00037	-0.00037
	(!A2 * !B1 * Y)	0.00163	0.00165	0.00164
sky130_fd_sc_hs__a31oi_2	(A2 * A3 * B1 * !Y)	-0.00230	-0.00231	-0.00230
	(A2 * A3 * B1 * !Y)	0.00270	0.00272	0.00271
	(A2 * !A3 * B1 * !Y)	-0.00193	-0.00216	-0.00215
	(A2 * !A3 * B1 * !Y)	0.00279	0.00281	0.00278
	(A2 * !A3 * !B1 * Y)	-0.00068	-0.00068	-0.00067
	(A2 * !A3 * !B1 * Y)	0.00339	0.00340	0.00338
	(!A2 * B1 * !Y)	-0.00210	-0.00219	-0.00218
	(!A2 * B1 * !Y)	0.00279	0.00281	0.00278
	(!A2 * !B1 * Y)	-0.00069	-0.00069	-0.00069
	(!A2 * !B1 * Y)	0.00339	0.00340	0.00339

sky130_fd_sc_hs__a31oi_4	(A2 * A3 * B1 * !Y)	-0.00478	-0.00478	-0.00477
	(A2 * A3 * B1 * !Y)	0.00534	0.00535	0.00533
	(A2 * !A3 * B1 * !Y)	-0.00400	-0.00447	-0.00445
	(A2 * !A3 * B1 * !Y)	0.00550	0.00555	0.00549
	(A2 * !A3 * !B1 * Y)	-0.00145	-0.00147	-0.00146
	(A2 * !A3 * !B1 * Y)	0.00673	0.00681	0.00677
	(!A2 * B1 * !Y)	-0.00436	-0.00456	-0.00455
	(!A2 * B1 * !Y)	0.00546	0.00555	0.00549
	(!A2 * !B1 * Y)	-0.00150	-0.00152	-0.00151
	(!A2 * !B1 * Y)	0.00674	0.00682	0.00677

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)	0.00129	0.00124	0.00122
	(A1 * A3 * B1 * !Y)	-0.00123	-0.00133	-0.00132
	(A1 * !A3 * B1 * !Y)	0.00116	0.00117	0.00116
	(A1 * !A3 * B1 * !Y)	-0.00136	-0.00136	-0.00136
	(A1 * !A3 * !B1 * Y)	0.00046	0.00046	0.00046
	(A1 * !A3 * !B1 * Y)	-0.00151	-0.00152	-0.00150
	(!A1 * A3 * B1 * !Y)	0.00117	0.00118	0.00116
	(!A1 * A3 * B1 * !Y)	-0.00136	-0.00137	-0.00136
	(!A1 * A3 * !B1 * Y)	0.00101	0.00102	0.00102
	(!A1 * A3 * !B1 * Y)	-0.00150	-0.00151	-0.00151
	(!A1 * !A3 * B1 * !Y)	0.00073	0.00074	0.00073
	(!A1 * !A3 * B1 * !Y)	-0.00135	-0.00137	-0.00136
	(!A1 * !A3 * !B1 * Y)	0.00053	0.00054	0.00054
	(!A1 * !A3 * !B1 * Y)	-0.00151	-0.00152	-0.00152

sky130_fd_sc_hs__a31oi_2	**(A1 * A3 * B1 * !Y)**	0.00223	0.00216	0.00213
	(A1 * A3 * B1 * !Y)	-0.00254	-0.00274	-0.00272
	(A1 * !A3 * B1 * !Y)	0.00202	0.00204	0.00202
	(A1 * !A3 * B1 * !Y)	-0.00280	-0.00280	-0.00279
	(A1 * !A3 * !B1 * Y)	0.00091	0.00091	0.00091
	(A1 * !A3 * !B1 * Y)	-0.00280	-0.00281	-0.00279
	(!A1 * A3 * B1 * !Y)	0.00201	0.00202	0.00201
	(!A1 * A3 * B1 * !Y)	-0.00280	-0.00280	-0.00279
	(!A1 * A3 * !B1 * Y)	0.00201	0.00202	0.00201
	(!A1 * A3 * !B1 * Y)	-0.00281	-0.00281	-0.00280
	(!A1 * !A3 * B1 * !Y)	0.00116	0.00117	0.00116
	(!A1 * !A3 * B1 * !Y)	-0.00279	-0.00280	-0.00279
	(!A1 * !A3 * !B1 * Y)	0.00105	0.00106	0.00105
	(!A1 * !A3 * !B1 * Y)	-0.00283	-0.00284	-0.00283
sky130_fd_sc_hs__a31oi_4	**(A1 * A3 * B1 * !Y)**	0.00476	0.00460	0.00453
	(A1 * A3 * B1 * !Y)	-0.00503	-0.00549	-0.00545
	(A1 * !A3 * B1 * !Y)	0.00420	0.00423	0.00422
	(A1 * !A3 * B1 * !Y)	-0.00558	-0.00562	-0.00561
	(A1 * !A3 * !B1 * Y)	0.00196	0.00198	0.00199
	(A1 * !A3 * !B1 * Y)	-0.00564	-0.00568	-0.00563
	(!A1 * A3 * B1 * !Y)	0.00432	0.00437	0.00433
	(!A1 * A3 * B1 * !Y)	-0.00558	-0.00563	-0.00560
	(!A1 * A3 * !B1 * Y)	0.00427	0.00431	0.00429
	(!A1 * A3 * !B1 * Y)	-0.00563	-0.00566	-0.00564
	(!A1 * !A3 * B1 * !Y)	0.00255	0.00257	0.00255
	(!A1 * !A3 * B1 * !Y)	-0.00559	-0.00564	-0.00561
	(!A1 * !A3 * !B1 * Y)	0.00230	0.00232	0.00231
	(!A1 * !A3 * !B1 * Y)	-0.00568	-0.00571	-0.00569

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)	-0.00123	-0.00123	-0.00122
	(A1 * A3 * B1 * !Y)	0.00133	0.00134	0.00132
	(A1 * !A3 * B1 * !Y)	-0.00113	-0.00117	-0.00116
	(A1 * !A3 * B1 * !Y)	0.00137	0.00138	0.00136
	(A1 * !A3 * !B1 * Y)	-0.00043	-0.00044	-0.00045
	(A1 * !A3 * !B1 * Y)	0.00154	0.00155	0.00152
	(!A1 * A3 * B1 * !Y)	-0.00113	-0.00117	-0.00116
	(!A1 * A3 * B1 * !Y)	0.00136	0.00137	0.00136
	(!A1 * A3 * !B1 * Y)	-0.00094	-0.00102	-0.00102
	(!A1 * A3 * !B1 * Y)	0.00155	0.00153	0.00151
	(!A1 * !A3 * B1 * !Y)	-0.00073	-0.00074	-0.00073
	(!A1 * !A3 * B1 * !Y)	0.00136	0.00138	0.00136
	(!A1 * !A3 * !B1 * Y)	-0.00053	-0.00054	-0.00054
	(!A1 * !A3 * !B1 * Y)	0.00157	0.00157	0.00153
sky130_fd_sc_hs__a31oi_2	(A1 * A3 * B1 * !Y)	-0.00213	-0.00214	-0.00213
	(A1 * A3 * B1 * !Y)	0.00273	0.00274	0.00272
	(A1 * !A3 * B1 * !Y)	-0.00194	-0.00203	-0.00202
	(A1 * !A3 * B1 * !Y)	0.00281	0.00280	0.00280
	(A1 * !A3 * !B1 * Y)	-0.00085	-0.00087	-0.00087
	(A1 * !A3 * !B1 * Y)	0.00288	0.00293	0.00283
	(!A1 * A3 * B1 * !Y)	-0.00193	-0.00202	-0.00201
	(!A1 * A3 * B1 * !Y)	0.00280	0.00282	0.00280
	(!A1 * A3 * !B1 * Y)	-0.00186	-0.00202	-0.00201
	(!A1 * A3 * !B1 * Y)	0.00288	0.00284	0.00281
	(!A1 * !A3 * B1 * !Y)	-0.00116	-0.00117	-0.00116
	(!A1 * !A3 * B1 * !Y)	0.00281	0.00284	0.00280
	(!A1 * !A3 * !B1 * Y)	-0.00105	-0.00106	-0.00105
	(!A1 * !A3 * !B1 * Y)	0.00297	0.00299	0.00286

sky130_fd_sc_hs__a31oi_4	**(A1 * A3 * B1 * !Y)**	-0.00452	-0.00454	-0.00452
	(A1 * A3 * B1 * !Y)	0.00542	0.00549	0.00545
	(A1 * !A3 * B1 * !Y)	-0.00406	-0.00423	-0.00422
	(A1 * !A3 * B1 * !Y)	0.00564	0.00566	0.00562
	(A1 * !A3 * !B1 * Y)	-0.00185	-0.00189	-0.00191
	(A1 * !A3 * !B1 * Y)	0.00581	0.00591	0.00571
	(!A1 * A3 * B1 * !Y)	-0.00412	-0.00437	-0.00433
	(!A1 * A3 * B1 * !Y)	0.00558	0.00568	0.00562
	(!A1 * A3 * !B1 * Y)	-0.00391	-0.00431	-0.00429
	(!A1 * A3 * !B1 * Y)	0.00583	0.00572	0.00566
	(!A1 * !A3 * B1 * !Y)	-0.00255	-0.00257	-0.00255
	(!A1 * !A3 * B1 * !Y)	0.00565	0.00569	0.00563
	(!A1 * !A3 * !B1 * Y)	-0.00230	-0.00232	-0.00231
	(!A1 * !A3 * !B1 * Y)	0.00596	0.00601	0.00575

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)**	0.00132	0.00129	0.00127
	(A1 * A2 * B1 * !Y)	-0.00127	-0.00137	-0.00137
	(A1 * !A2 * !B1 * Y)	0.00112	0.00113	0.00112
	(A1 * !A2 * !B1 * Y)	-0.00149	-0.00150	-0.00149
	(!A2 * B1 * !Y)	0.00120	0.00121	0.00121
	(!A2 * B1 * !Y)	-0.00140	-0.00140	-0.00140
	(!A1 * A2 * B1 * !Y)	0.00120	0.00120	0.00119
	(!A1 * A2 * B1 * !Y)	-0.00140	-0.00140	-0.00140
	(!A1 * A2 * !B1 * Y)	0.00110	0.00111	0.00110
	(!A1 * A2 * !B1 * Y)	-0.00149	-0.00150	-0.00149
	(!A1 * !A2 * !B1 * Y)	0.00111	0.00112	0.00111
	(!A1 * !A2 * !B1 * Y)	-0.00149	-0.00149	-0.00149

sky130_fd_sc_hs__a31oi_2	**(A1 * A2 * B1 * !Y)**	0.00246	0.00239	0.00236
	(A1 * A2 * B1 * !Y)	-0.00251	-0.00272	-0.00269
	(A1 * !A2 * !B1 * Y)	0.00219	0.00220	0.00219
	(A1 * !A2 * !B1 * Y)	-0.00277	-0.00278	-0.00277
	(!A2 * B1 * !Y)	0.00224	0.00226	0.00224
	(!A2 * B1 * !Y)	-0.00276	-0.00278	-0.00276
	(!A1 * A2 * B1 * !Y)	0.00217	0.00216	0.00216
	(!A1 * A2 * B1 * !Y)	-0.00277	-0.00276	-0.00276
	(!A1 * A2 * !B1 * Y)	0.00217	0.00218	0.00216
	(!A1 * A2 * !B1 * Y)	-0.00278	-0.00279	-0.00277
	(!A1 * !A2 * !B1 * Y)	0.00220	0.00222	0.00219
	(!A1 * !A2 * !B1 * Y)	-0.00277	-0.00278	-0.00277
sky130_fd_sc_hs__a31oi_4	**(A1 * A2 * B1 * !Y)**	0.00472	0.00457	0.00450
	(A1 * A2 * B1 * !Y)	-0.00504	-0.00548	-0.00543
	(A1 * !A2 * !B1 * Y)	0.00420	0.00423	0.00422
	(A1 * !A2 * !B1 * Y)	-0.00557	-0.00560	-0.00559
	(!A2 * B1 * !Y)	0.00422	0.00423	0.00423
	(!A2 * B1 * !Y)	-0.00558	-0.00558	-0.00558
	(!A1 * A2 * B1 * !Y)	0.00414	0.00417	0.00412
	(!A1 * A2 * B1 * !Y)	-0.00559	-0.00561	-0.00558
	(!A1 * A2 * !B1 * Y)	0.00413	0.00414	0.00412
	(!A1 * A2 * !B1 * Y)	-0.00560	-0.00561	-0.00558
	(!A1 * !A2 * !B1 * Y)	0.00420	0.00420	0.00421
	(!A1 * !A2 * !B1 * Y)	-0.00557	-0.00557	-0.00559

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)**	-0.00127	-0.00127	-0.00127
	(A1 * A2 * B1 * !Y)	0.00137	0.00137	0.00137
	(A1 * !A2 * !B1 * Y)	-0.00108	-0.00113	-0.00112
	(A1 * !A2 * !B1 * Y)	0.00150	0.00152	0.00149
	(!A2 * B1 * !Y)	-0.00118	-0.00121	-0.00121
	(!A2 * B1 * !Y)	0.00141	0.00141	0.00140
	(!A1 * A2 * B1 * !Y)	-0.00112	-0.00120	-0.00119
	(!A1 * A2 * B1 * !Y)	0.00140	0.00140	0.00140
	(!A1 * A2 * !B1 * Y)	-0.00103	-0.00111	-0.00110
	(!A1 * A2 * !B1 * Y)	0.00149	0.00150	0.00149
	(!A1 * !A2 * !B1 * Y)	-0.00108	-0.00112	-0.00111
	(!A1 * !A2 * !B1 * Y)	0.00150	0.00152	0.00149
sky130_fd_sc_hs__a31oi_2	**(A1 * A2 * B1 * !Y)**	-0.00235	-0.00236	-0.00235
	(A1 * A2 * B1 * !Y)	0.00268	0.00272	0.00269
	(A1 * !A2 * !B1 * Y)	-0.00210	-0.00220	-0.00219
	(A1 * !A2 * !B1 * Y)	0.00277	0.00280	0.00278
	(!A2 * B1 * !Y)	-0.00218	-0.00225	-0.00224
	(!A2 * B1 * !Y)	0.00276	0.00279	0.00277
	(!A1 * A2 * B1 * !Y)	-0.00203	-0.00216	-0.00216
	(!A1 * A2 * B1 * !Y)	0.00277	0.00278	0.00277
	(!A1 * A2 * !B1 * Y)	-0.00202	-0.00218	-0.00216
	(!A1 * A2 * !B1 * Y)	0.00278	0.00279	0.00278
	(!A1 * !A2 * !B1 * Y)	-0.00212	-0.00221	-0.00219
	(!A1 * !A2 * !B1 * Y)	0.00277	0.00280	0.00278

sky130_fd_sc_hs__a31oi_4	(A1 * A2 * B1 * !Y)	-0.00448	-0.00453	-0.00449
	(A1 * A2 * B1 * !Y)	0.00541	0.00552	0.00543
	(A1 * !A2 * !B1 * Y)	-0.00402	-0.00423	-0.00422
	(A1 * !A2 * !B1 * Y)	0.00558	0.00566	0.00560
	(!A2 * B1 * !Y)	-0.00406	-0.00423	-0.00423
	(!A2 * B1 * !Y)	0.00558	0.00562	0.00560
	(!A1 * A2 * B1 * !Y)	-0.00385	-0.00417	-0.00412
	(!A1 * A2 * B1 * !Y)	0.00559	0.00562	0.00560
	(!A1 * A2 * !B1 * Y)	-0.00384	-0.00414	-0.00412
	(!A1 * A2 * !B1 * Y)	0.00560	0.00563	0.00560
	(!A1 * !A2 * !B1 * Y)	-0.00403	-0.00420	-0.00421
	(!A1 * !A2 * !B1 * Y)	0.00558	0.00566	0.00560

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)	0.00139	0.00139	0.00139
	(A1 * A2 * A3 * !Y)	-0.00069	-0.00069	-0.00069
sky130_fd_sc_hs__a31oi_2	(A1 * A2 * A3 * !Y)	0.00148	0.00151	0.00148
	(A1 * A2 * A3 * !Y)	-0.00136	-0.00139	-0.00137
sky130_fd_sc_hs__a31oi_4	(A1 * A2 * A3 * !Y)	0.00309	0.00311	0.00309
	(A1 * A2 * A3 * !Y)	-0.00280	-0.00282	-0.00280

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)	-0.00128	-0.00129	-0.00138
	(A1 * A2 * A3 * !Y)	0.00079	0.00079	0.00071
sky130_fd_sc_hs__a31oi_2	(A1 * A2 * A3 * !Y)	-0.00121	-0.00123	-0.00145
	(A1 * A2 * A3 * !Y)	0.00161	0.00161	0.00142
sky130_fd_sc_hs__a31oi_4	(A1 * A2 * A3 * !Y)	-0.00256	-0.00258	-0.00303
	(A1 * A2 * A3 * !Y)	0.00324	0.00322	0.00291

SKY130_FD_SC_HS__A31Ox

sky130_fd_sc_hs_tt_1.50v_25C.ccs
Cell Library: Process , Voltage 1.50, 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	0.00246	0.00243	0.00243	0.00265	0.84947
sky130_fd_sc_hs__a31o_2	0.00274	0.00264	0.00265	0.00258	1.66177
sky130_fd_sc_hs__a31o_4	0.00483	0.00468	0.00466	0.00483	3.26646

Leakage Information

Cell Name	Leakage(nW)		
	Min.	**Avg**	**Max.**
sky130_fd_sc_hs__a31o_1	0.00000	0.05732	0.08613
sky130_fd_sc_hs__a31o_2	0.00000	0.07200	0.09078
sky130_fd_sc_hs__a31o_4	0.00000	0.14589	0.18157

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)	0.11404	0.75701	6.80429
	A2->X (RR)	0.12196	0.77029	6.92066
	A3->X (RR)	0.12621	0.75782	6.89714
	B1->X (RR)	0.07598	0.69402	6.77108
sky130_fd_sc_hs__a31o_2	A1->X (RR)	0.11835	0.67700	6.90580
	A2->X (RR)	0.12602	0.68286	6.98951
	A3->X (RR)	0.13029	0.66579	6.95164
	B1->X (RR)	0.07216	0.60054	6.81147
sky130_fd_sc_hs__a31o_4	A1->X (RR)	0.13431	0.62986	7.04088
	A2->X (RR)	0.14295	0.62803	7.10938
	A3->X (RR)	0.14851	0.61061	7.06869
	B1->X (RR)	0.07210	0.52271	6.89112

Delay(ns) to X falling :

Cell Name	Timing Arc(Dir)	Delay(ns)		
		First	Mid	Last
sky130_fd_sc_hs__a31o_1	A1->X (FF)	0.17542	0.70202	4.61170
	A2->X (FF)	0.20511	0.74355	4.75082
	A3->X (FF)	0.22306	0.76928	4.84995
	B1->X (FF)	0.19142	0.72405	4.62422
sky130_fd_sc_hs__a31o_2	A1->X (FF)	0.23381	0.76172	4.92404
	A2->X (FF)	0.27140	0.80904	5.06526
	A3->X (FF)	0.28523	0.82733	5.14402
	B1->X (FF)	0.25149	0.78897	4.93662
sky130_fd_sc_hs__a31o_4	A1->X (FF)	0.22878	0.72641	4.97435
	A2->X (FF)	0.25825	0.76562	5.09605
	A3->X (FF)	0.28622	0.80114	5.21694
	B1->X (FF)	0.24521	0.74933	4.97749

Power Information

Internal switching power(pJ) to X rising :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__a31o_1	A1	0.00717	0.00709	0.01046
	A1	0.00342	0.00335	0.00674
	A2	0.00778	0.00768	0.01000
	A2	0.00343	0.00333	0.00566
	A3	0.00845	0.00832	0.01014
	A3	0.00341	0.00327	0.00511
	B1	0.00687	0.00687	0.01189
	B1	0.00233	0.00235	0.00859
sky130_fd_sc_hs__a31o_2	A1	0.00944	0.00952	0.01263
	A1	0.00538	0.00545	0.00856
	A2	0.01013	0.01023	0.01237
	A2	0.00537	0.00547	0.00761
	A3	0.01091	0.01099	0.01267
	A3	0.00536	0.00545	0.00712
	B1	0.00910	0.00929	0.01387
	B1	0.00428	0.00448	0.01013
sky130_fd_sc_hs__a31o_4	A1	0.01820	0.01851	0.02523
	A1	0.01072	0.01158	0.01790
	A2	0.01953	0.01991	0.02454
	A2	0.01072	0.01111	0.01595
	A3	0.02094	0.02137	0.02535
	A3	0.01070	0.01116	0.01530
	B1	0.01635	0.01680	0.02759
	B1	0.00771	0.00820	0.02297

Internal switching power(pJ) to X falling :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__a31o_1	A1	0.00250	0.00250	0.00512
	A1	0.00630	0.00629	0.00870
	A2	0.00289	0.00293	0.00535
	A2	0.00724	0.00728	0.00950
	A3	0.00308	0.00306	0.00532
	A3	0.00806	0.00805	0.01013
	B1	0.00252	0.00285	0.00926
	B1	0.00721	0.00746	0.01289
sky130_fd_sc_hs__a31o_2	A1	0.00424	0.00425	0.00728
	A1	0.00837	0.00857	0.01091
	A2	0.00473	0.00496	0.00768
	A2	0.00948	0.00970	0.01192
	A3	0.00499	0.00503	0.00758
	A3	0.01046	0.01063	0.01271
	B1	0.00454	0.00501	0.01138
	B1	0.00961	0.01014	0.01532
sky130_fd_sc_hs__a31o_4	A1	0.00872	0.00913	0.01379
	A1	0.01634	0.01680	0.02137
	A2	0.00952	0.01004	0.01608
	A2	0.01837	0.01887	0.02309
	A3	0.01034	0.01102	0.01592
	A3	0.02045	0.02110	0.02510
	B1	0.01036	0.01129	0.02199
	B1	0.01870	0.01972	0.03029

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)**	0.00105	0.00098	0.00096
	(A2 * A3 * B1 * X)	-0.00112	-0.00124	-0.00124
	(A2 * !A3 * B1 * X)	0.00089	0.00090	0.00089
	(A2 * !A3 * B1 * X)	-0.00127	-0.00129	-0.00128
	(A2 * !A3 * !B1 * !X)	0.00031	0.00031	0.00029
	(A2 * !A3 * !B1 * !X)	-0.00145	-0.00146	-0.00151
	(!A2 * B1 * X)	0.00091	0.00092	0.00091
	(!A2 * B1 * X)	-0.00128	-0.00129	-0.00128
	(!A2 * !B1 * !X)	0.00032	0.00032	0.00030
	(!A2 * !B1 * !X)	-0.00149	-0.00149	-0.00151
sky130_fd_sc_hs__a31o_2	**(A2 * A3 * B1 * X)**	0.00129	0.00123	0.00121
	(A2 * A3 * B1 * X)	-0.00108	-0.00120	-0.00120
	(A2 * !A3 * B1 * X)	0.00112	0.00113	0.00112
	(A2 * !A3 * B1 * X)	-0.00123	-0.00124	-0.00123
	(A2 * !A3 * !B1 * !X)	0.00040	0.00040	0.00037
	(A2 * !A3 * !B1 * !X)	-0.00149	-0.00150	-0.00156
	(!A2 * B1 * X)	0.00115	0.00115	0.00115
	(!A2 * B1 * X)	-0.00123	-0.00123	-0.00123
	(!A2 * !B1 * !X)	0.00041	0.00041	0.00039
	(!A2 * !B1 * !X)	-0.00153	-0.00154	-0.00156
sky130_fd_sc_hs__a31o_4	**(A2 * A3 * B1 * X)**	0.00217	0.00208	0.00205
	(A2 * A3 * B1 * X)	-0.00226	-0.00251	-0.00249
	(A2 * !A3 * B1 * X)	0.00189	0.00191	0.00190
	(A2 * !A3 * B1 * X)	-0.00256	-0.00258	-0.00256
	(A2 * !A3 * !B1 * !X)	0.00075	0.00075	0.00067
	(A2 * !A3 * !B1 * !X)	-0.00293	-0.00294	-0.00306
	(!A2 * B1 * X)	0.00195	0.00196	0.00195
	(!A2 * B1 * X)	-0.00257	-0.00258	-0.00256
	(!A2 * !B1 * !X)	0.00073	0.00073	0.00070
	(!A2 * !B1 * !X)	-0.00302	-0.00303	-0.00308

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)	-0.00096	-0.00096	-0.00095
	(A2 * A3 * B1 * X)	0.00125	0.00124	0.00124
	(A2 * !A3 * B1 * X)	-0.00082	-0.00089	-0.00089
	(A2 * !A3 * B1 * X)	0.00129	0.00129	0.00128
	(A2 * !A3 * !B1 * !X)	-0.00028	-0.00029	-0.00029
	(A2 * !A3 * !B1 * !X)	0.00151	0.00152	0.00151
	(!A2 * B1 * X)	-0.00088	-0.00091	-0.00091
	(!A2 * B1 * X)	0.00129	0.00129	0.00128
	(!A2 * !B1 * !X)	-0.00029	-0.00030	-0.00029
	(!A2 * !B1 * !X)	0.00151	0.00152	0.00152
sky130_fd_sc_hs__a31o_2	(A2 * A3 * B1 * X)	-0.00121	-0.00121	-0.00121
	(A2 * A3 * B1 * X)	0.00120	0.00120	0.00120
	(A2 * !A3 * B1 * X)	-0.00105	-0.00113	-0.00112
	(A2 * !A3 * B1 * X)	0.00124	0.00124	0.00123
	(A2 * !A3 * !B1 * !X)	-0.00036	-0.00037	-0.00037
	(A2 * !A3 * !B1 * !X)	0.00156	0.00157	0.00157
	(!A2 * B1 * X)	-0.00112	-0.00115	-0.00115
	(!A2 * B1 * X)	0.00124	0.00124	0.00123
	(!A2 * !B1 * !X)	-0.00037	-0.00038	-0.00037
	(!A2 * !B1 * !X)	0.00156	0.00157	0.00157

sky130_fd_sc_hs__a31o_4	**(A2 * A3 * B1 * X)**	-0.00205	-0.00205	-0.00204
	(A2 * A3 * B1 * X)	0.00250	0.00251	0.00249
	(A2 * !A3 * B1 * X)	-0.00177	-0.00191	-0.00190
	(A2 * !A3 * B1 * X)	0.00259	0.00260	0.00257
	(A2 * !A3 * !B1 * !X)	-0.00065	-0.00066	-0.00065
	(A2 * !A3 * !B1 * !X)	0.00308	0.00309	0.00309
	(!A2 * B1 * X)	-0.00189	-0.00196	-0.00195
	(!A2 * B1 * X)	0.00259	0.00259	0.00257
	(!A2 * !B1 * !X)	-0.00067	-0.00068	-0.00067
	(!A2 * !B1 * !X)	0.00308	0.00309	0.00309

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)**	0.00103	0.00096	0.00094
	(A1 * A3 * B1 * X)	-0.00112	-0.00124	-0.00124
	(A1 * !A3 * B1 * X)	0.00088	0.00088	0.00089
	(A1 * !A3 * B1 * X)	-0.00128	-0.00127	-0.00127
	(A1 * !A3 * !B1 * !X)	0.00037	0.00037	0.00038
	(A1 * !A3 * !B1 * !X)	-0.00132	-0.00132	-0.00131
	(!A1 * A3 * B1 * X)	0.00089	0.00090	0.00089
	(!A1 * A3 * B1 * X)	-0.00127	-0.00128	-0.00127
	(!A1 * A3 * !B1 * !X)	0.00085	0.00085	0.00085
	(!A1 * A3 * !B1 * !X)	-0.00132	-0.00132	-0.00132
	(!A1 * !A3 * B1 * X)	0.00052	0.00052	0.00052
	(!A1 * !A3 * B1 * X)	-0.00127	-0.00128	-0.00127
	(!A1 * !A3 * !B1 * !X)	0.00043	0.00044	0.00044
	(!A1 * !A3 * !B1 * !X)	-0.00132	-0.00133	-0.00132

sky130_fd_sc_hs__a31o_2	**(A1 * A3 * B1 * X)**	0.00124	0.00118	0.00116
	(A1 * A3 * B1 * X)	-0.00108	-0.00120	-0.00120
	(A1 * !A3 * B1 * X)	0.00109	0.00111	0.00110
	(A1 * !A3 * B1 * X)	-0.00122	-0.00124	-0.00123
	(A1 * !A3 * !B1 * !X)	0.00047	0.00046	0.00047
	(A1 * !A3 * !B1 * !X)	-0.00132	-0.00132	-0.00131
	(!A1 * A3 * B1 * X)	0.00111	0.00111	0.00111
	(!A1 * A3 * B1 * X)	-0.00123	-0.00123	-0.00123
	(!A1 * A3 * !B1 * !X)	0.00101	0.00103	0.00102
	(!A1 * A3 * !B1 * !X)	-0.00131	-0.00133	-0.00132
	(!A1 * !A3 * B1 * X)	0.00068	0.00069	0.00068
	(!A1 * !A3 * B1 * X)	-0.00122	-0.00124	-0.00123
	(!A1 * !A3 * !B1 * !X)	0.00054	0.00054	0.00054
	(!A1 * !A3 * !B1 * !X)	-0.00133	-0.00133	-0.00133
sky130_fd_sc_hs__a31o_4	**(A1 * A3 * B1 * X)**	0.00215	0.00206	0.00202
	(A1 * A3 * B1 * X)	-0.00227	-0.00253	-0.00251
	(A1 * !A3 * B1 * X)	0.00190	0.00192	0.00190
	(A1 * !A3 * B1 * X)	-0.00258	-0.00260	-0.00259
	(A1 * !A3 * !B1 * !X)	0.00094	0.00094	0.00094
	(A1 * !A3 * !B1 * !X)	-0.00261	-0.00261	-0.00260
	(!A1 * A3 * B1 * X)	0.00193	0.00194	0.00193
	(!A1 * A3 * B1 * X)	-0.00259	-0.00260	-0.00259
	(!A1 * A3 * !B1 * !X)	0.00192	0.00194	0.00192
	(!A1 * A3 * !B1 * !X)	-0.00259	-0.00261	-0.00259
	(!A1 * !A3 * B1 * X)	0.00118	0.00118	0.00118
	(!A1 * !A3 * B1 * X)	-0.00260	-0.00260	-0.00259
	(!A1 * !A3 * !B1 * !X)	0.00108	0.00109	0.00108
	(!A1 * !A3 * !B1 * !X)	-0.00262	-0.00263	-0.00262

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)	-0.00094	-0.00094	-0.00094
	(A1 * A3 * B1 * X)	0.00124	0.00124	0.00124
	(A1 * !A3 * B1 * X)	-0.00086	-0.00088	-0.00089
	(A1 * !A3 * B1 * X)	0.00128	0.00129	0.00128
	(A1 * !A3 * !B1 * !X)	-0.00035	-0.00036	-0.00036
	(A1 * !A3 * !B1 * !X)	0.00135	0.00137	0.00133
	(!A1 * A3 * B1 * X)	-0.00086	-0.00090	-0.00089
	(!A1 * A3 * B1 * X)	0.00127	0.00129	0.00128
	(!A1 * A3 * !B1 * !X)	-0.00078	-0.00085	-0.00085
	(!A1 * A3 * !B1 * !X)	0.00136	0.00134	0.00132
	(!A1 * !A3 * B1 * X)	-0.00052	-0.00052	-0.00052
	(!A1 * !A3 * B1 * X)	0.00127	0.00129	0.00128
	(!A1 * !A3 * !B1 * !X)	-0.00043	-0.00044	-0.00044
	(!A1 * !A3 * !B1 * !X)	0.00137	0.00140	0.00134
sky130_fd_sc_hs__a31o_2	(A1 * A3 * B1 * X)	-0.00116	-0.00117	-0.00116
	(A1 * A3 * B1 * X)	0.00120	0.00122	0.00120
	(A1 * !A3 * B1 * X)	-0.00107	-0.00111	-0.00110
	(A1 * !A3 * B1 * X)	0.00124	0.00124	0.00123
	(A1 * !A3 * !B1 * !X)	-0.00044	-0.00045	-0.00045
	(A1 * !A3 * !B1 * !X)	0.00135	0.00138	0.00133
	(!A1 * A3 * B1 * X)	-0.00107	-0.00111	-0.00111
	(!A1 * A3 * B1 * X)	0.00123	0.00124	0.00123
	(!A1 * A3 * !B1 * !X)	-0.00095	-0.00102	-0.00102
	(!A1 * A3 * !B1 * !X)	0.00136	0.00134	0.00132
	(!A1 * !A3 * B1 * X)	-0.00068	-0.00069	-0.00068
	(!A1 * !A3 * B1 * X)	0.00123	0.00125	0.00123
	(!A1 * !A3 * !B1 * !X)	-0.00054	-0.00054	-0.00054
	(!A1 * !A3 * !B1 * !X)	0.00139	0.00141	0.00134

sky130_fd_sc_hs__a31o_4	**(A1 * A3 * B1 * X)**	-0.00201	-0.00203	-0.00201
	(A1 * A3 * B1 * X)	0.00250	0.00253	0.00251
	(A1 * !A3 * B1 * X)	-0.00182	-0.00192	-0.00190
	(A1 * !A3 * B1 * X)	0.00261	0.00263	0.00260
	(A1 * !A3 * !B1 * !X)	-0.00087	-0.00089	-0.00090
	(A1 * !A3 * !B1 * !X)	0.00268	0.00272	0.00263
	(!A1 * A3 * B1 * X)	-0.00185	-0.00194	-0.00193
	(!A1 * A3 * B1 * X)	0.00259	0.00262	0.00260
	(!A1 * A3 * !B1 * !X)	-0.00177	-0.00194	-0.00192
	(!A1 * A3 * !B1 * !X)	0.00269	0.00263	0.00260
	(!A1 * !A3 * B1 * X)	-0.00118	-0.00118	-0.00118
	(!A1 * !A3 * B1 * X)	0.00261	0.00263	0.00260
	(!A1 * !A3 * !B1 * !X)	-0.00108	-0.00109	-0.00108
	(!A1 * !A3 * !B1 * !X)	0.00276	0.00278	0.00266

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)**	0.00110	0.00106	0.00104
	(A1 * A2 * B1 * X)	-0.00111	-0.00123	-0.00122
	(A1 * !A2 * !B1 * !X)	0.00086	0.00087	0.00086
	(A1 * !A2 * !B1 * !X)	-0.00137	-0.00138	-0.00137
	(!A2 * B1 * X)	0.00098	0.00099	0.00098
	(!A2 * B1 * X)	-0.00125	-0.00125	-0.00125
	(!A1 * A2 * B1 * X)	0.00097	0.00097	0.00097
	(!A1 * A2 * B1 * X)	-0.00125	-0.00125	-0.00125
	(!A1 * A2 * !B1 * !X)	0.00085	0.00086	0.00085
	(!A1 * A2 * !B1 * !X)	-0.00137	-0.00138	-0.00137
	(!A1 * !A2 * !B1 * !X)	0.00086	0.00087	0.00086
	(!A1 * !A2 * !B1 * !X)	-0.00137	-0.00138	-0.00137

sky130_fd_sc_hs__a31o_2	**(A1 * A2 * B1 * X)**	0.00132	0.00127	0.00125
	(A1 * A2 * B1 * X)	-0.00108	-0.00119	-0.00118
	(A1 * !A2 * !B1 * !X)	0.00101	0.00102	0.00102
	(A1 * !A2 * !B1 * !X)	-0.00137	-0.00138	-0.00138
	(!A2 * B1 * X)	0.00118	0.00118	0.00118
	(!A2 * B1 * X)	-0.00121	-0.00121	-0.00121
	(!A1 * A2 * B1 * X)	0.00117	0.00119	0.00118
	(!A1 * A2 * B1 * X)	-0.00121	-0.00122	-0.00121
	(!A1 * A2 * !B1 * !X)	0.00101	0.00101	0.00101
	(!A1 * A2 * !B1 * !X)	-0.00138	-0.00139	-0.00138
	(!A1 * !A2 * !B1 * !X)	0.00102	0.00102	0.00102
	(!A1 * !A2 * !B1 * !X)	-0.00138	-0.00138	-0.00138
sky130_fd_sc_hs__a31o_4	**(A1 * A2 * B1 * X)**	0.00214	0.00204	0.00200
	(A1 * A2 * B1 * X)	-0.00229	-0.00254	-0.00252
	(A1 * !A2 * !B1 * !X)	0.00189	0.00190	0.00188
	(A1 * !A2 * !B1 * !X)	-0.00260	-0.00262	-0.00260
	(!A2 * B1 * X)	0.00189	0.00189	0.00188
	(!A2 * B1 * X)	-0.00259	-0.00260	-0.00260
	(!A1 * A2 * B1 * X)	0.00183	0.00186	0.00184
	(!A1 * A2 * B1 * X)	-0.00259	-0.00261	-0.00260
	(!A1 * A2 * !B1 * !X)	0.00183	0.00184	0.00183
	(!A1 * A2 * !B1 * !X)	-0.00260	-0.00260	-0.00260
	(!A1 * !A2 * !B1 * !X)	0.00188	0.00190	0.00188
	(!A1 * !A2 * !B1 * !X)	-0.00261	-0.00262	-0.00260

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)**	-0.00104	-0.00105	-0.00103
	(A1 * A2 * B1 * X)	0.00122	0.00124	0.00122
	(A1 * !A2 * !B1 * !X)	-0.00083	-0.00087	-0.00086
	(A1 * !A2 * !B1 * !X)	0.00138	0.00140	0.00138
	(!A2 * B1 * X)	-0.00096	-0.00099	-0.00098
	(!A2 * B1 * X)	0.00125	0.00126	0.00126
	(!A1 * A2 * B1 * X)	-0.00092	-0.00097	-0.00097
	(!A1 * A2 * B1 * X)	0.00125	0.00127	0.00126
	(!A1 * A2 * !B1 * !X)	-0.00079	-0.00086	-0.00085
	(!A1 * A2 * !B1 * !X)	0.00137	0.00138	0.00138
	(!A1 * !A2 * !B1 * !X)	-0.00084	-0.00087	-0.00086
	(!A1 * !A2 * !B1 * !X)	0.00138	0.00140	0.00138
sky130_fd_sc_hs__a31o_2	**(A1 * A2 * B1 * X)**	-0.00125	-0.00126	-0.00125
	(A1 * A2 * B1 * X)	0.00118	0.00120	0.00118
	(A1 * !A2 * !B1 * !X)	-0.00099	-0.00102	-0.00102
	(A1 * !A2 * !B1 * !X)	0.00139	0.00140	0.00139
	(!A2 * B1 * X)	-0.00116	-0.00118	-0.00118
	(!A2 * B1 * X)	0.00122	0.00122	0.00122
	(!A1 * A2 * B1 * X)	-0.00111	-0.00119	-0.00118
	(!A1 * A2 * B1 * X)	0.00121	0.00123	0.00122
	(!A1 * A2 * !B1 * !X)	-0.00094	-0.00101	-0.00101
	(!A1 * A2 * !B1 * !X)	0.00138	0.00141	0.00139
	(!A1 * !A2 * !B1 * !X)	-0.00099	-0.00102	-0.00102
	(!A1 * !A2 * !B1 * !X)	0.00139	0.00141	0.00139

sky130_fd_sc_hs__a31o_4	**(A1 * A2 * B1 * X)**	-0.00199	-0.00200	-0.00199
	(A1 * A2 * B1 * X)	0.00251	0.00254	0.00252
	(A1 * !A2 * !B1 * !X)	-0.00179	-0.00189	-0.00188
	(A1 * !A2 * !B1 * !X)	0.00260	0.00263	0.00261
	(!A2 * B1 * X)	-0.00181	-0.00189	-0.00188
	(!A2 * B1 * X)	0.00259	0.00262	0.00261
	(!A1 * A2 * B1 * X)	-0.00172	-0.00186	-0.00184
	(!A1 * A2 * B1 * X)	0.00260	0.00261	0.00261
	(!A1 * A2 * !B1 * !X)	-0.00171	-0.00184	-0.00183
	(!A1 * A2 * !B1 * !X)	0.00262	0.00260	0.00261
	(!A1 * !A2 * !B1 * !X)	-0.00180	-0.00189	-0.00188
	(!A1 * !A2 * !B1 * !X)	0.00261	0.00263	0.00261

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)**	0.00139	0.00139	0.00139
	(A1 * A2 * A3 * X)	-0.00065	-0.00065	-0.00065
sky130_fd_sc_hs__a31o_2	**(A1 * A2 * A3 * X)**	0.00131	0.00133	0.00131
	(A1 * A2 * A3 * X)	-0.00063	-0.00064	-0.00063
sky130_fd_sc_hs__a31o_4	**(A1 * A2 * A3 * X)**	0.00227	0.00228	0.00228
	(A1 * A2 * A3 * X)	-0.00137	-0.00137	-0.00137

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)	-0.00128	-0.00129	-0.00137
	(A1 * A2 * A3 * X)	0.00073	0.00073	0.00067
sky130_fd_sc_hs__a31o_2	(A1 * A2 * A3 * X)	-0.00121	-0.00122	-0.00130
	(A1 * A2 * A3 * X)	0.00072	0.00072	0.00065
sky130_fd_sc_hs__a31o_4	(A1 * A2 * A3 * X)	-0.00201	-0.00203	-0.00224
	(A1 * A2 * A3 * X)	0.00160	0.00160	0.00142

SKY130_FD_SC_HS__A32OIx

sky130_fd_sc_hs_tt_1.50v_25C.ccs
Cell Library: Process , Voltage
1.50, 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	0.00281	0.00280	0.00253	0.00287	0.00265	0.39208
sky130_fd_sc_hs__a32oi_2	0.00529	0.00513	0.00503	0.00534	0.00519	0.73090
sky130_fd_sc_hs__a32oi_4	0.01046	0.01011	0.01006	0.01067	0.01029	1.25335

Leakage Information

Cell Name	Leakage(nW)		
	Min.	**Avg**	**Max.**
sky130_fd_sc_hs__a32oi_1	0.00000	0.02006	0.05947
sky130_fd_sc_hs__a32oi_2	0.00000	0.04012	0.11893
sky130_fd_sc_hs__a32oi_4	0.00000	0.08023	0.23786

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)	0.16610	1.20857	11.49560
	A2->Y (FR)	0.18949	1.23242	11.50910
	A3->Y (FR)	0.20755	1.24899	11.47330
	B1->Y (FR)	0.11857	1.14270	11.49080
	B2->Y (FR)	0.13895	1.16274	11.49930
sky130_fd_sc_hs__a32oi_2	A1->Y (FR)	0.14886	1.01659	11.08250
	A2->Y (FR)	0.18944	1.08201	11.44710
	A3->Y (FR)	0.20749	1.09807	11.36560
	B1->Y (FR)	0.10244	0.97653	11.33290
	B2->Y (FR)	0.13575	1.01583	11.45480
sky130_fd_sc_hs__a32oi_4	A1->Y (FR)	0.16551	0.93455	11.12530
	A2->Y (FR)	0.19596	0.96233	11.09490
	A3->Y (FR)	0.22067	0.99207	11.11190
	B1->Y (FR)	0.13534	0.88797	11.05100
	B2->Y (FR)	0.17473	0.94488	11.31400

Delay(ns) to Y falling :

Cell Name	Timing Arc(Dir)	Delay(ns)		
		First	Mid	Last
sky130_fd_sc_hs__a32oi_1	A1->Y (RF)	0.05948	0.57036	5.60064
	A2->Y (RF)	0.06679	0.55276	5.30932
	A3->Y (RF)	0.07029	0.51069	4.74289
	B1->Y (RF)	0.03177	0.46187	4.77434
	B2->Y (RF)	0.03542	0.43572	4.41487
sky130_fd_sc_hs__a32oi_2	A1->Y (RF)	0.05952	0.53821	5.97115
	A2->Y (RF)	0.07187	0.52498	5.63136
	A3->Y (RF)	0.07557	0.46120	4.77339
	B1->Y (RF)	0.02781	0.41559	4.93187
	B2->Y (RF)	0.03488	0.39172	4.49706
sky130_fd_sc_hs__a32oi_4	A1->Y (RF)	0.06163	0.48423	5.82852
	A2->Y (RF)	0.07261	0.46320	5.38863
	A3->Y (RF)	0.07651	0.39988	4.49986
	B1->Y (RF)	0.02863	0.36567	4.79039
	B2->Y (RF)	0.03475	0.32885	4.16061

Power Information

Internal switching power(pJ) to Y rising :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__a32oi_1	A1	0.00080	0.00061	0.00080
	A1	0.00598	0.00580	0.00598
	A2	0.00113	0.00095	0.00114
	A2	0.00704	0.00687	0.00705
	A3	0.00156	0.00145	0.00164
	A3	0.00807	0.00797	0.00814
	B1	0.00071	0.00067	0.00173
	B1	0.00615	0.00594	0.00706
	B2	0.00154	0.00151	0.00255
	B2	0.00711	0.00697	0.00810
sky130_fd_sc_hs__a32oi_2	A1	0.00098	0.00063	0.00103
	A1	0.01119	0.01087	0.01125
	A2	0.00234	0.00196	0.00232
	A2	0.01401	0.01364	0.01396
	A3	0.00291	0.00271	0.00307
	A3	0.01599	0.01579	0.01610
	B1	0.00084	0.00087	0.00291
	B1	0.01136	0.01130	0.01198
	B2	0.00302	0.00299	0.00491
	B2	0.01402	0.01400	0.01585

sky130_fd_sc_hs__a32oi_4	**A1**	0.00184	0.00102	0.00200
	A1	0.02230	0.02150	0.02249
	A2	0.00385	0.00304	0.00396
	A2	0.02721	0.02643	0.02730
	A3	0.00514	0.00469	0.00556
	A3	0.03139	0.03097	0.03176
	B1	0.00128	0.00098	0.00556
	B1	0.02243	0.02165	0.02616
	B2	0.00336	0.00348	0.00764
	B2	0.02731	0.02730	0.02925

Internal switching power(pJ) to Y falling :

Cell Name	**Input**	**Power(pJ)**		
		first	**mid**	**last**
sky130_fd_sc_hs__a32oi_1	**A1**	0.00720	0.00707	0.00775
	A1	0.00228	0.00214	0.00251
	A2	0.00799	0.00787	0.00805
	A2	0.00227	0.00213	0.00236
	A3	0.00861	0.00852	0.00891
	A3	0.00224	0.00211	0.00232
	B1	0.00505	0.00512	0.00569
	B1	0.00003	-0.00003	0.00044
	B2	0.00577	0.00575	0.00605
	B2	0.00002	-0.00006	0.00027

sky130_fd_sc_hs__a32oi_2	**A1**	0.01400	0.01378	0.01442
	A1	0.00438	0.00414	0.00483
	A2	0.01559	0.01530	0.01637
	A2	0.00438	0.00406	0.00450
	A3	0.01712	0.01688	0.01721
	A3	0.00437	0.00406	0.00449
	B1	0.00962	0.00975	0.01087
	B1	-0.00019	-0.00031	0.00068
	B2	0.01130	0.01124	0.01190
	B2	-0.00014	-0.00031	0.00035
sky130_fd_sc_hs__a32oi_4	**A1**	0.02740	0.02678	0.02880
	A1	0.00809	0.00748	0.00896
	A2	0.03041	0.02984	0.03137
	A2	0.00800	0.00729	0.00832
	A3	0.03346	0.03289	0.03391
	A3	0.00790	0.00722	0.00822
	B1	0.01941	0.01932	0.02192
	B1	-0.00042	-0.00053	0.00141
	B2	0.02271	0.02248	0.02451
	B2	-0.00027	-0.00069	0.00082

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)**	0.00124	0.00121	0.00119
	(A2 * A3 * B1 * B2 * !Y)	-0.00124	-0.00133	-0.00132
	(A2 * !A3 * B1 * B2 * !Y)	0.00110	0.00111	0.00110
	(A2 * !A3 * B1 * B2 * !Y)	-0.00136	-0.00137	-0.00136
	(A2 * !A3 * B1 * !B2 * Y)	0.00041	0.00041	0.00038
	(A2 * !A3 * B1 * !B2 * Y)	-0.00159	-0.00160	-0.00165
	(A2 * !A3 * !B1 * Y)	0.00041	0.00041	0.00038
	(A2 * !A3 * !B1 * Y)	-0.00159	-0.00160	-0.00165
	(!A2 * B1 * B2 * !Y)	0.00112	0.00113	0.00113
	(!A2 * B1 * B2 * !Y)	-0.00135	-0.00136	-0.00136
	(!A2 * B1 * !B2 * Y)	0.00040	0.00040	0.00038
	(!A2 * B1 * !B2 * Y)	-0.00163	-0.00164	-0.00166
	(!A2 * !B1 * Y)	0.00040	0.00040	0.00038
	(!A2 * !B1 * Y)	-0.00163	-0.00164	-0.00166
sky130_fd_sc_hs__a32oi_2	**(A2 * A3 * B1 * B2 * !Y)**	0.00244	0.00239	0.00236
	(A2 * A3 * B1 * B2 * !Y)	-0.00248	-0.00264	-0.00264
	(A2 * !A3 * B1 * B2 * !Y)	0.00219	0.00220	0.00219
	(A2 * !A3 * B1 * B2 * !Y)	-0.00272	-0.00273	-0.00271
	(A2 * !A3 * B1 * !B2 * Y)	0.00086	0.00086	0.00078
	(A2 * !A3 * B1 * !B2 * Y)	-0.00311	-0.00314	-0.00327
	(A2 * !A3 * !B1 * Y)	0.00087	0.00087	0.00078
	(A2 * !A3 * !B1 * Y)	-0.00311	-0.00314	-0.00327
	(!A2 * B1 * B2 * !Y)	0.00225	0.00228	0.00226
	(!A2 * B1 * B2 * !Y)	-0.00270	-0.00273	-0.00271
	(!A2 * B1 * !B2 * Y)	0.00087	0.00088	0.00082
	(!A2 * B1 * !B2 * Y)	-0.00321	-0.00323	-0.00329
	(!A2 * !B1 * Y)	0.00088	0.00088	0.00082
	(!A2 * !B1 * Y)	-0.00321	-0.00323	-0.00329

sky130_fd_sc_hs__a32oi_4	**(A2 * A3 * B1 * B2 * !Y)**	0.00489	0.00466	0.00466
	(A2 * A3 * B1 * B2 * !Y)	-0.00487	-0.00529	-0.00528
	(A2 * !A3 * B1 * B2 * !Y)	0.00428	0.00433	0.00430
	(A2 * !A3 * B1 * B2 * !Y)	-0.00541	-0.00546	-0.00544
	(A2 * !A3 * B1 * !B2 * Y)	0.00154	0.00155	0.00140
	(A2 * !A3 * B1 * !B2 * Y)	-0.00631	-0.00638	-0.00663
	(A2 * !A3 * !B1 * Y)	0.00154	0.00155	0.00141
	(A2 * !A3 * !B1 * Y)	-0.00631	-0.00638	-0.00663
	(!A2 * B1 * B2 * !Y)	0.00444	0.00447	0.00444
	(!A2 * B1 * B2 * !Y)	-0.00545	-0.00544	-0.00544
	(!A2 * B1 * !B2 * Y)	0.00156	0.00157	0.00148
	(!A2 * B1 * !B2 * Y)	-0.00651	-0.00658	-0.00667
	(!A2 * !B1 * Y)	0.00156	0.00158	0.00149
	(!A2 * !B1 * Y)	-0.00650	-0.00657	-0.00667

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)**	-0.00120	-0.00120	-0.00119
	(A2 * A3 * B1 * B2 * !Y)	0.00133	0.00133	0.00132
	(A2 * !A3 * B1 * B2 * !Y)	-0.00101	-0.00111	-0.00110
	(A2 * !A3 * B1 * B2 * !Y)	0.00137	0.00138	0.00136
	(A2 * !A3 * B1 * !B2 * Y)	-0.00037	-0.00037	-0.00037
	(A2 * !A3 * B1 * !B2 * Y)	0.00165	0.00167	0.00166
	(A2 * !A3 * !B1 * Y)	-0.00037	-0.00037	-0.00037
	(A2 * !A3 * !B1 * Y)	0.00165	0.00167	0.00166
	(!A2 * B1 * B2 * !Y)	-0.00110	-0.00113	-0.00113
	(!A2 * B1 * B2 * !Y)	0.00137	0.00138	0.00136
	(!A2 * B1 * !B2 * Y)	-0.00037	-0.00038	-0.00037
	(!A2 * B1 * !B2 * Y)	0.00166	0.00167	0.00166
	(!A2 * !B1 * Y)	-0.00037	-0.00038	-0.00037
	(!A2 * !B1 * Y)	0.00166	0.00167	0.00166
sky130_fd_sc_hs__a32oi_2	**(A2 * A3 * B1 * B2 * !Y)**	-0.00235	-0.00235	-0.00235
	(A2 * A3 * B1 * B2 * !Y)	0.00263	0.00264	0.00264
	(A2 * !A3 * B1 * B2 * !Y)	-0.00195	-0.00220	-0.00219
	(A2 * !A3 * B1 * B2 * !Y)	0.00272	0.00275	0.00272
	(A2 * !A3 * B1 * !B2 * Y)	-0.00076	-0.00077	-0.00077
	(A2 * !A3 * B1 * !B2 * Y)	0.00328	0.00331	0.00330
	(A2 * !A3 * !B1 * Y)	-0.00077	-0.00078	-0.00077
	(A2 * !A3 * !B1 * Y)	0.00328	0.00331	0.00330
	(!A2 * B1 * B2 * !Y)	-0.00216	-0.00228	-0.00226
	(!A2 * B1 * B2 * !Y)	0.00273	0.00275	0.00272
	(!A2 * B1 * !B2 * Y)	-0.00080	-0.00080	-0.00079
	(!A2 * B1 * !B2 * Y)	0.00331	0.00331	0.00330
	(!A2 * !B1 * Y)	-0.00080	-0.00080	-0.00080
	(!A2 * !B1 * Y)	0.00331	0.00331	0.00330

sky130_fd_sc_hs__a32oi_4	**(A2 * A3 * B1 * B2 * !Y)**	-0.00466	-0.00466	-0.00464
	(A2 * A3 * B1 * B2 * !Y)	0.00531	0.00532	0.00528
	(A2 * !A3 * B1 * B2 * !Y)	-0.00380	-0.00433	-0.00430
	(A2 * !A3 * B1 * B2 * !Y)	0.00543	0.00552	0.00546
	(A2 * !A3 * B1 * !B2 * Y)	-0.00140	-0.00140	-0.00139
	(A2 * !A3 * B1 * !B2 * Y)	0.00669	0.00670	0.00668
	(A2 * !A3 * !B1 * Y)	-0.00141	-0.00140	-0.00140
	(A2 * !A3 * !B1 * Y)	0.00669	0.00670	0.00668
	(!A2 * B1 * B2 * !Y)	-0.00427	-0.00447	-0.00444
	(!A2 * B1 * B2 * !Y)	0.00547	0.00544	0.00546
	(!A2 * B1 * !B2 * Y)	-0.00145	-0.00144	-0.00144
	(!A2 * B1 * !B2 * Y)	0.00670	0.00671	0.00668
	(!A2 * !B1 * Y)	-0.00145	-0.00145	-0.00144
	(!A2 * !B1 * Y)	0.00670	0.00671	0.00668

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)**	0.00128	0.00124	0.00123
	(A1 * A3 * B1 * B2 * !Y)	-0.00124	-0.00133	-0.00132
	(A1 * !A3 * B1 * B2 * !Y)	0.00117	0.00117	0.00117
	(A1 * !A3 * B1 * B2 * !Y)	-0.00136	-0.00136	-0.00136
	(A1 * !A3 * B1 * !B2 * Y)	0.00054	0.00054	0.00054
	(A1 * !A3 * B1 * !B2 * Y)	-0.00143	-0.00144	-0.00143
	(A1 * !A3 * !B1 * Y)	0.00054	0.00054	0.00054
	(A1 * !A3 * !B1 * Y)	-0.00143	-0.00144	-0.00143
	(!A1 * A3 * B1 * B2 * !Y)	0.00116	0.00118	0.00117
	(!A1 * A3 * B1 * B2 * !Y)	-0.00136	-0.00137	-0.00136
	(!A1 * A3 * B1 * !B2 * Y)	0.00109	0.00110	0.00109
	(!A1 * A3 * B1 * !B2 * Y)	-0.00143	-0.00144	-0.00143
	(!A1 * A3 * !B1 * Y)	0.00109	0.00110	0.00109
	(!A1 * A3 * !B1 * Y)	-0.00143	-0.00144	-0.00143
	(!A1 * !A3 * B1 * B2 * !Y)	0.00073	0.00073	0.00073
	(!A1 * !A3 * B1 * B2 * !Y)	-0.00136	-0.00137	-0.00136
	(!A1 * !A3 * B1 * !B2 * Y)	0.00061	0.00062	0.00061
	(!A1 * !A3 * B1 * !B2 * Y)	-0.00143	-0.00144	-0.00144
	(!A1 * !A3 * !B1 * Y)	0.00061	0.00062	0.00061
	(!A1 * !A3 * !B1 * Y)	-0.00143	-0.00144	-0.00144

sky130_fd_sc_hs__a32oi_2	**(A1 * A3 * B1 * B2 * !Y)**	0.00237	0.00229	0.00226
	(A1 * A3 * B1 * B2 * !Y)	-0.00252	-0.00276	-0.00273
	(A1 * !A3 * B1 * B2 * !Y)	0.00212	0.00214	0.00213
	(A1 * !A3 * B1 * B2 * !Y)	-0.00282	-0.00284	-0.00282
	(A1 * !A3 * B1 * !B2 * Y)	0.00099	0.00101	0.00101
	(A1 * !A3 * B1 * !B2 * Y)	-0.00285	-0.00287	-0.00284
	(A1 * !A3 * !B1 * Y)	0.00099	0.00101	0.00102
	(A1 * !A3 * !B1 * Y)	-0.00285	-0.00287	-0.00284
	(!A1 * A3 * B1 * B2 * !Y)	0.00215	0.00217	0.00216
	(!A1 * A3 * B1 * B2 * !Y)	-0.00281	-0.00282	-0.00282
	(!A1 * A3 * B1 * !B2 * Y)	0.00212	0.00215	0.00213
	(!A1 * A3 * B1 * !B2 * Y)	-0.00284	-0.00286	-0.00285
	(!A1 * A3 * !B1 * Y)	0.00212	0.00215	0.00213
	(!A1 * A3 * !B1 * Y)	-0.00284	-0.00286	-0.00285
	(!A1 * !A3 * B1 * B2 * !Y)	0.00131	0.00133	0.00132
	(!A1 * !A3 * B1 * B2 * !Y)	-0.00282	-0.00285	-0.00283
	(!A1 * !A3 * B1 * !B2 * Y)	0.00118	0.00118	0.00118
	(!A1 * !A3 * B1 * !B2 * Y)	-0.00287	-0.00288	-0.00288
	(!A1 * !A3 * !B1 * Y)	0.00118	0.00119	0.00118
	(!A1 * !A3 * !B1 * Y)	-0.00287	-0.00288	-0.00288

sky130_fd_sc_hs__a32oi_4	**(A1 * A3 * B1 * B2 * !Y)**	0.00479	0.00455	0.00454
	(A1 * A3 * B1 * B2 * !Y)	-0.00498	-0.00543	-0.00542
	(A1 * !A3 * B1 * B2 * !Y)	0.00421	0.00424	0.00422
	(A1 * !A3 * B1 * B2 * !Y)	-0.00558	-0.00561	-0.00559
	(A1 * !A3 * B1 * !B2 * Y)	0.00191	0.00193	0.00194
	(A1 * !A3 * B1 * !B2 * Y)	-0.00564	-0.00568	-0.00563
	(A1 * !A3 * !B1 * Y)	0.00191	0.00193	0.00194
	(A1 * !A3 * !B1 * Y)	-0.00564	-0.00568	-0.00563
	(!A1 * A3 * B1 * B2 * !Y)	0.00431	0.00437	0.00433
	(!A1 * A3 * B1 * B2 * !Y)	-0.00558	-0.00563	-0.00559
	(!A1 * A3 * B1 * !B2 * Y)	0.00427	0.00428	0.00427
	(!A1 * A3 * B1 * !B2 * Y)	-0.00565	-0.00565	-0.00564
	(!A1 * A3 * !B1 * Y)	0.00428	0.00428	0.00428
	(!A1 * A3 * !B1 * Y)	-0.00565	-0.00564	-0.00564
	(!A1 * !A3 * B1 * B2 * !Y)	0.00248	0.00251	0.00248
	(!A1 * !A3 * B1 * B2 * !Y)	-0.00558	-0.00563	-0.00559
	(!A1 * !A3 * B1 * !B2 * Y)	0.00223	0.00224	0.00222
	(!A1 * !A3 * B1 * !B2 * Y)	-0.00571	-0.00572	-0.00569
	(!A1 * !A3 * !B1 * Y)	0.00224	0.00224	0.00223
	(!A1 * !A3 * !B1 * Y)	-0.00571	-0.00572	-0.00569

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)**	-0.00123	-0.00123	-0.00123
	(A1 * A3 * B1 * B2 * !Y)	0.00133	0.00133	0.00132
	(A1 * !A3 * B1 * B2 * !Y)	-0.00113	-0.00117	-0.00117
	(A1 * !A3 * B1 * B2 * !Y)	0.00137	0.00138	0.00137
	(A1 * !A3 * B1 * !B2 * Y)	-0.00051	-0.00052	-0.00052
	(A1 * !A3 * B1 * !B2 * Y)	0.00146	0.00149	0.00144
	(A1 * !A3 * !B1 * Y)	-0.00051	-0.00052	-0.00052
	(A1 * !A3 * !B1 * Y)	0.00146	0.00149	0.00144
	(!A1 * A3 * B1 * B2 * !Y)	-0.00113	-0.00117	-0.00117
	(!A1 * A3 * B1 * B2 * !Y)	0.00136	0.00138	0.00137
	(!A1 * A3 * B1 * !B2 * Y)	-0.00101	-0.00110	-0.00109
	(!A1 * A3 * B1 * !B2 * Y)	0.00149	0.00146	0.00144
	(!A1 * A3 * !B1 * Y)	-0.00101	-0.00110	-0.00109
	(!A1 * A3 * !B1 * Y)	0.00149	0.00146	0.00144
	(!A1 * !A3 * B1 * B2 * !Y)	-0.00073	-0.00073	-0.00073
	(!A1 * !A3 * B1 * B2 * !Y)	0.00136	0.00138	0.00137
	(!A1 * !A3 * B1 * !B2 * Y)	-0.00061	-0.00062	-0.00061
	(!A1 * !A3 * B1 * !B2 * Y)	0.00151	0.00152	0.00146
	(!A1 * !A3 * !B1 * Y)	-0.00061	-0.00062	-0.00061
	(!A1 * !A3 * !B1 * Y)	0.00151	0.00152	0.00146

sky130_fd_sc_hs__a32oi_2	**(A1 * A3 * B1 * B2 * !Y)**	-0.00225	-0.00227	-0.00225
	(A1 * A3 * B1 * B2 * !Y)	0.00272	0.00277	0.00273
	(A1 * !A3 * B1 * B2 * !Y)	-0.00205	-0.00214	-0.00213
	(A1 * !A3 * B1 * B2 * !Y)	0.00284	0.00286	0.00283
	(A1 * !A3 * B1 * !B2 * Y)	-0.00094	-0.00096	-0.00097
	(A1 * !A3 * B1 * !B2 * Y)	0.00294	0.00299	0.00289
	(A1 * !A3 * !B1 * Y)	-0.00094	-0.00096	-0.00097
	(A1 * !A3 * !B1 * Y)	0.00294	0.00299	0.00289
	(!A1 * A3 * B1 * B2 * !Y)	-0.00205	-0.00217	-0.00216
	(!A1 * A3 * B1 * B2 * !Y)	0.00281	0.00286	0.00283
	(!A1 * A3 * B1 * !B2 * Y)	-0.00194	-0.00214	-0.00213
	(!A1 * A3 * B1 * !B2 * Y)	0.00294	0.00289	0.00286
	(!A1 * A3 * !B1 * Y)	-0.00194	-0.00214	-0.00213
	(!A1 * A3 * !B1 * Y)	0.00294	0.00289	0.00286
	(!A1 * !A3 * B1 * B2 * !Y)	-0.00131	-0.00133	-0.00132
	(!A1 * !A3 * B1 * B2 * !Y)	0.00285	0.00287	0.00284
	(!A1 * !A3 * B1 * !B2 * Y)	-0.00118	-0.00118	-0.00118
	(!A1 * !A3 * B1 * !B2 * Y)	0.00300	0.00303	0.00290
	(!A1 * !A3 * !B1 * Y)	-0.00118	-0.00119	-0.00118
	(!A1 * !A3 * !B1 * Y)	0.00300	0.00303	0.00290

sky130_fd_sc_hs__a32oi_4	**(A1 * A3 * B1 * B2 * !Y)**	-0.00452	-0.00454	-0.00452
	(A1 * A3 * B1 * B2 * !Y)	0.00539	0.00544	0.00542
	(A1 * !A3 * B1 * B2 * !Y)	-0.00409	-0.00424	-0.00422
	(A1 * !A3 * B1 * B2 * !Y)	0.00563	0.00563	0.00561
	(A1 * !A3 * B1 * !B2 * Y)	-0.00181	-0.00184	-0.00186
	(A1 * !A3 * B1 * !B2 * Y)	0.00582	0.00591	0.00571
	(A1 * !A3 * !B1 * Y)	-0.00181	-0.00184	-0.00186
	(A1 * !A3 * !B1 * Y)	0.00581	0.00591	0.00571
	(!A1 * A3 * B1 * B2 * !Y)	-0.00413	-0.00437	-0.00433
	(!A1 * A3 * B1 * B2 * !Y)	0.00559	0.00567	0.00561
	(!A1 * A3 * B1 * !B2 * Y)	-0.00388	-0.00428	-0.00427
	(!A1 * A3 * B1 * !B2 * Y)	0.00589	0.00572	0.00566
	(!A1 * A3 * !B1 * Y)	-0.00388	-0.00428	-0.00428
	(!A1 * A3 * !B1 * Y)	0.00589	0.00572	0.00566
	(!A1 * !A3 * B1 * B2 * !Y)	-0.00248	-0.00251	-0.00248
	(!A1 * !A3 * B1 * B2 * !Y)	0.00564	0.00568	0.00561
	(!A1 * !A3 * B1 * !B2 * Y)	-0.00223	-0.00224	-0.00222
	(!A1 * !A3 * B1 * !B2 * Y)	0.00598	0.00603	0.00576
	(!A1 * !A3 * !B1 * Y)	-0.00224	-0.00224	-0.00223
	(!A1 * !A3 * !B1 * Y)	0.00598	0.00603	0.00576

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)**	0.00119	0.00116	0.00115
	(A1 * A2 * B1 * B2 * !Y)	-0.00126	-0.00135	-0.00134
	(A1 * !A2 * B1 * !B2 * Y)	0.00109	0.00110	0.00110
	(A1 * !A2 * B1 * !B2 * Y)	-0.00137	-0.00138	-0.00137
	(A1 * !A2 * !B1 * Y)	0.00109	0.00110	0.00110
	(A1 * !A2 * !B1 * Y)	-0.00137	-0.00138	-0.00137
	(!A2 * B1 * B2 * !Y)	0.00110	0.00111	0.00109
	(!A2 * B1 * B2 * !Y)	-0.00137	-0.00138	-0.00137
	(!A1 * A2 * B1 * B2 * !Y)	0.00108	0.00108	0.00107
	(!A1 * A2 * B1 * B2 * !Y)	-0.00137	-0.00138	-0.00137
	(!A1 * A2 * B1 * !B2 * Y)	0.00107	0.00107	0.00106
	(!A1 * A2 * B1 * !B2 * Y)	-0.00137	-0.00137	-0.00137
	(!A1 * A2 * !B1 * Y)	0.00108	0.00108	0.00107
	(!A1 * A2 * !B1 * Y)	-0.00137	-0.00137	-0.00137
	(!A1 * !A2 * B1 * !B2 * Y)	0.00109	0.00111	0.00110
	(!A1 * !A2 * B1 * !B2 * Y)	-0.00137	-0.00138	-0.00137
	(!A1 * !A2 * !B1 * Y)	0.00109	0.00111	0.00110
	(!A1 * !A2 * !B1 * Y)	-0.00137	-0.00138	-0.00137

sky130_fd_sc_hs__a32oi_2	**(A1 * A2 * B1 * B2 * !Y)**	0.00243	0.00235	0.00231
	(A1 * A2 * B1 * B2 * !Y)	-0.00252	-0.00272	-0.00270
	(A1 * !A2 * B1 * !B2 * Y)	0.00218	0.00221	0.00219
	(A1 * !A2 * B1 * !B2 * Y)	-0.00278	-0.00280	-0.00278
	(A1 * !A2 * !B1 * Y)	0.00218	0.00221	0.00219
	(A1 * !A2 * !B1 * Y)	-0.00278	-0.00280	-0.00278
	(!A2 * B1 * B2 * !Y)	0.00219	0.00221	0.00219
	(!A2 * B1 * B2 * !Y)	-0.00278	-0.00279	-0.00278
	(!A1 * A2 * B1 * B2 * !Y)	0.00217	0.00218	0.00216
	(!A1 * A2 * B1 * B2 * !Y)	-0.00278	-0.00280	-0.00278
	(!A1 * A2 * B1 * !B2 * Y)	0.00217	0.00218	0.00216
	(!A1 * A2 * B1 * !B2 * Y)	-0.00279	-0.00279	-0.00278
	(!A1 * A2 * !B1 * Y)	0.00217	0.00218	0.00216
	(!A1 * A2 * !B1 * Y)	-0.00279	-0.00279	-0.00278
	(!A1 * !A2 * B1 * !B2 * Y)	0.00218	0.00221	0.00219
	(!A1 * !A2 * B1 * !B2 * Y)	-0.00278	-0.00280	-0.00279
	(!A1 * !A2 * !B1 * Y)	0.00218	0.00221	0.00219
	(!A1 * !A2 * !B1 * Y)	-0.00278	-0.00280	-0.00279

sky130_fd_sc_hs__a32oi_4	**(A1 * A2 * B1 * B2 * !Y)**	0.00471	0.00457	0.00449
	(A1 * A2 * B1 * B2 * !Y)	-0.00501	-0.00550	-0.00546
	(A1 * !A2 * B1 * !B2 * Y)	0.00421	0.00422	0.00421
	(A1 * !A2 * B1 * !B2 * Y)	-0.00563	-0.00564	-0.00563
	(A1 * !A2 * !B1 * Y)	0.00421	0.00425	0.00421
	(A1 * !A2 * !B1 * Y)	-0.00563	-0.00566	-0.00563
	(!A2 * B1 * B2 * !Y)	0.00421	0.00422	0.00421
	(!A2 * B1 * B2 * !Y)	-0.00562	-0.00563	-0.00562
	(!A1 * A2 * B1 * B2 * !Y)	0.00410	0.00417	0.00413
	(!A1 * A2 * B1 * B2 * !Y)	-0.00560	-0.00565	-0.00562
	(!A1 * A2 * B1 * !B2 * Y)	0.00411	0.00416	0.00412
	(!A1 * A2 * B1 * !B2 * Y)	-0.00562	-0.00565	-0.00563
	(!A1 * A2 * !B1 * Y)	0.00411	0.00416	0.00412
	(!A1 * A2 * !B1 * Y)	-0.00562	-0.00565	-0.00563
	(!A1 * !A2 * B1 * !B2 * Y)	0.00420	0.00422	0.00420
	(!A1 * !A2 * B1 * !B2 * Y)	-0.00563	-0.00564	-0.00563
	(!A1 * !A2 * !B1 * Y)	0.00420	0.00423	0.00420
	(!A1 * !A2 * !B1 * Y)	-0.00563	-0.00565	-0.00563

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)**	-0.00115	-0.00115	-0.00115
	(A1 * A2 * B1 * B2 * !Y)	0.00134	0.00135	0.00134
	(A1 * !A2 * B1 * !B2 * Y)	-0.00106	-0.00110	-0.00110
	(A1 * !A2 * B1 * !B2 * Y)	0.00138	0.00139	0.00138
	(A1 * !A2 * !B1 * Y)	-0.00106	-0.00110	-0.00110
	(A1 * !A2 * !B1 * Y)	0.00138	0.00139	0.00138
	(!A2 * B1 * B2 * !Y)	-0.00107	-0.00110	-0.00109
	(!A2 * B1 * B2 * !Y)	0.00138	0.00139	0.00138
	(!A1 * A2 * B1 * B2 * !Y)	-0.00101	-0.00108	-0.00107
	(!A1 * A2 * B1 * B2 * !Y)	0.00137	0.00138	0.00138
	(!A1 * A2 * B1 * !B2 * Y)	-0.00101	-0.00107	-0.00106
	(!A1 * A2 * B1 * !B2 * Y)	0.00137	0.00137	0.00138
	(!A1 * A2 * !B1 * Y)	-0.00101	-0.00108	-0.00107
	(!A1 * A2 * !B1 * Y)	0.00137	0.00137	0.00138
	(!A1 * !A2 * B1 * !B2 * Y)	-0.00107	-0.00110	-0.00110
	(!A1 * !A2 * B1 * !B2 * Y)	0.00138	0.00139	0.00138
	(!A1 * !A2 * !B1 * Y)	-0.00107	-0.00110	-0.00110
	(!A1 * !A2 * !B1 * Y)	0.00138	0.00139	0.00138

sky130_fd_sc_hs__a32oi_2	**(A1 * A2 * B1 * B2 * !Y)**	-0.00230	-0.00232	-0.00231
	(A1 * A2 * B1 * B2 * !Y)	0.00269	0.00272	0.00270
	(A1 * !A2 * B1 * !B2 * Y)	-0.00211	-0.00220	-0.00219
	(A1 * !A2 * B1 * !B2 * Y)	0.00278	0.00282	0.00279
	(A1 * !A2 * !B1 * Y)	-0.00211	-0.00220	-0.00219
	(A1 * !A2 * !B1 * Y)	0.00278	0.00282	0.00279
	(!A2 * B1 * B2 * !Y)	-0.00212	-0.00220	-0.00219
	(!A2 * B1 * B2 * !Y)	0.00278	0.00281	0.00279
	(!A1 * A2 * B1 * B2 * !Y)	-0.00203	-0.00217	-0.00216
	(!A1 * A2 * B1 * B2 * !Y)	0.00278	0.00280	0.00279
	(!A1 * A2 * B1 * !B2 * Y)	-0.00203	-0.00217	-0.00216
	(!A1 * A2 * B1 * !B2 * Y)	0.00279	0.00280	0.00279
	(!A1 * A2 * !B1 * Y)	-0.00203	-0.00217	-0.00216
	(!A1 * A2 * !B1 * Y)	0.00279	0.00280	0.00279
	(!A1 * !A2 * B1 * !B2 * Y)	-0.00211	-0.00220	-0.00219
	(!A1 * !A2 * B1 * !B2 * Y)	0.00278	0.00282	0.00279
	(!A1 * !A2 * !B1 * Y)	-0.00211	-0.00220	-0.00219
	(!A1 * !A2 * !B1 * Y)	0.00278	0.00282	0.00279

sky130_fd_sc_hs__a32oi_4	**(A1 * A2 * B1 * B2 * !Y)**	-0.00447	-0.00450	-0.00447
	(A1 * A2 * B1 * B2 * !Y)	0.00543	0.00550	0.00546
	(A1 * !A2 * B1 * !B2 * Y)	-0.00403	-0.00422	-0.00421
	(A1 * !A2 * B1 * !B2 * Y)	0.00563	0.00575	0.00564
	(A1 * !A2 * !B1 * Y)	-0.00403	-0.00425	-0.00421
	(A1 * !A2 * !B1 * Y)	0.00563	0.00575	0.00564
	(!A2 * B1 * B2 * !Y)	-0.00406	-0.00422	-0.00421
	(!A2 * B1 * B2 * !Y)	0.00562	0.00567	0.00564
	(!A1 * A2 * B1 * B2 * !Y)	-0.00387	-0.00417	-0.00413
	(!A1 * A2 * B1 * B2 * !Y)	0.00564	0.00565	0.00564
	(!A1 * A2 * B1 * !B2 * Y)	-0.00386	-0.00416	-0.00412
	(!A1 * A2 * B1 * !B2 * Y)	0.00565	0.00565	0.00564
	(!A1 * A2 * !B1 * Y)	-0.00386	-0.00416	-0.00412
	(!A1 * A2 * !B1 * Y)	0.00565	0.00565	0.00564
	(!A1 * !A2 * B1 * !B2 * Y)	-0.00404	-0.00422	-0.00420
	(!A1 * !A2 * B1 * !B2 * Y)	0.00563	0.00575	0.00564
	(!A1 * !A2 * !B1 * Y)	-0.00404	-0.00423	-0.00420
	(!A1 * !A2 * !B1 * Y)	0.00563	0.00575	0.00564

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)**	0.00134	0.00135	0.00135
	(A1 * A2 * A3 * B2 * !Y)	-0.00069	-0.00069	-0.00069
	(A1 * A2 * A3 * !B2 * !Y)	0.00128	0.00128	0.00129
	(A1 * A2 * A3 * !B2 * !Y)	-0.00068	-0.00068	-0.00069
	(A1 * A2 * !A3 * !B2 * Y)	0.00039	0.00039	0.00038
	(A1 * A2 * !A3 * !B2 * Y)	-0.00167	-0.00167	-0.00170
	(A1 * !A2 * !B2 * Y)	0.00039	0.00039	0.00038
	(A1 * !A2 * !B2 * Y)	-0.00167	-0.00167	-0.00170
	(!A1 * !B2 * Y)	0.00039	0.00039	0.00038
	(!A1 * !B2 * Y)	-0.00167	-0.00167	-0.00170
sky130_fd_sc_hs__a32oi_2	**(A1 * A2 * A3 * B2 * !Y)**	0.00256	0.00256	0.00255
	(A1 * A2 * A3 * B2 * !Y)	-0.00139	-0.00138	-0.00138
	(A1 * A2 * A3 * !B2 * !Y)	0.00244	0.00246	0.00244
	(A1 * A2 * A3 * !B2 * !Y)	-0.00137	-0.00138	-0.00138
	(A1 * A2 * !A3 * !B2 * Y)	0.00083	0.00082	0.00078
	(A1 * A2 * !A3 * !B2 * Y)	-0.00322	-0.00322	-0.00330
	(A1 * !A2 * !B2 * Y)	0.00083	0.00082	0.00078
	(A1 * !A2 * !B2 * Y)	-0.00322	-0.00322	-0.00330
	(!A1 * !B2 * Y)	0.00083	0.00083	0.00078
	(!A1 * !B2 * Y)	-0.00322	-0.00322	-0.00330
sky130_fd_sc_hs__a32oi_4	**(A1 * A2 * A3 * B2 * !Y)**	0.00514	0.00518	0.00515
	(A1 * A2 * A3 * B2 * !Y)	-0.00279	-0.00281	-0.00279
	(A1 * A2 * A3 * !B2 * !Y)	0.00489	0.00493	0.00491
	(A1 * A2 * A3 * !B2 * !Y)	-0.00279	-0.00280	-0.00279
	(A1 * A2 * !A3 * !B2 * Y)	0.00158	0.00157	0.00149
	(A1 * A2 * !A3 * !B2 * Y)	-0.00656	-0.00657	-0.00670
	(A1 * !A2 * !B2 * Y)	0.00158	0.00157	0.00149
	(A1 * !A2 * !B2 * Y)	-0.00656	-0.00657	-0.00670
	(!A1 * !B2 * Y)	0.00158	0.00157	0.00150
	(!A1 * !B2 * Y)	-0.00656	-0.00657	-0.00670

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)	-0.00116	-0.00118	-0.00132
	(A1 * A2 * A3 * B2 * !Y)	0.00083	0.00083	0.00072
	(A1 * A2 * A3 * !B2 * !Y)	-0.00126	-0.00128	-0.00129
	(A1 * A2 * A3 * !B2 * !Y)	0.00069	0.00070	0.00069
	(A1 * A2 * !A3 * !B2 * Y)	-0.00037	-0.00037	-0.00037
	(A1 * A2 * !A3 * !B2 * Y)	0.00170	0.00171	0.00170
	(A1 * !A2 * !B2 * Y)	-0.00037	-0.00037	-0.00037
	(A1 * !A2 * !B2 * Y)	0.00170	0.00171	0.00170
	(!A1 * !B2 * Y)	-0.00037	-0.00037	-0.00037
	(!A1 * !B2 * Y)	0.00170	0.00171	0.00170
sky130_fd_sc_hs__a32oi_2	(A1 * A2 * A3 * B2 * !Y)	-0.00220	-0.00222	-0.00251
	(A1 * A2 * A3 * B2 * !Y)	0.00167	0.00166	0.00144
	(A1 * A2 * A3 * !B2 * !Y)	-0.00234	-0.00246	-0.00244
	(A1 * A2 * A3 * !B2 * !Y)	0.00137	0.00138	0.00138
	(A1 * A2 * !A3 * !B2 * Y)	-0.00076	-0.00076	-0.00075
	(A1 * A2 * !A3 * !B2 * Y)	0.00331	0.00332	0.00330
	(A1 * !A2 * !B2 * Y)	-0.00076	-0.00076	-0.00075
	(A1 * !A2 * !B2 * Y)	0.00331	0.00332	0.00330
	(!A1 * !B2 * Y)	-0.00076	-0.00076	-0.00075
	(!A1 * !B2 * Y)	0.00331	0.00332	0.00330

sky130_fd_sc_hs__a32oi_4	**(A1 * A2 * A3 * B2 * !Y)**	-0.00452	-0.00456	-0.00507
	(A1 * A2 * A3 * B2 * !Y)	0.00334	0.00332	0.00292
	(A1 * A2 * A3 * !B2 * !Y)	-0.00472	-0.00493	-0.00491
	(A1 * A2 * A3 * !B2 * !Y)	0.00279	0.00280	0.00279
	(A1 * A2 * !A3 * !B2 * Y)	-0.00144	-0.00146	-0.00144
	(A1 * A2 * !A3 * !B2 * Y)	0.00668	0.00675	0.00671
	(A1 * !A2 * !B2 * Y)	-0.00144	-0.00146	-0.00144
	(A1 * !A2 * !B2 * Y)	0.00668	0.00675	0.00671
	(!A1 * !B2 * Y)	-0.00144	-0.00146	-0.00145
	(!A1 * !B2 * Y)	0.00668	0.00674	0.00671

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)**	0.00130	0.00129	0.00129
	(A1 * A2 * A3 * B1 * !Y)	-0.00073	-0.00072	-0.00072
	(A1 * A2 * A3 * !B1 * !Y)	0.00123	0.00125	0.00123
	(A1 * A2 * A3 * !B1 * !Y)	-0.00072	-0.00073	-0.00072
	(A1 * A2 * !A3 * !B1 * Y)	0.00109	0.00110	0.00109
	(A1 * A2 * !A3 * !B1 * Y)	-0.00142	-0.00143	-0.00142
	(A1 * !A2 * !B1 * Y)	0.00109	0.00110	0.00109
	(A1 * !A2 * !B1 * Y)	-0.00142	-0.00143	-0.00142
	(!A1 * !B1 * Y)	0.00109	0.00110	0.00109
	(!A1 * !B1 * Y)	-0.00142	-0.00143	-0.00142

sky130_fd_sc_hs__a32oi_2	**(A1 * A2 * A3 * B1 * !Y)**	0.00255	0.00255	0.00255
	(A1 * A2 * A3 * B1 * !Y)	-0.00142	-0.00142	-0.00141
	(A1 * A2 * A3 * !B1 * !Y)	0.00243	0.00244	0.00243
	(A1 * A2 * A3 * !B1 * !Y)	-0.00141	-0.00141	-0.00141
	(A1 * A2 * !A3 * !B1 * Y)	0.00215	0.00218	0.00216
	(A1 * A2 * !A3 * !B1 * Y)	-0.00278	-0.00280	-0.00279
	(A1 * !A2 * !B1 * Y)	0.00216	0.00218	0.00216
	(A1 * !A2 * !B1 * Y)	-0.00279	-0.00280	-0.00279
	(!A1 * !B1 * Y)	0.00216	0.00218	0.00217
	(!A1 * !B1 * Y)	-0.00279	-0.00280	-0.00279
sky130_fd_sc_hs__a32oi_4	**(A1 * A2 * A3 * B1 * !Y)**	0.00503	0.00506	0.00504
	(A1 * A2 * A3 * B1 * !Y)	-0.00280	-0.00282	-0.00281
	(A1 * A2 * A3 * !B1 * !Y)	0.00481	0.00488	0.00481
	(A1 * A2 * A3 * !B1 * !Y)	-0.00280	-0.00282	-0.00280
	(A1 * A2 * !A3 * !B1 * Y)	0.00423	0.00429	0.00424
	(A1 * A2 * !A3 * !B1 * Y)	-0.00556	-0.00561	-0.00557
	(A1 * !A2 * !B1 * Y)	0.00423	0.00429	0.00424
	(A1 * !A2 * !B1 * Y)	-0.00557	-0.00561	-0.00557
	(!A1 * !B1 * Y)	0.00425	0.00430	0.00427
	(!A1 * !B1 * Y)	-0.00556	-0.00560	-0.00557

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)**	-0.00112	-0.00113	-0.00127
	(A1 * A2 * A3 * B1 * !Y)	0.00088	0.00088	0.00076
	(A1 * A2 * A3 * !B1 * !Y)	-0.00120	-0.00125	-0.00123
	(A1 * A2 * A3 * !B1 * !Y)	0.00072	0.00073	0.00072
	(A1 * A2 * !A3 * !B1 * Y)	-0.00104	-0.00109	-0.00109
	(A1 * A2 * !A3 * !B1 * Y)	0.00147	0.00143	0.00143
	(A1 * !A2 * !B1 * Y)	-0.00104	-0.00109	-0.00109
	(A1 * !A2 * !B1 * Y)	0.00147	0.00143	0.00143
	(!A1 * !B1 * Y)	-0.00104	-0.00109	-0.00109
	(!A1 * !B1 * Y)	0.00147	0.00143	0.00143
sky130_fd_sc_hs__a32oi_2	**(A1 * A2 * A3 * B1 * !Y)**	-0.00219	-0.00223	-0.00250
	(A1 * A2 * A3 * B1 * !Y)	0.00170	0.00171	0.00148
	(A1 * A2 * A3 * !B1 * !Y)	-0.00235	-0.00244	-0.00243
	(A1 * A2 * A3 * !B1 * !Y)	0.00141	0.00141	0.00141
	(A1 * A2 * !A3 * !B1 * Y)	-0.00204	-0.00217	-0.00216
	(A1 * A2 * !A3 * !B1 * Y)	0.00285	0.00282	0.00279
	(A1 * !A2 * !B1 * Y)	-0.00204	-0.00218	-0.00216
	(A1 * !A2 * !B1 * Y)	0.00285	0.00282	0.00279
	(!A1 * !B1 * Y)	-0.00204	-0.00218	-0.00217
	(!A1 * !B1 * Y)	0.00285	0.00282	0.00279
sky130_fd_sc_hs__a32oi_4	**(A1 * A2 * A3 * B1 * !Y)**	-0.00440	-0.00442	-0.00496
	(A1 * A2 * A3 * B1 * !Y)	0.00334	0.00332	0.00293
	(A1 * A2 * A3 * !B1 * !Y)	-0.00464	-0.00482	-0.00481
	(A1 * A2 * A3 * !B1 * !Y)	0.00280	0.00282	0.00280
	(A1 * A2 * !A3 * !B1 * Y)	-0.00398	-0.00427	-0.00424
	(A1 * A2 * !A3 * !B1 * Y)	0.00572	0.00564	0.00559
	(A1 * !A2 * !B1 * Y)	-0.00398	-0.00427	-0.00424
	(A1 * !A2 * !B1 * Y)	0.00572	0.00564	0.00559
	(!A1 * !B1 * Y)	-0.00398	-0.00427	-0.00427
	(!A1 * !B1 * Y)	0.00572	0.00564	0.00559

SKY130_FD_SC_HS__A32Ox

sky130_fd_sc_hs_tt_1.50v_25C.ccs
Cell Library: Process , Voltage
1.50, 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	0.00251	0.00247	0.00256	0.00250	0.00232	0.83609
sky130_fd_sc_hs__a32o_2	0.00269	0.00264	0.00271	0.00264	0.00250	1.49209
sky130_fd_sc_hs__a32o_4	0.00459	0.00515	0.00461	0.00478	0.00547	3.17370

Leakage Information

Cell Name	Leakage(nW)		
	Min.	Avg	Max.
sky130_fd_sc_hs__a32o_1	0.00000	0.06595	0.15326
sky130_fd_sc_hs__a32o_2	0.00000	0.08609	0.15791
sky130_fd_sc_hs__a32o_4	0.00000	0.17412	0.31583

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)	0.13646	0.81369	7.02402
	A2->X (RR)	0.14450	0.82298	7.11797
	A3->X (RR)	0.14954	0.80375	7.07737
	B1->X (RR)	0.10120	0.74928	6.92005
	B2->X (RR)	0.10481	0.74713	6.95586
sky130_fd_sc_hs__a32o_2	A1->X (RR)	0.13820	0.73604	7.03149
	A2->X (RR)	0.14657	0.73737	7.10074
	A3->X (RR)	0.15176	0.71769	7.04740
	B1->X (RR)	0.10179	0.67007	6.89643
	B2->X (RR)	0.10629	0.66429	6.92444
sky130_fd_sc_hs__a32o_4	A1->X (RR)	0.14817	0.66403	7.16415
	A2->X (RR)	0.15930	0.67238	7.25789
	A3->X (RR)	0.16488	0.65172	7.20362
	B1->X (RR)	0.10093	0.58244	7.03210
	B2->X (RR)	0.10593	0.57986	7.06658

Delay(ns) to X falling :

Cell Name	Timing Arc(Dir)	Delay(ns)		
		First	Mid	Last
sky130_fd_sc_hs__a32o_1	A1->X (FF)	0.23862	0.79576	4.91030
	A2->X (FF)	0.26561	0.83132	5.02198
	A3->X (FF)	0.27929	0.84824	5.10318
	B1->X (FF)	0.20942	0.75757	4.74851
	B2->X (FF)	0.22961	0.78925	4.83805
sky130_fd_sc_hs__a32o_2	A1->X (FF)	0.29186	0.82939	4.94255
	A2->X (FF)	0.32277	0.86895	5.06641
	A3->X (FF)	0.34723	0.89890	5.15977
	B1->X (FF)	0.26729	0.80261	4.79946
	B2->X (FF)	0.29670	0.84187	4.92080
sky130_fd_sc_hs__a32o_4	A1->X (FF)	0.27233	0.78144	5.08057
	A2->X (FF)	0.29118	0.80873	5.19354
	A3->X (FF)	0.32612	0.84985	5.32038
	B1->X (FF)	0.25891	0.76601	4.98313
	B2->X (FF)	0.27751	0.79004	5.05704

Power Information

Internal switching power(pJ) to X rising :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__a32o_1	A1	0.00903	0.00884	0.01186
	A1	0.00450	0.00431	0.00734
	A2	0.00963	0.00940	0.01142
	A2	0.00450	0.00427	0.00633
	A3	0.01034	0.01004	0.01156
	A3	0.00449	0.00419	0.00575
	B1	0.00707	0.00708	0.01159
	B1	0.00263	0.00266	0.00932
	B2	0.00769	0.00769	0.01113
	B2	0.00260	0.00260	0.00700
sky130_fd_sc_hs__a32o_2	A1	0.01107	0.01109	0.01396
	A1	0.00647	0.00653	0.00932
	A2	0.01179	0.01182	0.01374
	A2	0.00647	0.00646	0.00846
	A3	0.01262	0.01258	0.01392
	A3	0.00648	0.00641	0.00771
	B1	0.00942	0.00966	0.01340
	B1	0.00460	0.00484	0.01121
	B2	0.01019	0.01046	0.01319
	B2	0.00460	0.00490	0.01083

sky130_fd_sc_hs__a32o_4	**A1**	0.02101	0.02140	0.02803
	A1	0.01266	0.01303	0.01981
	A2	0.02262	0.02293	0.02745
	A2	0.01264	0.01294	0.01767
	A3	0.02391	0.02434	0.02820
	A3	0.01266	0.01309	0.01719
	B1	0.01729	0.01765	0.02764
	B1	0.00859	0.00899	0.01906
	B2	0.01930	0.01967	0.02750
	B2	0.00854	0.00886	0.01778

Internal switching power(pJ) to X falling :

Cell Name	**Input**	**Power(pJ)**		
		first	**mid**	**last**
sky130_fd_sc_hs__a32o_1	**A1**	0.00313	0.00310	0.00506
	A1	0.00783	0.00781	0.00975
	A2	0.00350	0.00354	0.00571
	A2	0.00876	0.00879	0.01065
	A3	0.00370	0.00356	0.00567
	A3	0.00962	0.00951	0.01123
	B1	0.00272	0.00316	0.00958
	B1	0.00777	0.00792	0.01308
	B2	0.00334	0.00360	0.00941
	B2	0.00857	0.00876	0.01375

sky130_fd_sc_hs__a32o_2	**A1**	0.00482	0.00488	0.00746
	A1	0.00975	0.00997	0.01196
	A2	0.00528	0.00541	0.00747
	A2	0.01089	0.01112	0.01303
	A3	0.00552	0.00538	0.00739
	A3	0.01187	0.01182	0.01350
	B1	0.00507	0.00527	0.01073
	B1	0.00977	0.00999	0.01487
	B2	0.00503	0.00547	0.01166
	B2	0.01085	0.01109	0.01588
sky130_fd_sc_hs__a32o_4	**A1**	0.00909	0.00942	0.01587
	A1	0.01817	0.01865	0.02283
	A2	0.00903	0.00959	0.01579
	A2	0.02040	0.02092	0.02475
	A3	0.01081	0.01122	0.01637
	A3	0.02254	0.02315	0.02677
	B1	0.01019	0.01105	0.02263
	B1	0.01864	0.01948	0.02958
	B2	0.01021	0.01091	0.02270
	B2	0.02061	0.02137	0.03147

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)**	0.00110	0.00105	0.00103
	(A2 * A3 * B1 * B2 * X)	-0.00110	-0.00121	-0.00120
	(A2 * !A3 * B1 * B2 * X)	0.00095	0.00096	0.00095
	(A2 * !A3 * B1 * B2 * X)	-0.00123	-0.00124	-0.00123
	(A2 * !A3 * B1 * !B2 * !X)	0.00036	0.00036	0.00033
	(A2 * !A3 * B1 * !B2 * !X)	-0.00144	-0.00145	-0.00150
	(A2 * !A3 * !B1 * !X)	0.00036	0.00036	0.00033
	(A2 * !A3 * !B1 * !X)	-0.00144	-0.00145	-0.00150
	(!A2 * B1 * B2 * X)	0.00098	0.00099	0.00098
	(!A2 * B1 * B2 * X)	-0.00124	-0.00124	-0.00123
	(!A2 * B1 * !B2 * !X)	0.00036	0.00036	0.00034
	(!A2 * B1 * !B2 * !X)	-0.00148	-0.00148	-0.00150
	(!A2 * !B1 * !X)	0.00036	0.00036	0.00034
	(!A2 * !B1 * !X)	-0.00148	-0.00148	-0.00150
sky130_fd_sc_hs__a32o_2	**(A2 * A3 * B1 * B2 * X)**	0.00124	0.00119	0.00117
	(A2 * A3 * B1 * B2 * X)	-0.00110	-0.00120	-0.00120
	(A2 * !A3 * B1 * B2 * X)	0.00108	0.00109	0.00108
	(A2 * !A3 * B1 * B2 * X)	-0.00123	-0.00124	-0.00123
	(A2 * !A3 * B1 * !B2 * !X)	0.00039	0.00039	0.00036
	(A2 * !A3 * B1 * !B2 * !X)	-0.00146	-0.00147	-0.00153
	(A2 * !A3 * !B1 * !X)	0.00039	0.00039	0.00036
	(A2 * !A3 * !B1 * !X)	-0.00146	-0.00147	-0.00153
	(!A2 * B1 * B2 * X)	0.00112	0.00113	0.00112
	(!A2 * B1 * B2 * X)	-0.00123	-0.00124	-0.00123
	(!A2 * B1 * !B2 * !X)	0.00040	0.00040	0.00038
	(!A2 * B1 * !B2 * !X)	-0.00151	-0.00151	-0.00153
	(!A2 * !B1 * !X)	0.00040	0.00040	0.00038
	(!A2 * !B1 * !X)	-0.00151	-0.00151	-0.00153

sky130_fd_sc_hs__a32o_4	**(A2 * A3 * B1 * B2 * X)**	0.00196	0.00189	0.00187
	(A2 * A3 * B1 * B2 * X)	-0.00219	-0.00241	-0.00240
	(A2 * !A3 * B1 * B2 * X)	0.00172	0.00173	0.00172
	(A2 * !A3 * B1 * B2 * X)	-0.00245	-0.00248	-0.00246
	(A2 * !A3 * B1 * !B2 * !X)	0.00067	0.00068	0.00060
	(A2 * !A3 * B1 * !B2 * !X)	-0.00271	-0.00273	-0.00286
	(A2 * !A3 * !B1 * !X)	0.00067	0.00068	0.00060
	(A2 * !A3 * !B1 * !X)	-0.00271	-0.00273	-0.00286
	(!A2 * B1 * B2 * X)	0.00176	0.00176	0.00176
	(!A2 * B1 * B2 * X)	-0.00245	-0.00247	-0.00246
	(!A2 * B1 * !B2 * !X)	0.00063	0.00064	0.00061
	(!A2 * B1 * !B2 * !X)	-0.00281	-0.00284	-0.00288
	(!A2 * !B1 * !X)	0.00063	0.00064	0.00061
	(!A2 * !B1 * !X)	-0.00281	-0.00284	-0.00288

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)**	-0.00103	-0.00103	-0.00102
	(A2 * A3 * B1 * B2 * X)	0.00120	0.00121	0.00120
	(A2 * !A3 * B1 * B2 * X)	-0.00088	-0.00096	-0.00095
	(A2 * !A3 * B1 * B2 * X)	0.00124	0.00125	0.00124
	(A2 * !A3 * B1 * !B2 * !X)	-0.00033	-0.00033	-0.00033
	(A2 * !A3 * B1 * !B2 * !X)	0.00150	0.00151	0.00150
	(A2 * !A3 * !B1 * !X)	-0.00032	-0.00033	-0.00033
	(A2 * !A3 * !B1 * !X)	0.00150	0.00151	0.00150
	(!A2 * B1 * B2 * X)	-0.00095	-0.00099	-0.00098
	(!A2 * B1 * B2 * X)	0.00124	0.00124	0.00124
	(!A2 * B1 * !B2 * !X)	-0.00033	-0.00034	-0.00033
	(!A2 * B1 * !B2 * !X)	0.00150	0.00151	0.00150
	(!A2 * !B1 * !X)	-0.00033	-0.00034	-0.00033
	(!A2 * !B1 * !X)	0.00150	0.00151	0.00150
sky130_fd_sc_hs__a32o_2	**(A2 * A3 * B1 * B2 * X)**	-0.00117	-0.00117	-0.00117
	(A2 * A3 * B1 * B2 * X)	0.00120	0.00121	0.00120
	(A2 * !A3 * B1 * B2 * X)	-0.00101	-0.00109	-0.00108
	(A2 * !A3 * B1 * B2 * X)	0.00124	0.00125	0.00124
	(A2 * !A3 * B1 * !B2 * !X)	-0.00036	-0.00036	-0.00036
	(A2 * !A3 * B1 * !B2 * !X)	0.00153	0.00154	0.00154
	(A2 * !A3 * !B1 * !X)	-0.00036	-0.00036	-0.00036
	(A2 * !A3 * !B1 * !X)	0.00153	0.00154	0.00154
	(!A2 * B1 * B2 * X)	-0.00108	-0.00112	-0.00112
	(!A2 * B1 * B2 * X)	0.00124	0.00124	0.00123
	(!A2 * B1 * !B2 * !X)	-0.00037	-0.00037	-0.00037
	(!A2 * B1 * !B2 * !X)	0.00153	0.00154	0.00154
	(!A2 * !B1 * !X)	-0.00037	-0.00037	-0.00037
	(!A2 * !B1 * !X)	0.00153	0.00154	0.00154

sky130_fd_sc_hs__a32o_4	**(A2 * A3 * B1 * B2 * X)**	-0.00185	-0.00186	-0.00185
	(A2 * A3 * B1 * B2 * X)	0.00238	0.00241	0.00240
	(A2 * !A3 * B1 * B2 * X)	-0.00155	-0.00173	-0.00172
	(A2 * !A3 * B1 * B2 * X)	0.00246	0.00250	0.00247
	(A2 * !A3 * B1 * !B2 * !X)	-0.00057	-0.00058	-0.00056
	(A2 * !A3 * B1 * !B2 * !X)	0.00289	0.00293	0.00288
	(A2 * !A3 * !B1 * !X)	-0.00057	-0.00058	-0.00056
	(A2 * !A3 * !B1 * !X)	0.00289	0.00293	0.00288
	(!A2 * B1 * B2 * X)	-0.00170	-0.00176	-0.00176
	(!A2 * B1 * B2 * X)	0.00246	0.00250	0.00247
	(!A2 * B1 * !B2 * !X)	-0.00059	-0.00058	-0.00059
	(!A2 * B1 * !B2 * !X)	0.00289	0.00287	0.00289
	(!A2 * !B1 * !X)	-0.00059	-0.00058	-0.00059
	(!A2 * !B1 * !X)	0.00289	0.00287	0.00289

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)**	0.00108	0.00102	0.00101
	(A1 * A3 * B1 * B2 * X)	-0.00110	-0.00121	-0.00120
	(A1 * !A3 * B1 * B2 * X)	0.00095	0.00096	0.00096
	(A1 * !A3 * B1 * B2 * X)	-0.00123	-0.00124	-0.00123
	(A1 * !A3 * B1 * !B2 * !X)	0.00041	0.00041	0.00041
	(A1 * !A3 * B1 * !B2 * !X)	-0.00132	-0.00132	-0.00131
	(A1 * !A3 * !B1 * !X)	0.00041	0.00041	0.00041
	(A1 * !A3 * !B1 * !X)	-0.00132	-0.00132	-0.00131
	(!A1 * A3 * B1 * B2 * X)	0.00096	0.00097	0.00096
	(!A1 * A3 * B1 * B2 * X)	-0.00123	-0.00124	-0.00123
	(!A1 * A3 * B1 * !B2 * !X)	0.00087	0.00088	0.00088
	(!A1 * A3 * B1 * !B2 * !X)	-0.00131	-0.00132	-0.00132
	(!A1 * A3 * !B1 * !X)	0.00088	0.00089	0.00088
	(!A1 * A3 * !B1 * !X)	-0.00132	-0.00132	-0.00132
	(!A1 * !A3 * B1 * B2 * X)	0.00060	0.00060	0.00059
	(!A1 * !A3 * B1 * B2 * X)	-0.00123	-0.00124	-0.00123
	(!A1 * !A3 * B1 * !B2 * !X)	0.00047	0.00047	0.00047
	(!A1 * !A3 * B1 * !B2 * !X)	-0.00133	-0.00133	-0.00132
	(!A1 * !A3 * !B1 * !X)	0.00047	0.00047	0.00047
	(!A1 * !A3 * !B1 * !X)	-0.00133	-0.00133	-0.00132

sky130_fd_sc_hs__a32o_2	**(A1 * A3 * B1 * B2 * X)**	0.00122	0.00117	0.00115
	(A1 * A3 * B1 * B2 * X)	-0.00110	-0.00120	-0.00120
	(A1 * !A3 * B1 * B2 * X)	0.00109	0.00109	0.00109
	(A1 * !A3 * B1 * B2 * X)	-0.00123	-0.00123	-0.00123
	(A1 * !A3 * B1 * !B2 * !X)	0.00046	0.00046	0.00046
	(A1 * !A3 * B1 * !B2 * !X)	-0.00132	-0.00132	-0.00131
	(A1 * !A3 * !B1 * !X)	0.00046	0.00046	0.00046
	(A1 * !A3 * !B1 * !X)	-0.00132	-0.00132	-0.00131
	(!A1 * A3 * B1 * B2 * X)	0.00109	0.00111	0.00110
	(!A1 * A3 * B1 * B2 * X)	-0.00122	-0.00123	-0.00123
	(!A1 * A3 * B1 * !B2 * !X)	0.00101	0.00103	0.00101
	(!A1 * A3 * B1 * !B2 * !X)	-0.00132	-0.00132	-0.00131
	(!A1 * A3 * !B1 * !X)	0.00101	0.00103	0.00101
	(!A1 * A3 * !B1 * !X)	-0.00132	-0.00132	-0.00131
	(!A1 * !A3 * B1 * B2 * X)	0.00067	0.00067	0.00067
	(!A1 * !A3 * B1 * B2 * X)	-0.00123	-0.00124	-0.00123
	(!A1 * !A3 * B1 * !B2 * !X)	0.00054	0.00054	0.00054
	(!A1 * !A3 * B1 * !B2 * !X)	-0.00133	-0.00132	-0.00132
	(!A1 * !A3 * !B1 * !X)	0.00054	0.00054	0.00054
	(!A1 * !A3 * !B1 * !X)	-0.00133	-0.00132	-0.00132

sky130_fd_sc_hs__a32o_4	**(A1 * A3 * B1 * B2 * X)**	0.00216	0.00202	0.00198
	(A1 * A3 * B1 * B2 * X)	-0.00233	-0.00262	-0.00261
	(A1 * !A3 * B1 * B2 * X)	0.00189	0.00190	0.00189
	(A1 * !A3 * B1 * B2 * X)	-0.00269	-0.00271	-0.00269
	(A1 * !A3 * B1 * !B2 * !X)	0.00086	0.00086	0.00084
	(A1 * !A3 * B1 * !B2 * !X)	-0.00283	-0.00283	-0.00281
	(A1 * !A3 * !B1 * !X)	0.00086	0.00086	0.00084
	(A1 * !A3 * !B1 * !X)	-0.00283	-0.00283	-0.00281
	(!A1 * A3 * B1 * B2 * X)	0.00188	0.00189	0.00188
	(!A1 * A3 * B1 * B2 * X)	-0.00269	-0.00270	-0.00269
	(!A1 * A3 * B1 * !B2 * !X)	0.00175	0.00178	0.00176
	(!A1 * A3 * B1 * !B2 * !X)	-0.00281	-0.00283	-0.00281
	(!A1 * A3 * !B1 * !X)	0.00175	0.00178	0.00176
	(!A1 * A3 * !B1 * !X)	-0.00281	-0.00283	-0.00281
	(!A1 * !A3 * B1 * B2 * X)	0.00121	0.00123	0.00121
	(!A1 * !A3 * B1 * B2 * X)	-0.00269	-0.00271	-0.00269
	(!A1 * !A3 * B1 * !B2 * !X)	0.00100	0.00101	0.00101
	(!A1 * !A3 * B1 * !B2 * !X)	-0.00283	-0.00285	-0.00284
	(!A1 * !A3 * !B1 * !X)	0.00100	0.00101	0.00101
	(!A1 * !A3 * !B1 * !X)	-0.00283	-0.00285	-0.00284

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)**	-0.00101	-0.00101	-0.00100
	(A1 * A3 * B1 * B2 * X)	0.00121	0.00121	0.00120
	(A1 * !A3 * B1 * B2 * X)	-0.00093	-0.00096	-0.00096
	(A1 * !A3 * B1 * B2 * X)	0.00124	0.00125	0.00124
	(A1 * !A3 * B1 * !B2 * !X)	-0.00038	-0.00039	-0.00039
	(A1 * !A3 * B1 * !B2 * !X)	0.00135	0.00137	0.00133
	(A1 * !A3 * !B1 * !X)	-0.00038	-0.00039	-0.00039
	(A1 * !A3 * !B1 * !X)	0.00135	0.00137	0.00133
	(!A1 * A3 * B1 * B2 * X)	-0.00093	-0.00097	-0.00096
	(!A1 * A3 * B1 * B2 * X)	0.00123	0.00125	0.00124
	(!A1 * A3 * B1 * !B2 * !X)	-0.00081	-0.00088	-0.00088
	(!A1 * A3 * B1 * !B2 * !X)	0.00136	0.00134	0.00132
	(!A1 * A3 * !B1 * !X)	-0.00081	-0.00088	-0.00088
	(!A1 * A3 * !B1 * !X)	0.00136	0.00134	0.00132
	(!A1 * !A3 * B1 * B2 * X)	-0.00060	-0.00060	-0.00059
	(!A1 * !A3 * B1 * B2 * X)	0.00123	0.00125	0.00124
	(!A1 * !A3 * B1 * !B2 * !X)	-0.00047	-0.00047	-0.00047
	(!A1 * !A3 * B1 * !B2 * !X)	0.00138	0.00140	0.00134
	(!A1 * !A3 * !B1 * !X)	-0.00047	-0.00047	-0.00047
	(!A1 * !A3 * !B1 * !X)	0.00138	0.00140	0.00134

sky130_fd_sc_hs__a32o_2	**(A1 * A3 * B1 * B2 * X)**	-0.00115	-0.00115	-0.00115
	(A1 * A3 * B1 * B2 * X)	0.00119	0.00121	0.00120
	(A1 * !A3 * B1 * B2 * X)	-0.00106	-0.00109	-0.00109
	(A1 * !A3 * B1 * B2 * X)	0.00124	0.00125	0.00124
	(A1 * !A3 * B1 * !B2 * !X)	-0.00043	-0.00044	-0.00044
	(A1 * !A3 * B1 * !B2 * !X)	0.00135	0.00137	0.00133
	(A1 * !A3 * !B1 * !X)	-0.00043	-0.00044	-0.00044
	(A1 * !A3 * !B1 * !X)	0.00135	0.00137	0.00133
	(!A1 * A3 * B1 * B2 * X)	-0.00106	-0.00110	-0.00110
	(!A1 * A3 * B1 * B2 * X)	0.00123	0.00124	0.00124
	(!A1 * A3 * B1 * !B2 * !X)	-0.00094	-0.00102	-0.00101
	(!A1 * A3 * B1 * !B2 * !X)	0.00135	0.00133	0.00132
	(!A1 * A3 * !B1 * !X)	-0.00094	-0.00102	-0.00101
	(!A1 * A3 * !B1 * !X)	0.00135	0.00133	0.00132
	(!A1 * !A3 * B1 * B2 * X)	-0.00067	-0.00067	-0.00067
	(!A1 * !A3 * B1 * B2 * X)	0.00123	0.00125	0.00124
	(!A1 * !A3 * B1 * !B2 * !X)	-0.00054	-0.00054	-0.00054
	(!A1 * !A3 * B1 * !B2 * !X)	0.00138	0.00140	0.00134
	(!A1 * !A3 * !B1 * !X)	-0.00054	-0.00054	-0.00054
	(!A1 * !A3 * !B1 * !X)	0.00138	0.00140	0.00134

sky130_fd_sc_hs__a32o_4	**(A1 * A3 * B1 * B2 * X)**	-0.00197	-0.00198	-0.00196
	(A1 * A3 * B1 * B2 * X)	0.00259	0.00262	0.00261
	(A1 * !A3 * B1 * B2 * X)	-0.00180	-0.00190	-0.00189
	(A1 * !A3 * B1 * B2 * X)	0.00272	0.00273	0.00271
	(A1 * !A3 * B1 * !B2 * !X)	-0.00079	-0.00080	-0.00080
	(A1 * !A3 * B1 * !B2 * !X)	0.00291	0.00294	0.00285
	(A1 * !A3 * !B1 * !X)	-0.00079	-0.00080	-0.00080
	(A1 * !A3 * !B1 * !X)	0.00291	0.00294	0.00285
	(!A1 * A3 * B1 * B2 * X)	-0.00181	-0.00189	-0.00188
	(!A1 * A3 * B1 * B2 * X)	0.00270	0.00272	0.00270
	(!A1 * A3 * B1 * !B2 * !X)	-0.00161	-0.00177	-0.00176
	(!A1 * A3 * B1 * !B2 * !X)	0.00293	0.00286	0.00283
	(!A1 * A3 * !B1 * !X)	-0.00161	-0.00177	-0.00176
	(!A1 * A3 * !B1 * !X)	0.00293	0.00286	0.00283
	(!A1 * !A3 * B1 * B2 * X)	-0.00121	-0.00123	-0.00121
	(!A1 * !A3 * B1 * B2 * X)	0.00272	0.00274	0.00271
	(!A1 * !A3 * B1 * !B2 * !X)	-0.00100	-0.00101	-0.00101
	(!A1 * !A3 * B1 * !B2 * !X)	0.00298	0.00297	0.00287
	(!A1 * !A3 * !B1 * !X)	-0.00100	-0.00101	-0.00101
	(!A1 * !A3 * !B1 * !X)	0.00298	0.00297	0.00287

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)**	0.00120	0.00115	0.00114
	(A1 * A2 * B1 * B2 * X)	-0.00109	-0.00119	-0.00118
	(A1 * !A2 * B1 * !B2 * !X)	0.00088	0.00089	0.00089
	(A1 * !A2 * B1 * !B2 * !X)	-0.00141	-0.00141	-0.00141
	(A1 * !A2 * !B1 * !X)	0.00088	0.00089	0.00089
	(A1 * !A2 * !B1 * !X)	-0.00141	-0.00141	-0.00141
	(!A2 * B1 * B2 * X)	0.00107	0.00108	0.00108
	(!A2 * B1 * B2 * X)	-0.00120	-0.00121	-0.00121
	(!A1 * A2 * B1 * B2 * X)	0.00106	0.00107	0.00106
	(!A1 * A2 * B1 * B2 * X)	-0.00121	-0.00121	-0.00121
	(!A1 * A2 * B1 * !B2 * !X)	0.00088	0.00088	0.00087
	(!A1 * A2 * B1 * !B2 * !X)	-0.00141	-0.00142	-0.00141
	(!A1 * A2 * !B1 * !X)	0.00088	0.00088	0.00087
	(!A1 * A2 * !B1 * !X)	-0.00141	-0.00141	-0.00141
	(!A1 * !A2 * B1 * !B2 * !X)	0.00088	0.00090	0.00089
	(!A1 * !A2 * B1 * !B2 * !X)	-0.00141	-0.00142	-0.00141
	(!A1 * !A2 * !B1 * !X)	0.00088	0.00090	0.00089
	(!A1 * !A2 * !B1 * !X)	-0.00141	-0.00142	-0.00141

sky130_fd_sc_hs__a32o_2	**(A1 * A2 * B1 * B2 * X)**	0.00135	0.00130	0.00128
	(A1 * A2 * B1 * B2 * X)	-0.00109	-0.00119	-0.00119
	(A1 * !A2 * B1 * !B2 * !X)	0.00103	0.00104	0.00103
	(A1 * !A2 * B1 * !B2 * !X)	-0.00141	-0.00141	-0.00141
	(A1 * !A2 * !B1 * !X)	0.00103	0.00104	0.00103
	(A1 * !A2 * !B1 * !X)	-0.00141	-0.00141	-0.00141
	(!A2 * B1 * B2 * X)	0.00121	0.00122	0.00122
	(!A2 * B1 * B2 * X)	-0.00122	-0.00122	-0.00122
	(!A1 * A2 * B1 * B2 * X)	0.00121	0.00122	0.00121
	(!A1 * A2 * B1 * B2 * X)	-0.00122	-0.00122	-0.00122
	(!A1 * A2 * B1 * !B2 * !X)	0.00101	0.00101	0.00100
	(!A1 * A2 * B1 * !B2 * !X)	-0.00141	-0.00141	-0.00141
	(!A1 * A2 * !B1 * !X)	0.00102	0.00102	0.00101
	(!A1 * A2 * !B1 * !X)	-0.00141	-0.00142	-0.00141
	(!A1 * !A2 * B1 * !B2 * !X)	0.00103	0.00103	0.00103
	(!A1 * !A2 * B1 * !B2 * !X)	-0.00141	-0.00141	-0.00141
	(!A1 * !A2 * !B1 * !X)	0.00103	0.00104	0.00103
	(!A1 * !A2 * !B1 * !X)	-0.00141	-0.00142	-0.00141

sky130_fd_sc_hs__a32o_4	**(A1 * A2 * B1 * B2 * X)**	0.00212	0.00200	0.00197
	(A1 * A2 * B1 * B2 * X)	-0.00229	-0.00253	-0.00252
	(A1 * !A2 * B1 * !B2 * !X)	0.00186	0.00188	0.00186
	(A1 * !A2 * B1 * !B2 * !X)	-0.00260	-0.00261	-0.00260
	(A1 * !A2 * !B1 * !X)	0.00186	0.00187	0.00186
	(A1 * !A2 * !B1 * !X)	-0.00260	-0.00261	-0.00260
	(!A2 * B1 * B2 * X)	0.00186	0.00188	0.00186
	(!A2 * B1 * B2 * X)	-0.00259	-0.00261	-0.00259
	(!A1 * A2 * B1 * B2 * X)	0.00180	0.00182	0.00180
	(!A1 * A2 * B1 * B2 * X)	-0.00259	-0.00261	-0.00259
	(!A1 * A2 * B1 * !B2 * !X)	0.00180	0.00182	0.00180
	(!A1 * A2 * B1 * !B2 * !X)	-0.00260	-0.00261	-0.00260
	(!A1 * A2 * !B1 * !X)	0.00180	0.00182	0.00180
	(!A1 * A2 * !B1 * !X)	-0.00260	-0.00261	-0.00260
	(!A1 * !A2 * B1 * !B2 * !X)	0.00186	0.00187	0.00186
	(!A1 * !A2 * B1 * !B2 * !X)	-0.00259	-0.00261	-0.00260
	(!A1 * !A2 * !B1 * !X)	0.00186	0.00187	0.00186
	(!A1 * !A2 * !B1 * !X)	-0.00259	-0.00261	-0.00260

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)**	-0.00113	-0.00114	-0.00113
	(A1 * A2 * B1 * B2 * X)	0.00119	0.00119	0.00118
	(A1 * !A2 * B1 * !B2 * !X)	-0.00086	-0.00089	-0.00089
	(A1 * !A2 * B1 * !B2 * !X)	0.00142	0.00141	0.00141
	(A1 * !A2 * !B1 * !X)	-0.00086	-0.00089	-0.00089
	(A1 * !A2 * !B1 * !X)	0.00142	0.00141	0.00141
	(!A2 * B1 * B2 * X)	-0.00106	-0.00108	-0.00108
	(!A2 * B1 * B2 * X)	0.00122	0.00123	0.00122
	(!A1 * A2 * B1 * B2 * X)	-0.00101	-0.00107	-0.00106
	(!A1 * A2 * B1 * B2 * X)	0.00121	0.00122	0.00122
	(!A1 * A2 * B1 * !B2 * !X)	-0.00081	-0.00088	-0.00087
	(!A1 * A2 * B1 * !B2 * !X)	0.00141	0.00142	0.00141
	(!A1 * A2 * !B1 * !X)	-0.00081	-0.00088	-0.00087
	(!A1 * A2 * !B1 * !X)	0.00141	0.00142	0.00141
	(!A1 * !A2 * B1 * !B2 * !X)	-0.00086	-0.00090	-0.00089
	(!A1 * !A2 * B1 * !B2 * !X)	0.00142	0.00144	0.00141
	(!A1 * !A2 * !B1 * !X)	-0.00086	-0.00090	-0.00089
	(!A1 * !A2 * !B1 * !X)	0.00142	0.00144	0.00141

sky130_fd_sc_hs__a32o_2	**(A1 * A2 * B1 * B2 * X)**	-0.00128	-0.00128	-0.00127
	(A1 * A2 * B1 * B2 * X)	0.00120	0.00120	0.00119
	(A1 * !A2 * B1 * !B2 * !X)	-0.00099	-0.00104	-0.00103
	(A1 * !A2 * B1 * !B2 * !X)	0.00142	0.00144	0.00141
	(A1 * !A2 * !B1 * !X)	-0.00099	-0.00104	-0.00103
	(A1 * !A2 * !B1 * !X)	0.00142	0.00144	0.00141
	(!A2 * B1 * B2 * X)	-0.00119	-0.00122	-0.00122
	(!A2 * B1 * B2 * X)	0.00123	0.00123	0.00122
	(!A1 * A2 * B1 * B2 * X)	-0.00113	-0.00121	-0.00121
	(!A1 * A2 * B1 * B2 * X)	0.00122	0.00122	0.00122
	(!A1 * A2 * B1 * !B2 * !X)	-0.00094	-0.00101	-0.00100
	(!A1 * A2 * B1 * !B2 * !X)	0.00141	0.00141	0.00141
	(!A1 * A2 * !B1 * !X)	-0.00094	-0.00102	-0.00101
	(!A1 * A2 * !B1 * !X)	0.00141	0.00142	0.00141
	(!A1 * !A2 * B1 * !B2 * !X)	-0.00100	-0.00103	-0.00103
	(!A1 * !A2 * B1 * !B2 * !X)	0.00142	0.00144	0.00141
	(!A1 * !A2 * !B1 * !X)	-0.00100	-0.00104	-0.00103
	(!A1 * !A2 * !B1 * !X)	0.00142	0.00144	0.00141

sky130_fd_sc_hs__a32o_4	**(A1 * A2 * B1 * B2 * X)**	-0.00196	-0.00196	-0.00195
	(A1 * A2 * B1 * B2 * X)	0.00252	0.00253	0.00252
	(A1 * !A2 * B1 * !B2 * !X)	-0.00176	-0.00187	-0.00186
	(A1 * !A2 * B1 * !B2 * !X)	0.00260	0.00263	0.00261
	(A1 * !A2 * !B1 * !X)	-0.00176	-0.00187	-0.00186
	(A1 * !A2 * !B1 * !X)	0.00260	0.00263	0.00261
	(!A2 * B1 * B2 * X)	-0.00179	-0.00187	-0.00186
	(!A2 * B1 * B2 * X)	0.00259	0.00262	0.00261
	(!A1 * A2 * B1 * B2 * X)	-0.00168	-0.00182	-0.00180
	(!A1 * A2 * B1 * B2 * X)	0.00260	0.00262	0.00261
	(!A1 * A2 * B1 * !B2 * !X)	-0.00167	-0.00182	-0.00180
	(!A1 * A2 * B1 * !B2 * !X)	0.00261	0.00261	0.00261
	(!A1 * A2 * !B1 * !X)	-0.00167	-0.00182	-0.00180
	(!A1 * A2 * !B1 * !X)	0.00261	0.00261	0.00261
	(!A1 * !A2 * B1 * !B2 * !X)	-0.00177	-0.00187	-0.00186
	(!A1 * !A2 * B1 * !B2 * !X)	0.00259	0.00263	0.00261
	(!A1 * !A2 * !B1 * !X)	-0.00177	-0.00187	-0.00186
	(!A1 * !A2 * !B1 * !X)	0.00259	0.00263	0.00261

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)**	0.00111	0.00113	0.00112
	(A1 * A2 * A3 * B2 * X)	-0.00063	-0.00064	-0.00063
	(A1 * A2 * A3 * !B2 * X)	0.00106	0.00108	0.00106
	(A1 * A2 * A3 * !B2 * X)	-0.00063	-0.00064	-0.00063
	(A1 * A2 * !A3 * !B2 * !X)	0.00034	0.00034	0.00033
	(A1 * A2 * !A3 * !B2 * !X)	-0.00146	-0.00147	-0.00148
	(A1 * !A2 * !B2 * !X)	0.00034	0.00034	0.00033
	(A1 * !A2 * !B2 * !X)	-0.00146	-0.00147	-0.00148
	(!A1 * !B2 * !X)	0.00034	0.00034	0.00033
	(!A1 * !B2 * !X)	-0.00146	-0.00147	-0.00148
sky130_fd_sc_hs__a32o_2	**(A1 * A2 * A3 * B2 * X)**	0.00124	0.00126	0.00124
	(A1 * A2 * A3 * B2 * X)	-0.00064	-0.00065	-0.00064
	(A1 * A2 * A3 * !B2 * X)	0.00118	0.00119	0.00119
	(A1 * A2 * A3 * !B2 * X)	-0.00064	-0.00064	-0.00064
	(A1 * A2 * !A3 * !B2 * !X)	0.00042	0.00042	0.00040
	(A1 * A2 * !A3 * !B2 * !X)	-0.00145	-0.00146	-0.00148
	(A1 * !A2 * !B2 * !X)	0.00042	0.00042	0.00040
	(A1 * !A2 * !B2 * !X)	-0.00145	-0.00146	-0.00148
	(!A1 * !B2 * !X)	0.00042	0.00042	0.00040
	(!A1 * !B2 * !X)	-0.00145	-0.00146	-0.00148
sky130_fd_sc_hs__a32o_4	**(A1 * A2 * A3 * B2 * X)**	0.00222	0.00223	0.00223
	(A1 * A2 * A3 * B2 * X)	-0.00128	-0.00128	-0.00128
	(A1 * A2 * A3 * !B2 * X)	0.00210	0.00213	0.00211
	(A1 * A2 * A3 * !B2 * X)	-0.00128	-0.00129	-0.00128
	(A1 * A2 * !A3 * !B2 * !X)	0.00063	0.00063	0.00060
	(A1 * A2 * !A3 * !B2 * !X)	-0.00294	-0.00296	-0.00300
	(A1 * !A2 * !B2 * !X)	0.00063	0.00063	0.00060
	(A1 * !A2 * !B2 * !X)	-0.00294	-0.00296	-0.00300
	(!A1 * !B2 * !X)	0.00063	0.00063	0.00060
	(!A1 * !B2 * !X)	-0.00294	-0.00296	-0.00300

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)	-0.00097	-0.00097	-0.00110
	(A1 * A2 * A3 * B2 * X)	0.00076	0.00075	0.00066
	(A1 * A2 * A3 * !B2 * X)	-0.00104	-0.00108	-0.00106
	(A1 * A2 * A3 * !B2 * X)	0.00064	0.00064	0.00063
	(A1 * A2 * !A3 * !B2 * !X)	-0.00032	-0.00032	-0.00032
	(A1 * A2 * !A3 * !B2 * !X)	0.00148	0.00149	0.00148
	(A1 * !A2 * !B2 * !X)	-0.00032	-0.00032	-0.00032
	(A1 * !A2 * !B2 * !X)	0.00148	0.00148	0.00148
	(!A1 * !B2 * !X)	-0.00032	-0.00032	-0.00032
	(!A1 * !B2 * !X)	0.00148	0.00148	0.00148
sky130_fd_sc_hs__a32o_2	(A1 * A2 * A3 * B2 * X)	-0.00109	-0.00111	-0.00122
	(A1 * A2 * A3 * B2 * X)	0.00077	0.00077	0.00067
	(A1 * A2 * A3 * !B2 * X)	-0.00115	-0.00119	-0.00119
	(A1 * A2 * A3 * !B2 * X)	0.00064	0.00065	0.00064
	(A1 * A2 * !A3 * !B2 * !X)	-0.00039	-0.00039	-0.00039
	(A1 * A2 * !A3 * !B2 * !X)	0.00148	0.00149	0.00149
	(A1 * !A2 * !B2 * !X)	-0.00039	-0.00039	-0.00039
	(A1 * !A2 * !B2 * !X)	0.00148	0.00149	0.00149
	(!A1 * !B2 * !X)	-0.00039	-0.00039	-0.00039
	(!A1 * !B2 * !X)	0.00148	0.00149	0.00149

sky130_fd_sc_hs__a32o_4	**(A1 * A2 * A3 * B2 * X)**	-0.00191	-0.00193	-0.00219
	(A1 * A2 * A3 * B2 * X)	0.00155	0.00154	0.00134
	(A1 * A2 * A3 * !B2 * X)	-0.00205	-0.00213	-0.00211
	(A1 * A2 * A3 * !B2 * X)	0.00129	0.00129	0.00128
	(A1 * A2 * !A3 * !B2 * !X)	-0.00059	-0.00059	-0.00058
	(A1 * A2 * !A3 * !B2 * !X)	0.00301	0.00301	0.00300
	(A1 * !A2 * !B2 * !X)	-0.00059	-0.00059	-0.00058
	(A1 * !A2 * !B2 * !X)	0.00301	0.00301	0.00300
	(!A1 * !B2 * !X)	-0.00059	-0.00059	-0.00058
	(!A1 * !B2 * !X)	0.00301	0.00301	0.00300

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)**	0.00109	0.00111	0.00109
	(A1 * A2 * A3 * B1 * X)	-0.00067	-0.00068	-0.00066
	(A1 * A2 * A3 * !B1 * X)	0.00104	0.00104	0.00104
	(A1 * A2 * A3 * !B1 * X)	-0.00066	-0.00066	-0.00066
	(A1 * A2 * !A3 * !B1 * !X)	0.00095	0.00096	0.00095
	(A1 * A2 * !A3 * !B1 * !X)	-0.00124	-0.00125	-0.00125
	(A1 * !A2 * !B1 * !X)	0.00095	0.00096	0.00095
	(A1 * !A2 * !B1 * !X)	-0.00124	-0.00125	-0.00125
	(!A1 * !B1 * !X)	0.00095	0.00096	0.00095
	(!A1 * !B1 * !X)	-0.00124	-0.00125	-0.00125

sky130_fd_sc_hs__a32o_2	**(A1 * A2 * A3 * B1 * X)**	0.00125	0.00127	0.00125
	(A1 * A2 * A3 * B1 * X)	-0.00068	-0.00069	-0.00068
	(A1 * A2 * A3 * !B1 * X)	0.00121	0.00121	0.00121
	(A1 * A2 * A3 * !B1 * X)	-0.00068	-0.00067	-0.00067
	(A1 * A2 * !A3 * !B1 * !X)	0.00112	0.00113	0.00112
	(A1 * A2 * !A3 * !B1 * !X)	-0.00125	-0.00126	-0.00126
	(A1 * !A2 * !B1 * !X)	0.00112	0.00113	0.00112
	(A1 * !A2 * !B1 * !X)	-0.00125	-0.00126	-0.00126
	(!A1 * !B1 * !X)	0.00111	0.00113	0.00112
	(!A1 * !B1 * !X)	-0.00125	-0.00126	-0.00126
sky130_fd_sc_hs__a32o_4	**(A1 * A2 * A3 * B1 * X)**	0.00285	0.00286	0.00284
	(A1 * A2 * A3 * B1 * X)	-0.00134	-0.00134	-0.00133
	(A1 * A2 * A3 * !B1 * X)	0.00271	0.00273	0.00271
	(A1 * A2 * A3 * !B1 * X)	-0.00133	-0.00134	-0.00133
	(A1 * A2 * !A3 * !B1 * !X)	0.00238	0.00238	0.00238
	(A1 * A2 * !A3 * !B1 * !X)	-0.00266	-0.00266	-0.00266
	(A1 * !A2 * !B1 * !X)	0.00238	0.00238	0.00238
	(A1 * !A2 * !B1 * !X)	-0.00266	-0.00266	-0.00266
	(!A1 * !B1 * !X)	0.00238	0.00238	0.00238
	(!A1 * !B1 * !X)	-0.00266	-0.00265	-0.00266

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)**	-0.00094	-0.00095	-0.00107
	(A1 * A2 * A3 * B1 * X)	0.00079	0.00079	0.00069
	(A1 * A2 * A3 * !B1 * X)	-0.00101	-0.00104	-0.00104
	(A1 * A2 * A3 * !B1 * X)	0.00066	0.00067	0.00066
	(A1 * A2 * !A3 * !B1 * !X)	-0.00090	-0.00096	-0.00095
	(A1 * A2 * !A3 * !B1 * !X)	0.00130	0.00127	0.00125
	(A1 * !A2 * !B1 * !X)	-0.00090	-0.00096	-0.00095
	(A1 * !A2 * !B1 * !X)	0.00130	0.00127	0.00125
	(!A1 * !B1 * !X)	-0.00090	-0.00096	-0.00095
	(!A1 * !B1 * !X)	0.00130	0.00127	0.00125
sky130_fd_sc_hs__a32o_2	**(A1 * A2 * A3 * B1 * X)**	-0.00111	-0.00112	-0.00123
	(A1 * A2 * A3 * B1 * X)	0.00080	0.00080	0.00071
	(A1 * A2 * A3 * !B1 * X)	-0.00118	-0.00121	-0.00121
	(A1 * A2 * A3 * !B1 * X)	0.00068	0.00068	0.00067
	(A1 * A2 * !A3 * !B1 * !X)	-0.00107	-0.00112	-0.00112
	(A1 * A2 * !A3 * !B1 * !X)	0.00129	0.00127	0.00126
	(A1 * !A2 * !B1 * !X)	-0.00107	-0.00112	-0.00112
	(A1 * !A2 * !B1 * !X)	0.00129	0.00127	0.00126
	(!A1 * !B1 * !X)	-0.00107	-0.00112	-0.00112
	(!A1 * !B1 * !X)	0.00129	0.00127	0.00126
sky130_fd_sc_hs__a32o_4	**(A1 * A2 * A3 * B1 * X)**	-0.00252	-0.00255	-0.00279
	(A1 * A2 * A3 * B1 * X)	0.00160	0.00160	0.00139
	(A1 * A2 * A3 * !B1 * X)	-0.00267	-0.00273	-0.00271
	(A1 * A2 * A3 * !B1 * X)	0.00134	0.00135	0.00133
	(A1 * A2 * !A3 * !B1 * !X)	-0.00225	-0.00238	-0.00238
	(A1 * A2 * !A3 * !B1 * !X)	0.00277	0.00269	0.00267
	(A1 * !A2 * !B1 * !X)	-0.00225	-0.00238	-0.00238
	(A1 * !A2 * !B1 * !X)	0.00277	0.00269	0.00267
	(!A1 * !B1 * !X)	-0.00225	-0.00238	-0.00238
	(!A1 * !B1 * !X)	0.00277	0.00269	0.00267

SKY130_FD_SC_HS__A41OIx

sky130_fd_sc_hs_tt_1.50v_25C.ccs
Cell Library: Process , Voltage
1.50, 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	0.00277	0.00279	0.00274	0.00278	0.00282	0.36916
sky130_fd_sc_hs__a41oi_2	0.00535	0.00519	0.00510	0.00509	0.00411	0.71470
sky130_fd_sc_hs__a41oi_4	0.01043	0.01005	0.01016	0.01006	0.00811	1.26896

Leakage Information

Cell Name	Leakage(nW)		
	Min.	**Avg**	**Max.**
sky130_fd_sc_hs__a41oi_1	0.00000	0.01841	0.04838
sky130_fd_sc_hs__a41oi_2	0.00000	0.03463	0.09676
sky130_fd_sc_hs__a41oi_4	0.00000	0.06926	0.19352

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)	0.14019	1.18095	11.29360
	A2->Y (FR)	0.17221	1.22856	11.46830
	A3->Y (FR)	0.18975	1.22931	11.28150
	A4->Y (FR)	0.19719	1.20077	10.92810
	B1->Y (FR)	0.12118	1.16290	11.49070
sky130_fd_sc_hs__a41oi_2	A1->Y (FR)	0.11602	1.01663	11.42270
	A2->Y (FR)	0.14349	1.02380	11.18890
	A3->Y (FR)	0.16665	1.05544	11.26530
	A4->Y (FR)	0.19105	1.08868	11.32970
	B1->Y (FR)	0.13513	1.02064	11.31430
sky130_fd_sc_hs__a41oi_4	A1->Y (FR)	0.10715	0.86565	10.87170
	A2->Y (FR)	0.13953	0.88484	10.70790
	A3->Y (FR)	0.16853	0.92749	10.89850
	A4->Y (FR)	0.19634	0.97301	11.11410
	B1->Y (FR)	0.14257	0.91638	11.27250

Delay(ns) to Y falling :

Cell Name	Timing Arc(Dir)	Delay(ns)		
		First	Mid	Last
sky130_fd_sc_hs__a41oi_1	A1->Y (RF)	0.05935	0.62087	6.09803
	A2->Y (RF)	0.07157	0.61286	5.85598
	A3->Y (RF)	0.07892	0.58272	5.37603
	A4->Y (RF)	0.08351	0.55380	4.92662
	B1->Y (RF)	0.02298	0.36658	3.75811
sky130_fd_sc_hs__a41oi_2	A1->Y (RF)	0.05320	0.59210	6.75076
	A2->Y (RF)	0.06996	0.59031	6.49054
	A3->Y (RF)	0.07835	0.54298	5.76907
	A4->Y (RF)	0.08449	0.52071	5.33008
	B1->Y (RF)	0.02576	0.45941	5.47934
sky130_fd_sc_hs__a41oi_4	A1->Y (RF)	0.05083	0.52493	6.67902
	A2->Y (RF)	0.07038	0.52277	6.36043
	A3->Y (RF)	0.08018	0.48071	5.66297
	A4->Y (RF)	0.08494	0.44778	5.09496
	B1->Y (RF)	0.02433	0.39151	5.21244

Power Information

Internal switching power(pJ) to Y rising :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__a41oi_1	A1	0.00029	0.00016	0.00034
	A1	0.00487	0.00474	0.00492
	A2	0.00086	0.00070	0.00088
	A2	0.00608	0.00593	0.00610
	A3	0.00133	0.00117	0.00135
	A3	0.00718	0.00703	0.00711
	A4	0.00160	0.00147	0.00165
	A4	0.00816	0.00803	0.00819
	B1	0.00114	0.00115	0.00234
	B1	0.00708	0.00695	0.00818
sky130_fd_sc_hs__a41oi_2	A1	-0.00049	-0.00063	-0.00021
	A1	0.00784	0.00773	0.00814
	A2	0.00090	0.00055	0.00095
	A2	0.01070	0.01037	0.01072
	A3	0.00173	0.00143	0.00180
	A3	0.01282	0.01252	0.01269
	A4	0.00278	0.00251	0.00285
	A4	0.01530	0.01503	0.01532
	B1	0.00340	0.00342	0.00462
	B1	0.01278	0.01280	0.01287

sky130_fd_sc_hs__a41oi_4	**A1**	-0.00146	-0.00175	-0.00064
	A1	0.01511	0.01486	0.01602
	A2	0.00168	0.00092	0.00192
	A2	0.02112	0.02037	0.02145
	A3	0.00333	0.00263	0.00355
	A3	0.02571	0.02495	0.02591
	A4	0.00500	0.00448	0.00536
	A4	0.03008	0.02956	0.03035
	B1	0.00635	0.00641	0.00918
	B1	0.02507	0.02484	0.02573

Internal switching power(pJ) to Y falling :

Cell Name	**Input**	**Power(pJ)**		
		first	**mid**	**last**
sky130_fd_sc_hs__a41oi_1	**A1**	0.00609	0.00596	0.00632
	A1	0.00162	0.00148	0.00182
	A2	0.00678	0.00663	0.00702
	A2	0.00161	0.00146	0.00167
	A3	0.00746	0.00732	0.00767
	A3	0.00159	0.00144	0.00163
	A4	0.00825	0.00808	0.00834
	A4	0.00161	0.00145	0.00162
	B1	0.00554	0.00560	0.00606
	B1	-0.00020	-0.00026	0.00025

sky130_fd_sc_hs__a41oi_2	**A1**	0.01102	0.01069	0.01132
	A1	0.00290	0.00253	0.00323
	A2	0.01257	0.01225	0.01288
	A2	0.00288	0.00251	0.00292
	A3	0.01397	0.01365	0.01420
	A3	0.00285	0.00251	0.00289
	A4	0.01557	0.01529	0.01573
	A4	0.00282	0.00248	0.00284
	B1	0.00878	0.00891	0.00947
	B1	-0.00107	-0.00115	-0.00047
sky130_fd_sc_hs__a41oi_4	**A1**	0.02134	0.02068	0.02453
	A1	0.00519	0.00444	0.00608
	A2	0.02442	0.02372	0.02557
	A2	0.00516	0.00440	0.00539
	A3	0.02755	0.02683	0.02767
	A3	0.00509	0.00434	0.00528
	A4	0.03056	0.02993	0.03098
	A4	0.00504	0.00432	0.00525
	B1	0.01750	0.01758	0.01984
	B1	-0.00221	-0.00222	-0.00064

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)**	0.00122	0.00119	0.00118
	(A2 * A3 * A4 * B1 * !Y)	-0.00128	-0.00138	-0.00137
	(A2 * A3 * !A4 * B1 * !Y)	0.00108	0.00109	0.00108
	(A2 * A3 * !A4 * B1 * !Y)	-0.00141	-0.00141	-0.00141
	(A2 * A3 * !A4 * !B1 * Y)	0.00046	0.00046	0.00041
	(A2 * A3 * !A4 * !B1 * Y)	-0.00156	-0.00157	-0.00167
	(A2 * !A3 * B1 * !Y)	0.00109	0.00111	0.00110
	(A2 * !A3 * B1 * !Y)	-0.00141	-0.00142	-0.00141
	(A2 * !A3 * !B1 * Y)	0.00045	0.00045	0.00041
	(A2 * !A3 * !B1 * Y)	-0.00160	-0.00161	-0.00167
	(!A2 * B1 * !Y)	0.00113	0.00113	0.00113
	(!A2 * B1 * !Y)	-0.00141	-0.00141	-0.00141
	(!A2 * !B1 * Y)	0.00045	0.00045	0.00043
	(!A2 * !B1 * Y)	-0.00165	-0.00166	-0.00168
sky130_fd_sc_hs__a41oi_2	**(A2 * A3 * A4 * B1 * !Y)**	0.00241	0.00235	0.00235
	(A2 * A3 * A4 * B1 * !Y)	-0.00250	-0.00268	-0.00267
	(A2 * A3 * !A4 * B1 * !Y)	0.00215	0.00217	0.00215
	(A2 * A3 * !A4 * B1 * !Y)	-0.00276	-0.00277	-0.00275
	(A2 * A3 * !A4 * !B1 * Y)	0.00085	0.00086	0.00074
	(A2 * A3 * !A4 * !B1 * Y)	-0.00306	-0.00310	-0.00333
	(A2 * !A3 * B1 * !Y)	0.00218	0.00221	0.00219
	(A2 * !A3 * B1 * !Y)	-0.00274	-0.00277	-0.00275
	(A2 * !A3 * !B1 * Y)	0.00081	0.00082	0.00073
	(A2 * !A3 * !B1 * Y)	-0.00318	-0.00322	-0.00335
	(!A2 * B1 * !Y)	0.00224	0.00226	0.00224
	(!A2 * B1 * !Y)	-0.00276	-0.00277	-0.00275
	(!A2 * !B1 * Y)	0.00080	0.00081	0.00076
	(!A2 * !B1 * Y)	-0.00328	-0.00332	-0.00338

sky130_fd_sc_hs__a41oi_4	**(A2 * A3 * A4 * B1 * !Y)**	0.00483	0.00471	0.00470
	(A2 * A3 * A4 * B1 * !Y)	-0.00493	-0.00530	-0.00528
	(A2 * A3 * !A4 * B1 * !Y)	0.00427	0.00430	0.00426
	(A2 * A3 * !A4 * B1 * !Y)	-0.00545	-0.00549	-0.00545
	(A2 * A3 * !A4 * !B1 * Y)	0.00172	0.00174	0.00150
	(A2 * A3 * !A4 * !B1 * Y)	-0.00601	-0.00609	-0.00654
	(A2 * !A3 * B1 * !Y)	0.00435	0.00438	0.00435
	(A2 * !A3 * B1 * !Y)	-0.00545	-0.00547	-0.00545
	(A2 * !A3 * !B1 * Y)	0.00164	0.00166	0.00149
	(A2 * !A3 * !B1 * Y)	-0.00623	-0.00631	-0.00658
	(!A2 * B1 * !Y)	0.00447	0.00453	0.00449
	(!A2 * B1 * !Y)	-0.00542	-0.00545	-0.00545
	(!A2 * !B1 * Y)	0.00169	0.00170	0.00160
	(!A2 * !B1 * Y)	-0.00643	-0.00650	-0.00661

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)**	-0.00118	-0.00118	-0.00118
	(A2 * A3 * A4 * B1 * !Y)	0.00138	0.00138	0.00137
	(A2 * A3 * !A4 * B1 * !Y)	-0.00098	-0.00109	-0.00108
	(A2 * A3 * !A4 * B1 * !Y)	0.00141	0.00143	0.00142
	(A2 * A3 * !A4 * !B1 * Y)	-0.00040	-0.00041	-0.00041
	(A2 * A3 * !A4 * !B1 * Y)	0.00167	0.00169	0.00168
	(A2 * !A3 * B1 * !Y)	-0.00101	-0.00111	-0.00110
	(A2 * !A3 * B1 * !Y)	0.00141	0.00143	0.00142
	(A2 * !A3 * !B1 * Y)	-0.00040	-0.00041	-0.00041
	(A2 * !A3 * !B1 * Y)	0.00167	0.00169	0.00168
	(!A2 * B1 * !Y)	-0.00109	-0.00113	-0.00113
	(!A2 * B1 * !Y)	0.00142	0.00142	0.00142
	(!A2 * !B1 * Y)	-0.00041	-0.00042	-0.00041
	(!A2 * !B1 * Y)	0.00168	0.00169	0.00168
sky130_fd_sc_hs__a41oi_2	**(A2 * A3 * A4 * B1 * !Y)**	-0.00234	-0.00235	-0.00234
	(A2 * A3 * A4 * B1 * !Y)	0.00266	0.00269	0.00267
	(A2 * A3 * !A4 * B1 * !Y)	-0.00189	-0.00217	-0.00215
	(A2 * A3 * !A4 * B1 * !Y)	0.00276	0.00279	0.00276
	(A2 * A3 * !A4 * !B1 * Y)	-0.00072	-0.00072	-0.00071
	(A2 * A3 * !A4 * !B1 * Y)	0.00339	0.00340	0.00338
	(A2 * !A3 * B1 * !Y)	-0.00194	-0.00221	-0.00219
	(A2 * !A3 * B1 * !Y)	0.00275	0.00279	0.00276
	(A2 * !A3 * !B1 * Y)	-0.00072	-0.00072	-0.00072
	(A2 * !A3 * !B1 * Y)	0.00339	0.00340	0.00338
	(!A2 * B1 * !Y)	-0.00214	-0.00226	-0.00224
	(!A2 * B1 * !Y)	0.00277	0.00279	0.00276
	(!A2 * !B1 * Y)	-0.00074	-0.00074	-0.00074
	(!A2 * !B1 * Y)	0.00339	0.00340	0.00338

sky130_fd_sc_hs__a41oi_4	**(A2 * A3 * A4 * B1 * !Y)**	-0.00468	-0.00470	-0.00469
	(A2 * A3 * A4 * B1 * !Y)	0.00525	0.00530	0.00528
	(A2 * A3 * !A4 * B1 * !Y)	-0.00371	-0.00430	-0.00426
	(A2 * A3 * !A4 * B1 * !Y)	0.00545	0.00552	0.00546
	(A2 * A3 * !A4 * !B1 * Y)	-0.00149	-0.00149	-0.00149
	(A2 * A3 * !A4 * !B1 * Y)	0.00664	0.00666	0.00663
	(A2 * !A3 * B1 * !Y)	-0.00382	-0.00438	-0.00435
	(A2 * !A3 * B1 * !Y)	0.00545	0.00552	0.00546
	(A2 * !A3 * !B1 * Y)	-0.00150	-0.00150	-0.00149
	(A2 * !A3 * !B1 * Y)	0.00664	0.00666	0.00663
	(!A2 * B1 * !Y)	-0.00428	-0.00452	-0.00449
	(!A2 * B1 * !Y)	0.00547	0.00545	0.00546
	(!A2 * !B1 * Y)	-0.00156	-0.00155	-0.00154
	(!A2 * !B1 * Y)	0.00664	0.00666	0.00663

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)**	0.00117	0.00115	0.00113
	(A1 * A3 * A4 * B1 * !Y)	-0.00128	-0.00138	-0.00137
	(A1 * A3 * !A4 * B1 * !Y)	0.00105	0.00106	0.00105
	(A1 * A3 * !A4 * B1 * !Y)	-0.00141	-0.00142	-0.00141
	(A1 * A3 * !A4 * !B1 * Y)	0.00045	0.00046	0.00046
	(A1 * A3 * !A4 * !B1 * Y)	-0.00147	-0.00148	-0.00147
	(A1 * !A3 * B1 * !Y)	0.00108	0.00109	0.00108
	(A1 * !A3 * B1 * !Y)	-0.00141	-0.00141	-0.00141
	(A1 * !A3 * !B1 * Y)	0.00048	0.00049	0.00049
	(A1 * !A3 * !B1 * Y)	-0.00148	-0.00148	-0.00147
	(!A1 * A3 * A4 * B1 * !Y)	0.00108	0.00108	0.00108
	(!A1 * A3 * A4 * B1 * !Y)	-0.00141	-0.00141	-0.00141
	(!A1 * A3 * A4 * !B1 * Y)	0.00101	0.00102	0.00102
	(!A1 * A3 * A4 * !B1 * Y)	-0.00147	-0.00148	-0.00147
	(!A1 * A3 * !A4 * B1 * !Y)	0.00066	0.00066	0.00066
	(!A1 * A3 * !A4 * B1 * !Y)	-0.00141	-0.00142	-0.00141
	(!A1 * A3 * !A4 * !B1 * Y)	0.00056	0.00057	0.00056
	(!A1 * A3 * !A4 * !B1 * Y)	-0.00148	-0.00149	-0.00148
	(!A1 * !A3 * B1 * !Y)	0.00069	0.00069	0.00068
	(!A1 * !A3 * B1 * !Y)	-0.00141	-0.00141	-0.00141
	(!A1 * !A3 * !B1 * Y)	0.00057	0.00057	0.00057
	(!A1 * !A3 * !B1 * Y)	-0.00148	-0.00149	-0.00148

sky130_fd_sc_hs__a41oi_2	**(A1 * A3 * A4 * B1 * !Y)**	0.00236	0.00232	0.00229
	(A1 * A3 * A4 * B1 * !Y)	-0.00255	-0.00275	-0.00272
	(A1 * A3 * !A4 * B1 * !Y)	0.00210	0.00213	0.00211
	(A1 * A3 * !A4 * B1 * !Y)	-0.00280	-0.00282	-0.00281
	(A1 * A3 * !A4 * !B1 * Y)	0.00099	0.00101	0.00102
	(A1 * A3 * !A4 * !B1 * Y)	-0.00283	-0.00285	-0.00283
	(A1 * !A3 * B1 * !Y)	0.00217	0.00219	0.00218
	(A1 * !A3 * B1 * !Y)	-0.00281	-0.00282	-0.00281
	(A1 * !A3 * !B1 * Y)	0.00105	0.00106	0.00106
	(A1 * !A3 * !B1 * Y)	-0.00284	-0.00285	-0.00283
	(!A1 * A3 * A4 * B1 * !Y)	0.00216	0.00220	0.00218
	(!A1 * A3 * A4 * B1 * !Y)	-0.00280	-0.00282	-0.00281
	(!A1 * A3 * A4 * !B1 * Y)	0.00213	0.00216	0.00214
	(!A1 * A3 * A4 * !B1 * Y)	-0.00283	-0.00286	-0.00284
	(!A1 * A3 * !A4 * B1 * !Y)	0.00133	0.00134	0.00133
	(!A1 * A3 * !A4 * B1 * !Y)	-0.00280	-0.00281	-0.00281
	(!A1 * A3 * !A4 * !B1 * Y)	0.00124	0.00122	0.00123
	(!A1 * A3 * !A4 * !B1 * Y)	-0.00287	-0.00285	-0.00286
	(!A1 * !A3 * B1 * !Y)	0.00136	0.00137	0.00136
	(!A1 * !A3 * B1 * !Y)	-0.00280	-0.00282	-0.00281
	(!A1 * !A3 * !B1 * Y)	0.00122	0.00123	0.00122
	(!A1 * !A3 * !B1 * Y)	-0.00286	-0.00287	-0.00286

sky130_fd_sc_hs__a41oi_4	**(A1 * A3 * A4 * B1 * !Y)**	0.00468	0.00458	0.00452
	(A1 * A3 * A4 * B1 * !Y)	-0.00505	-0.00541	-0.00539
	(A1 * A3 * !A4 * B1 * !Y)	0.00411	0.00415	0.00412
	(A1 * A3 * !A4 * B1 * !Y)	-0.00556	-0.00560	-0.00557
	(A1 * A3 * !A4 * !B1 * Y)	0.00189	0.00191	0.00196
	(A1 * A3 * !A4 * !B1 * Y)	-0.00558	-0.00562	-0.00556
	(A1 * !A3 * B1 * !Y)	0.00422	0.00427	0.00423
	(A1 * !A3 * B1 * !Y)	-0.00556	-0.00561	-0.00557
	(A1 * !A3 * !B1 * Y)	0.00197	0.00199	0.00201
	(A1 * !A3 * !B1 * Y)	-0.00558	-0.00562	-0.00557
	(!A1 * A3 * A4 * B1 * !Y)	0.00432	0.00435	0.00432
	(!A1 * A3 * A4 * B1 * !Y)	-0.00559	-0.00558	-0.00557
	(!A1 * A3 * A4 * !B1 * Y)	0.00429	0.00432	0.00429
	(!A1 * A3 * A4 * !B1 * Y)	-0.00562	-0.00559	-0.00560
	(!A1 * A3 * !A4 * B1 * !Y)	0.00253	0.00255	0.00252
	(!A1 * A3 * !A4 * B1 * !Y)	-0.00558	-0.00559	-0.00557
	(!A1 * A3 * !A4 * !B1 * Y)	0.00238	0.00239	0.00237
	(!A1 * A3 * !A4 * !B1 * Y)	-0.00564	-0.00566	-0.00562
	(!A1 * !A3 * B1 * !Y)	0.00255	0.00257	0.00255
	(!A1 * !A3 * B1 * !Y)	-0.00557	-0.00560	-0.00557
	(!A1 * !A3 * !B1 * Y)	0.00232	0.00234	0.00232
	(!A1 * !A3 * !B1 * Y)	-0.00562	-0.00565	-0.00563

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)**	-0.00113	-0.00114	-0.00113
	(A1 * A3 * A4 * B1 * !Y)	0.00137	0.00138	0.00137
	(A1 * A3 * !A4 * B1 * !Y)	-0.00095	-0.00106	-0.00105
	(A1 * A3 * !A4 * B1 * !Y)	0.00142	0.00143	0.00141
	(A1 * A3 * !A4 * !B1 * Y)	-0.00044	-0.00045	-0.00046
	(A1 * A3 * !A4 * !B1 * Y)	0.00151	0.00154	0.00149
	(A1 * !A3 * B1 * !Y)	-0.00104	-0.00109	-0.00108
	(A1 * !A3 * B1 * !Y)	0.00142	0.00143	0.00141
	(A1 * !A3 * !B1 * Y)	-0.00045	-0.00046	-0.00047
	(A1 * !A3 * !B1 * Y)	0.00151	0.00154	0.00149
	(!A1 * A3 * A4 * B1 * !Y)	-0.00105	-0.00108	-0.00108
	(!A1 * A3 * A4 * B1 * !Y)	0.00142	0.00143	0.00141
	(!A1 * A3 * A4 * !B1 * Y)	-0.00093	-0.00102	-0.00102
	(!A1 * A3 * A4 * !B1 * Y)	0.00154	0.00150	0.00148
	(!A1 * A3 * !A4 * B1 * !Y)	-0.00066	-0.00066	-0.00066
	(!A1 * A3 * !A4 * B1 * !Y)	0.00142	0.00143	0.00141
	(!A1 * A3 * !A4 * !B1 * Y)	-0.00056	-0.00057	-0.00056
	(!A1 * A3 * !A4 * !B1 * Y)	0.00151	0.00152	0.00148
	(!A1 * !A3 * B1 * !Y)	-0.00069	-0.00069	-0.00068
	(!A1 * !A3 * B1 * !Y)	0.00141	0.00143	0.00141
	(!A1 * !A3 * !B1 * Y)	-0.00057	-0.00057	-0.00057
	(!A1 * !A3 * !B1 * Y)	0.00155	0.00156	0.00150

sky130_fd_sc_hs__a41oi_2	**(A1 * A3 * A4 * B1 * !Y)**	-0.00229	-0.00230	-0.00228
	(A1 * A3 * A4 * B1 * !Y)	0.00273	0.00275	0.00272
	(A1 * A3 * !A4 * B1 * !Y)	-0.00188	-0.00213	-0.00211
	(A1 * A3 * !A4 * B1 * !Y)	0.00280	0.00285	0.00282
	(A1 * A3 * !A4 * !B1 * Y)	-0.00095	-0.00097	-0.00098
	(A1 * A3 * !A4 * !B1 * Y)	0.00293	0.00298	0.00287
	(A1 * !A3 * B1 * !Y)	-0.00210	-0.00219	-0.00218
	(A1 * !A3 * B1 * !Y)	0.00282	0.00285	0.00282
	(A1 * !A3 * !B1 * Y)	-0.00098	-0.00100	-0.00102
	(A1 * !A3 * !B1 * Y)	0.00293	0.00298	0.00287
	(!A1 * A3 * A4 * B1 * !Y)	-0.00208	-0.00220	-0.00218
	(!A1 * A3 * A4 * B1 * !Y)	0.00282	0.00285	0.00282
	(!A1 * A3 * A4 * !B1 * Y)	-0.00193	-0.00216	-0.00214
	(!A1 * A3 * A4 * !B1 * Y)	0.00300	0.00288	0.00285
	(!A1 * A3 * !A4 * B1 * !Y)	-0.00133	-0.00134	-0.00133
	(!A1 * A3 * !A4 * B1 * !Y)	0.00280	0.00281	0.00282
	(!A1 * A3 * !A4 * !B1 * Y)	-0.00124	-0.00122	-0.00123
	(!A1 * A3 * !A4 * !B1 * Y)	0.00291	0.00292	0.00286
	(!A1 * !A3 * B1 * !Y)	-0.00136	-0.00137	-0.00136
	(!A1 * !A3 * B1 * !Y)	0.00281	0.00285	0.00282
	(!A1 * !A3 * !B1 * Y)	-0.00122	-0.00123	-0.00122
	(!A1 * !A3 * !B1 * Y)	0.00298	0.00302	0.00289

sky130_fd_sc_hs__a41oi_4	**(A1 * A3 * A4 * B1 * !Y)**	-0.00453	-0.00453	-0.00451
	(A1 * A3 * A4 * B1 * !Y)	0.00542	0.00541	0.00539
	(A1 * A3 * !A4 * B1 * !Y)	-0.00362	-0.00415	-0.00412
	(A1 * A3 * !A4 * B1 * !Y)	0.00556	0.00565	0.00559
	(A1 * A3 * !A4 * !B1 * Y)	-0.00183	-0.00186	-0.00187
	(A1 * A3 * !A4 * !B1 * Y)	0.00576	0.00586	0.00566
	(A1 * !A3 * B1 * !Y)	-0.00408	-0.00427	-0.00423
	(A1 * !A3 * B1 * !Y)	0.00560	0.00561	0.00559
	(A1 * !A3 * !B1 * Y)	-0.00186	-0.00190	-0.00192
	(A1 * !A3 * !B1 * Y)	0.00576	0.00586	0.00566
	(!A1 * A3 * A4 * B1 * !Y)	-0.00411	-0.00434	-0.00432
	(!A1 * A3 * A4 * B1 * !Y)	0.00559	0.00558	0.00559
	(!A1 * A3 * A4 * !B1 * Y)	-0.00383	-0.00430	-0.00429
	(!A1 * A3 * A4 * !B1 * Y)	0.00592	0.00559	0.00562
	(!A1 * A3 * !A4 * B1 * !Y)	-0.00253	-0.00255	-0.00252
	(!A1 * A3 * !A4 * B1 * !Y)	0.00558	0.00559	0.00559
	(!A1 * A3 * !A4 * !B1 * Y)	-0.00238	-0.00239	-0.00237
	(!A1 * A3 * !A4 * !B1 * Y)	0.00572	0.00576	0.00562
	(!A1 * !A3 * B1 * !Y)	-0.00255	-0.00257	-0.00255
	(!A1 * !A3 * B1 * !Y)	0.00558	0.00566	0.00559
	(!A1 * !A3 * !B1 * Y)	-0.00232	-0.00234	-0.00232
	(!A1 * !A3 * !B1 * Y)	0.00585	0.00595	0.00569

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)**	0.00115	0.00113	0.00111
	(A1 * A2 * A4 * B1 * !Y)	-0.00129	-0.00138	-0.00136
	(A1 * A2 * !A4 * B1 * !Y)	0.00105	0.00106	0.00105
	(A1 * A2 * !A4 * B1 * !Y)	-0.00141	-0.00141	-0.00141
	(A1 * A2 * !A4 * !B1 * Y)	0.00046	0.00047	0.00047
	(A1 * A2 * !A4 * !B1 * Y)	-0.00145	-0.00146	-0.00145
	(A1 * !A2 * A4 * !B1 * Y)	0.00101	0.00103	0.00102
	(A1 * !A2 * A4 * !B1 * Y)	-0.00145	-0.00146	-0.00146
	(A1 * !A2 * !A4 * !B1 * Y)	0.00054	0.00055	0.00054
	(A1 * !A2 * !A4 * !B1 * Y)	-0.00145	-0.00146	-0.00146
	(!A2 * A4 * B1 * !Y)	0.00106	0.00107	0.00106
	(!A2 * A4 * B1 * !Y)	-0.00140	-0.00142	-0.00141
	(!A2 * !A4 * B1 * !Y)	0.00064	0.00064	0.00063
	(!A2 * !A4 * B1 * !Y)	-0.00141	-0.00142	-0.00141
	(!A1 * A2 * A4 * B1 * !Y)	0.00103	0.00104	0.00103
	(!A1 * A2 * A4 * B1 * !Y)	-0.00141	-0.00142	-0.00141
	(!A1 * A2 * A4 * !B1 * Y)	0.00098	0.00100	0.00099
	(!A1 * A2 * A4 * !B1 * Y)	-0.00145	-0.00146	-0.00145
	(!A1 * A2 * !A4 * B1 * !Y)	0.00063	0.00063	0.00063
	(!A1 * A2 * !A4 * B1 * !Y)	-0.00140	-0.00141	-0.00141
	(!A1 * A2 * !A4 * !B1 * Y)	0.00055	0.00054	0.00055
	(!A1 * A2 * !A4 * !B1 * Y)	-0.00146	-0.00146	-0.00146
	(!A1 * !A2 * A4 * !B1 * Y)	0.00101	0.00103	0.00102
	(!A1 * !A2 * A4 * !B1 * Y)	-0.00145	-0.00146	-0.00146
	(!A1 * !A2 * !A4 * !B1 * Y)	0.00057	0.00057	0.00057
	(!A1 * !A2 * !A4 * !B1 * Y)	-0.00146	-0.00146	-0.00146

sky130_fd_sc_hs__a41oi_2	**(A1 * A2 * A4 * B1 * !Y)**	0.00231	0.00225	0.00225
	(A1 * A2 * A4 * B1 * !Y)	-0.00254	-0.00271	-0.00270
	(A1 * A2 * !A4 * B1 * !Y)	0.00211	0.00213	0.00211
	(A1 * A2 * !A4 * B1 * !Y)	-0.00279	-0.00281	-0.00279
	(A1 * A2 * !A4 * !B1 * Y)	0.00104	0.00104	0.00105
	(A1 * A2 * !A4 * !B1 * Y)	-0.00275	-0.00274	-0.00273
	(A1 * !A2 * A4 * !B1 * Y)	0.00213	0.00213	0.00213
	(A1 * !A2 * A4 * !B1 * Y)	-0.00279	-0.00280	-0.00279
	(A1 * !A2 * !A4 * !B1 * Y)	0.00119	0.00121	0.00120
	(A1 * !A2 * !A4 * !B1 * Y)	-0.00279	-0.00281	-0.00279
	(!A2 * A4 * B1 * !Y)	0.00214	0.00214	0.00214
	(!A2 * A4 * B1 * !Y)	-0.00279	-0.00279	-0.00279
	(!A2 * !A4 * B1 * !Y)	0.00127	0.00128	0.00127
	(!A2 * !A4 * B1 * !Y)	-0.00279	-0.00280	-0.00279
	(!A1 * A2 * A4 * B1 * !Y)	0.00210	0.00212	0.00210
	(!A1 * A2 * A4 * B1 * !Y)	-0.00280	-0.00281	-0.00279
	(!A1 * A2 * A4 * !B1 * Y)	0.00209	0.00210	0.00209
	(!A1 * A2 * A4 * !B1 * Y)	-0.00280	-0.00280	-0.00279
	(!A1 * A2 * !A4 * B1 * !Y)	0.00127	0.00129	0.00127
	(!A1 * A2 * !A4 * B1 * !Y)	-0.00278	-0.00281	-0.00279
	(!A1 * A2 * !A4 * !B1 * Y)	0.00119	0.00121	0.00119
	(!A1 * A2 * !A4 * !B1 * Y)	-0.00281	-0.00282	-0.00281
	(!A1 * !A2 * A4 * !B1 * Y)	0.00214	0.00214	0.00214
	(!A1 * !A2 * A4 * !B1 * Y)	-0.00279	-0.00280	-0.00279
	(!A1 * !A2 * !A4 * !B1 * Y)	0.00124	0.00125	0.00124
	(!A1 * !A2 * !A4 * !B1 * Y)	-0.00279	-0.00281	-0.00279

sky130_fd_sc_hs__a41oi_4	**(A1 * A2 * A4 * B1 * !Y)**	0.00462	0.00453	0.00447
	(A1 * A2 * A4 * B1 * !Y)	-0.00508	-0.00551	-0.00545
	(A1 * A2 * !A4 * B1 * !Y)	0.00422	0.00425	0.00422
	(A1 * A2 * !A4 * B1 * !Y)	-0.00566	-0.00567	-0.00564
	(A1 * A2 * !A4 * !B1 * Y)	0.00197	0.00197	0.00197
	(A1 * A2 * !A4 * !B1 * Y)	-0.00557	-0.00555	-0.00553
	(A1 * !A2 * A4 * !B1 * Y)	0.00417	0.00421	0.00419
	(A1 * !A2 * A4 * !B1 * Y)	-0.00563	-0.00565	-0.00564
	(A1 * !A2 * !A4 * !B1 * Y)	0.00223	0.00225	0.00224
	(A1 * !A2 * !A4 * !B1 * Y)	-0.00563	-0.00566	-0.00564
	(!A2 * A4 * B1 * !Y)	0.00418	0.00424	0.00419
	(!A2 * A4 * B1 * !Y)	-0.00563	-0.00568	-0.00564
	(!A2 * !A4 * B1 * !Y)	0.00238	0.00241	0.00238
	(!A2 * !A4 * B1 * !Y)	-0.00563	-0.00568	-0.00564
	(!A1 * A2 * A4 * B1 * !Y)	0.00411	0.00414	0.00411
	(!A1 * A2 * A4 * B1 * !Y)	-0.00565	-0.00567	-0.00564
	(!A1 * A2 * A4 * !B1 * Y)	0.00411	0.00414	0.00410
	(!A1 * A2 * A4 * !B1 * Y)	-0.00566	-0.00567	-0.00564
	(!A1 * A2 * !A4 * B1 * !Y)	0.00246	0.00246	0.00245
	(!A1 * A2 * !A4 * B1 * !Y)	-0.00564	-0.00566	-0.00564
	(!A1 * A2 * !A4 * !B1 * Y)	0.00230	0.00232	0.00230
	(!A1 * A2 * !A4 * !B1 * Y)	-0.00565	-0.00566	-0.00565
	(!A1 * !A2 * A4 * !B1 * Y)	0.00418	0.00422	0.00419
	(!A1 * !A2 * A4 * !B1 * Y)	-0.00563	-0.00566	-0.00564
	(!A1 * !A2 * !A4 * !B1 * Y)	0.00232	0.00233	0.00232
	(!A1 * !A2 * !A4 * !B1 * Y)	-0.00563	-0.00565	-0.00564

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)**	-0.00111	-0.00112	-0.00111
	(A1 * A2 * A4 * B1 * !Y)	0.00137	0.00138	0.00136
	(A1 * A2 * !A4 * B1 * !Y)	-0.00102	-0.00106	-0.00105
	(A1 * A2 * !A4 * B1 * !Y)	0.00142	0.00143	0.00141
	(A1 * A2 * !A4 * !B1 * Y)	-0.00045	-0.00046	-0.00045
	(A1 * A2 * !A4 * !B1 * Y)	0.00146	0.00149	0.00146
	(A1 * !A2 * A4 * !B1 * Y)	-0.00096	-0.00102	-0.00102
	(A1 * !A2 * A4 * !B1 * Y)	0.00145	0.00147	0.00146
	(A1 * !A2 * !A4 * !B1 * Y)	-0.00054	-0.00055	-0.00054
	(A1 * !A2 * !A4 * !B1 * Y)	0.00148	0.00150	0.00147
	(!A2 * A4 * B1 * !Y)	-0.00102	-0.00107	-0.00106
	(!A2 * A4 * B1 * !Y)	0.00140	0.00142	0.00141
	(!A2 * !A4 * B1 * !Y)	-0.00064	-0.00064	-0.00063
	(!A2 * !A4 * B1 * !Y)	0.00141	0.00143	0.00141
	(!A1 * A2 * A4 * B1 * !Y)	-0.00095	-0.00104	-0.00103
	(!A1 * A2 * A4 * B1 * !Y)	0.00141	0.00142	0.00141
	(!A1 * A2 * A4 * !B1 * Y)	-0.00090	-0.00100	-0.00099
	(!A1 * A2 * A4 * !B1 * Y)	0.00146	0.00147	0.00146
	(!A1 * A2 * !A4 * B1 * !Y)	-0.00063	-0.00063	-0.00063
	(!A1 * A2 * !A4 * B1 * !Y)	0.00140	0.00144	0.00141
	(!A1 * A2 * !A4 * !B1 * Y)	-0.00055	-0.00054	-0.00055
	(!A1 * A2 * !A4 * !B1 * Y)	0.00146	0.00149	0.00146
	(!A1 * !A2 * A4 * !B1 * Y)	-0.00097	-0.00102	-0.00102
	(!A1 * !A2 * A4 * !B1 * Y)	0.00146	0.00147	0.00146
	(!A1 * !A2 * !A4 * !B1 * Y)	-0.00057	-0.00057	-0.00057
	(!A1 * !A2 * !A4 * !B1 * Y)	0.00146	0.00148	0.00146

sky130_fd_sc_hs__a41oi_2	**(A1 * A2 * A4 * B1 * !Y)**	-0.00224	-0.00225	-0.00224
	(A1 * A2 * A4 * B1 * !Y)	0.00271	0.00274	0.00270
	(A1 * A2 * !A4 * B1 * !Y)	-0.00202	-0.00213	-0.00211
	(A1 * A2 * !A4 * B1 * !Y)	0.00281	0.00281	0.00280
	(A1 * A2 * !A4 * !B1 * Y)	-0.00099	-0.00099	-0.00099
	(A1 * A2 * !A4 * !B1 * Y)	0.00282	0.00280	0.00280
	(A1 * !A2 * A4 * !B1 * Y)	-0.00202	-0.00213	-0.00213
	(A1 * !A2 * A4 * !B1 * Y)	0.00279	0.00283	0.00280
	(A1 * !A2 * !A4 * !B1 * Y)	-0.00119	-0.00121	-0.00120
	(A1 * !A2 * !A4 * !B1 * Y)	0.00282	0.00281	0.00280
	(!A2 * A4 * B1 * !Y)	-0.00205	-0.00214	-0.00214
	(!A2 * A4 * B1 * !Y)	0.00279	0.00283	0.00280
	(!A2 * !A4 * B1 * !Y)	-0.00127	-0.00128	-0.00127
	(!A2 * !A4 * B1 * !Y)	0.00279	0.00280	0.00280
	(!A1 * A2 * A4 * B1 * !Y)	-0.00192	-0.00212	-0.00210
	(!A1 * A2 * A4 * B1 * !Y)	0.00281	0.00283	0.00280
	(!A1 * A2 * A4 * !B1 * Y)	-0.00191	-0.00210	-0.00209
	(!A1 * A2 * A4 * !B1 * Y)	0.00282	0.00283	0.00280
	(!A1 * A2 * !A4 * B1 * !Y)	-0.00127	-0.00129	-0.00127
	(!A1 * A2 * !A4 * B1 * !Y)	0.00279	0.00281	0.00280
	(!A1 * A2 * !A4 * !B1 * Y)	-0.00119	-0.00121	-0.00119
	(!A1 * A2 * !A4 * !B1 * Y)	0.00282	0.00282	0.00281
	(!A1 * !A2 * A4 * !B1 * Y)	-0.00204	-0.00214	-0.00214
	(!A1 * !A2 * A4 * !B1 * Y)	0.00279	0.00283	0.00280
	(!A1 * !A2 * !A4 * !B1 * Y)	-0.00124	-0.00125	-0.00124
	(!A1 * !A2 * !A4 * !B1 * Y)	0.00282	0.00281	0.00280

sky130_fd_sc_hs__a41oi_4	**(A1 * A2 * A4 * B1 * !Y)**	-0.00446	-0.00449	-0.00446
	(A1 * A2 * A4 * B1 * !Y)	0.00544	0.00552	0.00545
	(A1 * A2 * !A4 * B1 * !Y)	-0.00405	-0.00425	-0.00422
	(A1 * A2 * !A4 * B1 * !Y)	0.00567	0.00568	0.00566
	(A1 * A2 * !A4 * !B1 * Y)	-0.00186	-0.00189	-0.00185
	(A1 * A2 * !A4 * !B1 * Y)	0.00568	0.00579	0.00567
	(A1 * !A2 * A4 * !B1 * Y)	-0.00395	-0.00421	-0.00419
	(A1 * !A2 * A4 * !B1 * Y)	0.00563	0.00571	0.00565
	(A1 * !A2 * !A4 * !B1 * Y)	-0.00223	-0.00225	-0.00224
	(A1 * !A2 * !A4 * !B1 * Y)	0.00572	0.00575	0.00566
	(!A2 * A4 * B1 * !Y)	-0.00402	-0.00424	-0.00419
	(!A2 * A4 * B1 * !Y)	0.00563	0.00572	0.00565
	(!A2 * !A4 * B1 * !Y)	-0.00238	-0.00241	-0.00238
	(!A2 * !A4 * B1 * !Y)	0.00568	0.00572	0.00566
	(!A1 * A2 * A4 * B1 * !Y)	-0.00370	-0.00414	-0.00411
	(!A1 * A2 * A4 * B1 * !Y)	0.00567	0.00571	0.00565
	(!A1 * A2 * A4 * !B1 * Y)	-0.00369	-0.00414	-0.00410
	(!A1 * A2 * A4 * !B1 * Y)	0.00569	0.00571	0.00565
	(!A1 * A2 * !A4 * B1 * !Y)	-0.00246	-0.00246	-0.00245
	(!A1 * A2 * !A4 * B1 * !Y)	0.00564	0.00567	0.00565
	(!A1 * A2 * !A4 * !B1 * Y)	-0.00230	-0.00232	-0.00230
	(!A1 * A2 * !A4 * !B1 * Y)	0.00566	0.00566	0.00566
	(!A1 * !A2 * A4 * !B1 * Y)	-0.00398	-0.00422	-0.00419
	(!A1 * !A2 * A4 * !B1 * Y)	0.00563	0.00571	0.00565
	(!A1 * !A2 * !A4 * !B1 * Y)	-0.00232	-0.00233	-0.00232
	(!A1 * !A2 * !A4 * !B1 * Y)	0.00568	0.00573	0.00566

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)**	0.00122	0.00120	0.00119
	(A1 * A2 * A3 * B1 * !Y)	-0.00128	-0.00137	-0.00136
	(A1 * A2 * !A3 * !B1 * Y)	0.00103	0.00103	0.00103
	(A1 * A2 * !A3 * !B1 * Y)	-0.00150	-0.00150	-0.00150
	(A1 * !A2 * A3 * !B1 * Y)	0.00101	0.00102	0.00101
	(A1 * !A2 * A3 * !B1 * Y)	-0.00150	-0.00151	-0.00150
	(A1 * !A2 * !A3 * !B1 * Y)	0.00103	0.00104	0.00103
	(A1 * !A2 * !A3 * !B1 * Y)	-0.00150	-0.00151	-0.00150
	(!A3 * B1 * !Y)	0.00112	0.00114	0.00113
	(!A3 * B1 * !Y)	-0.00140	-0.00141	-0.00140
	(!A2 * A3 * B1 * !Y)	0.00111	0.00112	0.00111
	(!A2 * A3 * B1 * !Y)	-0.00140	-0.00141	-0.00140
	(!A1 * A2 * A3 * B1 * !Y)	0.00109	0.00110	0.00110
	(!A1 * A2 * A3 * B1 * !Y)	-0.00140	-0.00140	-0.00140
	(!A1 * A2 * A3 * !B1 * Y)	0.00099	0.00100	0.00100
	(!A1 * A2 * A3 * !B1 * Y)	-0.00150	-0.00150	-0.00150
	(!A1 * !A3 * !B1 * Y)	0.00103	0.00104	0.00103
	(!A1 * !A3 * !B1 * Y)	-0.00150	-0.00151	-0.00150
	(!A1 * !A2 * A3 * !B1 * Y)	0.00101	0.00101	0.00100
	(!A1 * !A2 * A3 * !B1 * Y)	-0.00150	-0.00151	-0.00150

sky130_fd_sc_hs__a41oi_2	**(A1 * A2 * A3 * B1 * !Y)**	0.00232	0.00229	0.00226
	(A1 * A2 * A3 * B1 * !Y)	-0.00255	-0.00274	-0.00271
	(A1 * A2 * !A3 * !B1 * Y)	0.00212	0.00215	0.00214
	(A1 * A2 * !A3 * !B1 * Y)	-0.00279	-0.00281	-0.00280
	(A1 * !A2 * A3 * !B1 * Y)	0.00209	0.00211	0.00209
	(A1 * !A2 * A3 * !B1 * Y)	-0.00281	-0.00281	-0.00280
	(A1 * !A2 * !A3 * !B1 * Y)	0.00212	0.00215	0.00214
	(A1 * !A2 * !A3 * !B1 * Y)	-0.00279	-0.00281	-0.00280
	(!A3 * B1 * !Y)	0.00213	0.00216	0.00214
	(!A3 * B1 * !Y)	-0.00279	-0.00281	-0.00280
	(!A2 * A3 * B1 * !Y)	0.00209	0.00211	0.00209
	(!A2 * A3 * B1 * !Y)	-0.00280	-0.00281	-0.00280
	(!A1 * A2 * A3 * B1 * !Y)	0.00206	0.00207	0.00207
	(!A1 * A2 * A3 * B1 * !Y)	-0.00280	-0.00280	-0.00280
	(!A1 * A2 * A3 * !B1 * Y)	0.00207	0.00209	0.00207
	(!A1 * A2 * A3 * !B1 * Y)	-0.00281	-0.00282	-0.00280
	(!A1 * !A3 * !B1 * Y)	0.00212	0.00214	0.00214
	(!A1 * !A3 * !B1 * Y)	-0.00279	-0.00280	-0.00280
	(!A1 * !A2 * A3 * !B1 * Y)	0.00209	0.00211	0.00209
	(!A1 * !A2 * A3 * !B1 * Y)	-0.00281	-0.00281	-0.00280

sky130_fd_sc_hs__a41oi_4	**(A1 * A2 * A3 * B1 * !Y)**	0.00465	0.00455	0.00448
	(A1 * A2 * A3 * B1 * !Y)	-0.00509	-0.00546	-0.00542
	(A1 * A2 * !A3 * !B1 * Y)	0.00422	0.00425	0.00423
	(A1 * A2 * !A3 * !B1 * Y)	-0.00559	-0.00561	-0.00560
	(A1 * !A2 * A3 * !B1 * Y)	0.00410	0.00412	0.00408
	(A1 * !A2 * A3 * !B1 * Y)	-0.00561	-0.00562	-0.00560
	(A1 * !A2 * !A3 * !B1 * Y)	0.00423	0.00430	0.00425
	(A1 * !A2 * !A3 * !B1 * Y)	-0.00559	-0.00564	-0.00560
	(!A3 * B1 * !Y)	0.00420	0.00424	0.00422
	(!A3 * B1 * !Y)	-0.00558	-0.00561	-0.00560
	(!A2 * A3 * B1 * !Y)	0.00411	0.00413	0.00409
	(!A2 * A3 * B1 * !Y)	-0.00561	-0.00563	-0.00560
	(!A1 * A2 * A3 * B1 * !Y)	0.00408	0.00407	0.00407
	(!A1 * A2 * A3 * B1 * !Y)	-0.00561	-0.00560	-0.00560
	(!A1 * A2 * A3 * !B1 * Y)	0.00408	0.00411	0.00406
	(!A1 * A2 * A3 * !B1 * Y)	-0.00561	-0.00562	-0.00560
	(!A1 * !A3 * !B1 * Y)	0.00420	0.00422	0.00422
	(!A1 * !A3 * !B1 * Y)	-0.00559	-0.00560	-0.00560
	(!A1 * !A2 * A3 * !B1 * Y)	0.00406	0.00409	0.00408
	(!A1 * !A2 * A3 * !B1 * Y)	-0.00557	-0.00560	-0.00560

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)**	-0.00119	-0.00119	-0.00118
	(A1 * A2 * A3 * B1 * !Y)	0.00137	0.00137	0.00136
	(A1 * A2 * !A3 * !B1 * Y)	-0.00099	-0.00103	-0.00103
	(A1 * A2 * !A3 * !B1 * Y)	0.00151	0.00153	0.00151
	(A1 * !A2 * A3 * !B1 * Y)	-0.00095	-0.00102	-0.00101
	(A1 * !A2 * A3 * !B1 * Y)	0.00150	0.00152	0.00151
	(A1 * !A2 * !A3 * !B1 * Y)	-0.00100	-0.00104	-0.00103
	(A1 * !A2 * !A3 * !B1 * Y)	0.00151	0.00153	0.00151
	(!A3 * B1 * !Y)	-0.00110	-0.00113	-0.00113
	(!A3 * B1 * !Y)	0.00140	0.00141	0.00141
	(!A2 * A3 * B1 * !Y)	-0.00105	-0.00112	-0.00111
	(!A2 * A3 * B1 * !Y)	0.00140	0.00143	0.00141
	(!A1 * A2 * A3 * B1 * !Y)	-0.00104	-0.00110	-0.00110
	(!A1 * A2 * A3 * B1 * !Y)	0.00141	0.00143	0.00141
	(!A1 * A2 * A3 * !B1 * Y)	-0.00094	-0.00100	-0.00100
	(!A1 * A2 * A3 * !B1 * Y)	0.00152	0.00150	0.00151
	(!A1 * !A3 * !B1 * Y)	-0.00100	-0.00104	-0.00103
	(!A1 * !A3 * !B1 * Y)	0.00151	0.00153	0.00151
	(!A1 * !A2 * A3 * !B1 * Y)	-0.00095	-0.00101	-0.00100
	(!A1 * !A2 * A3 * !B1 * Y)	0.00150	0.00153	0.00151

sky130_fd_sc_hs__a41oi_2	**(A1 * A2 * A3 * B1 * !Y)**	-0.00225	-0.00227	-0.00226
	(A1 * A2 * A3 * B1 * !Y)	0.00270	0.00274	0.00271
	(A1 * A2 * !A3 * !B1 * Y)	-0.00203	-0.00214	-0.00214
	(A1 * A2 * !A3 * !B1 * Y)	0.00280	0.00283	0.00281
	(A1 * !A2 * A3 * !B1 * Y)	-0.00194	-0.00210	-0.00209
	(A1 * !A2 * A3 * !B1 * Y)	0.00281	0.00282	0.00281
	(A1 * !A2 * !A3 * !B1 * Y)	-0.00204	-0.00214	-0.00214
	(A1 * !A2 * !A3 * !B1 * Y)	0.00280	0.00283	0.00281
	(!A3 * B1 * !Y)	-0.00205	-0.00215	-0.00214
	(!A3 * B1 * !Y)	0.00280	0.00283	0.00281
	(!A2 * A3 * B1 * !Y)	-0.00194	-0.00211	-0.00209
	(!A2 * A3 * B1 * !Y)	0.00281	0.00282	0.00281
	(!A1 * A2 * A3 * B1 * !Y)	-0.00190	-0.00207	-0.00207
	(!A1 * A2 * A3 * B1 * !Y)	0.00280	0.00282	0.00281
	(!A1 * A2 * A3 * !B1 * Y)	-0.00190	-0.00209	-0.00207
	(!A1 * A2 * A3 * !B1 * Y)	0.00281	0.00282	0.00281
	(!A1 * !A3 * !B1 * Y)	-0.00204	-0.00214	-0.00214
	(!A1 * !A3 * !B1 * Y)	0.00280	0.00283	0.00281
	(!A1 * !A2 * A3 * !B1 * Y)	-0.00194	-0.00210	-0.00209
	(!A1 * !A2 * A3 * !B1 * Y)	0.00281	0.00282	0.00281

sky130_fd_sc_hs__a41oi_4	(A1 * A2 * A3 * B1 * !Y)	-0.00449	-0.00449	-0.00447
	(A1 * A2 * A3 * B1 * !Y)	0.00543	0.00546	0.00542
	(A1 * A2 * !A3 * !B1 * Y)	-0.00403	-0.00425	-0.00423
	(A1 * A2 * !A3 * !B1 * Y)	0.00559	0.00568	0.00561
	(A1 * !A2 * A3 * !B1 * Y)	-0.00381	-0.00412	-0.00408
	(A1 * !A2 * A3 * !B1 * Y)	0.00561	0.00565	0.00561
	(A1 * !A2 * !A3 * !B1 * Y)	-0.00405	-0.00427	-0.00425
	(A1 * !A2 * !A3 * !B1 * Y)	0.00559	0.00568	0.00561
	(!A3 * B1 * !Y)	-0.00408	-0.00424	-0.00422
	(!A3 * B1 * !Y)	0.00559	0.00563	0.00562
	(!A2 * A3 * B1 * !Y)	-0.00381	-0.00413	-0.00409
	(!A2 * A3 * B1 * !Y)	0.00561	0.00565	0.00562
	(!A1 * A2 * A3 * B1 * !Y)	-0.00377	-0.00407	-0.00407
	(!A1 * A2 * A3 * B1 * !Y)	0.00561	0.00562	0.00562
	(!A1 * A2 * A3 * !B1 * Y)	-0.00377	-0.00411	-0.00406
	(!A1 * A2 * A3 * !B1 * Y)	0.00561	0.00562	0.00562
	(!A1 * !A3 * !B1 * Y)	-0.00405	-0.00422	-0.00422
	(!A1 * !A3 * !B1 * Y)	0.00559	0.00568	0.00561
	(!A1 * !A2 * A3 * !B1 * Y)	-0.00381	-0.00409	-0.00408
	(!A1 * !A2 * A3 * !B1 * Y)	0.00561	0.00565	0.00561

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)	0.00140	0.00140	0.00139
	(A1 * A2 * A3 * A4 * !Y)	-0.00070	-0.00070	-0.00070
sky130_fd_sc_hs__a41oi_2	(A1 * A2 * A3 * A4 * !Y)	0.00149	0.00148	0.00149
	(A1 * A2 * A3 * A4 * !Y)	-0.00143	-0.00142	-0.00143
sky130_fd_sc_hs__a41oi_4	(A1 * A2 * A3 * A4 * !Y)	0.00293	0.00295	0.00294
	(A1 * A2 * A3 * A4 * !Y)	-0.00282	-0.00283	-0.00282

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)	-0.00123	-0.00124	-0.00137
	(A1 * A2 * A3 * A4 * !Y)	0.00084	0.00083	0.00073
sky130_fd_sc_hs__a41oi_2	(A1 * A2 * A3 * A4 * !Y)	-0.00115	-0.00117	-0.00144
	(A1 * A2 * A3 * A4 * !Y)	0.00172	0.00171	0.00149
sky130_fd_sc_hs__a41oi_4	(A1 * A2 * A3 * A4 * !Y)	-0.00229	-0.00234	-0.00285
	(A1 * A2 * A3 * A4 * !Y)	0.00335	0.00335	0.00294

SKY130_FD_SC_HS__A41Ox

sky130_fd_sc_hs_tt_1.50v_25C.ccs
Cell Library: Process , Voltage 1.50, 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	0.00260	0.00256	0.00258	0.00252	0.00267	0.86670
sky130_fd_sc_hs__a41o_2	0.00255	0.00262	0.00268	0.00252	0.00270	1.65670
sky130_fd_sc_hs__a41o_4	0.00504	0.00486	0.00502	0.00483	0.00498	2.82730

Leakage Information

Cell Name	Leakage(nW)		
	Min.	**Avg**	**Max.**
sky130_fd_sc_hs__a41o_1	0.00000	0.05754	0.11012
sky130_fd_sc_hs__a41o_2	0.00000	0.07395	0.11477
sky130_fd_sc_hs__a41o_4	0.00000	0.14789	0.22953

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)	0.13750	0.79437	6.97479
	A2->X (RR)	0.14872	0.81319	7.09338
	A3->X (RR)	0.15701	0.80974	7.09466
	A4->X (RR)	0.16124	0.79730	7.07057
	B1->X (RR)	0.08062	0.70990	6.92999
sky130_fd_sc_hs__a41o_2	A1->X (RR)	0.14411	0.72553	7.05124
	A2->X (RR)	0.15692	0.73935	7.15579
	A3->X (RR)	0.16481	0.72966	7.13607
	A4->X (RR)	0.16853	0.71188	7.09064
	B1->X (RR)	0.07316	0.61330	6.91886
sky130_fd_sc_hs__a41o_4	A1->X (RR)	0.15925	0.68598	7.08637
	A2->X (RR)	0.17525	0.70576	7.20680
	A3->X (RR)	0.18336	0.67620	7.11726
	A4->X (RR)	0.18828	0.66277	7.07498
	B1->X (RR)	0.06883	0.53778	6.87803

Delay(ns) to X falling :

Cell Name	Timing Arc(Dir)	Delay(ns)		
		First	Mid	Last
sky130_fd_sc_hs__a41o_1	A1->X (FF)	0.19331	0.72762	4.71535
	A2->X (FF)	0.22786	0.77276	4.85771
	A3->X (FF)	0.25271	0.80709	4.98251
	A4->X (FF)	0.27714	0.83978	5.10491
	B1->X (FF)	0.23415	0.78066	4.81934
sky130_fd_sc_hs__a41o_2	A1->X (FF)	0.23179	0.76065	4.87401
	A2->X (FF)	0.26984	0.80622	5.03701
	A3->X (FF)	0.29317	0.83680	5.14276
	A4->X (FF)	0.31484	0.86543	5.24027
	B1->X (FF)	0.27408	0.81169	4.98022
sky130_fd_sc_hs__a41o_4	A1->X (FF)	0.23761	0.72955	4.73559
	A2->X (FF)	0.27286	0.77369	4.87315
	A3->X (FF)	0.30080	0.80949	4.98357
	A4->X (FF)	0.32879	0.84373	5.11357
	B1->X (FF)	0.28234	0.79324	4.89161

Power Information

Internal switching power(pJ) to X rising :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__a41o_1	A1	0.00881	0.00879	0.01198
	A1	0.00485	0.00485	0.00805
	A2	0.00956	0.00957	0.01179
	A2	0.00487	0.00488	0.00716
	A3	0.01029	0.01029	0.01222
	A3	0.00486	0.00487	0.00684
	A4	0.01106	0.01109	0.01277
	A4	0.00486	0.00488	0.00662
	B1	0.00848	0.00837	0.01379
	B1	0.00317	0.00306	0.01011
sky130_fd_sc_hs__a41o_2	A1	0.01006	0.01024	0.01338
	A1	0.00611	0.00629	0.00952
	A2	0.01084	0.01106	0.01321
	A2	0.00612	0.00634	0.00860
	A3	0.01159	0.01184	0.01369
	A3	0.00611	0.00636	0.00832
	A4	0.01232	0.01257	0.01425
	A4	0.00610	0.00636	0.00814
	B1	0.00978	0.00989	0.01492
	B1	0.00442	0.00452	0.01212

sky130_fd_sc_hs__a41o_4	**A1**	0.01928	0.01954	0.02537
	A1	0.01138	0.01166	0.01766
	A2	0.02071	0.02112	0.02534
	A2	0.01135	0.01177	0.01626
	A3	0.02238	0.02282	0.02656
	A3	0.01135	0.01181	0.01574
	A4	0.02382	0.02435	0.02765
	A4	0.01133	0.01186	0.01532
	B1	0.01854	0.01886	0.02904
	B1	0.00777	0.00813	0.02254

Internal switching power(pJ) to X falling :

Cell Name	**Input**	**Power(pJ)**		
		first	**mid**	**last**
sky130_fd_sc_hs__a41o_1	**A1**	0.00259	0.00254	0.00518
	A1	0.00662	0.00657	0.00896
	A2	0.00298	0.00297	0.00515
	A2	0.00770	0.00768	0.00980
	A3	0.00344	0.00345	0.00551
	A3	0.00880	0.00885	0.01084
	A4	0.00375	0.00385	0.00601
	A4	0.00981	0.00993	0.01184
	B1	0.00338	0.00361	0.00972
	B1	0.00891	0.00927	0.01448

sky130_fd_sc_hs__a41o_2	**A1**	0.00431	0.00453	0.00720
	A1	0.00833	0.00857	0.01078
	A2	0.00479	0.00505	0.00719
	A2	0.00953	0.00979	0.01181
	A3	0.00521	0.00542	0.00826
	A3	0.01063	0.01094	0.01289
	A4	0.00548	0.00574	0.00829
	A4	0.01155	0.01192	0.01381
	B1	0.00518	0.00561	0.01158
	B1	0.01070	0.01125	0.01640
sky130_fd_sc_hs__a41o_4	**A1**	0.00827	0.00856	0.01327
	A1	0.01632	0.01661	0.02080
	A2	0.00954	0.00991	0.01408
	A2	0.01892	0.01940	0.02340
	A3	0.01019	0.01055	0.01595
	A3	0.02107	0.02166	0.02554
	A4	0.01131	0.01170	0.01666
	A4	0.02344	0.02400	0.02775
	B1	0.01007	0.01112	0.02273
	B1	0.02144	0.02231	0.03272

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)**	0.00113	0.00111	0.00109
	(A2 * A3 * A4 * B1 * X)	-0.00116	-0.00125	-0.00124
	(A2 * A3 * !A4 * B1 * X)	0.00100	0.00100	0.00100
	(A2 * A3 * !A4 * B1 * X)	-0.00129	-0.00129	-0.00128
	(A2 * A3 * !A4 * !B1 * !X)	0.00041	0.00042	0.00036
	(A2 * A3 * !A4 * !B1 * !X)	-0.00139	-0.00140	-0.00150
	(A2 * !A3 * B1 * X)	0.00101	0.00102	0.00101
	(A2 * !A3 * B1 * X)	-0.00128	-0.00129	-0.00128
	(A2 * !A3 * !B1 * !X)	0.00039	0.00039	0.00036
	(A2 * !A3 * !B1 * !X)	-0.00144	-0.00145	-0.00151
	(!A2 * B1 * X)	0.00103	0.00104	0.00103
	(!A2 * B1 * X)	-0.00128	-0.00129	-0.00128
	(!A2 * !B1 * !X)	0.00039	0.00039	0.00037
	(!A2 * !B1 * !X)	-0.00149	-0.00149	-0.00151
sky130_fd_sc_hs__a41o_2	**(A2 * A3 * A4 * B1 * X)**	0.00113	0.00110	0.00108
	(A2 * A3 * A4 * B1 * X)	-0.00116	-0.00126	-0.00125
	(A2 * A3 * !A4 * B1 * X)	0.00099	0.00099	0.00099
	(A2 * A3 * !A4 * B1 * X)	-0.00129	-0.00129	-0.00129
	(A2 * A3 * !A4 * !B1 * !X)	0.00042	0.00042	0.00037
	(A2 * A3 * !A4 * !B1 * !X)	-0.00138	-0.00138	-0.00149
	(A2 * !A3 * B1 * X)	0.00101	0.00102	0.00102
	(A2 * !A3 * B1 * X)	-0.00129	-0.00130	-0.00129
	(A2 * !A3 * !B1 * !X)	0.00041	0.00041	0.00037
	(A2 * !A3 * !B1 * !X)	-0.00142	-0.00143	-0.00150
	(!A2 * B1 * X)	0.00103	0.00103	0.00103
	(!A2 * B1 * X)	-0.00129	-0.00129	-0.00129
	(!A2 * !B1 * !X)	0.00041	0.00041	0.00039
	(!A2 * !B1 * !X)	-0.00147	-0.00147	-0.00150

sky130_fd_sc_hs__a41o_4	**(A2 * A3 * A4 * B1 * X)**	0.00237	0.00232	0.00229
	(A2 * A3 * A4 * B1 * X)	-0.00236	-0.00255	-0.00253
	(A2 * A3 * !A4 * B1 * X)	0.00208	0.00209	0.00209
	(A2 * A3 * !A4 * B1 * X)	-0.00261	-0.00262	-0.00262
	(A2 * A3 * !A4 * !B1 * !X)	0.00091	0.00092	0.00080
	(A2 * A3 * !A4 * !B1 * !X)	-0.00278	-0.00281	-0.00305
	(A2 * !A3 * B1 * X)	0.00211	0.00214	0.00212
	(A2 * !A3 * B1 * X)	-0.00261	-0.00264	-0.00262
	(A2 * !A3 * !B1 * !X)	0.00085	0.00087	0.00079
	(A2 * !A3 * !B1 * !X)	-0.00290	-0.00294	-0.00307
	(!A2 * B1 * X)	0.00217	0.00220	0.00218
	(!A2 * B1 * X)	-0.00261	-0.00264	-0.00262
	(!A2 * !B1 * !X)	0.00087	0.00089	0.00084
	(!A2 * !B1 * !X)	-0.00299	-0.00303	-0.00309

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)**	-0.00109	-0.00109	-0.00109
	(A2 * A3 * A4 * B1 * X)	0.00125	0.00125	0.00124
	(A2 * A3 * !A4 * B1 * X)	-0.00091	-0.00100	-0.00100
	(A2 * A3 * !A4 * B1 * X)	0.00130	0.00130	0.00129
	(A2 * A3 * !A4 * !B1 * !X)	-0.00035	-0.00035	-0.00035
	(A2 * A3 * !A4 * !B1 * !X)	0.00151	0.00152	0.00151
	(A2 * !A3 * B1 * X)	-0.00093	-0.00102	-0.00101
	(A2 * !A3 * B1 * X)	0.00128	0.00130	0.00129
	(A2 * !A3 * !B1 * !X)	-0.00035	-0.00035	-0.00035
	(A2 * !A3 * !B1 * !X)	0.00151	0.00152	0.00151
	(!A2 * B1 * X)	-0.00101	-0.00104	-0.00103
	(!A2 * B1 * X)	0.00129	0.00129	0.00129
	(!A2 * !B1 * !X)	-0.00036	-0.00036	-0.00036
	(!A2 * !B1 * !X)	0.00151	0.00152	0.00151
sky130_fd_sc_hs__a41o_2	**(A2 * A3 * A4 * B1 * X)**	-0.00108	-0.00108	-0.00108
	(A2 * A3 * A4 * B1 * X)	0.00125	0.00126	0.00125
	(A2 * A3 * !A4 * B1 * X)	-0.00091	-0.00099	-0.00099
	(A2 * A3 * !A4 * B1 * X)	0.00130	0.00130	0.00129
	(A2 * A3 * !A4 * !B1 * !X)	-0.00036	-0.00036	-0.00036
	(A2 * A3 * !A4 * !B1 * !X)	0.00150	0.00150	0.00151
	(A2 * !A3 * B1 * X)	-0.00093	-0.00102	-0.00102
	(A2 * !A3 * B1 * X)	0.00129	0.00130	0.00129
	(A2 * !A3 * !B1 * !X)	-0.00036	-0.00037	-0.00036
	(A2 * !A3 * !B1 * !X)	0.00150	0.00150	0.00151
	(!A2 * B1 * X)	-0.00100	-0.00103	-0.00103
	(!A2 * B1 * X)	0.00130	0.00130	0.00129
	(!A2 * !B1 * !X)	-0.00037	-0.00037	-0.00037
	(!A2 * !B1 * !X)	0.00150	0.00150	0.00151

sky130_fd_sc_hs__a41o_4	**(A2 * A3 * A4 * B1 * X)**	-0.00228	-0.00230	-0.00229
	(A2 * A3 * A4 * B1 * X)	0.00252	0.00255	0.00253
	(A2 * A3 * !A4 * B1 * X)	-0.00185	-0.00209	-0.00209
	(A2 * A3 * !A4 * B1 * X)	0.00263	0.00266	0.00263
	(A2 * A3 * !A4 * !B1 * !X)	-0.00078	-0.00078	-0.00078
	(A2 * A3 * !A4 * !B1 * !X)	0.00311	0.00310	0.00310
	(A2 * !A3 * B1 * X)	-0.00189	-0.00214	-0.00212
	(A2 * !A3 * B1 * X)	0.00263	0.00266	0.00263
	(A2 * !A3 * !B1 * !X)	-0.00079	-0.00078	-0.00078
	(A2 * !A3 * !B1 * !X)	0.00311	0.00310	0.00310
	(!A2 * B1 * X)	-0.00208	-0.00220	-0.00218
	(!A2 * B1 * X)	0.00262	0.00266	0.00263
	(!A2 * !B1 * !X)	-0.00082	-0.00081	-0.00081
	(!A2 * !B1 * !X)	0.00311	0.00311	0.00310

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)**	0.00116	0.00113	0.00111
	(A1 * A3 * A4 * B1 * X)	-0.00115	-0.00124	-0.00123
	(A1 * A3 * !A4 * B1 * X)	0.00102	0.00104	0.00103
	(A1 * A3 * !A4 * B1 * X)	-0.00127	-0.00128	-0.00127
	(A1 * A3 * !A4 * !B1 * !X)	0.00049	0.00049	0.00049
	(A1 * A3 * !A4 * !B1 * !X)	-0.00128	-0.00128	-0.00127
	(A1 * !A3 * B1 * X)	0.00106	0.00106	0.00106
	(A1 * !A3 * B1 * X)	-0.00128	-0.00128	-0.00127
	(A1 * !A3 * !B1 * !X)	0.00051	0.00051	0.00051
	(A1 * !A3 * !B1 * !X)	-0.00128	-0.00128	-0.00127
	(!A1 * A3 * A4 * B1 * X)	0.00106	0.00106	0.00105
	(!A1 * A3 * A4 * B1 * X)	-0.00128	-0.00128	-0.00127
	(!A1 * A3 * A4 * !B1 * !X)	0.00105	0.00105	0.00105
	(!A1 * A3 * A4 * !B1 * !X)	-0.00128	-0.00128	-0.00128
	(!A1 * A3 * !A4 * B1 * X)	0.00064	0.00064	0.00063
	(!A1 * A3 * !A4 * B1 * X)	-0.00128	-0.00128	-0.00127
	(!A1 * A3 * !A4 * !B1 * !X)	0.00060	0.00061	0.00060
	(!A1 * A3 * !A4 * !B1 * !X)	-0.00128	-0.00129	-0.00128
	(!A1 * !A3 * B1 * X)	0.00064	0.00064	0.00063
	(!A1 * !A3 * B1 * X)	-0.00128	-0.00128	-0.00127
	(!A1 * !A3 * !B1 * !X)	0.00058	0.00059	0.00059
	(!A1 * !A3 * !B1 * !X)	-0.00128	-0.00129	-0.00128

sky130_fd_sc_hs__a41o_2	**(A1 * A3 * A4 * B1 * X)**	0.00117	0.00114	0.00112
	(A1 * A3 * A4 * B1 * X)	-0.00115	-0.00125	-0.00124
	(A1 * A3 * !A4 * B1 * X)	0.00103	0.00105	0.00104
	(A1 * A3 * !A4 * B1 * X)	-0.00128	-0.00129	-0.00128
	(A1 * A3 * !A4 * !B1 * !X)	0.00050	0.00050	0.00051
	(A1 * A3 * !A4 * !B1 * !X)	-0.00129	-0.00129	-0.00128
	(A1 * !A3 * B1 * X)	0.00107	0.00108	0.00107
	(A1 * !A3 * B1 * X)	-0.00128	-0.00129	-0.00128
	(A1 * !A3 * !B1 * !X)	0.00053	0.00053	0.00053
	(A1 * !A3 * !B1 * !X)	-0.00128	-0.00128	-0.00128
	(!A1 * A3 * A4 * B1 * X)	0.00107	0.00108	0.00107
	(!A1 * A3 * A4 * B1 * X)	-0.00128	-0.00129	-0.00128
	(!A1 * A3 * A4 * !B1 * !X)	0.00106	0.00107	0.00106
	(!A1 * A3 * A4 * !B1 * !X)	-0.00129	-0.00129	-0.00128
	(!A1 * A3 * !A4 * B1 * X)	0.00065	0.00065	0.00064
	(!A1 * A3 * !A4 * B1 * X)	-0.00128	-0.00129	-0.00128
	(!A1 * A3 * !A4 * !B1 * !X)	0.00061	0.00062	0.00061
	(!A1 * A3 * !A4 * !B1 * !X)	-0.00129	-0.00129	-0.00129
	(!A1 * !A3 * B1 * X)	0.00067	0.00067	0.00067
	(!A1 * !A3 * B1 * X)	-0.00128	-0.00128	-0.00128
	(!A1 * !A3 * !B1 * !X)	0.00061	0.00062	0.00062
	(!A1 * !A3 * !B1 * !X)	-0.00128	-0.00129	-0.00129

sky130_fd_sc_hs__a41o_4	**(A1 * A3 * A4 * B1 * X)**	0.00230	0.00226	0.00223
	(A1 * A3 * A4 * B1 * X)	-0.00231	-0.00251	-0.00249
	(A1 * A3 * !A4 * B1 * X)	0.00204	0.00206	0.00205
	(A1 * A3 * !A4 * B1 * X)	-0.00257	-0.00259	-0.00258
	(A1 * A3 * !A4 * !B1 * !X)	0.00094	0.00095	0.00097
	(A1 * A3 * !A4 * !B1 * !X)	-0.00257	-0.00258	-0.00256
	(A1 * !A3 * B1 * X)	0.00208	0.00211	0.00209
	(A1 * !A3 * B1 * X)	-0.00257	-0.00259	-0.00258
	(A1 * !A3 * !B1 * !X)	0.00096	0.00097	0.00098
	(A1 * !A3 * !B1 * !X)	-0.00257	-0.00258	-0.00256
	(!A1 * A3 * A4 * B1 * X)	0.00212	0.00215	0.00213
	(!A1 * A3 * A4 * B1 * X)	-0.00257	-0.00259	-0.00258
	(!A1 * A3 * A4 * !B1 * !X)	0.00211	0.00214	0.00213
	(!A1 * A3 * A4 * !B1 * !X)	-0.00257	-0.00258	-0.00258
	(!A1 * A3 * !A4 * B1 * X)	0.00124	0.00125	0.00124
	(!A1 * A3 * !A4 * B1 * X)	-0.00258	-0.00259	-0.00258
	(!A1 * A3 * !A4 * !B1 * !X)	0.00118	0.00118	0.00117
	(!A1 * A3 * !A4 * !B1 * !X)	-0.00260	-0.00260	-0.00259
	(!A1 * !A3 * B1 * X)	0.00122	0.00124	0.00123
	(!A1 * !A3 * B1 * X)	-0.00257	-0.00259	-0.00258
	(!A1 * !A3 * !B1 * !X)	0.00113	0.00113	0.00113
	(!A1 * !A3 * !B1 * !X)	-0.00259	-0.00260	-0.00260

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)**	-0.00111	-0.00111	-0.00111
	(A1 * A3 * A4 * B1 * X)	0.00124	0.00124	0.00123
	(A1 * A3 * !A4 * B1 * X)	-0.00094	-0.00104	-0.00103
	(A1 * A3 * !A4 * B1 * X)	0.00129	0.00129	0.00128
	(A1 * A3 * !A4 * !B1 * !X)	-0.00047	-0.00048	-0.00048
	(A1 * A3 * !A4 * !B1 * !X)	0.00131	0.00134	0.00129
	(A1 * !A3 * B1 * X)	-0.00102	-0.00106	-0.00106
	(A1 * !A3 * B1 * X)	0.00128	0.00129	0.00128
	(A1 * !A3 * !B1 * !X)	-0.00048	-0.00049	-0.00049
	(A1 * !A3 * !B1 * !X)	0.00131	0.00134	0.00129
	(!A1 * A3 * A4 * B1 * X)	-0.00102	-0.00106	-0.00105
	(!A1 * A3 * A4 * B1 * X)	0.00128	0.00129	0.00128
	(!A1 * A3 * A4 * !B1 * !X)	-0.00096	-0.00105	-0.00105
	(!A1 * A3 * A4 * !B1 * !X)	0.00135	0.00130	0.00129
	(!A1 * A3 * !A4 * B1 * X)	-0.00064	-0.00064	-0.00063
	(!A1 * A3 * !A4 * B1 * X)	0.00129	0.00130	0.00128
	(!A1 * A3 * !A4 * !B1 * !X)	-0.00060	-0.00061	-0.00060
	(!A1 * A3 * !A4 * !B1 * !X)	0.00132	0.00132	0.00128
	(!A1 * !A3 * B1 * X)	-0.00064	-0.00064	-0.00063
	(!A1 * !A3 * B1 * X)	0.00128	0.00129	0.00128
	(!A1 * !A3 * !B1 * !X)	-0.00058	-0.00059	-0.00059
	(!A1 * !A3 * !B1 * !X)	0.00135	0.00137	0.00130

sky130_fd_sc_hs__a41o_2	**(A1 * A3 * A4 * B1 * X)**	-0.00112	-0.00112	-0.00112
	(A1 * A3 * A4 * B1 * X)	0.00125	0.00125	0.00124
	(A1 * A3 * !A4 * B1 * X)	-0.00095	-0.00105	-0.00104
	(A1 * A3 * !A4 * B1 * X)	0.00129	0.00130	0.00128
	(A1 * A3 * !A4 * !B1 * !X)	-0.00049	-0.00050	-0.00050
	(A1 * A3 * !A4 * !B1 * !X)	0.00132	0.00134	0.00130
	(A1 * !A3 * B1 * X)	-0.00103	-0.00108	-0.00107
	(A1 * !A3 * B1 * X)	0.00129	0.00129	0.00128
	(A1 * !A3 * !B1 * !X)	-0.00050	-0.00051	-0.00051
	(A1 * !A3 * !B1 * !X)	0.00132	0.00134	0.00130
	(!A1 * A3 * A4 * B1 * X)	-0.00103	-0.00108	-0.00107
	(!A1 * A3 * A4 * B1 * X)	0.00129	0.00130	0.00128
	(!A1 * A3 * A4 * !B1 * !X)	-0.00098	-0.00107	-0.00106
	(!A1 * A3 * A4 * !B1 * !X)	0.00135	0.00131	0.00129
	(!A1 * A3 * !A4 * B1 * X)	-0.00065	-0.00065	-0.00064
	(!A1 * A3 * !A4 * B1 * X)	0.00129	0.00130	0.00128
	(!A1 * A3 * !A4 * !B1 * !X)	-0.00061	-0.00062	-0.00061
	(!A1 * A3 * !A4 * !B1 * !X)	0.00133	0.00132	0.00129
	(!A1 * !A3 * B1 * X)	-0.00067	-0.00067	-0.00067
	(!A1 * !A3 * B1 * X)	0.00128	0.00130	0.00129
	(!A1 * !A3 * !B1 * !X)	-0.00061	-0.00062	-0.00062
	(!A1 * !A3 * !B1 * !X)	0.00135	0.00137	0.00130

sky130_fd_sc_hs__a41o_4	**(A1 * A3 * A4 * B1 * X)**	-0.00222	-0.00224	-0.00223
	(A1 * A3 * A4 * B1 * X)	0.00248	0.00251	0.00249
	(A1 * A3 * !A4 * B1 * X)	-0.00182	-0.00206	-0.00205
	(A1 * A3 * !A4 * B1 * X)	0.00258	0.00261	0.00259
	(A1 * A3 * !A4 * !B1 * !X)	-0.00089	-0.00090	-0.00091
	(A1 * A3 * !A4 * !B1 * !X)	0.00268	0.00271	0.00261
	(A1 * !A3 * B1 * X)	-0.00200	-0.00211	-0.00209
	(A1 * !A3 * B1 * X)	0.00257	0.00261	0.00259
	(A1 * !A3 * !B1 * !X)	-0.00091	-0.00093	-0.00094
	(A1 * !A3 * !B1 * !X)	0.00268	0.00270	0.00261
	(!A1 * A3 * A4 * B1 * X)	-0.00203	-0.00215	-0.00213
	(!A1 * A3 * A4 * B1 * X)	0.00259	0.00261	0.00259
	(!A1 * A3 * A4 * !B1 * !X)	-0.00191	-0.00214	-0.00213
	(!A1 * A3 * A4 * !B1 * !X)	0.00273	0.00262	0.00259
	(!A1 * A3 * !A4 * B1 * X)	-0.00124	-0.00125	-0.00124
	(!A1 * A3 * !A4 * B1 * X)	0.00258	0.00259	0.00259
	(!A1 * A3 * !A4 * !B1 * !X)	-0.00118	-0.00118	-0.00117
	(!A1 * A3 * !A4 * !B1 * !X)	0.00266	0.00261	0.00259
	(!A1 * !A3 * B1 * X)	-0.00122	-0.00124	-0.00123
	(!A1 * !A3 * B1 * X)	0.00260	0.00259	0.00259
	(!A1 * !A3 * !B1 * !X)	-0.00113	-0.00113	-0.00113
	(!A1 * !A3 * !B1 * !X)	0.00273	0.00273	0.00263

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)**	0.00113	0.00111	0.00109
	(A1 * A2 * A4 * B1 * X)	-0.00116	-0.00127	-0.00126
	(A1 * A2 * !A4 * B1 * X)	0.00104	0.00105	0.00104
	(A1 * A2 * !A4 * B1 * X)	-0.00130	-0.00131	-0.00130
	(A1 * A2 * !A4 * !B1 * !X)	0.00052	0.00052	0.00052
	(A1 * A2 * !A4 * !B1 * !X)	-0.00127	-0.00129	-0.00127
	(A1 * !A2 * A4 * !B1 * !X)	0.00103	0.00105	0.00104
	(A1 * !A2 * A4 * !B1 * !X)	-0.00130	-0.00131	-0.00130
	(A1 * !A2 * !A4 * !B1 * !X)	0.00060	0.00060	0.00060
	(A1 * !A2 * !A4 * !B1 * !X)	-0.00129	-0.00130	-0.00130
	(!A2 * A4 * B1 * X)	0.00104	0.00104	0.00104
	(!A2 * A4 * B1 * X)	-0.00130	-0.00130	-0.00130
	(!A2 * !A4 * B1 * X)	0.00064	0.00064	0.00063
	(!A2 * !A4 * B1 * X)	-0.00130	-0.00130	-0.00130
	(!A1 * A2 * A4 * B1 * X)	0.00100	0.00102	0.00101
	(!A1 * A2 * A4 * B1 * X)	-0.00130	-0.00131	-0.00130
	(!A1 * A2 * A4 * !B1 * !X)	0.00100	0.00102	0.00101
	(!A1 * A2 * A4 * !B1 * !X)	-0.00130	-0.00131	-0.00130
	(!A1 * A2 * !A4 * B1 * X)	0.00062	0.00062	0.00062
	(!A1 * A2 * !A4 * B1 * X)	-0.00131	-0.00131	-0.00130
	(!A1 * A2 * !A4 * !B1 * !X)	0.00059	0.00059	0.00059
	(!A1 * A2 * !A4 * !B1 * !X)	-0.00130	-0.00131	-0.00130
	(!A1 * !A2 * A4 * !B1 * !X)	0.00103	0.00105	0.00104
	(!A1 * !A2 * A4 * !B1 * !X)	-0.00130	-0.00131	-0.00130
	(!A1 * !A2 * !A4 * !B1 * !X)	0.00063	0.00062	0.00062
	(!A1 * !A2 * !A4 * !B1 * !X)	-0.00130	-0.00130	-0.00130

sky130_fd_sc_hs__a41o_2	**(A1 * A2 * A4 * B1 * X)**	0.00118	0.00116	0.00114
	(A1 * A2 * A4 * B1 * X)	-0.00115	-0.00126	-0.00125
	(A1 * A2 * !A4 * B1 * X)	0.00107	0.00108	0.00108
	(A1 * A2 * !A4 * B1 * X)	-0.00128	-0.00129	-0.00129
	(A1 * A2 * !A4 * !B1 * !X)	0.00053	0.00053	0.00053
	(A1 * A2 * !A4 * !B1 * !X)	-0.00128	-0.00129	-0.00129
	(A1 * !A2 * A4 * !B1 * !X)	0.00108	0.00110	0.00109
	(A1 * !A2 * A4 * !B1 * !X)	-0.00129	-0.00130	-0.00129
	(A1 * !A2 * !A4 * !B1 * !X)	0.00061	0.00061	0.00061
	(A1 * !A2 * !A4 * !B1 * !X)	-0.00129	-0.00129	-0.00129
	(!A2 * A4 * B1 * X)	0.00108	0.00108	0.00108
	(!A2 * A4 * B1 * X)	-0.00128	-0.00129	-0.00129
	(!A2 * !A4 * B1 * X)	0.00065	0.00065	0.00064
	(!A2 * !A4 * B1 * X)	-0.00129	-0.00130	-0.00129
	(!A1 * A2 * A4 * B1 * X)	0.00105	0.00107	0.00106
	(!A1 * A2 * A4 * B1 * X)	-0.00129	-0.00130	-0.00129
	(!A1 * A2 * A4 * !B1 * !X)	0.00106	0.00107	0.00106
	(!A1 * A2 * A4 * !B1 * !X)	-0.00129	-0.00130	-0.00129
	(!A1 * A2 * !A4 * B1 * X)	0.00065	0.00065	0.00065
	(!A1 * A2 * !A4 * B1 * X)	-0.00129	-0.00129	-0.00129
	(!A1 * A2 * !A4 * !B1 * !X)	0.00062	0.00062	0.00062
	(!A1 * A2 * !A4 * !B1 * !X)	-0.00129	-0.00129	-0.00129
	(!A1 * !A2 * A4 * !B1 * !X)	0.00108	0.00110	0.00109
	(!A1 * !A2 * A4 * !B1 * !X)	-0.00129	-0.00130	-0.00129
	(!A1 * !A2 * !A4 * !B1 * !X)	0.00064	0.00064	0.00063
	(!A1 * !A2 * !A4 * !B1 * !X)	-0.00129	-0.00130	-0.00129

sky130_fd_sc_hs__a41o_4	**(A1 * A2 * A4 * B1 * X)**	0.00236	0.00231	0.00228
	(A1 * A2 * A4 * B1 * X)	-0.00234	-0.00254	-0.00252
	(A1 * A2 * !A4 * B1 * X)	0.00215	0.00216	0.00215
	(A1 * A2 * !A4 * B1 * X)	-0.00261	-0.00262	-0.00261
	(A1 * A2 * !A4 * !B1 * !X)	0.00103	0.00104	0.00103
	(A1 * A2 * !A4 * !B1 * !X)	-0.00255	-0.00256	-0.00254
	(A1 * !A2 * A4 * !B1 * !X)	0.00212	0.00216	0.00213
	(A1 * !A2 * A4 * !B1 * !X)	-0.00261	-0.00263	-0.00261
	(A1 * !A2 * !A4 * !B1 * !X)	0.00118	0.00118	0.00117
	(A1 * !A2 * !A4 * !B1 * !X)	-0.00262	-0.00262	-0.00262
	(!A2 * A4 * B1 * X)	0.00212	0.00215	0.00213
	(!A2 * A4 * B1 * X)	-0.00260	-0.00263	-0.00261
	(!A2 * !A4 * B1 * X)	0.00126	0.00126	0.00125
	(!A2 * !A4 * B1 * X)	-0.00263	-0.00263	-0.00262
	(!A1 * A2 * A4 * B1 * X)	0.00209	0.00210	0.00209
	(!A1 * A2 * A4 * B1 * X)	-0.00262	-0.00263	-0.00261
	(!A1 * A2 * A4 * !B1 * !X)	0.00208	0.00210	0.00208
	(!A1 * A2 * A4 * !B1 * !X)	-0.00261	-0.00263	-0.00261
	(!A1 * A2 * !A4 * B1 * X)	0.00125	0.00127	0.00126
	(!A1 * A2 * !A4 * B1 * X)	-0.00261	-0.00262	-0.00262
	(!A1 * A2 * !A4 * !B1 * !X)	0.00119	0.00119	0.00118
	(!A1 * A2 * !A4 * !B1 * !X)	-0.00263	-0.00263	-0.00262
	(!A1 * !A2 * A4 * !B1 * !X)	0.00212	0.00216	0.00213
	(!A1 * !A2 * A4 * !B1 * !X)	-0.00261	-0.00263	-0.00261
	(!A1 * !A2 * !A4 * !B1 * !X)	0.00123	0.00121	0.00122
	(!A1 * !A2 * !A4 * !B1 * !X)	-0.00263	-0.00261	-0.00262

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)**	-0.00109	-0.00109	-0.00109
	(A1 * A2 * A4 * B1 * X)	0.00126	0.00127	0.00126
	(A1 * A2 * !A4 * B1 * X)	-0.00100	-0.00105	-0.00104
	(A1 * A2 * !A4 * B1 * X)	0.00131	0.00132	0.00131
	(A1 * A2 * !A4 * !B1 * !X)	-0.00049	-0.00050	-0.00049
	(A1 * A2 * !A4 * !B1 * !X)	0.00131	0.00133	0.00131
	(A1 * !A2 * A4 * !B1 * !X)	-0.00099	-0.00105	-0.00104
	(A1 * !A2 * A4 * !B1 * !X)	0.00131	0.00132	0.00131
	(A1 * !A2 * !A4 * !B1 * !X)	-0.00060	-0.00060	-0.00060
	(A1 * !A2 * !A4 * !B1 * !X)	0.00131	0.00133	0.00131
	(!A2 * A4 * B1 * X)	-0.00100	-0.00104	-0.00104
	(!A2 * A4 * B1 * X)	0.00131	0.00131	0.00131
	(!A2 * !A4 * B1 * X)	-0.00064	-0.00064	-0.00063
	(!A2 * !A4 * B1 * X)	0.00130	0.00132	0.00131
	(!A1 * A2 * A4 * B1 * X)	-0.00092	-0.00102	-0.00101
	(!A1 * A2 * A4 * B1 * X)	0.00130	0.00132	0.00131
	(!A1 * A2 * A4 * !B1 * !X)	-0.00092	-0.00102	-0.00101
	(!A1 * A2 * A4 * !B1 * !X)	0.00130	0.00132	0.00130
	(!A1 * A2 * !A4 * B1 * X)	-0.00062	-0.00062	-0.00062
	(!A1 * A2 * !A4 * B1 * X)	0.00131	0.00132	0.00131
	(!A1 * A2 * !A4 * !B1 * !X)	-0.00059	-0.00059	-0.00059
	(!A1 * A2 * !A4 * !B1 * !X)	0.00130	0.00133	0.00130
	(!A1 * !A2 * A4 * !B1 * !X)	-0.00100	-0.00105	-0.00104
	(!A1 * !A2 * A4 * !B1 * !X)	0.00131	0.00132	0.00131
	(!A1 * !A2 * !A4 * !B1 * !X)	-0.00063	-0.00062	-0.00062
	(!A1 * !A2 * !A4 * !B1 * !X)	0.00130	0.00132	0.00131

sky130_fd_sc_hs__a41o_2	**(A1 * A2 * A4 * B1 * X)**	-0.00114	-0.00114	-0.00114
	(A1 * A2 * A4 * B1 * X)	0.00125	0.00126	0.00125
	(A1 * A2 * !A4 * B1 * X)	-0.00105	-0.00108	-0.00108
	(A1 * A2 * !A4 * B1 * X)	0.00130	0.00131	0.00129
	(A1 * A2 * !A4 * !B1 * !X)	-0.00052	-0.00053	-0.00052
	(A1 * A2 * !A4 * !B1 * !X)	0.00130	0.00132	0.00130
	(A1 * !A2 * A4 * !B1 * !X)	-0.00104	-0.00109	-0.00109
	(A1 * !A2 * A4 * !B1 * !X)	0.00129	0.00131	0.00129
	(A1 * !A2 * !A4 * !B1 * !X)	-0.00061	-0.00061	-0.00061
	(A1 * !A2 * !A4 * !B1 * !X)	0.00131	0.00133	0.00130
	(!A2 * A4 * B1 * X)	-0.00105	-0.00108	-0.00108
	(!A2 * A4 * B1 * X)	0.00129	0.00130	0.00129
	(!A2 * !A4 * B1 * X)	-0.00065	-0.00065	-0.00064
	(!A2 * !A4 * B1 * X)	0.00129	0.00131	0.00130
	(!A1 * A2 * A4 * B1 * X)	-0.00097	-0.00107	-0.00106
	(!A1 * A2 * A4 * B1 * X)	0.00129	0.00131	0.00129
	(!A1 * A2 * A4 * !B1 * !X)	-0.00097	-0.00107	-0.00106
	(!A1 * A2 * A4 * !B1 * !X)	0.00129	0.00130	0.00129
	(!A1 * A2 * !A4 * B1 * X)	-0.00065	-0.00065	-0.00065
	(!A1 * A2 * !A4 * B1 * X)	0.00129	0.00131	0.00130
	(!A1 * A2 * !A4 * !B1 * !X)	-0.00062	-0.00062	-0.00062
	(!A1 * A2 * !A4 * !B1 * !X)	0.00129	0.00131	0.00129
	(!A1 * !A2 * A4 * !B1 * !X)	-0.00104	-0.00109	-0.00109
	(!A1 * !A2 * A4 * !B1 * !X)	0.00129	0.00131	0.00129
	(!A1 * !A2 * !A4 * !B1 * !X)	-0.00064	-0.00064	-0.00063
	(!A1 * !A2 * !A4 * !B1 * !X)	0.00129	0.00131	0.00129

sky130_fd_sc_hs__a41o_4	**(A1 * A2 * A4 * B1 * X)**	-0.00227	-0.00228	-0.00227
	(A1 * A2 * A4 * B1 * X)	0.00251	0.00254	0.00252
	(A1 * A2 * !A4 * B1 * X)	-0.00205	-0.00216	-0.00215
	(A1 * A2 * !A4 * B1 * X)	0.00263	0.00263	0.00262
	(A1 * A2 * !A4 * !B1 * !X)	-0.00096	-0.00098	-0.00096
	(A1 * A2 * !A4 * !B1 * !X)	0.00264	0.00269	0.00263
	(A1 * !A2 * A4 * !B1 * !X)	-0.00202	-0.00216	-0.00213
	(A1 * !A2 * A4 * !B1 * !X)	0.00261	0.00265	0.00262
	(A1 * !A2 * !A4 * !B1 * !X)	-0.00118	-0.00118	-0.00117
	(A1 * !A2 * !A4 * !B1 * !X)	0.00266	0.00267	0.00263
	(!A2 * A4 * B1 * X)	-0.00205	-0.00215	-0.00213
	(!A2 * A4 * B1 * X)	0.00261	0.00264	0.00262
	(!A2 * !A4 * B1 * X)	-0.00126	-0.00126	-0.00125
	(!A2 * !A4 * B1 * X)	0.00264	0.00266	0.00263
	(!A1 * A2 * A4 * B1 * X)	-0.00191	-0.00210	-0.00209
	(!A1 * A2 * A4 * B1 * X)	0.00263	0.00265	0.00262
	(!A1 * A2 * A4 * !B1 * !X)	-0.00191	-0.00210	-0.00208
	(!A1 * A2 * A4 * !B1 * !X)	0.00264	0.00265	0.00262
	(!A1 * A2 * !A4 * B1 * X)	-0.00125	-0.00127	-0.00126
	(!A1 * A2 * !A4 * B1 * X)	0.00262	0.00262	0.00263
	(!A1 * A2 * !A4 * !B1 * !X)	-0.00119	-0.00119	-0.00118
	(!A1 * A2 * !A4 * !B1 * !X)	0.00263	0.00268	0.00263
	(!A1 * !A2 * A4 * !B1 * !X)	-0.00203	-0.00216	-0.00213
	(!A1 * !A2 * A4 * !B1 * !X)	0.00261	0.00265	0.00262
	(!A1 * !A2 * !A4 * !B1 * !X)	-0.00123	-0.00121	-0.00122
	(!A1 * !A2 * !A4 * !B1 * !X)	0.00264	0.00266	0.00263

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)**	0.00120	0.00118	0.00116
	(A1 * A2 * A3 * B1 * X)	-0.00116	-0.00126	-0.00125
	(A1 * A2 * !A3 * !B1 * !X)	0.00111	0.00113	0.00111
	(A1 * A2 * !A3 * !B1 * !X)	-0.00129	-0.00130	-0.00130
	(A1 * !A2 * A3 * !B1 * !X)	0.00109	0.00109	0.00109
	(A1 * !A2 * A3 * !B1 * !X)	-0.00129	-0.00129	-0.00130
	(A1 * !A2 * !A3 * !B1 * !X)	0.00111	0.00111	0.00111
	(A1 * !A2 * !A3 * !B1 * !X)	-0.00129	-0.00130	-0.00130
	(!A3 * B1 * X)	0.00111	0.00112	0.00111
	(!A3 * B1 * X)	-0.00129	-0.00130	-0.00130
	(!A2 * A3 * B1 * X)	0.00108	0.00110	0.00109
	(!A2 * A3 * B1 * X)	-0.00129	-0.00130	-0.00130
	(!A1 * A2 * A3 * B1 * X)	0.00107	0.00108	0.00108
	(!A1 * A2 * A3 * B1 * X)	-0.00129	-0.00130	-0.00130
	(!A1 * A2 * A3 * !B1 * !X)	0.00108	0.00109	0.00108
	(!A1 * A2 * A3 * !B1 * !X)	-0.00129	-0.00130	-0.00130
	(!A1 * !A3 * !B1 * !X)	0.00111	0.00111	0.00111
	(!A1 * !A3 * !B1 * !X)	-0.00129	-0.00130	-0.00130
	(!A1 * !A2 * A3 * !B1 * !X)	0.00109	0.00108	0.00109
	(!A1 * !A2 * A3 * !B1 * !X)	-0.00129	-0.00129	-0.00130

sky130_fd_sc_hs__a41o_2	**(A1 * A2 * A3 * B1 * X)**	0.00120	0.00117	0.00116
	(A1 * A2 * A3 * B1 * X)	-0.00116	-0.00126	-0.00125
	(A1 * A2 * !A3 * !B1 * !X)	0.00110	0.00110	0.00110
	(A1 * A2 * !A3 * !B1 * !X)	-0.00129	-0.00130	-0.00130
	(A1 * !A2 * A3 * !B1 * !X)	0.00107	0.00108	0.00107
	(A1 * !A2 * A3 * !B1 * !X)	-0.00130	-0.00130	-0.00130
	(A1 * !A2 * !A3 * !B1 * !X)	0.00109	0.00110	0.00110
	(A1 * !A2 * !A3 * !B1 * !X)	-0.00129	-0.00130	-0.00130
	(!A3 * B1 * X)	0.00109	0.00110	0.00109
	(!A3 * B1 * X)	-0.00129	-0.00130	-0.00130
	(!A2 * A3 * B1 * X)	0.00107	0.00109	0.00108
	(!A2 * A3 * B1 * X)	-0.00129	-0.00130	-0.00130
	(!A1 * A2 * A3 * B1 * X)	0.00107	0.00107	0.00107
	(!A1 * A2 * A3 * B1 * X)	-0.00129	-0.00130	-0.00130
	(!A1 * A2 * A3 * !B1 * !X)	0.00107	0.00108	0.00107
	(!A1 * A2 * A3 * !B1 * !X)	-0.00129	-0.00130	-0.00130
	(!A1 * !A3 * !B1 * !X)	0.00109	0.00110	0.00110
	(!A1 * !A3 * !B1 * !X)	-0.00129	-0.00130	-0.00130
	(!A1 * !A2 * A3 * !B1 * !X)	0.00108	0.00108	0.00108
	(!A1 * !A2 * A3 * !B1 * !X)	-0.00130	-0.00130	-0.00130

sky130_fd_sc_hs__a41o_4	**(A1 * A2 * A3 * B1 * X)**	0.00233	0.00228	0.00225
	(A1 * A2 * A3 * B1 * X)	-0.00232	-0.00249	-0.00247
	(A1 * A2 * !A3 * !B1 * !X)	0.00213	0.00215	0.00213
	(A1 * A2 * !A3 * !B1 * !X)	-0.00255	-0.00256	-0.00255
	(A1 * !A2 * A3 * !B1 * !X)	0.00207	0.00209	0.00208
	(A1 * !A2 * A3 * !B1 * !X)	-0.00254	-0.00256	-0.00255
	(A1 * !A2 * !A3 * !B1 * !X)	0.00213	0.00214	0.00213
	(A1 * !A2 * !A3 * !B1 * !X)	-0.00255	-0.00255	-0.00255
	(!A3 * B1 * X)	0.00214	0.00215	0.00213
	(!A3 * B1 * X)	-0.00255	-0.00256	-0.00255
	(!A2 * A3 * B1 * X)	0.00209	0.00209	0.00208
	(!A2 * A3 * B1 * X)	-0.00256	-0.00256	-0.00255
	(!A1 * A2 * A3 * B1 * X)	0.00205	0.00208	0.00206
	(!A1 * A2 * A3 * B1 * X)	-0.00254	-0.00256	-0.00255
	(!A1 * A2 * A3 * !B1 * !X)	0.00205	0.00207	0.00206
	(!A1 * A2 * A3 * !B1 * !X)	-0.00254	-0.00256	-0.00255
	(!A1 * !A3 * !B1 * !X)	0.00213	0.00214	0.00213
	(!A1 * !A3 * !B1 * !X)	-0.00255	-0.00255	-0.00255
	(!A1 * !A2 * A3 * !B1 * !X)	0.00208	0.00208	0.00208
	(!A1 * !A2 * A3 * !B1 * !X)	-0.00255	-0.00255	-0.00255

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)**	-0.00116	-0.00116	-0.00116
	(A1 * A2 * A3 * B1 * X)	0.00126	0.00126	0.00125
	(A1 * A2 * !A3 * !B1 * !X)	-0.00108	-0.00112	-0.00111
	(A1 * A2 * !A3 * !B1 * !X)	0.00131	0.00131	0.00130
	(A1 * !A2 * A3 * !B1 * !X)	-0.00103	-0.00109	-0.00109
	(A1 * !A2 * A3 * !B1 * !X)	0.00129	0.00129	0.00130
	(A1 * !A2 * !A3 * !B1 * !X)	-0.00108	-0.00111	-0.00111
	(A1 * !A2 * !A3 * !B1 * !X)	0.00130	0.00131	0.00130
	(!A3 * B1 * X)	-0.00109	-0.00112	-0.00111
	(!A3 * B1 * X)	0.00131	0.00131	0.00130
	(!A2 * A3 * B1 * X)	-0.00103	-0.00110	-0.00109
	(!A2 * A3 * B1 * X)	0.00129	0.00132	0.00130
	(!A1 * A2 * A3 * B1 * X)	-0.00101	-0.00108	-0.00108
	(!A1 * A2 * A3 * B1 * X)	0.00130	0.00132	0.00130
	(!A1 * A2 * A3 * !B1 * !X)	-0.00101	-0.00109	-0.00108
	(!A1 * A2 * A3 * !B1 * !X)	0.00130	0.00131	0.00130
	(!A1 * !A3 * !B1 * !X)	-0.00108	-0.00111	-0.00111
	(!A1 * !A3 * !B1 * !X)	0.00130	0.00131	0.00130
	(!A1 * !A2 * A3 * !B1 * !X)	-0.00103	-0.00108	-0.00109
	(!A1 * !A2 * A3 * !B1 * !X)	0.00129	0.00129	0.00130

sky130_fd_sc_hs__a41o_2	**(A1 * A2 * A3 * B1 * X)**	-0.00115	-0.00116	-0.00115
	(A1 * A2 * A3 * B1 * X)	0.00126	0.00126	0.00125
	(A1 * A2 * !A3 * !B1 * !X)	-0.00106	-0.00110	-0.00110
	(A1 * A2 * !A3 * !B1 * !X)	0.00130	0.00132	0.00130
	(A1 * !A2 * A3 * !B1 * !X)	-0.00102	-0.00108	-0.00107
	(A1 * !A2 * A3 * !B1 * !X)	0.00130	0.00130	0.00130
	(A1 * !A2 * !A3 * !B1 * !X)	-0.00107	-0.00110	-0.00110
	(A1 * !A2 * !A3 * !B1 * !X)	0.00130	0.00132	0.00130
	(!A3 * B1 * X)	-0.00107	-0.00110	-0.00109
	(!A3 * B1 * X)	0.00130	0.00131	0.00130
	(!A2 * A3 * B1 * X)	-0.00102	-0.00109	-0.00108
	(!A2 * A3 * B1 * X)	0.00130	0.00130	0.00130
	(!A1 * A2 * A3 * B1 * X)	-0.00101	-0.00107	-0.00107
	(!A1 * A2 * A3 * B1 * X)	0.00130	0.00132	0.00130
	(!A1 * A2 * A3 * !B1 * !X)	-0.00101	-0.00108	-0.00107
	(!A1 * A2 * A3 * !B1 * !X)	0.00130	0.00132	0.00130
	(!A1 * !A3 * !B1 * !X)	-0.00107	-0.00110	-0.00110
	(!A1 * !A3 * !B1 * !X)	0.00130	0.00132	0.00130
	(!A1 * !A2 * A3 * !B1 * !X)	-0.00102	-0.00108	-0.00108
	(!A1 * !A2 * A3 * !B1 * !X)	0.00130	0.00130	0.00130

sky130_fd_sc_hs__a41o_4	(A1 * A2 * A3 * B1 * X)	-0.00224	-0.00226	-0.00225
	(A1 * A2 * A3 * B1 * X)	0.00246	0.00249	0.00247
	(A1 * A2 * !A3 * !B1 * !X)	-0.00203	-0.00214	-0.00213
	(A1 * A2 * !A3 * !B1 * !X)	0.00255	0.00258	0.00256
	(A1 * !A2 * A3 * !B1 * !X)	-0.00192	-0.00209	-0.00208
	(A1 * !A2 * A3 * !B1 * !X)	0.00256	0.00257	0.00256
	(A1 * !A2 * !A3 * !B1 * !X)	-0.00204	-0.00214	-0.00213
	(A1 * !A2 * !A3 * !B1 * !X)	0.00255	0.00258	0.00256
	(!A3 * B1 * X)	-0.00205	-0.00214	-0.00213
	(!A3 * B1 * X)	0.00255	0.00257	0.00256
	(!A2 * A3 * B1 * X)	-0.00193	-0.00209	-0.00208
	(!A2 * A3 * B1 * X)	0.00256	0.00257	0.00256
	(!A1 * A2 * A3 * B1 * X)	-0.00190	-0.00208	-0.00206
	(!A1 * A2 * A3 * B1 * X)	0.00255	0.00258	0.00256
	(!A1 * A2 * A3 * !B1 * !X)	-0.00189	-0.00207	-0.00206
	(!A1 * A2 * A3 * !B1 * !X)	0.00255	0.00257	0.00256
	(!A1 * !A3 * !B1 * !X)	-0.00204	-0.00214	-0.00213
	(!A1 * !A3 * !B1 * !X)	0.00255	0.00258	0.00256
	(!A1 * !A2 * A3 * !B1 * !X)	-0.00192	-0.00208	-0.00208
	(!A1 * !A2 * A3 * !B1 * !X)	0.00255	0.00257	0.00256

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)	0.00131	0.00132	0.00131
	(A1 * A2 * A3 * A4 * X)	-0.00066	-0.00066	-0.00066
sky130_fd_sc_hs__a41o_2	(A1 * A2 * A3 * A4 * X)	0.00132	0.00133	0.00133
	(A1 * A2 * A3 * A4 * X)	-0.00067	-0.00067	-0.00067
sky130_fd_sc_hs__a41o_4	(A1 * A2 * A3 * A4 * X)	0.00249	0.00250	0.00250
	(A1 * A2 * A3 * A4 * X)	-0.00138	-0.00138	-0.00137

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)	-0.00116	-0.00117	-0.00129
	(A1 * A2 * A3 * A4 * X)	0.00079	0.00079	0.00069
sky130_fd_sc_hs__a41o_2	(A1 * A2 * A3 * A4 * X)	-0.00117	-0.00118	-0.00131
	(A1 * A2 * A3 * A4 * X)	0.00080	0.00080	0.00070
sky130_fd_sc_hs__a41o_4	(A1 * A2 * A3 * A4 * X)	-0.00215	-0.00218	-0.00245
	(A1 * A2 * A3 * A4 * X)	0.00164	0.00164	0.00143

SKY130_FD_SC_HS__AND2Bx

sky130_fd_sc_hs_tt_1.50v_25C.ccs
Cell Library: Process , Voltage
1.50, 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	0.00250	0.00236	0.86547
sky130_fd_sc_hs__and2b_2	0.00225	0.00274	1.49987
sky130_fd_sc_hs__and2b_4	0.00251	0.00495	3.17437

Leakage Information

Cell Name	Leakage(nW)		
	Min.	Avg	Max.
sky130_fd_sc_hs__and2b_1	0.00000	0.17894	0.30960
sky130_fd_sc_hs__and2b_2	0.00000	0.16330	0.21524
sky130_fd_sc_hs__and2b_4	0.00000	0.29125	0.62935

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)	0.15693	0.91325	8.35358
	B->X (RR)	0.08809	0.69205	6.87012
sky130_fd_sc_hs__and2b_2	A_N->X (FR)	0.16883	0.83732	8.29493
	B->X (RR)	0.09248	0.61699	6.77355
sky130_fd_sc_hs__and2b_4	A_N->X (FR)	0.17102	0.77153	8.53930
	B->X (RR)	0.09417	0.52893	6.90310

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)	0.12600	0.42840	2.46128
	B->X (FF)	0.10247	0.59501	4.29426
sky130_fd_sc_hs__and2b_2	A_N->X (RF)	0.14552	0.41232	2.21591
	B->X (FF)	0.12149	0.61227	4.27960
sky130_fd_sc_hs__and2b_4	A_N->X (RF)	0.14257	0.39158	2.38975
	B->X (FF)	0.12291	0.58459	4.46482

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	0.00468	0.00504	0.01261
	A_N	0.00732	0.00768	0.01524
	B	0.00580	0.00572	0.01084
	B	0.00315	0.00307	0.00823
sky130_fd_sc_hs__and2b_2	A_N	0.00711	0.00757	0.01474
	A_N	0.00948	0.00996	0.01713
	B	0.00805	0.00816	0.01124
	B	0.00494	0.00505	0.01017
sky130_fd_sc_hs__and2b_4	A_N	0.01323	0.01435	0.02163
	A_N	0.01574	0.01688	0.02415
	B	0.01524	0.01563	0.02597
	B	0.00977	0.01019	0.02050

Internal switching power(pJ) to X falling :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__and2b_1	A_N	0.00805	0.00792	0.01474
	A_N	0.00541	0.00528	0.01208
	B	0.00266	0.00320	0.01031
	B	0.00529	0.00578	0.01257
sky130_fd_sc_hs__and2b_2	A_N	0.00973	0.00983	0.01583
	A_N	0.00735	0.00744	0.01340
	B	0.00424	0.00493	0.01064
	B	0.00733	0.00791	0.01347
sky130_fd_sc_hs__and2b_4	A_N	0.01509	0.01596	0.02333
	A_N	0.01256	0.01339	0.02033
	B	0.00831	0.00964	0.02390
	B	0.01373	0.01506	0.02919

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__and2b_1	(!B * !X)	0.00454	0.00440	0.01107
	(!B * !X)	0.00159	0.00144	0.00813
sky130_fd_sc_hs__and2b_2	(!B * !X)	0.00435	0.00424	0.01088
	(!B * !X)	0.00161	0.00149	0.00814
sky130_fd_sc_hs__and2b_4	(!B * !X)	0.00542	0.00531	0.01181
	(!B * !X)	0.00229	0.00216	0.00868

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__and2b_1	(!B * !X)	0.00005	0.00037	0.00751
	(!B * !X)	0.00300	0.00333	0.01046
sky130_fd_sc_hs__and2b_2	(!B * !X)	0.00023	0.00045	0.00764
	(!B * !X)	0.00298	0.00321	0.01039
sky130_fd_sc_hs__and2b_4	(!B * !X)	0.00046	0.00059	0.00737
	(!B * !X)	0.00361	0.00374	0.01052

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__and2b_1	(A_N * !X)	0.00100	0.00100	0.00100
	(A_N * !X)	-0.00122	-0.00123	-0.00123
sky130_fd_sc_hs__and2b_2	(A_N * !X)	0.00122	0.00123	0.00122
	(A_N * !X)	-0.00138	-0.00139	-0.00138
sky130_fd_sc_hs__and2b_4	(A_N * !X)	0.00216	0.00215	0.00215
	(A_N * !X)	-0.00248	-0.00247	-0.00247

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__and2b_1	(A_N * !X)	-0.00095	-0.00100	-0.00100
	(A_N * !X)	0.00128	0.00124	0.00123
sky130_fd_sc_hs__and2b_2	(A_N * !X)	-0.00118	-0.00123	-0.00122
	(A_N * !X)	0.00144	0.00142	0.00139
sky130_fd_sc_hs__and2b_4	(A_N * !X)	-0.00207	-0.00215	-0.00215
	(A_N * !X)	0.00253	0.00251	0.00249

SKY130_FD_SC_HS__AND2x

sky130_fd_sc_hs_tt_1.50v_25C.ccs
Cell Library: Process , Voltage 1.50, 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	0.00242	0.00236	0.84188
sky130_fd_sc_hs__and2_2	0.00262	0.00289	1.63314
sky130_fd_sc_hs__and2_4	0.00428	0.00475	3.23512

Leakage Information

Cell Name	Leakage(nW)		
	Min.	Avg	Max.
sky130_fd_sc_hs__and2_1	0.00000	0.10203	0.30690
sky130_fd_sc_hs__and2_2	0.00000	0.08639	0.15791
sky130_fd_sc_hs__and2_4	0.00000	0.25098	0.62310

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)	0.08143	0.68405	6.82080
	B->X (RR)	0.08733	0.69846	6.84089
sky130_fd_sc_hs__and2_2	A->X (RR)	0.08433	0.60367	6.81639
	B->X (RR)	0.09027	0.61101	6.85203
sky130_fd_sc_hs__and2_4	A->X (RR)	0.08320	0.52007	6.96746
	B->X (RR)	0.09115	0.53216	7.01673

Delay(ns) to X falling :

Cell Name	Timing Arc(Dir)	Delay(ns)		
		First	Mid	Last
sky130_fd_sc_hs__and2_1	A->X (FF)	0.09179	0.56266	4.17917
	B->X (FF)	0.10503	0.59818	4.27053
sky130_fd_sc_hs__and2_2	A->X (FF)	0.10316	0.58544	4.41034
	B->X (FF)	0.11839	0.61483	4.51379
sky130_fd_sc_hs__and2_4	A->X (FF)	0.11129	0.55799	4.38082
	B->X (FF)	0.12337	0.58200	4.45126

Power Information

Internal switching power(pJ) to X rising :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__and2_1	A	0.00540	0.00541	0.01289
	A	0.00251	0.00253	0.01002
	B	0.00591	0.00577	0.01049
	B	0.00253	0.00239	0.00713
sky130_fd_sc_hs__and2_2	A	0.00737	0.00747	0.01327
	A	0.00423	0.00433	0.01016
	B	0.00829	0.00830	0.01184
	B	0.00429	0.00467	0.00790
sky130_fd_sc_hs__and2_4	A	0.01358	0.01411	0.02844
	A	0.00863	0.00917	0.02348
	B	0.01534	0.01578	0.02622
	B	0.00858	0.00905	0.01959

Internal switching power(pJ) to X falling :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__and2_1	A	0.00206	0.00247	0.00976
	A	0.00495	0.00535	0.01253
	B	0.00262	0.00312	0.01008
	B	0.00595	0.00639	0.01301
sky130_fd_sc_hs__and2_2	A	0.00406	0.00461	0.01077
	A	0.00720	0.00770	0.01390
	B	0.00433	0.00487	0.01059
	B	0.00827	0.00871	0.01451
sky130_fd_sc_hs__and2_4	A	0.00769	0.00919	0.02513
	A	0.01265	0.01392	0.02897
	B	0.00809	0.00976	0.02448
	B	0.01475	0.01618	0.03038

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__and2_1	(!B * !X)	0.00059	0.00059	0.00057
	(!B * !X)	-0.00129	-0.00130	-0.00132
sky130_fd_sc_hs__and2_2	(!B * !X)	0.00042	0.00042	0.00041
	(!B * !X)	-0.00152	-0.00152	-0.00154
sky130_fd_sc_hs__and2_4	(!B * !X)	0.00064	0.00064	0.00060
	(!B * !X)	-0.00250	-0.00251	-0.00256

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__and2_1	(!B * !X)	-0.00056	-0.00056	-0.00056
	(!B * !X)	0.00132	0.00132	0.00132
sky130_fd_sc_hs__and2_2	(!B * !X)	-0.00040	-0.00040	-0.00040
	(!B * !X)	0.00154	0.00155	0.00154
sky130_fd_sc_hs__and2_4	(!B * !X)	-0.00058	-0.00059	-0.00058
	(!B * !X)	0.00256	0.00258	0.00257

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__and2_1	(!A * !X)	0.00088	0.00089	0.00088
	(!A * !X)	-0.00123	-0.00124	-0.00124
sky130_fd_sc_hs__and2_2	(!A * !X)	0.00102	0.00103	0.00102
	(!A * !X)	-0.00149	-0.00150	-0.00149
sky130_fd_sc_hs__and2_4	(!A * !X)	0.00207	0.00208	0.00207
	(!A * !X)	-0.00229	-0.00230	-0.00229

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__and2_1	(!A * !X)	-0.00084	-0.00088	-0.00088
	(!A * !X)	0.00128	0.00125	0.00124
sky130_fd_sc_hs__and2_2	(!A * !X)	-0.00096	-0.00102	-0.00102
	(!A * !X)	0.00154	0.00150	0.00150
sky130_fd_sc_hs__and2_4	(!A * !X)	-0.00196	-0.00208	-0.00207
	(!A * !X)	0.00237	0.00230	0.00230

SKY130_FD_SC_HS__AND3Bx

sky130_fd_sc_hs_tt_1.50v_25C.ccs
Cell Library: Process , Voltage
1.50, 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	0.00220	0.00231	0.00230	0.83275
sky130_fd_sc_hs__and3b_2	0.00227	0.00278	0.00265	1.49259
sky130_fd_sc_hs__and3b_4	0.00254	0.00473	0.00487	3.17541

Leakage Information

Cell Name	Leakage(nW)		
	Min.	Avg	Max.
sky130_fd_sc_hs__and3b_1	0.00000	0.16253	0.46072
sky130_fd_sc_hs__and3b_2	0.00000	0.15984	0.23492
sky130_fd_sc_hs__and3b_4	0.00000	0.20710	0.47068

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)	0.17395	0.92981	8.31553
	B->X (RR)	0.11523	0.74846	6.97132
	C->X (RR)	0.12062	0.74104	6.92055
sky130_fd_sc_hs__and3b_2	A_N->X (FR)	0.19118	0.85957	8.27651
	B->X (RR)	0.12297	0.67632	6.93331
	C->X (RR)	0.12840	0.66380	6.87288
sky130_fd_sc_hs__and3b_4	A_N->X (FR)	0.21216	0.83076	8.65935
	B->X (RR)	0.14132	0.62030	7.13178
	C->X (RR)	0.14625	0.59169	7.04271

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)	0.13497	0.42304	2.29864
	B->X (FF)	0.11716	0.61665	4.23051
	C->X (FF)	0.12423	0.63513	4.29409
sky130_fd_sc_hs__and3b_2	A_N->X (RF)	0.14625	0.40768	2.14511
	B->X (FF)	0.12575	0.62166	4.27617
	C->X (FF)	0.14196	0.65104	4.38187
sky130_fd_sc_hs__and3b_4	A_N->X (RF)	0.14041	0.39054	2.37289
	B->X (FF)	0.11896	0.58736	4.49499
	C->X (FF)	0.12753	0.60667	4.57747

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	0.00569	0.00600	0.01365
	A_N	0.00787	0.00817	0.01582
	B	0.00650	0.00646	0.01220
	B	0.00379	0.00375	0.00950
	C	0.00717	0.00709	0.01122
	C	0.00389	0.00381	0.00795
sky130_fd_sc_hs__and3b_2	A_N	0.00804	0.00853	0.01598
	A_N	0.01032	0.01082	0.01830
	B	0.00907	0.00920	0.01339
	B	0.00590	0.00603	0.01022
	C	0.00981	0.00988	0.01238
	C	0.00603	0.00611	0.00865
sky130_fd_sc_hs__and3b_4	A_N	0.01456	0.01556	0.02270
	A_N	0.01678	0.01779	0.02492
	B	0.01658	0.01686	0.02518
	B	0.01098	0.01126	0.01977
	C	0.01803	0.01838	0.02569
	C	0.01102	0.01138	0.01882

Internal switching power(pJ) to X falling :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__and3b_1	A_N	0.00749	0.00743	0.01441
	A_N	0.00531	0.00524	0.01216
	B	0.00271	0.00306	0.01043
	B	0.00541	0.00575	0.01271
	C	0.00298	0.00341	0.01013
	C	0.00618	0.00659	0.01314
sky130_fd_sc_hs__and3b_2	A_N	0.00952	0.00971	0.01642
	A_N	0.00722	0.00740	0.01406
	B	0.00425	0.00472	0.01096
	B	0.00740	0.00786	0.01382
	C	0.00463	0.00506	0.01042
	C	0.00832	0.00875	0.01406
sky130_fd_sc_hs__and3b_4	A_N	0.01579	0.01655	0.02356
	A_N	0.01357	0.01428	0.02089
	B	0.00901	0.01015	0.02252
	B	0.01459	0.01552	0.02708
	C	0.00949	0.01062	0.02223
	C	0.01631	0.01731	0.02881

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)	0.00388	0.00383	0.01072
	(B * !C * !X)	0.00125	0.00118	0.00808
	(!B * !X)	0.00387	0.00382	0.01071
	(!B * !X)	0.00125	0.00118	0.00808
sky130_fd_sc_hs__and3b_2	(B * !C * !X)	0.00422	0.00412	0.01084
	(B * !C * !X)	0.00147	0.00136	0.00809
	(!B * !X)	0.00421	0.00411	0.01083
	(!B * !X)	0.00148	0.00136	0.00809
sky130_fd_sc_hs__and3b_4	(B * !C * !X)	0.00579	0.00566	0.01211
	(B * !C * !X)	0.00275	0.00261	0.00907
	(!B * !X)	0.00575	0.00563	0.01208
	(!B * !X)	0.00275	0.00261	0.00907

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	0.00034	0.00768
	(B * !C * !X)	0.00276	0.00304	0.01036
	(!B * !X)	0.00006	0.00033	0.00768
	(!B * !X)	0.00269	0.00297	0.01032
sky130_fd_sc_hs__and3b_2	(B * !C * !X)	0.00018	0.00039	0.00761
	(B * !C * !X)	0.00298	0.00321	0.01040
	(!B * !X)	0.00016	0.00038	0.00761
	(!B * !X)	0.00290	0.00313	0.01035
sky130_fd_sc_hs__and3b_4	(B * !C * !X)	0.00038	0.00049	0.00719
	(B * !C * !X)	0.00354	0.00365	0.01033
	(!B * !X)	0.00039	0.00050	0.00722
	(!B * !X)	0.00341	0.00352	0.01025

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)	0.00101	0.00101	0.00101
	(A_N * C * !X)	-0.00113	-0.00113	-0.00113
	(A_N * !C * !X)	0.00064	0.00064	0.00064
	(A_N * !C * !X)	-0.00114	-0.00114	-0.00114
	(!A_N * !C * !X)	0.00040	0.00040	0.00040
	(!A_N * !C * !X)	-0.00130	-0.00130	-0.00130
sky130_fd_sc_hs__and3b_2	(A_N * C * !X)	0.00124	0.00126	0.00125
	(A_N * C * !X)	-0.00134	-0.00135	-0.00134
	(A_N * !C * !X)	0.00081	0.00081	0.00080
	(A_N * !C * !X)	-0.00135	-0.00135	-0.00135
	(!A_N * !C * !X)	0.00054	0.00054	0.00054
	(!A_N * !C * !X)	-0.00153	-0.00153	-0.00154
sky130_fd_sc_hs__and3b_4	(A_N * C * !X)	0.00196	0.00197	0.00197
	(A_N * C * !X)	-0.00256	-0.00257	-0.00257
	(A_N * !C * !X)	0.00119	0.00121	0.00120
	(A_N * !C * !X)	-0.00258	-0.00260	-0.00259
	(!A_N * !C * !X)	0.00086	0.00087	0.00088
	(!A_N * !C * !X)	-0.00273	-0.00276	-0.00275

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)	-0.00094	-0.00101	-0.00101
	(A_N * C * !X)	0.00119	0.00115	0.00114
	(A_N * !C * !X)	-0.00064	-0.00064	-0.00064
	(A_N * !C * !X)	0.00120	0.00122	0.00116
	(!A_N * !C * !X)	-0.00037	-0.00039	-0.00039
	(!A_N * !C * !X)	0.00132	0.00135	0.00131
sky130_fd_sc_hs__and3b_2	(A_N * C * !X)	-0.00117	-0.00125	-0.00125
	(A_N * C * !X)	0.00140	0.00137	0.00135
	(A_N * !C * !X)	-0.00081	-0.00081	-0.00080
	(A_N * !C * !X)	0.00142	0.00143	0.00137
	(!A_N * !C * !X)	-0.00051	-0.00052	-0.00052
	(!A_N * !C * !X)	0.00156	0.00159	0.00155
sky130_fd_sc_hs__and3b_4	(A_N * C * !X)	-0.00182	-0.00197	-0.00197
	(A_N * C * !X)	0.00267	0.00261	0.00258
	(A_N * !C * !X)	-0.00119	-0.00121	-0.00120
	(A_N * !C * !X)	0.00271	0.00274	0.00262
	(!A_N * !C * !X)	-0.00082	-0.00083	-0.00084
	(!A_N * !C * !X)	0.00283	0.00287	0.00279

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)	0.00088	0.00088	0.00088
	(A_N * B * !X)	-0.00118	-0.00118	-0.00118
	(A_N * !B * !X)	0.00089	0.00090	0.00089
	(A_N * !B * !X)	-0.00118	-0.00119	-0.00118
	(!A_N * !B * !X)	0.00089	0.00090	0.00089
	(!A_N * !B * !X)	-0.00118	-0.00119	-0.00118
sky130_fd_sc_hs__and3b_2	(A_N * B * !X)	0.00108	0.00110	0.00109
	(A_N * B * !X)	-0.00134	-0.00134	-0.00134
	(A_N * !B * !X)	0.00110	0.00110	0.00111
	(A_N * !B * !X)	-0.00134	-0.00134	-0.00134
	(!A_N * !B * !X)	0.00110	0.00112	0.00111
	(!A_N * !B * !X)	-0.00134	-0.00135	-0.00134
sky130_fd_sc_hs__and3b_4	(A_N * B * !X)	0.00184	0.00187	0.00185
	(A_N * B * !X)	-0.00265	-0.00267	-0.00266
	(A_N * !B * !X)	0.00186	0.00188	0.00186
	(A_N * !B * !X)	-0.00266	-0.00268	-0.00266
	(!A_N * !B * !X)	0.00186	0.00188	0.00186
	(!A_N * !B * !X)	-0.00266	-0.00268	-0.00266

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)	-0.00083	-0.00088	-0.00088
	(A_N * B * !X)	0.00119	0.00119	0.00119
	(A_N * !B * !X)	-0.00086	-0.00089	-0.00089
	(A_N * !B * !X)	0.00119	0.00120	0.00119
	(!A_N * !B * !X)	-0.00086	-0.00089	-0.00089
	(!A_N * !B * !X)	0.00120	0.00120	0.00119
sky130_fd_sc_hs__and3b_2	(A_N * B * !X)	-0.00104	-0.00110	-0.00109
	(A_N * B * !X)	0.00135	0.00134	0.00135
	(A_N * !B * !X)	-0.00108	-0.00110	-0.00111
	(A_N * !B * !X)	0.00135	0.00136	0.00135
	(!A_N * !B * !X)	-0.00107	-0.00111	-0.00111
	(!A_N * !B * !X)	0.00136	0.00135	0.00135
sky130_fd_sc_hs__and3b_4	(A_N * B * !X)	-0.00175	-0.00186	-0.00185
	(A_N * B * !X)	0.00267	0.00268	0.00267
	(A_N * !B * !X)	-0.00179	-0.00188	-0.00186
	(A_N * !B * !X)	0.00266	0.00272	0.00267
	(!A_N * !B * !X)	-0.00178	-0.00188	-0.00186
	(!A_N * !B * !X)	0.00268	0.00272	0.00267

SKY130_FD_SC_HS__AND3x

sky130_fd_sc_hs_tt_1.50v_25C.ccs
Cell Library: Process , Voltage
1.50, 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	0.00249	0.00229	0.00226	0.86374
sky130_fd_sc_hs__and3_2	0.00247	0.00226	0.00229	1.66660
sky130_fd_sc_hs__and3_4	0.00449	0.00435	0.00450	3.17369

Leakage Information

Cell Name	Leakage(nW)		
	Min.	Avg	Max.
sky130_fd_sc_hs__and3_1	0.00000	0.08562	0.45802
sky130_fd_sc_hs__and3_2	0.00000	0.11222	0.46267
sky130_fd_sc_hs__and3_4	0.00000	0.22444	0.92534

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)	0.10149	0.71689	6.85686
	B->X (RR)	0.10969	0.73481	6.92390
	C->X (RR)	0.11407	0.72760	6.89233
sky130_fd_sc_hs__and3_2	A->X (RR)	0.11442	0.66345	7.03080
	B->X (RR)	0.12250	0.67405	7.09448
	C->X (RR)	0.12696	0.65974	7.03146
sky130_fd_sc_hs__and3_4	A->X (RR)	0.12288	0.60073	7.07842
	B->X (RR)	0.13461	0.61841	7.15382
	C->X (RR)	0.13974	0.58955	7.05320

Delay(ns) to X falling :

Cell Name	Timing Arc(Dir)	Delay(ns)		
		First	Mid	Last
sky130_fd_sc_hs__and3_1	A->X (FF)	0.10151	0.58438	4.22591
	B->X (FF)	0.11552	0.61661	4.30944
	C->X (FF)	0.11872	0.63115	4.36651
sky130_fd_sc_hs__and3_2	A->X (FF)	0.12477	0.61289	4.37535
	B->X (FF)	0.13835	0.63880	4.45995
	C->X (FF)	0.14481	0.65414	4.51983
sky130_fd_sc_hs__and3_4	A->X (FF)	0.11619	0.56983	4.35583
	B->X (FF)	0.13025	0.59728	4.44036
	C->X (FF)	0.14092	0.61984	4.52989

Power Information

Internal switching power(pJ) to X rising :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__and3_1	A	0.00604	0.00604	0.01310
	A	0.00300	0.00300	0.01008
	B	0.00638	0.00632	0.01205
	B	0.00302	0.00295	0.00875
	C	0.00703	0.00695	0.01175
	C	0.00299	0.00290	0.00775
sky130_fd_sc_hs__and3_2	A	0.00795	0.00812	0.01461
	A	0.00492	0.00510	0.01165
	B	0.00826	0.00841	0.01360
	B	0.00493	0.00509	0.01037
	C	0.00895	0.00911	0.01290
	C	0.00492	0.00508	0.00894
sky130_fd_sc_hs__and3_4	A	0.01485	0.01528	0.02814
	A	0.00926	0.00972	0.02273
	B	0.01617	0.01658	0.02680
	B	0.00931	0.00974	0.02015
	C	0.01764	0.01807	0.02694
	C	0.00930	0.00975	0.01875

Internal switching power(pJ) to X falling :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__and3_1	A	0.00195	0.00231	0.00959
	A	0.00498	0.00535	0.01248
	B	0.00266	0.00303	0.00997
	B	0.00598	0.00631	0.01324
	C	0.00293	0.00324	0.01053
	C	0.00686	0.00717	0.01405
sky130_fd_sc_hs__and3_2	A	0.00369	0.00444	0.01156
	A	0.00671	0.00728	0.01431
	B	0.00440	0.00504	0.01266
	B	0.00770	0.00831	0.01515
	C	0.00460	0.00528	0.01219
	C	0.00852	0.00917	0.01564
sky130_fd_sc_hs__and3_4	A	0.00789	0.00898	0.02449
	A	0.01350	0.01455	0.02887
	B	0.00906	0.01033	0.02484
	B	0.01580	0.01684	0.03074
	C	0.00955	0.01077	0.02457
	C	0.01763	0.01883	0.03241

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__and3_1	(B * !C * !X)	0.00063	0.00063	0.00060
	(B * !C * !X)	-0.00125	-0.00126	-0.00131
	(!B * !X)	0.00063	0.00063	0.00061
	(!B * !X)	-0.00128	-0.00129	-0.00131
sky130_fd_sc_hs__and3_2	(B * !C * !X)	0.00063	0.00064	0.00061
	(B * !C * !X)	-0.00122	-0.00124	-0.00129
	(!B * !X)	0.00064	0.00065	0.00063
	(!B * !X)	-0.00126	-0.00127	-0.00129
sky130_fd_sc_hs__and3_4	(B * !C * !X)	0.00074	0.00075	0.00067
	(B * !C * !X)	-0.00253	-0.00255	-0.00268
	(!B * !X)	0.00076	0.00076	0.00071
	(!B * !X)	-0.00262	-0.00263	-0.00269

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__and3_1	(B * !C * !X)	-0.00060	-0.00060	-0.00059
	(B * !C * !X)	0.00132	0.00132	0.00131
	(!B * !X)	-0.00061	-0.00061	-0.00060
	(!B * !X)	0.00132	0.00132	0.00131
sky130_fd_sc_hs__and3_2	(B * !C * !X)	-0.00062	-0.00061	-0.00061
	(B * !C * !X)	0.00130	0.00130	0.00129
	(!B * !X)	-0.00062	-0.00062	-0.00062
	(!B * !X)	0.00130	0.00130	0.00129
sky130_fd_sc_hs__and3_4	(B * !C * !X)	-0.00066	-0.00066	-0.00066
	(B * !C * !X)	0.00270	0.00271	0.00270
	(!B * !X)	-0.00068	-0.00069	-0.00068
	(!B * !X)	0.00270	0.00271	0.00270

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__and3_1	(A * !C * !X)	0.00039	0.00039	0.00039
	(A * !C * !X)	-0.00113	-0.00113	-0.00112
	(!A * C * !X)	0.00086	0.00086	0.00085
	(!A * C * !X)	-0.00113	-0.00113	-0.00113
	(!A * !C * !X)	0.00047	0.00046	0.00046
	(!A * !C * !X)	-0.00114	-0.00113	-0.00113
sky130_fd_sc_hs__and3_2	(A * !C * !X)	0.00038	0.00038	0.00038
	(A * !C * !X)	-0.00111	-0.00111	-0.00110
	(!A * C * !X)	0.00085	0.00086	0.00085
	(!A * C * !X)	-0.00110	-0.00111	-0.00111
	(!A * !C * !X)	0.00045	0.00044	0.00044
	(!A * !C * !X)	-0.00112	-0.00111	-0.00111
sky130_fd_sc_hs__and3_4	(A * !C * !X)	0.00090	0.00091	0.00092
	(A * !C * !X)	-0.00220	-0.00220	-0.00218
	(!A * C * !X)	0.00186	0.00189	0.00187
	(!A * C * !X)	-0.00219	-0.00221	-0.00220
	(!A * !C * !X)	0.00106	0.00106	0.00106
	(!A * !C * !X)	-0.00222	-0.00222	-0.00221

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__and3_1	(A * !C * !X)	-0.00037	-0.00037	-0.00038
	(A * !C * !X)	0.00117	0.00118	0.00114
	(!A * C * !X)	-0.00079	-0.00086	-0.00085
	(!A * C * !X)	0.00118	0.00115	0.00113
	(!A * !C * !X)	-0.00047	-0.00046	-0.00046
	(!A * !C * !X)	0.00118	0.00121	0.00115
sky130_fd_sc_hs__and3_2	(A * !C * !X)	-0.00036	-0.00036	-0.00036
	(A * !C * !X)	0.00115	0.00116	0.00112
	(!A * C * !X)	-0.00079	-0.00086	-0.00085
	(!A * C * !X)	0.00116	0.00113	0.00111
	(!A * !C * !X)	-0.00045	-0.00044	-0.00044
	(!A * !C * !X)	0.00118	0.00118	0.00113
sky130_fd_sc_hs__and3_4	(A * !C * !X)	-0.00085	-0.00087	-0.00088
	(A * !C * !X)	0.00227	0.00231	0.00223
	(!A * C * !X)	-0.00173	-0.00189	-0.00187
	(!A * C * !X)	0.00231	0.00223	0.00221
	(!A * !C * !X)	-0.00106	-0.00106	-0.00106
	(!A * !C * !X)	0.00231	0.00235	0.00224

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__and3_1	(A * !B * !X)	0.00089	0.00089	0.00088
	(A * !B * !X)	-0.00117	-0.00116	-0.00116
	(!A * B * !X)	0.00087	0.00088	0.00087
	(!A * B * !X)	-0.00116	-0.00117	-0.00116
	(!A * !B * !X)	0.00089	0.00089	0.00088
	(!A * !B * !X)	-0.00116	-0.00117	-0.00116
sky130_fd_sc_hs__and3_2	(A * !B * !X)	0.00086	0.00088	0.00087
	(A * !B * !X)	-0.00116	-0.00118	-0.00117
	(!A * B * !X)	0.00086	0.00086	0.00086
	(!A * B * !X)	-0.00117	-0.00117	-0.00117
	(!A * !B * !X)	0.00087	0.00088	0.00087
	(!A * !B * !X)	-0.00117	-0.00118	-0.00117
sky130_fd_sc_hs__and3_4	(A * !B * !X)	0.00184	0.00186	0.00184
	(A * !B * !X)	-0.00232	-0.00233	-0.00232
	(!A * B * !X)	0.00181	0.00182	0.00181
	(!A * B * !X)	-0.00232	-0.00233	-0.00232
	(!A * !B * !X)	0.00184	0.00185	0.00184
	(!A * !B * !X)	-0.00232	-0.00232	-0.00232

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__and3_1	(A * !B * !X)	-0.00086	-0.00089	-0.00088
	(A * !B * !X)	0.00117	0.00118	0.00117
	(!A * B * !X)	-0.00081	-0.00088	-0.00087
	(!A * B * !X)	0.00116	0.00118	0.00117
	(!A * !B * !X)	-0.00086	-0.00089	-0.00088
	(!A * !B * !X)	0.00117	0.00117	0.00117
sky130_fd_sc_hs__and3_2	(A * !B * !X)	-0.00084	-0.00088	-0.00087
	(A * !B * !X)	0.00118	0.00119	0.00117
	(!A * B * !X)	-0.00080	-0.00086	-0.00086
	(!A * B * !X)	0.00118	0.00117	0.00117
	(!A * !B * !X)	-0.00084	-0.00087	-0.00087
	(!A * !B * !X)	0.00118	0.00118	0.00117
sky130_fd_sc_hs__and3_4	(A * !B * !X)	-0.00178	-0.00186	-0.00184
	(A * !B * !X)	0.00233	0.00235	0.00233
	(!A * B * !X)	-0.00170	-0.00182	-0.00181
	(!A * B * !X)	0.00233	0.00233	0.00233
	(!A * !B * !X)	-0.00178	-0.00185	-0.00184
	(!A * !B * !X)	0.00233	0.00234	0.00233

SKY130_FD_SC_HS__AND4BBx

sky130_fd_sc_hs_tt_1.50v_25C.ccs
Cell Library: Process , Voltage
1.50, 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	0.00225	0.00228	0.00239	0.00234	0.77864
sky130_fd_sc_hs__and4bb_2	0.00228	0.00216	0.00262	0.00268	1.62551
sky130_fd_sc_hs__and4bb_4	0.00246	0.00261	0.00486	0.00470	3.11760

Leakage Information

Cell Name	Leakage(nW)		
	Min.	Avg	Max.
sky130_fd_sc_hs__and4bb_1	0.00000	0.22149	0.61454
sky130_fd_sc_hs__and4bb_2	0.00000	0.23014	0.36244
sky130_fd_sc_hs__and4bb_4	0.00000	0.23381	0.62553

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)	0.20929	0.99328	8.43308
	B_N->X (FR)	0.21820	1.00129	8.42454
	C->X (RR)	0.15666	0.81558	7.12510
	D->X (RR)	0.16089	0.80628	7.09522
sky130_fd_sc_hs__and4bb_2	A_N->X (FR)	0.20583	0.87049	8.36986
	B_N->X (FR)	0.22613	0.89848	8.42631
	C->X (RR)	0.16030	0.71396	7.12862
	D->X (RR)	0.16631	0.70108	7.07007
sky130_fd_sc_hs__and4bb_4	A_N->X (FR)	0.25286	0.89179	8.70931
	B_N->X (FR)	0.28120	0.92727	8.78021
	C->X (RR)	0.19565	0.67467	7.19273
	D->X (RR)	0.20065	0.65539	7.10644

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)	0.14338	0.43788	2.27557
	B_N->X (RF)	0.15041	0.44719	2.28083
	C->X (FF)	0.13122	0.64607	4.26684
	D->X (FF)	0.14083	0.66710	4.34322
sky130_fd_sc_hs__and4bb_2	A_N->X (RF)	0.14874	0.42377	2.46979
	B_N->X (RF)	0.16494	0.45089	2.54403
	C->X (FF)	0.14108	0.66659	4.71546
	D->X (FF)	0.15157	0.68535	4.79421
sky130_fd_sc_hs__and4bb_4	A_N->X (RF)	0.15760	0.41426	2.39415
	B_N->X (RF)	0.16403	0.42802	2.43615
	C->X (FF)	0.13018	0.61294	4.56708
	D->X (FF)	0.13970	0.63415	4.65269

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	0.00610	0.00644	0.01363
	A_N	0.00832	0.00869	0.01587
	B_N	0.00661	0.00706	0.01445
	B_N	0.00913	0.00960	0.01698
	C	0.00738	0.00747	0.01264
	C	0.00472	0.00480	0.01001
	D	0.00798	0.00808	0.01305
	D	0.00481	0.00490	0.00992
sky130_fd_sc_hs__and4bb_2	A_N	0.00820	0.00867	0.01613
	A_N	0.01032	0.01079	0.01863
	B_N	0.00931	0.00964	0.01656
	B_N	0.01151	0.01186	0.01879
	C	0.00999	0.01000	0.01355
	C	0.00689	0.00690	0.01056
	D	0.01081	0.01075	0.01326
	D	0.00701	0.00695	0.00955
sky130_fd_sc_hs__and4bb_4	A_N	0.01646	0.01745	0.02449
	A_N	0.01834	0.01934	0.02637
	B_N	0.01803	0.01899	0.02576
	B_N	0.02027	0.02121	0.02845
	C	0.01953	0.01976	0.02694
	C	0.01376	0.01398	0.02145
	D	0.02076	0.02106	0.02716
	D	0.01378	0.01410	0.02034

Internal switching power(pJ) to X falling :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__and4bb_1	A_N	0.00806	0.00783	0.01390
	A_N	0.00582	0.00560	0.01162
	B_N	0.00827	0.00829	0.01513
	B_N	0.00574	0.00575	0.01255
	C	0.00346	0.00386	0.01119
	C	0.00612	0.00650	0.01346
	D	0.00376	0.00415	0.01135
	D	0.00685	0.00723	0.01423
sky130_fd_sc_hs__and4bb_2	A_N	0.00944	0.00966	0.01652
	A_N	0.00731	0.00751	0.01423
	B_N	0.00991	0.01013	0.01642
	B_N	0.00769	0.00786	0.01406
	C	0.00487	0.00554	0.01158
	C	0.00795	0.00843	0.01416
	D	0.00519	0.00563	0.01152
	D	0.00889	0.00931	0.01471
sky130_fd_sc_hs__and4bb_4	A_N	0.01581	0.01663	0.02338
	A_N	0.01391	0.01469	0.02111
	B_N	0.01703	0.01782	0.02449
	B_N	0.01477	0.01553	0.02193
	C	0.00930	0.01026	0.02157
	C	0.01504	0.01598	0.02717
	D	0.01015	0.01126	0.02216
	D	0.01692	0.01787	0.02881

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)	0.00388	0.00380	0.01055
	(B_N * !X)	0.00136	0.00126	0.00802
	(!B_N * C * !D * !X)	0.00406	0.00397	0.01073
	(!B_N * C * !D * !X)	0.00153	0.00143	0.00819
	(!B_N * !C * !X)	0.00406	0.00397	0.01072
	(!B_N * !C * !X)	0.00153	0.00143	0.00819
sky130_fd_sc_hs__and4bb_2	(B_N * !X)	0.00395	0.00386	0.01068
	(B_N * !X)	0.00140	0.00129	0.00812
	(!B_N * C * !D * !X)	0.00412	0.00402	0.01084
	(!B_N * C * !D * !X)	0.00155	0.00145	0.00827
	(!B_N * !C * !X)	0.00412	0.00402	0.01084
	(!B_N * !C * !X)	0.00155	0.00145	0.00827
sky130_fd_sc_hs__and4bb_4	(B_N * !X)	0.00548	0.00539	0.01170
	(B_N * !X)	0.00283	0.00273	0.00905
	(!B_N * C * !D * !X)	0.00582	0.00572	0.01203
	(!B_N * C * !D * !X)	0.00314	0.00305	0.00937
	(!B_N * !C * !X)	0.00581	0.00572	0.01203
	(!B_N * !C * !X)	0.00315	0.00305	0.00937

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)	0.00035	0.00059	0.00783
	(B_N * !X)	0.00287	0.00312	0.01036
	(!B_N * C * !D * !X)	0.00020	0.00044	0.00767
	(!B_N * C * !D * !X)	0.00280	0.00305	0.01025
	(!B_N * !C * !X)	0.00018	0.00043	0.00766
	(!B_N * !C * !X)	0.00273	0.00298	0.01020
sky130_fd_sc_hs__and4bb_2	(B_N * !X)	0.00026	0.00049	0.00781
	(B_N * !X)	0.00283	0.00306	0.01036
	(!B_N * C * !D * !X)	0.00013	0.00036	0.00765
	(!B_N * C * !D * !X)	0.00278	0.00301	0.01028
	(!B_N * !C * !X)	0.00011	0.00034	0.00764
	(!B_N * !C * !X)	0.00270	0.00294	0.01022
sky130_fd_sc_hs__and4bb_4	(B_N * !X)	0.00099	0.00113	0.00775
	(B_N * !X)	0.00365	0.00378	0.01040
	(!B_N * C * !D * !X)	0.00072	0.00085	0.00744
	(!B_N * C * !D * !X)	0.00353	0.00366	0.01022
	(!B_N * !C * !X)	0.00067	0.00081	0.00742
	(!B_N * !C * !X)	0.00337	0.00350	0.01011

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)	0.00391	0.00377	0.01038
	(A_N * C * !X) + (!A_N * C * !D * !X)	0.00110	0.00093	0.00755
	(!C * !X)	0.00398	0.00389	0.01057
	(!C * !X)	0.00110	0.00099	0.00768
sky130_fd_sc_hs__and4bb_2	(A_N * C * !X) + (!A_N * C * !D * !X)	0.00395	0.00379	0.01028
	(A_N * C * !X) + (!A_N * C * !D * !X)	0.00131	0.00114	0.00763
	(!C * !X)	0.00402	0.00393	0.01051
	(!C * !X)	0.00131	0.00120	0.00779
sky130_fd_sc_hs__and4bb_4	(A_N * C * !X) + (!A_N * C * !D * !X)	0.00546	0.00518	0.01118
	(A_N * C * !X) + (!A_N * C * !D * !X)	0.00245	0.00217	0.00817
	(!C * !X)	0.00559	0.00545	0.01158
	(!C * !X)	0.00245	0.00230	0.00843

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)	0.00079	0.00102	0.00829
	(A_N * C * !X) + (!A_N * C * !D * !X)	0.00361	0.00386	0.01111
	(!C * !X)	0.00043	0.00067	0.00796
	(!C * !X)	0.00330	0.00355	0.01083
sky130_fd_sc_hs__and4bb_2	(A_N * C * !X) + (!A_N * C * !D * !X)	0.00114	0.00137	0.00857
	(A_N * C * !X) + (!A_N * C * !D * !X)	0.00378	0.00401	0.01121
	(!C * !X)	0.00071	0.00093	0.00817
	(!C * !X)	0.00341	0.00363	0.01087
sky130_fd_sc_hs__and4bb_4	(A_N * C * !X) + (!A_N * C * !D * !X)	0.00231	0.00240	0.00897
	(A_N * C * !X) + (!A_N * C * !D * !X)	0.00531	0.00541	0.01198
	(!C * !X)	0.00152	0.00161	0.00823
	(!C * !X)	0.00463	0.00474	0.01135

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)**	0.00113	0.00114	0.00113
	(A_N * B_N * D * !X)	-0.00110	-0.00111	-0.00110
	(A_N * B_N * !D * !X)	0.00081	0.00081	0.00081
	(A_N * B_N * !D * !X)	-0.00110	-0.00111	-0.00110
	(A_N * !B_N * D * !X)	0.00087	0.00088	0.00087
	(A_N * !B_N * D * !X)	-0.00137	-0.00138	-0.00136
	(A_N * !B_N * !D * !X)	0.00052	0.00052	0.00051
	(A_N * !B_N * !D * !X)	-0.00147	-0.00147	-0.00146
	(!A_N * B_N * D * !X)	0.00113	0.00113	0.00113
	(!A_N * B_N * D * !X)	-0.00110	-0.00110	-0.00110
	(!A_N * B_N * !D * !X)	0.00079	0.00078	0.00078
	(!A_N * B_N * !D * !X)	-0.00111	-0.00110	-0.00110
	(!A_N * !B_N * !D * !X)	0.00043	0.00043	0.00043
	(!A_N * !B_N * !D * !X)	-0.00137	-0.00137	-0.00137
sky130_fd_sc_hs__and4bb_2	**(A_N * B_N * D * !X)**	0.00120	0.00121	0.00120
	(A_N * B_N * D * !X)	-0.00130	-0.00130	-0.00129
	(A_N * B_N * !D * !X)	0.00082	0.00082	0.00081
	(A_N * B_N * !D * !X)	-0.00130	-0.00131	-0.00129
	(A_N * !B_N * D * !X)	0.00099	0.00100	0.00099
	(A_N * !B_N * D * !X)	-0.00152	-0.00152	-0.00150
	(A_N * !B_N * !D * !X)	0.00057	0.00057	0.00057
	(A_N * !B_N * !D * !X)	-0.00163	-0.00163	-0.00163
	(!A_N * B_N * D * !X)	0.00119	0.00121	0.00120
	(!A_N * B_N * D * !X)	-0.00129	-0.00130	-0.00129
	(!A_N * B_N * !D * !X)	0.00079	0.00079	0.00079
	(!A_N * B_N * !D * !X)	-0.00130	-0.00130	-0.00130
	(!A_N * !B_N * !D * !X)	0.00047	0.00048	0.00048
	(!A_N * !B_N * !D * !X)	-0.00150	-0.00152	-0.00151

sky130_fd_sc_hs__and4bb_4	**(A_N * B_N * D * !X)**	0.00202	0.00201	0.00202
	(A_N * B_N * D * !X)	-0.00269	-0.00268	-0.00268
	(A_N * B_N * !D * !X)	0.00129	0.00131	0.00130
	(A_N * B_N * !D * !X)	-0.00268	-0.00270	-0.00269
	(A_N * !B_N * D * !X)	0.00189	0.00191	0.00190
	(A_N * !B_N * D * !X)	-0.00283	-0.00285	-0.00281
	(A_N * !B_N * !D * !X)	0.00112	0.00114	0.00113
	(A_N * !B_N * !D * !X)	-0.00303	-0.00306	-0.00304
	(!A_N * B_N * D * !X)	0.00202	0.00202	0.00202
	(!A_N * B_N * D * !X)	-0.00269	-0.00269	-0.00268
	(!A_N * B_N * !D * !X)	0.00125	0.00126	0.00125
	(!A_N * B_N * !D * !X)	-0.00269	-0.00271	-0.00270
	(!A_N * !B_N * !D * !X)	0.00096	0.00097	0.00096
	(!A_N * !B_N * !D * !X)	-0.00281	-0.00284	-0.00283

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)**	-0.00112	-0.00113	-0.00113
	(A_N * B_N * D * !X)	0.00111	0.00112	0.00111
	(A_N * B_N * !D * !X)	-0.00081	-0.00081	-0.00081
	(A_N * B_N * !D * !X)	0.00111	0.00112	0.00111
	(A_N * !B_N * D * !X)	-0.00081	-0.00088	-0.00087
	(A_N * !B_N * D * !X)	0.00142	0.00138	0.00136
	(A_N * !B_N * !D * !X)	-0.00052	-0.00052	-0.00051
	(A_N * !B_N * !D * !X)	0.00150	0.00151	0.00151
	(!A_N * B_N * D * !X)	-0.00111	-0.00113	-0.00113
	(!A_N * B_N * D * !X)	0.00112	0.00112	0.00111
	(!A_N * B_N * !D * !X)	-0.00079	-0.00078	-0.00078
	(!A_N * B_N * !D * !X)	0.00114	0.00115	0.00111
	(!A_N * !B_N * !D * !X)	-0.00042	-0.00041	-0.00041
	(!A_N * !B_N * !D * !X)	0.00140	0.00139	0.00138
sky130_fd_sc_hs__and4bb_2	**(A_N * B_N * D * !X)**	-0.00117	-0.00120	-0.00120
	(A_N * B_N * D * !X)	0.00130	0.00132	0.00130
	(A_N * B_N * !D * !X)	-0.00082	-0.00082	-0.00081
	(A_N * B_N * !D * !X)	0.00130	0.00132	0.00130
	(A_N * !B_N * D * !X)	-0.00092	-0.00100	-0.00099
	(A_N * !B_N * D * !X)	0.00158	0.00153	0.00150
	(A_N * !B_N * !D * !X)	-0.00057	-0.00057	-0.00057
	(A_N * !B_N * !D * !X)	0.00165	0.00168	0.00167
	(!A_N * B_N * D * !X)	-0.00117	-0.00120	-0.00120
	(!A_N * B_N * D * !X)	0.00131	0.00132	0.00130
	(!A_N * B_N * !D * !X)	-0.00079	-0.00079	-0.00079
	(!A_N * B_N * !D * !X)	0.00134	0.00135	0.00131
	(!A_N * !B_N * !D * !X)	-0.00045	-0.00045	-0.00045
	(!A_N * !B_N * !D * !X)	0.00153	0.00154	0.00153

sky130_fd_sc_hs__and4bb_4	(A_N * B_N * D * !X)	-0.00197	-0.00201	-0.00202
	(A_N * B_N * D * !X)	0.00269	0.00272	0.00270
	(A_N * B_N * !D * !X)	-0.00129	-0.00131	-0.00130
	(A_N * B_N * !D * !X)	0.00272	0.00274	0.00271
	(A_N * !B_N * D * !X)	-0.00177	-0.00191	-0.00190
	(A_N * !B_N * D * !X)	0.00296	0.00285	0.00281
	(A_N * !B_N * !D * !X)	-0.00112	-0.00114	-0.00113
	(A_N * !B_N * !D * !X)	0.00308	0.00314	0.00312
	(!A_N * B_N * D * !X)	-0.00195	-0.00202	-0.00202
	(!A_N * B_N * D * !X)	0.00271	0.00272	0.00270
	(!A_N * B_N * !D * !X)	-0.00125	-0.00126	-0.00125
	(!A_N * B_N * !D * !X)	0.00277	0.00279	0.00272
	(!A_N * !B_N * !D * !X)	-0.00091	-0.00092	-0.00091
	(!A_N * !B_N * !D * !X)	0.00288	0.00293	0.00287

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)	0.00102	0.00103	0.00102
	(A_N * B_N * C * !X)	-0.00107	-0.00108	-0.00107
	(A_N * !C * !X)	0.00103	0.00103	0.00102
	(A_N * !C * !X)	-0.00107	-0.00108	-0.00107
	(A_N * !B_N * C * !X)	0.00089	0.00089	0.00088
	(A_N * !B_N * C * !X)	-0.00123	-0.00123	-0.00123
	(!A_N * B_N * C * !X)	0.00101	0.00103	0.00102
	(!A_N * B_N * C * !X)	-0.00107	-0.00108	-0.00107
	(!A_N * B_N * !C * !X)	0.00103	0.00104	0.00102
	(!A_N * B_N * !C * !X)	-0.00107	-0.00108	-0.00107
	(!A_N * !B_N * !C * !X)	0.00090	0.00091	0.00090
	(!A_N * !B_N * !C * !X)	-0.00120	-0.00121	-0.00120

sky130_fd_sc_hs__and4bb_2	**(A_N * B_N * C * !X)**	0.00107	0.00108	0.00107
	(A_N * B_N * C * !X)	-0.00137	-0.00138	-0.00137
	(A_N * !C * !X)	0.00107	0.00108	0.00108
	(A_N * !C * !X)	-0.00137	-0.00137	-0.00137
	(A_N * !B_N * C * !X)	0.00100	0.00101	0.00100
	(A_N * !B_N * C * !X)	-0.00146	-0.00147	-0.00145
	(!A_N * B_N * C * !X)	0.00106	0.00106	0.00106
	(!A_N * B_N * C * !X)	-0.00138	-0.00138	-0.00138
	(!A_N * B_N * !C * !X)	0.00108	0.00108	0.00108
	(!A_N * B_N * !C * !X)	-0.00138	-0.00137	-0.00138
	(!A_N * !B_N * !C * !X)	0.00103	0.00103	0.00103
	(!A_N * !B_N * !C * !X)	-0.00143	-0.00142	-0.00142
sky130_fd_sc_hs__and4bb_4	**(A_N * B_N * C * !X)**	0.00180	0.00181	0.00179
	(A_N * B_N * C * !X)	-0.00267	-0.00267	-0.00266
	(A_N * !C * !X)	0.00182	0.00183	0.00181
	(A_N * !C * !X)	-0.00266	-0.00267	-0.00266
	(A_N * !B_N * C * !X)	0.00176	0.00178	0.00177
	(A_N * !B_N * C * !X)	-0.00272	-0.00273	-0.00271
	(!A_N * B_N * C * !X)	0.00180	0.00181	0.00179
	(!A_N * B_N * C * !X)	-0.00267	-0.00267	-0.00266
	(!A_N * B_N * !C * !X)	0.00182	0.00183	0.00181
	(!A_N * B_N * !C * !X)	-0.00266	-0.00268	-0.00266
	(!A_N * !B_N * !C * !X)	0.00181	0.00182	0.00181
	(!A_N * !B_N * !C * !X)	-0.00267	-0.00266	-0.00266

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)**	-0.00097	-0.00103	-0.00102
	(A_N * B_N * C * !X)	0.00109	0.00109	0.00108
	(A_N * !C * !X)	-0.00099	-0.00103	-0.00102
	(A_N * !C * !X)	0.00107	0.00109	0.00108
	(A_N * !B_N * C * !X)	-0.00082	-0.00089	-0.00088
	(A_N * !B_N * C * !X)	0.00126	0.00124	0.00123
	(!A_N * B_N * C * !X)	-0.00097	-0.00103	-0.00102
	(!A_N * B_N * C * !X)	0.00108	0.00109	0.00108
	(!A_N * B_N * !C * !X)	-0.00099	-0.00103	-0.00102
	(!A_N * B_N * !C * !X)	0.00107	0.00109	0.00108
	(!A_N * !B_N * !C * !X)	-0.00086	-0.00090	-0.00090
	(!A_N * !B_N * !C * !X)	0.00120	0.00121	0.00121
sky130_fd_sc_hs__and4bb_2	**(A_N * B_N * C * !X)**	-0.00101	-0.00107	-0.00107
	(A_N * B_N * C * !X)	0.00138	0.00138	0.00138
	(A_N * !C * !X)	-0.00104	-0.00108	-0.00108
	(A_N * !C * !X)	0.00139	0.00139	0.00138
	(A_N * !B_N * C * !X)	-0.00093	-0.00101	-0.00100
	(A_N * !B_N * C * !X)	0.00148	0.00148	0.00145
	(!A_N * B_N * C * !X)	-0.00101	-0.00106	-0.00106
	(!A_N * B_N * C * !X)	0.00138	0.00138	0.00138
	(!A_N * B_N * !C * !X)	-0.00104	-0.00108	-0.00108
	(!A_N * B_N * !C * !X)	0.00139	0.00139	0.00138
	(!A_N * !B_N * !C * !X)	-0.00099	-0.00103	-0.00103
	(!A_N * !B_N * !C * !X)	0.00144	0.00145	0.00143

sky130_fd_sc_hs__and4bb_4	**(A_N * B_N * C * !X)**	-0.00169	-0.00181	-0.00179
	(A_N * B_N * C * !X)	0.00267	0.00268	0.00267
	(A_N * !C * !X)	-0.00174	-0.00182	-0.00181
	(A_N * !C * !X)	0.00266	0.00269	0.00267
	(A_N * !B_N * C * !X)	-0.00165	-0.00178	-0.00177
	(A_N * !B_N * C * !X)	0.00278	0.00273	0.00271
	(!A_N * B_N * C * !X)	-0.00169	-0.00181	-0.00179
	(!A_N * B_N * C * !X)	0.00267	0.00268	0.00267
	(!A_N * B_N * !C * !X)	-0.00174	-0.00182	-0.00181
	(!A_N * B_N * !C * !X)	0.00266	0.00269	0.00267
	(!A_N * !B_N * !C * !X)	-0.00173	-0.00182	-0.00181
	(!A_N * !B_N * !C * !X)	0.00267	0.00269	0.00267

SKY130_FD_SC_HS__AND4Bx

sky130_fd_sc_hs_tt_1.50v_25C.ccs
Cell Library: Process , Voltage
1.50, 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	0.00238	0.00251	0.00241	0.00233	0.82619
sky130_fd_sc_hs__and4b_2	0.00221	0.00267	0.00266	0.00274	1.49522
sky130_fd_sc_hs__and4b_4	0.00241	0.00493	0.00531	0.00491	2.82655

Leakage Information

Cell Name	Leakage(nW)		
	Min.	**Avg**	**Max.**
sky130_fd_sc_hs__and4b_1	0.00000	0.14458	0.61184
sky130_fd_sc_hs__and4b_2	0.00000	0.15322	0.30922
sky130_fd_sc_hs__and4b_4	0.00000	0.19354	0.61928

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)	0.19425	0.95549	8.32474
	B->X (RR)	0.14244	0.79724	7.09006
	C->X (RR)	0.14915	0.79356	7.07902
	D->X (RR)	0.15517	0.78468	7.01773
sky130_fd_sc_hs__and4b_2	A_N->X (FR)	0.21627	0.89727	8.35681
	B->X (RR)	0.14766	0.72136	7.04668
	C->X (RR)	0.15589	0.71450	7.02881
	D->X (RR)	0.16112	0.70102	6.95844
sky130_fd_sc_hs__and4b_4	A_N->X (FR)	0.26377	0.91675	8.78904
	B->X (RR)	0.16913	0.67797	7.18156
	C->X (RR)	0.18592	0.67592	7.14243
	D->X (RR)	0.18755	0.66019	7.11298

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)	0.13439	0.43101	2.36930
	B->X (FF)	0.11896	0.62782	4.30325
	C->X (FF)	0.12926	0.64864	4.38247
	D->X (FF)	0.14037	0.67211	4.47090
sky130_fd_sc_hs__and4b_2	A_N->X (RF)	0.15732	0.43027	2.23684
	B->X (FF)	0.13525	0.63754	4.35095
	C->X (FF)	0.14809	0.66169	4.43577
	D->X (FF)	0.15682	0.67727	4.50799
sky130_fd_sc_hs__and4b_4	A_N->X (RF)	0.17331	0.43723	2.23488
	B->X (FF)	0.13081	0.59983	4.27884
	C->X (FF)	0.14449	0.62421	4.37026
	D->X (FF)	0.16641	0.65863	4.48424

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	0.00583	0.00623	0.01364
	A_N	0.00795	0.00835	0.01575
	B	0.00688	0.00675	0.01200
	B	0.00374	0.00360	0.00890
	C	0.00757	0.00741	0.01245
	C	0.00390	0.00374	0.00882
	D	0.00808	0.00784	0.01142
	D	0.00388	0.00364	0.00722
sky130_fd_sc_hs__and4b_2	A_N	0.00817	0.00861	0.01565
	A_N	0.01017	0.01062	0.01765
	B	0.00900	0.00911	0.01305
	B	0.00567	0.00578	0.00978
	C	0.00972	0.00982	0.01344
	C	0.00581	0.00592	0.00954
	D	0.01054	0.01058	0.01276
	D	0.00581	0.00585	0.00803
sky130_fd_sc_hs__and4b_4	A_N	0.01647	0.01745	0.02430
	A_N	0.01874	0.01970	0.02680
	B	0.01793	0.01827	0.02627
	B	0.01182	0.01216	0.02041
	C	0.01981	0.02018	0.02634
	C	0.01215	0.01253	0.01887
	D	0.02071	0.02106	0.02789
	D	0.01219	0.01256	0.01956

Internal switching power(pJ) to X falling :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__and4b_1	A_N	0.00745	0.00736	0.01426
	A_N	0.00532	0.00525	0.01208
	B	0.00274	0.00300	0.00999
	B	0.00587	0.00612	0.01278
	C	0.00290	0.00321	0.00994
	C	0.00649	0.00680	0.01346
	D	0.00342	0.00364	0.01036
	D	0.00747	0.00768	0.01403
sky130_fd_sc_hs__and4b_2	A_N	0.00987	0.00999	0.01593
	A_N	0.00786	0.00799	0.01384
	B	0.00452	0.00500	0.01109
	B	0.00784	0.00830	0.01408
	C	0.00494	0.00543	0.01164
	C	0.00875	0.00923	0.01500
	D	0.00516	0.00547	0.01123
	D	0.00972	0.01002	0.01529
sky130_fd_sc_hs__and4b_4	A_N	0.01695	0.01765	0.02357
	A_N	0.01469	0.01533	0.02116
	B	0.00850	0.00964	0.02141
	B	0.01457	0.01555	0.02701
	C	0.00919	0.01000	0.02133
	C	0.01665	0.01744	0.02837
	D	0.01030	0.01134	0.02311
	D	0.01845	0.01948	0.03047

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)	0.00398	0.00389	0.01074
	(B * C * !D * !X)	0.00113	0.00101	0.00788
	(B * !C * !X)	0.00398	0.00389	0.01074
	(B * !C * !X)	0.00113	0.00101	0.00788
	(!B * !X)	0.00397	0.00387	0.01073
	(!B * !X)	0.00113	0.00101	0.00788
sky130_fd_sc_hs__and4b_2	(B * C * !D * !X)	0.00441	0.00431	0.01094
	(B * C * !D * !X)	0.00170	0.00159	0.00823
	(B * !C * !X)	0.00441	0.00431	0.01094
	(B * !C * !X)	0.00170	0.00158	0.00823
	(!B * !X)	0.00440	0.00430	0.01093
	(!B * !X)	0.00170	0.00158	0.00823
sky130_fd_sc_hs__and4b_4	(B * C * !D * !X)	0.00682	0.00671	0.01282
	(B * C * !D * !X)	0.00354	0.00340	0.00953
	(B * !C * !X)	0.00681	0.00669	0.01281
	(B * !C * !X)	0.00354	0.00341	0.00953
	(!B * !X)	0.00676	0.00665	0.01276
	(!B * !X)	0.00354	0.00340	0.00953

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__and4b_1	(B * C * !D * !X)	0.00015	0.00038	0.00770
	(B * C * !D * !X)	0.00309	0.00333	0.01062
	(B * !C * !X)	0.00012	0.00035	0.00768
	(B * !C * !X)	0.00304	0.00328	0.01059
	(!B * !X)	0.00013	0.00036	0.00770
	(!B * !X)	0.00298	0.00323	0.01055
sky130_fd_sc_hs__and4b_2	(B * C * !D * !X)	0.00022	0.00045	0.00760
	(B * C * !D * !X)	0.00304	0.00326	0.01041
	(B * !C * !X)	0.00021	0.00044	0.00760
	(B * !C * !X)	0.00299	0.00322	0.01038
	(!B * !X)	0.00020	0.00043	0.00761
	(!B * !X)	0.00291	0.00314	0.01032
sky130_fd_sc_hs__and4b_4	(B * C * !D * !X)	0.00052	0.00064	0.00707
	(B * C * !D * !X)	0.00400	0.00411	0.01049
	(B * !C * !X)	0.00050	0.00062	0.00706
	(B * !C * !X)	0.00390	0.00402	0.01043
	(!B * !X)	0.00049	0.00061	0.00709
	(!B * !X)	0.00374	0.00386	0.01033

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)**	0.00104	0.00106	0.00105
	(A_N * C * D * !X)	-0.00125	-0.00126	-0.00125
	(A_N * C * !D * !X)	0.00068	0.00069	0.00069
	(A_N * C * !D * !X)	-0.00125	-0.00126	-0.00126
	(A_N * !C * !X)	0.00067	0.00066	0.00066
	(A_N * !C * !X)	-0.00126	-0.00126	-0.00126
	(!A_N * C * !D * !X)	0.00042	0.00043	0.00043
	(!A_N * C * !D * !X)	-0.00140	-0.00140	-0.00142
	(!A_N * !C * !X)	0.00042	0.00043	0.00043
	(!A_N * !C * !X)	-0.00142	-0.00142	-0.00142
sky130_fd_sc_hs__and4b_2	**(A_N * C * D * !X)**	0.00119	0.00120	0.00119
	(A_N * C * D * !X)	-0.00130	-0.00131	-0.00130
	(A_N * C * !D * !X)	0.00076	0.00077	0.00076
	(A_N * C * !D * !X)	-0.00131	-0.00132	-0.00131
	(A_N * !C * !X)	0.00077	0.00077	0.00077
	(A_N * !C * !X)	-0.00132	-0.00131	-0.00131
	(!A_N * C * !D * !X)	0.00045	0.00045	0.00046
	(!A_N * C * !D * !X)	-0.00148	-0.00149	-0.00150
	(!A_N * !C * !X)	0.00048	0.00048	0.00048
	(!A_N * !C * !X)	-0.00151	-0.00151	-0.00151
sky130_fd_sc_hs__and4b_4	**(A_N * C * D * !X)**	0.00244	0.00247	0.00245
	(A_N * C * D * !X)	-0.00247	-0.00249	-0.00247
	(A_N * C * !D * !X)	0.00169	0.00171	0.00170
	(A_N * C * !D * !X)	-0.00247	-0.00249	-0.00248
	(A_N * !C * !X)	0.00174	0.00176	0.00174
	(A_N * !C * !X)	-0.00248	-0.00251	-0.00249
	(!A_N * C * !D * !X)	0.00103	0.00104	0.00104
	(!A_N * C * !D * !X)	-0.00289	-0.00291	-0.00295
	(!A_N * !C * !X)	0.00108	0.00109	0.00108
	(!A_N * !C * !X)	-0.00294	-0.00295	-0.00296

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)	-0.00097	-0.00105	-0.00105
	(A_N * C * D * !X)	0.00132	0.00127	0.00126
	(A_N * C * !D * !X)	-0.00068	-0.00069	-0.00069
	(A_N * C * !D * !X)	0.00130	0.00130	0.00126
	(A_N * !C * !X)	-0.00067	-0.00066	-0.00066
	(A_N * !C * !X)	0.00131	0.00133	0.00127
	(!A_N * C * !D * !X)	-0.00040	-0.00040	-0.00041
	(!A_N * C * !D * !X)	0.00144	0.00145	0.00144
	(!A_N * !C * !X)	-0.00040	-0.00040	-0.00041
	(!A_N * !C * !X)	0.00145	0.00145	0.00144
sky130_fd_sc_hs__and4b_2	(A_N * C * D * !X)	-0.00112	-0.00120	-0.00119
	(A_N * C * D * !X)	0.00137	0.00132	0.00131
	(A_N * C * !D * !X)	-0.00076	-0.00077	-0.00076
	(A_N * C * !D * !X)	0.00135	0.00135	0.00131
	(A_N * !C * !X)	-0.00077	-0.00077	-0.00077
	(A_N * !C * !X)	0.00138	0.00139	0.00133
	(!A_N * C * !D * !X)	-0.00044	-0.00044	-0.00045
	(!A_N * C * !D * !X)	0.00154	0.00154	0.00153
	(!A_N * !C * !X)	-0.00045	-0.00045	-0.00046
	(!A_N * !C * !X)	0.00154	0.00154	0.00153

sky130_fd_sc_hs__and4b_4	**(A_N * C * D * !X)**	-0.00231	-0.00245	-0.00245
	(A_N * C * D * !X)	0.00257	0.00250	0.00248
	(A_N * C * !D * !X)	-0.00169	-0.00171	-0.00170
	(A_N * C * !D * !X)	0.00255	0.00255	0.00249
	(A_N * !C * !X)	-0.00174	-0.00176	-0.00174
	(A_N * !C * !X)	0.00260	0.00261	0.00251
	(!A_N * C * !D * !X)	-0.00100	-0.00102	-0.00102
	(!A_N * C * !D * !X)	0.00302	0.00307	0.00299
	(!A_N * !C * !X)	-0.00102	-0.00104	-0.00104
	(!A_N * !C * !X)	0.00303	0.00307	0.00300

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)**	0.00106	0.00107	0.00106
	(A_N * B * D * !X)	-0.00113	-0.00113	-0.00112
	(A_N * B * !D * !X)	0.00071	0.00071	0.00071
	(A_N * B * !D * !X)	-0.00113	-0.00114	-0.00113
	(A_N * !B * D * !X)	0.00106	0.00107	0.00106
	(A_N * !B * D * !X)	-0.00113	-0.00113	-0.00112
	(A_N * !B * !D * !X)	0.00071	0.00071	0.00070
	(A_N * !B * !D * !X)	-0.00113	-0.00114	-0.00113
	(!A_N * B * !D * !X)	0.00062	0.00062	0.00061
	(!A_N * B * !D * !X)	-0.00113	-0.00113	-0.00112
	(!A_N * !B * D * !X)	0.00105	0.00106	0.00105
	(!A_N * !B * D * !X)	-0.00113	-0.00114	-0.00113
	(!A_N * !B * !D * !X)	0.00068	0.00068	0.00067
	(!A_N * !B * !D * !X)	-0.00114	-0.00115	-0.00114

sky130_fd_sc_hs__and4b_2	**(A_N * B * D * !X)**	0.00101	0.00102	0.00101
	(A_N * B * D * !X)	-0.00129	-0.00129	-0.00129
	(A_N * B * !D * !X)	0.00058	0.00059	0.00059
	(A_N * B * !D * !X)	-0.00129	-0.00129	-0.00129
	(A_N * !B * D * !X)	0.00102	0.00104	0.00103
	(A_N * !B * D * !X)	-0.00129	-0.00130	-0.00129
	(A_N * !B * !D * !X)	0.00058	0.00058	0.00058
	(A_N * !B * !D * !X)	-0.00130	-0.00130	-0.00129
	(!A_N * B * !D * !X)	0.00046	0.00046	0.00047
	(!A_N * B * !D * !X)	-0.00131	-0.00131	-0.00130
	(!A_N * !B * D * !X)	0.00101	0.00103	0.00101
	(!A_N * !B * D * !X)	-0.00130	-0.00131	-0.00130
	(!A_N * !B * !D * !X)	0.00055	0.00054	0.00054
	(!A_N * !B * !D * !X)	-0.00132	-0.00131	-0.00131
sky130_fd_sc_hs__and4b_4	**(A_N * B * D * !X)**	0.00227	0.00229	0.00228
	(A_N * B * D * !X)	-0.00263	-0.00264	-0.00263
	(A_N * B * !D * !X)	0.00155	0.00156	0.00155
	(A_N * B * !D * !X)	-0.00264	-0.00265	-0.00264
	(A_N * !B * D * !X)	0.00230	0.00229	0.00230
	(A_N * !B * D * !X)	-0.00264	-0.00263	-0.00264
	(A_N * !B * !D * !X)	0.00157	0.00158	0.00157
	(A_N * !B * !D * !X)	-0.00264	-0.00265	-0.00264
	(!A_N * B * !D * !X)	0.00132	0.00132	0.00132
	(!A_N * B * !D * !X)	-0.00267	-0.00268	-0.00267
	(!A_N * !B * D * !X)	0.00225	0.00228	0.00226
	(!A_N * !B * D * !X)	-0.00266	-0.00268	-0.00267
	(!A_N * !B * !D * !X)	0.00148	0.00148	0.00148
	(!A_N * !B * !D * !X)	-0.00269	-0.00269	-0.00269

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)	-0.00099	-0.00106	-0.00106
	(A_N * B * D * !X)	0.00114	0.00114	0.00113
	(A_N * B * !D * !X)	-0.00071	-0.00071	-0.00071
	(A_N * B * !D * !X)	0.00113	0.00114	0.00113
	(A_N * !B * D * !X)	-0.00103	-0.00107	-0.00106
	(A_N * !B * D * !X)	0.00113	0.00114	0.00113
	(A_N * !B * !D * !X)	-0.00071	-0.00071	-0.00070
	(A_N * !B * !D * !X)	0.00114	0.00114	0.00114
	(!A_N * B * !D * !X)	-0.00059	-0.00058	-0.00058
	(!A_N * B * !D * !X)	0.00116	0.00116	0.00115
	(!A_N * !B * D * !X)	-0.00101	-0.00106	-0.00105
	(!A_N * !B * D * !X)	0.00115	0.00115	0.00114
	(!A_N * !B * !D * !X)	-0.00068	-0.00068	-0.00067
	(!A_N * !B * !D * !X)	0.00119	0.00118	0.00115
sky130_fd_sc_hs__and4b_2	(A_N * B * D * !X)	-0.00094	-0.00102	-0.00101
	(A_N * B * D * !X)	0.00130	0.00131	0.00130
	(A_N * B * !D * !X)	-0.00058	-0.00059	-0.00059
	(A_N * B * !D * !X)	0.00130	0.00132	0.00130
	(A_N * !B * D * !X)	-0.00098	-0.00104	-0.00103
	(A_N * !B * D * !X)	0.00129	0.00131	0.00130
	(A_N * !B * !D * !X)	-0.00058	-0.00058	-0.00058
	(A_N * !B * !D * !X)	0.00130	0.00132	0.00130
	(!A_N * B * !D * !X)	-0.00045	-0.00046	-0.00045
	(!A_N * B * !D * !X)	0.00132	0.00135	0.00132
	(!A_N * !B * D * !X)	-0.00096	-0.00102	-0.00101
	(!A_N * !B * D * !X)	0.00131	0.00132	0.00131
	(!A_N * !B * !D * !X)	-0.00055	-0.00054	-0.00054
	(!A_N * !B * !D * !X)	0.00135	0.00136	0.00132

sky130_fd_sc_hs__and4b_4	(A_N * B * D * !X)	-0.00214	-0.00229	-0.00228
	(A_N * B * D * !X)	0.00265	0.00267	0.00264
	(A_N * B * !D * !X)	-0.00155	-0.00156	-0.00155
	(A_N * B * !D * !X)	0.00265	0.00269	0.00265
	(A_N * !B * D * !X)	-0.00219	-0.00229	-0.00230
	(A_N * !B * D * !X)	0.00264	0.00265	0.00265
	(A_N * !B * !D * !X)	-0.00157	-0.00158	-0.00157
	(A_N * !B * !D * !X)	0.00265	0.00268	0.00265
	(!A_N * B * !D * !X)	-0.00130	-0.00132	-0.00130
	(!A_N * B * !D * !X)	0.00271	0.00275	0.00269
	(!A_N * !B * D * !X)	-0.00215	-0.00227	-0.00226
	(!A_N * !B * D * !X)	0.00269	0.00268	0.00268
	(!A_N * !B * !D * !X)	-0.00148	-0.00148	-0.00148
	(!A_N * !B * !D * !X)	0.00273	0.00276	0.00271

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)	0.00086	0.00086	0.00086
	(A_N * B * C * !X)	-0.00122	-0.00122	-0.00122
	(A_N * !C * !X)	0.00089	0.00090	0.00089
	(A_N * !C * !X)	-0.00122	-0.00123	-0.00122
	(A_N * !B * C * !X)	0.00086	0.00087	0.00086
	(A_N * !B * C * !X)	-0.00122	-0.00123	-0.00122
	(!A_N * B * !C * !X)	0.00089	0.00090	0.00089
	(!A_N * B * !C * !X)	-0.00122	-0.00123	-0.00123
	(!A_N * !B * C * !X)	0.00086	0.00087	0.00086
	(!A_N * !B * C * !X)	-0.00123	-0.00123	-0.00122
	(!A_N * !B * !C * !X)	0.00089	0.00089	0.00089
	(!A_N * !B * !C * !X)	-0.00122	-0.00123	-0.00123

sky130_fd_sc_hs__and4b_2	**(A_N * B * C * !X)**	0.00101	0.00101	0.00101
	(A_N * B * C * !X)	-0.00140	-0.00140	-0.00140
	(A_N * !C * !X)	0.00104	0.00105	0.00104
	(A_N * !C * !X)	-0.00140	-0.00140	-0.00140
	(A_N * !B * C * !X)	0.00101	0.00102	0.00101
	(A_N * !B * C * !X)	-0.00139	-0.00140	-0.00140
	(!A_N * B * !C * !X)	0.00102	0.00102	0.00102
	(!A_N * B * !C * !X)	-0.00141	-0.00141	-0.00141
	(!A_N * !B * C * !X)	0.00099	0.00101	0.00100
	(!A_N * !B * C * !X)	-0.00141	-0.00142	-0.00141
	(!A_N * !B * !C * !X)	0.00102	0.00103	0.00102
	(!A_N * !B * !C * !X)	-0.00141	-0.00142	-0.00141
sky130_fd_sc_hs__and4b_4	**(A_N * B * C * !X)**	0.00185	0.00186	0.00184
	(A_N * B * C * !X)	-0.00262	-0.00264	-0.00262
	(A_N * !C * !X)	0.00185	0.00187	0.00185
	(A_N * !C * !X)	-0.00261	-0.00263	-0.00262
	(A_N * !B * C * !X)	0.00185	0.00186	0.00184
	(A_N * !B * C * !X)	-0.00263	-0.00264	-0.00262
	(!A_N * B * !C * !X)	0.00181	0.00183	0.00182
	(!A_N * B * !C * !X)	-0.00265	-0.00266	-0.00266
	(!A_N * !B * C * !X)	0.00182	0.00182	0.00181
	(!A_N * !B * C * !X)	-0.00266	-0.00267	-0.00265
	(!A_N * !B * !C * !X)	0.00182	0.00185	0.00183
	(!A_N * !B * !C * !X)	-0.00265	-0.00267	-0.00265

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)**	-0.00081	-0.00086	-0.00086
	(A_N * B * C * !X)	0.00123	0.00123	0.00123
	(A_N * !C * !X)	-0.00086	-0.00089	-0.00089
	(A_N * !C * !X)	0.00124	0.00124	0.00123
	(A_N * !B * C * !X)	-0.00081	-0.00087	-0.00086
	(A_N * !B * C * !X)	0.00123	0.00123	0.00123
	(!A_N * B * !C * !X)	-0.00086	-0.00089	-0.00089
	(!A_N * B * !C * !X)	0.00124	0.00124	0.00123
	(!A_N * !B * C * !X)	-0.00081	-0.00087	-0.00086
	(!A_N * !B * C * !X)	0.00123	0.00123	0.00123
	(!A_N * !B * !C * !X)	-0.00086	-0.00089	-0.00089
	(!A_N * !B * !C * !X)	0.00124	0.00124	0.00123
sky130_fd_sc_hs__and4b_2	**(A_N * B * C * !X)**	-0.00096	-0.00101	-0.00101
	(A_N * B * C * !X)	0.00141	0.00143	0.00140
	(A_N * !C * !X)	-0.00100	-0.00104	-0.00104
	(A_N * !C * !X)	0.00141	0.00141	0.00140
	(A_N * !B * C * !X)	-0.00095	-0.00102	-0.00101
	(A_N * !B * C * !X)	0.00140	0.00143	0.00140
	(!A_N * B * !C * !X)	-0.00099	-0.00102	-0.00102
	(!A_N * B * !C * !X)	0.00142	0.00144	0.00142
	(!A_N * !B * C * !X)	-0.00094	-0.00101	-0.00100
	(!A_N * !B * C * !X)	0.00141	0.00142	0.00142
	(!A_N * !B * !C * !X)	-0.00099	-0.00103	-0.00102
	(!A_N * !B * !C * !X)	0.00142	0.00144	0.00142

sky130_fd_sc_hs__and4b_4	**(A_N * B * C * !X)**	-0.00170	-0.00186	-0.00184
	(A_N * B * C * !X)	0.00262	0.00266	0.00263
	(A_N * !C * !X)	-0.00179	-0.00187	-0.00185
	(A_N * !C * !X)	0.00262	0.00265	0.00263
	(A_N * !B * C * !X)	-0.00172	-0.00186	-0.00184
	(A_N * !B * C * !X)	0.00263	0.00265	0.00263
	(!A_N * B * !C * !X)	-0.00174	-0.00183	-0.00182
	(!A_N * B * !C * !X)	0.00266	0.00269	0.00266
	(!A_N * !B * C * !X)	-0.00169	-0.00182	-0.00181
	(!A_N * !B * C * !X)	0.00267	0.00268	0.00266
	(!A_N * !B * !C * !X)	-0.00176	-0.00184	-0.00183
	(!A_N * !B * !C * !X)	0.00265	0.00269	0.00266

SKY130_FD_SC_HS__AND4x

sky130_fd_sc_hs_tt_1.50v_25C.ccs
Cell Library: Process , Voltage
1.50, 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	0.00253	0.00249	0.00240	0.00242	0.83999
sky130_fd_sc_hs__and4_2	0.00272	0.00279	0.00264	0.00260	1.48993
sky130_fd_sc_hs__and4_4	0.00469	0.00484	0.00532	0.00473	3.16610

Leakage Information

Cell Name	Leakage(nW)		
	Min.	Avg	Max.
sky130_fd_sc_hs__and4_1	0.00000	0.06767	0.60913
sky130_fd_sc_hs__and4_2	0.00000	0.07631	0.30652
sky130_fd_sc_hs__and4_4	0.00000	0.15326	0.61304

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)	0.12897	0.77775	7.05900
	B->X (RR)	0.13889	0.79643	7.13627
	C->X (RR)	0.14487	0.79175	7.12340
	D->X (RR)	0.15162	0.78314	7.06181
sky130_fd_sc_hs__and4_2	A->X (RR)	0.13698	0.71689	6.99485
	B->X (RR)	0.14818	0.72932	7.07096
	C->X (RR)	0.15515	0.72148	7.05020
	D->X (RR)	0.16043	0.70739	6.98027
sky130_fd_sc_hs__and4_4	A->X (RR)	0.14491	0.63940	7.12713
	B->X (RR)	0.15917	0.65969	7.22071
	C->X (RR)	0.17336	0.65696	7.18722
	D->X (RR)	0.17442	0.64027	7.15369

Delay(ns) to X falling :

Cell Name	Timing Arc(Dir)	Delay(ns)		
		First	Mid	Last
sky130_fd_sc_hs__and4_1	A->X (FF)	0.10638	0.59328	4.18506
	B->X (FF)	0.11863	0.62327	4.25944
	C->X (FF)	0.12867	0.64511	4.33547
	D->X (FF)	0.13972	0.66759	4.41702
sky130_fd_sc_hs__and4_2	A->X (FF)	0.11621	0.60546	4.21591
	B->X (FF)	0.13150	0.63323	4.31784
	C->X (FF)	0.14222	0.65451	4.40359
	D->X (FF)	0.15796	0.68139	4.50543
sky130_fd_sc_hs__and4_4	A->X (FF)	0.11535	0.57878	4.48063
	B->X (FF)	0.12137	0.59295	4.52362
	C->X (FF)	0.13380	0.61635	4.61430
	D->X (FF)	0.13938	0.63155	4.68196

Power Information

Internal switching power(pJ) to X rising :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__and4_1	A	0.00645	0.00642	0.01300
	A	0.00327	0.00325	0.00987
	B	0.00698	0.00694	0.01229
	B	0.00329	0.00324	0.00864
	C	0.00760	0.00755	0.01266
	C	0.00330	0.00325	0.00841
	D	0.00832	0.00818	0.01189
	D	0.00331	0.00317	0.00692
sky130_fd_sc_hs__and4_2	A	0.00868	0.00880	0.01381
	A	0.00519	0.00530	0.01031
	B	0.00944	0.00956	0.01343
	B	0.00529	0.00540	0.00935
	C	0.01008	0.01019	0.01379
	C	0.00528	0.00538	0.00906
	D	0.01088	0.01093	0.01307
	D	0.00529	0.00535	0.00748
sky130_fd_sc_hs__and4_4	A	0.01608	0.01655	0.02701
	A	0.01008	0.01055	0.02121
	B	0.01759	0.01793	0.02610
	B	0.01005	0.01041	0.01883
	C	0.01941	0.01974	0.02646
	C	0.01010	0.01044	0.01743
	D	0.02011	0.02054	0.02762
	D	0.01008	0.01052	0.01779

Internal switching power(pJ) to X falling :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__and4_1	A	0.00239	0.00273	0.00968
	A	0.00556	0.00586	0.01283
	B	0.00275	0.00305	0.01011
	B	0.00639	0.00669	0.01348
	C	0.00300	0.00335	0.01026
	C	0.00719	0.00754	0.01428
	D	0.00332	0.00358	0.01037
	D	0.00814	0.00840	0.01482
sky130_fd_sc_hs__and4_2	A	0.00399	0.00441	0.01066
	A	0.00750	0.00790	0.01385
	B	0.00437	0.00483	0.01124
	B	0.00848	0.00889	0.01471
	C	0.00483	0.00533	0.01139
	C	0.00949	0.00997	0.01573
	D	0.00515	0.00556	0.01130
	D	0.01051	0.01089	0.01605
sky130_fd_sc_hs__and4_4	A	0.00795	0.00920	0.02099
	A	0.01395	0.01490	0.02694
	B	0.00842	0.00960	0.02098
	B	0.01588	0.01679	0.02832
	C	0.00903	0.00987	0.02189
	C	0.01808	0.01890	0.03008
	D	0.01014	0.01118	0.02419
	D	0.01976	0.02076	0.03211

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)	0.00038	0.00039	0.00035
	(B * C * !D * !X)	-0.00133	-0.00134	-0.00142
	(B * !C * !X)	0.00036	0.00036	0.00034
	(B * !C * !X)	-0.00137	-0.00138	-0.00142
	(!B * !X)	0.00036	0.00036	0.00035
	(!B * !X)	-0.00141	-0.00141	-0.00143
sky130_fd_sc_hs__and4_2	(B * C * !D * !X)	0.00047	0.00047	0.00042
	(B * C * !D * !X)	-0.00150	-0.00151	-0.00161
	(B * !C * !X)	0.00045	0.00045	0.00042
	(B * !C * !X)	-0.00155	-0.00156	-0.00161
	(!B * !X)	0.00043	0.00043	0.00042
	(!B * !X)	-0.00159	-0.00160	-0.00162
sky130_fd_sc_hs__and4_4	(B * C * !D * !X)	0.00067	0.00067	0.00058
	(B * C * !D * !X)	-0.00274	-0.00277	-0.00295
	(B * !C * !X)	0.00064	0.00065	0.00058
	(B * !C * !X)	-0.00282	-0.00285	-0.00297
	(!B * !X)	0.00061	0.00062	0.00059
	(!B * !X)	-0.00292	-0.00295	-0.00298

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)	-0.00033	-0.00034	-0.00033
	(B * C * !D * !X)	0.00142	0.00144	0.00143
	(B * !C * !X)	-0.00033	-0.00034	-0.00033
	(B * !C * !X)	0.00142	0.00144	0.00143
	(!B * !X)	-0.00034	-0.00034	-0.00034
	(!B * !X)	0.00143	0.00144	0.00143
sky130_fd_sc_hs__and4_2	(B * C * !D * !X)	-0.00040	-0.00041	-0.00040
	(B * C * !D * !X)	0.00162	0.00163	0.00162
	(B * !C * !X)	-0.00040	-0.00041	-0.00040
	(B * !C * !X)	0.00162	0.00163	0.00162
	(!B * !X)	-0.00041	-0.00041	-0.00041
	(!B * !X)	0.00162	0.00163	0.00162
sky130_fd_sc_hs__and4_4	(B * C * !D * !X)	-0.00055	-0.00055	-0.00054
	(B * C * !D * !X)	0.00300	0.00300	0.00299
	(B * !C * !X)	-0.00056	-0.00055	-0.00054
	(B * !C * !X)	0.00300	0.00300	0.00299
	(!B * !X)	-0.00058	-0.00057	-0.00057
	(!B * !X)	0.00300	0.00300	0.00299

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)**	0.00041	0.00041	0.00041
	(A * C * !D * !X)	-0.00115	-0.00115	-0.00114
	(A * !C * !X)	0.00041	0.00042	0.00041
	(A * !C * !X)	-0.00115	-0.00115	-0.00114
	(!A * C * D * !X)	0.00089	0.00090	0.00090
	(!A * C * D * !X)	-0.00115	-0.00116	-0.00115
	(!A * C * !D * !X)	0.00049	0.00050	0.00049
	(!A * C * !D * !X)	-0.00115	-0.00116	-0.00115
	(!A * !C * !X)	0.00047	0.00047	0.00047
	(!A * !C * !X)	-0.00115	-0.00115	-0.00115
sky130_fd_sc_hs__and4_2	**(A * C * !D * !X)**	0.00049	0.00049	0.00048
	(A * C * !D * !X)	-0.00137	-0.00137	-0.00136
	(A * !C * !X)	0.00050	0.00050	0.00050
	(A * !C * !X)	-0.00137	-0.00137	-0.00136
	(!A * C * D * !X)	0.00104	0.00104	0.00104
	(!A * C * D * !X)	-0.00136	-0.00136	-0.00137
	(!A * C * !D * !X)	0.00059	0.00059	0.00059
	(!A * C * !D * !X)	-0.00137	-0.00138	-0.00137
	(!A * !C * !X)	0.00057	0.00057	0.00057
	(!A * !C * !X)	-0.00137	-0.00138	-0.00137
sky130_fd_sc_hs__and4_4	**(A * C * !D * !X)**	0.00102	0.00103	0.00102
	(A * C * !D * !X)	-0.00257	-0.00259	-0.00257
	(A * !C * !X)	0.00107	0.00108	0.00106
	(A * !C * !X)	-0.00258	-0.00260	-0.00257
	(!A * C * D * !X)	0.00201	0.00203	0.00202
	(!A * C * D * !X)	-0.00256	-0.00257	-0.00256
	(!A * C * !D * !X)	0.00119	0.00120	0.00119
	(!A * C * !D * !X)	-0.00258	-0.00260	-0.00259
	(!A * !C * !X)	0.00121	0.00122	0.00121
	(!A * !C * !X)	-0.00260	-0.00262	-0.00260

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)	-0.00039	-0.00040	-0.00039
	(A * C * !D * !X)	0.00117	0.00120	0.00116
	(A * !C * !X)	-0.00039	-0.00040	-0.00040
	(A * !C * !X)	0.00117	0.00120	0.00116
	(!A * C * D * !X)	-0.00081	-0.00090	-0.00090
	(!A * C * D * !X)	0.00123	0.00117	0.00115
	(!A * C * !D * !X)	-0.00049	-0.00050	-0.00049
	(!A * C * !D * !X)	0.00121	0.00120	0.00115
	(!A * !C * !X)	-0.00047	-0.00047	-0.00047
	(!A * !C * !X)	0.00121	0.00123	0.00117
sky130_fd_sc_hs__and4_2	(A * C * !D * !X)	-0.00046	-0.00047	-0.00047
	(A * C * !D * !X)	0.00140	0.00142	0.00138
	(A * !C * !X)	-0.00047	-0.00048	-0.00048
	(A * !C * !X)	0.00140	0.00142	0.00138
	(!A * C * D * !X)	-0.00096	-0.00104	-0.00104
	(!A * C * D * !X)	0.00145	0.00139	0.00137
	(!A * C * !D * !X)	-0.00059	-0.00059	-0.00059
	(!A * C * !D * !X)	0.00142	0.00142	0.00137
	(!A * !C * !X)	-0.00057	-0.00057	-0.00057
	(!A * !C * !X)	0.00144	0.00146	0.00139

sky130_fd_sc_hs__and4_4	(A * C * !D * !X)	-0.00099	-0.00100	-0.00100
	(A * C * !D * !X)	0.00265	0.00268	0.00260
	(A * !C * !X)	-0.00101	-0.00102	-0.00102
	(A * !C * !X)	0.00265	0.00269	0.00260
	(!A * C * D * !X)	-0.00185	-0.00203	-0.00202
	(!A * C * D * !X)	0.00269	0.00259	0.00257
	(!A * C * !D * !X)	-0.00119	-0.00120	-0.00119
	(!A * C * !D * !X)	0.00269	0.00267	0.00259
	(!A * !C * !X)	-0.00121	-0.00122	-0.00121
	(!A * !C * !X)	0.00274	0.00276	0.00263

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)	0.00048	0.00048	0.00048
	(A * B * !D * !X)	-0.00108	-0.00109	-0.00108
	(A * !B * D * !X)	0.00093	0.00095	0.00093
	(A * !B * D * !X)	-0.00111	-0.00112	-0.00111
	(A * !B * !D * !X)	0.00054	0.00054	0.00054
	(A * !B * !D * !X)	-0.00111	-0.00111	-0.00111
	(!A * B * D * !X)	0.00091	0.00091	0.00091
	(!A * B * D * !X)	-0.00111	-0.00111	-0.00111
	(!A * B * !D * !X)	0.00053	0.00053	0.00053
	(!A * B * !D * !X)	-0.00111	-0.00111	-0.00111
	(!A * !B * D * !X)	0.00093	0.00093	0.00093
	(!A * !B * D * !X)	-0.00111	-0.00110	-0.00111
	(!A * !B * !D * !X)	0.00056	0.00056	0.00056
	(!A * !B * !D * !X)	-0.00111	-0.00112	-0.00111

sky130_fd_sc_hs__and4_2	**(A * B * !D * !X)**	0.00051	0.00052	0.00052
	(A * B * !D * !X)	-0.00126	-0.00127	-0.00126
	(A * !B * D * !X)	0.00104	0.00106	0.00105
	(A * !B * D * !X)	-0.00128	-0.00129	-0.00128
	(A * !B * !D * !X)	0.00060	0.00060	0.00060
	(A * !B * !D * !X)	-0.00129	-0.00129	-0.00128
	(!A * B * D * !X)	0.00101	0.00102	0.00101
	(!A * B * D * !X)	-0.00128	-0.00129	-0.00128
	(!A * B * !D * !X)	0.00058	0.00058	0.00058
	(!A * B * !D * !X)	-0.00128	-0.00129	-0.00128
	(!A * !B * D * !X)	0.00104	0.00106	0.00105
	(!A * !B * D * !X)	-0.00128	-0.00129	-0.00128
	(!A * !B * !D * !X)	0.00063	0.00063	0.00062
	(!A * !B * !D * !X)	-0.00128	-0.00129	-0.00128
sky130_fd_sc_hs__and4_4	**(A * B * !D * !X)**	0.00132	0.00131	0.00132
	(A * B * !D * !X)	-0.00267	-0.00266	-0.00266
	(A * !B * D * !X)	0.00226	0.00228	0.00227
	(A * !B * D * !X)	-0.00266	-0.00267	-0.00267
	(A * !B * !D * !X)	0.00147	0.00148	0.00146
	(A * !B * !D * !X)	-0.00268	-0.00270	-0.00268
	(!A * B * D * !X)	0.00223	0.00224	0.00223
	(!A * B * D * !X)	-0.00266	-0.00267	-0.00266
	(!A * B * !D * !X)	0.00144	0.00144	0.00144
	(!A * B * !D * !X)	-0.00268	-0.00269	-0.00268
	(!A * !B * D * !X)	0.00226	0.00228	0.00227
	(!A * !B * D * !X)	-0.00266	-0.00267	-0.00267
	(!A * !B * !D * !X)	0.00151	0.00152	0.00151
	(!A * !B * !D * !X)	-0.00268	-0.00269	-0.00268

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)	-0.00046	-0.00046	-0.00046
	(A * B * !D * !X)	0.00113	0.00114	0.00112
	(A * !B * D * !X)	-0.00089	-0.00094	-0.00093
	(A * !B * D * !X)	0.00111	0.00112	0.00111
	(A * !B * !D * !X)	-0.00054	-0.00054	-0.00054
	(A * !B * !D * !X)	0.00117	0.00116	0.00112
	(!A * B * D * !X)	-0.00083	-0.00091	-0.00091
	(!A * B * D * !X)	0.00111	0.00112	0.00111
	(!A * B * !D * !X)	-0.00053	-0.00053	-0.00053
	(!A * B * !D * !X)	0.00112	0.00113	0.00111
	(!A * !B * D * !X)	-0.00090	-0.00093	-0.00093
	(!A * !B * D * !X)	0.00111	0.00112	0.00111
	(!A * !B * !D * !X)	-0.00056	-0.00056	-0.00056
	(!A * !B * !D * !X)	0.00112	0.00112	0.00111
sky130_fd_sc_hs__and4_2	(A * B * !D * !X)	-0.00049	-0.00050	-0.00049
	(A * B * !D * !X)	0.00129	0.00132	0.00129
	(A * !B * D * !X)	-0.00100	-0.00105	-0.00105
	(A * !B * D * !X)	0.00129	0.00130	0.00129
	(A * !B * !D * !X)	-0.00060	-0.00060	-0.00060
	(A * !B * !D * !X)	0.00130	0.00132	0.00129
	(!A * B * D * !X)	-0.00093	-0.00102	-0.00101
	(!A * B * D * !X)	0.00129	0.00130	0.00129
	(!A * B * !D * !X)	-0.00058	-0.00058	-0.00058
	(!A * B * !D * !X)	0.00128	0.00131	0.00129
	(!A * !B * D * !X)	-0.00101	-0.00105	-0.00105
	(!A * !B * D * !X)	0.00129	0.00130	0.00129
	(!A * !B * !D * !X)	-0.00063	-0.00063	-0.00062
	(!A * !B * !D * !X)	0.00128	0.00130	0.00129

sky130_fd_sc_hs__and4_4	(A * B * !D * !X)	-0.00129	-0.00131	-0.00129
	(A * B * !D * !X)	0.00269	0.00273	0.00269
	(A * !B * D * !X)	-0.00216	-0.00228	-0.00227
	(A * !B * D * !X)	0.00267	0.00268	0.00267
	(A * !B * !D * !X)	-0.00147	-0.00148	-0.00146
	(A * !B * !D * !X)	0.00271	0.00274	0.00269
	(!A * B * D * !X)	-0.00206	-0.00224	-0.00223
	(!A * B * D * !X)	0.00269	0.00272	0.00267
	(!A * B * !D * !X)	-0.00144	-0.00144	-0.00144
	(!A * B * !D * !X)	0.00269	0.00273	0.00269
	(!A * !B * D * !X)	-0.00217	-0.00228	-0.00227
	(!A * !B * D * !X)	0.00267	0.00268	0.00267
	(!A * !B * !D * !X)	-0.00151	-0.00152	-0.00151
	(!A * !B * !D * !X)	0.00269	0.00272	0.00269

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)	0.00091	0.00092	0.00091
	(A * B * !C * !X)	-0.00123	-0.00124	-0.00123
	(A * !B * C * !X)	0.00089	0.00090	0.00089
	(A * !B * C * !X)	-0.00123	-0.00124	-0.00123
	(A * !B * !C * !X)	0.00091	0.00093	0.00091
	(A * !B * !C * !X)	-0.00123	-0.00124	-0.00123
	(!A * B * C * !X)	0.00088	0.00088	0.00088
	(!A * B * C * !X)	-0.00123	-0.00123	-0.00123
	(!A * !C * !X)	0.00091	0.00092	0.00091
	(!A * !C * !X)	-0.00123	-0.00124	-0.00123
	(!A * !B * C * !X)	0.00089	0.00089	0.00089
	(!A * !B * C * !X)	-0.00123	-0.00123	-0.00123

sky130_fd_sc_hs__and4_2	**(A * B * !C * !X)**	0.00107	0.00108	0.00107
	(A * B * !C * !X)	-0.00133	-0.00134	-0.00133
	(A * !B * C * !X)	0.00105	0.00106	0.00105
	(A * !B * C * !X)	-0.00133	-0.00133	-0.00133
	(A * !B * !C * !X)	0.00107	0.00108	0.00107
	(A * !B * !C * !X)	-0.00133	-0.00133	-0.00133
	(!A * B * C * !X)	0.00104	0.00104	0.00104
	(!A * B * C * !X)	-0.00133	-0.00133	-0.00133
	(!A * !C * !X)	0.00107	0.00108	0.00107
	(!A * !C * !X)	-0.00133	-0.00133	-0.00133
	(!A * !B * C * !X)	0.00104	0.00105	0.00104
	(!A * !B * C * !X)	-0.00133	-0.00133	-0.00133
sky130_fd_sc_hs__and4_4	**(A * B * !C * !X)**	0.00176	0.00177	0.00177
	(A * B * !C * !X)	-0.00259	-0.00260	-0.00260
	(A * !B * C * !X)	0.00175	0.00176	0.00175
	(A * !B * C * !X)	-0.00261	-0.00262	-0.00260
	(A * !B * !C * !X)	0.00177	0.00179	0.00177
	(A * !B * !C * !X)	-0.00260	-0.00262	-0.00260
	(!A * B * C * !X)	0.00173	0.00174	0.00172
	(!A * B * C * !X)	-0.00261	-0.00261	-0.00260
	(!A * !C * !X)	0.00177	0.00179	0.00176
	(!A * !C * !X)	-0.00260	-0.00262	-0.00260
	(!A * !B * C * !X)	0.00175	0.00176	0.00174
	(!A * !B * C * !X)	-0.00261	-0.00262	-0.00260

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)**	-0.00088	-0.00092	-0.00091
	(A * B * !C * !X)	0.00124	0.00124	0.00123
	(A * !B * C * !X)	-0.00084	-0.00090	-0.00089
	(A * !B * C * !X)	0.00123	0.00124	0.00123
	(A * !B * !C * !X)	-0.00089	-0.00092	-0.00091
	(A * !B * !C * !X)	0.00124	0.00124	0.00123
	(!A * B * C * !X)	-0.00083	-0.00088	-0.00088
	(!A * B * C * !X)	0.00124	0.00123	0.00123
	(!A * !C * !X)	-0.00089	-0.00092	-0.00091
	(!A * !C * !X)	0.00124	0.00124	0.00123
	(!A * !B * C * !X)	-0.00084	-0.00089	-0.00089
	(!A * !B * C * !X)	0.00123	0.00123	0.00123
sky130_fd_sc_hs__and4_2	**(A * B * !C * !X)**	-0.00104	-0.00108	-0.00107
	(A * B * !C * !X)	0.00134	0.00134	0.00133
	(A * !B * C * !X)	-0.00099	-0.00105	-0.00105
	(A * !B * C * !X)	0.00133	0.00133	0.00133
	(A * !B * !C * !X)	-0.00104	-0.00108	-0.00107
	(A * !B * !C * !X)	0.00134	0.00134	0.00133
	(!A * B * C * !X)	-0.00097	-0.00104	-0.00104
	(!A * B * C * !X)	0.00133	0.00135	0.00133
	(!A * !C * !X)	-0.00104	-0.00108	-0.00107
	(!A * !C * !X)	0.00134	0.00134	0.00133
	(!A * !B * C * !X)	-0.00099	-0.00105	-0.00104
	(!A * !B * C * !X)	0.00133	0.00133	0.00133

sky130_fd_sc_hs__and4_4	**(A * B * !C * !X)**	-0.00169	-0.00177	-0.00177
	(A * B * !C * !X)	0.00260	0.00264	0.00261
	(A * !B * C * !X)	-0.00163	-0.00176	-0.00175
	(A * !B * C * !X)	0.00262	0.00263	0.00261
	(A * !B * !C * !X)	-0.00170	-0.00179	-0.00177
	(A * !B * !C * !X)	0.00260	0.00264	0.00261
	(!A * B * C * !X)	-0.00157	-0.00174	-0.00172
	(!A * B * C * !X)	0.00261	0.00261	0.00261
	(!A * !C * !X)	-0.00169	-0.00178	-0.00176
	(!A * !C * !X)	0.00260	0.00264	0.00261
	(!A * !B * C * !X)	-0.00163	-0.00176	-0.00174
	(!A * !B * C * !X)	0.00262	0.00263	0.00261

SKY130_FD_SC_HS__BUFx

sky130_fd_sc_hs_tt_1.50v_25C.ccs
Cell Library: Process , Voltage
1.50, 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	0.00243	0.83673
sky130_fd_sc_hs__buf_16	0.01571	12.93050
sky130_fd_sc_hs__buf_2	0.00260	1.58233
sky130_fd_sc_hs__buf_4	0.00356	3.20459
sky130_fd_sc_hs__buf_8	0.00806	6.16437
sky130_fd_sc_hs__bufbuf_16	0.00289	12.86884
sky130_fd_sc_hs__bufbuf_8	0.00227	6.18572

Leakage Information

Cell Name	Leakage(nW)		
	Min.	Avg	Max.
sky130_fd_sc_hs__buf_1	0.00000	0.09411	0.15578
sky130_fd_sc_hs__buf_16	0.00000	0.37825	0.50365
sky130_fd_sc_hs__buf_2	0.00000	0.07466	0.08361
sky130_fd_sc_hs__buf_4	0.00000	0.22222	0.32086
sky130_fd_sc_hs__buf_8	0.00000	0.18913	0.25183
sky130_fd_sc_hs__bufbuf_16	0.00000	0.44703	0.59750
sky130_fd_sc_hs__bufbuf_8	0.00000	0.28323	0.28426

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)	0.06923	0.67484	6.81403
sky130_fd_sc_hs__buf_16	A->X (RR)	0.07002	0.38124	6.85126
sky130_fd_sc_hs__buf_2	A->X (RR)	0.07072	0.58559	6.69992
sky130_fd_sc_hs__buf_4	A->X (RR)	0.08414	0.54921	7.12421
sky130_fd_sc_hs__buf_8	A->X (RR)	0.06984	0.43773	6.77713
sky130_fd_sc_hs__bufbuf_16	A->X (RR)	0.21377	0.54190	7.04280
sky130_fd_sc_hs__bufbuf_8	A->X (RR)	0.23305	0.57307	6.83211

Delay(ns) to X falling :

Cell Name	Timing Arc(Dir)	Delay(ns)		
		First	Mid	Last
sky130_fd_sc_hs__buf_1	A->X (FF)	0.08821	0.54829	3.98961
sky130_fd_sc_hs__buf_16	A->X (FF)	0.10938	0.53333	4.56258
sky130_fd_sc_hs__buf_2	A->X (FF)	0.10765	0.58853	4.28119
sky130_fd_sc_hs__buf_4	A->X (FF)	0.10359	0.54069	4.18868
sky130_fd_sc_hs__buf_8	A->X (FF)	0.11118	0.56120	4.65512
sky130_fd_sc_hs__bufbuf_16	A->X (FF)	0.27123	0.70301	4.59415
sky130_fd_sc_hs__bufbuf_8	A->X (FF)	0.23595	0.61534	4.06233

Power Information

Internal switching power(pJ) to X rising :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__buf_1	A	0.00502	0.00494	0.01019
	A	0.00228	0.00222	0.00748
sky130_fd_sc_hs__buf_16	A	0.04958	0.05086	0.08281
	A	0.03199	0.03327	0.06561
sky130_fd_sc_hs__buf_2	A	0.00732	0.00740	0.01165
	A	0.00441	0.00450	0.00875
sky130_fd_sc_hs__buf_4	A	0.01175	0.01213	0.02184
	A	0.00776	0.00815	0.01806
sky130_fd_sc_hs__buf_8	A	0.02526	0.02595	0.04091
	A	0.01623	0.01696	0.03950
sky130_fd_sc_hs__bufbuf_16	A	0.05914	0.06318	0.07000
	A	0.05590	0.05996	0.06748
sky130_fd_sc_hs__bufbuf_8	A	0.02961	0.03147	0.03819
	A	0.02705	0.02903	0.03579

Internal switching power(pJ) to X falling :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__buf_1	A	0.00233	0.00273	0.00933
	A	0.00507	0.00540	0.01202
sky130_fd_sc_hs__buf_16	A	0.03190	0.03551	0.07249
	A	0.04952	0.05310	0.08792
sky130_fd_sc_hs__buf_2	A	0.00403	0.00457	0.01063
	A	0.00694	0.00736	0.01299
sky130_fd_sc_hs__buf_4	A	0.00826	0.00953	0.02159
	A	0.01225	0.01338	0.02494
sky130_fd_sc_hs__buf_8	A	0.01594	0.01807	0.03672
	A	0.02497	0.02694	0.04354
sky130_fd_sc_hs__bufbuf_16	A	0.05614	0.06077	0.06942
	A	0.05939	0.06400	0.07054
sky130_fd_sc_hs__bufbuf_8	A	0.02644	0.02893	0.03651
	A	0.02899	0.03144	0.03880

SKY130_FD_SC_HS__CLKBUFx

sky130_fd_sc_hs_tt_1.50v_25C.ccs
Cell Library: Process , Voltage 1.50, 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	0.00257	0.84305
sky130_fd_sc_hs__clkbuf_16	0.00864	13.04158
sky130_fd_sc_hs__clkbuf_2	0.00258	1.48658
sky130_fd_sc_hs__clkbuf_4	0.00237	3.18757
sky130_fd_sc_hs__clkbuf_8	0.00443	6.20965

Leakage Information

Cell Name	Leakage(nW)		
	Min.	**Avg**	**Max.**
sky130_fd_sc_hs__clkbuf_1	0.00000	0.03099	0.03099
sky130_fd_sc_hs__clkbuf_16	0.00000	0.30992	0.48076
sky130_fd_sc_hs__clkbuf_2	0.00000	0.04649	0.06073
sky130_fd_sc_hs__clkbuf_4	0.00000	0.07748	0.12019
sky130_fd_sc_hs__clkbuf_8	0.00000	0.15496	0.24038

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)**	0.07325	0.69275	6.89549
sky130_fd_sc_hs__clkbuf_16	**A->X (RR)**	0.09653	0.48309	7.33592
sky130_fd_sc_hs__clkbuf_2	**A->X (RR)**	0.07995	0.62850	6.86849
sky130_fd_sc_hs__clkbuf_4	**A->X (RR)**	0.10199	0.60957	7.27069
sky130_fd_sc_hs__clkbuf_8	**A->X (RR)**	0.09625	0.53074	7.16765

Delay(ns) to X falling :

Cell Name	Timing Arc(Dir)	Delay(ns)		
		First	Mid	Last
sky130_fd_sc_hs__clkbuf_1	**A->X (FF)**	0.08206	0.66689	5.81988
sky130_fd_sc_hs__clkbuf_16	**A->X (FF)**	0.12784	0.61823	6.55981
sky130_fd_sc_hs__clkbuf_2	**A->X (FF)**	0.09836	0.65024	5.65733
sky130_fd_sc_hs__clkbuf_4	**A->X (FF)**	0.12892	0.69457	6.40086
sky130_fd_sc_hs__clkbuf_8	**A->X (FF)**	0.12368	0.64240	6.34604

Power Information

Internal switching power(pJ) to X rising :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__clkbuf_1	A	0.00485	0.00469	0.00804
	A	0.00197	0.00181	0.00517
sky130_fd_sc_hs__clkbuf_16	A	0.03763	0.03889	0.05284
	A	0.02790	0.02956	0.04400
sky130_fd_sc_hs__clkbuf_2	A	0.00652	0.00640	0.00914
	A	0.00371	0.00360	0.00639
sky130_fd_sc_hs__clkbuf_4	A	0.01005	0.01028	0.01334
	A	0.00740	0.00765	0.01098
sky130_fd_sc_hs__clkbuf_8	A	0.01917	0.01982	0.02654
	A	0.01420	0.01487	0.02202

Internal switching power(pJ) to X falling :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__clkbuf_1	A	0.00191	0.00211	0.00679
	A	0.00479	0.00499	0.00932
sky130_fd_sc_hs__clkbuf_16	A	0.02441	0.02812	0.04533
	A	0.03408	0.03748	0.05501
sky130_fd_sc_hs__clkbuf_2	A	0.00301	0.00347	0.00718
	A	0.00582	0.00608	0.00997
sky130_fd_sc_hs__clkbuf_4	A	0.00632	0.00716	0.01121
	A	0.00897	0.00980	0.01382
sky130_fd_sc_hs__clkbuf_8	A	0.01218	0.01418	0.02252
	A	0.01717	0.01891	0.02735

SKY130_FD_SC_HS__CLKDLYINVx

sky130_fd_sc_hs_tt_1.50v_25C.ccs
Cell Library: Process , Voltage 1.50, 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	0.00244	0.85572
sky130_fd_sc_hs__clkdlyinv3sd2_1	0.00247	0.85489
sky130_fd_sc_hs__clkdlyinv3sd3_1	0.00250	0.85379
sky130_fd_sc_hs__clkdlyinv5sd1_1	0.00242	0.85983
sky130_fd_sc_hs__clkdlyinv5sd2_1	0.00246	0.85056
sky130_fd_sc_hs__clkdlyinv5sd3_1	0.00249	0.85583

Leakage Information

Cell Name	Leakage(nW)		
	Min.	Avg	Max.
sky130_fd_sc_hs__clkdlyinv3sd1_1	0.00000	0.06877	0.07682
sky130_fd_sc_hs__clkdlyinv3sd2_1	0.00000	0.03133	0.06010
sky130_fd_sc_hs__clkdlyinv3sd3_1	0.00000	0.03137	0.06010
sky130_fd_sc_hs__clkdlyinv5sd1_1	0.00000	0.14434	0.15239
sky130_fd_sc_hs__clkdlyinv5sd2_1	0.00000	0.03201	0.06078
sky130_fd_sc_hs__clkdlyinv5sd3_1	0.00000	0.03213	0.06086

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)**	0.12524	0.87576	8.24918
sky130_fd_sc_hs__clkdlyinv3sd2_1	**A->Y (FR)**	0.13759	0.89869	8.30142
sky130_fd_sc_hs__clkdlyinv3sd3_1	**A->Y (FR)**	0.15555	0.93791	8.41696
sky130_fd_sc_hs__clkdlyinv5sd1_1	**A->Y (FR)**	0.22470	0.97586	8.39032
sky130_fd_sc_hs__clkdlyinv5sd2_1	**A->Y (FR)**	0.32007	1.08124	8.47703
sky130_fd_sc_hs__clkdlyinv5sd3_1	**A->Y (FR)**	0.56122	1.34793	8.88737

Delay(ns) to Y falling :

Cell Name	Timing Arc(Dir)	Delay(ns)		
		First	Mid	Last
sky130_fd_sc_hs__clkdlyinv3sd1_1	**A->Y (RF)**	0.11738	0.55478	4.34241
sky130_fd_sc_hs__clkdlyinv3sd2_1	**A->Y (RF)**	0.17577	0.63513	4.55750
sky130_fd_sc_hs__clkdlyinv3sd3_1	**A->Y (RF)**	0.30728	0.81405	4.85469
sky130_fd_sc_hs__clkdlyinv5sd1_1	**A->Y (RF)**	0.21849	0.65724	4.45777
sky130_fd_sc_hs__clkdlyinv5sd2_1	**A->Y (RF)**	0.36835	0.82958	4.73097
sky130_fd_sc_hs__clkdlyinv5sd3_1	**A->Y (RF)**	0.73662	1.24743	5.30860

Power Information

Internal switching power(pJ) to Y rising :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__clkdlyinv3sd1_1	A	0.00394	0.00409	0.00896
	A	0.00669	0.00685	0.01174
sky130_fd_sc_hs__clkdlyinv3sd2_1	A	0.00418	0.00426	0.00881
	A	0.00696	0.00704	0.01158
sky130_fd_sc_hs__clkdlyinv3sd3_1	A	0.00459	0.00458	0.00874
	A	0.00739	0.00738	0.01155
sky130_fd_sc_hs__clkdlyinv5sd1_1	A	0.00870	0.00873	0.01344
	A	0.01143	0.01147	0.01616
sky130_fd_sc_hs__clkdlyinv5sd2_1	A	0.00944	0.00938	0.01377
	A	0.01221	0.01216	0.01656
sky130_fd_sc_hs__clkdlyinv5sd3_1	A	0.01096	0.01085	0.01485
	A	0.01376	0.01365	0.01774

Internal switching power(pJ) to Y falling :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__clkdlyinv3sd1_1	**A**	0.00660	0.00646	0.01140
	A	0.00386	0.00373	0.00824
sky130_fd_sc_hs__clkdlyinv3sd2_1	**A**	0.00696	0.00685	0.01113
	A	0.00418	0.00408	0.00820
sky130_fd_sc_hs__clkdlyinv3sd3_1	**A**	0.00803	0.00796	0.01247
	A	0.00523	0.00516	0.00903
sky130_fd_sc_hs__clkdlyinv5sd1_1	**A**	0.01122	0.01099	0.01559
	A	0.00849	0.00826	0.01261
sky130_fd_sc_hs__clkdlyinv5sd2_1	**A**	0.01209	0.01189	0.01652
	A	0.00932	0.00913	0.01305
sky130_fd_sc_hs__clkdlyinv5sd3_1	**A**	0.01452	0.01438	0.01812
	A	0.01172	0.01158	0.01533

SKY130_FD_SC_HS__CLKINVx

sky130_fd_sc_hs_tt_1.50v_25C.ccs
Cell Library: Process , Voltage 1.50, 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	0.00311	1.23871
sky130_fd_sc_hs__clkinv_16	0.04598	18.81771
sky130_fd_sc_hs__clkinv_2	0.00592	2.28530
sky130_fd_sc_hs__clkinv_4	0.01173	4.53007
sky130_fd_sc_hs__clkinv_8	0.02349	8.69255

Leakage Information

Cell Name	Leakage(nW)		
	Min.	**Avg**	**Max.**
sky130_fd_sc_hs__clkinv_1	0.00000	0.15175	0.30224
sky130_fd_sc_hs__clkinv_16	0.00000	0.36686	0.71359
sky130_fd_sc_hs__clkinv_2	0.00000	0.04586	0.08920
sky130_fd_sc_hs__clkinv_4	0.00000	0.09172	0.17840
sky130_fd_sc_hs__clkinv_8	0.00000	0.18343	0.35679

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)	0.02965	0.81025	11.19010
sky130_fd_sc_hs__clkinv_16	A->Y (FR)	0.02205	0.53477	11.47730
sky130_fd_sc_hs__clkinv_2	A->Y (FR)	0.02809	0.74480	11.45330
sky130_fd_sc_hs__clkinv_4	A->Y (FR)	0.02490	0.66480	11.43730
sky130_fd_sc_hs__clkinv_8	A->Y (FR)	0.02511	0.59733	11.33440

Delay(ns) to Y falling :

Cell Name	Timing Arc(Dir)	Delay(ns)		
		First	Mid	Last
sky130_fd_sc_hs__clkinv_1	A->Y (RF)	0.02966	0.73892	10.30140
sky130_fd_sc_hs__clkinv_16	A->Y (RF)	0.02180	0.42133	10.28780
sky130_fd_sc_hs__clkinv_2	A->Y (RF)	0.02650	0.62638	9.80973
sky130_fd_sc_hs__clkinv_4	A->Y (RF)	0.02366	0.54992	9.89735
sky130_fd_sc_hs__clkinv_8	A->Y (RF)	0.02404	0.47711	9.81650

Power Information

Internal switching power(pJ) to Y rising :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__clkinv_1	A	-0.00020	0.00001	0.00096
	A	0.00328	0.00350	0.00466
sky130_fd_sc_hs__clkinv_16	A	-0.00875	-0.00513	0.00171
	A	0.04270	0.04648	0.05399
sky130_fd_sc_hs__clkinv_2	A	-0.00067	-0.00037	0.00052
	A	0.00595	0.00630	0.00723
sky130_fd_sc_hs__clkinv_4	A	-0.00159	-0.00078	0.00110
	A	0.01152	0.01243	0.01439
sky130_fd_sc_hs__clkinv_8	A	-0.00304	-0.00175	0.00349
	A	0.02321	0.02454	0.03042

Internal switching power(pJ) to Y falling :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__clkinv_1	A	0.00261	0.00267	0.00299
	A	-0.00087	-0.00084	-0.00057
sky130_fd_sc_hs__clkinv_16	A	0.03628	0.03655	0.04414
	A	-0.01522	-0.01518	-0.00883
sky130_fd_sc_hs__clkinv_2	A	0.00520	0.00522	0.00583
	A	-0.00142	-0.00131	-0.00080
sky130_fd_sc_hs__clkinv_4	A	0.00939	0.00989	0.01095
	A	-0.00371	-0.00343	-0.00218
sky130_fd_sc_hs__clkinv_8	A	0.01860	0.01885	0.02219
	A	-0.00769	-0.00763	-0.00411

SKY130_FD_SC_HS__CONB

sky130_fd_sc_hs_tt_1.50v_25C.ccs
Cell Library: Process , Voltage 1.50, Temp 25.00

Footprint

Cell Name	Area
sky130_fd_sc_hs__conb_1	4.79520

Pin Capacitance Information

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

Leakage Information

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

SKY130_FD_SC_HS__DELAYx

sky130_fd_sc_hs_tt_1.50v_25C.ccs
Cell Library: Process , Voltage 1.50, 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	0.00156	0.84135
sky130_fd_sc_hs__dlymetal6s4s_1	0.00156	0.84565
sky130_fd_sc_hs__dlymetal6s6s_1	0.00156	0.84762

Leakage Information

Cell Name	Leakage(nW)		
	Min.	Avg	Max.
sky130_fd_sc_hs__dlymetal6s2s_1	0.00000	0.06092	0.09298
sky130_fd_sc_hs__dlymetal6s4s_1	0.00000	0.06092	0.09298
sky130_fd_sc_hs__dlymetal6s6s_1	0.00000	0.06092	0.09298

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)**	0.08434	0.69385	6.67707
sky130_fd_sc_hs__dlymetal6s4s_1	**A->X (RR)**	0.16981	0.78156	6.73908
sky130_fd_sc_hs__dlymetal6s6s_1	**A->X (RR)**	0.24520	0.85651	6.82668

Delay(ns) to X falling :

Cell Name	Timing Arc(Dir)	Delay(ns)		
		First	Mid	Last
sky130_fd_sc_hs__dlymetal6s2s_1	**A->X (FF)**	0.13279	0.68948	4.79530
sky130_fd_sc_hs__dlymetal6s4s_1	**A->X (FF)**	0.26623	0.81047	4.78441
sky130_fd_sc_hs__dlymetal6s6s_1	**A->X (FF)**	0.39271	0.93985	4.91827

Power Information

Internal switching power(pJ) to X rising :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__dlymetal6s2s_1	A	0.01280	0.01248	0.01594
	A	0.01105	0.01073	0.01420
sky130_fd_sc_hs__dlymetal6s4s_1	A	0.01280	0.01247	0.01674
	A	0.01106	0.01072	0.01500
sky130_fd_sc_hs__dlymetal6s6s_1	A	0.01284	0.01267	0.01470
	A	0.01109	0.01092	0.01297

Internal switching power(pJ) to X falling :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__dlymetal6s2s_1	A	0.01078	0.01066	0.01256
	A	0.01252	0.01240	0.01430
sky130_fd_sc_hs__dlymetal6s4s_1	A	0.01081	0.01061	0.01315
	A	0.01255	0.01237	0.01488
sky130_fd_sc_hs__dlymetal6s6s_1	A	0.01084	0.01078	0.01310
	A	0.01259	0.01253	0.01446

SKY130_FD_SC_HS__DFBBNx

sky130_fd_sc_hs_tt_1.50v_25C.ccs
Cell Library: Process , Voltage
1.50, 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	0.00170	0.00167	0.00528	0.00289	0.84593	0.78627
sky130_fd_sc_hs__dfbbn_2	0.00170	0.00169	0.00521	0.00289	1.64659	1.59237

Leakage Information

Cell Name	Leakage(nW)		
	Min.	Avg	Max.
sky130_fd_sc_hs__dfbbn_1	0.00000	0.41784	0.82477
sky130_fd_sc_hs__dfbbn_2	0.00000	0.40813	0.78233

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)	0.52779	1.34176	9.13696
	SET_B->Q (FR)	0.25356	1.09776	9.05801
sky130_fd_sc_hs__dfbbn_2	CLK_N->Q (FR)	0.59827	1.29206	9.19241
	SET_B->Q (FR)	0.29329	1.03450	9.18767

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)	0.52164	1.03790	4.77118
	RESET_B->Q (FF)	0.31601	0.85327	4.61821
	SET_B->Q (RF)	0.17914	0.52835	2.71912
sky130_fd_sc_hs__dfbbn_2	CLK_N->Q (FF)	0.57059	1.04680	4.73846
	RESET_B->Q (FF)	0.36369	0.86174	4.62102
	SET_B->Q (RF)	0.22525	0.55212	2.85061

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)	0.47812	1.32206	9.10146
	RESET_B->Q_N (FR)	0.27421	1.14436	8.97336
	SET_B->Q_N (RR)	0.13695	0.82199	7.20699
sky130_fd_sc_hs__dfbbn_2	CLK_N->Q_N (FR)	0.48463	1.21613	9.05076
	RESET_B->Q_N (FR)	0.28000	1.03455	8.95005
	SET_B->Q_N (RR)	0.14195	0.72814	7.28049

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)	0.43277	1.02221	4.69626
	SET_B->Q_N (FF)	0.17015	0.76535	4.89635
sky130_fd_sc_hs__dfbbn_2	CLK_N->Q_N (FF)	0.47603	1.05239	4.72718
	SET_B->Q_N (FF)	0.18717	0.76647	5.03324

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)	0.02322	0.10495	1.73401
	setup	CLK_N (F)	0.13791	0.03123	-1.69366
sky130_fd_sc_hs__dfbbn_2	hold	CLK_N (F)	0.02474	0.10501	1.74023
	setup	CLK_N (F)	0.12902	0.02286	-1.70001

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)	-0.19896	-0.27727	-1.15998
	setup	CLK_N (F)	0.23411	0.30719	1.19805
sky130_fd_sc_hs__dfbbn_2	hold	CLK_N (F)	-0.19967	-0.27586	-1.15884
	setup	CLK_N (F)	0.22971	0.30539	1.19645

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)	0.02322	0.10495	1.73401
	setup	CLK_N (F)	0.13791	0.03123	-1.69366
sky130_fd_sc_hs__dfbbn_2	hold	CLK_N (F)	0.02474	0.10501	1.74023
	setup	CLK_N (F)	0.12902	0.02286	-1.70001

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)	-0.19896	-0.27727	-1.15998
	setup	CLK_N (F)	0.23411	0.30719	1.19805
sky130_fd_sc_hs__dfbbn_2	hold	CLK_N (F)	-0.19967	-0.27586	-1.15884
	setup	CLK_N (F)	0.22971	0.30539	1.19645

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)	0.13289	0.02699	-1.69461
	removal	CLK_N (F)	0.04225	0.12489	1.77486
sky130_fd_sc_hs__dfbbn_2	recovery	CLK_N (F)	0.12416	0.02203	-1.70220
	removal	CLK_N (F)	0.04381	0.12311	1.77655

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)	0.13289	0.02699	-1.69461
	removal	CLK_N (F)	0.04225	0.12489	1.77486
sky130_fd_sc_hs__dfbbn_2	recovery	CLK_N (F)	0.12416	0.02203	-1.70220
	removal	CLK_N (F)	0.04381	0.12311	1.77655

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 ()	0.28075	0.74341	16.50020
	min_pulse_width	RESET_B ()	0.24473	0.74341	16.50020
sky130_fd_sc_hs__dfbbn_2	min_pulse_width	RESET_B ()	0.29183	0.74341	16.50020
	min_pulse_width	RESET_B ()	0.25304	0.74341	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)	-0.04533	-0.15620	-1.38221
	removal	CLK_N (F)	0.06258	0.17566	1.96643
	hold	RESET_B (R)	-0.06639	-0.12726	-0.52072
	setup	RESET_B (R)	0.14945	0.18631	1.08615
sky130_fd_sc_hs__dfbbn_2	recovery	CLK_N (F)	-0.04509	-0.15820	-1.08255
	removal	CLK_N (F)	0.06332	0.17566	1.96939
	hold	RESET_B (R)	-0.09156	-0.15598	-0.67977
	setup	RESET_B (R)	0.15637	0.21215	1.09253

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)	-0.04533	-0.15620	-1.38221
	removal	CLK_N (F)	0.06258	0.17566	1.96643
	hold	RESET_B (R)	-0.06650	-0.12856	-0.52072
	hold	RESET_B (R)	-0.06639	-0.12726	-0.52523
	setup	RESET_B (R)	0.14945	0.18631	1.08615
	setup	RESET_B (R)	0.10970	0.16459	1.08408
sky130_fd_sc_hs__dfbbn_2	recovery	CLK_N (F)	-0.04509	-0.15820	-1.08255
	removal	CLK_N (F)	0.06332	0.17566	1.96939
	hold	RESET_B (R)	-0.09936	-0.16948	-0.71720
	hold	RESET_B (R)	-0.09156	-0.15598	-0.67977
	setup	RESET_B (R)	0.15637	0.21215	1.09253
	setup	RESET_B (R)	0.11634	0.20043	1.08820

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 ()	0.19209	0.74341	16.50020
	min_pulse_width	SET_B ()	0.17270	0.74341	16.50020
sky130_fd_sc_hs__dfbbn_2	min_pulse_width	SET_B ()	0.22811	0.74341	16.50020
	min_pulse_width	SET_B ()	0.20318	0.74341	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 ()	0.23365	0.74341	16.50020
	min_pulse_width	CLK_N ()	0.20040	0.74341	16.50020
sky130_fd_sc_hs__dfbbn_2	min_pulse_width	CLK_N ()	0.22534	0.74341	16.50020
	min_pulse_width	CLK_N ()	0.20040	0.74341	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 ()	0.23642	0.74341	16.50020
	min_pulse_width	CLK_N ()	0.28352	0.74341	16.50020
sky130_fd_sc_hs__dfbbn_2	min_pulse_width	CLK_N ()	0.27798	0.74341	16.50020
	min_pulse_width	CLK_N ()	0.29737	0.74341	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	0.00981	0.00996	0.01354
	CLK_N	0.01141	0.01156	0.01459
	SET_B	0.01020	0.01028	0.01696
	SET_B	0.01318	0.01327	0.01961
sky130_fd_sc_hs__dfbbn_2	CLK_N	0.01185	0.01225	0.01577
	CLK_N	0.01347	0.01387	0.01696
	SET_B	0.01219	0.01246	0.02018
	SET_B	0.01516	0.01548	0.02195

Internal switching power(pJ) to Q falling :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__dfbbn_1	CLK_N	0.01083	0.01101	0.01378
	CLK_N	0.01229	0.01248	0.01522
	RESET_B	0.01288	0.01304	0.01492
	RESET_B	0.01373	0.01389	0.01562
	SET_B	0.01347	0.01332	0.01705
	SET_B	0.01048	0.01029	0.01401
sky130_fd_sc_hs__dfbbn_2	CLK_N	0.01287	0.01333	0.01612
	CLK_N	0.01431	0.01478	0.01755
	RESET_B	0.01494	0.01532	0.01749
	RESET_B	0.01579	0.01627	0.01806
	SET_B	0.01552	0.01564	0.01925
	SET_B	0.01253	0.01261	0.01618

Internal switching power(pJ) to Q_N rising :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__dfbbn_1	CLK_N	0.01084	0.01103	0.01425
	CLK_N	0.01230	0.01249	0.01544
	RESET_B	0.01289	0.01304	0.01524
	RESET_B	0.01374	0.01391	0.01587
	SET_B	0.01348	0.01331	0.01717
	SET_B	0.01049	0.01030	0.01417
sky130_fd_sc_hs__dfbbn_2	CLK_N	0.01288	0.01334	0.01647
	CLK_N	0.01432	0.01479	0.01779
	RESET_B	0.01495	0.01543	0.01769
	RESET_B	0.01580	0.01628	0.01830
	SET_B	0.01553	0.01569	0.01942
	SET_B	0.01254	0.01262	0.01638

Internal switching power(pJ) to Q_N falling :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__dfbbn_1	CLK_N	0.00979	0.00994	0.01290
	CLK_N	0.01139	0.01154	0.01441
	SET_B	0.01017	0.01024	0.01647
	SET_B	0.01314	0.01322	0.01933
sky130_fd_sc_hs__dfbbn_2	CLK_N	0.01183	0.01223	0.01541
	CLK_N	0.01346	0.01384	0.01670
	SET_B	0.01215	0.01246	0.01868
	SET_B	0.01511	0.01542	0.02151

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)	0.00770	0.00749	0.00917
	(CLK_N * RESET_B * SET_B * Q * !Q_N) + (CLK_N * RESET_B * SET_B * !Q * Q_N)	0.00616	0.00595	0.00763
	(CLK_N * !SET_B * Q * !Q_N)	0.00500	0.00491	0.00648
	(CLK_N * !SET_B * Q * !Q_N)	0.00306	0.00297	0.00454
	(CLK_N * !RESET_B * SET_B * !Q * Q_N)	0.00428	0.00421	0.00573
	(CLK_N * !RESET_B * SET_B * !Q * Q_N)	0.00237	0.00229	0.00382
	!CLK_N	0.00267	0.00257	0.00439
	!CLK_N	0.00076	0.00066	0.00248
sky130_fd_sc_hs__dfbbn_2	(CLK_N * RESET_B * SET_B * Q * !Q_N) + (CLK_N * RESET_B * SET_B * !Q * Q_N)	0.00773	0.00752	0.00920
	(CLK_N * RESET_B * SET_B * Q * !Q_N) + (CLK_N * RESET_B * SET_B * !Q * Q_N)	0.00617	0.00597	0.00765
	(CLK_N * !SET_B * Q * !Q_N)	0.00501	0.00493	0.00649
	(CLK_N * !SET_B * Q * !Q_N)	0.00307	0.00298	0.00455
	(CLK_N * !RESET_B * SET_B * !Q * Q_N)	0.00426	0.00419	0.00572
	(CLK_N * !RESET_B * SET_B * !Q * Q_N)	0.00235	0.00227	0.00380
	!CLK_N	0.00267	0.00257	0.00439
	!CLK_N	0.00075	0.00065	0.00248

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)	0.00737	0.00723	0.00891
	(CLK_N * RESET_B * SET_B * Q * !Q_N) + (CLK_N * RESET_B * SET_B * !Q * Q_N)	0.00891	0.00877	0.01044
	(CLK_N * !SET_B * Q * !Q_N)	0.00207	0.00201	0.00348
	(CLK_N * !SET_B * Q * !Q_N)	0.00401	0.00396	0.00541
	(CLK_N * !RESET_B * SET_B * !Q * Q_N)	0.00268	0.00263	0.00414
	(CLK_N * !RESET_B * SET_B * !Q * Q_N)	0.00460	0.00453	0.00605
	!CLK_N	0.00110	0.00108	0.00277
	!CLK_N	0.00301	0.00299	0.00468
sky130_fd_sc_hs__dfbbn_2	(CLK_N * RESET_B * SET_B * Q * !Q_N) + (CLK_N * RESET_B * SET_B * !Q * Q_N)	0.00735	0.00721	0.00890
	(CLK_N * RESET_B * SET_B * Q * !Q_N) + (CLK_N * RESET_B * SET_B * !Q * Q_N)	0.00890	0.00876	0.01046
	(CLK_N * !SET_B * Q * !Q_N)	0.00202	0.00196	0.00343
	(CLK_N * !SET_B * Q * !Q_N)	0.00396	0.00390	0.00537
	(CLK_N * !RESET_B * SET_B * !Q * Q_N)	0.00266	0.00261	0.00413
	(CLK_N * !RESET_B * SET_B * !Q * Q_N)	0.00458	0.00452	0.00604
	!CLK_N	0.00108	0.00106	0.00275
	!CLK_N	0.00299	0.00298	0.00466

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)	0.00848	0.00827	0.01175
	(CLK_N * D * SET_B * !Q * Q_N)	0.00663	0.00643	0.00990
	(CLK_N * !D * SET_B * !Q * Q_N) + (!CLK_N * SET_B * !Q * Q_N)	0.00503	0.00496	0.00850
	(CLK_N * !D * SET_B * !Q * Q_N) + (!CLK_N * SET_B * !Q * Q_N)	0.00280	0.00273	0.00628
	(!SET_B * Q * !Q_N)	0.00503	0.00494	0.00865
	(!SET_B * Q * !Q_N)	0.00276	0.00266	0.00638
sky130_fd_sc_hs__dfbbn_2	(CLK_N * D * SET_B * !Q * Q_N)	0.00851	0.00829	0.01179
	(CLK_N * D * SET_B * !Q * Q_N)	0.00663	0.00642	0.00991
	(CLK_N * !D * SET_B * !Q * Q_N) + (!CLK_N * SET_B * !Q * Q_N)	0.00502	0.00494	0.00850
	(CLK_N * !D * SET_B * !Q * Q_N) + (!CLK_N * SET_B * !Q * Q_N)	0.00276	0.00268	0.00625
	(!SET_B * Q * !Q_N)	0.00504	0.00494	0.00866
	(!SET_B * Q * !Q_N)	0.00274	0.00264	0.00636

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)	0.00748	0.00742	0.01171
	(CLK_N * D * SET_B * !Q * Q_N)	0.00933	0.00927	0.01356
	(CLK_N * !D * SET_B * !Q * Q_N) + (!CLK_N * SET_B * !Q * Q_N)	0.00248	0.00247	0.00664
	(CLK_N * !D * SET_B * !Q * Q_N) + (!CLK_N * SET_B * !Q * Q_N)	0.00471	0.00469	0.00887
	(!SET_B * Q * !Q_N)	0.00172	0.00175	0.00597
	(!SET_B * Q * !Q_N)	0.00401	0.00404	0.00825
sky130_fd_sc_hs__dfbbn_2	(CLK_N * D * SET_B * !Q * Q_N)	0.00750	0.00745	0.01174
	(CLK_N * D * SET_B * !Q * Q_N)	0.00938	0.00933	0.01362
	(CLK_N * !D * SET_B * !Q * Q_N) + (!CLK_N * SET_B * !Q * Q_N)	0.00250	0.00249	0.00667
	(CLK_N * !D * SET_B * !Q * Q_N) + (!CLK_N * SET_B * !Q * Q_N)	0.00475	0.00474	0.00892
	(!SET_B * Q * !Q_N)	0.00172	0.00176	0.00598
	(!SET_B * Q * !Q_N)	0.00403	0.00407	0.00828

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)	0.00243	0.00245	0.00243
	(CLK_N * D * RESET_B * Q * !Q_N) + (!CLK_N * RESET_B * Q * !Q_N)	-0.00272	-0.00274	-0.00272
	(CLK_N * !D * RESET_B * Q * !Q_N)	0.00784	0.00764	0.01225
	(CLK_N * !D * RESET_B * Q * !Q_N)	0.00221	0.00197	0.00660
sky130_fd_sc_hs__dfbbn_2	(CLK_N * D * RESET_B * Q * !Q_N) + (!CLK_N * RESET_B * Q * !Q_N)	0.00240	0.00242	0.00241
	(CLK_N * D * RESET_B * Q * !Q_N) + (!CLK_N * RESET_B * Q * !Q_N)	-0.00271	-0.00272	-0.00271
	(CLK_N * !D * RESET_B * Q * !Q_N)	0.00784	0.00764	0.01226
	(CLK_N * !D * RESET_B * Q * !Q_N)	0.00226	0.00201	0.00666

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)	-0.00240	-0.00244	-0.00243
	(CLK_N * D * RESET_B * Q * !Q_N) + (!CLK_N * RESET_B * Q * !Q_N)	0.00277	0.00276	0.00274
	(CLK_N * !D * RESET_B * Q * !Q_N)	0.00087	0.00097	0.00727
	(CLK_N * !D * RESET_B * Q * !Q_N)	0.00649	0.00663	0.01293
sky130_fd_sc_hs__dfbbn_2	(CLK_N * D * RESET_B * Q * !Q_N) + (!CLK_N * RESET_B * Q * !Q_N)	-0.00238	-0.00241	-0.00240
	(CLK_N * D * RESET_B * Q * !Q_N) + (!CLK_N * RESET_B * Q * !Q_N)	0.00275	0.00274	0.00272
	(CLK_N * !D * RESET_B * Q * !Q_N)	0.00084	0.00093	0.00724
	(CLK_N * !D * RESET_B * Q * !Q_N)	0.00641	0.00654	0.01285

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)**	0.01450	0.01427	0.01950
	(D * RESET_B * SET_B * !Q * Q_N)	0.01182	0.01159	0.01682
	(D * RESET_B * Q * !Q_N) + (D * !RESET_B * !SET_B * Q * !Q_N)	0.00928	0.00899	0.01401
	(D * RESET_B * Q * !Q_N) + (D * !RESET_B * !SET_B * Q * !Q_N)	0.00623	0.00593	0.01094
	(D * !RESET_B * SET_B * !Q * Q_N)	0.01106	0.01081	0.01603
	(D * !RESET_B * SET_B * !Q * Q_N)	0.00800	0.00776	0.01296
	(!D * SET_B * !Q * Q_N)	0.00875	0.00847	0.01351
	(!D * SET_B * !Q * Q_N)	0.00570	0.00538	0.01044
	(!D * RESET_B * SET_B * Q * !Q_N)	0.01527	0.01487	0.01999
	(!D * RESET_B * SET_B * Q * !Q_N)	0.01184	0.01143	0.01655
	(!D * !SET_B * Q * !Q_N)	0.00981	0.00941	0.01445
	(!D * !SET_B * Q * !Q_N)	0.00677	0.00637	0.01141

sky130_fd_sc_hs__dfbbn_2	**(D * RESET_B * SET_B * !Q * Q_N)**	0.01455	0.01432	0.01954
	(D * RESET_B * SET_B * !Q * Q_N)	0.01186	0.01162	0.01685
	(D * RESET_B * Q * !Q_N) + (D * !RESET_B * !SET_B * Q * !Q_N)	0.00927	0.00898	0.01418
	(D * RESET_B * Q * !Q_N) + (D * !RESET_B * !SET_B * Q * !Q_N)	0.00622	0.00592	0.01112
	(D * !RESET_B * SET_B * !Q * Q_N)	0.01106	0.01082	0.01603
	(D * !RESET_B * SET_B * !Q * Q_N)	0.00800	0.00776	0.01296
	(!D * SET_B * !Q * Q_N)	0.00877	0.00848	0.01351
	(!D * SET_B * !Q * Q_N)	0.00571	0.00539	0.01045
	(!D * RESET_B * SET_B * Q * !Q_N)	0.01528	0.01487	0.02000
	(!D * RESET_B * SET_B * Q * !Q_N)	0.01185	0.01144	0.01656
	(!D * !SET_B * Q * !Q_N)	0.00977	0.00938	0.01440
	(!D * !SET_B * Q * !Q_N)	0.00673	0.00633	0.01137

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)	0.00705	0.00703	0.01276
	(D * RESET_B * Q * !Q_N) + (D * !RESET_B * !SET_B * Q * !Q_N)	0.01011	0.01010	0.01582
	(D * !RESET_B * SET_B * !Q * Q_N)	0.00989	0.00978	0.01533
	(D * !RESET_B * SET_B * !Q * Q_N)	0.01295	0.01285	0.01840
	(!D * SET_B * !Q * Q_N)	0.00761	0.00759	0.01328
	(!D * SET_B * !Q * Q_N)	0.01067	0.01065	0.01635
	(!D * !SET_B * Q * !Q_N)	0.00970	0.00957	0.01543
	(!D * !SET_B * Q * !Q_N)	0.01274	0.01262	0.01848
sky130_fd_sc_hs__dfbbn_2	(D * RESET_B * Q * !Q_N) + (D * !RESET_B * !SET_B * Q * !Q_N)	0.00706	0.00703	0.01276
	(D * RESET_B * Q * !Q_N) + (D * !RESET_B * !SET_B * Q * !Q_N)	0.01011	0.01010	0.01582
	(D * !RESET_B * SET_B * !Q * Q_N)	0.00987	0.00975	0.01530
	(D * !RESET_B * SET_B * !Q * Q_N)	0.01292	0.01282	0.01837
	(!D * SET_B * !Q * Q_N)	0.00760	0.00754	0.01327
	(!D * SET_B * !Q * Q_N)	0.01066	0.01060	0.01633
	(!D * !SET_B * Q * !Q_N)	0.00973	0.00960	0.01546
	(!D * !SET_B * Q * !Q_N)	0.01277	0.01265	0.01851

SKY130_FD_SC_HS__DFBBP

sky130_fd_sc_hs_tt_1.50v_25C.ccs
Cell Library: Process , Voltage
1.50, 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	0.00149	0.00183	0.00614	0.00286	0.84575	0.78028

Leakage Information

Cell Name	Leakage(nW)		
	Min.	Avg	Max.
sky130_fd_sc_hs__dfbbp_1	0.00000	0.41784	0.82476

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)	0.50328	1.12717	7.13946
	SET_B->Q (FR)	0.23250	1.07404	8.98164

Delay(ns) to Q falling :

Cell Name	Timing Arc(Dir)	Delay(ns)		
		First	Mid	Last
sky130_fd_sc_hs__dfbbp_1	CLK->Q (RF)	0.37755	0.69996	2.74976
	RESET_B->Q (FF)	0.30540	0.83832	4.59224
	SET_B->Q (RF)	0.18226	0.51993	2.70062

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)	0.33631	0.98238	7.04904
	RESET_B->Q_N (FR)	0.26483	1.12979	8.91852
	SET_B->Q_N (RR)	0.14149	0.81404	7.15765

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)	0.41115	0.80205	2.66218
	SET_B->Q_N (FF)	0.15555	0.73643	4.77809

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)	-0.04188	-0.09097	-0.41895
	setup	CLK (R)	0.10788	0.12500	0.51548

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)	-0.13304	-0.26629	-2.74042
	setup	CLK (R)	0.22047	0.33765	3.04255

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)	-0.04188	-0.09097	-0.41895
	setup	CLK (R)	0.10788	0.12500	0.51548

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)	-0.13304	-0.26629	-2.74042
	setup	CLK (R)	0.22047	0.33765	3.04255

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)	0.11791	0.12932	0.39799
	removal	CLK (R)	-0.04965	-0.06994	-0.24053

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)	0.11791	0.12932	0.39799
	removal	CLK (R)	-0.04965	-0.06994	-0.24053

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 ()	0.24473	0.74341	16.50020
	min_pulse_width	RESET_B ()	0.25304	0.74341	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)	0.01482	0.00400	3.08406
	removal	CLK (R)	0.08148	0.10769	0.20618
	hold	RESET_B (R)	-0.07170	-0.13693	-0.55536
	setup	RESET_B (R)	0.13033	0.18552	1.15378

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)	0.01482	0.00400	3.08406
	removal	CLK (R)	0.08148	0.10769	0.20618
	hold	RESET_B (R)	-0.07368	-0.13693	-0.55798
	hold	RESET_B (R)	-0.07170	-0.13823	-0.55536
	setup	RESET_B (R)	0.12857	0.18059	1.14801
	setup	RESET_B (R)	0.13033	0.18552	1.15378

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 ()	0.15608	0.74341	16.50020
	min_pulse_width	SET_B ()	0.16716	0.74341	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 ()	0.12837	0.74341	16.50020
	min_pulse_width	CLK ()	0.16993	0.74341	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 ()	0.21980	0.74341	16.50020
	min_pulse_width	CLK ()	0.31676	0.74341	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	0.01155	0.01165	0.01441
	CLK	0.01001	0.01013	0.01284
	SET_B	0.01013	0.01022	0.01676
	SET_B	0.01338	0.01347	0.01985

Internal switching power(pJ) to Q falling :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__dfbbp_1	CLK	0.01163	0.01165	0.01433
	CLK	0.00994	0.00995	0.01261
	RESET_B	0.01183	0.01196	0.01385
	RESET_B	0.01271	0.01285	0.01459
	SET_B	0.01281	0.01259	0.01635
	SET_B	0.00955	0.00930	0.01304

Internal switching power(pJ) to Q_N rising :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__dfbbp_1	CLK	0.01165	0.01167	0.01435
	CLK	0.00995	0.00996	0.01265
	RESET_B	0.01184	0.01197	0.01405
	RESET_B	0.01272	0.01285	0.01481
	SET_B	0.01283	0.01266	0.01646
	SET_B	0.00957	0.00931	0.01318

Internal switching power(pJ) to Q_N falling :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__dfbbp_1	CLK	0.01153	0.01163	0.01425
	CLK	0.00999	0.01011	0.01271
	SET_B	0.01009	0.01017	0.01647
	SET_B	0.01334	0.01342	0.01959

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__dfbbp_1	CLK	0.00177	0.00175	0.00384
	CLK	0.00010	0.00006	0.00216
	(!CLK * RESET_B * SET_B * Q * !Q_N) + (!CLK * RESET_B * SET_B * !Q * Q_N)	0.00727	0.00710	0.00894
	(!CLK * RESET_B * SET_B * Q * !Q_N) + (!CLK * RESET_B * SET_B * !Q * Q_N)	0.00579	0.00561	0.00745
	(!CLK * !SET_B * Q * !Q_N)	0.00423	0.00419	0.00588
	(!CLK * !SET_B * Q * !Q_N)	0.00236	0.00232	0.00401
	(!CLK * !RESET_B * SET_B * !Q * Q_N)	0.00342	0.00339	0.00504
	(!CLK * !RESET_B * SET_B * !Q * Q_N)	0.00157	0.00153	0.00319

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__dfbbp_1	CLK	-0.00008	-0.00001	0.00195
	CLK	0.00159	0.00166	0.00362
	(!CLK * RESET_B * SET_B * Q * !Q_N) + (!CLK * RESET_B * SET_B * !Q * Q_N)	0.00552	0.00538	0.00717
	(!CLK * RESET_B * SET_B * Q * !Q_N) + (!CLK * RESET_B * SET_B * !Q * Q_N)	0.00701	0.00687	0.00866
	(!CLK * !SET_B * Q * !Q_N)	0.00137	0.00139	0.00291
	(!CLK * !SET_B * Q * !Q_N)	0.00324	0.00327	0.00479
	(!CLK * !RESET_B * SET_B * !Q * Q_N)	0.00204	0.00207	0.00364
	(!CLK * !RESET_B * SET_B * !Q * Q_N)	0.00389	0.00393	0.00550

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)	0.00458	0.00448	0.00814
	(CLK * SET_B * !Q * Q_N) + (!CLK * !D * SET_B * !Q * Q_N)	0.00248	0.00237	0.00605
	(!SET_B * Q * !Q_N)	0.00494	0.00482	0.00865
	(!SET_B * Q * !Q_N)	0.00280	0.00267	0.00652
	(!CLK * D * SET_B * !Q * Q_N)	0.00854	0.00827	0.01183
	(!CLK * D * SET_B * !Q * Q_N)	0.00681	0.00654	0.01011

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)	0.00240	0.00236	0.00659
	(CLK * SET_B * !Q * Q_N) + (!CLK * !D * SET_B * !Q * Q_N)	0.00449	0.00446	0.00869
	(!SET_B * Q * !Q_N)	0.00128	0.00130	0.00557
	(!SET_B * Q * !Q_N)	0.00343	0.00346	0.00771
	(!CLK * D * SET_B * !Q * Q_N)	0.00634	0.00625	0.01058
	(!CLK * D * SET_B * !Q * Q_N)	0.00806	0.00797	0.01231

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)	0.00245	0.00247	0.00245
	(CLK * RESET_B * Q * !Q_N) + (!CLK * D * RESET_B * Q * !Q_N)	-0.00346	-0.00347	-0.00345
	(!CLK * !D * RESET_B * Q * !Q_N)	0.00652	0.00630	0.01106
	(!CLK * !D * RESET_B * Q * !Q_N)	0.00018	-0.00011	0.00471

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)	-0.00240	-0.00246	-0.00245
	(CLK * RESET_B * Q * !Q_N) + (!CLK * D * RESET_B * Q * !Q_N)	0.00347	0.00350	0.00347
	(!CLK * !D * RESET_B * Q * !Q_N)	0.00154	0.00154	0.00795
	(!CLK * !D * RESET_B * Q * !Q_N)	0.00790	0.00792	0.01433

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)	0.01065	0.01036	0.01552
	(D * RESET_B * Q * !Q_N) + (D * !RESET_B * !SET_B * Q * !Q_N)	0.00742	0.00711	0.01227
	(D * !RESET_B * SET_B * !Q * Q_N)	0.01282	0.01240	0.01769
	(D * !RESET_B * SET_B * !Q * Q_N)	0.00977	0.00934	0.01463
	(!D * SET_B * !Q * Q_N)	0.01077	0.01045	0.01549
	(!D * SET_B * !Q * Q_N)	0.00754	0.00721	0.01225
	(!D * !SET_B * Q * !Q_N)	0.01343	0.01318	0.01821
	(!D * !SET_B * Q * !Q_N)	0.01001	0.00974	0.01477

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)	0.01117	0.01107	0.01673
	(D * RESET_B * SET_B * !Q * Q_N)	0.01459	0.01448	0.02015
	(D * RESET_B * Q * !Q_N) + (D * !RESET_B * !SET_B * Q * !Q_N)	0.00564	0.00569	0.01137
	(D * RESET_B * Q * !Q_N) + (D * !RESET_B * !SET_B * Q * !Q_N)	0.00888	0.00894	0.01461
	(D * !RESET_B * SET_B * !Q * Q_N)	0.00709	0.00706	0.01279
	(D * !RESET_B * SET_B * !Q * Q_N)	0.01014	0.01011	0.01585
	(!D * SET_B * !Q * Q_N)	0.00554	0.00557	0.01121
	(!D * SET_B * !Q * Q_N)	0.00878	0.00881	0.01444
	(!D * RESET_B * SET_B * Q * !Q_N)	0.01177	0.01191	0.01793
	(!D * RESET_B * SET_B * Q * !Q_N)	0.01484	0.01497	0.02101
	(!D * !SET_B * Q * !Q_N)	0.00757	0.00771	0.01371
	(!D * !SET_B * Q * !Q_N)	0.01100	0.01116	0.01714

SKY130_FD_SC_HS__DFRBPx

sky130_fd_sc_hs_tt_1.50v_25C.ccs
Cell Library: Process , Voltage
1.50, 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	0.00177	0.00536	0.00292	0.85933	0.83895
sky130_fd_sc_hs__dfrbp_2	0.00162	0.00512	0.00292	1.68820	1.67130

Leakage Information

Cell Name	Leakage(nW)		
	Min.	Avg	Max.
sky130_fd_sc_hs__dfrbp_1	0.00000	0.19952	0.38731
sky130_fd_sc_hs__dfrbp_2	0.00000	0.20987	0.34329

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)	0.31767	0.93815	7.03367
sky130_fd_sc_hs__dfrbp_2	CLK->Q (RR)	0.38951	0.90878	7.53440

Delay(ns) to Q falling :

Cell Name	Timing Arc(Dir)	Delay(ns)		
		First	Mid	Last
sky130_fd_sc_hs__dfrbp_1	CLK->Q (RF)	0.27924	0.60183	2.55230
	RESET_B->Q (FF)	0.39454	0.96993	5.28194
sky130_fd_sc_hs__dfrbp_2	CLK->Q (RF)	0.31897	0.61060	2.62432
	RESET_B->Q (FF)	0.46431	1.01666	5.50213

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)	0.23754	0.88263	6.92955
	RESET_B->Q_N (FR)	0.35214	1.24442	9.65370
sky130_fd_sc_hs__dfrbp_2	CLK->Q_N (RR)	0.23030	0.76938	6.87084
	RESET_B->Q_N (FR)	0.37596	1.17279	9.74416

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)	0.24150	0.63662	2.59911
sky130_fd_sc_hs__dfrbp_2	CLK->Q_N (RF)	0.26018	0.65430	2.71475

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)	-0.06871	-0.15441	-0.77569
	setup	CLK (R)	0.15589	0.21106	0.99282
sky130_fd_sc_hs__dfrbp_2	hold	CLK (R)	-0.07181	-0.16028	-0.81003
	setup	CLK (R)	0.17235	0.22214	1.06393

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)	-0.07322	-0.22895	-2.09844
	setup	CLK (R)	0.24603	0.36823	3.31983
sky130_fd_sc_hs__dfrbp_2	hold	CLK (R)	-0.10472	-0.26753	-2.96911
	setup	CLK (R)	0.27037	0.39541	3.31743

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)	-0.06871	-0.15441	-0.77569
	setup	CLK (R)	0.15589	0.21106	0.99282
sky130_fd_sc_hs__dfrbp_2	hold	CLK (R)	-0.07181	-0.16028	-0.81003
	setup	CLK (R)	0.17235	0.22214	1.06393

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)	-0.07322	-0.22895	-2.09844
	setup	CLK (R)	0.24603	0.36823	3.31983
sky130_fd_sc_hs__dfrbp_2	hold	CLK (R)	-0.10472	-0.26753	-2.96911
	setup	CLK (R)	0.27037	0.39541	3.31743

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)	0.16571	0.20946	1.11335
	removal	CLK (R)	-0.11719	-0.18281	-0.98978
sky130_fd_sc_hs__dfrbp_2	recovery	CLK (R)	0.18229	0.21835	1.16480
	removal	CLK (R)	-0.13224	-0.19593	-1.04114

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)	0.16571	0.20946	1.11335
	removal	CLK (R)	-0.11719	-0.18281	-0.98978
sky130_fd_sc_hs__dfrbp_2	recovery	CLK (R)	0.18229	0.21835	1.16480
	removal	CLK (R)	-0.13224	-0.19593	-1.04114

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 ()	0.20318	0.74341	16.50020
	min_pulse_width	RESET_B ()	0.16439	0.74341	16.50020
sky130_fd_sc_hs__dfrbp_2	min_pulse_width	RESET_B ()	0.21980	0.74341	16.50020
	min_pulse_width	RESET_B ()	0.17547	0.74341	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 ()	0.18378	0.74341	16.50020
	min_pulse_width	CLK ()	0.10344	0.74341	16.50020
sky130_fd_sc_hs__dfrbp_2	min_pulse_width	CLK ()	0.25581	0.74341	16.50020
	min_pulse_width	CLK ()	0.12560	0.74341	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 ()	0.23365	0.74341	16.50020
	min_pulse_width	CLK ()	0.30014	0.74341	16.50020
sky130_fd_sc_hs__dfrbp_2	min_pulse_width	CLK ()	0.24750	0.74341	16.50020
	min_pulse_width	CLK ()	0.30568	0.74341	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	0.01075	0.01077	0.01349
	CLK	0.00912	0.00913	0.01185
sky130_fd_sc_hs__dfrbp_2	CLK	0.01183	0.01219	0.01492
	CLK	0.01023	0.01057	0.01331

Internal switching power(pJ) to Q falling :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__dfrbp_1	CLK	0.01098	0.01109	0.01380
	CLK	0.00931	0.00940	0.01212
	RESET_B	0.00840	0.00834	0.01093
	RESET_B	0.01165	0.01156	0.01376
sky130_fd_sc_hs__dfrbp_2	CLK	0.01219	0.01271	0.01549
	CLK	0.01058	0.01103	0.01385
	RESET_B	0.01058	0.01092	0.01368
	RESET_B	0.01360	0.01390	0.01608

Internal switching power(pJ) to Q_N rising :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__dfrbp_1	CLK	0.01098	0.01116	0.01404
	CLK	0.00932	0.00941	0.01238
	RESET_B	0.00841	0.00834	0.01101
	RESET_B	0.01166	0.01157	0.01393
sky130_fd_sc_hs__dfrbp_2	CLK	0.01220	0.01265	0.01565
	CLK	0.01060	0.01105	0.01404
	RESET_B	0.01059	0.01093	0.01391
	RESET_B	0.01362	0.01392	0.01630

Internal switching power(pJ) to Q_N falling :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__dfrbp_1	CLK	0.01074	0.01076	0.01337
	CLK	0.00911	0.00912	0.01173
sky130_fd_sc_hs__dfrbp_2	CLK	0.01183	0.01216	0.01473
	CLK	0.01022	0.01055	0.01310

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__dfrbp_1	(CLK * RESET_B)	0.00284	0.00273	0.00456
	(CLK * RESET_B)	0.00065	0.00053	0.00237
	(CLK * !RESET_B)	0.00032	0.00032	0.00031
	(CLK * !RESET_B)	-0.00094	-0.00094	-0.00095
	(!CLK * RESET_B * Q * !Q_N) + (!CLK * RESET_B * !Q * Q_N)	0.00805	0.00796	0.00967
	(!CLK * RESET_B * Q * !Q_N) + (!CLK * RESET_B * !Q * Q_N)	0.00576	0.00566	0.00738
	(!CLK * !RESET_B)	0.00032	0.00032	0.00031
	(!CLK * !RESET_B)	-0.00094	-0.00094	-0.00095
sky130_fd_sc_hs__dfrbp_2	(CLK * RESET_B)	0.00327	0.00317	0.00492
	(CLK * RESET_B)	0.00136	0.00125	0.00301
	(CLK * !RESET_B)	0.00036	0.00036	0.00035
	(CLK * !RESET_B)	-0.00080	-0.00080	-0.00081
	(!CLK * RESET_B * Q * !Q_N) + (!CLK * RESET_B * !Q * Q_N)	0.00990	0.00984	0.01153
	(!CLK * RESET_B * Q * !Q_N) + (!CLK * RESET_B * !Q * Q_N)	0.00811	0.00805	0.00974
	(!CLK * !RESET_B)	0.00036	0.00036	0.00035
	(!CLK * !RESET_B)	-0.00080	-0.00080	-0.00081

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__dfrbp_1	(CLK * RESET_B)	0.00042	0.00031	0.00209
	(CLK * RESET_B)	0.00260	0.00250	0.00427
	(CLK * !RESET_B)	-0.00030	-0.00030	-0.00030
	(CLK * !RESET_B)	0.00096	0.00096	0.00096
	(!CLK * RESET_B * Q * !Q_N) + (!CLK * RESET_B * !Q * Q_N)	0.00487	0.00472	0.00695
	(!CLK * RESET_B * Q * !Q_N) + (!CLK * RESET_B * !Q * Q_N)	0.00717	0.00701	0.00925
	(!CLK * !RESET_B)	-0.00030	-0.00030	-0.00030
	(!CLK * !RESET_B)	0.00096	0.00096	0.00096
sky130_fd_sc_hs__dfrbp_2	(CLK * RESET_B)	0.00068	0.00057	0.00227
	(CLK * RESET_B)	0.00259	0.00248	0.00418
	(CLK * !RESET_B)	-0.00035	-0.00034	-0.00034
	(CLK * !RESET_B)	0.00082	0.00082	0.00082
	(!CLK * RESET_B * Q * !Q_N) + (!CLK * RESET_B * !Q * Q_N)	0.00599	0.00580	0.00780
	(!CLK * RESET_B * Q * !Q_N) + (!CLK * RESET_B * !Q * Q_N)	0.00779	0.00759	0.00959
	(!CLK * !RESET_B)	-0.00035	-0.00034	-0.00034
	(!CLK * !RESET_B)	0.00083	0.00082	0.00082

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)	0.00529	0.00516	0.00658
	(CLK * D * !Q * Q_N)	-0.00104	-0.00121	0.00025
	(CLK * !D * !Q * Q_N)	0.00250	0.00253	0.00250
	(CLK * !D * !Q * Q_N)	-0.00279	-0.00281	-0.00279
	(!CLK * D * !Q * Q_N)	0.01075	0.01031	0.01238
	(!CLK * D * !Q * Q_N)	0.00432	0.00387	0.00595
	(!CLK * !D * !Q * Q_N)	0.00244	0.00246	0.00244
	(!CLK * !D * !Q * Q_N)	-0.00285	-0.00285	-0.00285
sky130_fd_sc_hs__dfrbp_2	(CLK * D * !Q * Q_N)	0.00591	0.00580	0.00718
	(CLK * D * !Q * Q_N)	-0.00014	-0.00027	0.00112
	(CLK * !D * !Q * Q_N)	0.00273	0.00276	0.00274
	(CLK * !D * !Q * Q_N)	-0.00245	-0.00246	-0.00245
	(!CLK * D * !Q * Q_N)	0.01276	0.01235	0.01437
	(!CLK * D * !Q * Q_N)	0.00685	0.00641	0.00845
	(!CLK * !D * !Q * Q_N)	0.00270	0.00272	0.00270
	(!CLK * !D * !Q * Q_N)	-0.00250	-0.00250	-0.00249

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)	-0.00139	-0.00153	0.00011
	(CLK * D * !Q * Q_N)	0.00494	0.00483	0.00645
	(CLK * !D * !Q * Q_N)	-0.00245	-0.00253	-0.00250
	(CLK * !D * !Q * Q_N)	0.00284	0.00283	0.00280
	(!CLK * D * !Q * Q_N)	0.00382	0.00329	0.00585
	(!CLK * D * !Q * Q_N)	0.01025	0.00972	0.01228
	(!CLK * !D * !Q * Q_N)	-0.00239	-0.00244	-0.00244
	(!CLK * !D * !Q * Q_N)	0.00290	0.00285	0.00286
sky130_fd_sc_hs__dfrbp_2	(CLK * D * !Q * Q_N)	-0.00140	-0.00151	0.00009
	(CLK * D * !Q * Q_N)	0.00464	0.00455	0.00614
	(CLK * !D * !Q * Q_N)	-0.00268	-0.00276	-0.00274
	(CLK * !D * !Q * Q_N)	0.00251	0.00249	0.00246
	(!CLK * D * !Q * Q_N)	0.00474	0.00429	0.00663
	(!CLK * D * !Q * Q_N)	0.01064	0.01020	0.01257
	(!CLK * !D * !Q * Q_N)	-0.00264	-0.00272	-0.00270
	(!CLK * !D * !Q * Q_N)	0.00254	0.00253	0.00250

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)	0.01025	0.00993	0.01486
	(D * RESET_B * Q * !Q_N)	0.00696	0.00662	0.01156
	(D * !RESET_B * !Q * Q_N)	0.01054	0.01023	0.01517
	(D * !RESET_B * !Q * Q_N)	0.00725	0.00693	0.01187
	(!D * !Q * Q_N)	0.01054	0.01023	0.01517
	(!D * !Q * Q_N)	0.00725	0.00692	0.01187
sky130_fd_sc_hs__dfrbp_2	(D * RESET_B * Q * !Q_N)	0.00932	0.00901	0.01402
	(D * RESET_B * Q * !Q_N)	0.00611	0.00579	0.01080
	(D * !RESET_B * !Q * Q_N)	0.00933	0.00903	0.01409
	(D * !RESET_B * !Q * Q_N)	0.00613	0.00581	0.01087
	(!D * !Q * Q_N)	0.00933	0.00903	0.01408
	(!D * !Q * Q_N)	0.00612	0.00581	0.01086

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)	0.00573	0.00577	0.01139
	(D * RESET_B * Q * !Q_N)	0.00903	0.00907	0.01469
	(D * RESET_B * !Q * Q_N)	0.01043	0.01039	0.01615
	(D * RESET_B * !Q * Q_N)	0.01364	0.01359	0.01935
	(D * !RESET_B * !Q * Q_N)	0.00534	0.00538	0.01103
	(D * !RESET_B * !Q * Q_N)	0.00865	0.00868	0.01433
	(!D * RESET_B * Q * !Q_N)	0.01088	0.01102	0.01700
	(!D * RESET_B * Q * !Q_N)	0.01429	0.01442	0.02041
	(!D * !Q * Q_N)	0.00534	0.00537	0.01103
	(!D * !Q * Q_N)	0.00865	0.00868	0.01434
sky130_fd_sc_hs__dfrbp_2	(D * RESET_B * Q * !Q_N)	0.00578	0.00585	0.01148
	(D * RESET_B * Q * !Q_N)	0.00899	0.00907	0.01470
	(D * RESET_B * !Q * Q_N)	0.01274	0.01258	0.01833
	(D * RESET_B * !Q * Q_N)	0.01605	0.01589	0.02165
	(D * !RESET_B * !Q * Q_N)	0.00573	0.00572	0.01146
	(D * !RESET_B * !Q * Q_N)	0.00894	0.00894	0.01467
	(!D * RESET_B * Q * !Q_N)	0.01192	0.01210	0.01811
	(!D * RESET_B * Q * !Q_N)	0.01502	0.01519	0.02122
	(!D * !Q * Q_N)	0.00573	0.00571	0.01146
	(!D * !Q * Q_N)	0.00894	0.00893	0.01468

SKY130_FD_SC_HS__DFRTN

sky130_fd_sc_hs_tt_1.50v_25C.ccs
Cell Library: Process , Voltage
1.50, 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	0.00174	0.00511	0.00279	0.82927

Leakage Information

Cell Name	Leakage(nW)		
	Min.	Avg	Max.
sky130_fd_sc_hs__dfrtn_1	0.00000	0.18571	0.35599

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)	0.34157	1.17470	8.99174

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)	0.26312	0.78092	4.48231
	RESET_B->Q (FF)	0.36399	0.93523	5.15955

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)	0.03812	0.11033	1.61720
	setup	CLK_N (F)	0.07930	-0.00202	-1.49467

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)	-0.07003	-0.13424	-0.99312
	setup	CLK_N (F)	0.29712	0.35615	1.13702

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)	0.03812	0.11033	1.61720
	setup	CLK_N (F)	0.07930	-0.00202	-1.49467

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)	-0.07003	-0.13424	-0.99312
	setup	CLK_N (F)	0.29712	0.35615	1.13702

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)	0.09256	-0.00692	-1.40217
	removal	CLK_N (F)	-0.03120	0.05192	1.43473

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)	0.09256	-0.00692	-1.40217
	removal	CLK_N (F)	-0.03120	0.05192	1.43473

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 ()	0.15608	0.74341	16.50020
	min_pulse_width	RESET_B ()	0.20040	0.74341	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 ()	0.16716	0.74341	16.50020
	min_pulse_width	CLK_N ()	0.28906	0.74341	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 ()	0.20040	0.74341	16.50020
	min_pulse_width	CLK_N ()	0.16993	0.74341	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	0.01675	0.01708	0.02363
	CLK_N	0.01983	0.02016	0.02681

Internal switching power(pJ) to Q falling :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__dfrtn_1	CLK_N	0.01559	0.01562	0.02155
	CLK_N	0.01859	0.01861	0.02438
	RESET_B	0.01505	0.01465	0.01910
	RESET_B	0.02108	0.02066	0.02506

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)	0.00796	0.00787	0.00960
	(CLK_N * RESET_B)	0.00595	0.00587	0.00759
	(CLK_N * !RESET_B)	0.00032	0.00032	0.00031
	(CLK_N * !RESET_B)	-0.00093	-0.00093	-0.00094
	(!CLK_N * RESET_B)	0.00276	0.00265	0.00448
	(!CLK_N * RESET_B)	0.00069	0.00057	0.00241
	(!CLK_N * !RESET_B)	0.00032	0.00032	0.00031
	(!CLK_N * !RESET_B)	-0.00092	-0.00093	-0.00094

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)	0.00561	0.00544	0.00761
	(CLK_N * RESET_B)	0.00761	0.00744	0.00961
	(CLK_N * !RESET_B)	-0.00030	-0.00030	-0.00030
	(CLK_N * !RESET_B)	0.00094	0.00095	0.00095
	(!CLK_N * RESET_B)	0.00049	0.00038	0.00216
	(!CLK_N * RESET_B)	0.00256	0.00246	0.00423
	(!CLK_N * !RESET_B)	-0.00031	-0.00030	-0.00030
	(!CLK_N * !RESET_B)	0.00095	0.00095	0.00095

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)	0.01063	0.01025	0.01230
	(CLK_N * D * !Q)	0.00467	0.00426	0.00633
	(CLK_N * !D * !Q)	0.00262	0.00266	0.00264
	(CLK_N * !D * !Q)	-0.00246	-0.00249	-0.00247
	(!CLK_N * D * !Q)	0.00506	0.00496	0.00638
	(!CLK_N * D * !Q)	-0.00099	-0.00112	0.00034
	(!CLK_N * !D * !Q)	0.00258	0.00260	0.00257
	(!CLK_N * !D * !Q)	-0.00254	-0.00255	-0.00254

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)	0.00447	0.00400	0.00650
	(CLK_N * D * !Q)	0.01042	0.00999	0.01249
	(CLK_N * !D * !Q)	-0.00258	-0.00266	-0.00264
	(CLK_N * !D * !Q)	0.00252	0.00251	0.00248
	(!CLK_N * D * !Q)	-0.00123	-0.00134	0.00029
	(!CLK_N * D * !Q)	0.00480	0.00471	0.00635
	(!CLK_N * !D * !Q)	-0.00252	-0.00259	-0.00257
	(!CLK_N * !D * !Q)	0.00259	0.00257	0.00255

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)	0.00979	0.00937	0.01442
	(D * RESET_B * Q)	0.00675	0.00631	0.01137
	(D * RESET_B * !Q)	0.01513	0.01477	0.01998
	(D * RESET_B * !Q)	0.01215	0.01178	0.01700
	(D * !RESET_B * !Q)	0.00963	0.00923	0.01426
	(D * !RESET_B * !Q)	0.00659	0.00618	0.01121
	(!D * RESET_B * Q)	0.01474	0.01419	0.01912
	(!D * RESET_B * Q)	0.01163	0.01107	0.01602
	(!D * !Q)	0.00963	0.00923	0.01426
	(!D * !Q)	0.00659	0.00617	0.01122

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)	0.00698	0.00694	0.01259
	(D * RESET_B * Q)	0.01003	0.01000	0.01564
	(D * !RESET_B * !Q)	0.00708	0.00709	0.01269
	(D * !RESET_B * !Q)	0.01013	0.01014	0.01574
	(!D * !Q)	0.00707	0.00707	0.01269
	(!D * !Q)	0.01012	0.01013	0.01573

SKY130_FD_SC_HS__DFRTPx

sky130_fd_sc_hs_tt_1.50v_25C.ccs
Cell Library: Process , Voltage
1.50, 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	0.00175	0.00533	0.00293	0.86637
sky130_fd_sc_hs__dfrtp_2	0.00174	0.00523	0.00292	1.66985
sky130_fd_sc_hs__dfrtp_4	0.00175	0.00541	0.00292	3.29987

Leakage Information

Cell Name	Leakage(nW)		
	Min.	**Avg**	**Max.**
sky130_fd_sc_hs__dfrtp_1	0.00000	0.18571	0.35598
sky130_fd_sc_hs__dfrtp_2	0.00000	0.20838	0.36064
sky130_fd_sc_hs__dfrtp_4	0.00000	0.30151	0.52107

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)	0.26190	0.88974	6.99725
sky130_fd_sc_hs__dfrtp_2	CLK->Q (RR)	0.25974	0.77286	6.89210
sky130_fd_sc_hs__dfrtp_4	CLK->Q (RR)	0.33971	0.77646	7.04704

Delay(ns) to Q falling :

Cell Name	Timing Arc(Dir)	Delay(ns)		
		First	Mid	Last
sky130_fd_sc_hs__dfrtp_1	CLK->Q (RF)	0.26775	0.59067	2.56335
	RESET_B->Q (FF)	0.37348	0.94979	5.28410
sky130_fd_sc_hs__dfrtp_2	CLK->Q (RF)	0.29787	0.59653	2.52799
	RESET_B->Q (FF)	0.40175	0.95263	5.25481
sky130_fd_sc_hs__dfrtp_4	CLK->Q (RF)	0.29984	0.57619	2.69331
	RESET_B->Q (FF)	0.41428	0.93953	5.42957

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)	-0.07682	-0.15805	-0.79846
	setup	CLK (R)	0.17869	0.22849	1.05256
sky130_fd_sc_hs__dfrtp_2	hold	CLK (R)	-0.07293	-0.15662	-0.79077
	setup	CLK (R)	0.17508	0.22716	1.04774
sky130_fd_sc_hs__dfrtp_4	hold	CLK (R)	-0.07672	-0.15828	-0.77461
	setup	CLK (R)	0.18295	0.23126	1.02429

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)	-0.06158	-0.21771	-1.80481
	setup	CLK (R)	0.24117	0.36858	3.33429
sky130_fd_sc_hs__dfrtp_2	hold	CLK (R)	-0.05732	-0.21294	-1.81241
	setup	CLK (R)	0.23933	0.36458	3.30581
sky130_fd_sc_hs__dfrtp_4	hold	CLK (R)	-0.07999	-0.22819	-2.23431
	setup	CLK (R)	0.25703	0.37857	3.27656

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)	-0.07682	-0.15805	-0.79846
	setup	CLK (R)	0.17869	0.22849	1.05256
sky130_fd_sc_hs__dfrtp_2	hold	CLK (R)	-0.07293	-0.15662	-0.79077
	setup	CLK (R)	0.17508	0.22716	1.04774
sky130_fd_sc_hs__dfrtp_4	hold	CLK (R)	-0.07672	-0.15828	-0.77461
	setup	CLK (R)	0.18295	0.23126	1.02429

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)	-0.06158	-0.21771	-1.80481
	setup	CLK (R)	0.24117	0.36858	3.33429
sky130_fd_sc_hs__dfrtp_2	hold	CLK (R)	-0.05732	-0.21294	-1.81241
	setup	CLK (R)	0.23933	0.36458	3.30581
sky130_fd_sc_hs__dfrtp_4	hold	CLK (R)	-0.07999	-0.22819	-2.23431
	setup	CLK (R)	0.25703	0.37857	3.27656

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)	0.19143	0.22536	1.15129
	removal	CLK (R)	-0.11742	-0.18371	-0.99751
sky130_fd_sc_hs__dfrtp_2	recovery	CLK (R)	0.18763	0.22298	1.14756
	removal	CLK (R)	-0.11891	-0.18130	-0.99297
sky130_fd_sc_hs__dfrtp_4	recovery	CLK (R)	0.19442	0.22814	1.12731
	removal	CLK (R)	-0.12851	-0.18691	-0.98680

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)	0.19143	0.22536	1.15129
	removal	CLK (R)	-0.11742	-0.18371	-0.99751
sky130_fd_sc_hs__dfrtp_2	recovery	CLK (R)	0.18763	0.22298	1.14756
	removal	CLK (R)	-0.11891	-0.18130	-0.99297
sky130_fd_sc_hs__dfrtp_4	recovery	CLK (R)	0.19442	0.22814	1.12731
	removal	CLK (R)	-0.12851	-0.18691	-0.98680

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 ()	0.20318	0.74341	16.50020
	min_pulse_width	RESET_B ()	0.15608	0.74341	16.50020
sky130_fd_sc_hs__dfrtp_2	min_pulse_width	RESET_B ()	0.20595	0.74341	16.50020
	min_pulse_width	RESET_B ()	0.16162	0.74341	16.50020
sky130_fd_sc_hs__dfrtp_4	min_pulse_width	RESET_B ()	0.21149	0.74341	16.50020
	min_pulse_width	RESET_B ()	0.16162	0.74341	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 ()	0.13115	0.74341	16.50020
	min_pulse_width	CLK ()	0.10067	0.74341	16.50020
sky130_fd_sc_hs__dfrtp_2	min_pulse_width	CLK ()	0.13669	0.74341	16.50020
	min_pulse_width	CLK ()	0.10344	0.74341	16.50020
sky130_fd_sc_hs__dfrtp_4	min_pulse_width	CLK ()	0.18932	0.74341	16.50020
	min_pulse_width	CLK ()	0.10898	0.74341	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 ()	0.25858	0.74341	16.50020
	min_pulse_width	CLK ()	0.30014	0.74341	16.50020
sky130_fd_sc_hs__dfrtp_2	min_pulse_width	CLK ()	0.25581	0.74341	16.50020
	min_pulse_width	CLK ()	0.30014	0.74341	16.50020
sky130_fd_sc_hs__dfrtp_4	min_pulse_width	CLK ()	0.27244	0.74341	16.50020
	min_pulse_width	CLK ()	0.32230	0.74341	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	0.01931	0.01921	0.02443
	CLK	0.01607	0.01596	0.02119
sky130_fd_sc_hs__dfrtp_2	CLK	0.02124	0.02135	0.02663
	CLK	0.01801	0.01812	0.02349
sky130_fd_sc_hs__dfrtp_4	CLK	0.02663	0.02727	0.03290
	CLK	0.02327	0.02391	0.02970

Internal switching power(pJ) to Q falling :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__dfrtp_1	CLK	0.02065	0.02077	0.02635
	CLK	0.01722	0.01723	0.02278
	RESET_B	0.01519	0.01486	0.01977
	RESET_B	0.02164	0.02128	0.02573
sky130_fd_sc_hs__dfrtp_2	CLK	0.02209	0.02247	0.02836
	CLK	0.01868	0.01901	0.02477
	RESET_B	0.01674	0.01674	0.02170
	RESET_B	0.02311	0.02306	0.02754
sky130_fd_sc_hs__dfrtp_4	CLK	0.02844	0.02942	0.03523
	CLK	0.02491	0.02579	0.03131
	RESET_B	0.02268	0.02321	0.02948
	RESET_B	0.02922	0.02972	0.03422

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__dfrtp_1	(CLK * RESET_B)	0.00281	0.00270	0.00454
	(CLK * RESET_B)	0.00064	0.00052	0.00236
	(CLK * !RESET_B)	0.00031	0.00031	0.00030
	(CLK * !RESET_B)	-0.00092	-0.00092	-0.00093
	(!CLK * RESET_B)	0.00825	0.00816	0.00989
	(!CLK * RESET_B)	0.00595	0.00586	0.00759
	(!CLK * !RESET_B)	0.00031	0.00031	0.00030
	(!CLK * !RESET_B)	-0.00092	-0.00092	-0.00093
sky130_fd_sc_hs__dfrtp_2	(CLK * RESET_B)	0.00273	0.00263	0.00447
	(CLK * RESET_B)	0.00060	0.00048	0.00233
	(CLK * !RESET_B)	0.00031	0.00031	0.00030
	(CLK * !RESET_B)	-0.00092	-0.00093	-0.00093
	(!CLK * RESET_B)	0.00793	0.00785	0.00958
	(!CLK * RESET_B)	0.00568	0.00559	0.00733
	(!CLK * !RESET_B)	0.00031	0.00031	0.00030
	(!CLK * !RESET_B)	-0.00092	-0.00092	-0.00093
sky130_fd_sc_hs__dfrtp_4	(CLK * RESET_B)	0.00283	0.00272	0.00455
	(CLK * RESET_B)	0.00067	0.00054	0.00238
	(CLK * !RESET_B)	0.00032	0.00032	0.00031
	(CLK * !RESET_B)	-0.00093	-0.00093	-0.00094
	(!CLK * RESET_B)	0.00903	0.00892	0.01062
	(!CLK * RESET_B)	0.00673	0.00663	0.00832
	(!CLK * !RESET_B)	0.00032	0.00032	0.00031
	(!CLK * !RESET_B)	-0.00093	-0.00093	-0.00094

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__dfrtp_1	(CLK * RESET_B)	0.00041	0.00031	0.00208
	(CLK * RESET_B)	0.00258	0.00248	0.00425
	(CLK * !RESET_B)	-0.00030	-0.00029	-0.00029
	(CLK * !RESET_B)	0.00094	0.00094	0.00094
	(!CLK * RESET_B)	0.00511	0.00495	0.00718
	(!CLK * RESET_B)	0.00742	0.00724	0.00948
	(!CLK * !RESET_B)	-0.00030	-0.00029	-0.00029
	(!CLK * !RESET_B)	0.00094	0.00094	0.00094
sky130_fd_sc_hs__dfrtp_2	(CLK * RESET_B)	0.00041	0.00031	0.00209
	(CLK * RESET_B)	0.00255	0.00245	0.00424
	(CLK * !RESET_B)	-0.00030	-0.00029	-0.00029
	(CLK * !RESET_B)	0.00095	0.00095	0.00094
	(!CLK * RESET_B)	0.00510	0.00495	0.00723
	(!CLK * RESET_B)	0.00736	0.00720	0.00948
	(!CLK * !RESET_B)	-0.00030	-0.00029	-0.00029
	(!CLK * !RESET_B)	0.00095	0.00094	0.00094
sky130_fd_sc_hs__dfrtp_4	(CLK * RESET_B)	0.00042	0.00031	0.00209
	(CLK * RESET_B)	0.00258	0.00248	0.00425
	(CLK * !RESET_B)	-0.00030	-0.00030	-0.00030
	(CLK * !RESET_B)	0.00095	0.00095	0.00094
	(!CLK * RESET_B)	0.00522	0.00505	0.00723
	(!CLK * RESET_B)	0.00753	0.00734	0.00952
	(!CLK * !RESET_B)	-0.00030	-0.00030	-0.00030
	(!CLK * !RESET_B)	0.00095	0.00095	0.00094

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)	0.00528	0.00514	0.00657
	(CLK * D * !Q)	-0.00104	-0.00122	0.00024
	(CLK * !D * !Q)	0.00249	0.00252	0.00250
	(CLK * !D * !Q)	-0.00277	-0.00279	-0.00277
	(!CLK * D * !Q)	0.01098	0.01058	0.01265
	(!CLK * D * !Q)	0.00456	0.00411	0.00621
	(!CLK * !D * !Q)	0.00240	0.00243	0.00241
	(!CLK * !D * !Q)	-0.00286	-0.00288	-0.00286
sky130_fd_sc_hs__dfrtp_2	(CLK * D * !Q)	0.00517	0.00503	0.00647
	(CLK * D * !Q)	-0.00106	-0.00123	0.00024
	(CLK * !D * !Q)	0.00247	0.00250	0.00248
	(CLK * !D * !Q)	-0.00273	-0.00275	-0.00273
	(!CLK * D * !Q)	0.01060	0.01022	0.01230
	(!CLK * D * !Q)	0.00428	0.00386	0.00597
	(!CLK * !D * !Q)	0.00239	0.00242	0.00240
	(!CLK * !D * !Q)	-0.00281	-0.00283	-0.00281
sky130_fd_sc_hs__dfrtp_4	(CLK * D * !Q)	0.00542	0.00528	0.00671
	(CLK * D * !Q)	-0.00099	-0.00116	0.00030
	(CLK * !D * !Q)	0.00263	0.00266	0.00264
	(CLK * !D * !Q)	-0.00273	-0.00274	-0.00273
	(!CLK * D * !Q)	0.01168	0.01124	0.01331
	(!CLK * D * !Q)	0.00517	0.00473	0.00679
	(!CLK * !D * !Q)	0.00242	0.00245	0.00243
	(!CLK * !D * !Q)	-0.00294	-0.00296	-0.00295

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)	-0.00139	-0.00154	0.00009
	(CLK * D * !Q)	0.00492	0.00481	0.00643
	(CLK * !D * !Q)	-0.00244	-0.00252	-0.00250
	(CLK * !D * !Q)	0.00283	0.00281	0.00279
	(!CLK * D * !Q)	0.00398	0.00344	0.00601
	(!CLK * D * !Q)	0.01042	0.00991	0.01246
	(!CLK * !D * !Q)	-0.00236	-0.00243	-0.00241
	(!CLK * !D * !Q)	0.00291	0.00290	0.00287
sky130_fd_sc_hs__dfrtp_2	(CLK * D * !Q)	-0.00137	-0.00150	0.00014
	(CLK * D * !Q)	0.00485	0.00473	0.00637
	(CLK * !D * !Q)	-0.00242	-0.00250	-0.00248
	(CLK * !D * !Q)	0.00279	0.00277	0.00275
	(!CLK * D * !Q)	0.00399	0.00353	0.00608
	(!CLK * D * !Q)	0.01032	0.00988	0.01243
	(!CLK * !D * !Q)	-0.00235	-0.00242	-0.00240
	(!CLK * !D * !Q)	0.00286	0.00285	0.00283
sky130_fd_sc_hs__dfrtp_4	(CLK * D * !Q)	-0.00152	-0.00166	-0.00003
	(CLK * D * !Q)	0.00487	0.00477	0.00639
	(CLK * !D * !Q)	-0.00259	-0.00266	-0.00264
	(CLK * !D * !Q)	0.00279	0.00277	0.00274
	(!CLK * D * !Q)	0.00421	0.00370	0.00616
	(!CLK * D * !Q)	0.01073	0.01024	0.01271
	(!CLK * !D * !Q)	-0.00237	-0.00245	-0.00243
	(!CLK * !D * !Q)	0.00300	0.00299	0.00296

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)	0.01060	0.01026	0.01518
	(D * RESET_B * Q)	0.00726	0.00692	0.01183
	(D * !RESET_B * !Q)	0.01102	0.01070	0.01560
	(D * !RESET_B * !Q)	0.00768	0.00734	0.01225
	(!D * !Q)	0.01102	0.01069	0.01560
	(!D * !Q)	0.00768	0.00734	0.01225
sky130_fd_sc_hs__dfrtp_2	(D * RESET_B * Q)	0.01053	0.01020	0.01512
	(D * RESET_B * Q)	0.00722	0.00687	0.01179
	(D * !RESET_B * !Q)	0.01095	0.01063	0.01554
	(D * !RESET_B * !Q)	0.00763	0.00729	0.01221
	(!D * !Q)	0.01095	0.01063	0.01554
	(!D * !Q)	0.00763	0.00729	0.01221
sky130_fd_sc_hs__dfrtp_4	(D * RESET_B * Q)	0.01112	0.01078	0.01563
	(D * RESET_B * Q)	0.00767	0.00733	0.01218
	(D * !RESET_B * !Q)	0.01145	0.01113	0.01597
	(D * !RESET_B * !Q)	0.00801	0.00767	0.01251
	(!D * !Q)	0.01145	0.01112	0.01597
	(!D * !Q)	0.00801	0.00766	0.01252

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)**	0.00577	0.00578	0.01141
	(D * RESET_B * Q)	0.00912	0.00913	0.01475
	(D * RESET_B * !Q)	0.01072	0.01065	0.01642
	(D * RESET_B * !Q)	0.01394	0.01385	0.01962
	(D * !RESET_B * !Q)	0.00532	0.00534	0.01099
	(D * !RESET_B * !Q)	0.00867	0.00869	0.01433
	(!D * RESET_B * Q)	0.01117	0.01128	0.01728
	(!D * RESET_B * Q)	0.01466	0.01474	0.02076
	(!D * !Q)	0.00532	0.00533	0.01099
	(!D * !Q)	0.00867	0.00867	0.01433
sky130_fd_sc_hs__dfrtp_2	**(D * RESET_B * Q)**	0.00578	0.00580	0.01143
	(D * RESET_B * Q)	0.00912	0.00914	0.01475
	(D * RESET_B * !Q)	0.01047	0.01041	0.01618
	(D * RESET_B * !Q)	0.01370	0.01362	0.01939
	(D * !RESET_B * !Q)	0.00534	0.00536	0.01101
	(D * !RESET_B * !Q)	0.00867	0.00869	0.01433
	(!D * RESET_B * Q)	0.01118	0.01130	0.01728
	(!D * RESET_B * Q)	0.01463	0.01473	0.02072
	(!D * !Q)	0.00534	0.00535	0.01101
	(!D * !Q)	0.00867	0.00868	0.01433
sky130_fd_sc_hs__dfrtp_4	**(D * RESET_B * Q)**	0.00600	0.00603	0.01158
	(D * RESET_B * Q)	0.00946	0.00949	0.01504
	(D * RESET_B * !Q)	0.01180	0.01171	0.01735
	(D * RESET_B * !Q)	0.01513	0.01503	0.02068
	(D * !RESET_B * !Q)	0.00563	0.00566	0.01124
	(D * !RESET_B * !Q)	0.00909	0.00911	0.01469
	(!D * RESET_B * Q)	0.01144	0.01158	0.01752
	(!D * RESET_B * Q)	0.01503	0.01516	0.02111
	(!D * !Q)	0.00563	0.00565	0.01124
	(!D * !Q)	0.00909	0.00910	0.01470

SKY130_FD_SC_HS__DFSBPx

sky130_fd_sc_hs_tt_1.50v_25C.ccs
Cell Library: Process , Voltage
1.50, 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	0.00172	0.00323	0.00289	0.82561	0.79343
sky130_fd_sc_hs__dfsbp_2	0.00173	0.00326	0.00289	1.68287	1.63375

Leakage Information

Cell Name	Leakage(nW)		
	Min.	Avg	Max.
sky130_fd_sc_hs__dfsbp_1	0.00000	0.20150	0.24367
sky130_fd_sc_hs__dfsbp_2	0.00000	0.18586	0.20124

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)	0.36331	0.98309	7.01976
	SET_B->Q (FR)	0.36697	1.26391	9.96501
sky130_fd_sc_hs__dfsbp_2	CLK->Q (RR)	0.43609	0.92734	7.06637
	SET_B->Q (FR)	0.44813	1.21714	10.19450

Delay(ns) to Q falling :

Cell Name	Timing Arc(Dir)	Delay(ns)		
		First	Mid	Last
sky130_fd_sc_hs__dfsbp_1	CLK->Q (RF)	0.31488	0.63180	2.51030
sky130_fd_sc_hs__dfsbp_2	CLK->Q (RF)	0.35703	0.64129	2.60460

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)	0.27179	0.93354	7.04858
sky130_fd_sc_hs__dfsbp_2	CLK->Q_N (RR)	0.27198	0.81352	6.98765

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)	0.27804	0.68181	2.60231
	SET_B->Q_N (FF)	0.27576	0.95705	5.62700
sky130_fd_sc_hs__dfsbp_2	CLK->Q_N (RF)	0.30798	0.69762	2.70352
	SET_B->Q_N (FF)	0.31132	0.98252	5.91236

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)	-0.06308	-0.14926	-0.80627
	setup	CLK (R)	0.11615	0.18745	0.95930
sky130_fd_sc_hs__dfsbp_2	hold	CLK (R)	-0.05987	-0.14482	-0.79014
	setup	CLK (R)	0.10817	0.17939	0.90966

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)	-0.06399	-0.21792	-2.00111
	setup	CLK (R)	0.26696	0.39392	3.59381
sky130_fd_sc_hs__dfsbp_2	hold	CLK (R)	-0.07275	-0.22399	-2.23889
	setup	CLK (R)	0.25947	0.39055	3.51055

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)	-0.06308	-0.14926	-0.80627
	setup	CLK (R)	0.11615	0.18745	0.95930
sky130_fd_sc_hs__dfsbp_2	hold	CLK (R)	-0.05987	-0.14482	-0.79014
	setup	CLK (R)	0.10817	0.17939	0.90966

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)	-0.06399	-0.21792	-2.00111
	setup	CLK (R)	0.26696	0.39392	3.59381
sky130_fd_sc_hs__dfsbp_2	hold	CLK (R)	-0.07275	-0.22399	-2.23889
	setup	CLK (R)	0.25947	0.39055	3.51055

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)	-0.12620	-0.17660	-0.47671
	removal	CLK (R)	0.15526	0.19863	0.57082
sky130_fd_sc_hs__dfsbp_2	recovery	CLK (R)	-0.12608	-0.17468	-0.47591
	removal	CLK (R)	0.15445	0.19863	0.55015

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)	-0.12620	-0.17660	-0.47671
	removal	CLK (R)	0.15526	0.19863	0.57082
sky130_fd_sc_hs__dfsbp_2	recovery	CLK (R)	-0.12608	-0.17468	-0.47591
	removal	CLK (R)	0.15445	0.19863	0.55015

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 ()	0.28629	0.74341	16.50020
	min_pulse_width	SET_B ()	0.28851	0.74964	16.50020
sky130_fd_sc_hs__dfsbp_2	min_pulse_width	SET_B ()	0.30845	0.74341	16.50020
	min_pulse_width	SET_B ()	0.35711	0.81407	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 ()	0.22534	0.74341	16.50020
	min_pulse_width	CLK ()	0.12837	0.74341	16.50020
sky130_fd_sc_hs__dfsbp_2	min_pulse_width	CLK ()	0.28906	0.74341	16.50020
	min_pulse_width	CLK ()	0.14777	0.74341	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 ()	0.21426	0.74341	16.50020
	min_pulse_width	CLK ()	0.35001	0.74341	16.50020
sky130_fd_sc_hs__dfsbp_2	min_pulse_width	CLK ()	0.20872	0.74341	16.50020
	min_pulse_width	CLK ()	0.34170	0.74341	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	0.01107	0.01109	0.01364
	CLK	0.00946	0.00947	0.01203
	SET_B	0.01051	0.01047	0.01186
	SET_B	0.01211	0.01207	0.01327
sky130_fd_sc_hs__dfsbp_2	CLK	0.01291	0.01315	0.01586
	CLK	0.01127	0.01152	0.01419
	SET_B	0.01215	0.01245	0.01464
	SET_B	0.01371	0.01403	0.01540

Internal switching power(pJ) to Q falling :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__dfsbp_1	CLK	0.01162	0.01166	0.01422
	CLK	0.01009	0.01013	0.01267
sky130_fd_sc_hs__dfsbp_2	CLK	0.01349	0.01384	0.01640
	CLK	0.01193	0.01227	0.01480

Internal switching power(pJ) to Q_N rising :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__dfsbp_1	CLK	0.01164	0.01170	0.01432
	CLK	0.01011	0.01016	0.01279
sky130_fd_sc_hs__dfsbp_2	CLK	0.01351	0.01392	0.01655
	CLK	0.01195	0.01229	0.01499

Internal switching power(pJ) to Q_N falling :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__dfsbp_1	CLK	0.01106	0.01107	0.01367
	CLK	0.00944	0.00945	0.01205
	SET_B	0.01049	0.01045	0.01154
	SET_B	0.01209	0.01205	0.01313
sky130_fd_sc_hs__dfsbp_2	CLK	0.01290	0.01307	0.01562
	CLK	0.01126	0.01152	0.01397
	SET_B	0.01213	0.01243	0.01380
	SET_B	0.01370	0.01401	0.01517

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__dfsbp_1	CLK	0.00253	0.00243	0.00437
	CLK	0.00059	0.00049	0.00243
	(!CLK * SET_B * Q * !Q_N) + (!CLK * SET_B * !Q * Q_N)	0.00744	0.00734	0.00877
	(!CLK * SET_B * Q * !Q_N) + (!CLK * SET_B * !Q * Q_N)	0.00531	0.00520	0.00664
	(!CLK * !SET_B * Q * !Q_N)	0.00583	0.00578	0.00721
	(!CLK * !SET_B * Q * !Q_N)	0.00361	0.00355	0.00498
sky130_fd_sc_hs__dfsbp_2	CLK	0.00252	0.00242	0.00437
	CLK	0.00057	0.00048	0.00242
	(!CLK * SET_B * Q * !Q_N) + (!CLK * SET_B * !Q * Q_N)	0.00737	0.00727	0.00871
	(!CLK * SET_B * Q * !Q_N) + (!CLK * SET_B * !Q * Q_N)	0.00516	0.00505	0.00650
	(!CLK * !SET_B * Q * !Q_N)	0.00582	0.00577	0.00720
	(!CLK * !SET_B * Q * !Q_N)	0.00354	0.00348	0.00492

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__dfsbp_1	CLK	0.00024	0.00023	0.00204
	CLK	0.00218	0.00217	0.00399
	(!CLK * SET_B * Q * !Q_N) + (!CLK * SET_B * !Q * Q_N)	0.00536	0.00529	0.00685
	(!CLK * SET_B * Q * !Q_N) + (!CLK * SET_B * !Q * Q_N)	0.00749	0.00743	0.00899
	(!CLK * !SET_B * Q * !Q_N)	0.00310	0.00305	0.00444
	(!CLK * !SET_B * Q * !Q_N)	0.00533	0.00528	0.00667
sky130_fd_sc_hs__dfsbp_2	CLK	0.00024	0.00023	0.00204
	CLK	0.00218	0.00218	0.00399
	(!CLK * SET_B * Q * !Q_N) + (!CLK * SET_B * !Q * Q_N)	0.00513	0.00507	0.00664
	(!CLK * SET_B * Q * !Q_N) + (!CLK * SET_B * !Q * Q_N)	0.00734	0.00729	0.00886
	(!CLK * !SET_B * Q * !Q_N)	0.00299	0.00294	0.00434
	(!CLK * !SET_B * Q * !Q_N)	0.00527	0.00523	0.00663

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)	0.00187	0.00189	0.00188
	(CLK * Q * !Q_N)	-0.00157	-0.00158	-0.00158
	(!CLK * D * Q * !Q_N)	0.00206	0.00207	0.00206
	(!CLK * D * Q * !Q_N)	-0.00139	-0.00140	-0.00139
	(!CLK * !D * Q * !Q_N)	0.00390	0.00384	0.00528
	(!CLK * !D * Q * !Q_N)	0.00031	0.00021	0.00167
sky130_fd_sc_hs__dfsbp_2	(CLK * Q * !Q_N)	0.00190	0.00191	0.00191
	(CLK * Q * !Q_N)	-0.00153	-0.00153	-0.00153
	(!CLK * D * Q * !Q_N)	0.00204	0.00206	0.00204
	(!CLK * D * Q * !Q_N)	-0.00139	-0.00140	-0.00139
	(!CLK * !D * Q * !Q_N)	0.00375	0.00368	0.00514
	(!CLK * !D * Q * !Q_N)	0.00019	0.00010	0.00157

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)	-0.00185	-0.00189	-0.00188
	(CLK * Q * !Q_N)	0.00161	0.00161	0.00159
	(!CLK * D * Q * !Q_N)	-0.00203	-0.00207	-0.00206
	(!CLK * D * Q * !Q_N)	0.00143	0.00143	0.00140
	(!CLK * !D * Q * !Q_N)	-0.00018	-0.00019	0.00144
	(!CLK * !D * Q * !Q_N)	0.00342	0.00343	0.00506
sky130_fd_sc_hs__dfsbp_2	(CLK * Q * !Q_N)	-0.00188	-0.00190	-0.00191
	(CLK * Q * !Q_N)	0.00156	0.00154	0.00154
	(!CLK * D * Q * !Q_N)	-0.00201	-0.00204	-0.00204
	(!CLK * D * Q * !Q_N)	0.00143	0.00140	0.00140
	(!CLK * !D * Q * !Q_N)	-0.00015	-0.00016	0.00150
	(!CLK * !D * Q * !Q_N)	0.00341	0.00341	0.00506

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)	0.01095	0.01060	0.01548
	(D * Q * !Q_N)	0.00780	0.00744	0.01233
	(!D * SET_B * !Q * Q_N)	0.01077	0.01042	0.01529
	(!D * SET_B * !Q * Q_N)	0.00762	0.00727	0.01213
	(!D * !SET_B * Q * !Q_N)	0.01925	0.01906	0.02428
	(!D * !SET_B * Q * !Q_N)	0.01583	0.01561	0.02084
sky130_fd_sc_hs__dfsbp_2	(D * Q * !Q_N)	0.01082	0.01047	0.01536
	(D * Q * !Q_N)	0.00762	0.00726	0.01216
	(!D * SET_B * !Q * Q_N)	0.01072	0.01036	0.01525
	(!D * SET_B * !Q * Q_N)	0.00751	0.00716	0.01204
	(!D * !SET_B * Q * !Q_N)	0.01900	0.01879	0.02406
	(!D * !SET_B * Q * !Q_N)	0.01547	0.01525	0.02051

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)	0.01096	0.01098	0.01658
	(D * SET_B * !Q * Q_N)	0.01393	0.01394	0.01954
	(D * Q * !Q_N)	0.00634	0.00641	0.01199
	(D * Q * !Q_N)	0.00950	0.00957	0.01515
	(!D * SET_B * Q * !Q_N)	0.01258	0.01274	0.01865
	(!D * SET_B * Q * !Q_N)	0.01593	0.01609	0.02200
	(!D * SET_B * !Q * Q_N)	0.00647	0.00656	0.01216
	(!D * SET_B * !Q * Q_N)	0.00963	0.00972	0.01531
	(!D * !SET_B * Q * !Q_N)	0.01032	0.01048	0.01638
	(!D * !SET_B * Q * !Q_N)	0.01377	0.01391	0.01981
sky130_fd_sc_hs__dfsbp_2	(D * SET_B * !Q * Q_N)	0.01077	0.01079	0.01641
	(D * SET_B * !Q * Q_N)	0.01372	0.01374	0.01936
	(D * Q * !Q_N)	0.00624	0.00631	0.01191
	(D * Q * !Q_N)	0.00946	0.00953	0.01512
	(!D * SET_B * Q * !Q_N)	0.01224	0.01239	0.01831
	(!D * SET_B * Q * !Q_N)	0.01572	0.01586	0.02179
	(!D * SET_B * !Q * Q_N)	0.00631	0.00639	0.01200
	(!D * SET_B * !Q * Q_N)	0.00952	0.00961	0.01522
	(!D * !SET_B * Q * !Q_N)	0.01008	0.01028	0.01615
	(!D * !SET_B * Q * !Q_N)	0.01363	0.01383	0.01970

SKY130_FD_SC_HS__DFSTPx

sky130_fd_sc_hs_tt_1.50v_25C.ccs
Cell Library: Process , Voltage
1.50, 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	0.00172	0.00334	0.00287	0.85282
sky130_fd_sc_hs__dfstp_2	0.00172	0.00312	0.00289	1.67899
sky130_fd_sc_hs__dfstp_4	0.00171	0.00315	0.00290	3.19617

Leakage Information

Cell Name	Leakage(nW)		
	Min.	**Avg**	**Max.**
sky130_fd_sc_hs__dfstp_1	0.00000	0.18013	0.21393
sky130_fd_sc_hs__dfstp_2	0.00000	0.14311	0.19163
sky130_fd_sc_hs__dfstp_4	0.00000	0.32057	0.37901

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)	0.29257	0.91247	6.94514
	SET_B->Q (FR)	0.29889	1.18871	9.67926
sky130_fd_sc_hs__dfstp_2	CLK->Q (RR)	0.30419	0.81406	6.95710
	SET_B->Q (FR)	0.31264	1.09576	9.73836
sky130_fd_sc_hs__dfstp_4	CLK->Q (RR)	0.35972	0.79190	7.03621
	SET_B->Q (FR)	0.36616	1.07319	9.90422

Delay(ns) to Q falling :

Cell Name	Timing Arc(Dir)	Delay(ns)		
		First	Mid	Last
sky130_fd_sc_hs__dfstp_1	CLK->Q (RF)	0.29274	0.61034	2.56577
sky130_fd_sc_hs__dfstp_2	CLK->Q (RF)	0.31320	0.60264	2.57655
sky130_fd_sc_hs__dfstp_4	CLK->Q (RF)	0.32113	0.58401	2.55919

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)	-0.06040	-0.14641	-0.79684
	setup	CLK (R)	0.11692	0.18599	0.97691
sky130_fd_sc_hs__dfstp_2	hold	CLK (R)	-0.06195	-0.14835	-0.81026
	setup	CLK (R)	0.12045	0.18745	0.98090
sky130_fd_sc_hs__dfstp_4	hold	CLK (R)	-0.06260	-0.14485	-0.78917
	setup	CLK (R)	0.11033	0.17975	0.92552

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)	-0.05511	-0.20872	-1.73830
	setup	CLK (R)	0.25843	0.38748	4.35664
sky130_fd_sc_hs__dfstp_2	hold	CLK (R)	-0.05528	-0.21100	-1.77687
	setup	CLK (R)	0.26189	0.38998	3.58997
sky130_fd_sc_hs__dfstp_4	hold	CLK (R)	-0.06582	-0.21968	-1.99975
	setup	CLK (R)	0.25741	0.38680	3.52815

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)	-0.06040	-0.14641	-0.79684
	setup	CLK (R)	0.11692	0.18599	0.97691
sky130_fd_sc_hs__dfstp_2	hold	CLK (R)	-0.06195	-0.14835	-0.81026
	setup	CLK (R)	0.12045	0.18745	0.98090
sky130_fd_sc_hs__dfstp_4	hold	CLK (R)	-0.06260	-0.14485	-0.78917
	setup	CLK (R)	0.11033	0.17975	0.92552

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)	-0.05511	-0.20872	-1.73830
	setup	CLK (R)	0.25843	0.38748	4.35664
sky130_fd_sc_hs__dfstp_2	hold	CLK (R)	-0.05528	-0.21100	-1.77687
	setup	CLK (R)	0.26189	0.38998	3.58997
sky130_fd_sc_hs__dfstp_4	hold	CLK (R)	-0.06582	-0.21968	-1.99975
	setup	CLK (R)	0.25741	0.38680	3.52815

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)	-0.12540	-0.17879	-0.50229
	removal	CLK (R)	0.15129	0.19623	0.61453
sky130_fd_sc_hs__dfstp_2	recovery	CLK (R)	-0.13033	-0.18052	-0.50215
	removal	CLK (R)	0.15177	0.19623	0.59387
sky130_fd_sc_hs__dfstp_4	recovery	CLK (R)	-0.12361	-0.17430	-0.47705
	removal	CLK (R)	0.14999	0.19384	0.55494

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)	-0.12540	-0.17879	-0.50229
	removal	CLK (R)	0.15129	0.19623	0.61453
sky130_fd_sc_hs__dfstp_2	recovery	CLK (R)	-0.13033	-0.18052	-0.50215
	removal	CLK (R)	0.15177	0.19623	0.59387
sky130_fd_sc_hs__dfstp_4	recovery	CLK (R)	-0.12361	-0.17430	-0.47705
	removal	CLK (R)	0.14999	0.19384	0.55494

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 ()	0.25304	0.74341	16.50020
	min_pulse_width	SET_B ()	0.21980	0.74341	16.50020
sky130_fd_sc_hs__dfstp_2	min_pulse_width	SET_B ()	0.26412	0.74341	16.50020
	min_pulse_width	SET_B ()	0.23365	0.74341	16.50020
sky130_fd_sc_hs__dfstp_4	min_pulse_width	SET_B ()	0.27244	0.74341	16.50020
	min_pulse_width	SET_B ()	0.26689	0.74341	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 ()	0.16162	0.74341	16.50020
	min_pulse_width	CLK ()	0.11729	0.74341	16.50020
sky130_fd_sc_hs__dfstp_2	min_pulse_width	CLK ()	0.17270	0.74341	16.50020
	min_pulse_width	CLK ()	0.12283	0.74341	16.50020
sky130_fd_sc_hs__dfstp_4	min_pulse_width	CLK ()	0.21149	0.74341	16.50020
	min_pulse_width	CLK ()	0.12560	0.74341	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 ()	0.21426	0.74341	16.50020
	min_pulse_width	CLK ()	0.33893	0.74341	16.50020
sky130_fd_sc_hs__dfstp_2	min_pulse_width	CLK ()	0.21426	0.74341	16.50020
	min_pulse_width	CLK ()	0.34170	0.74341	16.50020
sky130_fd_sc_hs__dfstp_4	min_pulse_width	CLK ()	0.20872	0.74341	16.50020
	min_pulse_width	CLK ()	0.33338	0.74341	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	0.01913	0.01879	0.02390
	CLK	0.01603	0.01569	0.02083
	SET_B	0.01786	0.01744	0.01975
	SET_B	0.02131	0.02086	0.02329
sky130_fd_sc_hs__dfstp_2	CLK	0.02154	0.02151	0.02661
	CLK	0.01829	0.01826	0.02341
	SET_B	0.02036	0.02022	0.02256
	SET_B	0.02350	0.02335	0.02591
sky130_fd_sc_hs__dfstp_4	CLK	0.02650	0.02691	0.03223
	CLK	0.02322	0.02364	0.02909
	SET_B	0.02507	0.02553	0.02807
	SET_B	0.02824	0.02868	0.03155

Internal switching power(pJ) to Q falling :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__dfstp_1	CLK	0.02089	0.02076	0.02573
	CLK	0.01764	0.01746	0.02243
sky130_fd_sc_hs__dfstp_2	CLK	0.02295	0.02306	0.02823
	CLK	0.01979	0.01992	0.02493
sky130_fd_sc_hs__dfstp_4	CLK	0.02822	0.02928	0.03427
	CLK	0.02506	0.02590	0.03101

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__dfstp_1	CLK	0.00253	0.00243	0.00437
	CLK	0.00060	0.00050	0.00243
	(!CLK * SET_B)	0.00736	0.00726	0.00871
	(!CLK * SET_B)	0.00523	0.00513	0.00658
	(!CLK * !SET_B * Q)	0.00579	0.00575	0.00718
	(!CLK * !SET_B * Q)	0.00356	0.00351	0.00495
sky130_fd_sc_hs__dfstp_2	CLK	0.00255	0.00245	0.00438
	CLK	0.00061	0.00051	0.00244
	(!CLK * SET_B)	0.00735	0.00725	0.00869
	(!CLK * SET_B)	0.00522	0.00511	0.00655
	(!CLK * !SET_B * Q)	0.00578	0.00574	0.00716
	(!CLK * !SET_B * Q)	0.00354	0.00349	0.00492
sky130_fd_sc_hs__dfstp_4	CLK	0.00255	0.00245	0.00438
	CLK	0.00061	0.00051	0.00244
	(!CLK * SET_B)	0.00732	0.00723	0.00867
	(!CLK * SET_B)	0.00518	0.00507	0.00652
	(!CLK * !SET_B * Q)	0.00572	0.00568	0.00712
	(!CLK * !SET_B * Q)	0.00349	0.00344	0.00488

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__dfstp_1	CLK	0.00031	0.00030	0.00210
	CLK	0.00224	0.00224	0.00403
	(!CLK * SET_B)	0.00514	0.00508	0.00664
	(!CLK * SET_B)	0.00727	0.00721	0.00877
	(!CLK * !SET_B * Q)	0.00299	0.00295	0.00434
	(!CLK * !SET_B * Q)	0.00523	0.00519	0.00658
sky130_fd_sc_hs__dfstp_2	CLK	0.00029	0.00029	0.00209
	CLK	0.00223	0.00223	0.00403
	(!CLK * SET_B)	0.00530	0.00524	0.00680
	(!CLK * SET_B)	0.00743	0.00737	0.00893
	(!CLK * !SET_B * Q)	0.00316	0.00311	0.00450
	(!CLK * !SET_B * Q)	0.00540	0.00536	0.00675
sky130_fd_sc_hs__dfstp_4	CLK	0.00031	0.00031	0.00210
	CLK	0.00225	0.00224	0.00404
	(!CLK * SET_B)	0.00507	0.00501	0.00658
	(!CLK * SET_B)	0.00722	0.00716	0.00873
	(!CLK * !SET_B * Q)	0.00298	0.00294	0.00434
	(!CLK * !SET_B * Q)	0.00522	0.00518	0.00658

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__dfstp_1	(CLK * Q)	0.00179	0.00181	0.00180
	(CLK * Q)	-0.00172	-0.00173	-0.00172
	(!CLK * D * Q)	0.00195	0.00197	0.00195
	(!CLK * D * Q)	-0.00157	-0.00158	-0.00157
	(!CLK * !D * Q)	0.00372	0.00365	0.00510
	(!CLK * !D * Q)	0.00005	-0.00005	0.00142
sky130_fd_sc_hs__dfstp_2	(CLK * Q)	0.00177	0.00178	0.00176
	(CLK * Q)	-0.00159	-0.00159	-0.00158
	(!CLK * D * Q)	0.00190	0.00193	0.00191
	(!CLK * D * Q)	-0.00143	-0.00144	-0.00143
	(!CLK * !D * Q)	0.00368	0.00361	0.00506
	(!CLK * !D * Q)	0.00019	0.00008	0.00155
sky130_fd_sc_hs__dfstp_4	(CLK * Q)	0.00186	0.00187	0.00186
	(CLK * Q)	-0.00154	-0.00154	-0.00154
	(!CLK * D * Q)	0.00199	0.00200	0.00200
	(!CLK * D * Q)	-0.00140	-0.00141	-0.00141
	(!CLK * !D * Q)	0.00371	0.00364	0.00509
	(!CLK * !D * Q)	0.00017	0.00008	0.00154

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__dfstp_1	(CLK * Q)	-0.00177	-0.00180	-0.00180
	(CLK * Q)	0.00175	0.00173	0.00173
	(!CLK * D * Q)	-0.00192	-0.00195	-0.00195
	(!CLK * D * Q)	0.00161	0.00158	0.00158
	(!CLK * !D * Q)	-0.00008	-0.00011	0.00154
	(!CLK * !D * Q)	0.00359	0.00358	0.00523
sky130_fd_sc_hs__dfstp_2	(CLK * Q)	-0.00174	-0.00178	-0.00176
	(CLK * Q)	0.00161	0.00162	0.00159
	(!CLK * D * Q)	-0.00189	-0.00193	-0.00191
	(!CLK * D * Q)	0.00147	0.00147	0.00144
	(!CLK * !D * Q)	-0.00003	-0.00004	0.00160
	(!CLK * !D * Q)	0.00348	0.00348	0.00512
sky130_fd_sc_hs__dfstp_4	(CLK * Q)	-0.00184	-0.00187	-0.00186
	(CLK * Q)	0.00157	0.00158	0.00155
	(!CLK * D * Q)	-0.00197	-0.00200	-0.00199
	(!CLK * D * Q)	0.00144	0.00144	0.00142
	(!CLK * !D * Q)	-0.00006	-0.00006	0.00157
	(!CLK * !D * Q)	0.00348	0.00348	0.00512

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__dfstp_1	(D * Q)	0.01083	0.01047	0.01536
	(D * Q)	0.00766	0.00729	0.01219
	(!D * SET_B * !Q)	0.01075	0.01041	0.01529
	(!D * SET_B * !Q)	0.00758	0.00723	0.01211
	(!D * !SET_B * Q)	0.01876	0.01858	0.02384
	(!D * !SET_B * Q)	0.01530	0.01510	0.02036
sky130_fd_sc_hs__dfstp_2	(D * Q)	0.01098	0.01062	0.01551
	(D * Q)	0.00779	0.00742	0.01231
	(!D * SET_B * !Q)	0.01080	0.01045	0.01533
	(!D * SET_B * !Q)	0.00760	0.00724	0.01213
	(!D * !SET_B * Q)	0.01903	0.01881	0.02406
	(!D * !SET_B * Q)	0.01554	0.01531	0.02055
sky130_fd_sc_hs__dfstp_4	(D * Q)	0.01086	0.01050	0.01539
	(D * Q)	0.00764	0.00727	0.01216
	(!D * SET_B * !Q)	0.01080	0.01046	0.01532
	(!D * SET_B * !Q)	0.00758	0.00722	0.01210
	(!D * !SET_B * Q)	0.01868	0.01846	0.02374
	(!D * !SET_B * Q)	0.01516	0.01493	0.02021

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)**	0.01091	0.01092	0.01653
	(D * SET_B * !Q)	0.01391	0.01391	0.01953
	(D * Q)	0.00637	0.00647	0.01202
	(D * Q)	0.00955	0.00965	0.01519
	(!D * SET_B * Q)	0.01225	0.01244	0.01831
	(!D * SET_B * Q)	0.01563	0.01580	0.02169
	(!D * SET_B * !Q)	0.00640	0.00647	0.01207
	(!D * SET_B * !Q)	0.00958	0.00965	0.01525
	(!D * !SET_B * Q)	0.01010	0.01029	0.01615
	(!D * !SET_B * Q)	0.01358	0.01375	0.01963
sky130_fd_sc_hs__dfstp_2	**(D * SET_B * !Q)**	0.01084	0.01085	0.01646
	(D * SET_B * !Q)	0.01386	0.01385	0.01948
	(D * Q)	0.00626	0.00632	0.01191
	(D * Q)	0.00946	0.00953	0.01511
	(!D * SET_B * Q)	0.01234	0.01255	0.01841
	(!D * SET_B * Q)	0.01574	0.01594	0.02181
	(!D * SET_B * !Q)	0.00639	0.00648	0.01208
	(!D * SET_B * !Q)	0.00960	0.00968	0.01528
	(!D * !SET_B * Q)	0.01020	0.01041	0.01626
	(!D * !SET_B * Q)	0.01371	0.01391	0.01976
sky130_fd_sc_hs__dfstp_4	**(D * SET_B * !Q)**	0.01079	0.01080	0.01642
	(D * SET_B * !Q)	0.01381	0.01381	0.01944
	(D * Q)	0.00630	0.00641	0.01195
	(D * Q)	0.00953	0.00964	0.01518
	(!D * SET_B * Q)	0.01208	0.01228	0.01816
	(!D * SET_B * Q)	0.01553	0.01572	0.02160
	(!D * SET_B * !Q)	0.00631	0.00638	0.01199
	(!D * SET_B * !Q)	0.00954	0.00961	0.01522
	(!D * !SET_B * Q)	0.00999	0.01010	0.01606
	(!D * !SET_B * Q)	0.01353	0.01363	0.01959

SKY130_FD_SC_HS__DFXBPx

sky130_fd_sc_hs_tt_1.50v_25C.ccs
Cell Library: Process , Voltage
1.50, 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	0.00175	0.00289	0.83600	0.82732
sky130_fd_sc_hs__dfxbp_2	0.00170	0.00290	1.50007	1.65752

Leakage Information

Cell Name	Leakage(nW)		
	Min.	Avg	Max.
sky130_fd_sc_hs__dfxbp_1	0.00000	0.31092	0.45689
sky130_fd_sc_hs__dfxbp_2	0.00000	0.42007	0.71923

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)	0.26335	0.89553	6.99322
sky130_fd_sc_hs__dfxbp_2	CLK->Q (RR)	0.31356	0.84839	6.95864

Delay(ns) to Q falling :

Cell Name	Timing Arc(Dir)	Delay(ns)		
		First	Mid	Last
sky130_fd_sc_hs__dfxbp_1	CLK->Q (RF)	0.29482	0.64045	2.63750
sky130_fd_sc_hs__dfxbp_2	CLK->Q (RF)	0.28499	0.58289	2.33578

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)	0.34900	0.98138	7.02039
sky130_fd_sc_hs__dfxbp_2	CLK->Q_N (RR)	0.36012	0.87331	6.95484

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)	0.30767	0.62473	2.52208
sky130_fd_sc_hs__dfxbp_2	CLK->Q_N (RF)	0.38941	0.67645	2.66761

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)	-0.02613	-0.07576	-0.42067
	setup	CLK (R)	0.10579	0.13517	0.67854
sky130_fd_sc_hs__dfxbp_2	hold	CLK (R)	-0.02632	-0.06616	-0.37626
	setup	CLK (R)	0.08704	0.12241	0.62572

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)	-0.04912	-0.18054	-1.80602
	setup	CLK (R)	0.19030	0.30889	2.96417
sky130_fd_sc_hs__dfxbp_2	hold	CLK (R)	-0.04580	-0.17488	-2.01657
	setup	CLK (R)	0.18310	0.30241	2.91735

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 ()	0.12560	0.74341	16.50020
	min_pulse_width	CLK ()	0.10344	0.74341	16.50020
sky130_fd_sc_hs__dfxbp_2	min_pulse_width	CLK ()	0.16716	0.74341	16.50020
	min_pulse_width	CLK ()	0.10344	0.74341	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 ()	0.21149	0.74341	16.50020
	min_pulse_width	CLK ()	0.27521	0.74341	16.50020
sky130_fd_sc_hs__dfxbp_2	min_pulse_width	CLK ()	0.19764	0.74341	16.50020
	min_pulse_width	CLK ()	0.27798	0.74341	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	0.01070	0.01056	0.01314
	CLK	0.00921	0.00902	0.01165
sky130_fd_sc_hs__dfxbp_2	CLK	0.01306	0.01323	0.01593
	CLK	0.01154	0.01170	0.01440

Internal switching power(pJ) to Q falling :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__dfxbp_1	CLK	0.01102	0.01110	0.01388
	CLK	0.00953	0.00959	0.01236
sky130_fd_sc_hs__dfxbp_2	CLK	0.01362	0.01404	0.01681
	CLK	0.01210	0.01245	0.01534

Internal switching power(pJ) to Q_N rising :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__dfxbp_1	CLK	0.01103	0.01110	0.01409
	CLK	0.00954	0.00959	0.01260
sky130_fd_sc_hs__dfxbp_2	CLK	0.01363	0.01405	0.01697
	CLK	0.01211	0.01246	0.01545

Internal switching power(pJ) to Q_N falling :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__dfxbp_1	CLK	0.01069	0.01051	0.01314
	CLK	0.00920	0.00901	0.01163
sky130_fd_sc_hs__dfxbp_2	CLK	0.01305	0.01321	0.01560
	CLK	0.01153	0.01169	0.01405

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__dfxbp_1	CLK	0.00185	0.00179	0.00386
	CLK	-0.00013	-0.00019	0.00188
	(!CLK * Q * !Q_N) + (!CLK * !Q * Q_N)	0.00665	0.00655	0.00852
	(!CLK * Q * !Q_N) + (!CLK * !Q * Q_N)	0.00468	0.00457	0.00654
sky130_fd_sc_hs__dfxbp_2	CLK	0.00174	0.00168	0.00377
	CLK	-0.00019	-0.00024	0.00185
	(!CLK * Q * !Q_N) + (!CLK * !Q * Q_N)	0.00653	0.00643	0.00842
	(!CLK * Q * !Q_N) + (!CLK * !Q * Q_N)	0.00462	0.00451	0.00650

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__dfxbp_1	CLK	-0.00009	-0.00006	0.00191
	CLK	0.00189	0.00191	0.00388
	(!CLK * Q * !Q_N) + (!CLK * !Q * Q_N)	0.00382	0.00378	0.00580
	(!CLK * Q * !Q_N) + (!CLK * !Q * Q_N)	0.00579	0.00575	0.00778
sky130_fd_sc_hs__dfxbp_2	CLK	-0.00009	-0.00005	0.00193
	CLK	0.00182	0.00187	0.00385
	(!CLK * Q * !Q_N) + (!CLK * !Q * Q_N)	0.00353	0.00351	0.00555
	(!CLK * Q * !Q_N) + (!CLK * !Q * Q_N)	0.00545	0.00542	0.00747

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)	0.00973	0.00942	0.01441
	(D * Q * !Q_N)	0.00674	0.00641	0.01141
	(!D * !Q * Q_N)	0.00992	0.00960	0.01478
	(!D * !Q * Q_N)	0.00692	0.00659	0.01178
sky130_fd_sc_hs__dfxbp_2	(D * Q * !Q_N)	0.00980	0.00948	0.01462
	(D * Q * !Q_N)	0.00675	0.00643	0.01157
	(!D * !Q * Q_N)	0.00987	0.00956	0.01470
	(!D * !Q * Q_N)	0.00682	0.00650	0.01165

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)	0.00736	0.00736	0.01296
	(D * Q * !Q_N)	0.01035	0.01037	0.01596
	(D * !Q * Q_N)	0.01176	0.01158	0.01739
	(D * !Q * Q_N)	0.01476	0.01458	0.02040
	(!D * Q * !Q_N)	0.01227	0.01235	0.01832
	(!D * Q * !Q_N)	0.01526	0.01533	0.02132
	(!D * !Q * Q_N)	0.00708	0.00704	0.01270
	(!D * !Q * Q_N)	0.01008	0.01005	0.01570
sky130_fd_sc_hs__dfxbp_2	(D * Q * !Q_N)	0.00734	0.00730	0.01291
	(D * Q * !Q_N)	0.01038	0.01035	0.01596
	(D * !Q * Q_N)	0.01184	0.01166	0.01744
	(D * !Q * Q_N)	0.01488	0.01470	0.02048
	(!D * Q * !Q_N)	0.01190	0.01190	0.01792
	(!D * Q * !Q_N)	0.01494	0.01493	0.02097
	(!D * !Q * Q_N)	0.00718	0.00713	0.01277
	(!D * !Q * Q_N)	0.01021	0.01018	0.01581

SKY130_FD_SC_HS__DFXTPx

sky130_fd_sc_hs_tt_1.50v_25C.ccs
Cell Library: Process , Voltage
1.50, 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	0.00171	0.00289	0.83930
sky130_fd_sc_hs__dfxtp_2	0.00176	0.00289	1.67744
sky130_fd_sc_hs__dfxtp_4	0.00175	0.00290	3.15979

Leakage Information

Cell Name	Leakage(nW)		
	Min.	Avg	Max.
sky130_fd_sc_hs__dfxtp_1	0.00000	0.25345	0.49774
sky130_fd_sc_hs__dfxtp_2	0.00000	0.23223	0.42557
sky130_fd_sc_hs__dfxtp_4	0.00000	0.37979	0.66282

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)**	0.23943	0.87457	6.98795
sky130_fd_sc_hs__dfxtp_2	**CLK->Q (RR)**	0.25431	0.77232	6.93755
sky130_fd_sc_hs__dfxtp_4	**CLK->Q (RR)**	0.30482	0.74556	6.99752

Delay(ns) to Q falling :

Cell Name	Timing Arc(Dir)	Delay(ns)		
		First	Mid	Last
sky130_fd_sc_hs__dfxtp_1	**CLK->Q (RF)**	0.27843	0.61780	2.62821
sky130_fd_sc_hs__dfxtp_2	**CLK->Q (RF)**	0.28988	0.59840	2.63647
sky130_fd_sc_hs__dfxtp_4	**CLK->Q (RF)**	0.29681	0.57749	2.64277

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)	-0.02795	-0.07277	-0.41170
	setup	CLK (R)	0.10899	0.13502	0.67806
sky130_fd_sc_hs__dfxtp_2	hold	CLK (R)	-0.02514	-0.06930	-0.39823
	setup	CLK (R)	0.10463	0.13147	0.66524
sky130_fd_sc_hs__dfxtp_4	hold	CLK (R)	-0.02709	-0.06780	-0.38518
	setup	CLK (R)	0.09977	0.13040	0.64217

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)	-0.05045	-0.18698	-1.76217
	setup	CLK (R)	0.19885	0.31555	2.97959
sky130_fd_sc_hs__dfxtp_2	hold	CLK (R)	-0.04473	-0.17600	-1.79479
	setup	CLK (R)	0.18269	0.30243	2.92495
sky130_fd_sc_hs__dfxtp_4	hold	CLK (R)	-0.04583	-0.17086	-1.91564
	setup	CLK (R)	0.18518	0.30088	2.91108

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 ()	0.11452	0.74341	16.50020
	min_pulse_width	CLK ()	0.10067	0.74341	16.50020
sky130_fd_sc_hs__dfxtp_2	min_pulse_width	CLK ()	0.12560	0.74341	16.50020
	min_pulse_width	CLK ()	0.10344	0.74341	16.50020
sky130_fd_sc_hs__dfxtp_4	min_pulse_width	CLK ()	0.15885	0.74341	16.50020
	min_pulse_width	CLK ()	0.10621	0.74341	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 ()	0.21980	0.74341	16.50020
	min_pulse_width	CLK ()	0.28352	0.74341	16.50020
sky130_fd_sc_hs__dfxtp_2	min_pulse_width	CLK ()	0.21426	0.74341	16.50020
	min_pulse_width	CLK ()	0.27521	0.74341	16.50020
sky130_fd_sc_hs__dfxtp_4	min_pulse_width	CLK ()	0.20872	0.74341	16.50020
	min_pulse_width	CLK ()	0.28075	0.74341	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	0.01660	0.01618	0.02163
	CLK	0.01357	0.01315	0.01860
sky130_fd_sc_hs__dfxtp_2	CLK	0.01871	0.01852	0.02393
	CLK	0.01566	0.01547	0.02089
sky130_fd_sc_hs__dfxtp_4	CLK	0.02335	0.02364	0.02911
	CLK	0.02034	0.02064	0.02621

Internal switching power(pJ) to Q falling :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__dfxtp_1	CLK	0.01738	0.01733	0.02310
	CLK	0.01435	0.01430	0.01994
sky130_fd_sc_hs__dfxtp_2	CLK	0.01929	0.01957	0.02579
	CLK	0.01624	0.01652	0.02242
sky130_fd_sc_hs__dfxtp_4	CLK	0.02457	0.02561	0.03181
	CLK	0.02155	0.02249	0.02848

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__dfxtp_1	CLK	0.00171	0.00165	0.00370
	CLK	-0.00022	-0.00029	0.00177
	!CLK	0.00655	0.00644	0.00840
	!CLK	0.00462	0.00451	0.00648
sky130_fd_sc_hs__dfxtp_2	CLK	0.00182	0.00176	0.00384
	CLK	-0.00016	-0.00022	0.00187
	!CLK	0.00648	0.00637	0.00835
	!CLK	0.00451	0.00439	0.00638
sky130_fd_sc_hs__dfxtp_4	CLK	0.00172	0.00167	0.00376
	CLK	-0.00025	-0.00030	0.00179
	!CLK	0.00648	0.00638	0.00837
	!CLK	0.00452	0.00441	0.00640

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__dfxtp_1	CLK	0.00018	0.00020	0.00214
	CLK	0.00211	0.00214	0.00407
	!CLK	0.00408	0.00404	0.00607
	!CLK	0.00601	0.00597	0.00800
sky130_fd_sc_hs__dfxtp_2	CLK	-0.00013	-0.00010	0.00188
	CLK	0.00185	0.00189	0.00386
	!CLK	0.00388	0.00384	0.00587
	!CLK	0.00585	0.00581	0.00785
sky130_fd_sc_hs__dfxtp_4	CLK	-0.00009	-0.00005	0.00194
	CLK	0.00188	0.00192	0.00391
	!CLK	0.00382	0.00379	0.00581
	!CLK	0.00579	0.00575	0.00778

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__dfxtp_1	(D * Q)	0.00979	0.00946	0.01457
	(D * Q)	0.00674	0.00641	0.01153
	(!D * !Q)	0.01012	0.00979	0.01491
	(!D * !Q)	0.00708	0.00674	0.01187
sky130_fd_sc_hs__dfxtp_2	(D * Q)	0.00983	0.00950	0.01462
	(D * Q)	0.00676	0.00643	0.01156
	(!D * !Q)	0.01008	0.00975	0.01489
	(!D * !Q)	0.00701	0.00668	0.01183
sky130_fd_sc_hs__dfxtp_4	(D * Q)	0.00975	0.00943	0.01455
	(D * Q)	0.00672	0.00640	0.01152
	(!D * !Q)	0.01002	0.00969	0.01481
	(!D * !Q)	0.00699	0.00666	0.01179

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__dfxtp_1	(D * Q)	0.00766	0.00768	0.01323
	(D * Q)	0.01069	0.01072	0.01626
	(D * !Q)	0.01200	0.01181	0.01759
	(D * !Q)	0.01503	0.01485	0.02062
	(!D * Q)	0.01252	0.01261	0.01856
	(!D * Q)	0.01555	0.01564	0.02160
	(!D * !Q)	0.00724	0.00720	0.01282
	(!D * !Q)	0.01027	0.01023	0.01586
sky130_fd_sc_hs__dfxtp_2	(D * Q)	0.00750	0.00751	0.01308
	(D * Q)	0.01056	0.01057	0.01614
	(D * !Q)	0.01173	0.01156	0.01734
	(D * !Q)	0.01478	0.01461	0.02041
	(!D * Q)	0.01244	0.01252	0.01849
	(!D * Q)	0.01549	0.01557	0.02154
	(!D * !Q)	0.00717	0.00712	0.01275
	(!D * !Q)	0.01022	0.01018	0.01582
sky130_fd_sc_hs__dfxtp_4	(D * Q)	0.00780	0.00780	0.01335
	(D * Q)	0.01081	0.01082	0.01637
	(D * !Q)	0.01205	0.01187	0.01763
	(D * !Q)	0.01507	0.01489	0.02065
	(!D * Q)	0.01273	0.01281	0.01876
	(!D * Q)	0.01574	0.01583	0.02179
	(!D * !Q)	0.00744	0.00740	0.01301
	(!D * !Q)	0.01046	0.01042	0.01604

SKY130_FD_SC_HS__DIODE_2

sky130_fd_sc_hs_tt_1.50v_25C.ccs
Cell Library: Process , Voltage 1.50, Temp 25.00

Footprint

Cell Name	Area
sky130_fd_sc_hs__diode_2	0.00000

Pin Capacitance Information

Leakage Information

Cell Name	Leakage(nW)		
	Min.	**Avg**	**Max.**
sky130_fd_sc_hs__diode_2	0.00000	0.00000	0.00000

SKY130_FD_SC_HS__DLCLKPx

sky130_fd_sc_hs_tt_1.50v_25C.ccs
Cell Library: Process , Voltage 1.50, 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	0.00253	0.00434	0.86345
sky130_fd_sc_hs__dlclkp_2	0.00252	0.00466	1.68403
sky130_fd_sc_hs__dlclkp_4	0.00250	0.00487	3.32600

Leakage Information

Cell Name	Leakage(nW)		
	Min.	Avg	Max.
sky130_fd_sc_hs__dlclkp_1	0.00000	0.31957	0.54538
sky130_fd_sc_hs__dlclkp_2	0.00000	0.28901	0.39640
sky130_fd_sc_hs__dlclkp_4	0.00000	0.30204	0.31657

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)**	0.08862	0.69181	6.87480
sky130_fd_sc_hs__dlclkp_2	**CLK->GCLK (RR)**	0.09091	0.59902	6.79357
sky130_fd_sc_hs__dlclkp_4	**CLK->GCLK (RR)**	0.12474	0.60144	7.19886

Delay(ns) to GCLK falling :

Cell Name	Timing Arc(Dir)	Delay(ns)		
		First	Mid	Last
sky130_fd_sc_hs__dlclkp_1	**CLK->GCLK (FF)**	0.10493	0.59094	4.24054
sky130_fd_sc_hs__dlclkp_2	**CLK->GCLK (FF)**	0.11838	0.61433	4.52287
sky130_fd_sc_hs__dlclkp_4	**CLK->GCLK (FF)**	0.15890	0.68111	4.98998

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)	-0.03914	-0.09572	-0.53507
	setup	CLK (R)	0.16224	0.20539	1.33907
sky130_fd_sc_hs__dlclkp_2	hold	CLK (R)	-0.03939	-0.09572	-0.52622
	setup	CLK (R)	0.17313	0.19928	1.59724
sky130_fd_sc_hs__dlclkp_4	hold	CLK (R)	-0.03842	-0.09333	-0.51785
	setup	CLK (R)	0.16765	0.17664	1.46646

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)	-0.08258	-0.18762	-2.26807
	setup	CLK (R)	0.15201	0.27035	2.46232
sky130_fd_sc_hs__dlclkp_2	hold	CLK (R)	-0.08083	-0.18525	-2.25300
	setup	CLK (R)	0.14732	0.25488	2.35978
sky130_fd_sc_hs__dlclkp_4	hold	CLK (R)	-0.07965	-0.18283	-2.25075
	setup	CLK (R)	0.12171	0.21104	2.34573

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 ()	0.06465	0.74341	16.50020
sky130_fd_sc_hs__dlclkp_2	min_pulse_width	CLK ()	0.07020	0.74341	16.50020
sky130_fd_sc_hs__dlclkp_4	min_pulse_width	CLK ()	0.10067	0.74341	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 ()	0.24196	0.74341	16.50020
	min_pulse_width	CLK ()	0.22534	0.74341	16.50020
sky130_fd_sc_hs__dlclkp_2	min_pulse_width	CLK ()	0.25858	0.74341	16.50020
	min_pulse_width	CLK ()	0.22811	0.74341	16.50020
sky130_fd_sc_hs__dlclkp_4	min_pulse_width	CLK ()	0.25027	0.74341	16.50020
	min_pulse_width	CLK ()	0.22257	0.74341	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	0.01222	0.01209	0.02615
	CLK	0.00734	0.00721	0.02131
sky130_fd_sc_hs__dlclkp_2	CLK	0.01459	0.01463	0.02701
	CLK	0.00936	0.00939	0.02179
sky130_fd_sc_hs__dlclkp_4	CLK	0.01891	0.01928	0.03039
	CLK	0.01354	0.01392	0.02530

Internal switching power(pJ) to GCLK falling :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__dlclkp_1	CLK	0.01351	0.01404	0.02955
	CLK	0.01848	0.01899	0.03434
sky130_fd_sc_hs__dlclkp_2	CLK	0.01579	0.01680	0.03140
	CLK	0.02109	0.02202	0.03592
sky130_fd_sc_hs__dlclkp_4	CLK	0.02050	0.02175	0.03588
	CLK	0.02585	0.02705	0.03994

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__dlclkp_1	CLK	0.00133	0.00119	0.00117
	CLK	-0.00116	-0.00131	-0.00132
	(!CLK * !GCLK)	0.00875	0.00850	0.01121
	(!CLK * !GCLK)	0.00608	0.00582	0.00852
sky130_fd_sc_hs__dlclkp_2	CLK	0.00102	0.00103	0.00103
	CLK	-0.00146	-0.00147	-0.00147
	(!CLK * !GCLK)	0.00885	0.00861	0.01128
	(!CLK * !GCLK)	0.00619	0.00594	0.00862
sky130_fd_sc_hs__dlclkp_4	CLK	0.00099	0.00100	0.00100
	CLK	-0.00145	-0.00147	-0.00147
	(!CLK * !GCLK)	0.00865	0.00842	0.01108
	(!CLK * !GCLK)	0.00613	0.00588	0.00855

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__dlclkp_1	CLK	-0.00114	-0.00116	-0.00116
	CLK	0.00133	0.00135	0.00134
	(!CLK * !GCLK)	0.00580	0.00555	0.00843
	(!CLK * !GCLK)	0.00849	0.00824	0.01110
sky130_fd_sc_hs__dlclkp_2	CLK	-0.00097	-0.00102	-0.00102
	CLK	0.00151	0.00149	0.00148
	(!CLK * !GCLK)	0.00606	0.00582	0.00867
	(!CLK * !GCLK)	0.00873	0.00850	0.01134
sky130_fd_sc_hs__dlclkp_4	CLK	-0.00094	-0.00099	-0.00099
	CLK	0.00151	0.00149	0.00147
	(!CLK * !GCLK)	0.00650	0.00626	0.00911
	(!CLK * !GCLK)	0.00903	0.00879	0.01163

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__dlclkp_1	(!GATE * !GCLK)	0.00763	0.00747	0.01526
	(!GATE * !GCLK)	0.00299	0.00279	0.01060
sky130_fd_sc_hs__dlclkp_2	(!GATE * !GCLK)	0.00803	0.00782	0.01556
	(!GATE * !GCLK)	0.00306	0.00281	0.01056
sky130_fd_sc_hs__dlclkp_4	(!GATE * !GCLK)	0.00799	0.00776	0.01543
	(!GATE * !GCLK)	0.00284	0.00258	0.01027

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__dlclkp_1	(GATE * !GCLK)	0.01045	0.01043	0.01970
	(GATE * !GCLK)	0.01509	0.01509	0.02436
	(!GATE * !GCLK)	0.00354	0.00377	0.01223
	(!GATE * !GCLK)	0.00819	0.00845	0.01690
sky130_fd_sc_hs__dlclkp_2	(GATE * !GCLK)	0.01074	0.01092	0.01996
	(GATE * !GCLK)	0.01576	0.01594	0.02498
	(!GATE * !GCLK)	0.00371	0.00393	0.01237
	(!GATE * !GCLK)	0.00870	0.00894	0.01739
sky130_fd_sc_hs__dlclkp_4	(GATE * !GCLK)	0.01043	0.01056	0.01952
	(GATE * !GCLK)	0.01571	0.01586	0.02482
	(!GATE * !GCLK)	0.00349	0.00368	0.01205
	(!GATE * !GCLK)	0.00864	0.00885	0.01722

SKY130_FD_SC_HS__DLRBNx

sky130_fd_sc_hs_tt_1.50v_25C.ccs
Cell Library: Process , Voltage
1.50, 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	0.00227	0.00251	0.00276	0.84698	0.84699
sky130_fd_sc_hs__dlrbn_2	0.00228	0.00250	0.00286	1.49847	1.67128

Leakage Information

Cell Name	Leakage(nW)		
	Min.	Avg	Max.
sky130_fd_sc_hs__dlrbn_1	0.00000	0.41842	0.57512
sky130_fd_sc_hs__dlrbn_2	0.00000	0.40010	0.53268

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)	0.34231	0.95342	7.09490
	GATE_N->Q (-R)	0.40834	1.20556	8.88378
	RESET_B->Q (RR)	0.11247	0.75615	7.06269
sky130_fd_sc_hs__dlrbn_2	D->Q (RR)	0.34922	0.86696	6.93751
	GATE_N->Q (-R)	0.41940	1.12389	8.74318
	RESET_B->Q (RR)	0.12087	0.68856	7.03012

Delay(ns) to Q falling :

Cell Name	Timing Arc(Dir)	Delay(ns)		
		First	Mid	Last
sky130_fd_sc_hs__dlrbn_1	D->Q (FF)	0.26035	0.72882	4.02961
	GATE_N->Q (-F)	0.28724	0.79957	4.37951
	RESET_B->Q (FF)	0.12629	0.67925	4.66293
sky130_fd_sc_hs__dlrbn_2	D->Q (FF)	0.28746	0.72864	3.83469
	GATE_N->Q (-F)	0.31510	0.79983	4.18418
	RESET_B->Q (FF)	0.14877	0.69129	4.64959

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)	0.31992	1.07544	8.43562
	GATE_N->Q_N (-R)	0.34695	1.14589	8.78533
	RESET_B->Q_N (FR)	0.18747	1.01197	8.80870
sky130_fd_sc_hs__dlrbn_2	D->Q_N (FR)	0.37219	1.02634	8.76588
	GATE_N->Q_N (-R)	0.40015	1.09695	9.11655
	RESET_B->Q_N (FR)	0.23568	0.98139	9.30859

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)	0.38622	0.67917	2.61124
	GATE_N->Q_N (-F)	0.45232	0.93136	4.39887
	RESET_B->Q_N (RF)	0.15647	0.47707	2.46488
sky130_fd_sc_hs__dlrbn_2	D->Q_N (RF)	0.43770	0.71615	2.86677
	GATE_N->Q_N (-F)	0.50796	0.97316	4.66946
	RESET_B->Q_N (RF)	0.20868	0.53519	2.88663

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 ()**	0.15054	0.74341	16.50020
sky130_fd_sc_hs__dlrbn_2	**min_pulse_width**	**RESET_B ()**	0.18932	0.74341	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	0.00897	0.00902	0.01228
	D	0.00764	0.00768	0.01095
	GATE_N	0.00924	0.00941	0.01387
	GATE_N	0.01050	0.01066	0.01489
	RESET_B	0.00593	0.00593	0.00756
	RESET_B	0.00438	0.00436	0.00601
sky130_fd_sc_hs__dlrbn_2	D	0.01076	0.01111	0.01440
	D	0.00945	0.00981	0.01310
	GATE_N	0.01104	0.01154	0.01606
	GATE_N	0.01230	0.01277	0.01704
	RESET_B	0.00789	0.00817	0.00946
	RESET_B	0.00631	0.00655	0.00788

Internal switching power(pJ) to Q falling :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__dlrbn_1	D	0.00704	0.00732	0.01075
	D	0.00837	0.00864	0.01207
	GATE_N	0.00855	0.00875	0.01312
	GATE_N	0.00997	0.01018	0.01444
	RESET_B	0.00620	0.00625	0.00865
	RESET_B	0.00764	0.00768	0.00991
sky130_fd_sc_hs__dlrbn_2	D	0.00901	0.00966	0.01322
	D	0.01032	0.01096	0.01443
	GATE_N	0.01052	0.01108	0.01542
	GATE_N	0.01192	0.01248	0.01672
	RESET_B	0.00810	0.00837	0.01076
	RESET_B	0.00958	0.00984	0.01202

Internal switching power(pJ) to Q_N rising :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__dlrbn_1	D	0.00706	0.00734	0.01096
	D	0.00838	0.00866	0.01225
	GATE_N	0.00856	0.00876	0.01341
	GATE_N	0.00998	0.01019	0.01464
	RESET_B	0.00621	0.00625	0.00887
	RESET_B	0.00765	0.00769	0.01008
sky130_fd_sc_hs__dlrbn_2	D	0.00903	0.00968	0.01363
	D	0.01033	0.01098	0.01465
	GATE_N	0.01053	0.01118	0.01636
	GATE_N	0.01193	0.01257	0.01703
	RESET_B	0.00811	0.00839	0.01161
	RESET_B	0.00959	0.00987	0.01226

Internal switching power(pJ) to Q_N falling :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__dlrbn_1	D	0.00896	0.00901	0.01212
	D	0.00763	0.00767	0.01080
	GATE_N	0.00923	0.00940	0.01355
	GATE_N	0.01049	0.01065	0.01469
	RESET_B	0.00592	0.00592	0.00744
	RESET_B	0.00438	0.00435	0.00589
sky130_fd_sc_hs__dlrbn_2	D	0.01075	0.01112	0.01428
	D	0.00945	0.00980	0.01290
	GATE_N	0.01104	0.01153	0.01571
	GATE_N	0.01229	0.01276	0.01675
	RESET_B	0.00789	0.00813	0.00938
	RESET_B	0.00630	0.00655	0.00773

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)	0.00393	0.00381	0.01032
	(GATE_N * RESET_B * Q * !Q_N) + (GATE_N * RESET_B * !Q * Q_N) + (GATE_N * !RESET_B * !Q * Q_N)	0.00145	0.00132	0.00783
	(!GATE_N * !RESET_B * !Q * Q_N)	0.00729	0.00710	0.01357
	(!GATE_N * !RESET_B * !Q * Q_N)	0.00497	0.00476	0.01124
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)	0.00391	0.00379	0.01027
	(GATE_N * RESET_B * Q * !Q_N) + (GATE_N * RESET_B * !Q * Q_N) + (GATE_N * !RESET_B * !Q * Q_N)	0.00145	0.00131	0.00780
	(!GATE_N * !RESET_B * !Q * Q_N)	0.00689	0.00669	0.01315
	(!GATE_N * !RESET_B * !Q * Q_N)	0.00458	0.00437	0.01083

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)	0.00114	0.00136	0.00859
	(GATE_N * RESET_B * Q * !Q_N) + (GATE_N * RESET_B * !Q * Q_N) + (GATE_N * !RESET_B * !Q * Q_N)	0.00363	0.00386	0.01108
	(!GATE_N * !RESET_B * !Q * Q_N)	0.00536	0.00548	0.01264
	(!GATE_N * !RESET_B * !Q * Q_N)	0.00770	0.00782	0.01499
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)	0.00108	0.00131	0.00848
	(GATE_N * RESET_B * Q * !Q_N) + (GATE_N * RESET_B * !Q * Q_N) + (GATE_N * !RESET_B * !Q * Q_N)	0.00355	0.00377	0.01095
	(!GATE_N * !RESET_B * !Q * Q_N)	0.00550	0.00562	0.01275
	(!GATE_N * !RESET_B * !Q * Q_N)	0.00782	0.00795	0.01507

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)	0.00702	0.00678	0.01436
	(D * RESET_B * Q * !Q_N)	0.00434	0.00408	0.01168
	(D * !RESET_B * !Q * Q_N)	0.01089	0.01063	0.01816
	(D * !RESET_B * !Q * Q_N)	0.00806	0.00779	0.01532
	(!D * !Q * Q_N)	0.00744	0.00722	0.01472
	(!D * !Q * Q_N)	0.00476	0.00453	0.01204
sky130_fd_sc_hs__dlrbn_2	(D * RESET_B * Q * !Q_N)	0.00703	0.00678	0.01434
	(D * RESET_B * Q * !Q_N)	0.00438	0.00411	0.01168
	(D * !RESET_B * !Q * Q_N)	0.01102	0.01075	0.01826
	(D * !RESET_B * !Q * Q_N)	0.00822	0.00794	0.01545
	(!D * !Q * Q_N)	0.00736	0.00713	0.01461
	(!D * !Q * Q_N)	0.00470	0.00447	0.01195

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)	0.00541	0.00551	0.01403
	(D * RESET_B * Q * !Q_N)	0.00809	0.00819	0.01671
	(D * !RESET_B * !Q * Q_N)	0.00781	0.00784	0.01613
	(D * !RESET_B * !Q * Q_N)	0.01064	0.01068	0.01897
	(!D * !Q * Q_N)	0.00495	0.00504	0.01360
	(!D * !Q * Q_N)	0.00763	0.00773	0.01628
sky130_fd_sc_hs__dlrbn_2	(D * RESET_B * Q * !Q_N)	0.00533	0.00542	0.01388
	(D * RESET_B * Q * !Q_N)	0.00799	0.00808	0.01654
	(D * !RESET_B * !Q * Q_N)	0.00743	0.00746	0.01569
	(D * !RESET_B * !Q * Q_N)	0.01025	0.01028	0.01851
	(!D * !Q * Q_N)	0.00494	0.00504	0.01354
	(!D * !Q * Q_N)	0.00760	0.00770	0.01620

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)	0.00116	0.00116	0.00116
	(D * GATE_N * !Q * Q_N) + (!D * !Q * Q_N)	-0.00149	-0.00150	-0.00149
sky130_fd_sc_hs__dlrbn_2	(D * GATE_N * !Q * Q_N) + (!D * !Q * Q_N)	0.00123	0.00124	0.00123
	(D * GATE_N * !Q * Q_N) + (!D * !Q * Q_N)	-0.00150	-0.00151	-0.00151

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)	-0.00111	-0.00116	-0.00115
	(D * GATE_N * !Q * Q_N) + (!D * !Q * Q_N)	0.00155	0.00153	0.00151
sky130_fd_sc_hs__dlrbn_2	(D * GATE_N * !Q * Q_N) + (!D * !Q * Q_N)	-0.00118	-0.00123	-0.00123
	(D * GATE_N * !Q * Q_N) + (!D * !Q * Q_N)	0.00156	0.00155	0.00152

SKY130_FD_SC_HS__DLRBPx

sky130_fd_sc_hs_tt_1.50v_25C.ccs
Cell Library: Process , Voltage
1.50, 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	0.00210	0.00240	0.00285	0.83460	0.83133
sky130_fd_sc_hs__dlrbp_2	0.00211	0.00240	0.00285	1.66517	1.69453

Leakage Information

Cell Name	Leakage(nW)		
	Min.	Avg	Max.
sky130_fd_sc_hs__dlrbp_1	0.00000	0.41842	0.57512
sky130_fd_sc_hs__dlrbp_2	0.00000	0.40010	0.53268

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)	0.33127	0.93428	6.98384
	GATE->Q (-R)	0.29259	0.89925	6.91930
	RESET_B->Q (RR)	0.11438	0.75738	7.00750
sky130_fd_sc_hs__dlrbp_2	D->Q (RR)	0.34090	0.83470	6.94398
	GATE->Q (-R)	0.29929	0.79490	6.86775
	RESET_B->Q (RR)	0.11994	0.67082	7.09017

Delay(ns) to Q falling :

Cell Name	Timing Arc(Dir)	Delay(ns)		
		First	Mid	Last
sky130_fd_sc_hs__dlrbp_1	D->Q (FF)	0.25833	0.72049	3.97938
	GATE->Q (-F)	0.27714	0.58570	2.38782
	RESET_B->Q (FF)	0.12854	0.68345	4.65564
sky130_fd_sc_hs__dlrbp_2	D->Q (FF)	0.28537	0.73252	4.09614
	GATE->Q (-F)	0.30335	0.59470	2.49594
	RESET_B->Q (FF)	0.14261	0.69203	4.91353

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)	0.32049	1.07579	8.44993
	GATE->Q_N (-R)	0.33944	0.94110	6.85841
	RESET_B->Q_N (FR)	0.19245	1.02472	8.86073
sky130_fd_sc_hs__dlrbp_2	D->Q_N (FR)	0.36864	1.00076	8.47820
	GATE->Q_N (-R)	0.38687	0.86321	6.87817
	RESET_B->Q_N (FR)	0.22525	0.95393	9.01894

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)	0.37688	0.66143	2.52053
	GATE->Q_N (-F)	0.33815	0.62658	2.45605
	RESET_B->Q_N (RF)	0.15996	0.47989	2.42878
sky130_fd_sc_hs__dlrbp_2	D->Q_N (RF)	0.42045	0.67611	2.65528
	GATE->Q_N (-F)	0.37895	0.63617	2.58004
	RESET_B->Q_N (RF)	0.19877	0.50912	2.71524

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 ()**	0.15054	0.74341	16.50020
sky130_fd_sc_hs__dlrbp_2	**min_pulse_width**	**RESET_B ()**	0.17824	0.74341	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	0.00848	0.00853	0.01181
	D	0.00723	0.00728	0.01057
	GATE	0.00975	0.00973	0.01356
	GATE	0.00835	0.00830	0.01217
	RESET_B	0.00597	0.00595	0.00754
	RESET_B	0.00438	0.00433	0.00595
sky130_fd_sc_hs__dlrbp_2	D	0.01057	0.01099	0.01421
	D	0.00932	0.00969	0.01298
	GATE	0.01179	0.01205	0.01602
	GATE	0.01039	0.01066	0.01461
	RESET_B	0.00799	0.00832	0.00985
	RESET_B	0.00639	0.00664	0.00822

Internal switching power(pJ) to Q falling :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__dlrbp_1	D	0.00731	0.00760	0.01107
	D	0.00855	0.00884	0.01227
	GATE	0.01002	0.01019	0.01394
	GATE	0.00882	0.00895	0.01273
	RESET_B	0.00629	0.00630	0.00869
	RESET_B	0.00777	0.00778	0.01002
sky130_fd_sc_hs__dlrbp_2	D	0.00929	0.00990	0.01351
	D	0.01053	0.01114	0.01460
	GATE	0.01200	0.01246	0.01633
	GATE	0.01078	0.01124	0.01509
	RESET_B	0.00823	0.00854	0.01081
	RESET_B	0.00972	0.01001	0.01224

Internal switching power(pJ) to Q_N rising :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__dlrbp_1	D	0.00732	0.00762	0.01125
	D	0.00856	0.00886	0.01245
	GATE	0.01004	0.01021	0.01408
	GATE	0.00883	0.00898	0.01287
	RESET_B	0.00630	0.00631	0.00897
	RESET_B	0.00779	0.00779	0.01020
sky130_fd_sc_hs__dlrbp_2	D	0.00930	0.00991	0.01371
	D	0.01054	0.01116	0.01481
	GATE	0.01201	0.01273	0.01647
	GATE	0.01079	0.01127	0.01524
	RESET_B	0.00824	0.00855	0.01176
	RESET_B	0.00973	0.01002	0.01252

Internal switching power(pJ) to Q_N falling :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__dlrbp_1	D	0.00847	0.00858	0.01165
	D	0.00722	0.00728	0.01041
	GATE	0.00973	0.00969	0.01341
	GATE	0.00833	0.00830	0.01202
	RESET_B	0.00596	0.00594	0.00744
	RESET_B	0.00437	0.00433	0.00584
sky130_fd_sc_hs__dlrbp_2	D	0.01056	0.01090	0.01406
	D	0.00931	0.00967	0.01280
	GATE	0.01178	0.01211	0.01586
	GATE	0.01038	0.01067	0.01443
	RESET_B	0.00798	0.00824	0.00976
	RESET_B	0.00639	0.00663	0.00813

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)	0.00628	0.00610	0.01264
	(GATE * !RESET_B * !Q * Q_N)	0.00416	0.00398	0.01050
	(!GATE * RESET_B * Q * !Q_N) + (!GATE * RESET_B * !Q * Q_N) + (!GATE * !RESET_B * !Q * Q_N)	0.00381	0.00370	0.01026
	(!GATE * RESET_B * Q * !Q_N) + (!GATE * RESET_B * !Q * Q_N) + (!GATE * !RESET_B * !Q * Q_N)	0.00151	0.00139	0.00797
sky130_fd_sc_hs__dlrbp_2	(GATE * !RESET_B * !Q * Q_N)	0.00634	0.00616	0.01267
	(GATE * !RESET_B * !Q * Q_N)	0.00421	0.00403	0.01054
	(!GATE * RESET_B * Q * !Q_N) + (!GATE * RESET_B * !Q * Q_N) + (!GATE * !RESET_B * !Q * Q_N)	0.00381	0.00370	0.01024
	(!GATE * RESET_B * Q * !Q_N) + (!GATE * RESET_B * !Q * Q_N) + (!GATE * !RESET_B * !Q * Q_N)	0.00150	0.00138	0.00793

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)	0.00560	0.00576	0.01291
	(GATE * !RESET_B * !Q * Q_N)	0.00774	0.00790	0.01504
	(!GATE * RESET_B * Q * !Q_N) + (!GATE * RESET_B * !Q * Q_N) + (!GATE * !RESET_B * !Q * Q_N)	0.00088	0.00113	0.00834
	(!GATE * RESET_B * Q * !Q_N) + (!GATE * RESET_B * !Q * Q_N) + (!GATE * !RESET_B * !Q * Q_N)	0.00317	0.00343	0.01063
sky130_fd_sc_hs__dlrbp_2	(GATE * !RESET_B * !Q * Q_N)	0.00566	0.00582	0.01295
	(GATE * !RESET_B * !Q * Q_N)	0.00780	0.00796	0.01509
	(!GATE * RESET_B * Q * !Q_N) + (!GATE * RESET_B * !Q * Q_N) + (!GATE * !RESET_B * !Q * Q_N)	0.00094	0.00120	0.00840
	(!GATE * RESET_B * Q * !Q_N) + (!GATE * RESET_B * !Q * Q_N) + (!GATE * !RESET_B * !Q * Q_N)	0.00325	0.00352	0.01071

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)	0.00725	0.00702	0.01462
	(D * RESET_B * Q * !Q_N)	0.00464	0.00441	0.01202
	(D * !RESET_B * !Q * Q_N)	0.00852	0.00819	0.01586
	(D * !RESET_B * !Q * Q_N)	0.00608	0.00575	0.01343
	(!D * !Q * Q_N)	0.00726	0.00706	0.01461
	(!D * !Q * Q_N)	0.00466	0.00445	0.01202
sky130_fd_sc_hs__dlrbp_2	(D * RESET_B * Q * !Q_N)	0.00725	0.00703	0.01464
	(D * RESET_B * Q * !Q_N)	0.00465	0.00441	0.01203
	(D * !RESET_B * !Q * Q_N)	0.00851	0.00817	0.01587
	(D * !RESET_B * !Q * Q_N)	0.00608	0.00573	0.01343
	(!D * !Q * Q_N)	0.00723	0.00704	0.01461
	(!D * !Q * Q_N)	0.00461	0.00442	0.01200

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)	0.00448	0.00459	0.01305
	(D * RESET_B * Q * !Q_N)	0.00707	0.00720	0.01564
	(D * !RESET_B * !Q * Q_N)	0.00756	0.00754	0.01633
	(D * !RESET_B * !Q * Q_N)	0.01000	0.00999	0.01878
	(!D * !Q * Q_N)	0.00445	0.00455	0.01306
	(!D * !Q * Q_N)	0.00704	0.00715	0.01566
sky130_fd_sc_hs__dlrbp_2	(D * RESET_B * Q * !Q_N)	0.00444	0.00457	0.01302
	(D * RESET_B * Q * !Q_N)	0.00705	0.00717	0.01563
	(D * !RESET_B * !Q * Q_N)	0.00751	0.00752	0.01627
	(D * !RESET_B * !Q * Q_N)	0.00994	0.00996	0.01871
	(!D * !Q * Q_N)	0.00445	0.00456	0.01307
	(!D * !Q * Q_N)	0.00705	0.00717	0.01568

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)	0.00118	0.00118	0.00118
	(D * !GATE * !Q * Q_N) + (!D * !Q * Q_N)	-0.00153	-0.00153	-0.00153
sky130_fd_sc_hs__dlrbp_2	(D * !GATE * !Q * Q_N) + (!D * !Q * Q_N)	0.00119	0.00121	0.00119
	(D * !GATE * !Q * Q_N) + (!D * !Q * Q_N)	-0.00152	-0.00154	-0.00152

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)	-0.00113	-0.00118	-0.00117
	(D * !GATE * !Q * Q_N) + (!D * !Q * Q_N)	0.00159	0.00157	0.00155
sky130_fd_sc_hs__dlrbp_2	(D * !GATE * !Q * Q_N) + (!D * !Q * Q_N)	-0.00114	-0.00119	-0.00119
	(D * !GATE * !Q * Q_N) + (!D * !Q * Q_N)	0.00158	0.00157	0.00154

SKY130_FD_SC_HS__DLRTNx

sky130_fd_sc_hs_tt_1.50v_25C.ccs
Cell Library: Process , Voltage
1.50, 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	0.00209	0.00243	0.00272	0.85983
sky130_fd_sc_hs__dlrtn_2	0.00211	0.00240	0.00281	1.66585
sky130_fd_sc_hs__dlrtn_4	0.00211	0.00242	0.00457	3.15248

Leakage Information

Cell Name	Leakage(nW)		
	Min.	**Avg**	**Max.**
sky130_fd_sc_hs__dlrtn_1	0.00000	0.32639	0.46540
sky130_fd_sc_hs__dlrtn_2	0.00000	0.32186	0.44907
sky130_fd_sc_hs__dlrtn_4	0.00000	0.53298	0.93523

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)	0.31746	0.91997	7.00873
	GATE_N->Q (-R)	0.37139	1.15113	8.74078
	RESET_B->Q (RR)	0.09893	0.71770	6.90332
sky130_fd_sc_hs__dlrtn_2	D->Q (RR)	0.32861	0.82338	6.96864
	GATE_N->Q (-R)	0.38265	1.05464	8.69959
	RESET_B->Q (RR)	0.10472	0.63417	6.96073
sky130_fd_sc_hs__dlrtn_4	D->Q (RR)	0.36576	0.78159	6.99736
	GATE_N->Q (-R)	0.42030	1.01601	8.72941
	RESET_B->Q (RR)	0.11250	0.56161	7.00437

Delay(ns) to Q falling :

Cell Name	Timing Arc(Dir)	Delay(ns)		
		First	Mid	Last
sky130_fd_sc_hs__dlrtn_1	D->Q (FF)	0.24166	0.70083	4.02971
	GATE_N->Q (-F)	0.26033	0.75857	4.33020
	RESET_B->Q (FF)	0.11398	0.63755	4.46788
sky130_fd_sc_hs__dlrtn_2	D->Q (FF)	0.25419	0.68152	3.96293
	GATE_N->Q (-F)	0.27237	0.73891	4.26589
	RESET_B->Q (FF)	0.12505	0.64301	4.63111
sky130_fd_sc_hs__dlrtn_4	D->Q (FF)	0.26777	0.67339	4.04735
	GATE_N->Q (-F)	0.29030	0.73892	4.37635
	RESET_B->Q (FF)	0.13285	0.60711	4.50276

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 ()**	0.13392	0.74341	16.50020
sky130_fd_sc_hs__dlrtn_2	**min_pulse_width**	**RESET_B ()**	0.15885	0.74341	16.50020
sky130_fd_sc_hs__dlrtn_4	**min_pulse_width**	**RESET_B ()**	0.18101	0.74341	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	0.01253	0.01247	0.01899
	D	0.01007	0.01006	0.01657
	GATE_N	0.01296	0.01315	0.02157
	GATE_N	0.01540	0.01559	0.02407
	RESET_B	0.00752	0.00737	0.01124
	RESET_B	0.00447	0.00433	0.00820
sky130_fd_sc_hs__dlrtn_2	D	0.01435	0.01462	0.02120
	D	0.01191	0.01220	0.01878
	GATE_N	0.01482	0.01535	0.02387
	GATE_N	0.01727	0.01780	0.02642
	RESET_B	0.00928	0.00938	0.01232
	RESET_B	0.00615	0.00624	0.00919
sky130_fd_sc_hs__dlrtn_4	D	0.02045	0.02135	0.02828
	D	0.01785	0.01876	0.02581
	GATE_N	0.02096	0.02218	0.03100
	GATE_N	0.02325	0.02440	0.03348
	RESET_B	0.01626	0.01676	0.02659
	RESET_B	0.01115	0.01165	0.02148

Internal switching power(pJ) to Q falling :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__dlrtn_1	D	0.01026	0.01064	0.01771
	D	0.01271	0.01308	0.02014
	GATE_N	0.01234	0.01255	0.02133
	GATE_N	0.01515	0.01535	0.02413
	RESET_B	0.00812	0.00822	0.01384
	RESET_B	0.01096	0.01103	0.01625
sky130_fd_sc_hs__dlrtn_2	D	0.01229	0.01305	0.02075
	D	0.01472	0.01546	0.02256
	GATE_N	0.01446	0.01503	0.02412
	GATE_N	0.01719	0.01776	0.02651
	RESET_B	0.01010	0.01037	0.01522
	RESET_B	0.01303	0.01327	0.01759
sky130_fd_sc_hs__dlrtn_4	D	0.01745	0.01885	0.02701
	D	0.02004	0.02143	0.02858
	GATE_N	0.01967	0.02086	0.03023
	GATE_N	0.02258	0.02378	0.03263
	RESET_B	0.01566	0.01656	0.02953
	RESET_B	0.02051	0.02135	0.03384

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)	0.00367	0.00357	0.01010
	(GATE_N * RESET_B) + (GATE_N * !RESET_B * !Q)	0.00141	0.00129	0.00783
	(!GATE_N * !RESET_B * !Q)	0.00616	0.00600	0.01249
	(!GATE_N * !RESET_B * !Q)	0.00406	0.00388	0.01038
sky130_fd_sc_hs__dlrtn_2	(GATE_N * RESET_B) + (GATE_N * !RESET_B * !Q)	0.00370	0.00360	0.01013
	(GATE_N * RESET_B) + (GATE_N * !RESET_B * !Q)	0.00142	0.00130	0.00784
	(!GATE_N * !RESET_B * !Q)	0.00619	0.00601	0.01251
	(!GATE_N * !RESET_B * !Q)	0.00407	0.00389	0.01039
sky130_fd_sc_hs__dlrtn_4	(GATE_N * RESET_B) + (GATE_N * !RESET_B * !Q)	0.00369	0.00359	0.01014
	(GATE_N * RESET_B) + (GATE_N * !RESET_B * !Q)	0.00141	0.00130	0.00786
	(!GATE_N * !RESET_B * !Q)	0.00653	0.00636	0.01286
	(!GATE_N * !RESET_B * !Q)	0.00444	0.00426	0.01076

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)	0.00118	0.00144	0.00865
	(GATE_N * RESET_B) + (GATE_N * !RESET_B * !Q)	0.00346	0.00371	0.01092
	(!GATE_N * !RESET_B * !Q)	0.00593	0.00608	0.01325
	(!GATE_N * !RESET_B * !Q)	0.00806	0.00820	0.01537
sky130_fd_sc_hs__dlrtn_2	(GATE_N * RESET_B) + (GATE_N * !RESET_B * !Q)	0.00117	0.00142	0.00863
	(GATE_N * RESET_B) + (GATE_N * !RESET_B * !Q)	0.00346	0.00371	0.01093
	(!GATE_N * !RESET_B * !Q)	0.00598	0.00611	0.01329
	(!GATE_N * !RESET_B * !Q)	0.00812	0.00826	0.01543
sky130_fd_sc_hs__dlrtn_4	(GATE_N * RESET_B) + (GATE_N * !RESET_B * !Q)	0.00114	0.00139	0.00861
	(GATE_N * RESET_B) + (GATE_N * !RESET_B * !Q)	0.00342	0.00367	0.01090
	(!GATE_N * !RESET_B * !Q)	0.00686	0.00701	0.01419
	(!GATE_N * !RESET_B * !Q)	0.00898	0.00913	0.01631

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)	0.00689	0.00666	0.01440
	(D * RESET_B * Q)	0.00427	0.00403	0.01177
	(D * !RESET_B * !Q)	0.01076	0.01052	0.01820
	(D * !RESET_B * !Q)	0.00799	0.00774	0.01543
	(!D * !Q)	0.00684	0.00665	0.01430
	(!D * !Q)	0.00423	0.00402	0.01168
sky130_fd_sc_hs__dlrtn_2	(D * RESET_B * Q)	0.00686	0.00664	0.01438
	(D * RESET_B * Q)	0.00427	0.00403	0.01178
	(D * !RESET_B * !Q)	0.01080	0.01056	0.01826
	(D * !RESET_B * !Q)	0.00805	0.00780	0.01551
	(!D * !Q)	0.00680	0.00661	0.01427
	(!D * !Q)	0.00421	0.00402	0.01167
sky130_fd_sc_hs__dlrtn_4	(D * RESET_B * Q)	0.00693	0.00669	0.01441
	(D * RESET_B * Q)	0.00433	0.00408	0.01181
	(D * !RESET_B * !Q)	0.01171	0.01148	0.01917
	(D * !RESET_B * !Q)	0.00895	0.00871	0.01640
	(!D * !Q)	0.00682	0.00663	0.01426
	(!D * !Q)	0.00422	0.00402	0.01166

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)	0.00457	0.00464	0.01319
	(D * RESET_B * Q)	0.00719	0.00727	0.01582
	(D * !RESET_B * !Q)	0.00655	0.00660	0.01497
	(D * !RESET_B * !Q)	0.00933	0.00938	0.01775
	(!D * !Q)	0.00454	0.00462	0.01321
	(!D * !Q)	0.00716	0.00725	0.01584
sky130_fd_sc_hs__dlrtn_2	(D * RESET_B * Q)	0.00462	0.00471	0.01326
	(D * RESET_B * Q)	0.00721	0.00730	0.01585
	(D * !RESET_B * !Q)	0.00662	0.00667	0.01505
	(D * !RESET_B * !Q)	0.00938	0.00943	0.01781
	(!D * !Q)	0.00462	0.00471	0.01330
	(!D * !Q)	0.00721	0.00731	0.01589
sky130_fd_sc_hs__dlrtn_4	(D * RESET_B * Q)	0.00466	0.00473	0.01328
	(D * RESET_B * Q)	0.00726	0.00734	0.01588
	(D * !RESET_B * !Q)	0.00699	0.00705	0.01543
	(D * !RESET_B * !Q)	0.00977	0.00984	0.01821
	(!D * !Q)	0.00468	0.00476	0.01334
	(!D * !Q)	0.00728	0.00737	0.01594

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)	0.00117	0.00118	0.00117
	(D * GATE_N * !Q) + (!D * !Q)	-0.00140	-0.00141	-0.00140
sky130_fd_sc_hs__dlrtn_2	(D * GATE_N * !Q) + (!D * !Q)	0.00119	0.00121	0.00120
	(D * GATE_N * !Q) + (!D * !Q)	-0.00150	-0.00151	-0.00151
sky130_fd_sc_hs__dlrtn_4	(D * GATE_N * !Q) + (!D * !Q)	0.00203	0.00204	0.00202
	(D * GATE_N * !Q) + (!D * !Q)	-0.00232	-0.00233	-0.00232

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__dlrtn_1	(D * GATE_N * !Q) + (!D * !Q)	-0.00112	-0.00118	-0.00117
	(D * GATE_N * !Q) + (!D * !Q)	0.00146	0.00144	0.00142
sky130_fd_sc_hs__dlrtn_2	(D * GATE_N * !Q) + (!D * !Q)	-0.00115	-0.00120	-0.00120
	(D * GATE_N * !Q) + (!D * !Q)	0.00156	0.00153	0.00152
sky130_fd_sc_hs__dlrtn_4	(D * GATE_N * !Q) + (!D * !Q)	-0.00192	-0.00201	-0.00202
	(D * GATE_N * !Q) + (!D * !Q)	0.00239	0.00236	0.00233

SKY130_FD_SC_HS__DLRTPx

sky130_fd_sc_hs_tt_1.50v_25C.ccs
Cell Library: Process , Voltage
1.50, 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	0.00226	0.00245	0.00277	0.85511
sky130_fd_sc_hs__dlrtp_2	0.00223	0.00240	0.00286	1.66841
sky130_fd_sc_hs__dlrtp_4	0.00222	0.00239	0.00435	3.16944

Leakage Information

Cell Name	Leakage(nW)		
	Min.	**Avg**	**Max.**
sky130_fd_sc_hs__dlrtp_1	0.00000	0.32639	0.46540
sky130_fd_sc_hs__dlrtp_2	0.00000	0.32186	0.44907
sky130_fd_sc_hs__dlrtp_4	0.00000	0.53298	0.93523

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)	0.31461	0.91101	6.95168
	GATE->Q (-R)	0.27559	0.87516	6.88585
	RESET_B->Q (RR)	0.09953	0.71613	6.85933
sky130_fd_sc_hs__dlrtp_2	D->Q (RR)	0.32772	0.81850	6.93855
	GATE->Q (-R)	0.28816	0.77951	6.86598
	RESET_B->Q (RR)	0.10451	0.63279	6.94318
sky130_fd_sc_hs__dlrtp_4	D->Q (RR)	0.36301	0.77804	6.99297
	GATE->Q (-R)	0.32719	0.74425	6.94263
	RESET_B->Q (RR)	0.11222	0.56107	7.01172

Delay(ns) to Q falling :

Cell Name	Timing Arc(Dir)	Delay(ns)		
		First	Mid	Last
sky130_fd_sc_hs__dlrtp_1	D->Q (FF)	0.25066	0.71733	4.13185
	GATE->Q (-F)	0.26893	0.58270	2.54504
	RESET_B->Q (FF)	0.11447	0.64215	4.53632
sky130_fd_sc_hs__dlrtp_2	D->Q (FF)	0.26580	0.70005	4.06264
	GATE->Q (-F)	0.28131	0.55892	2.45651
	RESET_B->Q (FF)	0.12174	0.64035	4.68042
sky130_fd_sc_hs__dlrtp_4	D->Q (FF)	0.27653	0.68469	4.07824
	GATE->Q (-F)	0.29114	0.54518	2.47129
	RESET_B->Q (FF)	0.13181	0.60651	4.51448

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 ()**	0.13115	0.74341	16.50020
sky130_fd_sc_hs__dlrtp_2	**min_pulse_width**	**RESET_B ()**	0.15331	0.74341	16.50020
sky130_fd_sc_hs__dlrtp_4	**min_pulse_width**	**RESET_B ()**	0.17824	0.74341	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	0.01261	0.01243	0.01890
	D	0.00989	0.00972	0.01620
	GATE	0.01524	0.01492	0.02260
	GATE	0.01237	0.01206	0.01978
	RESET_B	0.00725	0.00703	0.01083
	RESET_B	0.00414	0.00393	0.00776
sky130_fd_sc_hs__dlrtp_2	D	0.01475	0.01497	0.02147
	D	0.01202	0.01226	0.01883
	GATE	0.01718	0.01724	0.02504
	GATE	0.01435	0.01441	0.02228
	RESET_B	0.00931	0.00940	0.01248
	RESET_B	0.00611	0.00619	0.00927
sky130_fd_sc_hs__dlrtp_4	D	0.02068	0.02158	0.02841
	D	0.01791	0.01882	0.02576
	GATE	0.02307	0.02385	0.03184
	GATE	0.02018	0.02098	0.02896
	RESET_B	0.01608	0.01661	0.02676
	RESET_B	0.01121	0.01176	0.02188

Internal switching power(pJ) to Q falling :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__dlrtp_1	D	0.00998	0.01035	0.01777
	D	0.01269	0.01305	0.02011
	GATE	0.01569	0.01577	0.02351
	GATE	0.01319	0.01328	0.02091
	RESET_B	0.00810	0.00812	0.01368
	RESET_B	0.01099	0.01098	0.01627
sky130_fd_sc_hs__dlrtp_2	D	0.01184	0.01257	0.01963
	D	0.01455	0.01528	0.02230
	GATE	0.01730	0.01784	0.02567
	GATE	0.01487	0.01534	0.02301
	RESET_B	0.00988	0.01018	0.01524
	RESET_B	0.01288	0.01311	0.01755
sky130_fd_sc_hs__dlrtp_4	D	0.01725	0.01872	0.02716
	D	0.02001	0.02141	0.02850
	GATE	0.02253	0.02369	0.03163
	GATE	0.02015	0.02130	0.02909
	RESET_B	0.01565	0.01677	0.02970
	RESET_B	0.02028	0.02123	0.03380

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)	0.00656	0.00635	0.01283
	(GATE * !RESET_B * !Q)	0.00420	0.00399	0.01048
	(!GATE * RESET_B) + (!GATE * !RESET_B * !Q)	0.00400	0.00386	0.01039
	(!GATE * RESET_B) + (!GATE * !RESET_B * !Q)	0.00147	0.00133	0.00785
sky130_fd_sc_hs__dlrtp_2	(GATE * !RESET_B * !Q)	0.00664	0.00643	0.01289
	(GATE * !RESET_B * !Q)	0.00429	0.00407	0.01054
	(!GATE * RESET_B) + (!GATE * !RESET_B * !Q)	0.00403	0.00388	0.01039
	(!GATE * RESET_B) + (!GATE * !RESET_B * !Q)	0.00152	0.00137	0.00787
sky130_fd_sc_hs__dlrtp_4	(GATE * !RESET_B * !Q)	0.00687	0.00665	0.01310
	(GATE * !RESET_B * !Q)	0.00453	0.00431	0.01075
	(!GATE * RESET_B) + (!GATE * !RESET_B * !Q)	0.00401	0.00387	0.01037
	(!GATE * RESET_B) + (!GATE * !RESET_B * !Q)	0.00151	0.00136	0.00786

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)	0.00551	0.00564	0.01278
	(GATE * !RESET_B * !Q)	0.00787	0.00800	0.01514
	(!GATE * RESET_B) + (!GATE * !RESET_B * !Q)	0.00086	0.00109	0.00828
	(!GATE * RESET_B) + (!GATE * !RESET_B * !Q)	0.00339	0.00363	0.01081
sky130_fd_sc_hs__dlrtp_2	(GATE * !RESET_B * !Q)	0.00566	0.00577	0.01291
	(GATE * !RESET_B * !Q)	0.00801	0.00814	0.01527
	(!GATE * RESET_B) + (!GATE * !RESET_B * !Q)	0.00090	0.00113	0.00831
	(!GATE * RESET_B) + (!GATE * !RESET_B * !Q)	0.00342	0.00365	0.01083
sky130_fd_sc_hs__dlrtp_4	(GATE * !RESET_B * !Q)	0.00649	0.00661	0.01374
	(GATE * !RESET_B * !Q)	0.00884	0.00898	0.01609
	(!GATE * RESET_B) + (!GATE * !RESET_B * !Q)	0.00087	0.00109	0.00827
	(!GATE * RESET_B) + (!GATE * !RESET_B * !Q)	0.00338	0.00361	0.01078

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)	0.00758	0.00736	0.01489
	(D * RESET_B * Q)	0.00490	0.00469	0.01222
	(D * !RESET_B * !Q)	0.00891	0.00859	0.01617
	(D * !RESET_B * !Q)	0.00641	0.00609	0.01368
	(!D * !Q)	0.00749	0.00731	0.01479
	(!D * !Q)	0.00480	0.00463	0.01211
sky130_fd_sc_hs__dlrtp_2	(D * RESET_B * Q)	0.00740	0.00718	0.01476
	(D * RESET_B * Q)	0.00478	0.00453	0.01212
	(D * !RESET_B * !Q)	0.00878	0.00845	0.01607
	(D * !RESET_B * !Q)	0.00632	0.00597	0.01360
	(!D * !Q)	0.00729	0.00711	0.01463
	(!D * !Q)	0.00465	0.00446	0.01200
sky130_fd_sc_hs__dlrtp_4	(D * RESET_B * Q)	0.00729	0.00708	0.01462
	(D * RESET_B * Q)	0.00466	0.00445	0.01199
	(D * !RESET_B * !Q)	0.00900	0.00865	0.01621
	(D * !RESET_B * !Q)	0.00653	0.00619	0.01374
	(!D * !Q)	0.00723	0.00705	0.01454
	(!D * !Q)	0.00460	0.00442	0.01191

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)	0.00445	0.00456	0.01299
	(D * RESET_B * Q)	0.00713	0.00724	0.01567
	(D * !RESET_B * !Q)	0.00756	0.00754	0.01631
	(D * !RESET_B * !Q)	0.01007	0.01003	0.01882
	(!D * !Q)	0.00453	0.00464	0.01311
	(!D * !Q)	0.00720	0.00731	0.01578
sky130_fd_sc_hs__dlrtp_2	(D * RESET_B * Q)	0.00448	0.00459	0.01303
	(D * RESET_B * Q)	0.00711	0.00723	0.01566
	(D * !RESET_B * !Q)	0.00772	0.00768	0.01646
	(D * !RESET_B * !Q)	0.01019	0.01016	0.01894
	(!D * !Q)	0.00457	0.00469	0.01317
	(!D * !Q)	0.00720	0.00732	0.01581
sky130_fd_sc_hs__dlrtp_4	(D * RESET_B * Q)	0.00443	0.00453	0.01297
	(D * RESET_B * Q)	0.00706	0.00716	0.01561
	(D * !RESET_B * !Q)	0.00857	0.00851	0.01723
	(D * !RESET_B * !Q)	0.01105	0.01099	0.01971
	(!D * !Q)	0.00447	0.00456	0.01305
	(!D * !Q)	0.00710	0.00719	0.01569

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)	0.00117	0.00117	0.00117
	(D * !GATE * !Q) + (!D * !Q)	-0.00144	-0.00145	-0.00145
sky130_fd_sc_hs__dlrtp_2	(D * !GATE * !Q) + (!D * !Q)	0.00118	0.00118	0.00118
	(D * !GATE * !Q) + (!D * !Q)	-0.00154	-0.00154	-0.00154
sky130_fd_sc_hs__dlrtp_4	(D * !GATE * !Q) + (!D * !Q)	0.00197	0.00198	0.00196
	(D * !GATE * !Q) + (!D * !Q)	-0.00221	-0.00222	-0.00221

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)	-0.00112	-0.00117	-0.00117
	(D * !GATE * !Q) + (!D * !Q)	0.00150	0.00148	0.00146
sky130_fd_sc_hs__dlrtp_2	(D * !GATE * !Q) + (!D * !Q)	-0.00113	-0.00118	-0.00118
	(D * !GATE * !Q) + (!D * !Q)	0.00159	0.00158	0.00155
sky130_fd_sc_hs__dlrtp_4	(D * !GATE * !Q) + (!D * !Q)	-0.00187	-0.00196	-0.00196
	(D * !GATE * !Q) + (!D * !Q)	0.00228	0.00225	0.00223

SKY130_FD_SC_HS__DLXBNx

sky130_fd_sc_hs_tt_1.50v_25C.ccs
Cell Library: Process , Voltage
1.50, 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	0.00224	0.00245	0.83108	0.84502
sky130_fd_sc_hs__dlxbn_2	0.00212	0.00242	1.50574	1.66340

Leakage Information

Cell Name	Leakage(nW)		
	Min.	Avg	Max.
sky130_fd_sc_hs__dlxbn_1	0.00000	0.38262	0.57512
sky130_fd_sc_hs__dlxbn_2	0.00000	0.38037	0.53268

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)	0.31712	0.92771	6.96650
	GATE_N->Q (-R)	0.37234	1.16168	8.70390
sky130_fd_sc_hs__dlxbn_2	D->Q (RR)	0.32472	0.83777	6.92979
	GATE_N->Q (-R)	0.37936	1.07094	8.66146

Delay(ns) to Q falling :

Cell Name	Timing Arc(Dir)	Delay(ns)		
		First	Mid	Last
sky130_fd_sc_hs__dlxbn_1	D->Q (FF)	0.25629	0.72576	4.07566
	GATE_N->Q (-F)	0.27617	0.78494	4.38289
sky130_fd_sc_hs__dlxbn_2	D->Q (FF)	0.27006	0.70394	3.83484
	GATE_N->Q (-F)	0.29053	0.76406	4.14406

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)	0.31808	1.11182	8.99366
	GATE_N->Q_N (-R)	0.33810	1.17084	9.30126
sky130_fd_sc_hs__dlxbn_2	D->Q_N (FR)	0.35211	1.00262	8.72624
	GATE_N->Q_N (-R)	0.37284	1.06258	9.03510

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)	0.36242	0.66067	2.68149
	GATE_N->Q_N (-F)	0.41763	0.89455	4.41674
sky130_fd_sc_hs__dlxbn_2	D->Q_N (RF)	0.40747	0.68457	2.81200
	GATE_N->Q_N (-F)	0.46224	0.91824	4.54407

Power Information

Internal switching power(pJ) to Q rising :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__dlxbn_1	D	0.00848	0.00869	0.01198
	D	0.00727	0.00748	0.01077
	GATE_N	0.00867	0.00901	0.01341
	GATE_N	0.01000	0.01033	0.01460
sky130_fd_sc_hs__dlxbn_2	D	0.01046	0.01101	0.01434
	D	0.00930	0.00982	0.01319
	GATE_N	0.01065	0.01131	0.01582
	GATE_N	0.01197	0.01262	0.01697

Internal switching power(pJ) to Q falling :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__dlxbn_1	D	0.00740	0.00778	0.01131
	D	0.00861	0.00898	0.01247
	GATE_N	0.00859	0.00888	0.01319
	GATE_N	0.00992	0.01020	0.01451
sky130_fd_sc_hs__dlxbn_2	D	0.00931	0.01000	0.01369
	D	0.01047	0.01115	0.01470
	GATE_N	0.01047	0.01107	0.01534
	GATE_N	0.01180	0.01239	0.01665

Internal switching power(pJ) to Q_N rising :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__dlxbn_1	D	0.00742	0.00780	0.01168
	D	0.00863	0.00900	0.01266
	GATE_N	0.00861	0.00889	0.01378
	GATE_N	0.00993	0.01022	0.01470
sky130_fd_sc_hs__dlxbn_2	D	0.00933	0.01002	0.01395
	D	0.01048	0.01118	0.01488
	GATE_N	0.01049	0.01109	0.01574
	GATE_N	0.01181	0.01241	0.01690

Internal switching power(pJ) to Q_N falling :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__dlxbn_1	D	0.00848	0.00868	0.01186
	D	0.00726	0.00747	0.01064
	GATE_N	0.00866	0.00898	0.01325
	GATE_N	0.00999	0.01032	0.01442
sky130_fd_sc_hs__dlxbn_2	D	0.01045	0.01097	0.01424
	D	0.00929	0.00982	0.01300
	GATE_N	0.01064	0.01130	0.01536
	GATE_N	0.01197	0.01263	0.01667

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)	0.00389	0.00376	0.01030
	(GATE_N * Q * !Q_N) + (GATE_N * !Q * Q_N)	0.00146	0.00133	0.00787
sky130_fd_sc_hs__dlxbn_2	(GATE_N * Q * !Q_N) + (GATE_N * !Q * Q_N)	0.00380	0.00370	0.01023
	(GATE_N * Q * !Q_N) + (GATE_N * !Q * Q_N)	0.00149	0.00137	0.00792

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)	0.00102	0.00125	0.00847
	(GATE_N * Q * !Q_N) + (GATE_N * !Q * Q_N)	0.00344	0.00367	0.01090
sky130_fd_sc_hs__dlxbn_2	(GATE_N * Q * !Q_N) + (GATE_N * !Q * Q_N)	0.00105	0.00130	0.00853
	(GATE_N * Q * !Q_N) + (GATE_N * !Q * Q_N)	0.00336	0.00362	0.01085

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)	0.00714	0.00689	0.01461
	(D * Q * !Q_N)	0.00449	0.00423	0.01196
	(!D * !Q * Q_N)	0.00703	0.00682	0.01445
	(!D * !Q * Q_N)	0.00438	0.00416	0.01180
sky130_fd_sc_hs__dlxbn_2	(D * Q * !Q_N)	0.00711	0.00687	0.01460
	(D * Q * !Q_N)	0.00447	0.00422	0.01195
	(!D * !Q * Q_N)	0.00700	0.00680	0.01443
	(!D * !Q * Q_N)	0.00436	0.00415	0.01179

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)	0.00466	0.00473	0.01325
	(D * Q * !Q_N)	0.00730	0.00738	0.01591
	(!D * !Q * Q_N)	0.00470	0.00477	0.01334
	(!D * !Q * Q_N)	0.00735	0.00743	0.01599
sky130_fd_sc_hs__dlxbn_2	(D * Q * !Q_N)	0.00463	0.00470	0.01322
	(D * Q * !Q_N)	0.00726	0.00735	0.01587
	(!D * !Q * Q_N)	0.00466	0.00474	0.01330
	(!D * !Q * Q_N)	0.00730	0.00739	0.01595

SKY130_FD_SC_HS__DLXBP

sky130_fd_sc_hs_tt_1.50v_25C.ccs
Cell Library: Process , Voltage
1.50, 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	0.00223	0.00246	0.83544	0.84831

Leakage Information

Cell Name	Leakage(nW)		
	Min.	Avg	Max.
sky130_fd_sc_hs__dlxbp_1	0.00000	0.38262	0.57512

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)	0.31016	0.92045	6.98190
	GATE->Q (-R)	0.27068	0.88188	6.90561

Delay(ns) to Q falling :

Cell Name	Timing Arc(Dir)	Delay(ns)		
		First	Mid	Last
sky130_fd_sc_hs__dlxbp_1	D->Q (FF)	0.26508	0.73818	4.10470
	GATE->Q (-F)	0.27671	0.59327	2.48931

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)	0.32766	1.12309	9.03598
	GATE->Q_N (-R)	0.33940	0.97825	7.42234

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)	0.35560	0.65260	2.67367
	GATE->Q_N (-F)	0.31623	0.61377	2.59480

Power Information

Internal switching power(pJ) to Q rising :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__dlxbp_1	D	0.00849	0.00869	0.01198
	D	0.00728	0.00749	0.01078
	GATE	0.00964	0.00979	0.01368
	GATE	0.00832	0.00845	0.01236

Internal switching power(pJ) to Q falling :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__dlxbp_1	D	0.00728	0.00764	0.01134
	D	0.00848	0.00884	0.01234
	GATE	0.00994	0.01017	0.01398
	GATE	0.00860	0.00882	0.01264

Internal switching power(pJ) to Q_N rising :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__dlxbp_1	D	0.00729	0.00766	0.01153
	D	0.00850	0.00886	0.01251
	GATE	0.00995	0.01023	0.01420
	GATE	0.00862	0.00884	0.01286

Internal switching power(pJ) to Q_N falling :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__dlxbp_1	D	0.00848	0.00869	0.01185
	D	0.00727	0.00748	0.01064
	GATE	0.00963	0.00977	0.01355
	GATE	0.00831	0.00845	0.01221

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)	0.00398	0.00385	0.01036
	(!GATE * Q * !Q_N) + (!GATE * !Q * Q_N)	0.00157	0.00145	0.00796

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)	0.00091	0.00114	0.00833
	(!GATE * Q * !Q_N) + (!GATE * !Q * Q_N)	0.00332	0.00354	0.01074

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)	0.00717	0.00696	0.01455
	(D * Q * !Q_N)	0.00452	0.00428	0.01189
	(!D * !Q * Q_N)	0.00721	0.00702	0.01459
	(!D * !Q * Q_N)	0.00456	0.00436	0.01193

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)	0.00437	0.00448	0.01293
	(D * Q * !Q_N)	0.00702	0.00715	0.01559
	(!D * !Q * Q_N)	0.00430	0.00442	0.01291
	(!D * !Q * Q_N)	0.00695	0.00708	0.01557

SKY130_FD_SC_HS__DLXTNx

sky130_fd_sc_hs_tt_1.50v_25C.ccs
Cell Library: Process , Voltage
1.50, 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	0.00222	0.00248	0.84739
sky130_fd_sc_hs__dlxtn_2	0.00228	0.00248	1.61820
sky130_fd_sc_hs__dlxtn_4	0.00227	0.00247	3.18944

Leakage Information

Cell Name	Leakage(nW)		
	Min.	Avg	Max.
sky130_fd_sc_hs__dlxtn_1	0.00000	0.31160	0.42093
sky130_fd_sc_hs__dlxtn_2	0.00000	0.30571	0.44907
sky130_fd_sc_hs__dlxtn_4	0.00000	0.48027	0.63299

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)	0.29701	0.89871	6.91470
	GATE_N->Q (-R)	0.35359	1.13519	8.66060
sky130_fd_sc_hs__dlxtn_2	D->Q (RR)	0.30023	0.78876	6.78847
	GATE_N->Q (-R)	0.35442	1.02022	8.51873
sky130_fd_sc_hs__dlxtn_4	D->Q (RR)	0.33901	0.75195	7.02465
	GATE_N->Q (-R)	0.39178	0.98329	8.74942

Delay(ns) to Q falling :

Cell Name	Timing Arc(Dir)	Delay(ns)		
		First	Mid	Last
sky130_fd_sc_hs__dlxtn_1	D->Q (FF)	0.23696	0.69489	3.98426
	GATE_N->Q (-F)	0.25938	0.75816	4.30264
sky130_fd_sc_hs__dlxtn_2	D->Q (FF)	0.24940	0.67633	3.92465
	GATE_N->Q (-F)	0.27006	0.73646	4.23709
sky130_fd_sc_hs__dlxtn_4	D->Q (FF)	0.26647	0.67647	4.13382
	GATE_N->Q (-F)	0.29045	0.74264	4.46914

Power Information

Internal switching power(pJ) to Q rising :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__dlxtn_1	D	0.01202	0.01211	0.01860
	D	0.00951	0.00960	0.01610
	GATE_N	0.01232	0.01265	0.02108
	GATE_N	0.01503	0.01537	0.02383
sky130_fd_sc_hs__dlxtn_2	D	0.01404	0.01437	0.02097
	D	0.01148	0.01182	0.02068
	GATE_N	0.01427	0.01489	0.02338
	GATE_N	0.01697	0.01758	0.02607
sky130_fd_sc_hs__dlxtn_4	D	0.01985	0.02063	0.02724
	D	0.01729	0.01809	0.02483
	GATE_N	0.02006	0.02116	0.02976
	GATE_N	0.02276	0.02384	0.03246

Internal switching power(pJ) to Q falling :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__dlxtn_1	D	0.01013	0.01048	0.01760
	D	0.01264	0.01298	0.02008
	GATE_N	0.01241	0.01261	0.02163
	GATE_N	0.01512	0.01532	0.02407
sky130_fd_sc_hs__dlxtn_2	D	0.01193	0.01257	0.01969
	D	0.01448	0.01512	0.02220
	GATE_N	0.01419	0.01468	0.02404
	GATE_N	0.01689	0.01737	0.02614
sky130_fd_sc_hs__dlxtn_4	D	0.01738	0.01864	0.02645
	D	0.01993	0.02118	0.02834
	GATE_N	0.01966	0.02075	0.02985
	GATE_N	0.02235	0.02345	0.03240

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__dlxtn_1	GATE_N	0.00390	0.00376	0.01022
	GATE_N	0.00139	0.00125	0.00771
sky130_fd_sc_hs__dlxtn_2	GATE_N	0.00391	0.00378	0.01023
	GATE_N	0.00136	0.00121	0.00767
sky130_fd_sc_hs__dlxtn_4	GATE_N	0.00392	0.00379	0.01023
	GATE_N	0.00137	0.00122	0.00768

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__dlxtn_1	GATE_N	0.00124	0.00146	0.00865
	GATE_N	0.00375	0.00397	0.01116
sky130_fd_sc_hs__dlxtn_2	GATE_N	0.00123	0.00145	0.00863
	GATE_N	0.00378	0.00401	0.01120
sky130_fd_sc_hs__dlxtn_4	GATE_N	0.00125	0.00146	0.00865
	GATE_N	0.00380	0.00402	0.01121

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__dlxtn_1	(D * Q)	0.00742	0.00719	0.01479
	(D * Q)	0.00471	0.00446	0.01207
	(!D * !Q)	0.00730	0.00710	0.01461
	(!D * !Q)	0.00459	0.00437	0.01189
sky130_fd_sc_hs__dlxtn_2	(D * Q)	0.00726	0.00703	0.01468
	(D * Q)	0.00456	0.00432	0.01197
	(!D * !Q)	0.00710	0.00691	0.01447
	(!D * !Q)	0.00440	0.00420	0.01177
sky130_fd_sc_hs__dlxtn_4	(D * Q)	0.00732	0.00708	0.01471
	(D * Q)	0.00462	0.00436	0.01200
	(!D * !Q)	0.00716	0.00696	0.01450
	(!D * !Q)	0.00447	0.00424	0.01179

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__dlxtn_1	(D * Q)	0.00467	0.00473	0.01322
	(D * Q)	0.00738	0.00745	0.01595
	(!D * !Q)	0.00473	0.00480	0.01335
	(!D * !Q)	0.00745	0.00752	0.01607
sky130_fd_sc_hs__dlxtn_2	(D * Q)	0.00461	0.00468	0.01320
	(D * Q)	0.00731	0.00739	0.01590
	(!D * !Q)	0.00471	0.00480	0.01333
	(!D * !Q)	0.00740	0.00750	0.01603
sky130_fd_sc_hs__dlxtn_4	(D * Q)	0.00465	0.00472	0.01322
	(D * Q)	0.00735	0.00743	0.01593
	(!D * !Q)	0.00475	0.00482	0.01335
	(!D * !Q)	0.00745	0.00753	0.01605

SKY130_FD_SC_HS__DLXTP

sky130_fd_sc_hs_tt_1.50v_25C.ccs
Cell Library: Process , Voltage
1.50, 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	0.00218	0.00253	0.83100

Leakage Information

Cell Name	Leakage(nW)		
	Min.	Avg	Max.
sky130_fd_sc_hs__dlxtp_1	0.00000	0.28806	0.41934

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)	0.35139	0.95268	7.00419
	GATE->Q (-R)	0.28181	0.88768	6.92320

Delay(ns) to Q falling :

Cell Name	Timing Arc(Dir)	Delay(ns)		
		First	Mid	Last
sky130_fd_sc_hs__dlxtp_1	D->Q (FF)	0.25393	0.71576	4.08324
	GATE->Q (-F)	0.26911	0.58058	2.48734

Power Information

Internal switching power(pJ) to Q rising :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__dlxtp_1	D	0.01304	0.01310	0.01963
	D	0.01045	0.01052	0.01706
	GATE	0.01569	0.01554	0.02142
	GATE	0.01286	0.01271	0.01859

Internal switching power(pJ) to Q falling :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__dlxtp_1	D	0.01142	0.01183	0.01916
	D	0.01401	0.01440	0.02149
	GATE	0.01677	0.01694	0.02413
	GATE	0.01420	0.01429	0.02144

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__dlxtp_1	!GATE	0.00366	0.00358	0.01025
	!GATE	0.00121	0.00112	0.00780

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__dlxtp_1	!GATE	0.00100	0.00117	0.00840
	!GATE	0.00345	0.00361	0.01086

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__dlxtp_1	(D * Q)	0.00780	0.00760	0.01522
	(D * Q)	0.00511	0.00489	0.01252
	(!D * !Q)	0.00755	0.00737	0.01494
	(!D * !Q)	0.00486	0.00466	0.01224

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__dlxtp_1	(D * Q)	0.00384	0.00394	0.01252
	(D * Q)	0.00654	0.00665	0.01523
	(!D * !Q)	0.00417	0.00425	0.01284
	(!D * !Q)	0.00687	0.00696	0.01554

SKY130_FD_SC_HS__DLYGATE4SDx

sky130_fd_sc_hs_tt_1.50v_25C.ccs
Cell Library: Process , Voltage 1.50, 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	0.00177	0.84948
sky130_fd_sc_hs__dlygate4sd2_1	0.00178	0.84635
sky130_fd_sc_hs__dlygate4sd3_1	0.00180	0.84027

Leakage Information

Cell Name	Leakage(nW)		
	Min.	Avg	Max.
sky130_fd_sc_hs__dlygate4sd1_1	0.00000	0.02241	0.03309
sky130_fd_sc_hs__dlygate4sd2_1	0.00000	0.02099	0.03167
sky130_fd_sc_hs__dlygate4sd3_1	0.00000	0.02106	0.03175

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)**	0.20169	0.81298	6.83204
sky130_fd_sc_hs__dlygate4sd2_1	**A->X (RR)**	0.26393	0.88171	6.94267
sky130_fd_sc_hs__dlygate4sd3_1	**A->X (RR)**	0.49189	1.13063	7.27634

Delay(ns) to X falling :

Cell Name	Timing Arc(Dir)	Delay(ns)		
		First	Mid	Last
sky130_fd_sc_hs__dlygate4sd1_1	**A->X (FF)**	0.26195	0.80768	4.82487
sky130_fd_sc_hs__dlygate4sd2_1	**A->X (FF)**	0.32493	0.88801	4.95256
sky130_fd_sc_hs__dlygate4sd3_1	**A->X (FF)**	0.51116	1.12430	5.34973

Power Information

Internal switching power(pJ) to X rising :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__dlygate4sd1_1	A	0.00927	0.00905	0.01082
	A	0.00729	0.00709	0.00885
sky130_fd_sc_hs__dlygate4sd2_1	A	0.00961	0.00940	0.01106
	A	0.00761	0.00740	0.00907
sky130_fd_sc_hs__dlygate4sd3_1	A	0.01078	0.01060	0.01214
	A	0.00876	0.00858	0.01019

Internal switching power(pJ) to X falling :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__dlygate4sd1_1	A	0.00699	0.00689	0.00877
	A	0.00898	0.00888	0.01050
sky130_fd_sc_hs__dlygate4sd2_1	A	0.00738	0.00726	0.00884
	A	0.00938	0.00926	0.01072
sky130_fd_sc_hs__dlygate4sd3_1	A	0.00886	0.00873	0.01035
	A	0.01088	0.01075	0.01188

SKY130_FD_SC_HS__EBUFNx

sky130_fd_sc_hs_tt_1.50v_25C.ccs
Cell Library: Process , Voltage
1.50, 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	0.00227	0.00422	0.41279
sky130_fd_sc_hs__ebufn_2	0.00247	0.00551	0.71179
sky130_fd_sc_hs__ebufn_4	0.00271	0.00842	1.41091
sky130_fd_sc_hs__ebufn_8	0.00521	0.01399	2.51724

Leakage Information

Cell Name	Leakage(nW)		
	Min.	Avg	Max.
sky130_fd_sc_hs__ebufn_1	0.00000	0.18476	0.30295
sky130_fd_sc_hs__ebufn_2	0.00000	0.10430	0.15002
sky130_fd_sc_hs__ebufn_4	0.00000	0.06338	0.12824
sky130_fd_sc_hs__ebufn_8	0.00000	0.10538	0.25182

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)	0.10234	0.88013	7.03565
	TE_B->Z (RR)	0.03113	0.37318	4.44552
	TE_B->Z (FR)	0.08304	1.10701	11.43820
sky130_fd_sc_hs__ebufn_2	A->Z (RR)	0.09194	0.76808	7.07302
	TE_B->Z (RR)	0.03304	0.37396	4.44630
	TE_B->Z (FR)	0.08084	0.97864	11.41920
sky130_fd_sc_hs__ebufn_4	A->Z (RR)	0.09948	0.68535	7.25324
	TE_B->Z (RR)	0.04174	0.37597	4.44826
	TE_B->Z (FR)	0.07540	0.83871	11.34380
sky130_fd_sc_hs__ebufn_8	A->Z (RR)	0.10520	0.60210	7.22641
	TE_B->Z (RR)	0.06659	0.38035	4.45250
	TE_B->Z (FR)	0.08335	0.74808	11.18470

Delay(ns) to Z falling :

Cell Name	Timing Arc(Dir)	Delay(ns)		
		First	Mid	Last
sky130_fd_sc_hs__ebufn_1	A->Z (FF)	0.10120	0.56360	3.53820
	TE_B->Z (RF)	0.03093	0.37316	4.44553
	TE_B->Z (FF)	0.08216	0.50911	3.37837
sky130_fd_sc_hs__ebufn_2	A->Z (FF)	0.11711	0.59623	3.80960
	TE_B->Z (RF)	0.03288	0.37394	4.44632
	TE_B->Z (FF)	0.08944	0.51450	3.55369
sky130_fd_sc_hs__ebufn_4	A->Z (FF)	0.15691	0.67151	4.36373
	TE_B->Z (RF)	0.04113	0.37593	4.44829
	TE_B->Z (FF)	0.10826	0.55855	3.94043
sky130_fd_sc_hs__ebufn_8	A->Z (FF)	0.15147	0.64222	4.45739
	TE_B->Z (RF)	0.06546	0.38026	4.45259
	TE_B->Z (FF)	0.15487	0.63524	4.43155

Power Information

Internal switching power(pJ) to Z rising :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__ebufn_1	A	0.00523	0.00526	0.01194
	A	0.00260	0.00265	0.00933
	TE_B	0.00232	0.00264	0.01014
	TE_B	0.00700	0.00732	0.01482
sky130_fd_sc_hs__ebufn_2	A	0.00743	0.00771	0.01403
	A	0.00464	0.00491	0.01126
	TE_B	0.00449	0.00470	0.01183
	TE_B	0.01058	0.01079	0.01792
sky130_fd_sc_hs__ebufn_4	A	0.01181	0.01247	0.01750
	A	0.00874	0.00940	0.01451
	TE_B	0.00903	0.00907	0.01503
	TE_B	0.01838	0.01847	0.02439
sky130_fd_sc_hs__ebufn_8	A	0.02276	0.02423	0.03483
	A	0.01679	0.01827	0.02901
	TE_B	0.01848	0.01839	0.02391
	TE_B	0.03410	0.03406	0.03958

Internal switching power(pJ) to Z falling :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__ebufn_1	A	0.00251	0.00293	0.01017
	A	0.00512	0.00553	0.01273
	TE_B	0.00268	0.00312	0.01045
	TE_B	0.00729	0.00768	0.01504
sky130_fd_sc_hs__ebufn_2	A	0.00443	0.00530	0.01176
	A	0.00722	0.00800	0.01447
	TE_B	0.00524	0.00556	0.01256
	TE_B	0.01107	0.01138	0.01834
sky130_fd_sc_hs__ebufn_4	A	0.00830	0.00947	0.01538
	A	0.01137	0.01254	0.01815
	TE_B	0.01034	0.01054	0.01661
	TE_B	0.01934	0.01952	0.02533
sky130_fd_sc_hs__ebufn_8	A	0.01636	0.01879	0.03024
	A	0.02233	0.02460	0.03616
	TE_B	0.02101	0.02110	0.02693
	TE_B	0.03591	0.03588	0.04134

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__ebufn_1	(TE_B * Z)	0.00344	0.00339	0.01018
	(TE_B * Z)	0.00080	0.00073	0.00753
	(TE_B * !Z)	0.00339	0.00332	0.01007
	(TE_B * !Z)	0.00074	0.00067	0.00743
sky130_fd_sc_hs__ebufn_2	(TE_B * Z)	0.00476	0.00465	0.01106
	(TE_B * Z)	0.00187	0.00176	0.00818
	(TE_B * !Z)	0.00454	0.00441	0.01073
	(TE_B * !Z)	0.00168	0.00153	0.00786
sky130_fd_sc_hs__ebufn_4	(TE_B * Z)	0.00702	0.00685	0.01174
	(TE_B * Z)	0.00383	0.00365	0.00855
	(TE_B * !Z)	0.00665	0.00646	0.01121
	(TE_B * !Z)	0.00349	0.00328	0.00805
sky130_fd_sc_hs__ebufn_8	(TE_B * Z)	0.01301	0.01272	0.02281
	(TE_B * Z)	0.00681	0.00649	0.01661
	(TE_B * !Z)	0.01228	0.01195	0.02173
	(TE_B * !Z)	0.00612	0.00575	0.01559

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__ebufn_1	(TE_B * Z)	0.00049	0.00076	0.00804
	(TE_B * Z)	0.00316	0.00343	0.01071
	(TE_B * !Z)	0.00054	0.00083	0.00815
	(TE_B * !Z)	0.00317	0.00347	0.01079
sky130_fd_sc_hs__ebufn_2	(TE_B * Z)	0.00103	0.00117	0.00787
	(TE_B * Z)	0.00396	0.00409	0.01082
	(TE_B * !Z)	0.00122	0.00138	0.00821
	(TE_B * !Z)	0.00408	0.00425	0.01108
sky130_fd_sc_hs__ebufn_4	(TE_B * Z)	0.00193	0.00195	0.00743
	(TE_B * Z)	0.00521	0.00523	0.01074
	(TE_B * !Z)	0.00229	0.00233	0.00796
	(TE_B * !Z)	0.00543	0.00548	0.01111
sky130_fd_sc_hs__ebufn_8	(TE_B * Z)	0.00328	0.00341	0.01457
	(TE_B * Z)	0.00968	0.00983	0.02099
	(TE_B * !Z)	0.00400	0.00417	0.01564
	(TE_B * !Z)	0.01013	0.01030	0.02174

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__ebufn_1	(A * Z)	0.00291	0.00272	0.00959
	(A * Z)	-0.00169	-0.00191	0.00499
	(!A * !Z)	0.00296	0.00272	0.00963
	(!A * !Z)	-0.00164	-0.00189	0.00504
sky130_fd_sc_hs__ebufn_2	(A * Z)	0.00322	0.00283	0.00941
	(A * Z)	-0.00263	-0.00306	0.00353
	(!A * !Z)	0.00335	0.00299	0.00952
	(!A * !Z)	-0.00249	-0.00289	0.00365
sky130_fd_sc_hs__ebufn_4	(A * Z)	0.00405	0.00332	0.00830
	(A * Z)	-0.00490	-0.00572	-0.00071
	(!A * !Z)	0.00415	0.00342	0.00840
	(!A * !Z)	-0.00478	-0.00559	-0.00060
sky130_fd_sc_hs__ebufn_8	(A * Z)	0.00559	0.00439	0.00836
	(A * Z)	-0.00928	-0.01059	-0.00658
	(!A * !Z)	0.00556	0.00446	0.00857
	(!A * !Z)	-0.00920	-0.01047	-0.00635

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__ebufn_1	(A * Z)	0.00067	0.00106	0.00844
	(A * Z)	0.00526	0.00568	0.01305
	(!A * !Z)	0.00066	0.00104	0.00842
	(!A * !Z)	0.00524	0.00564	0.01302
sky130_fd_sc_hs__ebufn_2	(A * Z)	0.00163	0.00185	0.00893
	(A * Z)	0.00749	0.00771	0.01478
	(!A * !Z)	0.00158	0.00183	0.00887
	(!A * !Z)	0.00744	0.00768	0.01474
sky130_fd_sc_hs__ebufn_4	(A * Z)	0.00343	0.00353	0.00943
	(A * Z)	0.01240	0.01256	0.01841
	(!A * !Z)	0.00347	0.00368	0.00943
	(!A * !Z)	0.01241	0.01268	0.01843
sky130_fd_sc_hs__ebufn_8	(A * Z)	0.00709	0.00707	0.01252
	(A * Z)	0.02197	0.02204	0.02744
	(!A * !Z)	0.00723	0.00719	0.01264
	(!A * !Z)	0.02205	0.02206	0.02747

SKY130_FD_SC_HS__EDFXBP

sky130_fd_sc_hs_tt_1.50v_25C.ccs
Cell Library: Process , Voltage 1.50, 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	0.00180	0.00354	0.00285	0.85757	0.86735

Leakage Information

Cell Name	Leakage(nW)		
	Min.	Avg	Max.
sky130_fd_sc_hs__edfxbp_1	0.00000	0.27917	0.45124

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)	0.24719	0.88192	6.96109

Delay(ns) to Q falling :

Cell Name	Timing Arc(Dir)	Delay(ns)		
		First	Mid	Last
sky130_fd_sc_hs__edfxbp_1	CLK->Q (RF)	0.24607	0.63499	2.71614

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)	0.35779	0.97300	7.12703

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)	0.33631	0.67505	2.66691

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)	-0.11444	-0.21594	-1.03883
	setup	CLK (R)	0.15229	0.24330	1.08485

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)	-0.46313	-0.59934	-3.72783
	setup	CLK (R)	0.61971	0.71106	4.14292

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)	-0.11444	-0.21594	-1.03883
	setup	CLK (R)	0.15229	0.24330	1.08485

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)	-0.46313	-0.59934	-3.72783
	setup	CLK (R)	0.61971	0.71106	4.14292

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)	-0.00249	0.00710	0.07980
	setup	CLK (R)	0.66153	0.65492	1.66014

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)	-0.19918	-0.34690	-2.32458
	setup	CLK (R)	0.52701	0.64203	3.75931

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)	-0.00249	0.00710	0.07980
	hold	CLK (R)	-0.22339	-0.27818	-0.51598
	setup	CLK (R)	0.15223	0.22163	1.09400
	setup	CLK (R)	0.66153	0.65492	1.66014

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)	-0.48980	-0.61893	-3.34120
	hold	CLK (R)	-0.19918	-0.34690	-2.32458
	setup	CLK (R)	0.52701	0.64203	3.75931
	setup	CLK (R)	0.22048	0.36229	2.34883

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 ()	0.10898	0.74341	16.50020
	min_pulse_width	CLK ()	0.19486	0.74341	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 ()	0.20872	0.74341	16.50020
	min_pulse_width	CLK ()	0.40542	0.74341	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	0.01174	0.01176	0.01440
	CLK	0.01023	0.01024	0.01289

Internal switching power(pJ) to Q falling :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__edfxbp_1	CLK	0.01143	0.01133	0.01381
	CLK	0.00980	0.00969	0.01218

Internal switching power(pJ) to Q_N rising :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__edfxbp_1	CLK	0.01145	0.01138	0.01402
	CLK	0.00982	0.00972	0.01236

Internal switching power(pJ) to Q_N falling :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__edfxbp_1	CLK	0.01172	0.01174	0.01430
	CLK	0.01021	0.01022	0.01277

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__edfxbp_1	(CLK * DE)	0.00446	0.00433	0.00581
	(CLK * DE)	0.00232	0.00218	0.00368
	(CLK * !DE)	0.00087	0.00087	0.00087
	(CLK * !DE)	-0.00051	-0.00051	-0.00050
	(!CLK * DE * Q * !Q_N)	0.01000	0.00988	0.01139
	(!CLK * DE * Q * !Q_N)	0.00786	0.00774	0.00926
	(!CLK * DE * !Q * Q_N)	0.00953	0.00943	0.01088
	(!CLK * DE * !Q * Q_N)	0.00737	0.00727	0.00873
	(!CLK * !DE)	0.00087	0.00087	0.00087
	(!CLK * !DE)	-0.00051	-0.00050	-0.00050

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__edfxbp_1	(CLK * DE)	0.00163	0.00146	0.00292
	(CLK * DE)	0.00379	0.00362	0.00508
	(CLK * !DE)	-0.00028	-0.00028	-0.00028
	(CLK * !DE)	0.00108	0.00108	0.00108
	(!CLK * DE * Q * !Q_N)	0.00711	0.00693	0.00913
	(!CLK * DE * Q * !Q_N)	0.00925	0.00907	0.01126
	(!CLK * DE * !Q * Q_N)	0.00753	0.00734	0.00956
	(!CLK * DE * !Q * Q_N)	0.00969	0.00950	0.01171
	(!CLK * !DE)	-0.00028	-0.00028	-0.00028
	(!CLK * !DE)	0.00108	0.00108	0.00108

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__edfxbp_1	CLK	0.00705	0.00681	0.01218
	CLK	0.00222	0.00197	0.00735
	(!CLK * D * Q * !Q_N)	0.00391	0.00373	0.00803
	(!CLK * D * Q * !Q_N)	-0.00004	-0.00023	0.00408
	(!CLK * D * !Q * Q_N)	0.01254	0.01230	0.01772
	(!CLK * D * !Q * Q_N)	0.00771	0.00746	0.01289
	(!CLK * !D * Q * !Q_N)	0.01189	0.01168	0.01596
	(!CLK * !D * Q * !Q_N)	0.00874	0.00852	0.01279
	(!CLK * !D * !Q * Q_N)	0.00390	0.00374	0.00804
	(!CLK * !D * !Q * Q_N)	-0.00001	-0.00019	0.00413

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__edfxbp_1	CLK	0.00229	0.00225	0.00793
	CLK	0.00713	0.00709	0.01275
	(!CLK * D * Q * !Q_N)	-0.00005	0.00003	0.00465
	(!CLK * D * Q * !Q_N)	0.00389	0.00397	0.00859
	(!CLK * D * !Q * Q_N)	0.00814	0.00808	0.01423
	(!CLK * D * !Q * Q_N)	0.01297	0.01293	0.01904
	(!CLK * !D * Q * !Q_N)	0.00974	0.00979	0.01425
	(!CLK * !D * Q * !Q_N)	0.01290	0.01295	0.01743
	(!CLK * !D * !Q * Q_N)	-0.00008	-0.00001	0.00461
	(!CLK * !D * !Q * Q_N)	0.00381	0.00391	0.00853

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)	0.01116	0.01079	0.01582
	(D * Q * !Q_N)	0.00801	0.00763	0.01267
	(D * !DE * !Q * Q_N)	0.01084	0.01042	0.01548
	(D * !DE * !Q * Q_N)	0.00769	0.00726	0.01232
	(!D * !Q * Q_N)	0.01084	0.01042	0.01548
	(!D * !Q * Q_N)	0.00769	0.00726	0.01233
	(!D * !DE * Q * !Q_N)	0.01116	0.01079	0.01582
	(!D * !DE * Q * !Q_N)	0.00801	0.00763	0.01267

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)	0.00571	0.00560	0.01138
	(D * Q * !Q_N)	0.00886	0.00876	0.01452
	(D * DE * !Q * Q_N)	0.01142	0.01117	0.01693
	(D * DE * !Q * Q_N)	0.01456	0.01432	0.02007
	(D * !DE * !Q * Q_N)	0.00599	0.00588	0.01158
	(D * !DE * !Q * Q_N)	0.00914	0.00903	0.01473
	(!D * DE * Q * !Q_N)	0.01254	0.01247	0.01870
	(!D * DE * Q * !Q_N)	0.01569	0.01562	0.02184
	(!D * !Q * Q_N)	0.00599	0.00588	0.01158
	(!D * !Q * Q_N)	0.00914	0.00903	0.01473
	(!D * !DE * Q * !Q_N)	0.00571	0.00560	0.01137
	(!D * !DE * Q * !Q_N)	0.00886	0.00876	0.01452

SKY130_FD_SC_HS__EDFXTP

sky130_fd_sc_hs_tt_1.50v_25C.ccs
Cell Library: Process , Voltage
1.50, 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	0.00184	0.00340	0.00278	0.85692

Leakage Information

Cell Name	Leakage(nW)		
	Min.	Avg	Max.
sky130_fd_sc_hs__edfxtp_1	0.00000	0.29079	0.50919

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)	0.23434	0.86495	6.92778

Delay(ns) to Q falling :

Cell Name	Timing Arc(Dir)	Delay(ns)		
		First	Mid	Last
sky130_fd_sc_hs__edfxtp_1	CLK->Q (RF)	0.22527	0.59391	2.58716

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)	-0.10984	-0.21430	-1.03617
	setup	CLK (R)	0.14783	0.23930	1.08825

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)	-0.45505	-0.59340	-2.68397
	setup	CLK (R)	0.61498	0.71068	5.51605

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)	-0.00323	0.00448	0.07305
	setup	CLK (R)	0.65398	0.65085	2.12376

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)	-0.19823	-0.34576	-2.33878
	setup	CLK (R)	0.51990	0.63703	3.74877

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)	-0.00323	0.00448	0.07305
	hold	CLK (R)	-0.21991	-0.26347	-0.50690
	setup	CLK (R)	0.14658	0.21993	1.09862
	setup	CLK (R)	0.65398	0.65085	2.12376

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)	-0.48521	-0.61559	-2.74814
	hold	CLK (R)	-0.19823	-0.34576	-2.33878
	setup	CLK (R)	0.51990	0.63703	3.74877
	setup	CLK (R)	0.21667	0.36063	2.36012

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 ()	0.10067	0.74341	16.50020
	min_pulse_width	CLK ()	0.17547	0.74341	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 ()	0.20040	0.74341	16.50020
	min_pulse_width	CLK ()	0.41096	0.74341	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	0.01977	0.01968	0.02508
	CLK	0.01678	0.01670	0.02217

Internal switching power(pJ) to Q falling :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__edfxtp_1	CLK	0.01901	0.01881	0.02415
	CLK	0.01582	0.01558	0.02084

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__edfxtp_1	(CLK * DE)	0.00432	0.00417	0.00568
	(CLK * DE)	0.00216	0.00202	0.00353
	(CLK * !DE)	0.00088	0.00088	0.00088
	(CLK * !DE)	-0.00052	-0.00052	-0.00051
	(!CLK * DE * Q)	0.00983	0.00970	0.01124
	(!CLK * DE * Q)	0.00767	0.00754	0.00908
	(!CLK * DE * !Q)	0.00936	0.00924	0.01073
	(!CLK * DE * !Q)	0.00717	0.00706	0.00855
	(!CLK * !DE)	0.00088	0.00089	0.00088
	(!CLK * !DE)	-0.00052	-0.00052	-0.00051

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__edfxtp_1	(CLK * DE)	0.00156	0.00140	0.00287
	(CLK * DE)	0.00375	0.00357	0.00504
	(CLK * !DE)	-0.00027	-0.00027	-0.00027
	(CLK * !DE)	0.00111	0.00111	0.00110
	(!CLK * DE * Q)	0.00675	0.00657	0.00881
	(!CLK * DE * Q)	0.00892	0.00873	0.01096
	(!CLK * DE * !Q)	0.00718	0.00700	0.00926
	(!CLK * DE * !Q)	0.00937	0.00918	0.01144
	(!CLK * !DE)	-0.00027	-0.00027	-0.00027
	(!CLK * !DE)	0.00111	0.00111	0.00110

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__edfxtp_1	CLK	0.00681	0.00660	0.01200
	CLK	0.00215	0.00190	0.00732
	(!CLK * D * Q)	0.00378	0.00361	0.00795
	(!CLK * D * Q)	0.00000	-0.00020	0.00415
	(!CLK * D * !Q)	0.01224	0.01202	0.01747
	(!CLK * D * !Q)	0.00757	0.00733	0.01279
	(!CLK * !D * Q)	0.01143	0.01123	0.01553
	(!CLK * !D * Q)	0.00843	0.00823	0.01251
	(!CLK * !D * !Q)	0.00379	0.00365	0.00798
	(!CLK * !D * !Q)	0.00004	-0.00012	0.00422

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__edfxtp_1	CLK	0.00225	0.00221	0.00790
	CLK	0.00694	0.00690	0.01257
	(!CLK * D * Q)	-0.00002	0.00005	0.00469
	(!CLK * D * Q)	0.00376	0.00386	0.00848
	(!CLK * D * !Q)	0.00784	0.00779	0.01399
	(!CLK * D * !Q)	0.01252	0.01248	0.01866
	(!CLK * !D * Q)	0.00959	0.00964	0.01411
	(!CLK * !D * Q)	0.01258	0.01266	0.01714
	(!CLK * !D * !Q)	-0.00007	0.00002	0.00464
	(!CLK * !D * !Q)	0.00368	0.00379	0.00841

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__edfxtp_1	(D * Q)	0.01070	0.01035	0.01543
	(D * Q)	0.00762	0.00725	0.01236
	(D * !DE * !Q)	0.01072	0.01033	0.01544
	(D * !DE * !Q)	0.00764	0.00723	0.01235
	(!D * !Q)	0.01072	0.01033	0.01544
	(!D * !Q)	0.00764	0.00723	0.01235
	(!D * !DE * Q)	0.01070	0.01035	0.01543
	(!D * !DE * Q)	0.00762	0.00725	0.01235

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__edfxtp_1	(D * Q)	0.00573	0.00573	0.01142
	(D * Q)	0.00882	0.00883	0.01450
	(D * DE * !Q)	0.01103	0.01097	0.01663
	(D * DE * !Q)	0.01412	0.01405	0.01971
	(D * !DE * !Q)	0.00564	0.00568	0.01127
	(D * !DE * !Q)	0.00873	0.00877	0.01435
	(!D * DE * Q)	0.01221	0.01230	0.01835
	(!D * DE * Q)	0.01530	0.01538	0.02143
	(!D * !Q)	0.00564	0.00569	0.01127
	(!D * !Q)	0.00874	0.00878	0.01436
	(!D * !DE * Q)	0.00572	0.00574	0.01141
	(!D * !DE * Q)	0.00882	0.00882	0.01450

SKY130_FD_SC_HS__EINVNx

sky130_fd_sc_hs_tt_1.50v_25C.ccs
Cell Library: Process , Voltage
1.50, 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	0.00276	0.00309	0.41723
sky130_fd_sc_hs__einvn_2	0.00517	0.00467	0.76560
sky130_fd_sc_hs__einvn_4	0.01032	0.00837	1.48010
sky130_fd_sc_hs__einvn_8	0.02065	0.01393	2.65208

Leakage Information

Cell Name	Leakage(nW)		
	Min.	**Avg**	**Max.**
sky130_fd_sc_hs__einvn_1	0.00000	0.09790	0.13762
sky130_fd_sc_hs__einvn_2	0.00000	0.10410	0.13833
sky130_fd_sc_hs__einvn_4	0.00000	0.04618	0.12359
sky130_fd_sc_hs__einvn_8	0.00000	0.07099	0.24252

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)	0.07123	1.08506	11.48290
	TE_B->Z (RR)	0.03244	0.37284	4.44517
	TE_B->Z (FR)	0.08167	1.11167	11.51570
sky130_fd_sc_hs__einvn_2	A->Z (FR)	0.04839	0.92473	11.38580
	TE_B->Z (RR)	0.04162	0.37454	4.44689
	TE_B->Z (FR)	0.07180	0.95561	11.41730
sky130_fd_sc_hs__einvn_4	A->Z (FR)	0.04471	0.80448	11.39690
	TE_B->Z (RR)	0.04259	0.37598	4.44831
	TE_B->Z (FR)	0.06784	0.82453	11.31120
sky130_fd_sc_hs__einvn_8	A->Z (FR)	0.04617	0.71653	11.23600
	TE_B->Z (RR)	0.06551	0.38237	4.45453
	TE_B->Z (FR)	0.07739	0.73071	11.02950

Delay(ns) to Z falling :

Cell Name	Timing Arc(Dir)	Delay(ns)		
		First	Mid	Last
sky130_fd_sc_hs__einvn_1	A->Z (RF)	0.02587	0.46269	4.93189
	TE_B->Z (RF)	0.03197	0.37283	4.44519
	TE_B->Z (FF)	0.08215	0.52515	3.40294
sky130_fd_sc_hs__einvn_2	A->Z (RF)	0.02147	0.41164	5.02354
	TE_B->Z (RF)	0.04089	0.37456	4.44692
	TE_B->Z (FF)	0.09603	0.54459	3.66860
sky130_fd_sc_hs__einvn_4	A->Z (RF)	0.02082	0.36063	5.08208
	TE_B->Z (RF)	0.04181	0.37599	4.44835
	TE_B->Z (FF)	0.09863	0.53744	3.93615
sky130_fd_sc_hs__einvn_8	A->Z (RF)	0.02285	0.33204	5.29660
	TE_B->Z (RF)	0.06448	0.38235	4.45468
	TE_B->Z (FF)	0.13890	0.60617	4.40265

Power Information

Internal switching power(pJ) to Z rising :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__einvn_1	A	-0.00034	-0.00027	0.00072
	A	0.00266	0.00262	0.00371
	TE_B	0.00160	0.00177	0.00663
	TE_B	0.00605	0.00622	0.01110
sky130_fd_sc_hs__einvn_2	A	-0.00144	-0.00124	0.00087
	A	0.00434	0.00455	0.00665
	TE_B	0.00243	0.00255	0.00734
	TE_B	0.00964	0.00977	0.01457
sky130_fd_sc_hs__einvn_4	A	-0.00285	-0.00229	0.00182
	A	0.00870	0.00924	0.01336
	TE_B	0.00501	0.00507	0.01117
	TE_B	0.01836	0.01847	0.02423
sky130_fd_sc_hs__einvn_8	A	-0.00542	-0.00434	0.00425
	A	0.01780	0.01878	0.02638
	TE_B	0.01040	0.01040	0.01604
	TE_B	0.03407	0.03408	0.03983

Internal switching power(pJ) to Z falling :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__einvn_1	A	0.00279	0.00284	0.00328
	A	-0.00020	-0.00018	0.00022
	TE_B	0.00301	0.00334	0.00783
	TE_B	0.00538	0.00568	0.01017
sky130_fd_sc_hs__einvn_2	A	0.00456	0.00467	0.00595
	A	-0.00121	-0.00111	-0.00018
	TE_B	0.00507	0.00532	0.00997
	TE_B	0.00825	0.00844	0.01308
sky130_fd_sc_hs__einvn_4	A	0.00923	0.00938	0.01234
	A	-0.00230	-0.00217	-0.00016
	TE_B	0.01045	0.01068	0.01674
	TE_B	0.01559	0.01579	0.02166
sky130_fd_sc_hs__einvn_8	A	0.01837	0.01847	0.02324
	A	-0.00472	-0.00466	-0.00020
	TE_B	0.02108	0.02107	0.02662
	TE_B	0.02807	0.02805	0.03360

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__einvn_1	(TE_B * Z)	0.00063	0.00064	0.00063
	(TE_B * Z)	-0.00102	-0.00101	-0.00101
	(TE_B * !Z)	0.00069	0.00070	0.00069
	(TE_B * !Z)	-0.00093	-0.00094	-0.00093
sky130_fd_sc_hs__einvn_2	(TE_B * Z)	0.00121	0.00120	0.00116
	(TE_B * Z)	-0.00195	-0.00197	-0.00196
	(TE_B * !Z)	0.00137	0.00139	0.00138
	(TE_B * !Z)	-0.00167	-0.00169	-0.00168
sky130_fd_sc_hs__einvn_4	(TE_B * Z)	0.00220	0.00220	0.00212
	(TE_B * Z)	-0.00390	-0.00392	-0.00391
	(TE_B * !Z)	0.00253	0.00252	0.00252
	(TE_B * !Z)	-0.00345	-0.00345	-0.00343
sky130_fd_sc_hs__einvn_8	(TE_B * Z)	0.00425	0.00423	0.00408
	(TE_B * Z)	-0.00778	-0.00776	-0.00773
	(TE_B * !Z)	0.00495	0.00493	0.00492
	(TE_B * !Z)	-0.00686	-0.00684	-0.00679

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__einvn_1	(TE_B * Z)	-0.00061	-0.00061	-0.00061
	(TE_B * Z)	0.00102	0.00101	0.00101
	(TE_B * !Z)	-0.00069	-0.00070	-0.00069
	(TE_B * !Z)	0.00095	0.00096	0.00094
sky130_fd_sc_hs__einvn_2	(TE_B * Z)	-0.00113	-0.00114	-0.00114
	(TE_B * Z)	0.00195	0.00197	0.00196
	(TE_B * !Z)	-0.00137	-0.00139	-0.00138
	(TE_B * !Z)	0.00176	0.00176	0.00168
sky130_fd_sc_hs__einvn_4	(TE_B * Z)	-0.00208	-0.00208	-0.00208
	(TE_B * Z)	0.00390	0.00392	0.00391
	(TE_B * !Z)	-0.00253	-0.00252	-0.00252
	(TE_B * !Z)	0.00358	0.00358	0.00343
sky130_fd_sc_hs__einvn_8	(TE_B * Z)	-0.00406	-0.00405	-0.00403
	(TE_B * Z)	0.00778	0.00776	0.00773
	(TE_B * !Z)	-0.00495	-0.00493	-0.00492
	(TE_B * !Z)	0.00702	0.00703	0.00679

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__einvn_1	(A * !Z)	0.00210	0.00193	0.00640
	(A * !Z)	-0.00126	-0.00148	0.00301
	(!A * Z)	0.00200	0.00187	0.00637
	(!A * Z)	-0.00125	-0.00147	0.00302
sky130_fd_sc_hs__einvn_2	(A * !Z)	0.00252	0.00223	0.00634
	(A * !Z)	-0.00265	-0.00302	0.00117
	(!A * Z)	0.00229	0.00213	0.00627
	(!A * Z)	-0.00259	-0.00296	0.00119
sky130_fd_sc_hs__einvn_4	(A * !Z)	0.00421	0.00355	0.00859
	(A * !Z)	-0.00492	-0.00572	-0.00060
	(!A * Z)	0.00372	0.00335	0.00842
	(!A * Z)	-0.00486	-0.00563	-0.00054
sky130_fd_sc_hs__einvn_8	(A * !Z)	0.00520	0.00420	0.00841
	(A * !Z)	-0.00972	-0.01109	-0.00686
	(!A * Z)	0.00426	0.00370	0.00798
	(!A * Z)	-0.00964	-0.01090	-0.00676

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__einvn_1	(A * !Z)	0.00100	0.00122	0.00600
	(A * !Z)	0.00440	0.00465	0.00942
	(!A * Z)	0.00103	0.00129	0.00605
	(!A * Z)	0.00434	0.00462	0.00937
sky130_fd_sc_hs__einvn_2	(A * !Z)	0.00165	0.00179	0.00646
	(A * !Z)	0.00691	0.00706	0.01172
	(!A * Z)	0.00179	0.00191	0.00662
	(!A * Z)	0.00681	0.00694	0.01162
sky130_fd_sc_hs__einvn_4	(A * !Z)	0.00338	0.00346	0.00940
	(A * !Z)	0.01263	0.01275	0.01871
	(!A * Z)	0.00358	0.00369	0.00965
	(!A * Z)	0.01242	0.01258	0.01850
sky130_fd_sc_hs__einvn_8	(A * !Z)	0.00711	0.00708	0.01264
	(A * !Z)	0.02238	0.02238	0.02796
	(!A * Z)	0.00745	0.00741	0.01303
	(!A * Z)	0.02184	0.02191	0.02750

SKY130_FD_SC_HS__EINVPx

sky130_fd_sc_hs_tt_1.50v_25C.ccs
Cell Library: Process , Voltage
1.50, 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	0.00277	0.00276	0.37296
sky130_fd_sc_hs__einvp_2	0.00510	0.00427	0.79126
sky130_fd_sc_hs__einvp_4	0.01032	0.00771	1.47043
sky130_fd_sc_hs__einvp_8	0.02067	0.01214	2.62184

Leakage Information

Cell Name	Leakage(nW)		
	Min.	**Avg**	**Max.**
sky130_fd_sc_hs__einvp_1	0.00000	0.01623	0.07927
sky130_fd_sc_hs__einvp_2	0.00000	0.05888	0.19638
sky130_fd_sc_hs__einvp_4	0.00000	0.03782	0.14866
sky130_fd_sc_hs__einvp_8	0.00000	0.06263	0.26760

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)	0.07642	1.09718	11.20810
	TE->Z (FR)	0.11392	0.47431	4.44512
	TE->Z (RR)	0.10909	0.89796	6.76144
sky130_fd_sc_hs__einvp_2	A->Z (FR)	0.04756	0.92358	11.46960
	TE->Z (FR)	0.10373	0.42636	4.44616
	TE->Z (RR)	0.10596	0.75914	7.21317
sky130_fd_sc_hs__einvp_4	A->Z (FR)	0.04465	0.80137	11.32390
	TE->Z (FR)	0.11933	0.46709	4.44792
	TE->Z (RR)	0.10325	0.63534	6.97596
sky130_fd_sc_hs__einvp_8	A->Z (FR)	0.04637	0.71771	11.24290
	TE->Z (FR)	0.19748	0.58345	4.45352
	TE->Z (RR)	0.12878	0.61919	7.17806

Delay(ns) to Z falling :

Cell Name	Timing Arc(Dir)	Delay(ns)		
		First	Mid	Last
sky130_fd_sc_hs__einvp_1	A->Z (RF)	0.02632	0.44471	4.62188
	TE->Z (FF)	0.11693	0.47541	4.44508
	TE->Z (RF)	0.02722	0.41760	4.27016
sky130_fd_sc_hs__einvp_2	A->Z (RF)	0.02101	0.40449	4.97141
	TE->Z (FF)	0.10566	0.43622	4.44610
	TE->Z (RF)	0.02527	0.37547	4.52558
sky130_fd_sc_hs__einvp_4	A->Z (RF)	0.02106	0.36267	5.09880
	TE->Z (FF)	0.12112	0.47297	4.44775
	TE->Z (RF)	0.02664	0.32307	4.40651
sky130_fd_sc_hs__einvp_8	A->Z (RF)	0.02305	0.33859	5.39461
	TE->Z (FF)	0.19975	0.59175	4.45301
	TE->Z (RF)	0.03225	0.28249	4.27507

Power Information

Internal switching power(pJ) to Z rising :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__einvp_1	A	-0.00049	-0.00038	0.00091
	A	0.00259	0.00270	0.00399
	TE	0.00507	0.00496	0.00678
	TE	0.00321	0.00311	0.00494
sky130_fd_sc_hs__einvp_2	A	-0.00140	-0.00117	0.00092
	A	0.00430	0.00454	0.00661
	TE	0.00791	0.00785	0.01211
	TE	0.00544	0.00536	0.00968
sky130_fd_sc_hs__einvp_4	A	-0.00273	-0.00222	0.00199
	A	0.00880	0.00931	0.01354
	TE	0.01502	0.01481	0.02005
	TE	0.01114	0.01090	0.01624
sky130_fd_sc_hs__einvp_8	A	-0.00537	-0.00439	0.00392
	A	0.01782	0.01877	0.02573
	TE	0.02632	0.02604	0.03051
	TE	0.02224	0.02197	0.02646

Internal switching power(pJ) to Z falling :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__einvp_1	A	0.00289	0.00290	0.00360
	A	-0.00018	-0.00018	0.00026
	TE	0.00644	0.00639	0.00826
	TE	0.00234	0.00224	0.00413
sky130_fd_sc_hs__einvp_2	A	0.00460	0.00471	0.00579
	A	-0.00109	-0.00101	-0.00007
	TE	0.01027	0.01019	0.01456
	TE	0.00362	0.00352	0.00778
sky130_fd_sc_hs__einvp_4	A	0.00907	0.00922	0.01195
	A	-0.00243	-0.00231	-0.00027
	TE	0.01971	0.01951	0.02509
	TE	0.00722	0.00698	0.01222
sky130_fd_sc_hs__einvp_8	A	0.01826	0.01839	0.02435
	A	-0.00483	-0.00475	-0.00041
	TE	0.03566	0.03548	0.04039
	TE	0.01424	0.01395	0.01844

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__einvp_1	(!TE * Z)	0.00054	0.00054	0.00054
	(!TE * Z)	-0.00103	-0.00104	-0.00103
	(!TE * !Z)	0.00061	0.00061	0.00060
	(!TE * !Z)	-0.00096	-0.00096	-0.00095
sky130_fd_sc_hs__einvp_2	(!TE * Z)	0.00100	0.00100	0.00097
	(!TE * Z)	-0.00208	-0.00209	-0.00207
	(!TE * !Z)	0.00117	0.00116	0.00116
	(!TE * !Z)	-0.00179	-0.00178	-0.00177
sky130_fd_sc_hs__einvp_4	(!TE * Z)	0.00192	0.00191	0.00185
	(!TE * Z)	-0.00409	-0.00412	-0.00410
	(!TE * !Z)	0.00224	0.00226	0.00225
	(!TE * !Z)	-0.00354	-0.00356	-0.00354
sky130_fd_sc_hs__einvp_8	(!TE * Z)	0.00375	0.00374	0.00363
	(!TE * Z)	-0.00798	-0.00794	-0.00793
	(!TE * !Z)	0.00442	0.00441	0.00439
	(!TE * !Z)	-0.00690	-0.00688	-0.00685

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__einvp_1	(!TE * Z)	-0.00053	-0.00054	-0.00053
	(!TE * Z)	0.00103	0.00104	0.00103
	(!TE * !Z)	-0.00061	-0.00061	-0.00060
	(!TE * !Z)	0.00097	0.00098	0.00095
sky130_fd_sc_hs__einvp_2	(!TE * Z)	-0.00097	-0.00097	-0.00096
	(!TE * Z)	0.00208	0.00209	0.00207
	(!TE * !Z)	-0.00117	-0.00116	-0.00116
	(!TE * !Z)	0.00189	0.00189	0.00179
sky130_fd_sc_hs__einvp_4	(!TE * Z)	-0.00184	-0.00185	-0.00184
	(!TE * Z)	0.00409	0.00412	0.00410
	(!TE * !Z)	-0.00224	-0.00226	-0.00225
	(!TE * !Z)	0.00372	0.00372	0.00356
sky130_fd_sc_hs__einvp_8	(!TE * Z)	-0.00367	-0.00364	-0.00363
	(!TE * Z)	0.00798	0.00794	0.00793
	(!TE * !Z)	-0.00442	-0.00441	-0.00439
	(!TE * !Z)	0.00714	0.00712	0.00686

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__einvp_1	(A * !Z)	0.00448	0.00441	0.00630
	(A * !Z)	0.00164	0.00155	0.00345
	(!A * Z)	0.00445	0.00437	0.00625
	(!A * Z)	0.00155	0.00146	0.00335
sky130_fd_sc_hs__einvp_2	(A * !Z)	0.00686	0.00681	0.01106
	(A * !Z)	0.00253	0.00243	0.00672
	(!A * Z)	0.00690	0.00685	0.01107
	(!A * Z)	0.00238	0.00229	0.00652
sky130_fd_sc_hs__einvp_4	(A * !Z)	0.01301	0.01284	0.01802
	(A * !Z)	0.00525	0.00504	0.01026
	(!A * Z)	0.01305	0.01287	0.01800
	(!A * Z)	0.00490	0.00466	0.00981
sky130_fd_sc_hs__einvp_8	(A * !Z)	0.02235	0.02218	0.02668
	(A * !Z)	0.01053	0.01029	0.01479
	(!A * Z)	0.02249	0.02230	0.02667
	(!A * Z)	0.00987	0.00960	0.01399

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__einvp_1	(A * !Z)	-0.00087	-0.00101	0.00068
	(A * !Z)	0.00192	0.00184	0.00352
	(!A * Z)	-0.00092	-0.00102	0.00068
	(!A * Z)	0.00198	0.00188	0.00356
sky130_fd_sc_hs__einvp_2	(A * !Z)	-0.00217	-0.00232	0.00215
	(A * !Z)	0.00210	0.00201	0.00648
	(!A * Z)	-0.00234	-0.00238	0.00210
	(!A * Z)	0.00220	0.00213	0.00657
sky130_fd_sc_hs__einvp_4	(A * !Z)	-0.00395	-0.00440	0.00111
	(A * !Z)	0.00363	0.00337	0.00884
	(!A * Z)	-0.00424	-0.00452	0.00104
	(!A * Z)	0.00386	0.00357	0.00902
sky130_fd_sc_hs__einvp_8	(A * !Z)	-0.00740	-0.00816	-0.00334
	(A * !Z)	0.00410	0.00376	0.00852
	(!A * Z)	-0.00787	-0.00841	-0.00351
	(!A * Z)	0.00456	0.00416	0.00886

SKY130_FD_SC_HS__FAHCIN

sky130_fd_sc_hs_tt_1.50v_25C.ccs
Cell Library: Process , Voltage
1.50, 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	0.00283	0.00699	0.00496	0.40184	0.84940

Leakage Information

Cell Name	Leakage(nW)		
	Min.	Avg	Max.
sky130_fd_sc_hs__fahcin_1	0.00000	0.78088	0.87743

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)	0.21947	0.95744	5.36126
	B->COUT (RR)	0.20680	0.84938	5.01433
	CIN->COUT (FR)	0.10147	0.93669	9.42569

Delay(ns) to COUT falling :

Cell Name	Timing Arc(Dir)	Delay(ns)		
		First	Mid	Last
sky130_fd_sc_hs__fahcin_1	A->COUT (FF)	0.30456	0.92906	4.80122
	B->COUT (FF)	0.25730	0.82962	4.39716
	CIN->COUT (RF)	0.05035	0.48323	4.70089

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)	-	0.37536	1.24994	9.63909
	B->SUM (-R)	-	0.34740	1.17636	9.25278
	CIN->SUM (RR)	(A * !B) + (!A * B)	0.12015	0.79218	7.18211
	CIN->SUM (FR)	(A * B) + (!A * !B)	0.19382	0.98675	8.67122

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)	-	0.39892	0.99443	5.11813
	B->SUM (-F)	-	0.32791	0.88459	4.72710
	CIN->SUM (FF)	(A * !B) + (!A * B)	0.19467	0.81858	5.15162
	CIN->SUM (RF)	(A * B) + (!A * !B)	0.19023	0.52550	2.48298

Power Information

Internal switching power(pJ) to COUT rising :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__fahcin_1	A	0.01170	0.01176	0.01393
	A	0.01022	0.01023	0.01245
	B	0.01237	0.01269	0.02004
	B	0.00867	0.00894	0.01634
	CIN	0.00486	0.00503	0.00883
	CIN	0.00765	0.00785	0.01167

Internal switching power(pJ) to COUT falling :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__fahcin_1	A	0.01010	0.01018	0.01325
	A	0.01159	0.01166	0.01474
	B	0.00884	0.00928	0.01790
	B	0.01254	0.01299	0.02164
	CIN	0.00808	0.00806	0.01137
	CIN	0.00529	0.00525	0.00853

Internal switching power(pJ) to SUM rising (conditional):

Cell Name	Input	When	Power(pJ)		
			first	mid	last
sky130_fd_sc_hs__fahcin_1	A	-	0.02268	0.02272	0.02778
	A	-	0.01971	0.01976	0.02486
	B	-	0.02281	0.02457	0.04094
	B	-	0.01541	0.01716	0.03355
	CIN	(A * B) + (!A * !B)	0.00735	0.00771	0.02112
	CIN	(A * B) + (!A * !B)	0.01291	0.01330	0.02671
	CIN	(A * !B) + (!A * B)	0.00809	0.00809	0.01137
	CIN	(A * !B) + (!A * B)	0.00529	0.00530	0.00856

Internal switching power(pJ) to SUM falling (conditional):

Cell Name	Input	When	Power(pJ)		
			first	mid	last
sky130_fd_sc_hs__fahcin_1	A	-	0.01926	0.01952	0.02751
	A	-	0.02223	0.02250	0.02952
	B	-	0.01552	0.01716	0.03704
	B	-	0.02294	0.02464	0.04422
	CIN	(A * B) + (!A * !B)	0.01413	0.01397	0.02682
	CIN	(A * B) + (!A * !B)	0.00855	0.00837	0.02121
	CIN	(A * !B) + (!A * B)	0.00485	0.00505	0.00833
	CIN	(A * !B) + (!A * B)	0.00765	0.00785	0.01081

SKY130_FD_SC_HS__FAHCON

sky130_fd_sc_hs_tt_1.50v_25C.ccs
Cell Library: Process , Voltage
1.50, 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	0.00281	0.00886	0.00499	0.39599	0.82312

Leakage Information

Cell Name	Leakage(nW)		
	Min.	Avg	Max.
sky130_fd_sc_hs__fahcon_1	0.00000	0.78088	0.90250

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)	0.30293	1.13617	7.08867
	B->COUT_N (FR)	0.22054	1.02167	9.39536
	CI->COUT_N (FR)	0.09506	0.91625	9.25055

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)	0.24798	0.63900	2.37760
	B->COUT_N (RF)	0.16936	0.56452	4.80948
	CI->COUT_N (RF)	0.04862	0.47273	4.66160

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)	-	0.33411	1.20777	9.30162
	B->SUM (-R)	-	0.27922	1.09819	8.82915
	CI->SUM (RR)	(A * B) + (!A * !B)	0.11479	0.77578	7.01217
	CI->SUM (FR)	(A * !B) + (!A * B)	0.19049	0.99098	8.66784

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)	-	0.36983	0.95609	4.95191
	B->SUM (-F)	-	0.28256	0.81294	4.43689
	CI->SUM (FF)	(A * B) + (!A * !B)	0.19116	0.78861	5.00203
	CI->SUM (RF)	(A * !B) + (!A * B)	0.20402	0.53165	2.44520

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	0.00941	0.00937	0.01239
	A	0.01094	0.01089	0.01408
	B	0.00682	0.00744	0.01973
	B	0.01167	0.01229	0.02469
	CI	0.00483	0.00490	0.00879
	CI	0.00764	0.00770	0.01174

Internal switching power(pJ) to COUT_N falling :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__fahcon_1	A	0.01082	0.01054	0.01272
	A	0.00923	0.00891	0.01114
	B	0.01155	0.01180	0.02196
	B	0.00669	0.00690	0.01709
	CI	0.00815	0.00804	0.01165
	CI	0.00535	0.00521	0.00876

Internal switching power(pJ) to SUM rising (conditional):

Cell Name	Input	When	Power(pJ)		
			first	mid	last
sky130_fd_sc_hs__fahcon_1	A	-	0.01986	0.01980	0.02502
	A	-	0.01669	0.01679	0.02209
	B	-	0.02276	0.02803	0.05224
	B	-	0.01305	0.01832	0.04249
	CI	(A * B) + (!A * !B)	0.01392	0.01381	0.02607
	CI	(A * B) + (!A * !B)	0.00832	0.00821	0.02048
	CI	(A * !B) + (!A * B)	0.00483	0.00487	0.00855
	CI	(A * !B) + (!A * B)	0.00764	0.00769	0.01137

Internal switching power(pJ) to SUM falling (conditional):

Cell Name	Input	When	Power(pJ)		
			first	mid	last
sky130_fd_sc_hs__fahcon_1	A	-	0.01822	0.01850	0.02575
	A	-	0.02126	0.02170	0.02844
	B	-	0.01431	0.01937	0.04591
	B	-	0.02402	0.02912	0.05545
	CI	(A * B) + (!A * !B)	0.00836	0.00892	0.02219
	CI	(A * B) + (!A * !B)	0.01398	0.01451	0.02760
	CI	(A * !B) + (!A * B)	0.00815	0.00806	0.01162
	CI	(A * !B) + (!A * B)	0.00535	0.00521	0.00864

SKY130_FD_SC_HS__FAHx

sky130_fd_sc_hs_tt_1.50v_25C.ccs
Cell Library: Process , Voltage
1.50, 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	0.00471	0.00704	0.00249	0.75450	0.82655
sky130_fd_sc_hs__fah_2	0.00475	0.00802	0.00263	1.49637	1.61398
sky130_fd_sc_hs__fah_4	0.00467	0.00726	0.00251	2.78894	3.17364

Leakage Information

Cell Name	Leakage(nW)		
	Min.	**Avg**	**Max.**
sky130_fd_sc_hs__fah_1	0.00000	0.78089	0.92758
sky130_fd_sc_hs__fah_2	0.00000	0.81527	0.96196
sky130_fd_sc_hs__fah_4	0.00000	0.88404	1.03074

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)	0.35058	1.01644	7.26558
	B->COUT (RR)	0.28960	1.01512	7.43474
	CI->COUT (RR)	0.16050	0.91094	7.68957
sky130_fd_sc_hs__fah_2	A->COUT (RR)	0.36246	0.88351	6.85362
	B->COUT (RR)	0.27413	0.86222	7.32081
	CI->COUT (RR)	0.14737	0.74852	7.22588
sky130_fd_sc_hs__fah_4	A->COUT (RR)	0.35909	0.81945	7.23950
	B->COUT (RR)	0.29976	0.82315	7.48990
	CI->COUT (RR)	0.18357	0.74025	7.86553

Delay(ns) to COUT falling :

Cell Name	Timing Arc(Dir)	Delay(ns)		
		First	Mid	Last
sky130_fd_sc_hs__fah_1	A->COUT (FF)	0.34520	0.84791	4.22936
	B->COUT (FF)	0.33232	0.90224	5.24235
	CI->COUT (FF)	0.25837	0.87979	5.23055
sky130_fd_sc_hs__fah_2	A->COUT (FF)	0.38068	0.88080	4.21830
	B->COUT (FF)	0.36542	0.91606	5.30671
	CI->COUT (FF)	0.25144	0.86134	5.05529
sky130_fd_sc_hs__fah_4	A->COUT (FF)	0.44221	0.96016	4.36415
	B->COUT (FF)	0.39990	0.96123	8.05034
	CI->COUT (FF)	0.30341	0.92114	5.53233

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)	-	0.36047	1.24968	9.68249
	B->SUM (-R)	-	0.32559	1.18052	9.40419
	CI->SUM (RR)	(A * B) + (!A * !B)	0.15796	0.84973	7.26742
	CI->SUM (FR)	(A * !B) + (!A * B)	0.31472	1.21975	9.70972
sky130_fd_sc_hs__fah_2	A->SUM (-R)	-	0.36320	1.10837	9.16111
	B->SUM (-R)	-	0.34552	1.06344	8.99143
	CI->SUM (RR)	(A * B) + (!A * !B)	0.14756	0.73817	7.25589
	CI->SUM (FR)	(A * !B) + (!A * B)	0.30945	1.06584	9.19053
sky130_fd_sc_hs__fah_4	A->SUM (-R)	-	0.38229	1.05860	9.59955
	B->SUM (-R)	-	0.35359	1.00760	10.85090
	CI->SUM (RR)	(A * B) + (!A * !B)	0.19351	0.73391	7.50282
	CI->SUM (FR)	(A * !B) + (!A * B)	0.38800	1.10966	9.96019

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)	-	0.35034	0.87059	4.38301
	B->SUM (-F)	-	0.35126	0.93208	7.64464
	CI->SUM (FF)	(A * B) + (!A * !B)	0.24457	0.87556	5.18621
	CI->SUM (RF)	(A * !B) + (!A * B)	0.30199	0.75031	3.20674
sky130_fd_sc_hs__fah_2	A->SUM (-F)	-	0.39496	0.89782	4.37838
	B->SUM (-F)	-	0.37797	0.92790	7.94073
	CI->SUM (FF)	(A * B) + (!A * !B)	0.25925	0.86189	5.18141
	CI->SUM (RF)	(A * !B) + (!A * B)	0.27730	0.68376	2.96762
sky130_fd_sc_hs__fah_4	A->SUM (-F)	-	0.44090	0.97826	4.57026
	B->SUM (-F)	-	0.41831	1.00200	7.72496
	CI->SUM (FF)	(A * B) + (!A * !B)	0.30825	0.92751	5.60884
	CI->SUM (RF)	(A * !B) + (!A * B)	0.40767	0.87647	3.65951

Power Information

Internal switching power(pJ) to COUT rising :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__fah_1	A	0.01488	0.01481	0.02135
	A	0.01230	0.01224	0.01878
	B	0.01343	0.01368	0.02120
	B	0.00981	0.01003	0.01757
	CI	0.00928	0.00939	0.01194
	CI	0.00805	0.00816	0.01068
sky130_fd_sc_hs__fah_2	A	0.01666	0.01689	0.02314
	A	0.01394	0.01418	0.02043
	B	0.01500	0.01568	0.02308
	B	0.01072	0.01135	0.01881
	CI	0.00972	0.01000	0.01255
	CI	0.00825	0.00851	0.01106
sky130_fd_sc_hs__fah_4	A	0.01952	0.01985	0.02684
	A	0.01698	0.01740	0.02428
	B	0.01844	0.01927	0.02740
	B	0.01459	0.01550	0.02352
	CI	0.01493	0.01540	0.01845
	CI	0.01365	0.01415	0.01686

Internal switching power(pJ) to COUT falling :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__fah_1	A	0.01232	0.01266	0.01978
	A	0.01479	0.01511	0.02222
	B	0.01025	0.01091	0.01989
	B	0.01398	0.01463	0.02352
	CI	0.00778	0.00803	0.01094
	CI	0.00900	0.00928	0.01207
sky130_fd_sc_hs__fah_2	A	0.01390	0.01443	0.02080
	A	0.01662	0.01714	0.02351
	B	0.01044	0.01129	0.01966
	B	0.01472	0.01560	0.02359
	CI	0.00833	0.00880	0.01172
	CI	0.00980	0.01029	0.01306
sky130_fd_sc_hs__fah_4	A	0.01674	0.01755	0.02495
	A	0.01924	0.02004	0.02700
	B	0.01472	0.01578	0.11965
	B	0.01856	0.01962	0.12281
	CI	0.01311	0.01375	0.01677
	CI	0.01439	0.01503	0.01800

Internal switching power(pJ) to SUM rising (conditional):

Cell Name	Input	When	Power(pJ)		
			first	mid	last
sky130_fd_sc_hs__fah_1	A	-	0.02607	0.02555	0.03739
	A	-	0.02081	0.02031	0.03217
	B	-	0.02304	0.02533	0.04415
	B	-	0.01549	0.01775	0.03662
	CI	(A * B) + (!A * !B)	0.01272	0.01238	0.01666
	CI	(A * B) + (!A * !B)	0.00993	0.00959	0.01393
	CI	(A * !B) + (!A * B)	0.00778	0.00805	0.01126
	CI	(A * !B) + (!A * B)	0.00901	0.00929	0.01221
sky130_fd_sc_hs__fah_2	A	-	0.02769	0.02728	0.03906
	A	-	0.02224	0.02186	0.03373
	B	-	0.02502	0.02789	0.04590
	B	-	0.01644	0.01934	0.03740
	CI	(A * B) + (!A * !B)	0.01302	0.01335	0.01864
	CI	(A * B) + (!A * !B)	0.01006	0.01041	0.01566
	CI	(A * !B) + (!A * B)	0.00834	0.00885	0.01310
	CI	(A * !B) + (!A * B)	0.00981	0.01031	0.01340
sky130_fd_sc_hs__fah_4	A	-	0.02926	0.02947	0.04220
	A	-	0.02404	0.02424	0.03705
	B	-	0.01472	0.01585	0.12018
	B	-	0.01857	0.01968	0.12328
	CI	(A * B) + (!A * !B)	0.01846	0.01873	0.02320
	CI	(A * B) + (!A * !B)	0.01565	0.01593	0.02077
	CI	(A * !B) + (!A * B)	0.01313	0.01369	0.01731
	CI	(A * !B) + (!A * B)	0.01441	0.01501	0.01822

Internal switching power(pJ) to SUM falling (conditional):

Cell Name	Input	When	Power(pJ)		
			first	mid	last
sky130_fd_sc_hs__fah_1	A	-	0.01938	0.01989	0.03307
	A	-	0.02487	0.02541	0.03827
	B	-	0.01690	0.01991	0.21650
	B	-	0.02470	0.02778	0.22375
	CI	(A * B) + (!A * !B)	0.00922	0.00924	0.01549
	CI	(A * B) + (!A * !B)	0.01202	0.01212	0.01792
	CI	(A * !B) + (!A * B)	0.00927	0.00938	0.01173
	CI	(A * !B) + (!A * B)	0.00805	0.00816	0.01042
sky130_fd_sc_hs__fah_2	A	-	0.02162	0.02224	0.03552
	A	-	0.02707	0.02766	0.04038
	B	-	0.01678	0.01972	0.24414
	B	-	0.02537	0.02848	0.25267
	CI	(A * B) + (!A * !B)	0.01042	0.01061	0.01749
	CI	(A * B) + (!A * !B)	0.01337	0.01379	0.02020
	CI	(A * !B) + (!A * B)	0.00971	0.00999	0.01243
	CI	(A * !B) + (!A * B)	0.00824	0.00852	0.01090
sky130_fd_sc_hs__fah_4	A	-	0.02371	0.02451	0.03784
	A	-	0.02905	0.03010	0.04306
	B	-	0.02286	0.02900	0.22071
	B	-	0.03090	0.03702	0.22728
	CI	(A * B) + (!A * !B)	0.01500	0.01521	0.02255
	CI	(A * B) + (!A * !B)	0.01782	0.01801	0.02429
	CI	(A * !B) + (!A * B)	0.01493	0.01539	0.01782
	CI	(A * !B) + (!A * B)	0.01364	0.01418	0.01629

SKY130_FD_SC_HS__FAx

sky130_fd_sc_hs_tt_1.50v_25C.ccs
Cell Library: Process , Voltage
1.50, 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	0.00992	0.00975	0.00707	0.86094	0.86779
sky130_fd_sc_hs__fa_2	0.01051	0.01010	0.00753	1.49105	1.59237
sky130_fd_sc_hs__fa_4	0.01048	0.01024	0.00740	3.19141	3.17760

Leakage Information

Cell Name	Leakage(nW)		
	Min.	Avg	Max.
sky130_fd_sc_hs__fa_1	0.00000	0.13898	0.19412
sky130_fd_sc_hs__fa_2	0.00000	0.17084	0.22582
sky130_fd_sc_hs__fa_4	0.00000	0.23962	0.29459

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)	0.13156	0.80408	7.14917
	B->COUT (RR)	0.14336	0.81884	7.09139
	CIN->COUT (RR)	0.12446	0.80204	7.13689
sky130_fd_sc_hs__fa_2	A->COUT (RR)	0.13644	0.71520	7.06610
	B->COUT (RR)	0.13979	0.73033	7.03562
	CIN->COUT (RR)	0.12726	0.72452	7.06271
sky130_fd_sc_hs__fa_4	A->COUT (RR)	0.17879	0.69809	7.43374
	B->COUT (RR)	0.15851	0.70399	7.41014
	CIN->COUT (RR)	0.15902	0.70917	7.43601

Delay(ns) to COUT falling :

Cell Name	Timing Arc(Dir)	Delay(ns)		
		First	Mid	Last
sky130_fd_sc_hs__fa_1	A->COUT (FF)	0.29134	0.88110	5.31998
	B->COUT (FF)	0.25627	0.85263	5.17284
	CIN->COUT (FF)	0.22484	0.82711	5.08163
sky130_fd_sc_hs__fa_2	A->COUT (FF)	0.34375	0.91874	5.35979
	B->COUT (FF)	0.30128	0.88488	5.23526
	CIN->COUT (FF)	0.30962	0.87938	5.13279
sky130_fd_sc_hs__fa_4	A->COUT (FF)	0.46291	1.05389	5.97743
	B->COUT (FF)	0.42000	1.01342	5.89447
	CIN->COUT (FF)	0.41968	0.99452	5.80103

Delay(ns) to SUM rising :

Cell Name	Timing Arc(Dir)	Delay(ns)		
		First	Mid	Last
sky130_fd_sc_hs__fa_1	A->SUM (-R)	0.40827	1.22979	9.52015
	B->SUM (-R)	0.38784	1.20065	9.32862
	CIN->SUM (-R)	0.34816	1.15113	9.08179
sky130_fd_sc_hs__fa_2	A->SUM (-R)	0.51580	1.22655	9.68719
	B->SUM (-R)	0.47410	1.18315	9.50455
	CIN->SUM (-R)	0.48450	1.18101	9.34546
sky130_fd_sc_hs__fa_4	A->SUM (-R)	0.73898	1.35451	10.15450
	B->SUM (-R)	0.68883	1.30311	10.02520
	CIN->SUM (-R)	0.69403	1.29072	9.87771

Delay(ns) to SUM falling :

Cell Name	Timing Arc(Dir)	Delay(ns)		
		First	Mid	Last
sky130_fd_sc_hs__fa_1	A->SUM (-F)	0.34132	0.89455	5.16671
	B->SUM (-F)	0.33420	0.90344	5.26229
	CIN->SUM (-F)	0.28325	0.83201	4.98009
sky130_fd_sc_hs__fa_2	A->SUM (-F)	0.42969	0.97828	5.31042
	B->SUM (-F)	0.43480	0.99808	5.45173
	CIN->SUM (-F)	0.38712	0.92403	5.18793
sky130_fd_sc_hs__fa_4	A->SUM (-F)	0.58372	1.14007	5.90350
	B->SUM (-F)	0.53694	1.11985	6.06794
	CIN->SUM (-F)	0.51298	1.06049	5.81919

Power Information

Internal switching power(pJ) to COUT rising :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__fa_1	A	0.00867	0.00866	0.00996
	A	0.00322	0.00316	0.00442
	B	0.00838	0.00830	0.01007
	B	0.00320	0.00312	0.00486
	CIN	0.00731	0.00721	0.00983
	CIN	0.00397	0.00386	0.00648
sky130_fd_sc_hs__fa_2	A	0.01097	0.01096	0.01205
	A	0.00505	0.00499	0.00615
	B	0.01066	0.01057	0.01224
	B	0.00518	0.00509	0.00676
	CIN	0.00971	0.00955	0.01192
	CIN	0.00596	0.00579	0.00818
sky130_fd_sc_hs__fa_4	A	0.01535	0.01575	0.01723
	A	0.00909	0.00949	0.01076
	B	0.01537	0.01560	0.01752
	B	0.01015	0.01040	0.01208
	CIN	0.01403	0.01422	0.01682
	CIN	0.01050	0.01077	0.01309

Internal switching power(pJ) to COUT falling :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__fa_1	A	0.00329	0.00334	0.00473
	A	0.00874	0.00884	0.00995
	B	0.00390	0.00391	0.00673
	B	0.00908	0.00910	0.01174
	CIN	0.00444	0.00453	0.00736
	CIN	0.00781	0.00789	0.01056
sky130_fd_sc_hs__fa_2	A	0.00517	0.00520	0.00677
	A	0.01106	0.01109	0.01229
	B	0.00580	0.00579	0.00884
	B	0.01127	0.01129	0.01393
	CIN	0.00633	0.00644	0.00914
	CIN	0.01015	0.01024	0.01286
sky130_fd_sc_hs__fa_4	A	0.00990	0.01007	0.01227
	A	0.01606	0.01631	0.01753
	B	0.01041	0.01047	0.01382
	B	0.01563	0.01577	0.01840
	CIN	0.01114	0.01092	0.01442
	CIN	0.01472	0.01485	0.01741

Internal switching power(pJ) to SUM rising :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__fa_1	A	0.01251	0.01251	0.01428
	A	0.00874	0.00880	0.01009
	B	0.01099	0.01071	0.01298
	B	0.00911	0.00913	0.01195
	CIN	0.00888	0.00880	0.01209
	CIN	0.00783	0.00791	0.01075
sky130_fd_sc_hs__fa_2	A	0.01489	0.01520	0.01705
	A	0.01109	0.01113	0.01241
	B	0.01358	0.01371	0.01600
	B	0.01130	0.01132	0.01416
	CIN	0.01236	0.01221	0.01524
	CIN	0.01016	0.01026	0.01301
sky130_fd_sc_hs__fa_4	A	0.01902	0.01969	0.02152
	A	0.01626	0.01650	0.01772
	B	0.01817	0.01836	0.02037
	B	0.01565	0.01580	0.01887
	CIN	0.01632	0.01635	0.01912
	CIN	0.01474	0.01491	0.01771

Internal switching power(pJ) to SUM falling :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__fa_1	A	0.00863	0.00865	0.00986
	A	0.01208	0.01210	0.01415
	B	0.00834	0.00828	0.00988
	B	0.01253	0.01256	0.01481
	CIN	0.00750	0.00740	0.00977
	CIN	0.00999	0.00990	0.01464
sky130_fd_sc_hs__fa_2	A	0.01095	0.01094	0.01187
	A	0.01441	0.01472	0.01689
	B	0.01062	0.01054	0.01209
	B	0.01444	0.01466	0.01695
	CIN	0.00970	0.00954	0.01180
	CIN	0.01245	0.01245	0.01734
sky130_fd_sc_hs__fa_4	A	0.01510	0.01555	0.01701
	A	0.02008	0.02056	0.02277
	B	0.01533	0.01557	0.01730
	B	0.01884	0.01862	0.02086
	CIN	0.00919	0.00847	0.01552
	CIN	0.01702	0.01653	0.02126

SKY130_FD_SC_HS__HAx

sky130_fd_sc_hs_tt_1.50v_25C.ccs
Cell Library: Process , Voltage 1.50, 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	0.00473	0.00451	0.82839	0.77783
sky130_fd_sc_hs__ha_2	0.00477	0.00498	1.48753	1.54878
sky130_fd_sc_hs__ha_4	0.00908	0.00826	2.81913	3.13384

Leakage Information

Cell Name	Leakage(nW)		
	Min.	**Avg**	**Max.**
sky130_fd_sc_hs__ha_1	0.00000	0.22490	0.34288
sky130_fd_sc_hs__ha_2	0.00000	0.18709	0.22203
sky130_fd_sc_hs__ha_4	0.00000	0.53110	0.75452

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)	0.10450	0.74623	6.97551
	B->COUT (RR)	0.09956	0.74368	6.96959
sky130_fd_sc_hs__ha_2	A->COUT (RR)	0.11142	0.67574	6.98411
	B->COUT (RR)	0.10772	0.68133	6.95729
sky130_fd_sc_hs__ha_4	A->COUT (RR)	0.12962	0.60747	7.04409
	B->COUT (RR)	0.11435	0.60189	7.01837

Delay(ns) to COUT falling :

Cell Name	Timing Arc(Dir)	Delay(ns)		
		First	Mid	Last
sky130_fd_sc_hs__ha_1	A->COUT (FF)	0.13303	0.66665	4.43783
	B->COUT (FF)	0.11832	0.63799	4.36035
sky130_fd_sc_hs__ha_2	A->COUT (FF)	0.15628	0.69225	4.59205
	B->COUT (FF)	0.14475	0.66985	4.51713
sky130_fd_sc_hs__ha_4	A->COUT (FF)	0.17441	0.66224	4.46745
	B->COUT (FF)	0.14976	0.62733	4.38246

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	0.10567	0.75386	6.85507
	A->SUM (FR)	B	0.21327	1.03470	8.65456
	B->SUM (RR)	!A	0.09235	0.72530	6.81401
	B->SUM (FR)	A	0.21059	1.01788	8.56799
sky130_fd_sc_hs__ha_2	A->SUM (RR)	!B	0.11284	0.65592	6.85067
	A->SUM (FR)	B	0.27661	1.00523	8.89420
	B->SUM (RR)	!A	0.10284	0.63636	6.81273
	B->SUM (FR)	A	0.27187	0.98968	8.80686
sky130_fd_sc_hs__ha_4	A->SUM (RR)	!B	0.12449	0.59675	7.05505
	A->SUM (FR)	B	0.30044	0.92636	8.89692
	B->SUM (RR)	!A	0.10999	0.56797	6.99594
	B->SUM (FR)	A	0.28497	0.90436	8.79979

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	0.19199	0.71774	4.59259
	A->SUM (RF)	B	0.16000	0.47802	2.34826
	B->SUM (FF)	!A	0.17144	0.68290	4.36134
	B->SUM (RF)	A	0.15525	0.47381	2.29863
sky130_fd_sc_hs__ha_2	A->SUM (FF)	!B	0.25948	0.79658	5.02497
	A->SUM (RF)	B	0.20057	0.51525	2.60403
	B->SUM (FF)	!A	0.23927	0.77017	4.79268
	B->SUM (RF)	A	0.19712	0.51960	2.56745
sky130_fd_sc_hs__ha_4	A->SUM (FF)	!B	0.26055	0.76699	5.11106
	A->SUM (RF)	B	0.23390	0.52614	2.77664
	B->SUM (FF)	!A	0.23370	0.73120	4.88191
	B->SUM (RF)	A	0.21855	0.51965	2.72999

Power Information

Internal switching power(pJ) to COUT rising :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__ha_1	A	0.00603	0.00602	0.00833
	A	0.00299	0.00296	0.00529
	B	0.00568	0.00567	0.00930
	B	0.00324	0.00321	0.00691
sky130_fd_sc_hs__ha_2	A	0.00819	0.00847	0.01054
	A	0.00514	0.00535	0.00748
	B	0.00799	0.00817	0.01088
	B	0.00531	0.00543	0.00824
sky130_fd_sc_hs__ha_4	A	0.01525	0.01607	0.02085
	A	0.00968	0.01041	0.01520
	B	0.01435	0.01507	0.02190
	B	0.01003	0.01067	0.01767

Internal switching power(pJ) to COUT falling :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__ha_1	A	0.00310	0.00337	0.00695
	A	0.00612	0.00639	0.00985
	B	0.00369	0.00383	0.00752
	B	0.00609	0.00622	0.00982
sky130_fd_sc_hs__ha_2	A	0.00565	0.00596	0.00904
	A	0.00869	0.00900	0.01195
	B	0.00598	0.00609	0.00922
	B	0.00863	0.00873	0.01168
sky130_fd_sc_hs__ha_4	A	0.01017	0.01107	0.01823
	A	0.01573	0.01660	0.02359
	B	0.01127	0.01211	0.01961
	B	0.01546	0.01617	0.02351

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	0.00310	0.00337	0.00716
	A	B	0.00613	0.00640	0.01011
	A	!B	0.00876	0.00883	0.01131
	A	!B	0.00298	0.00303	0.00555
	B	A	0.00371	0.00386	0.00769
	B	A	0.00610	0.00624	0.01002
	B	!A	0.00662	0.00661	0.01119
	B	!A	0.00211	0.00211	0.00668
sky130_fd_sc_hs__ha_2	A	B	0.00566	0.00596	0.00971
	A	B	0.00870	0.00900	0.01226
	A	!B	0.01115	0.01142	0.01365
	A	!B	0.00542	0.00569	0.00797
	B	A	0.00599	0.00611	0.00961
	B	A	0.00863	0.00874	0.01192
	B	!A	0.00939	0.00963	0.01352
	B	!A	0.00446	0.00470	0.01057
sky130_fd_sc_hs__ha_4	A	B	0.01018	0.01107	0.01921
	A	B	0.01575	0.01663	0.02408
	A	!B	0.02240	0.02292	0.02753
	A	!B	0.01050	0.01105	0.01578
	B	A	0.01132	0.01203	0.02057
	B	A	0.01549	0.01621	0.02399
	B	!A	0.01786	0.01831	0.02630
	B	!A	0.00874	0.00920	0.01718

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	0.00602	0.00602	0.00829
	A	B	0.00300	0.00295	0.00525
	A	!B	0.00174	0.00181	0.00466
	A	!B	0.00739	0.00747	0.01006
	B	A	0.00568	0.00565	0.00916
	B	A	0.00324	0.00320	0.00678
	B	!A	0.00257	0.00288	0.00868
	B	!A	0.00713	0.00744	0.01304
sky130_fd_sc_hs__ha_2	A	B	0.00819	0.00846	0.01047
	A	B	0.00515	0.00535	0.00737
	A	!B	0.00377	0.00394	0.00713
	A	!B	0.00935	0.00961	0.01215
	B	A	0.00799	0.00814	0.01080
	B	A	0.00531	0.00543	0.00811
	B	!A	0.00424	0.00475	0.01083
	B	!A	0.00924	0.00974	0.01521
sky130_fd_sc_hs__ha_4	A	B	0.01525	0.01600	0.02054
	A	B	0.00968	0.01041	0.01485
	A	!B	0.00743	0.00798	0.01346
	A	!B	0.01904	0.01971	0.02445
	B	A	0.01435	0.01506	0.02161
	B	A	0.01003	0.01068	0.01734
	B	!A	0.00920	0.01021	0.02199
	B	!A	0.01855	0.01955	0.03023

SKY130_FD_SC_HS__INVx

sky130_fd_sc_hs_tt_1.50v_25C.ccs
Cell Library: Process , Voltage
1.50, 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	0.00805	12.90931
sky130_fd_sc_hs__bufinv_8	0.00277	5.40268
sky130_fd_sc_hs__inv_1	0.00280	0.84500
sky130_fd_sc_hs__inv_16	0.04238	12.77123
sky130_fd_sc_hs__inv_2	0.00513	1.63674
sky130_fd_sc_hs__inv_4	0.01036	3.11025
sky130_fd_sc_hs__inv_8	0.02051	6.11544

Leakage Information

Cell Name	Leakage(nW)		
	Min.	Avg	Max.
sky130_fd_sc_hs__bufinv_16	0.00000	0.42983	0.59285
sky130_fd_sc_hs__bufinv_8	0.00000	0.20632	0.28156
sky130_fd_sc_hs__inv_1	0.00000	0.01719	0.02973
sky130_fd_sc_hs__inv_16	0.00000	0.27509	0.47573
sky130_fd_sc_hs__inv_2	0.00000	0.03439	0.05947
sky130_fd_sc_hs__inv_4	0.00000	0.06877	0.11893
sky130_fd_sc_hs__inv_8	0.00000	0.13755	0.23786

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)	0.16580	0.65809	8.72631
sky130_fd_sc_hs__bufinv_8	A->Y (FR)	0.21550	0.80909	8.90426
sky130_fd_sc_hs__inv_1	A->Y (FR)	0.03868	0.91831	11.62820
sky130_fd_sc_hs__inv_16	A->Y (FR)	0.02636	0.57723	11.56610
sky130_fd_sc_hs__inv_2	A->Y (FR)	0.02986	0.79531	11.48500
sky130_fd_sc_hs__inv_4	A->Y (FR)	0.02800	0.71199	11.49940
sky130_fd_sc_hs__inv_8	A->Y (FR)	0.02726	0.63982	11.44660

Delay(ns) to Y falling :

Cell Name	Timing Arc(Dir)	Delay(ns)		
		First	Mid	Last
sky130_fd_sc_hs__bufinv_16	A->Y (RF)	0.14683	0.35308	2.36090
sky130_fd_sc_hs__bufinv_8	A->Y (RF)	0.17385	0.43505	2.34254
sky130_fd_sc_hs__inv_1	A->Y (RF)	0.01964	0.47348	5.96562
sky130_fd_sc_hs__inv_16	A->Y (RF)	0.01547	0.26040	5.93973
sky130_fd_sc_hs__inv_2	A->Y (RF)	0.01664	0.40348	5.86577
sky130_fd_sc_hs__inv_4	A->Y (RF)	0.01596	0.35367	5.92570
sky130_fd_sc_hs__inv_8	A->Y (RF)	0.01586	0.30446	5.90402

Power Information

Internal switching power(pJ) to Y rising :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__bufinv_16	A	0.04755	0.05104	0.07134
	A	0.05657	0.06005	0.08035
sky130_fd_sc_hs__bufinv_8	A	0.02490	0.02643	0.03319
	A	0.02798	0.02951	0.03673
sky130_fd_sc_hs__inv_1	A	-0.00057	-0.00044	0.00026
	A	0.00257	0.00269	0.00346
sky130_fd_sc_hs__inv_16	A	-0.01211	-0.00864	0.00344
	A	0.03539	0.03928	0.05165
sky130_fd_sc_hs__inv_2	A	-0.00143	-0.00118	0.00038
	A	0.00432	0.00457	0.00622
sky130_fd_sc_hs__inv_4	A	-0.00285	-0.00186	0.00081
	A	0.00878	0.00975	0.01257
sky130_fd_sc_hs__inv_8	A	-0.00565	-0.00409	0.00276
	A	0.01734	0.01897	0.02598

Internal switching power(pJ) to Y falling :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__bufinv_16	A	0.05737	0.06070	0.07994
	A	0.04832	0.05166	0.06929
sky130_fd_sc_hs__bufinv_8	A	0.02761	0.02894	0.03425
	A	0.02453	0.02582	0.03087
sky130_fd_sc_hs__inv_1	A	0.00281	0.00281	0.00372
	A	-0.00032	-0.00033	0.00000
sky130_fd_sc_hs__inv_16	A	0.03669	0.03728	0.06372
	A	-0.01075	-0.01048	-0.00337
sky130_fd_sc_hs__inv_2	A	0.00452	0.00464	0.00686
	A	-0.00124	-0.00116	-0.00045
sky130_fd_sc_hs__inv_4	A	0.00913	0.00936	0.01536
	A	-0.00246	-0.00230	-0.00079
sky130_fd_sc_hs__inv_8	A	0.01783	0.01820	0.03038
	A	-0.00512	-0.00489	-0.00127

SKY130_FD_SC_HS__MAJ3x

sky130_fd_sc_hs_tt_1.50v_25C.ccs
Cell Library: Process , Voltage
1.50, 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	0.00518	0.00485	0.00506	0.85353
sky130_fd_sc_hs__maj3_2	0.00551	0.00524	0.00538	1.69394
sky130_fd_sc_hs__maj3_4	0.01008	0.00951	0.00993	3.18761

Leakage Information

Cell Name	Leakage(nW)		
	Min.	**Avg**	**Max.**
sky130_fd_sc_hs__maj3_1	0.00000	0.06209	0.15448
sky130_fd_sc_hs__maj3_2	0.00000	0.07823	0.15914
sky130_fd_sc_hs__maj3_4	0.00000	0.15856	0.31827

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)	0.12079	0.77856	7.02459
	B->X (RR)	0.11526	0.76766	6.94614
	C->X (RR)	0.12180	0.78686	6.95761
sky130_fd_sc_hs__maj3_2	A->X (RR)	0.12744	0.68718	7.11778
	B->X (RR)	0.11470	0.68095	7.05597
	C->X (RR)	0.12002	0.69305	7.07126
sky130_fd_sc_hs__maj3_4	A->X (RR)	0.12325	0.60432	7.09302
	B->X (RR)	0.11630	0.59885	7.01605
	C->X (RR)	0.11675	0.60432	7.01867

Delay(ns) to X falling :

Cell Name	Timing Arc(Dir)	Delay(ns)		
		First	Mid	Last
sky130_fd_sc_hs__maj3_1	A->X (FF)	0.24621	0.81373	5.11055
	B->X (FF)	0.19368	0.77180	4.84894
	C->X (FF)	0.20364	0.79088	5.03489
sky130_fd_sc_hs__maj3_2	A->X (FF)	0.30934	0.86386	5.31044
	B->X (FF)	0.24404	0.80512	5.03453
	C->X (FF)	0.25116	0.82305	5.20591
sky130_fd_sc_hs__maj3_4	A->X (FF)	0.28200	0.80181	5.25114
	B->X (FF)	0.21633	0.73700	4.99188
	C->X (FF)	0.23119	0.76379	5.16212

Power Information

Internal switching power(pJ) to X rising :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__maj3_1	A	0.01158	0.01144	0.01349
	A	0.00333	0.00317	0.00526
	B	0.00968	0.00910	0.01373
	B	0.00323	0.00263	0.00726
	C	0.01110	0.01073	0.01384
	C	0.00389	0.00352	0.00663
sky130_fd_sc_hs__maj3_2	A	0.01379	0.01384	0.01584
	A	0.00496	0.00501	0.00711
	B	0.01221	0.01195	0.01634
	B	0.00522	0.00497	0.00942
	C	0.01366	0.01350	0.01640
	C	0.00595	0.00581	0.00877
sky130_fd_sc_hs__maj3_4	A	0.02564	0.02564	0.02997
	A	0.00999	0.01001	0.01449
	B	0.02206	0.02188	0.03117
	B	0.00964	0.00949	0.01872
	C	0.02514	0.02488	0.03089
	C	0.01122	0.01097	0.01691

Internal switching power(pJ) to X falling :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__maj3_1	A	0.00199	0.00194	0.00471
	A	0.01014	0.01016	0.01247
	B	0.00279	0.00259	0.00807
	B	0.00917	0.00903	0.01433
	C	0.00306	0.00287	0.00855
	C	0.01019	0.01002	0.01534
sky130_fd_sc_hs__maj3_2	A	0.00439	0.00451	0.00765
	A	0.01320	0.01334	0.01576
	B	0.00469	0.00451	0.01063
	B	0.01166	0.01160	0.01689
	C	0.00506	0.00484	0.01066
	C	0.01288	0.01280	0.01814
sky130_fd_sc_hs__maj3_4	A	0.00834	0.00859	0.01490
	A	0.02383	0.02413	0.02879
	B	0.00882	0.00897	0.02161
	B	0.02108	0.02131	0.03203
	C	0.00951	0.00947	0.02151
	C	0.02336	0.02356	0.03385

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__maj3_1	(B * C * X)	0.00290	0.00261	0.00258
	(B * C * X)	-0.00206	-0.00238	-0.00240
	(!B * !C * !X)	0.00230	0.00231	0.00230
	(!B * !C * !X)	-0.00260	-0.00261	-0.00260
sky130_fd_sc_hs__maj3_2	(B * C * X)	0.00277	0.00251	0.00248
	(B * C * X)	-0.00244	-0.00276	-0.00278
	(!B * !C * !X)	0.00209	0.00210	0.00210
	(!B * !C * !X)	-0.00305	-0.00306	-0.00306
sky130_fd_sc_hs__maj3_4	(B * C * X)	0.00517	0.00464	0.00458
	(B * C * X)	-0.00423	-0.00485	-0.00488
	(!B * !C * !X)	0.00403	0.00409	0.00404
	(!B * !C * !X)	-0.00530	-0.00534	-0.00530

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__maj3_1	(B * C * X)	-0.00257	-0.00257	-0.00256
	(B * C * X)	0.00239	0.00241	0.00240
	(!B * !C * !X)	-0.00219	-0.00231	-0.00230
	(!B * !C * !X)	0.00268	0.00264	0.00262
sky130_fd_sc_hs__maj3_2	(B * C * X)	-0.00246	-0.00246	-0.00246
	(B * C * X)	0.00277	0.00277	0.00278
	(!B * !C * !X)	-0.00198	-0.00210	-0.00210
	(!B * !C * !X)	0.00313	0.00307	0.00307
sky130_fd_sc_hs__maj3_4	(B * C * X)	-0.00455	-0.00458	-0.00455
	(B * C * X)	0.00485	0.00491	0.00488
	(!B * !C * !X)	-0.00383	-0.00405	-0.00404
	(!B * !C * !X)	0.00541	0.00535	0.00532

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__maj3_1	(A * C * X)	0.00214	0.00215	0.00214
	(A * C * X)	-0.00130	-0.00130	-0.00129
	(!A * !C * !X)	0.00058	0.00059	0.00056
	(!A * !C * !X)	-0.00292	-0.00294	-0.00298
sky130_fd_sc_hs__maj3_2	(A * C * X)	0.00251	0.00252	0.00252
	(A * C * X)	-0.00124	-0.00124	-0.00124
	(!A * !C * !X)	0.00072	0.00071	0.00069
	(!A * !C * !X)	-0.00300	-0.00299	-0.00304
sky130_fd_sc_hs__maj3_4	(A * C * X)	0.00420	0.00423	0.00421
	(A * C * X)	-0.00258	-0.00260	-0.00259
	(!A * !C * !X)	0.00135	0.00136	0.00128
	(!A * !C * !X)	-0.00567	-0.00570	-0.00582

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__maj3_1	(A * C * X)	-0.00204	-0.00206	-0.00213
	(A * C * X)	0.00137	0.00137	0.00131
	(!A * !C * !X)	-0.00055	-0.00055	-0.00055
	(!A * !C * !X)	0.00297	0.00300	0.00298
sky130_fd_sc_hs__maj3_2	(A * C * X)	-0.00241	-0.00242	-0.00250
	(A * C * X)	0.00132	0.00133	0.00126
	(!A * !C * !X)	-0.00067	-0.00067	-0.00066
	(!A * !C * !X)	0.00305	0.00306	0.00305
sky130_fd_sc_hs__maj3_4	(A * C * X)	-0.00400	-0.00401	-0.00419
	(A * C * X)	0.00280	0.00279	0.00264
	(!A * !C * !X)	-0.00124	-0.00125	-0.00124
	(!A * !C * !X)	0.00581	0.00586	0.00583

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__maj3_1	(A * B * X)	0.00237	0.00222	0.00221
	(A * B * X)	-0.00170	-0.00185	-0.00187
	(!A * !B * !X)	0.00117	0.00118	0.00116
	(!A * !B * !X)	-0.00290	-0.00291	-0.00293
sky130_fd_sc_hs__maj3_2	(A * B * X)	0.00270	0.00255	0.00254
	(A * B * X)	-0.00167	-0.00182	-0.00183
	(!A * !B * !X)	0.00143	0.00144	0.00142
	(!A * !B * !X)	-0.00287	-0.00289	-0.00290
sky130_fd_sc_hs__maj3_4	(A * B * X)	0.00469	0.00443	0.00439
	(A * B * X)	-0.00337	-0.00369	-0.00371
	(!A * !B * !X)	0.00264	0.00267	0.00261
	(!A * !B * !X)	-0.00551	-0.00554	-0.00557

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__maj3_1	(A * B * X)	-0.00216	-0.00217	-0.00219
	(A * B * X)	0.00191	0.00192	0.00188
	(!A * !B * !X)	-0.00110	-0.00116	-0.00116
	(!A * !B * !X)	0.00297	0.00297	0.00294
sky130_fd_sc_hs__maj3_2	(A * B * X)	-0.00248	-0.00250	-0.00253
	(A * B * X)	0.00186	0.00189	0.00185
	(!A * !B * !X)	-0.00135	-0.00142	-0.00142
	(!A * !B * !X)	0.00293	0.00293	0.00291
sky130_fd_sc_hs__maj3_4	(A * B * X)	-0.00426	-0.00430	-0.00436
	(A * B * X)	0.00377	0.00381	0.00373
	(!A * !B * !X)	-0.00249	-0.00260	-0.00261
	(!A * !B * !X)	0.00561	0.00561	0.00559

SKY130_FD_SC_HS__MUX2Ix

sky130_fd_sc_hs_tt_1.50v_25C.ccs
Cell Library: Process , Voltage
1.50, 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	0.00279	0.00263	0.00489	0.38919
sky130_fd_sc_hs__mux2i_2	0.00523	0.00553	0.00793	0.66482
sky130_fd_sc_hs__mux2i_4	0.01034	0.01032	0.01378	1.17943

Leakage Information

Cell Name	Leakage(nW)		
	Min.	**Avg**	**Max.**
sky130_fd_sc_hs__mux2i_1	0.00000	0.09883	0.19440
sky130_fd_sc_hs__mux2i_2	0.00000	0.08412	0.16087
sky130_fd_sc_hs__mux2i_4	0.00000	0.24114	0.47536

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)	-	0.12548	1.15071	11.46040
	A1->Y (FR)	-	0.11243	1.13830	11.45870
	S->Y (RR)	(A0 * !A1)	0.17096	0.96876	7.13334
	S->Y (FR)	(!A0 * A1)	0.14331	1.18089	11.43830
sky130_fd_sc_hs__mux2i_2	A0->Y (FR)	-	0.13766	1.02756	11.38950
	A1->Y (FR)	-	0.12709	0.99087	11.01560
	S->Y (RR)	(A0 * !A1)	0.18286	0.83136	6.66094
	S->Y (FR)	(!A0 * A1)	0.15231	1.04210	11.19520
sky130_fd_sc_hs__mux2i_4	A0->Y (FR)	-	0.12600	0.88530	11.01020
	A1->Y (FR)	-	0.12540	0.89581	11.26640
	S->Y (RR)	(A0 * !A1)	0.20410	0.81094	7.36116
	S->Y (FR)	(!A0 * A1)	0.14306	0.89386	10.74800

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)	-	0.03559	0.47860	4.83500
	A1->Y (RF)	-	0.03743	0.50092	5.06820
	S->Y (FF)	(A0 * !A1)	0.11427	0.56764	3.42235
	S->Y (RF)	(!A0 * A1)	0.04359	0.45852	4.52490
sky130_fd_sc_hs__mux2i_2	A0->Y (RF)	-	0.04403	0.46571	5.15395
	A1->Y (RF)	-	0.04231	0.45286	5.03261
	S->Y (FF)	(A0 * !A1)	0.14097	0.61392	3.87515
	S->Y (RF)	(!A0 * A1)	0.04639	0.39310	4.22790
sky130_fd_sc_hs__mux2i_4	A0->Y (RF)	-	0.04037	0.40556	4.96267
	A1->Y (RF)	-	0.04562	0.43631	5.34894
	S->Y (FF)	(A0 * !A1)	0.14225	0.56751	3.55542
	S->Y (RF)	(!A0 * A1)	0.04917	0.34498	4.10442

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	-	0.00096	0.00089	0.00190
	A0	-	0.00510	0.00504	0.00604
	A1	-	0.00068	0.00063	0.00162
	A1	-	0.00449	0.00445	0.00544
	S	(A0 * !A1)	0.00710	0.00694	0.01364
	S	(A0 * !A1)	0.00370	0.00352	0.01022
	S	(!A0 * A1)	0.00152	0.00164	0.00930
	S	(!A0 * A1)	0.00905	0.00916	0.01683
sky130_fd_sc_hs__mux2i_2	A0	-	0.00205	0.00186	0.00380
	A0	-	0.01011	0.00992	0.01182
	A1	-	0.00188	0.00170	0.00368
	A1	-	0.00989	0.00972	0.01170
	S	(A0 * !A1)	0.01199	0.01173	0.01725
	S	(A0 * !A1)	0.00773	0.00747	0.01297
	S	(!A0 * A1)	0.00362	0.00341	0.01068
	S	(!A0 * A1)	0.01647	0.01627	0.02351
sky130_fd_sc_hs__mux2i_4	A0	-	0.00243	0.00185	0.00617
	A0	-	0.01842	0.01785	0.02215
	A1	-	0.00249	0.00190	0.00604
	A1	-	0.01770	0.01683	0.02078
	S	(A0 * !A1)	0.02054	0.02013	0.03033
	S	(A0 * !A1)	0.01398	0.01359	0.02371
	S	(!A0 * A1)	0.00583	0.00559	0.01910
	S	(!A0 * A1)	0.02909	0.02888	0.04247

Internal switching power(pJ) to Y falling (conditional):

Cell Name	Input	When	Power(pJ)		
			first	mid	last
sky130_fd_sc_hs__mux2i_1	A0	-	0.00522	0.00524	0.00570
	A0	-	0.00120	0.00119	0.00154
	A1	-	0.00506	0.00508	0.00574
	A1	-	0.00111	0.00111	0.00146
	S	(A0 * !A1)	0.00432	0.00454	0.01171
	S	(A0 * !A1)	0.00774	0.00795	0.01510
	S	(!A0 * A1)	0.00974	0.00949	0.01649
	S	(!A0 * A1)	0.00217	0.00191	0.00882
sky130_fd_sc_hs__mux2i_2	A0	-	0.01072	0.01058	0.01172
	A0	-	0.00300	0.00285	0.00368
	A1	-	0.01039	0.01025	0.01136
	A1	-	0.00222	0.00206	0.00293
	S	(A0 * !A1)	0.00936	0.00939	0.01523
	S	(A0 * !A1)	0.01348	0.01355	0.01948
	S	(!A0 * A1)	0.01738	0.01693	0.02389
	S	(!A0 * A1)	0.00444	0.00395	0.01064
sky130_fd_sc_hs__mux2i_4	A0	-	0.01987	0.01949	0.02172
	A0	-	0.00445	0.00405	0.00595
	A1	-	0.01978	0.01945	0.02163
	A1	-	0.00416	0.00380	0.00560
	S	(A0 * !A1)	0.01773	0.01787	0.02968
	S	(A0 * !A1)	0.02397	0.02417	0.03610
	S	(!A0 * A1)	0.03209	0.03120	0.04256
	S	(!A0 * A1)	0.00870	0.00774	0.01917

Passive power(pJ) for A0 rising (conditional):

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__mux2i_1	(A1 * S * !Y)	0.00136	0.00138	0.00137
	(A1 * S * !Y)	-0.00074	-0.00075	-0.00074
	(!A1 * S * Y)	0.00062	0.00060	0.00058
	(!A1 * S * Y)	-0.00157	-0.00163	-0.00164
sky130_fd_sc_hs__mux2i_2	(A1 * S * !Y)	0.00250	0.00249	0.00250
	(A1 * S * !Y)	-0.00138	-0.00138	-0.00138
	(!A1 * S * Y)	0.00091	0.00091	0.00086
	(!A1 * S * Y)	-0.00307	-0.00317	-0.00322
sky130_fd_sc_hs__mux2i_4	(A1 * S * !Y)	0.00484	0.00487	0.00486
	(A1 * S * !Y)	-0.00283	-0.00284	-0.00282
	(!A1 * S * Y)	0.00175	0.00175	0.00165
	(!A1 * S * Y)	-0.00624	-0.00639	-0.00647

Passive power(pJ) for A0 falling (conditional):

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__mux2i_1	(A1 * S * !Y)	-0.00127	-0.00130	-0.00137
	(A1 * S * !Y)	0.00084	0.00084	0.00077
	(!A1 * S * Y)	-0.00057	-0.00058	-0.00057
	(!A1 * S * Y)	0.00163	0.00164	0.00164
sky130_fd_sc_hs__mux2i_2	(A1 * S * !Y)	-0.00231	-0.00240	-0.00250
	(A1 * S * !Y)	0.00148	0.00149	0.00141
	(!A1 * S * Y)	-0.00083	-0.00084	-0.00083
	(!A1 * S * Y)	0.00321	0.00323	0.00322
sky130_fd_sc_hs__mux2i_4	(A1 * S * !Y)	-0.00452	-0.00462	-0.00486
	(A1 * S * !Y)	0.00308	0.00307	0.00289
	(!A1 * S * Y)	-0.00161	-0.00161	-0.00159
	(!A1 * S * Y)	0.00649	0.00649	0.00647

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__mux2i_1	(A0 * !S * !Y)	0.00124	0.00125	0.00124
	(A0 * !S * !Y)	-0.00075	-0.00076	-0.00075
	(!A0 * !S * Y)	0.00049	0.00049	0.00046
	(!A0 * !S * Y)	-0.00157	-0.00160	-0.00164
sky130_fd_sc_hs__mux2i_2	(A0 * !S * !Y)	0.00257	0.00259	0.00257
	(A0 * !S * !Y)	-0.00153	-0.00154	-0.00153
	(!A0 * !S * Y)	0.00099	0.00099	0.00094
	(!A0 * !S * Y)	-0.00320	-0.00326	-0.00331
sky130_fd_sc_hs__mux2i_4	(A0 * !S * !Y)	0.00476	0.00479	0.00477
	(A0 * !S * !Y)	-0.00286	-0.00287	-0.00284
	(!A0 * !S * Y)	0.00157	0.00158	0.00148
	(!A0 * !S * Y)	-0.00629	-0.00641	-0.00653

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__mux2i_1	(A0 * !S * !Y)	-0.00107	-0.00116	-0.00124
	(A0 * !S * !Y)	0.00087	0.00086	0.00078
	(!A0 * !S * Y)	-0.00045	-0.00045	-0.00044
	(!A0 * !S * Y)	0.00164	0.00164	0.00164
sky130_fd_sc_hs__mux2i_2	(A0 * !S * !Y)	-0.00231	-0.00247	-0.00257
	(A0 * !S * !Y)	0.00168	0.00169	0.00157
	(!A0 * !S * Y)	-0.00091	-0.00092	-0.00091
	(!A0 * !S * Y)	0.00330	0.00332	0.00331
sky130_fd_sc_hs__mux2i_4	(A0 * !S * !Y)	-0.00427	-0.00454	-0.00477
	(A0 * !S * !Y)	0.00312	0.00310	0.00292
	(!A0 * !S * Y)	-0.00143	-0.00144	-0.00143
	(!A0 * !S * Y)	0.00652	0.00655	0.00653

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__mux2i_1	(A0 * A1 * !Y)	0.00527	0.00515	0.01168
	(A0 * A1 * !Y)	-0.00005	-0.00025	0.00633
	(!A0 * !A1 * Y)	0.00533	0.00518	0.01172
	(!A0 * !A1 * Y)	-0.00005	-0.00022	0.00634
sky130_fd_sc_hs__mux2i_2	(A0 * A1 * !Y)	0.00827	0.00781	0.01382
	(A0 * A1 * !Y)	-0.00001	-0.00056	0.00547
	(!A0 * !A1 * Y)	0.00801	0.00776	0.01376
	(!A0 * !A1 * Y)	-0.00033	-0.00057	0.00548
sky130_fd_sc_hs__mux2i_4	(A0 * A1 * !Y)	0.01450	0.01367	0.02381
	(A0 * A1 * !Y)	0.00015	-0.00085	0.00934
	(!A0 * !A1 * Y)	0.01411	0.01364	0.02375
	(!A0 * !A1 * Y)	-0.00032	-0.00077	0.00939

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__mux2i_1	(A0 * A1 * !Y)	-0.00028	-0.00008	0.00711
	(A0 * A1 * !Y)	0.00508	0.00529	0.01247
	(!A0 * !A1 * Y)	-0.00036	-0.00016	0.00709
	(!A0 * !A1 * Y)	0.00501	0.00524	0.01245
sky130_fd_sc_hs__mux2i_2	(A0 * A1 * !Y)	-0.00036	-0.00031	0.00615
	(A0 * A1 * !Y)	0.00794	0.00802	0.01443
	(!A0 * !A1 * Y)	-0.00037	-0.00036	0.00610
	(!A0 * !A1 * Y)	0.00786	0.00795	0.01441
sky130_fd_sc_hs__mux2i_4	(A0 * A1 * !Y)	-0.00017	0.00008	0.01188
	(A0 * A1 * !Y)	0.01430	0.01446	0.02629
	(!A0 * !A1 * Y)	-0.00031	-0.00025	0.01176
	(!A0 * !A1 * Y)	0.01395	0.01420	0.02620

SKY130_FD_SC_HS__MUX2x

sky130_fd_sc_hs_tt_1.50v_25C.ccs
Cell Library: Process , Voltage
1.50, 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	0.00269	0.00316	0.00450	0.85420
sky130_fd_sc_hs__mux2_2	0.00249	0.00282	0.00532	1.49414
sky130_fd_sc_hs__mux2_4	0.00478	0.00480	0.00804	2.85602

Leakage Information

Cell Name	Leakage(nW)		
	Min.	**Avg**	**Max.**
sky130_fd_sc_hs__mux2_1	0.00000	0.14259	0.26028
sky130_fd_sc_hs__mux2_2	0.00000	0.15978	0.26493
sky130_fd_sc_hs__mux2_4	0.00000	0.20819	0.30193

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)	-	0.09417	0.72214	6.82416
	A1->X (RR)	-	0.09536	0.72677	6.83444
	S->X (RR)	(!A0 * A1)	0.09724	0.72487	6.81453
	S->X (FR)	(A0 * !A1)	0.18729	0.95118	8.39856
sky130_fd_sc_hs__mux2_2	A0->X (RR)	-	0.11166	0.68334	6.90050
	A1->X (RR)	-	0.10719	0.67486	6.91340
	S->X (RR)	(!A0 * A1)	0.11001	0.66621	6.89058
	S->X (FR)	(A0 * !A1)	0.19878	0.86845	8.29365
sky130_fd_sc_hs__mux2_4	A0->X (RR)	-	0.14501	0.65971	7.13943
	A1->X (RR)	-	0.14799	0.66557	7.15500
	S->X (RR)	(!A0 * A1)	0.15174	0.63441	7.09455
	S->X (FR)	(A0 * !A1)	0.25767	0.90540	8.79936

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)	-	0.17393	0.73527	4.79598
	A1->X (FF)	-	0.17119	0.73380	4.83117
	S->X (FF)	(!A0 * A1)	0.22686	0.78190	5.01279
	S->X (RF)	(A0 * !A1)	0.25785	0.59220	2.69053
sky130_fd_sc_hs__mux2_2	A0->X (FF)	-	0.22139	0.77046	4.76869
	A1->X (FF)	-	0.22592	0.77996	4.81474
	S->X (FF)	(!A0 * A1)	0.27730	0.81158	4.91877
	S->X (RF)	(A0 * !A1)	0.32085	0.63025	2.41844
sky130_fd_sc_hs__mux2_4	A0->X (FF)	-	0.25312	0.77527	4.77360
	A1->X (FF)	-	0.25446	0.77892	4.78983
	S->X (FF)	(!A0 * A1)	0.30217	0.80183	4.87050
	S->X (RF)	(A0 * !A1)	0.33924	0.64117	2.37846

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	-	0.00747	0.00728	0.01215
	A0	-	0.00352	0.00335	0.00911
	A1	-	0.00778	0.00771	0.01203
	A1	-	0.00349	0.00343	0.00870
	S	(A0 * !A1)	0.00698	0.00707	0.01406
	S	(A0 * !A1)	0.00962	0.00975	0.01758
	S	(!A0 * A1)	0.01219	0.01208	0.02097
	S	(!A0 * A1)	0.00500	0.00489	0.01381
sky130_fd_sc_hs__mux2_2	A0	-	0.00963	0.00986	0.01443
	A0	-	0.00574	0.00598	0.01056
	A1	-	0.01005	0.01022	0.01480
	A1	-	0.00598	0.00617	0.01081
	S	(A0 * !A1)	0.00886	0.00965	0.01653
	S	(A0 * !A1)	0.01212	0.01294	0.01986
	S	(!A0 * A1)	0.01464	0.01458	0.02149
	S	(!A0 * A1)	0.00685	0.00680	0.01378
sky130_fd_sc_hs__mux2_4	A0	-	0.01677	0.01708	0.02538
	A0	-	0.01097	0.01128	0.01926
	A1	-	0.01822	0.01844	0.02715
	A1	-	0.01105	0.01129	0.02017
	S	(A0 * !A1)	0.01659	0.01758	0.02418
	S	(A0 * !A1)	0.02127	0.02229	0.02923
	S	(!A0 * A1)	0.02573	0.02554	0.03429
	S	(!A0 * A1)	0.01331	0.01312	0.02204

Internal switching power(pJ) to X falling (conditional):

Cell Name	Input	When	Power(pJ)		
			first	mid	last
sky130_fd_sc_hs__mux2_1	A0	-	0.00316	0.00332	0.00871
	A0	-	0.00724	0.00741	0.01279
	A1	-	0.00367	0.00372	0.00947
	A1	-	0.00792	0.00797	0.01349
	S	(A0 * !A1)	0.01040	0.01028	0.01656
	S	(A0 * !A1)	0.00767	0.00747	0.01375
	S	(!A0 * A1)	0.00391	0.00412	0.01428
	S	(!A0 * A1)	0.01103	0.01137	0.02102
sky130_fd_sc_hs__mux2_2	A0	-	0.00475	0.00521	0.01102
	A0	-	0.00880	0.00923	0.01454
	A1	-	0.00546	0.00575	0.01111
	A1	-	0.00950	0.00979	0.01509
	S	(A0 * !A1)	0.01189	0.01210	0.01819
	S	(A0 * !A1)	0.00857	0.00876	0.01467
	S	(!A0 * A1)	0.00532	0.00562	0.01531
	S	(!A0 * A1)	0.01308	0.01336	0.02237
sky130_fd_sc_hs__mux2_4	A0	-	0.01121	0.01171	0.02169
	A0	-	0.01847	0.01896	0.02852
	A1	-	0.01150	0.01212	0.02278
	A1	-	0.01841	0.01905	0.02892
	S	(A0 * !A1)	0.02171	0.02234	0.02814
	S	(A0 * !A1)	0.01689	0.01750	0.02324
	S	(!A0 * A1)	0.01241	0.01234	0.02440
	S	(!A0 * A1)	0.02473	0.02465	0.03504

Passive power(pJ) for A0 rising (conditional):

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__mux2_1	(A1 * S * X)	0.00128	0.00130	0.00129
	(A1 * S * X)	-0.00062	-0.00063	-0.00062
	(!A1 * S * !X)	0.00052	0.00051	0.00048
	(!A1 * S * !X)	-0.00143	-0.00146	-0.00149
sky130_fd_sc_hs__mux2_2	(A1 * S * X)	0.00122	0.00123	0.00122
	(A1 * S * X)	-0.00067	-0.00068	-0.00067
	(!A1 * S * !X)	0.00058	0.00057	0.00053
	(!A1 * S * !X)	-0.00134	-0.00137	-0.00142
sky130_fd_sc_hs__mux2_4	(A1 * S * X)	0.00220	0.00221	0.00220
	(A1 * S * X)	-0.00132	-0.00133	-0.00132
	(!A1 * S * !X)	0.00088	0.00087	0.00081
	(!A1 * S * !X)	-0.00283	-0.00290	-0.00293

Passive power(pJ) for A0 falling (conditional):

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__mux2_1	(A1 * S * X)	-0.00119	-0.00123	-0.00129
	(A1 * S * X)	0.00069	0.00070	0.00064
	(!A1 * S * !X)	-0.00046	-0.00046	-0.00046
	(!A1 * S * !X)	0.00149	0.00150	0.00149
sky130_fd_sc_hs__mux2_2	(A1 * S * X)	-0.00110	-0.00114	-0.00122
	(A1 * S * X)	0.00076	0.00077	0.00070
	(!A1 * S * !X)	-0.00051	-0.00051	-0.00051
	(!A1 * S * !X)	0.00142	0.00142	0.00142
sky130_fd_sc_hs__mux2_4	(A1 * S * X)	-0.00205	-0.00208	-0.00220
	(A1 * S * X)	0.00145	0.00144	0.00136
	(!A1 * S * !X)	-0.00080	-0.00080	-0.00080
	(!A1 * S * !X)	0.00293	0.00293	0.00293

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__mux2_1	(A0 * !S * X)	0.00142	0.00144	0.00142
	(A0 * !S * X)	-0.00075	-0.00076	-0.00075
	(!A0 * !S * !X)	0.00046	0.00045	0.00044
	(!A0 * !S * !X)	-0.00172	-0.00174	-0.00175
sky130_fd_sc_hs__mux2_2	(A0 * !S * X)	0.00131	0.00131	0.00131
	(A0 * !S * X)	-0.00065	-0.00064	-0.00065
	(!A0 * !S * !X)	0.00041	0.00041	0.00039
	(!A0 * !S * !X)	-0.00155	-0.00157	-0.00159
sky130_fd_sc_hs__mux2_4	(A0 * !S * X)	0.00219	0.00220	0.00219
	(A0 * !S * X)	-0.00134	-0.00134	-0.00133
	(!A0 * !S * !X)	0.00071	0.00071	0.00066
	(!A0 * !S * !X)	-0.00296	-0.00299	-0.00305

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__mux2_1	(A0 * !S * X)	-0.00134	-0.00139	-0.00142
	(A0 * !S * X)	0.00081	0.00081	0.00076
	(!A0 * !S * !X)	-0.00043	-0.00043	-0.00043
	(!A0 * !S * !X)	0.00175	0.00176	0.00175
sky130_fd_sc_hs__mux2_2	(A0 * !S * X)	-0.00121	-0.00126	-0.00131
	(A0 * !S * X)	0.00073	0.00073	0.00067
	(!A0 * !S * !X)	-0.00038	-0.00039	-0.00038
	(!A0 * !S * !X)	0.00159	0.00159	0.00159
sky130_fd_sc_hs__mux2_4	(A0 * !S * X)	-0.00199	-0.00212	-0.00219
	(A0 * !S * X)	0.00146	0.00145	0.00136
	(!A0 * !S * !X)	-0.00064	-0.00065	-0.00064
	(!A0 * !S * !X)	0.00304	0.00305	0.00305

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__mux2_1	(A0 * A1 * X)	0.00534	0.00514	0.01156
	(A0 * A1 * X)	0.00050	0.00025	0.00670
	(!A0 * !A1 * !X)	0.00540	0.00526	0.01168
	(!A0 * !A1 * !X)	0.00057	0.00042	0.00687
sky130_fd_sc_hs__mux2_2	(A0 * A1 * X)	0.00540	0.00517	0.01173
	(A0 * A1 * X)	-0.00003	-0.00032	0.00625
	(!A0 * !A1 * !X)	0.00515	0.00498	0.01151
	(!A0 * !A1 * !X)	-0.00031	-0.00048	0.00607
sky130_fd_sc_hs__mux2_4	(A0 * A1 * X)	0.00845	0.00804	0.01401
	(A0 * A1 * X)	0.00014	-0.00037	0.00563
	(!A0 * !A1 * !X)	0.00846	0.00822	0.01409
	(!A0 * !A1 * !X)	0.00010	-0.00017	0.00572

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__mux2_1	(A0 * A1 * X)	0.00002	0.00033	0.00730
	(A0 * A1 * X)	0.00488	0.00519	0.01215
	(!A0 * !A1 * !X)	-0.00018	0.00010	0.00710
	(!A0 * !A1 * !X)	0.00461	0.00491	0.01194
sky130_fd_sc_hs__mux2_2	(A0 * A1 * X)	-0.00045	-0.00017	0.00687
	(A0 * A1 * X)	0.00501	0.00531	0.01233
	(!A0 * !A1 * !X)	-0.00030	-0.00007	0.00702
	(!A0 * !A1 * !X)	0.00514	0.00540	0.01247
sky130_fd_sc_hs__mux2_4	(A0 * A1 * X)	-0.00024	-0.00032	0.00608
	(A0 * A1 * X)	0.00814	0.00805	0.01445
	(!A0 * !A1 * !X)	-0.00047	-0.00056	0.00596
	(!A0 * !A1 * !X)	0.00787	0.00783	0.01431

SKY130_FD_SC_HS__MUX4x

sky130_fd_sc_hs_tt_1.50v_25C.ccs
Cell Library: Process , Voltage
1.50, 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	0.00234	0.00245	0.00243	0.00270	0.00825	0.00526	0.82017
sky130_fd_sc_hs__mux4_2	0.00265	0.00250	0.00261	0.00254	0.00936	0.00544	1.66050
sky130_fd_sc_hs__mux4_4	0.00464	0.00446	0.00464	0.00465	0.01302	0.00812	3.16007

Leakage Information

Cell Name	Leakage(nW)		
	Min.	Avg	Max.
sky130_fd_sc_hs__mux4_1	0.00000	0.21466	0.37469
sky130_fd_sc_hs__mux4_2	0.00000	0.22910	0.40009
sky130_fd_sc_hs__mux4_4	0.00000	0.33699	0.57110

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)	0.16924	0.84558	7.16451
	A1->X (RR)	0.17053	0.84764	7.16672
	A2->X (RR)	0.17114	0.85378	7.20576
	A3->X (RR)	0.16741	0.84770	7.18791
	S0->X (-R)	0.27656	1.10402	8.81938
	S1->X (-R)	0.16271	0.93492	8.38216
sky130_fd_sc_hs__mux4_2	A0->X (RR)	0.18126	0.75653	7.26942
	A1->X (RR)	0.17316	0.75246	7.26723
	A2->X (RR)	0.16766	0.74093	7.22880
	A3->X (RR)	0.15931	0.73394	7.21815
	S0->X (-R)	0.26019	0.97900	8.81222
	S1->X (-R)	0.17293	0.84649	8.41823
sky130_fd_sc_hs__mux4_4	A0->X (RR)	0.20560	0.69966	7.34926
	A1->X (RR)	0.20869	0.70539	7.35386
	A2->X (RR)	0.20978	0.70670	7.35545
	A3->X (RR)	0.19932	0.70232	7.35057
	S0->X (-R)	0.35637	1.04132	9.28667
	S1->X (-R)	0.20435	0.85501	8.78944

Delay(ns) to X falling :

Cell Name	Timing Arc(Dir)	Delay(ns)		
		First	Mid	Last
sky130_fd_sc_hs__mux4_1	A0->X (FF)	0.33833	0.94169	5.24832
	A1->X (FF)	0.35409	0.96020	5.30303
	A2->X (FF)	0.36988	0.98280	5.35420
	A3->X (FF)	0.37026	0.98045	5.35746
	S0->X (-F)	0.33990	0.93877	5.12009
	S1->X (-F)	0.16295	0.71058	4.51835
sky130_fd_sc_hs__mux4_2	A0->X (FF)	0.42431	1.04638	5.71968
	A1->X (FF)	0.42066	1.04371	5.69856
	A2->X (FF)	0.41582	1.03063	5.66053
	A3->X (FF)	0.40469	1.01872	5.62413
	S0->X (-F)	0.39365	1.00309	5.49745
	S1->X (-F)	0.21055	0.77625	4.95066
sky130_fd_sc_hs__mux4_4	A0->X (FF)	0.41351	0.99070	5.64048
	A1->X (FF)	0.40772	0.98604	5.63188
	A2->X (FF)	0.44655	1.02426	5.68459
	A3->X (FF)	0.43034	1.00734	5.66357
	S0->X (-F)	0.40845	0.99154	5.57896
	S1->X (-F)	0.22834	0.77911	5.07789

Power Information

Internal switching power(pJ) to X rising :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__mux4_1	A0	0.01193	0.01200	0.01418
	A0	0.00733	0.00739	0.00964
	A1	0.01090	0.01096	0.01308
	A1	0.00629	0.00635	0.00850
	A2	0.01079	0.01088	0.01304
	A2	0.00628	0.00636	0.00859
	A3	0.01007	0.01012	0.01229
	A3	0.00531	0.00536	0.00759
	S0	0.01940	0.01909	0.03616
	S0	0.02004	0.02040	0.03302
	S1	0.00911	0.00902	0.01989
	S1	0.00911	0.01037	0.02191
sky130_fd_sc_hs__mux4_2	A0	0.01452	0.01480	0.01682
	A0	0.00937	0.00966	0.01182
	A1	0.01355	0.01384	0.01591
	A1	0.00840	0.00870	0.01091
	A2	0.01273	0.01303	0.01508
	A2	0.00783	0.00813	0.01034
	A3	0.01203	0.01235	0.01448
	A3	0.00716	0.00748	0.00976
	S0	0.02290	0.02271	0.03950
	S0	0.02140	0.02212	0.03489
	S1	0.01102	0.01115	0.02175
	S1	0.01131	0.01282	0.02418

sky130_fd_sc_hs__mux4_4	**A0**	0.02664	0.02719	0.03157
	A0	0.01763	0.01819	0.02278
	A1	0.02457	0.02512	0.02947
	A1	0.01566	0.01656	0.02077
	A2	0.02454	0.02510	0.02949
	A2	0.01564	0.01620	0.02079
	A3	0.02327	0.02382	0.02817
	A3	0.01422	0.01514	0.01932
	S0	0.03842	0.03836	0.06333
	S0	0.03551	0.03655	0.05401
	S1	0.01953	0.01962	0.03329
	S1	0.02012	0.02237	0.03788

Internal switching power(pJ) to X falling :

Cell Name	**Input**	**Power(pJ)**		
		first	**mid**	**last**
sky130_fd_sc_hs__mux4_1	**A0**	0.00389	0.00400	0.00649
	A0	0.00850	0.00861	0.01084
	A1	0.00502	0.00511	0.00778
	A1	0.00959	0.00968	0.01194
	A2	0.00582	0.00589	0.00897
	A2	0.01034	0.01041	0.01265
	A3	0.00656	0.00659	0.00970
	A3	0.01127	0.01131	0.01358
	S0	0.01820	0.01779	0.02959
	S0	0.01779	0.01830	0.03645
	S1	0.00913	0.00983	0.02074
	S1	0.00805	0.00851	0.02039

sky130_fd_sc_hs__mux4_2	**A0**	0.00729	0.00731	0.01015
	A0	0.01243	0.01250	0.01483
	A1	0.00824	0.00829	0.01161
	A1	0.01335	0.01347	0.01566
	A2	0.00806	0.00799	0.01045
	A2	0.01295	0.01297	0.01529
	A3	0.00864	0.00867	0.01167
	A3	0.01345	0.01358	0.01584
	S0	0.02145	0.02064	0.03273
	S0	0.02060	0.02114	0.03924
	S1	0.01179	0.01253	0.02315
	S1	0.01091	0.01141	0.02322
sky130_fd_sc_hs__mux4_4	**A0**	0.01332	0.01328	0.01966
	A0	0.02232	0.02240	0.02698
	A1	0.01562	0.01568	0.02173
	A1	0.02447	0.02464	0.02907
	A2	0.01539	0.01527	0.02266
	A2	0.02429	0.02433	0.02888
	A3	0.01713	0.01710	0.02383
	A3	0.02610	0.02615	0.03061
	S0	0.03621	0.03547	0.05166
	S0	0.03366	0.03445	0.06162
	S1	0.02115	0.02282	0.03663
	S1	0.01890	0.01947	0.03446

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)**	0.00630	0.00614	0.00869
	(A2 * !S0 * S1 * X) + (!A2 * !S0 * S1 * !X)	0.00263	0.00246	0.00502
	(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)	0.00117	0.00106	0.00105
	(A1 * A3 * S0 * X) + (A1 * !A3 * S0 * S1 * !X) + (A1 * !A3 * S0 * !S1 * X) + (!A1 * A3 * S0 * S1 * X) + (!A1 * A3 * S0 * !S1 * !X) + (!A1 * !A3 * S0 * !X)	-0.00108	-0.00122	-0.00123
sky130_fd_sc_hs__mux4_2	**(A2 * !S0 * S1 * X) + (!A2 * !S0 * S1 * !X)**	0.00704	0.00685	0.00928
	(A2 * !S0 * S1 * X) + (!A2 * !S0 * S1 * !X)	0.00283	0.00264	0.00508
	(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)	0.00131	0.00116	0.00115
	(A1 * A3 * S0 * X) + (A1 * !A3 * S0 * S1 * !X) + (A1 * !A3 * S0 * !S1 * X) + (!A1 * A3 * S0 * S1 * X) + (!A1 * A3 * S0 * !S1 * !X) + (!A1 * !A3 * S0 * !X)	-0.00103	-0.00118	-0.00121
sky130_fd_sc_hs__mux4_4	**(A2 * !S0 * S1 * X) + (!A2 * !S0 * S1 * !X)**	0.01179	0.01147	0.01656
	(A2 * !S0 * S1 * X) + (!A2 * !S0 * S1 * !X)	0.00461	0.00429	0.00939
	(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)	0.00229	0.00200	0.00195
	(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)	-0.00220	-0.00253	-0.00255

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)	0.00108	0.00096	0.00362
	(A2 * !S0 * S1 * X) + (!A2 * !S0 * S1 * !X)	0.00476	0.00464	0.00728
	(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)	-0.00103	-0.00104	-0.00104
	(A1 * A3 * S0 * X) + (A1 * !A3 * S0 * S1 * !X) + (A1 * !A3 * S0 * !S1 * X) + (!A1 * A3 * S0 * S1 * X) + (!A1 * A3 * S0 * !S1 * !X) + (!A1 * !A3 * S0 * !X)	0.00123	0.00123	0.00123
sky130_fd_sc_hs__mux4_2	(A2 * !S0 * S1 * X) + (!A2 * !S0 * S1 * !X)	0.00169	0.00151	0.00415
	(A2 * !S0 * S1 * X) + (!A2 * !S0 * S1 * !X)	0.00589	0.00572	0.00835
	(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)	-0.00112	-0.00114	-0.00114
	(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)	0.00120	0.00121	0.00121

sky130_fd_sc_hs__mux4_4	**(A2 * !S0 * S1 * X) + (!A2 * !S0 * S1 * !X)**	0.00243	0.00217	0.00748
	(A2 * !S0 * S1 * X) + (!A2 * !S0 * S1 * !X)	0.00961	0.00937	0.01465
	(A1 * A3 * S0 * X) + (A1 * !A3 * S0 * S1 * !X) + (A1 * !A3 * S0 * !S1 * X) + (!A1 * A3 * S0 * S1 * X) + (!A1 * A3 * S0 * !S1 * !X) + (!A1 * !A3 * S0 * !X)	-0.00190	-0.00194	-0.00195
	(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)	0.00254	0.00255	0.00255

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)**	0.00529	0.00511	0.00765
	(A3 * S0 * S1 * X) + (!A3 * S0 * S1 * !X)	0.00164	0.00145	0.00400
	(A0 * A2 * !S0 * X) + (A0 * !A2 * !S0 * S1 * !X) + (A0 * !A2 * !S0 * !S1 * X) + (!A0 * A2 * !S0 * S1 * X) + (!A0 * A2 * !S0 * !S1 * !X) + (!A0 * !A2 * !S0 * !X)	0.00111	0.00096	0.00094
	(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)	-0.00120	-0.00135	-0.00136

sky130_fd_sc_hs__mux4_2	**(A3 * S0 * S1 * X) + (!A3 * S0 * S1 * !X)**	0.00606	0.00591	0.00834
	(A3 * S0 * S1 * X) + (!A3 * S0 * S1 * !X)	0.00189	0.00172	0.00416
	(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)	0.00112	0.00103	0.00101
	(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)	-0.00118	-0.00130	-0.00130
sky130_fd_sc_hs__mux4_4	**(A3 * S0 * S1 * X) + (!A3 * S0 * S1 * !X)**	0.00975	0.00942	0.01451
	(A3 * S0 * S1 * X) + (!A3 * S0 * S1 * !X)	0.00272	0.00238	0.00750
	(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)	0.00219	0.00191	0.00186
	(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)	-0.00216	-0.00248	-0.00251

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)**	0.00218	0.00204	0.00467
	(A3 * S0 * S1 * X) + (!A3 * S0 * S1 * !X)	0.00584	0.00570	0.00831
	(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)	-0.00091	-0.00094	-0.00094
	(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)	0.00136	0.00137	0.00137
sky130_fd_sc_hs__mux4_2	**(A3 * S0 * S1 * X) + (!A3 * S0 * S1 * !X)**	0.00261	0.00247	0.00508
	(A3 * S0 * S1 * X) + (!A3 * S0 * S1 * !X)	0.00680	0.00666	0.00925
	(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)	-0.00098	-0.00101	-0.00101
	(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)	0.00130	0.00131	0.00131
sky130_fd_sc_hs__mux4_4	**(A3 * S0 * S1 * X) + (!A3 * S0 * S1 * !X)**	0.00468	0.00446	0.00969
	(A3 * S0 * S1 * X) + (!A3 * S0 * S1 * !X)	0.01171	0.01151	0.01669
	(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)	-0.00181	-0.00188	-0.00186
	(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)	0.00249	0.00252	0.00251

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)	0.00126	0.00113	0.00110
	(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)	-0.00101	-0.00118	-0.00119
	(A0 * !S0 * !S1 * X) + (!A0 * !S0 * !S1 * !X)	0.00648	0.00632	0.00881
	(A0 * !S0 * !S1 * X) + (!A0 * !S0 * !S1 * !X)	0.00278	0.00261	0.00511
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)	0.00143	0.00129	0.00126
	(A1 * A3 * S0 * X) + (A1 * !A3 * S0 * S1 * !X) + (A1 * !A3 * S0 * !S1 * X) + (!A1 * A3 * S0 * S1 * X) + (!A1 * A3 * S0 * !S1 * !X) + (!A1 * !A3 * S0 * !X)	-0.00102	-0.00119	-0.00120
	(A0 * !S0 * !S1 * X) + (!A0 * !S0 * !S1 * !X)	0.00665	0.00647	0.00890
	(A0 * !S0 * !S1 * X) + (!A0 * !S0 * !S1 * !X)	0.00264	0.00244	0.00489

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)**	0.00237	0.00208	0.00204
	(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	-0.00239	-0.00242
	(A0 * !S0 * !S1 * X) + (!A0 * !S0 * !S1 * !X)	0.01197	0.01166	0.01670
	(A0 * !S0 * !S1 * X) + (!A0 * !S0 * !S1 * !X)	0.00466	0.00431	0.00942

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)**	-0.00108	-0.00110	-0.00110
	(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)	0.00119	0.00119	0.00119
	(A0 * !S0 * !S1 * X) + (!A0 * !S0 * !S1 * !X)	0.00172	0.00159	0.00418
	(A0 * !S0 * !S1 * X) + (!A0 * !S0 * !S1 * !X)	0.00542	0.00531	0.00788

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)**	-0.00124	-0.00126	-0.00126
	(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)	0.00119	0.00120	0.00120
	(A0 * !S0 * !S1 * X) + (!A0 * !S0 * !S1 * !X)	0.00178	0.00160	0.00424
	(A0 * !S0 * !S1 * X) + (!A0 * !S0 * !S1 * !X)	0.00580	0.00563	0.00825
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)**	-0.00200	-0.00204	-0.00204
	(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)	0.00240	0.00241	0.00242
	(A0 * !S0 * !S1 * X) + (!A0 * !S0 * !S1 * !X)	0.00234	0.00208	0.00735
	(A0 * !S0 * !S1 * X) + (!A0 * !S0 * !S1 * !X)	0.00965	0.00940	0.01466

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)**	0.00577	0.00556	0.00807
	(A1 * S0 * !S1 * X) + (!A1 * S0 * !S1 * !X)	0.00185	0.00163	0.00416
	(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)	0.00140	0.00125	0.00123
	(A0 * A2 * !S0 * X) + (A0 * !A2 * !S0 * S1 * !X) + (A0 * !A2 * !S0 * !S1 * X) + (!A0 * A2 * !S0 * S1 * X) + (!A0 * A2 * !S0 * !S1 * !X) + (!A0 * !A2 * !S0 * !X)	-0.00115	-0.00131	-0.00132
sky130_fd_sc_hs__mux4_2	**(A1 * S0 * !S1 * X) + (!A1 * S0 * !S1 * !X)**	0.00595	0.00579	0.00825
	(A1 * S0 * !S1 * X) + (!A1 * S0 * !S1 * !X)	0.00200	0.00183	0.00430
	(A0 * A2 * !S0 * X) + (A0 * !A2 * !S0 * S1 * !X) + (A0 * !A2 * !S0 * !S1 * X) + (!A0 * A2 * !S0 * S1 * X) + (!A0 * A2 * !S0 * !S1 * !X) + (!A0 * !A2 * !S0 * !X)	0.00121	0.00109	0.00109
	(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)	-0.00112	-0.00125	-0.00126
sky130_fd_sc_hs__mux4_4	**(A1 * S0 * !S1 * X) + (!A1 * S0 * !S1 * !X)**	0.01067	0.01032	0.01536
	(A1 * S0 * !S1 * X) + (!A1 * S0 * !S1 * !X)	0.00329	0.00290	0.00798
	(A0 * A2 * !S0 * X) + (A0 * !A2 * !S0 * S1 * !X) + (A0 * !A2 * !S0 * !S1 * X) + (!A0 * A2 * !S0 * S1 * X) + (!A0 * A2 * !S0 * !S1 * !X) + (!A0 * !A2 * !S0 * !X)	0.00227	0.00200	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)	-0.00212	-0.00241	-0.00244

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)	0.00246	0.00227	0.00488
	(A1 * S0 * !S1 * X) + (!A1 * S0 * !S1 * !X)	0.00637	0.00621	0.00879
	(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)	-0.00120	-0.00123	-0.00123
	(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)	0.00132	0.00134	0.00133
sky130_fd_sc_hs__mux4_2	(A1 * S0 * !S1 * X) + (!A1 * S0 * !S1 * !X)	0.00240	0.00225	0.00490
	(A1 * S0 * !S1 * X) + (!A1 * S0 * !S1 * !X)	0.00636	0.00621	0.00884
	(A0 * A2 * !S0 * X) + (A0 * !A2 * !S0 * S1 * !X) + (A0 * !A2 * !S0 * !S1 * X) + (!A0 * A2 * !S0 * S1 * X) + (!A0 * A2 * !S0 * !S1 * !X) + (!A0 * !A2 * !S0 * !X)	-0.00105	-0.00109	-0.00109
	(A0 * A2 * !S0 * X) + (A0 * !A2 * !S0 * S1 * !X) + (A0 * !A2 * !S0 * !S1 * X) + (!A0 * A2 * !S0 * S1 * X) + (!A0 * A2 * !S0 * !S1 * !X) + (!A0 * !A2 * !S0 * !X)	0.00126	0.00128	0.00127

sky130_fd_sc_hs__mux4_4	**(A1 * S0 * !S1 * X) + (!A1 * S0 * !S1 * !X)**	0.00406	0.00378	0.00900
	(A1 * S0 * !S1 * X) + (!A1 * S0 * !S1 * !X)	0.01147	0.01120	0.01634
	(A0 * A2 * !S0 * X) + (A0 * !A2 * !S0 * S1 * !X) + (A0 * !A2 * !S0 * !S1 * X) + (!A0 * A2 * !S0 * S1 * X) + (!A0 * A2 * !S0 * !S1 * !X) + (!A0 * !A2 * !S0 * !X)	-0.00190	-0.00198	-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)	0.00242	0.00245	0.00244

Passive power(pJ) for S0 rising (conditional):

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

	(A0 * A1 * A2 * A3 * X) + (A0 * A1 * !A2 * !A3 * !S1 * X) + (!A0 * !A1 * A2 * A3 * S1 * X)	0.00716	0.00695	0.01292
	(A0 * A1 * A2 * A3 * X) + (A0 * A1 * !A2 * !A3 * !S1 * X) + (!A0 * !A1 * A2 * A3 * S1 * X)	-0.00078	-0.00103	0.00495
	(A0 * A1 * A2 * !A3 * !S1 * X)	0.01067	0.01028	0.01626
	(A0 * A1 * A2 * !A3 * !S1 * X)	0.00389	0.00348	0.00950
	(A0 * A1 * !A2 * A3 * !S1 * X)	0.01027	0.00991	0.02170
	(A0 * A1 * !A2 * A3 * !S1 * X)	0.00110	0.00074	0.01250
	(A0 * A1 * !A2 * !A3 * S1 * !X) + (!A0 * !A1 * A2 * A3 * !S1 * !X) + (!A0 * !A1 * !A2 * !A3 * !X)	0.00739	0.00718	0.01320
sky130_fd_sc_hs__mux4_1	**(A0 * A1 * !A2 * !A3 * S1 * !X) + (!A0 * !A1 * A2 * A3 * !S1 * !X) + (!A0 * !A1 * !A2 * !A3 * !X)**	-0.00062	-0.00088	0.00515
	(A0 * !A1 * A2 * A3 * S1 * X)	0.01004	0.00988	0.01587
	(A0 * !A1 * A2 * A3 * S1 * X)	0.00320	0.00300	0.00900
	(A0 * !A1 * !A2 * !A3 * S1 * !X)	0.00985	0.00969	0.01574
	(A0 * !A1 * !A2 * !A3 * S1 * !X)	0.00292	0.00273	0.00879
	(!A0 * A1 * A2 * A3 * S1 * X)	0.00994	0.00960	0.02157
	(!A0 * A1 * A2 * A3 * S1 * X)	0.00079	0.00041	0.01239
	(!A0 * A1 * !A2 * !A3 * S1 * !X)	0.01059	0.01024	0.02227
	(!A0 * A1 * !A2 * !A3 * S1 * !X)	0.00137	0.00098	0.01300
	(!A0 * !A1 * A2 * !A3 * !S1 * !X)	0.01044	0.01003	0.01605
	(!A0 * !A1 * A2 * !A3 * !S1 * !X)	0.00353	0.00311	0.00913
	(!A0 * !A1 * !A2 * A3 * !S1 * !X)	0.01091	0.01056	0.02236
	(!A0 * !A1 * !A2 * A3 * !S1 * !X)	0.00162	0.00123	0.01302

sky130_fd_sc_hs__mux4_2	**(A0 * A1 * A2 * A3 * X) + (A0 * A1 * !A2 * !A3 * !S1 * X) + (!A0 * !A1 * A2 * A3 * S1 * X)**	0.00796	0.00777	0.01382
	(A0 * A1 * A2 * A3 * X) + (A0 * A1 * !A2 * !A3 * !S1 * X) + (!A0 * !A1 * A2 * A3 * S1 * X)	0.00012	-0.00013	0.00597
	(A0 * A1 * A2 * !A3 * !S1 * X)	0.01137	0.01072	0.01683
	(A0 * A1 * A2 * !A3 * !S1 * X)	0.00492	0.00424	0.01036
	(A0 * A1 * !A2 * A3 * !S1 * X)	0.01109	0.01076	0.02251
	(A0 * A1 * !A2 * A3 * !S1 * X)	0.00191	0.00153	0.01333
	(A0 * A1 * !A2 * !A3 * S1 * !X) + (!A0 * !A1 * A2 * A3 * !S1 * !X) + (!A0 * !A1 * !A2 * !A3 * !X)	0.00784	0.00766	0.01377
	(A0 * A1 * !A2 * !A3 * S1 * !X) + (!A0 * !A1 * A2 * A3 * !S1 * !X) + (!A0 * !A1 * !A2 * !A3 * !X)	0.00002	-0.00021	0.00592
	(A0 * !A1 * A2 * A3 * S1 * X)	0.01179	0.01102	0.01695
	(A0 * !A1 * A2 * A3 * S1 * X)	0.00558	0.00478	0.01074
	(A0 * !A1 * !A2 * !A3 * S1 * !X)	0.01138	0.01058	0.01662
	(A0 * !A1 * !A2 * !A3 * S1 * !X)	0.00517	0.00433	0.01042
	(!A0 * A1 * A2 * A3 * S1 * X)	0.01116	0.01077	0.02265
	(!A0 * A1 * A2 * A3 * S1 * X)	0.00170	0.00129	0.01318
	(!A0 * A1 * !A2 * !A3 * S1 * !X)	0.01132	0.01091	0.02289
	(!A0 * A1 * !A2 * !A3 * S1 * !X)	0.00191	0.00144	0.01344
	(!A0 * !A1 * A2 * !A3 * !S1 * !X)	0.01075	0.01008	0.01625
	(!A0 * !A1 * A2 * !A3 * !S1 * !X)	0.00429	0.00360	0.00979
	(!A0 * !A1 * !A2 * A3 * !S1 * !X)	0.01181	0.01145	0.02332
	(!A0 * !A1 * !A2 * A3 * !S1 * !X)	0.00265	0.00223	0.01412

sky130_fd_sc_hs__mux4_4	**(A0 * A1 * A2 * A3 * X) + (A0 * A1 * !A2 * !A3 * !S1 * X) + (!A0 * !A1 * A2 * A3 * S1 * X)**	0.01121	0.01104	0.01564
	(A0 * A1 * A2 * A3 * X) + (A0 * A1 * !A2 * !A3 * !S1 * X) + (!A0 * !A1 * A2 * A3 * S1 * X)	-0.00006	-0.00032	0.00435
	(A0 * A1 * A2 * !A3 * !S1 * X)	0.01737	0.01623	0.02104
	(A0 * A1 * A2 * !A3 * !S1 * X)	0.00843	0.00730	0.01212
	(A0 * A1 * !A2 * A3 * !S1 * X)	0.01676	0.01621	0.03191
	(A0 * A1 * !A2 * A3 * !S1 * X)	0.00305	0.00244	0.01820
	(A0 * A1 * !A2 * !A3 * S1 * !X) + (!A0 * !A1 * A2 * A3 * !S1 * !X) + (!A0 * !A1 * !A2 * !A3 * !X)	0.01120	0.01103	0.01574
	(A0 * A1 * !A2 * !A3 * S1 * !X) + (!A0 * !A1 * A2 * A3 * !S1 * !X) + (!A0 * !A1 * !A2 * !A3 * !X)	-0.00011	-0.00037	0.00435
	(A0 * !A1 * A2 * A3 * S1 * X)	0.01756	0.01691	0.02160
	(A0 * !A1 * A2 * A3 * S1 * X)	0.00821	0.00756	0.01230
	(A0 * !A1 * !A2 * !A3 * S1 * !X)	0.01688	0.01623	0.02113
	(A0 * !A1 * !A2 * !A3 * S1 * !X)	0.00749	0.00681	0.01171
	(!A0 * A1 * A2 * A3 * S1 * X)	0.01610	0.01575	0.03173
	(!A0 * A1 * A2 * A3 * S1 * X)	0.00262	0.00225	0.01829
	(!A0 * A1 * !A2 * !A3 * S1 * !X)	0.01672	0.01640	0.03249
	(!A0 * A1 * !A2 * !A3 * S1 * !X)	0.00323	0.00286	0.01896
	(!A0 * !A1 * A2 * !A3 * !S1 * !X)	0.01709	0.01595	0.02089
	(!A0 * !A1 * A2 * !A3 * !S1 * !X)	0.00801	0.00683	0.01178
	(!A0 * !A1 * !A2 * A3 * !S1 * !X)	0.01790	0.01733	0.03315
	(!A0 * !A1 * !A2 * A3 * !S1 * !X)	0.00403	0.00340	0.01923

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)**	0.00055	0.00054	0.00711
	(A0 * A1 * A2 * A3 * X) + (A0 * A1 * !A2 * !A3 * !S1 * X) + (!A0 * !A1 * A2 * A3 * S1 * X)	0.00848	0.00849	0.01508
	(A0 * A1 * A2 * !A3 * !S1 * X)	0.00512	0.00517	0.01188
	(A0 * A1 * A2 * !A3 * !S1 * X)	0.01191	0.01197	0.01862
	(A0 * A1 * !A2 * A3 * !S1 * X)	0.00204	0.00212	0.01474
	(A0 * A1 * !A2 * A3 * !S1 * X)	0.01121	0.01132	0.02395
	(A0 * A1 * !A2 * !A3 * S1 * !X) + (!A0 * !A1 * A2 * A3 * !S1 * !X) + (!A0 * !A1 * !A2 * !A3 * !X)	0.00034	0.00035	0.00685
	(A0 * A1 * !A2 * !A3 * S1 * !X) + (!A0 * !A1 * A2 * A3 * !S1 * !X) + (!A0 * !A1 * !A2 * !A3 * !X)	0.00837	0.00838	0.01492
	(A0 * !A1 * A2 * A3 * S1 * X)	0.00485	0.00493	0.01173
	(A0 * !A1 * A2 * A3 * S1 * X)	0.01171	0.01180	0.01854
	(A0 * !A1 * !A2 * !A3 * S1 * !X)	0.00508	0.00515	0.01187
	(A0 * !A1 * !A2 * !A3 * S1 * !X)	0.01202	0.01212	0.01878
	(!A0 * A1 * A2 * A3 * S1 * X)	0.00140	0.00151	0.01424
	(!A0 * A1 * A2 * A3 * S1 * X)	0.01056	0.01066	0.02343
	(!A0 * A1 * !A2 * !A3 * S1 * !X)	0.00078	0.00091	0.01357
	(!A0 * A1 * !A2 * !A3 * S1 * !X)	0.01003	0.01019	0.02284
	(!A0 * !A1 * A2 * !A3 * !S1 * !X)	0.00542	0.00545	0.01209
	(!A0 * !A1 * A2 * !A3 * !S1 * !X)	0.01233	0.01239	0.01896
	(!A0 * !A1 * !A2 * A3 * !S1 * !X)	0.00142	0.00152	0.01410
	(!A0 * !A1 * !A2 * A3 * !S1 * !X)	0.01074	0.01084	0.02341

sky130_fd_sc_hs__mux4_2	**(A0 * A1 * A2 * A3 * X) + (A0 * A1 * !A2 * !A3 * !S1 * X) + (!A0 * !A1 * A2 * A3 * S1 * X)**	-0.00072	-0.00062	0.00603
	(A0 * A1 * A2 * A3 * X) + (A0 * A1 * !A2 * !A3 * !S1 * X) + (!A0 * !A1 * A2 * A3 * S1 * X)	0.00709	0.00723	0.01389
	(A0 * A1 * A2 * !A3 * !S1 * X)	0.00392	0.00396	0.01076
	(A0 * A1 * A2 * !A3 * !S1 * X)	0.01040	0.01046	0.01716
	(A0 * A1 * !A2 * A3 * !S1 * X)	0.00092	0.00110	0.01380
	(A0 * A1 * !A2 * A3 * !S1 * X)	0.01009	0.01030	0.02301
	(A0 * A1 * !A2 * !A3 * S1 * !X) + (!A0 * !A1 * A2 * A3 * !S1 * !X) + (!A0 * !A1 * !A2 * !A3 * !X)	-0.00060	-0.00052	0.00608
	(A0 * A1 * !A2 * !A3 * S1 * !X) + (!A0 * !A1 * A2 * A3 * !S1 * !X) + (!A0 * !A1 * !A2 * !A3 * !X)	0.00723	0.00733	0.01394
	(A0 * !A1 * A2 * A3 * S1 * X)	0.00439	0.00445	0.01121
	(A0 * !A1 * A2 * A3 * S1 * X)	0.01060	0.01069	0.01737
	(A0 * !A1 * !A2 * !A3 * S1 * !X)	0.00483	0.00486	0.01164
	(A0 * !A1 * !A2 * !A3 * S1 * !X)	0.01105	0.01112	0.01778
	(!A0 * A1 * A2 * A3 * S1 * X)	0.00049	0.00062	0.01342
	(!A0 * A1 * A2 * A3 * S1 * X)	0.00992	0.01009	0.02289
	(!A0 * A1 * !A2 * !A3 * S1 * !X)	0.00031	0.00042	0.01317
	(!A0 * A1 * !A2 * !A3 * S1 * !X)	0.00975	0.00990	0.02264
	(!A0 * !A1 * A2 * !A3 * !S1 * !X)	0.00456	0.00460	0.01132
	(!A0 * !A1 * A2 * !A3 * !S1 * !X)	0.01106	0.01110	0.01770
	(!A0 * !A1 * !A2 * A3 * !S1 * !X)	0.00018	0.00028	0.01301
	(!A0 * !A1 * !A2 * A3 * !S1 * !X)	0.00936	0.00951	0.02221

sky130_fd_sc_hs__mux4_4	**(A0 * A1 * A2 * A3 * X) + (A0 * A1 * !A2 * !A3 * !S1 * X) + (!A0 * !A1 * A2 * A3 * S1 * X)**	-0.00096	-0.00091	0.00456
	(A0 * A1 * A2 * A3 * X) + (A0 * A1 * !A2 * !A3 * !S1 * X) + (!A0 * !A1 * A2 * A3 * S1 * X)	0.01023	0.01029	0.01587
	(A0 * A1 * A2 * !A3 * !S1 * X)	0.00788	0.00774	0.01335
	(A0 * A1 * A2 * !A3 * !S1 * X)	0.01678	0.01668	0.02221
	(A0 * A1 * !A2 * A3 * !S1 * X)	0.00116	0.00127	0.01815
	(A0 * A1 * !A2 * A3 * !S1 * X)	0.01480	0.01496	0.03187
	(A0 * A1 * !A2 * !A3 * S1 * !X) + (!A0 * !A1 * A2 * A3 * !S1 * !X) + (!A0 * !A1 * !A2 * !A3 * !X)	-0.00090	-0.00086	0.00456
	(A0 * A1 * !A2 * !A3 * S1 * !X) + (!A0 * !A1 * A2 * A3 * !S1 * !X) + (!A0 * !A1 * !A2 * !A3 * !X)	0.01041	0.01046	0.01596
	(A0 * !A1 * A2 * A3 * S1 * X)	0.00703	0.00714	0.01289
	(A0 * !A1 * A2 * A3 * S1 * X)	0.01634	0.01649	0.02220
	(A0 * !A1 * !A2 * !A3 * S1 * !X)	0.00782	0.00791	0.01346
	(A0 * !A1 * !A2 * !A3 * S1 * !X)	0.01725	0.01738	0.02287
	(!A0 * A1 * A2 * A3 * S1 * X)	0.00093	0.00122	0.01860
	(!A0 * A1 * A2 * A3 * S1 * X)	0.01433	0.01467	0.03208
	(!A0 * A1 * !A2 * !A3 * S1 * !X)	0.00034	0.00063	0.01795
	(!A0 * A1 * !A2 * !A3 * S1 * !X)	0.01384	0.01415	0.03149
	(!A0 * !A1 * A2 * !A3 * !S1 * !X)	0.00831	0.00814	0.01374
	(!A0 * !A1 * A2 * !A3 * !S1 * !X)	0.01745	0.01729	0.02276
	(!A0 * !A1 * !A2 * A3 * !S1 * !X)	0.00008	0.00021	0.01700
	(!A0 * !A1 * !A2 * A3 * !S1 * !X)	0.01397	0.01414	0.03092

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)	0.00472	0.00466	0.01153
	(A1 * A3 * S0 * X)	-0.00026	-0.00035	0.00653
	(A0 * A2 * !S0 * X)	0.00472	0.00466	0.01153
	(A0 * A2 * !S0 * X)	-0.00026	-0.00035	0.00653
	(!A1 * !A3 * S0 * !X)	0.00489	0.00483	0.01174
	(!A1 * !A3 * S0 * !X)	-0.00023	-0.00030	0.00662
	(!A0 * !A2 * !S0 * !X)	0.00489	0.00483	0.01174
	(!A0 * !A2 * !S0 * !X)	-0.00023	-0.00030	0.00662
sky130_fd_sc_hs__mux4_2	(A1 * A3 * S0 * X)	0.00497	0.00498	0.01171
	(A1 * A3 * S0 * X)	-0.00022	-0.00025	0.00650
	(A0 * A2 * !S0 * X)	0.00497	0.00498	0.01171
	(A0 * A2 * !S0 * X)	-0.00022	-0.00025	0.00650
	(!A1 * !A3 * S0 * !X)	0.00496	0.00494	0.01178
	(!A1 * !A3 * S0 * !X)	-0.00030	-0.00033	0.00651
	(!A0 * !A2 * !S0 * !X)	0.00496	0.00495	0.01178
	(!A0 * !A2 * !S0 * !X)	-0.00030	-0.00034	0.00651
sky130_fd_sc_hs__mux4_4	(A1 * A3 * S0 * X)	0.00722	0.00702	0.01243
	(A1 * A3 * S0 * X)	-0.00016	-0.00042	0.00503
	(A0 * A2 * !S0 * X)	0.00722	0.00702	0.01243
	(A0 * A2 * !S0 * X)	-0.00016	-0.00042	0.00503
	(!A1 * !A3 * S0 * !X)	0.00720	0.00698	0.01249
	(!A1 * !A3 * S0 * !X)	-0.00044	-0.00067	0.00486
	(!A0 * !A2 * !S0 * !X)	0.00720	0.00698	0.01249
	(!A0 * !A2 * !S0 * !X)	-0.00044	-0.00067	0.00486

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)	-0.00061	-0.00032	0.00684
	(A1 * A3 * S0 * X)	0.00438	0.00467	0.01183
	(A0 * A2 * !S0 * X)	-0.00061	-0.00033	0.00684
	(A0 * A2 * !S0 * X)	0.00437	0.00466	0.01183
	(!A1 * !A3 * S0 * !X)	-0.00065	-0.00042	0.00667
	(!A1 * !A3 * S0 * !X)	0.00445	0.00472	0.01180
	(!A0 * !A2 * !S0 * !X)	-0.00065	-0.00042	0.00667
	(!A0 * !A2 * !S0 * !X)	0.00445	0.00472	0.01180
sky130_fd_sc_hs__mux4_2	(A1 * A3 * S0 * X)	-0.00067	-0.00038	0.00674
	(A1 * A3 * S0 * X)	0.00454	0.00483	0.01194
	(A0 * A2 * !S0 * X)	-0.00067	-0.00039	0.00674
	(A0 * A2 * !S0 * X)	0.00454	0.00483	0.01194
	(!A1 * !A3 * S0 * !X)	-0.00061	-0.00020	0.00670
	(!A1 * !A3 * S0 * !X)	0.00466	0.00510	0.01197
	(!A0 * !A2 * !S0 * !X)	-0.00061	-0.00019	0.00670
	(!A0 * !A2 * !S0 * !X)	0.00466	0.00508	0.01197
sky130_fd_sc_hs__mux4_4	(A1 * A3 * S0 * X)	-0.00097	-0.00088	0.00516
	(A1 * A3 * S0 * X)	0.00641	0.00654	0.01256
	(A0 * A2 * !S0 * X)	-0.00097	-0.00088	0.00516
	(A0 * A2 * !S0 * X)	0.00641	0.00654	0.01256
	(!A1 * !A3 * S0 * !X)	-0.00068	-0.00064	0.00524
	(!A1 * !A3 * S0 * !X)	0.00693	0.00697	0.01289
	(!A0 * !A2 * !S0 * !X)	-0.00068	-0.00064	0.00524
	(!A0 * !A2 * !S0 * !X)	0.00693	0.00696	0.01289

SKY130_FD_SC_HS__NAND2Bx

sky130_fd_sc_hs_tt_1.50v_25C.ccs
Cell Library: Process , Voltage 1.50, 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	0.00229	0.00272	0.78817
sky130_fd_sc_hs__nand2b_2	0.00256	0.00515	1.47840
sky130_fd_sc_hs__nand2b_4	0.00377	0.00791	1.71607

Leakage Information

Cell Name	Leakage(nW)		
	Min.	Avg	Max.
sky130_fd_sc_hs__nand2b_1	0.00000	0.09409	0.15578
sky130_fd_sc_hs__nand2b_2	0.00000	0.07463	0.12518
sky130_fd_sc_hs__nand2b_4	0.00000	0.19242	0.32086

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)	0.07758	0.69871	6.89515
	B->Y (FR)	0.05284	0.92346	11.33820
sky130_fd_sc_hs__nand2b_2	A_N->Y (RR)	0.07430	0.57993	6.41557
	B->Y (FR)	0.04958	0.82663	11.44910
sky130_fd_sc_hs__nand2b_4	A_N->Y (RR)	0.09076	0.61012	6.94045
	B->Y (FR)	0.06597	0.83428	11.66920

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)	0.10020	0.63916	5.08874
	B->Y (RF)	0.03289	0.53835	6.56784
sky130_fd_sc_hs__nand2b_2	A_N->Y (FF)	0.11139	0.65062	5.53604
	B->Y (RF)	0.03351	0.47168	6.58396
sky130_fd_sc_hs__nand2b_4	A_N->Y (FF)	0.08759	0.49997	3.83134
	B->Y (RF)	0.02966	0.34399	4.87050

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	0.00545	0.00546	0.01217
	A_N	0.00283	0.00285	0.00961
	B	0.00019	0.00028	0.00093
	B	0.00313	0.00322	0.00386
sky130_fd_sc_hs__nand2b_2	A_N	0.00715	0.00740	0.01256
	A_N	0.00445	0.00472	0.01010
	B	0.00013	0.00021	0.00161
	B	0.00585	0.00596	0.00732
sky130_fd_sc_hs__nand2b_4	A_N	0.00954	0.00999	0.02065
	A_N	0.00567	0.00612	0.01679
	B	-0.00006	0.00004	0.00219
	B	0.00869	0.00884	0.01108

Internal switching power(pJ) to Y falling :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__nand2b_1	A_N	0.00281	0.00320	0.01051
	A_N	0.00543	0.00581	0.01287
	B	0.00378	0.00378	0.00423
	B	0.00083	0.00079	0.00101
sky130_fd_sc_hs__nand2b_2	A_N	0.00485	0.00551	0.01186
	A_N	0.00754	0.00810	0.01439
	B	0.00732	0.00734	0.00778
	B	0.00153	0.00146	0.00193
sky130_fd_sc_hs__nand2b_4	A_N	0.00848	0.00920	0.02214
	A_N	0.01235	0.01304	0.02563
	B	0.01277	0.01268	0.01344
	B	0.00390	0.00381	0.00449

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__nand2b_1	(!B * Y)	0.00437	0.00428	0.01104
	(!B * Y)	0.00159	0.00150	0.00826
sky130_fd_sc_hs__nand2b_2	(!B * Y)	0.00608	0.00594	0.01223
	(!B * Y)	0.00301	0.00286	0.00916
sky130_fd_sc_hs__nand2b_4	(!B * Y)	0.00750	0.00730	0.01895
	(!B * Y)	0.00299	0.00279	0.01445

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__nand2b_1	(!B * Y)	0.00008	0.00031	0.00759
	(!B * Y)	0.00287	0.00310	0.01038
sky130_fd_sc_hs__nand2b_2	(!B * Y)	0.00061	0.00070	0.00730
	(!B * Y)	0.00370	0.00379	0.01039
sky130_fd_sc_hs__nand2b_4	(!B * Y)	0.00109	0.00146	0.01416
	(!B * Y)	0.00565	0.00602	0.01870

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__nand2b_1	(A_N * Y)	0.00131	0.00130	0.00131
	(A_N * Y)	-0.00135	-0.00134	-0.00135
sky130_fd_sc_hs__nand2b_2	(A_N * Y)	0.00225	0.00227	0.00225
	(A_N * Y)	-0.00279	-0.00280	-0.00279
sky130_fd_sc_hs__nand2b_4	(A_N * Y)	0.00450	0.00452	0.00453
	(A_N * Y)	-0.00292	-0.00293	-0.00293

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__nand2b_1	(A_N * Y)	-0.00126	-0.00130	-0.00131
	(A_N * Y)	0.00139	0.00138	0.00136
sky130_fd_sc_hs__nand2b_2	(A_N * Y)	-0.00216	-0.00226	-0.00225
	(A_N * Y)	0.00284	0.00282	0.00279
sky130_fd_sc_hs__nand2b_4	(A_N * Y)	-0.00430	-0.00452	-0.00453
	(A_N * Y)	0.00309	0.00299	0.00295

SKY130_FD_SC_HS__NAND2x

sky130_fd_sc_hs_tt_1.50v_25C.ccs
Cell Library: Process , Voltage
1.50, 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	0.00273	0.00264	0.83198
sky130_fd_sc_hs__nand2_2	0.00522	0.00517	1.61581
sky130_fd_sc_hs__nand2_4	0.00798	0.00772	1.63807
sky130_fd_sc_hs__nand2_8	0.01526	0.01526	3.08402

Leakage Information

Cell Name	Leakage(nW)		
	Min.	**Avg**	**Max.**
sky130_fd_sc_hs__nand2_1	0.00000	0.01718	0.05947
sky130_fd_sc_hs__nand2_2	0.00000	0.03435	0.11893
sky130_fd_sc_hs__nand2_4	0.00000	0.03897	0.11893
sky130_fd_sc_hs__nand2_8	0.00000	0.07794	0.23786

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)	0.04101	0.91200	11.52040
	B->Y (FR)	0.05074	0.92557	11.53010
sky130_fd_sc_hs__nand2_2	A->Y (FR)	0.03539	0.80304	11.50300
	B->Y (FR)	0.04839	0.81331	11.46200
sky130_fd_sc_hs__nand2_4	A->Y (FR)	0.05020	0.81873	11.58080
	B->Y (FR)	0.07571	0.83990	11.55100
sky130_fd_sc_hs__nand2_8	A->Y (FR)	0.03986	0.71829	11.34300
	B->Y (FR)	0.06317	0.72766	11.01270

Delay(ns) to Y falling :

Cell Name	Timing Arc(Dir)	Delay(ns)		
		First	Mid	Last
sky130_fd_sc_hs__nand2_1	A->Y (RF)	0.02625	0.57974	7.27386
	B->Y (RF)	0.03027	0.54572	6.78606
sky130_fd_sc_hs__nand2_2	A->Y (RF)	0.02509	0.52904	7.70624
	B->Y (RF)	0.03204	0.49734	7.14304
sky130_fd_sc_hs__nand2_4	A->Y (RF)	0.02301	0.38595	5.55365
	B->Y (RF)	0.02904	0.34722	4.84529
sky130_fd_sc_hs__nand2_8	A->Y (RF)	0.02068	0.34473	5.81529
	B->Y (RF)	0.02668	0.29189	4.74203

Power Information

Internal switching power(pJ) to Y rising :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__nand2_1	A	-0.00039	-0.00029	0.00036
	A	0.00272	0.00257	0.00351
	B	-0.00002	0.00004	0.00068
	B	0.00378	0.00383	0.00451
sky130_fd_sc_hs__nand2_2	A	-0.00114	-0.00089	0.00045
	A	0.00488	0.00513	0.00654
	B	0.00022	0.00027	0.00156
	B	0.00772	0.00778	0.00912
sky130_fd_sc_hs__nand2_4	A	-0.00220	-0.00206	0.00034
	A	0.00698	0.00712	0.00960
	B	0.00030	0.00032	0.00248
	B	0.01233	0.01235	0.01459
sky130_fd_sc_hs__nand2_8	A	-0.00494	-0.00436	0.00146
	A	0.01287	0.01343	0.01922
	B	-0.00034	-0.00040	0.00429
	B	0.02344	0.02343	0.02800

Internal switching power(pJ) to Y falling :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__nand2_1	A	0.00295	0.00293	0.00335
	A	-0.00016	-0.00017	0.00013
	B	0.00370	0.00369	0.00388
	B	-0.00013	-0.00016	0.00005
sky130_fd_sc_hs__nand2_2	A	0.00578	0.00592	0.00642
	A	-0.00023	-0.00015	0.00042
	B	0.00748	0.00742	0.00796
	B	-0.00014	-0.00022	0.00023
sky130_fd_sc_hs__nand2_4	A	0.01069	0.01065	0.01206
	A	0.00158	0.00147	0.00248
	B	0.01396	0.01389	0.01481
	B	0.00169	0.00154	0.00224
sky130_fd_sc_hs__nand2_8	A	0.01708	0.01736	0.02002
	A	-0.00066	-0.00039	0.00170
	B	0.02390	0.02376	0.02643
	B	-0.00033	-0.00058	0.00096

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__nand2_1	(!B * Y)	0.00042	0.00042	0.00041
	(!B * Y)	-0.00164	-0.00166	-0.00168
sky130_fd_sc_hs__nand2_2	(!B * Y)	0.00079	0.00080	0.00075
	(!B * Y)	-0.00320	-0.00323	-0.00329
sky130_fd_sc_hs__nand2_4	(!B * Y)	0.00156	0.00156	0.00148
	(!B * Y)	-0.00387	-0.00389	-0.00401
sky130_fd_sc_hs__nand2_8	(!B * Y)	0.00309	0.00309	0.00293
	(!B * Y)	-0.00744	-0.00750	-0.00773

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__nand2_1	(!B * Y)	-0.00040	-0.00040	-0.00040
	(!B * Y)	0.00169	0.00169	0.00168
sky130_fd_sc_hs__nand2_2	(!B * Y)	-0.00073	-0.00073	-0.00073
	(!B * Y)	0.00328	0.00331	0.00330
sky130_fd_sc_hs__nand2_4	(!B * Y)	-0.00143	-0.00144	-0.00143
	(!B * Y)	0.00401	0.00405	0.00402
sky130_fd_sc_hs__nand2_8	(!B * Y)	-0.00284	-0.00286	-0.00283
	(!B * Y)	0.00773	0.00781	0.00774

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__nand2_1	(!A * Y)	0.00109	0.00110	0.00110
	(!A * Y)	-0.00141	-0.00142	-0.00142
sky130_fd_sc_hs__nand2_2	(!A * Y)	0.00213	0.00215	0.00213
	(!A * Y)	-0.00278	-0.00280	-0.00278
sky130_fd_sc_hs__nand2_4	(!A * Y)	0.00423	0.00427	0.00423
	(!A * Y)	-0.00292	-0.00293	-0.00291
sky130_fd_sc_hs__nand2_8	(!A * Y)	0.00841	0.00851	0.00844
	(!A * Y)	-0.00582	-0.00585	-0.00582

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__nand2_1	(!A * Y)	-0.00104	-0.00110	-0.00110
	(!A * Y)	0.00145	0.00145	0.00143
sky130_fd_sc_hs__nand2_2	(!A * Y)	-0.00200	-0.00213	-0.00213
	(!A * Y)	0.00284	0.00282	0.00279
sky130_fd_sc_hs__nand2_4	(!A * Y)	-0.00396	-0.00423	-0.00423
	(!A * Y)	0.00305	0.00296	0.00292
sky130_fd_sc_hs__nand2_8	(!A * Y)	-0.00792	-0.00851	-0.00844
	(!A * Y)	0.00611	0.00592	0.00585

SKY130_FD_SC_HS__NAND3Bx

sky130_fd_sc_hs_tt_1.50v_25C.ccs
Cell Library: Process , Voltage 1.50, 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	0.00214	0.00274	0.00266	0.83812
sky130_fd_sc_hs__nand3b_2	0.00253	0.00520	0.00517	1.61984
sky130_fd_sc_hs__nand3b_4	0.00358	0.00749	0.00756	1.53380

Leakage Information

Cell Name	Leakage(nW)		
	Min.	**Avg**	**Max.**
sky130_fd_sc_hs__nand3b_1	0.00000	0.08993	0.15578
sky130_fd_sc_hs__nand3b_2	0.00000	0.06630	0.18464
sky130_fd_sc_hs__nand3b_4	0.00000	0.18320	0.32086

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)	0.08026	0.68400	6.86001
	B->Y (FR)	0.06043	0.94823	11.74420
	C->Y (FR)	0.06729	0.94552	11.59890
sky130_fd_sc_hs__nand3b_2	A_N->Y (RR)	0.07911	0.58263	6.67145
	B->Y (FR)	0.05260	0.81699	11.48560
	C->Y (FR)	0.06162	0.83244	11.58630
sky130_fd_sc_hs__nand3b_4	A_N->Y (RR)	0.09803	0.62787	6.81017
	B->Y (FR)	0.07207	0.82594	11.17120
	C->Y (FR)	0.09713	0.87059	11.48690

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)	0.10902	0.75184	6.69905
	B->Y (RF)	0.04807	0.66886	8.25158
	C->Y (RF)	0.05216	0.62754	7.67312
sky130_fd_sc_hs__nand3b_2	A_N->Y (FF)	0.12743	0.77767	7.77778
	B->Y (RF)	0.04962	0.62283	8.96582
	C->Y (RF)	0.05334	0.56372	8.15685
sky130_fd_sc_hs__nand3b_4	A_N->Y (FF)	0.10696	0.64147	6.02662
	B->Y (RF)	0.05397	0.54787	7.59665
	C->Y (RF)	0.05820	0.43219	5.96620

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	0.00528	0.00530	0.01206
	A_N	0.00299	0.00302	0.00981
	B	0.00041	0.00044	0.00104
	B	0.00343	0.00345	0.00407
	C	0.00075	0.00077	0.00135
	C	0.00428	0.00430	0.00492
sky130_fd_sc_hs__nand3b_2	A_N	0.00743	0.00764	0.01385
	A_N	0.00489	0.00512	0.01139
	B	0.00056	0.00062	0.00173
	B	0.00663	0.00668	0.00784
	C	0.00126	0.00130	0.00242
	C	0.00871	0.00874	0.00993
sky130_fd_sc_hs__nand3b_4	A_N	0.00991	0.01061	0.02192
	A_N	0.00605	0.00677	0.01809
	B	0.00071	0.00025	0.00240
	B	0.00930	0.00884	0.01094
	C	0.00190	0.00183	0.00379
	C	0.01356	0.01349	0.01546

Internal switching power(pJ) to Y falling :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__nand3b_1	A_N	0.00364	0.00402	0.01120
	A_N	0.00592	0.00630	0.01348
	B	0.00455	0.00451	0.00473
	B	0.00152	0.00146	0.00165
	C	0.00525	0.00519	0.00545
	C	0.00164	0.00159	0.00177
sky130_fd_sc_hs__nand3b_2	A_N	0.00654	0.00713	0.01344
	A_N	0.00907	0.00967	0.01596
	B	0.00863	0.00861	0.00894
	B	0.00253	0.00242	0.00282
	C	0.01017	0.01005	0.01056
	C	0.00255	0.00243	0.00282
sky130_fd_sc_hs__nand3b_4	A_N	0.00904	0.00974	0.02250
	A_N	0.01288	0.01357	0.02594
	B	0.01280	0.01273	0.01324
	B	0.00415	0.00404	0.00460
	C	0.01678	0.01669	0.01773
	C	0.00469	0.00456	0.00516

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)	0.00415	0.00409	0.01088
	(B * !C * Y)	0.00155	0.00148	0.00829
	(!B * Y)	0.00413	0.00407	0.01087
	(!B * Y)	0.00156	0.00148	0.00829
sky130_fd_sc_hs__nand3b_2	(B * !C * Y)	0.00633	0.00621	0.01245
	(B * !C * Y)	0.00305	0.00291	0.00917
	(!B * Y)	0.00623	0.00610	0.01235
	(!B * Y)	0.00305	0.00291	0.00917
sky130_fd_sc_hs__nand3b_4	(B * !C * Y)	0.00757	0.00740	0.01886
	(B * !C * Y)	0.00295	0.00276	0.01423
	(!B * Y)	0.00742	0.00725	0.01873
	(!B * Y)	0.00291	0.00273	0.01422

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__nand3b_1	(B * !C * Y)	0.00020	0.00046	0.00775
	(B * !C * Y)	0.00288	0.00314	0.01041
	(!B * Y)	0.00021	0.00048	0.00777
	(!B * Y)	0.00281	0.00306	0.01036
sky130_fd_sc_hs__nand3b_2	(B * !C * Y)	0.00056	0.00064	0.00720
	(B * !C * Y)	0.00396	0.00405	0.01058
	(!B * Y)	0.00066	0.00074	0.00732
	(!B * Y)	0.00385	0.00395	0.01052
sky130_fd_sc_hs__nand3b_4	(B * !C * Y)	0.00117	0.00154	0.01404
	(B * !C * Y)	0.00607	0.00645	0.01887
	(!B * Y)	0.00132	0.00169	0.01424
	(!B * Y)	0.00586	0.00625	0.01878

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)	0.00122	0.00123	0.00122
	(A_N * C * Y)	-0.00139	-0.00140	-0.00139
	(A_N * !C * Y)	0.00077	0.00078	0.00078
	(A_N * !C * Y)	-0.00139	-0.00139	-0.00139
	(!A_N * !C * Y)	0.00046	0.00046	0.00046
	(!A_N * !C * Y)	-0.00163	-0.00163	-0.00163
sky130_fd_sc_hs__nand3b_2	(A_N * C * Y)	0.00225	0.00227	0.00227
	(A_N * C * Y)	-0.00285	-0.00287	-0.00286
	(A_N * !C * Y)	0.00140	0.00140	0.00140
	(A_N * !C * Y)	-0.00287	-0.00288	-0.00287
	(!A_N * !C * Y)	0.00098	0.00099	0.00101
	(!A_N * !C * Y)	-0.00307	-0.00309	-0.00307
sky130_fd_sc_hs__nand3b_4	(A_N * C * Y)	0.00455	0.00463	0.00459
	(A_N * C * Y)	-0.00277	-0.00280	-0.00278
	(A_N * !C * Y)	0.00256	0.00256	0.00255
	(A_N * !C * Y)	-0.00310	-0.00310	-0.00309
	(!A_N * !C * Y)	0.00184	0.00185	0.00189
	(!A_N * !C * Y)	-0.00337	-0.00338	-0.00335

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)	-0.00116	-0.00122	-0.00122
	(A_N * C * Y)	0.00143	0.00141	0.00140
	(A_N * !C * Y)	-0.00077	-0.00078	-0.00078
	(A_N * !C * Y)	0.00146	0.00148	0.00141
	(!A_N * !C * Y)	-0.00043	-0.00043	-0.00044
	(!A_N * !C * Y)	0.00166	0.00166	0.00164
sky130_fd_sc_hs__nand3b_2	(A_N * C * Y)	-0.00214	-0.00227	-0.00227
	(A_N * C * Y)	0.00293	0.00291	0.00287
	(A_N * !C * Y)	-0.00140	-0.00140	-0.00140
	(A_N * !C * Y)	0.00299	0.00302	0.00290
	(!A_N * !C * Y)	-0.00094	-0.00095	-0.00096
	(!A_N * !C * Y)	0.00316	0.00320	0.00311
sky130_fd_sc_hs__nand3b_4	(A_N * C * Y)	-0.00410	-0.00459	-0.00459
	(A_N * C * Y)	0.00323	0.00282	0.00280
	(A_N * !C * Y)	-0.00256	-0.00256	-0.00255
	(A_N * !C * Y)	0.00333	0.00333	0.00315
	(!A_N * !C * Y)	-0.00178	-0.00180	-0.00182
	(!A_N * !C * Y)	0.00349	0.00353	0.00340

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)	0.00106	0.00107	0.00106
	(A_N * B * Y)	-0.00137	-0.00137	-0.00137
	(A_N * !B * Y)	0.00106	0.00107	0.00107
	(A_N * !B * Y)	-0.00136	-0.00137	-0.00137
	(!A_N * !B * Y)	0.00102	0.00102	0.00102
	(!A_N * !B * Y)	-0.00141	-0.00141	-0.00141
sky130_fd_sc_hs__nand3b_2	(A_N * B * Y)	0.00229	0.00230	0.00228
	(A_N * B * Y)	-0.00275	-0.00276	-0.00275
	(A_N * !B * Y)	0.00229	0.00230	0.00230
	(A_N * !B * Y)	-0.00275	-0.00276	-0.00276
	(!A_N * !B * Y)	0.00204	0.00206	0.00204
	(!A_N * !B * Y)	-0.00302	-0.00303	-0.00301
sky130_fd_sc_hs__nand3b_4	(A_N * B * Y)	0.00438	0.00440	0.00436
	(A_N * B * Y)	-0.00284	-0.00284	-0.00283
	(A_N * !B * Y)	0.00439	0.00442	0.00437
	(A_N * !B * Y)	-0.00288	-0.00289	-0.00286
	(!A_N * !B * Y)	0.00404	0.00405	0.00402
	(!A_N * !B * Y)	-0.00323	-0.00323	-0.00320

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)	-0.00100	-0.00107	-0.00106
	(A_N * B * Y)	0.00137	0.00140	0.00137
	(A_N * !B * Y)	-0.00103	-0.00107	-0.00107
	(A_N * !B * Y)	0.00138	0.00138	0.00137
	(!A_N * !B * Y)	-0.00098	-0.00102	-0.00102
	(!A_N * !B * Y)	0.00143	0.00144	0.00142
sky130_fd_sc_hs__nand3b_2	(A_N * B * Y)	-0.00218	-0.00230	-0.00228
	(A_N * B * Y)	0.00275	0.00280	0.00276
	(A_N * !B * Y)	-0.00222	-0.00230	-0.00230
	(A_N * !B * Y)	0.00276	0.00279	0.00276
	(!A_N * !B * Y)	-0.00195	-0.00205	-0.00204
	(!A_N * !B * Y)	0.00302	0.00304	0.00302
sky130_fd_sc_hs__nand3b_4	(A_N * B * Y)	-0.00415	-0.00440	-0.00436
	(A_N * B * Y)	0.00285	0.00284	0.00283
	(A_N * !B * Y)	-0.00416	-0.00440	-0.00437
	(A_N * !B * Y)	0.00293	0.00291	0.00286
	(!A_N * !B * Y)	-0.00379	-0.00405	-0.00402
	(!A_N * !B * Y)	0.00329	0.00326	0.00320

SKY130_FD_SC_HS__NAND3x

sky130_fd_sc_hs_tt_1.50v_25C.ccs
Cell Library: Process , Voltage
1.50, 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	0.00277	0.00281	0.00272	0.83243
sky130_fd_sc_hs__nand3_2	0.00519	0.00562	0.00514	1.35129
sky130_fd_sc_hs__nand3_4	0.00773	0.00761	0.00764	1.66177

Leakage Information

Cell Name	Leakage(nW)		
	Min.	**Avg**	**Max.**
sky130_fd_sc_hs__nand3_1	0.00000	0.01301	0.08920
sky130_fd_sc_hs__nand3_2	0.00000	0.02603	0.17840
sky130_fd_sc_hs__nand3_4	0.00000	0.02975	0.17840

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)	0.04933	0.92105	11.52640
	B->Y (FR)	0.06072	0.93298	11.51960
	C->Y (FR)	0.06805	0.94414	11.55100
sky130_fd_sc_hs__nand3_2	A->Y (FR)	0.04508	0.83357	11.47630
	B->Y (FR)	0.05404	0.78630	10.52690
	C->Y (FR)	0.06367	0.80021	10.56830
sky130_fd_sc_hs__nand3_4	A->Y (FR)	0.04916	0.81998	11.67560
	B->Y (FR)	0.07487	0.83925	11.58310
	C->Y (FR)	0.09065	0.85020	11.45180

Delay(ns) to Y falling :

Cell Name	Timing Arc(Dir)	Delay(ns)		
		First	Mid	Last
sky130_fd_sc_hs__nand3_1	A->Y (RF)	0.03869	0.68880	8.57884
	B->Y (RF)	0.04683	0.66780	8.23191
	C->Y (RF)	0.05016	0.62601	7.65511
sky130_fd_sc_hs__nand3_2	A->Y (RF)	0.03220	0.57522	8.04030
	B->Y (RF)	0.04382	0.56436	7.70980
	C->Y (RF)	0.04924	0.52396	7.09527
sky130_fd_sc_hs__nand3_4	A->Y (RF)	0.02595	0.45714	6.64100
	B->Y (RF)	0.03691	0.43192	6.09313
	C->Y (RF)	0.04100	0.38083	5.30568

Power Information

Internal switching power(pJ) to Y rising :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__nand3_1	A	-0.00028	-0.00023	0.00040
	A	0.00303	0.00292	0.00375
	B	0.00024	0.00024	0.00082
	B	0.00422	0.00422	0.00484
	C	0.00050	0.00050	0.00109
	C	0.00522	0.00523	0.00584
sky130_fd_sc_hs__nand3_2	A	-0.00103	-0.00085	0.00052
	A	0.00523	0.00543	0.00682
	B	0.00035	0.00038	0.00169
	B	0.00829	0.00831	0.00974
	C	0.00137	0.00140	0.00276
	C	0.01057	0.01060	0.01203
sky130_fd_sc_hs__nand3_4	A	-0.00215	-0.00190	0.00026
	A	0.00711	0.00736	0.00957
	B	0.00041	0.00012	0.00227
	B	0.01253	0.01227	0.01445
	C	0.00188	0.00178	0.00377
	C	0.01706	0.01699	0.01895

Internal switching power(pJ) to Y falling :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__nand3_1	A	0.00407	0.00402	0.00434
	A	0.00077	0.00071	0.00102
	B	0.00483	0.00479	0.00499
	B	0.00080	0.00074	0.00093
	C	0.00559	0.00553	0.00582
	C	0.00076	0.00070	0.00088
sky130_fd_sc_hs__nand3_2	A	0.00691	0.00691	0.00778
	A	0.00066	0.00066	0.00123
	B	0.00864	0.00849	0.00922
	B	0.00059	0.00045	0.00090
	C	0.01011	0.01004	0.01077
	C	0.00064	0.00049	0.00095
sky130_fd_sc_hs__nand3_4	A	0.01039	0.01038	0.01156
	A	0.00116	0.00106	0.00200
	B	0.01359	0.01345	0.01494
	B	0.00125	0.00113	0.00174
	C	0.01678	0.01671	0.01807
	C	0.00110	0.00095	0.00155

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__nand3_1	(B * !C * Y)	0.00041	0.00041	0.00037
	(B * !C * Y)	-0.00161	-0.00162	-0.00168
	(!B * Y)	0.00041	0.00041	0.00039
	(!B * Y)	-0.00165	-0.00166	-0.00168
sky130_fd_sc_hs__nand3_2	(B * !C * Y)	0.00080	0.00081	0.00072
	(B * !C * Y)	-0.00299	-0.00301	-0.00315
	(!B * Y)	0.00082	0.00083	0.00078
	(!B * Y)	-0.00307	-0.00311	-0.00316
sky130_fd_sc_hs__nand3_4	(B * !C * Y)	0.00149	0.00149	0.00134
	(B * !C * Y)	-0.00358	-0.00361	-0.00388
	(!B * Y)	0.00153	0.00152	0.00144
	(!B * Y)	-0.00378	-0.00380	-0.00392

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__nand3_1	(B * !C * Y)	-0.00037	-0.00037	-0.00037
	(B * !C * Y)	0.00168	0.00169	0.00168
	(!B * Y)	-0.00039	-0.00038	-0.00038
	(!B * Y)	0.00169	0.00169	0.00169
sky130_fd_sc_hs__nand3_2	(B * !C * Y)	-0.00071	-0.00071	-0.00070
	(B * !C * Y)	0.00318	0.00318	0.00317
	(!B * Y)	-0.00076	-0.00076	-0.00075
	(!B * Y)	0.00318	0.00319	0.00317
sky130_fd_sc_hs__nand3_4	(B * !C * Y)	-0.00135	-0.00135	-0.00134
	(B * !C * Y)	0.00393	0.00395	0.00392
	(!B * Y)	-0.00140	-0.00140	-0.00139
	(!B * Y)	0.00393	0.00395	0.00392

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__nand3_1	(A * !C * Y)	0.00052	0.00052	0.00052
	(A * !C * Y)	-0.00142	-0.00142	-0.00141
	(!A * C * Y)	0.00107	0.00108	0.00107
	(!A * C * Y)	-0.00141	-0.00143	-0.00142
	(!A * !C * Y)	0.00059	0.00059	0.00059
	(!A * !C * Y)	-0.00142	-0.00142	-0.00142
sky130_fd_sc_hs__nand3_2	(A * !C * Y)	0.00103	0.00104	0.00105
	(A * !C * Y)	-0.00298	-0.00300	-0.00296
	(!A * C * Y)	0.00212	0.00215	0.00213
	(!A * C * Y)	-0.00296	-0.00298	-0.00296
	(!A * !C * Y)	0.00123	0.00124	0.00123
	(!A * !C * Y)	-0.00299	-0.00301	-0.00299
sky130_fd_sc_hs__nand3_4	(A * !C * Y)	0.00185	0.00188	0.00189
	(A * !C * Y)	-0.00291	-0.00293	-0.00290
	(!A * C * Y)	0.00419	0.00425	0.00421
	(!A * C * Y)	-0.00292	-0.00295	-0.00293
	(!A * !C * Y)	0.00218	0.00219	0.00219
	(!A * !C * Y)	-0.00295	-0.00297	-0.00296

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__nand3_1	(A * !C * Y)	-0.00049	-0.00050	-0.00050
	(A * !C * Y)	0.00145	0.00148	0.00143
	(!A * C * Y)	-0.00100	-0.00108	-0.00107
	(!A * C * Y)	0.00146	0.00144	0.00142
	(!A * !C * Y)	-0.00059	-0.00059	-0.00059
	(!A * !C * Y)	0.00148	0.00151	0.00144
sky130_fd_sc_hs__nand3_2	(A * !C * Y)	-0.00098	-0.00097	-0.00100
	(A * !C * Y)	0.00307	0.00305	0.00301
	(!A * C * Y)	-0.00198	-0.00214	-0.00213
	(!A * C * Y)	0.00303	0.00301	0.00297
	(!A * !C * Y)	-0.00123	-0.00124	-0.00123
	(!A * !C * Y)	0.00311	0.00313	0.00301
sky130_fd_sc_hs__nand3_4	(A * !C * Y)	-0.00176	-0.00179	-0.00181
	(A * !C * Y)	0.00309	0.00314	0.00298
	(!A * C * Y)	-0.00384	-0.00425	-0.00421
	(!A * C * Y)	0.00314	0.00298	0.00294
	(!A * !C * Y)	-0.00218	-0.00219	-0.00219
	(!A * !C * Y)	0.00321	0.00326	0.00302

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__nand3_1	(A * !B * Y)	0.00113	0.00114	0.00114
	(A * !B * Y)	-0.00143	-0.00143	-0.00143
	(!A * B * Y)	0.00113	0.00114	0.00113
	(!A * B * Y)	-0.00143	-0.00144	-0.00143
	(!A * !B * Y)	0.00113	0.00114	0.00113
	(!A * !B * Y)	-0.00143	-0.00143	-0.00143
sky130_fd_sc_hs__nand3_2	(A * !B * Y)	0.00210	0.00210	0.00209
	(A * !B * Y)	-0.00281	-0.00282	-0.00281
	(!A * B * Y)	0.00206	0.00207	0.00205
	(!A * B * Y)	-0.00281	-0.00282	-0.00281
	(!A * !B * Y)	0.00210	0.00210	0.00209
	(!A * !B * Y)	-0.00281	-0.00282	-0.00281
sky130_fd_sc_hs__nand3_4	(A * !B * Y)	0.00422	0.00425	0.00424
	(A * !B * Y)	-0.00296	-0.00297	-0.00297
	(!A * B * Y)	0.00416	0.00420	0.00415
	(!A * B * Y)	-0.00297	-0.00298	-0.00297
	(!A * !B * Y)	0.00424	0.00428	0.00423
	(!A * !B * Y)	-0.00296	-0.00299	-0.00297

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__nand3_1	(A * !B * Y)	-0.00111	-0.00114	-0.00114
	(A * !B * Y)	0.00144	0.00146	0.00143
	(!A * B * Y)	-0.00106	-0.00114	-0.00113
	(!A * B * Y)	0.00144	0.00145	0.00143
	(!A * !B * Y)	-0.00111	-0.00114	-0.00113
	(!A * !B * Y)	0.00144	0.00144	0.00143
sky130_fd_sc_hs__nand3_2	(A * !B * Y)	-0.00200	-0.00210	-0.00209
	(A * !B * Y)	0.00281	0.00284	0.00282
	(!A * B * Y)	-0.00191	-0.00207	-0.00205
	(!A * B * Y)	0.00281	0.00282	0.00281
	(!A * !B * Y)	-0.00200	-0.00210	-0.00209
	(!A * !B * Y)	0.00281	0.00284	0.00282
sky130_fd_sc_hs__nand3_4	(A * !B * Y)	-0.00405	-0.00425	-0.00424
	(A * !B * Y)	0.00296	0.00303	0.00297
	(!A * B * Y)	-0.00388	-0.00420	-0.00415
	(!A * B * Y)	0.00297	0.00301	0.00297
	(!A * !B * Y)	-0.00407	-0.00428	-0.00423
	(!A * !B * Y)	0.00296	0.00301	0.00297

SKY130_FD_SC_HS__NAND4BBx

sky130_fd_sc_hs_tt_1.50v_25C.ccs
Cell Library: Process , Voltage 1.50, 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	0.00217	0.00210	0.00280	0.00282	0.78567
sky130_fd_sc_hs__nand4bb_2	0.00248	0.00244	0.00526	0.00519	1.45217
sky130_fd_sc_hs__nand4bb_4	0.00346	0.00357	0.01024	0.01027	2.42673

Leakage Information

Cell Name	Leakage(nW)		
	Min.	**Avg**	**Max.**
sky130_fd_sc_hs__nand4bb_1	0.00000	0.16266	0.30297
sky130_fd_sc_hs__nand4bb_2	0.00000	0.09823	0.25036
sky130_fd_sc_hs__nand4bb_4	0.00000	0.34225	0.60740

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)	0.09285	0.71293	6.91811
	B_N->Y (RR)	0.10652	0.72564	6.90362
	C->Y (FR)	0.07908	0.94829	11.33060
	D->Y (FR)	0.08837	0.96079	11.35330
sky130_fd_sc_hs__nand4bb_2	A_N->Y (RR)	0.08515	0.57583	6.20945
	B_N->Y (RR)	0.09878	0.57269	5.88467
	C->Y (FR)	0.06492	0.80759	10.77500
	D->Y (FR)	0.07429	0.82161	10.84370
sky130_fd_sc_hs__nand4bb_4	A_N->Y (RR)	0.10272	0.52604	5.58239
	B_N->Y (RR)	0.12060	0.54971	5.67519
	C->Y (FR)	0.06321	0.71729	10.19890
	D->Y (FR)	0.07201	0.73081	10.26060

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)	0.12577	0.86440	7.96426
	B_N->Y (FF)	0.14082	0.88401	7.99376
	C->Y (RF)	0.08008	0.76048	9.00518
	D->Y (RF)	0.08618	0.73383	8.55623
sky130_fd_sc_hs__nand4bb_2	A_N->Y (FF)	0.14363	0.87664	9.08321
	B_N->Y (FF)	0.17201	0.91399	9.15059
	C->Y (RF)	0.08232	0.68454	9.50701
	D->Y (RF)	0.08769	0.66217	9.06484
sky130_fd_sc_hs__nand4bb_4	A_N->Y (FF)	0.14331	0.76909	8.46999
	B_N->Y (FF)	0.16574	0.79702	8.50769
	C->Y (RF)	0.08554	0.58358	9.04819
	D->Y (RF)	0.09033	0.55344	8.50240

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	0.00545	0.00545	0.01224
	A_N	0.00347	0.00347	0.01029
	B_N	0.00594	0.00590	0.01263
	B_N	0.00402	0.00398	0.01072
	C	0.00090	0.00087	0.00142
	C	0.00420	0.00416	0.00473
	D	0.00131	0.00126	0.00184
	D	0.00521	0.00516	0.00573
sky130_fd_sc_hs__nand4bb_2	A_N	0.00768	0.00788	0.01426
	A_N	0.00556	0.00578	0.01253
	B_N	0.00947	0.00944	0.01566
	B_N	0.00743	0.00740	0.01386
	C	0.00144	0.00135	0.00252
	C	0.00746	0.00736	0.00860
	D	0.00252	0.00246	0.00354
	D	0.00992	0.00989	0.01015
sky130_fd_sc_hs__nand4bb_4	A_N	0.01273	0.01314	0.02390
	A_N	0.00999	0.01049	0.02147
	B_N	0.01559	0.01556	0.02623
	B_N	0.01275	0.01275	0.02340
	C	0.00234	0.00206	0.00555
	C	0.01422	0.01392	0.01779
	D	0.00410	0.00409	0.00725
	D	0.01877	0.01884	0.02231

Internal switching power(pJ) to Y falling :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__nand4bb_1	A_N	0.00457	0.00500	0.01239
	A_N	0.00654	0.00699	0.01429
	B_N	0.00563	0.00596	0.01342
	B_N	0.00755	0.00787	0.01527
	C	0.00655	0.00647	0.00664
	C	0.00324	0.00315	0.00333
	D	0.00733	0.00725	0.00747
	D	0.00334	0.00325	0.00343
sky130_fd_sc_hs__nand4bb_2	A_N	0.00774	0.00825	0.01497
	A_N	0.00985	0.01037	0.01699
	B_N	0.00973	0.01021	0.01687
	B_N	0.01178	0.01226	0.01883
	C	0.01154	0.01139	0.01182
	C	0.00551	0.00533	0.00570
	D	0.01310	0.01297	0.01331
	D	0.00547	0.00530	0.00567
sky130_fd_sc_hs__nand4bb_4	A_N	0.01562	0.01632	0.02912
	A_N	0.01834	0.01904	0.03175
	B_N	0.01894	0.01977	0.03228
	B_N	0.02177	0.02260	0.03496
	C	0.02268	0.02227	0.02371
	C	0.01072	0.01026	0.01147
	D	0.02585	0.02541	0.02678
	D	0.01070	0.01026	0.01146

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)	0.00390	0.00385	0.01063
	(B_N * Y)	0.00141	0.00135	0.00815
	(!B_N * C * !D * Y)	0.00427	0.00422	0.01100
	(!B_N * C * !D * Y)	0.00177	0.00171	0.00851
	(!B_N * !C * Y)	0.00427	0.00422	0.01100
	(!B_N * !C * Y)	0.00177	0.00171	0.00851
sky130_fd_sc_hs__nand4bb_2	(B_N * Y)	0.00582	0.00570	0.01194
	(B_N * Y)	0.00311	0.00297	0.00923
	(!B_N * C * !D * Y)	0.00628	0.00615	0.01238
	(!B_N * C * !D * Y)	0.00353	0.00340	0.00966
	(!B_N * !C * Y)	0.00627	0.00615	0.01238
	(!B_N * !C * Y)	0.00354	0.00340	0.00966
sky130_fd_sc_hs__nand4bb_4	(B_N * Y)	0.00954	0.00932	0.02010
	(B_N * Y)	0.00564	0.00540	0.01619
	(!B_N * C * !D * Y)	0.01015	0.00994	0.02070
	(!B_N * C * !D * Y)	0.00621	0.00597	0.01676
	(!B_N * !C * Y)	0.01014	0.00992	0.02070
	(!B_N * !C * Y)	0.00621	0.00597	0.01676

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)	0.00037	0.00061	0.00789
	(B_N * Y)	0.00285	0.00311	0.01038
	(!B_N * C * !D * Y)	0.00004	0.00028	0.00754
	(!B_N * C * !D * Y)	0.00260	0.00286	0.01009
	(!B_N * !C * Y)	0.00001	0.00026	0.00753
	(!B_N * !C * Y)	0.00252	0.00278	0.01004
sky130_fd_sc_hs__nand4bb_2	(B_N * Y)	0.00099	0.00109	0.00762
	(B_N * Y)	0.00370	0.00381	0.01034
	(!B_N * C * !D * Y)	0.00059	0.00070	0.00719
	(!B_N * C * !D * Y)	0.00348	0.00360	0.01005
	(!B_N * !C * Y)	0.00056	0.00066	0.00717
	(!B_N * !C * Y)	0.00331	0.00343	0.00993
sky130_fd_sc_hs__nand4bb_4	(B_N * Y)	0.00198	0.00227	0.01441
	(B_N * Y)	0.00588	0.00618	0.01832
	(!B_N * C * !D * Y)	0.00149	0.00178	0.01385
	(!B_N * C * !D * Y)	0.00578	0.00607	0.01808
	(!B_N * !C * Y)	0.00143	0.00172	0.01383
	(!B_N * !C * Y)	0.00544	0.00573	0.01783

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)	0.00384	0.00372	0.01029
	(A_N * C * Y) + (!A_N * C * !D * Y)	0.00143	0.00130	0.00787
	(!C * Y)	0.00392	0.00386	0.01053
	(!C * Y)	0.00142	0.00136	0.00803
sky130_fd_sc_hs__nand4bb_2	(A_N * C * Y) + (!A_N * C * !D * Y)	0.00561	0.00539	0.01131
	(A_N * C * Y) + (!A_N * C * !D * Y)	0.00297	0.00273	0.00867
	(!C * Y)	0.00576	0.00564	0.01170
	(!C * Y)	0.00297	0.00284	0.00890
sky130_fd_sc_hs__nand4bb_4	(A_N * C * Y) + (!A_N * C * !D * Y)	0.00938	0.00901	0.01906
	(A_N * C * Y) + (!A_N * C * !D * Y)	0.00536	0.00498	0.01505
	(!C * Y)	0.00980	0.00955	0.01990
	(!C * Y)	0.00548	0.00522	0.01557

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)	0.00095	0.00121	0.00845
	(A_N * C * Y) + (!A_N * C * !D * Y)	0.00338	0.00364	0.01087
	(!C * Y)	0.00053	0.00079	0.00806
	(!C * Y)	0.00301	0.00328	0.01053
sky130_fd_sc_hs__nand4bb_2	(A_N * C * Y) + (!A_N * C * !D * Y)	0.00220	0.00229	0.00876
	(A_N * C * Y) + (!A_N * C * !D * Y)	0.00485	0.00495	0.01142
	(!C * Y)	0.00138	0.00147	0.00800
	(!C * Y)	0.00414	0.00425	0.01077
sky130_fd_sc_hs__nand4bb_4	(A_N * C * Y) + (!A_N * C * !D * Y)	0.00403	0.00432	0.01640
	(A_N * C * Y) + (!A_N * C * !D * Y)	0.00803	0.00833	0.02041
	(!C * Y)	0.00239	0.00268	0.01483
	(!C * Y)	0.00663	0.00693	0.01909

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)**	0.00116	0.00118	0.00117
	(A_N * B_N * D * Y)	-0.00145	-0.00147	-0.00146
	(A_N * B_N * !D * Y)	0.00080	0.00079	0.00079
	(A_N * B_N * !D * Y)	-0.00147	-0.00147	-0.00146
	(A_N * !B_N * D * Y)	0.00099	0.00101	0.00100
	(A_N * !B_N * D * Y)	-0.00164	-0.00165	-0.00163
	(A_N * !B_N * !D * Y)	0.00058	0.00059	0.00058
	(A_N * !B_N * !D * Y)	-0.00175	-0.00176	-0.00175
	(!A_N * B_N * D * Y)	0.00117	0.00118	0.00117
	(!A_N * B_N * D * Y)	-0.00146	-0.00147	-0.00146
	(!A_N * B_N * !D * Y)	0.00076	0.00076	0.00076
	(!A_N * B_N * !D * Y)	-0.00147	-0.00147	-0.00147
	(!A_N * !B_N * !D * Y)	0.00049	0.00049	0.00049
	(!A_N * !B_N * !D * Y)	-0.00164	-0.00165	-0.00164
sky130_fd_sc_hs__nand4bb_2	**(A_N * B_N * D * Y)**	0.00221	0.00221	0.00221
	(A_N * B_N * D * Y)	-0.00286	-0.00286	-0.00286
	(A_N * B_N * !D * Y)	0.00139	0.00140	0.00139
	(A_N * B_N * !D * Y)	-0.00286	-0.00287	-0.00286
	(A_N * !B_N * D * Y)	0.00214	0.00215	0.00213
	(A_N * !B_N * D * Y)	-0.00297	-0.00298	-0.00294
	(A_N * !B_N * !D * Y)	0.00127	0.00128	0.00127
	(A_N * !B_N * !D * Y)	-0.00317	-0.00320	-0.00318
	(!A_N * B_N * D * Y)	0.00221	0.00222	0.00221
	(!A_N * B_N * D * Y)	-0.00286	-0.00286	-0.00286
	(!A_N * B_N * !D * Y)	0.00134	0.00134	0.00134
	(!A_N * B_N * !D * Y)	-0.00286	-0.00287	-0.00286
	(!A_N * !B_N * !D * Y)	0.00105	0.00105	0.00106
	(!A_N * !B_N * !D * Y)	-0.00294	-0.00294	-0.00295

sky130_fd_sc_hs__nand4bb_4	**(A_N * B_N * D * Y)**	0.00441	0.00447	0.00442
	(A_N * B_N * D * Y)	-0.00558	-0.00562	-0.00559
	(A_N * B_N * !D * Y)	0.00275	0.00277	0.00276
	(A_N * B_N * !D * Y)	-0.00558	-0.00560	-0.00559
	(A_N * !B_N * D * Y)	0.00422	0.00426	0.00422
	(A_N * !B_N * D * Y)	-0.00587	-0.00588	-0.00580
	(A_N * !B_N * !D * Y)	0.00243	0.00245	0.00243
	(A_N * !B_N * !D * Y)	-0.00628	-0.00633	-0.00629
	(!A_N * B_N * D * Y)	0.00440	0.00446	0.00442
	(!A_N * B_N * D * Y)	-0.00558	-0.00562	-0.00559
	(!A_N * B_N * !D * Y)	0.00263	0.00265	0.00264
	(!A_N * B_N * !D * Y)	-0.00559	-0.00562	-0.00561
	(!A_N * !B_N * !D * Y)	0.00201	0.00202	0.00203
	(!A_N * !B_N * !D * Y)	-0.00582	-0.00584	-0.00584

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)**	-0.00115	-0.00117	-0.00117
	(A_N * B_N * D * Y)	0.00147	0.00148	0.00147
	(A_N * B_N * !D * Y)	-0.00080	-0.00079	-0.00079
	(A_N * B_N * !D * Y)	0.00147	0.00148	0.00147
	(A_N * !B_N * D * Y)	-0.00093	-0.00101	-0.00100
	(A_N * !B_N * D * Y)	0.00170	0.00166	0.00163
	(A_N * !B_N * !D * Y)	-0.00058	-0.00059	-0.00058
	(A_N * !B_N * !D * Y)	0.00179	0.00180	0.00180
	(!A_N * B_N * D * Y)	-0.00115	-0.00118	-0.00117
	(!A_N * B_N * D * Y)	0.00148	0.00148	0.00146
	(!A_N * B_N * !D * Y)	-0.00076	-0.00076	-0.00076
	(!A_N * B_N * !D * Y)	0.00150	0.00152	0.00148
	(!A_N * !B_N * !D * Y)	-0.00046	-0.00047	-0.00047
	(!A_N * !B_N * !D * Y)	0.00166	0.00169	0.00166
sky130_fd_sc_hs__nand4bb_2	**(A_N * B_N * D * Y)**	-0.00216	-0.00221	-0.00221
	(A_N * B_N * D * Y)	0.00286	0.00290	0.00287
	(A_N * B_N * !D * Y)	-0.00139	-0.00140	-0.00139
	(A_N * B_N * !D * Y)	0.00289	0.00291	0.00287
	(A_N * !B_N * D * Y)	-0.00200	-0.00215	-0.00213
	(A_N * !B_N * D * Y)	0.00310	0.00299	0.00294
	(A_N * !B_N * !D * Y)	-0.00127	-0.00128	-0.00127
	(A_N * !B_N * !D * Y)	0.00321	0.00328	0.00327
	(!A_N * B_N * D * Y)	-0.00215	-0.00222	-0.00221
	(!A_N * B_N * D * Y)	0.00288	0.00290	0.00287
	(!A_N * B_N * !D * Y)	-0.00134	-0.00134	-0.00134
	(!A_N * B_N * !D * Y)	0.00292	0.00294	0.00288
	(!A_N * !B_N * !D * Y)	-0.00100	-0.00102	-0.00100
	(!A_N * !B_N * !D * Y)	0.00300	0.00306	0.00300

sky130_fd_sc_hs__nand4bb_4	(A_N * B_N * D * Y)	-0.00431	-0.00445	-0.00442
	(A_N * B_N * D * Y)	0.00560	0.00568	0.00561
	(A_N * B_N * !D * Y)	-0.00275	-0.00277	-0.00276
	(A_N * B_N * !D * Y)	0.00565	0.00570	0.00562
	(A_N * !B_N * D * Y)	-0.00390	-0.00426	-0.00422
	(A_N * !B_N * D * Y)	0.00614	0.00590	0.00580
	(A_N * !B_N * !D * Y)	-0.00243	-0.00245	-0.00243
	(A_N * !B_N * !D * Y)	0.00639	0.00652	0.00648
	(!A_N * B_N * D * Y)	-0.00428	-0.00445	-0.00442
	(!A_N * B_N * D * Y)	0.00566	0.00568	0.00561
	(!A_N * B_N * !D * Y)	-0.00263	-0.00265	-0.00264
	(!A_N * B_N * !D * Y)	0.00576	0.00580	0.00565
	(!A_N * !B_N * !D * Y)	-0.00194	-0.00196	-0.00193
	(!A_N * !B_N * !D * Y)	0.00596	0.00605	0.00592

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)	0.00101	0.00102	0.00101
	(A_N * B_N * C * Y)	-0.00153	-0.00154	-0.00154
	(A_N * !C * Y)	0.00102	0.00103	0.00103
	(A_N * !C * Y)	-0.00153	-0.00154	-0.00154
	(A_N * !B_N * C * Y)	0.00100	0.00100	0.00100
	(A_N * !B_N * C * Y)	-0.00157	-0.00158	-0.00157
	(!A_N * B_N * C * Y)	0.00101	0.00103	0.00102
	(!A_N * B_N * C * Y)	-0.00154	-0.00155	-0.00154
	(!A_N * B_N * !C * Y)	0.00102	0.00103	0.00103
	(!A_N * B_N * !C * Y)	-0.00153	-0.00154	-0.00154
	(!A_N * !B_N * !C * Y)	0.00103	0.00104	0.00103
	(!A_N * !B_N * !C * Y)	-0.00154	-0.00155	-0.00154

sky130_fd_sc_hs__nand4bb_2	**(A_N * B_N * C * Y)**	0.00213	0.00214	0.00212
	(A_N * B_N * C * Y)	-0.00279	-0.00280	-0.00279
	(A_N * !C * Y)	0.00214	0.00218	0.00215
	(A_N * !C * Y)	-0.00277	-0.00280	-0.00279
	(A_N * !B_N * C * Y)	0.00209	0.00210	0.00209
	(A_N * !B_N * C * Y)	-0.00287	-0.00287	-0.00285
	(!A_N * B_N * C * Y)	0.00212	0.00214	0.00212
	(!A_N * B_N * C * Y)	-0.00278	-0.00280	-0.00279
	(!A_N * B_N * !C * Y)	0.00215	0.00214	0.00214
	(!A_N * B_N * !C * Y)	-0.00278	-0.00279	-0.00279
	(!A_N * !B_N * !C * Y)	0.00215	0.00216	0.00214
	(!A_N * !B_N * !C * Y)	-0.00279	-0.00280	-0.00279
sky130_fd_sc_hs__nand4bb_4	**(A_N * B_N * C * Y)**	0.00424	0.00425	0.00422
	(A_N * B_N * C * Y)	-0.00557	-0.00557	-0.00555
	(A_N * !C * Y)	0.00427	0.00427	0.00428
	(A_N * !C * Y)	-0.00554	-0.00554	-0.00555
	(A_N * !B_N * C * Y)	0.00418	0.00418	0.00417
	(A_N * !B_N * C * Y)	-0.00573	-0.00571	-0.00568
	(!A_N * B_N * C * Y)	0.00423	0.00427	0.00422
	(!A_N * B_N * C * Y)	-0.00557	-0.00559	-0.00555
	(!A_N * B_N * !C * Y)	0.00426	0.00430	0.00428
	(!A_N * B_N * !C * Y)	-0.00554	-0.00557	-0.00555
	(!A_N * !B_N * !C * Y)	0.00426	0.00432	0.00428
	(!A_N * !B_N * !C * Y)	-0.00554	-0.00559	-0.00555

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)**	-0.00096	-0.00102	-0.00101
	(A_N * B_N * C * Y)	0.00154	0.00154	0.00155
	(A_N * !C * Y)	-0.00099	-0.00103	-0.00103
	(A_N * !C * Y)	0.00155	0.00156	0.00155
	(A_N * !B_N * C * Y)	-0.00093	-0.00100	-0.00100
	(A_N * !B_N * C * Y)	0.00160	0.00159	0.00157
	(!A_N * B_N * C * Y)	-0.00096	-0.00102	-0.00102
	(!A_N * B_N * C * Y)	0.00154	0.00155	0.00155
	(!A_N * B_N * !C * Y)	-0.00100	-0.00103	-0.00103
	(!A_N * B_N * !C * Y)	0.00155	0.00156	0.00155
	(!A_N * !B_N * !C * Y)	-0.00099	-0.00103	-0.00103
	(!A_N * !B_N * !C * Y)	0.00155	0.00156	0.00154
sky130_fd_sc_hs__nand4bb_2	**(A_N * B_N * C * Y)**	-0.00200	-0.00214	-0.00212
	(A_N * B_N * C * Y)	0.00280	0.00282	0.00280
	(A_N * !C * Y)	-0.00206	-0.00216	-0.00215
	(A_N * !C * Y)	0.00278	0.00282	0.00280
	(A_N * !B_N * C * Y)	-0.00195	-0.00210	-0.00209
	(A_N * !B_N * C * Y)	0.00294	0.00287	0.00285
	(!A_N * B_N * C * Y)	-0.00200	-0.00214	-0.00212
	(!A_N * B_N * C * Y)	0.00279	0.00282	0.00280
	(!A_N * B_N * !C * Y)	-0.00206	-0.00214	-0.00214
	(!A_N * B_N * !C * Y)	0.00278	0.00282	0.00280
	(!A_N * !B_N * !C * Y)	-0.00205	-0.00216	-0.00214
	(!A_N * !B_N * !C * Y)	0.00280	0.00282	0.00280

sky130_fd_sc_hs__nand4bb_4	**(A_N * B_N * C * Y)**	-0.00399	-0.00425	-0.00422
	(A_N * B_N * C * Y)	0.00557	0.00561	0.00557
	(A_N * !C * Y)	-0.00411	-0.00427	-0.00428
	(A_N * !C * Y)	0.00556	0.00564	0.00557
	(A_N * !B_N * C * Y)	-0.00389	-0.00418	-0.00417
	(A_N * !B_N * C * Y)	0.00585	0.00571	0.00568
	(!A_N * B_N * C * Y)	-0.00399	-0.00427	-0.00422
	(!A_N * B_N * C * Y)	0.00557	0.00561	0.00557
	(!A_N * B_N * !C * Y)	-0.00411	-0.00430	-0.00428
	(!A_N * B_N * !C * Y)	0.00555	0.00564	0.00557
	(!A_N * !B_N * !C * Y)	-0.00408	-0.00431	-0.00428
	(!A_N * !B_N * !C * Y)	0.00559	0.00564	0.00557

SKY130_FD_SC_HS__NAND4Bx

sky130_fd_sc_hs_tt_1.50v_25C.ccs
Cell Library: Process , Voltage
1.50, 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	0.00213	0.00275	0.00275	0.00266	0.82631
sky130_fd_sc_hs__nand4b_2	0.00267	0.00542	0.00525	0.00525	1.44142
sky130_fd_sc_hs__nand4b_4	0.00372	0.00770	0.00785	0.00752	1.65325

Leakage Information

Cell Name	Leakage(nW)		
	Min.	**Avg**	**Max.**
sky130_fd_sc_hs__nand4b_1	0.00000	0.08575	0.15578
sky130_fd_sc_hs__nand4b_2	0.00000	0.05795	0.24411
sky130_fd_sc_hs__nand4b_4	0.00000	0.17394	0.32086

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)	0.08403	0.67517	6.60507
	B->Y (FR)	0.06332	0.94668	11.64960
	C->Y (FR)	0.07358	0.95746	11.65690
	D->Y (FR)	0.07763	0.95372	11.51140
sky130_fd_sc_hs__nand4b_2	A_N->Y (RR)	0.08346	0.55027	5.72181
	B->Y (FR)	0.05663	0.79345	10.71080
	C->Y (FR)	0.06714	0.81270	10.84900
	D->Y (FR)	0.07511	0.82157	10.80940
sky130_fd_sc_hs__nand4b_4	A_N->Y (RR)	0.10324	0.61649	6.78469
	B->Y (FR)	0.07797	0.83576	11.42720
	C->Y (FR)	0.09827	0.85765	11.45150
	D->Y (FR)	0.11674	0.88255	11.57760

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)	0.12203	0.87630	8.22069
	B->Y (RF)	0.06169	0.78973	9.72279
	C->Y (RF)	0.07022	0.76136	9.25236
	D->Y (RF)	0.07354	0.73242	8.80823
sky130_fd_sc_hs__nand4b_2	A_N->Y (FF)	0.13560	0.85965	8.93012
	B->Y (RF)	0.06780	0.72432	10.13640
	C->Y (RF)	0.07642	0.67516	9.39037
	D->Y (RF)	0.08242	0.65332	8.95673
sky130_fd_sc_hs__nand4b_4	A_N->Y (FF)	0.10591	0.62730	6.03939
	B->Y (RF)	0.05732	0.53353	7.49365
	C->Y (RF)	0.06678	0.49110	6.77082
	D->Y (RF)	0.07161	0.46145	6.21842

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	0.00532	0.00535	0.01196
	A_N	0.00322	0.00325	0.00991
	B	0.00044	0.00045	0.00102
	B	0.00363	0.00363	0.00425
	C	0.00090	0.00087	0.00142
	C	0.00462	0.00459	0.00519
	D	0.00121	0.00120	0.00175
	D	0.00555	0.00554	0.00610
sky130_fd_sc_hs__nand4b_2	A_N	0.00772	0.00789	0.01333
	A_N	0.00568	0.00586	0.01129
	B	0.00037	0.00026	0.00155
	B	0.00696	0.00684	0.00819
	C	0.00136	0.00129	0.00244
	C	0.00916	0.00908	0.00943
	D	0.00237	0.00225	0.00340
	D	0.01162	0.01152	0.01266
sky130_fd_sc_hs__nand4b_4	A_N	0.00988	0.01031	0.02111
	A_N	0.00690	0.00735	0.01813
	B	0.00045	0.00004	0.00208
	B	0.00974	0.00936	0.01142
	C	0.00209	0.00162	0.00354
	C	0.01427	0.01379	0.01572
	D	0.00385	0.00347	0.00542
	D	0.01864	0.01787	0.02019

Internal switching power(pJ) to Y falling :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__nand4b_1	A_N	0.00416	0.00451	0.01165
	A_N	0.00626	0.00661	0.01374
	B	0.00492	0.00486	0.00482
	B	0.00172	0.00166	0.00184
	C	0.00565	0.00559	0.00580
	C	0.00185	0.00178	0.00195
	D	0.00633	0.00627	0.00646
	D	0.00184	0.00177	0.00194
sky130_fd_sc_hs__nand4b_2	A_N	0.00756	0.00801	0.01460
	A_N	0.00960	0.01005	0.01658
	B	0.00993	0.00979	0.01016
	B	0.00330	0.00313	0.00354
	C	0.01139	0.01123	0.01169
	C	0.00342	0.00325	0.00363
	D	0.01299	0.01287	0.01324
	D	0.00338	0.00321	0.00359
sky130_fd_sc_hs__nand4b_4	A_N	0.01149	0.01206	0.02502
	A_N	0.01446	0.01501	0.02773
	B	0.01540	0.01524	0.01580
	B	0.00603	0.00586	0.00644
	C	0.01857	0.01858	0.01923
	C	0.00608	0.00589	0.00644
	D	0.02157	0.02142	0.02208
	D	0.00612	0.00596	0.00648

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)	0.00420	0.00414	0.01084
	(B * C * !D * Y)	0.00161	0.00153	0.00824
	(B * !C * Y)	0.00420	0.00413	0.01084
	(B * !C * Y)	0.00161	0.00153	0.00825
	(!B * Y)	0.00418	0.00411	0.01082
	(!B * Y)	0.00161	0.00153	0.00825
sky130_fd_sc_hs__nand4b_2	(B * C * !D * Y)	0.00630	0.00615	0.01246
	(B * C * !D * Y)	0.00308	0.00291	0.00924
	(B * !C * Y)	0.00630	0.00615	0.01246
	(B * !C * Y)	0.00308	0.00291	0.00925
	(!B * Y)	0.00627	0.00612	0.01243
	(!B * Y)	0.00308	0.00291	0.00925
sky130_fd_sc_hs__nand4b_4	(B * C * !D * Y)	0.00750	0.00730	0.01898
	(B * C * !D * Y)	0.00296	0.00277	0.01447
	(B * !C * Y)	0.00749	0.00729	0.01897
	(B * !C * Y)	0.00296	0.00277	0.01447
	(!B * Y)	0.00742	0.00722	0.01891
	(!B * Y)	0.00298	0.00278	0.01447

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)	0.00038	0.00061	0.00784
	(B * C * !D * Y)	0.00308	0.00331	0.01052
	(B * !C * Y)	0.00037	0.00060	0.00784
	(B * !C * Y)	0.00303	0.00327	0.01048
	(!B * Y)	0.00037	0.00061	0.00786
	(!B * Y)	0.00296	0.00320	0.01043
sky130_fd_sc_hs__nand4b_2	(B * C * !D * Y)	0.00049	0.00055	0.00713
	(B * C * !D * Y)	0.00392	0.00399	0.01052
	(B * !C * Y)	0.00045	0.00051	0.00712
	(B * !C * Y)	0.00380	0.00386	0.01044
	(!B * Y)	0.00043	0.00050	0.00713
	(!B * Y)	0.00362	0.00370	0.01033
sky130_fd_sc_hs__nand4b_4	(B * C * !D * Y)	0.00109	0.00144	0.01407
	(B * C * !D * Y)	0.00603	0.00640	0.01892
	(B * !C * Y)	0.00102	0.00137	0.01404
	(B * !C * Y)	0.00578	0.00616	0.01876
	(!B * Y)	0.00101	0.00136	0.01408
	(!B * Y)	0.00546	0.00585	0.01854

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)**	0.00121	0.00122	0.00121
	(A_N * C * D * Y)	-0.00140	-0.00140	-0.00140
	(A_N * C * !D * Y)	0.00078	0.00078	0.00078
	(A_N * C * !D * Y)	-0.00140	-0.00140	-0.00140
	(A_N * !C * Y)	0.00078	0.00079	0.00079
	(A_N * !C * Y)	-0.00139	-0.00140	-0.00140
	(!A_N * C * !D * Y)	0.00045	0.00045	0.00046
	(!A_N * C * !D * Y)	-0.00160	-0.00160	-0.00161
	(!A_N * !C * Y)	0.00048	0.00048	0.00048
	(!A_N * !C * Y)	-0.00162	-0.00162	-0.00162
sky130_fd_sc_hs__nand4b_2	**(A_N * C * D * Y)**	0.00221	0.00223	0.00222
	(A_N * C * D * Y)	-0.00296	-0.00296	-0.00296
	(A_N * C * !D * Y)	0.00139	0.00138	0.00138
	(A_N * C * !D * Y)	-0.00299	-0.00298	-0.00298
	(A_N * !C * Y)	0.00141	0.00141	0.00140
	(A_N * !C * Y)	-0.00299	-0.00300	-0.00299
	(!A_N * C * !D * Y)	0.00095	0.00096	0.00096
	(!A_N * C * !D * Y)	-0.00310	-0.00313	-0.00316
	(!A_N * !C * Y)	0.00100	0.00101	0.00101
	(!A_N * !C * Y)	-0.00316	-0.00319	-0.00318
sky130_fd_sc_hs__nand4b_4	**(A_N * C * D * Y)**	0.00423	0.00427	0.00425
	(A_N * C * D * Y)	-0.00307	-0.00309	-0.00308
	(A_N * C * !D * Y)	0.00251	0.00252	0.00250
	(A_N * C * !D * Y)	-0.00312	-0.00313	-0.00311
	(A_N * !C * Y)	0.00252	0.00254	0.00253
	(A_N * !C * Y)	-0.00312	-0.00313	-0.00312
	(!A_N * C * !D * Y)	0.00177	0.00179	0.00181
	(!A_N * C * !D * Y)	-0.00326	-0.00329	-0.00337
	(!A_N * !C * Y)	0.00187	0.00189	0.00189
	(!A_N * !C * Y)	-0.00337	-0.00339	-0.00340

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)	-0.00114	-0.00121	-0.00121
	(A_N * C * D * Y)	0.00146	0.00142	0.00140
	(A_N * C * !D * Y)	-0.00078	-0.00078	-0.00078
	(A_N * C * !D * Y)	0.00145	0.00144	0.00140
	(A_N * !C * Y)	-0.00078	-0.00079	-0.00079
	(A_N * !C * Y)	0.00146	0.00148	0.00142
	(!A_N * C * !D * Y)	-0.00044	-0.00044	-0.00045
	(!A_N * C * !D * Y)	0.00165	0.00165	0.00164
	(!A_N * !C * Y)	-0.00045	-0.00045	-0.00046
	(!A_N * !C * Y)	0.00165	0.00165	0.00164
sky130_fd_sc_hs__nand4b_2	(A_N * C * D * Y)	-0.00205	-0.00222	-0.00222
	(A_N * C * D * Y)	0.00311	0.00296	0.00297
	(A_N * C * !D * Y)	-0.00139	-0.00138	-0.00138
	(A_N * C * !D * Y)	0.00304	0.00301	0.00298
	(A_N * !C * Y)	-0.00141	-0.00141	-0.00140
	(A_N * !C * Y)	0.00308	0.00311	0.00301
	(!A_N * C * !D * Y)	-0.00092	-0.00091	-0.00094
	(!A_N * C * !D * Y)	0.00326	0.00325	0.00321
	(!A_N * !C * Y)	-0.00095	-0.00094	-0.00097
	(!A_N * !C * Y)	0.00326	0.00325	0.00321

sky130_fd_sc_hs__nand4b_4	**(A_N * C * D * Y)**	-0.00388	-0.00425	-0.00425
	(A_N * C * D * Y)	0.00341	0.00310	0.00309
	(A_N * C * !D * Y)	-0.00251	-0.00252	-0.00250
	(A_N * C * !D * Y)	0.00326	0.00315	0.00311
	(A_N * !C * Y)	-0.00252	-0.00254	-0.00253
	(A_N * !C * Y)	0.00339	0.00341	0.00318
	(!A_N * C * !D * Y)	-0.00173	-0.00172	-0.00176
	(!A_N * C * !D * Y)	0.00354	0.00352	0.00346
	(!A_N * !C * Y)	-0.00178	-0.00176	-0.00181
	(!A_N * !C * Y)	0.00354	0.00352	0.00346

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)**	0.00104	0.00105	0.00104
	(A_N * B * D * Y)	-0.00139	-0.00140	-0.00139
	(A_N * B * !D * Y)	0.00062	0.00061	0.00061
	(A_N * B * !D * Y)	-0.00139	-0.00139	-0.00139
	(A_N * !B * D * Y)	0.00105	0.00107	0.00105
	(A_N * !B * D * Y)	-0.00139	-0.00140	-0.00139
	(A_N * !B * !D * Y)	0.00061	0.00061	0.00060
	(A_N * !B * !D * Y)	-0.00140	-0.00140	-0.00139
	(!A_N * B * !D * Y)	0.00046	0.00046	0.00046
	(!A_N * B * !D * Y)	-0.00143	-0.00145	-0.00143
	(!A_N * !B * D * Y)	0.00101	0.00102	0.00101
	(!A_N * !B * D * Y)	-0.00143	-0.00144	-0.00144
	(!A_N * !B * !D * Y)	0.00054	0.00054	0.00054
	(!A_N * !B * !D * Y)	-0.00145	-0.00144	-0.00144

sky130_fd_sc_hs__nand4b_2	**(A_N * B * D * Y)**	0.00210	0.00212	0.00210
	(A_N * B * D * Y)	-0.00284	-0.00285	-0.00284
	(A_N * B * !D * Y)	0.00125	0.00126	0.00125
	(A_N * B * !D * Y)	-0.00286	-0.00287	-0.00285
	(A_N * !B * D * Y)	0.00213	0.00215	0.00213
	(A_N * !B * D * Y)	-0.00283	-0.00285	-0.00284
	(A_N * !B * !D * Y)	0.00125	0.00126	0.00126
	(A_N * !B * !D * Y)	-0.00283	-0.00284	-0.00284
	(!A_N * B * !D * Y)	0.00103	0.00103	0.00104
	(!A_N * B * !D * Y)	-0.00282	-0.00282	-0.00281
	(!A_N * !B * D * Y)	0.00213	0.00215	0.00213
	(!A_N * !B * D * Y)	-0.00284	-0.00285	-0.00284
	(!A_N * !B * !D * Y)	0.00120	0.00121	0.00121
	(!A_N * !B * !D * Y)	-0.00284	-0.00285	-0.00285
sky130_fd_sc_hs__nand4b_4	**(A_N * B * D * Y)**	0.00423	0.00427	0.00425
	(A_N * B * D * Y)	-0.00305	-0.00307	-0.00306
	(A_N * B * !D * Y)	0.00244	0.00244	0.00242
	(A_N * B * !D * Y)	-0.00309	-0.00310	-0.00308
	(A_N * !B * D * Y)	0.00428	0.00435	0.00431
	(A_N * !B * D * Y)	-0.00304	-0.00308	-0.00306
	(A_N * !B * !D * Y)	0.00241	0.00241	0.00240
	(A_N * !B * !D * Y)	-0.00307	-0.00307	-0.00306
	(!A_N * B * !D * Y)	0.00201	0.00201	0.00202
	(!A_N * B * !D * Y)	-0.00304	-0.00303	-0.00301
	(!A_N * !B * D * Y)	0.00430	0.00434	0.00430
	(!A_N * !B * D * Y)	-0.00307	-0.00308	-0.00306
	(!A_N * !B * !D * Y)	0.00232	0.00231	0.00230
	(!A_N * !B * !D * Y)	-0.00309	-0.00308	-0.00307

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)	-0.00097	-0.00105	-0.00104
	(A_N * B * D * Y)	0.00140	0.00141	0.00140
	(A_N * B * !D * Y)	-0.00062	-0.00061	-0.00061
	(A_N * B * !D * Y)	0.00139	0.00142	0.00140
	(A_N * !B * D * Y)	-0.00101	-0.00106	-0.00105
	(A_N * !B * D * Y)	0.00140	0.00142	0.00140
	(A_N * !B * !D * Y)	-0.00061	-0.00061	-0.00060
	(A_N * !B * !D * Y)	0.00140	0.00142	0.00140
	(!A_N * B * !D * Y)	-0.00045	-0.00046	-0.00045
	(!A_N * B * !D * Y)	0.00145	0.00148	0.00145
	(!A_N * !B * D * Y)	-0.00096	-0.00102	-0.00101
	(!A_N * !B * D * Y)	0.00144	0.00146	0.00144
	(!A_N * !B * !D * Y)	-0.00054	-0.00054	-0.00054
	(!A_N * !B * !D * Y)	0.00148	0.00150	0.00145
sky130_fd_sc_hs__nand4b_2	(A_N * B * D * Y)	-0.00196	-0.00212	-0.00210
	(A_N * B * D * Y)	0.00287	0.00288	0.00285
	(A_N * B * !D * Y)	-0.00125	-0.00126	-0.00125
	(A_N * B * !D * Y)	0.00286	0.00291	0.00286
	(A_N * !B * D * Y)	-0.00204	-0.00215	-0.00213
	(A_N * !B * D * Y)	0.00283	0.00288	0.00285
	(A_N * !B * !D * Y)	-0.00125	-0.00126	-0.00126
	(A_N * !B * !D * Y)	0.00287	0.00289	0.00285
	(!A_N * B * !D * Y)	-0.00099	-0.00100	-0.00099
	(!A_N * B * !D * Y)	0.00287	0.00293	0.00286
	(!A_N * !B * D * Y)	-0.00202	-0.00215	-0.00213
	(!A_N * !B * D * Y)	0.00285	0.00288	0.00285
	(!A_N * !B * !D * Y)	-0.00120	-0.00121	-0.00121
	(!A_N * !B * !D * Y)	0.00291	0.00293	0.00286

sky130_fd_sc_hs__nand4b_4	(A_N * B * D * Y)	-0.00391	-0.00427	-0.00425
	(A_N * B * D * Y)	0.00311	0.00310	0.00307
	(A_N * B * !D * Y)	-0.00244	-0.00244	-0.00242
	(A_N * B * !D * Y)	0.00309	0.00315	0.00309
	(A_N * !B * D * Y)	-0.00411	-0.00435	-0.00431
	(A_N * !B * D * Y)	0.00307	0.00310	0.00307
	(A_N * !B * !D * Y)	-0.00241	-0.00241	-0.00240
	(A_N * !B * !D * Y)	0.00310	0.00312	0.00307
	(!A_N * B * !D * Y)	-0.00192	-0.00195	-0.00192
	(!A_N * B * !D * Y)	0.00313	0.00318	0.00309
	(!A_N * !B * D * Y)	-0.00406	-0.00434	-0.00430
	(!A_N * !B * D * Y)	0.00313	0.00310	0.00307
	(!A_N * !B * !D * Y)	-0.00232	-0.00231	-0.00230
	(!A_N * !B * !D * Y)	0.00321	0.00324	0.00311

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)	0.00104	0.00105	0.00105
	(A_N * B * C * Y)	-0.00136	-0.00137	-0.00136
	(A_N * !C * Y)	0.00105	0.00106	0.00106
	(A_N * !C * Y)	-0.00136	-0.00136	-0.00136
	(A_N * !B * C * Y)	0.00104	0.00105	0.00104
	(A_N * !B * C * Y)	-0.00136	-0.00137	-0.00136
	(!A_N * B * !C * Y)	0.00102	0.00103	0.00102
	(!A_N * B * !C * Y)	-0.00140	-0.00142	-0.00141
	(!A_N * !B * C * Y)	0.00101	0.00100	0.00100
	(!A_N * !B * C * Y)	-0.00141	-0.00140	-0.00141
	(!A_N * !B * !C * Y)	0.00101	0.00102	0.00102
	(!A_N * !B * !C * Y)	-0.00140	-0.00141	-0.00141

sky130_fd_sc_hs__nand4b_2	**(A_N * B * C * Y)**	0.00210	0.00211	0.00210
	(A_N * B * C * Y)	-0.00282	-0.00283	-0.00282
	(A_N * !C * Y)	0.00214	0.00214	0.00215
	(A_N * !C * Y)	-0.00281	-0.00281	-0.00282
	(A_N * !B * C * Y)	0.00211	0.00212	0.00210
	(A_N * !B * C * Y)	-0.00282	-0.00283	-0.00282
	(!A_N * B * !C * Y)	0.00214	0.00215	0.00215
	(!A_N * B * !C * Y)	-0.00281	-0.00282	-0.00282
	(!A_N * !B * C * Y)	0.00211	0.00213	0.00210
	(!A_N * !B * C * Y)	-0.00282	-0.00283	-0.00282
	(!A_N * !B * !C * Y)	0.00214	0.00217	0.00215
	(!A_N * !B * !C * Y)	-0.00281	-0.00284	-0.00282
sky130_fd_sc_hs__nand4b_4	**(A_N * B * C * Y)**	0.00417	0.00421	0.00417
	(A_N * B * C * Y)	-0.00281	-0.00283	-0.00281
	(A_N * !C * Y)	0.00424	0.00425	0.00423
	(A_N * !C * Y)	-0.00282	-0.00282	-0.00281
	(A_N * !B * C * Y)	0.00418	0.00418	0.00417
	(A_N * !B * C * Y)	-0.00281	-0.00282	-0.00281
	(!A_N * B * !C * Y)	0.00424	0.00426	0.00423
	(!A_N * B * !C * Y)	-0.00282	-0.00283	-0.00281
	(!A_N * !B * C * Y)	0.00414	0.00419	0.00416
	(!A_N * !B * C * Y)	-0.00280	-0.00282	-0.00281
	(!A_N * !B * !C * Y)	0.00423	0.00424	0.00423
	(!A_N * !B * !C * Y)	-0.00282	-0.00282	-0.00281

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)**	-0.00098	-0.00105	-0.00105
	(A_N * B * C * Y)	0.00137	0.00138	0.00137
	(A_N * !C * Y)	-0.00103	-0.00106	-0.00106
	(A_N * !C * Y)	0.00137	0.00139	0.00137
	(A_N * !B * C * Y)	-0.00097	-0.00105	-0.00104
	(A_N * !B * C * Y)	0.00136	0.00137	0.00137
	(!A_N * B * !C * Y)	-0.00098	-0.00103	-0.00102
	(!A_N * B * !C * Y)	0.00141	0.00144	0.00141
	(!A_N * !B * C * Y)	-0.00093	-0.00100	-0.00100
	(!A_N * !B * C * Y)	0.00141	0.00141	0.00141
	(!A_N * !B * !C * Y)	-0.00099	-0.00102	-0.00102
	(!A_N * !B * !C * Y)	0.00141	0.00143	0.00141
sky130_fd_sc_hs__nand4b_2	**(A_N * B * C * Y)**	-0.00195	-0.00211	-0.00210
	(A_N * B * C * Y)	0.00284	0.00285	0.00283
	(A_N * !C * Y)	-0.00205	-0.00214	-0.00215
	(A_N * !C * Y)	0.00282	0.00285	0.00283
	(A_N * !B * C * Y)	-0.00195	-0.00212	-0.00210
	(A_N * !B * C * Y)	0.00282	0.00284	0.00283
	(!A_N * B * !C * Y)	-0.00205	-0.00215	-0.00215
	(!A_N * B * !C * Y)	0.00282	0.00285	0.00283
	(!A_N * !B * C * Y)	-0.00195	-0.00212	-0.00210
	(!A_N * !B * C * Y)	0.00284	0.00284	0.00283
	(!A_N * !B * !C * Y)	-0.00205	-0.00216	-0.00215
	(!A_N * !B * !C * Y)	0.00282	0.00285	0.00283

sky130_fd_sc_hs__nand4b_4	**(A_N * B * C * Y)**	-0.00384	-0.00418	-0.00417
	(A_N * B * C * Y)	0.00281	0.00285	0.00283
	(A_N * !C * Y)	-0.00408	-0.00425	-0.00423
	(A_N * !C * Y)	0.00283	0.00285	0.00282
	(A_N * !B * C * Y)	-0.00385	-0.00418	-0.00417
	(A_N * !B * C * Y)	0.00281	0.00285	0.00282
	(!A_N * B * !C * Y)	-0.00406	-0.00426	-0.00423
	(!A_N * B * !C * Y)	0.00283	0.00285	0.00282
	(!A_N * !B * C * Y)	-0.00385	-0.00419	-0.00416
	(!A_N * !B * C * Y)	0.00281	0.00285	0.00282
	(!A_N * !B * !C * Y)	-0.00408	-0.00424	-0.00423
	(!A_N * !B * !C * Y)	0.00283	0.00285	0.00282

SKY130_FD_SC_HS__NAND4x

sky130_fd_sc_hs_tt_1.50v_25C.ccs
Cell Library: Process , Voltage
1.50, 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	0.00268	0.00283	0.00279	0.00278	0.82678
sky130_fd_sc_hs__nand4_2	0.00523	0.00528	0.00533	0.00516	1.44021
sky130_fd_sc_hs__nand4_4	0.00785	0.00765	0.00765	0.00785	1.61855

Leakage Information

Cell Name	Leakage(nW)		
	Min.	**Avg**	**Max.**
sky130_fd_sc_hs__nand4_1	0.00000	0.00884	0.11893
sky130_fd_sc_hs__nand4_2	0.00000	0.01768	0.23786
sky130_fd_sc_hs__nand4_4	0.00000	0.02049	0.23786

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)	0.05245	0.92202	11.45760
	B->Y (FR)	0.06667	0.94979	11.66350
	C->Y (FR)	0.07615	0.96083	11.67470
	D->Y (FR)	0.08090	0.95705	11.51660
sky130_fd_sc_hs__nand4_2	A->Y (FR)	0.04414	0.78690	10.80420
	B->Y (FR)	0.05719	0.79404	10.72810
	C->Y (FR)	0.06623	0.80612	10.75430
	D->Y (FR)	0.07410	0.82024	10.82380
sky130_fd_sc_hs__nand4_4	A->Y (FR)	0.05607	0.80970	11.29810
	B->Y (FR)	0.08118	0.83064	11.25810
	C->Y (FR)	0.10388	0.86509	11.51850
	D->Y (FR)	0.12119	0.88925	11.53220

Delay(ns) to Y falling :

Cell Name	Timing Arc(Dir)	Delay(ns)		
		First	Mid	Last
sky130_fd_sc_hs__nand4_1	A->Y (RF)	0.04816	0.78853	9.85101
	B->Y (RF)	0.06149	0.78207	9.61252
	C->Y (RF)	0.06897	0.75218	9.12618
	D->Y (RF)	0.07313	0.72354	8.67955
sky130_fd_sc_hs__nand4_2	A->Y (RF)	0.04499	0.72338	10.40520
	B->Y (RF)	0.06323	0.72542	10.17930
	C->Y (RF)	0.07216	0.67678	9.43684
	D->Y (RF)	0.07753	0.65241	8.98791
sky130_fd_sc_hs__nand4_4	A->Y (RF)	0.03484	0.53988	7.75718
	B->Y (RF)	0.05205	0.52911	7.38370
	C->Y (RF)	0.06168	0.48533	6.65614
	D->Y (RF)	0.06681	0.45542	6.10231

Power Information

Internal switching power(pJ) to Y rising :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__nand4_1	A	-0.00012	-0.00007	0.00050
	A	0.00345	0.00349	0.00409
	B	0.00045	0.00043	0.00099
	B	0.00470	0.00468	0.00529
	C	0.00092	0.00088	0.00144
	C	0.00580	0.00575	0.00636
	D	0.00121	0.00117	0.00173
	D	0.00679	0.00676	0.00733
sky130_fd_sc_hs__nand4_2	A	-0.00093	-0.00074	0.00052
	A	0.00569	0.00586	0.00718
	B	0.00051	0.00047	0.00167
	B	0.00862	0.00855	0.00981
	C	0.00129	0.00120	0.00237
	C	0.01090	0.01081	0.01198
	D	0.00237	0.00231	0.00341
	D	0.01330	0.01326	0.01434
sky130_fd_sc_hs__nand4_4	A	-0.00183	-0.00168	0.00033
	A	0.00787	0.00804	0.01003
	B	0.00065	0.00024	0.00226
	B	0.01320	0.01279	0.01490
	C	0.00231	0.00184	0.00386
	C	0.01767	0.01674	0.01921
	D	0.00411	0.00388	0.00569
	D	0.02251	0.02227	0.02406

Internal switching power(pJ) to Y falling :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__nand4_1	A	0.00444	0.00438	0.00468
	A	0.00088	0.00082	0.00110
	B	0.00523	0.00516	0.00534
	B	0.00093	0.00086	0.00104
	C	0.00592	0.00586	0.00608
	C	0.00094	0.00086	0.00103
	D	0.00667	0.00662	0.00690
	D	0.00091	0.00083	0.00100
sky130_fd_sc_hs__nand4_2	A	0.00810	0.00808	0.00863
	A	0.00152	0.00145	0.00198
	B	0.00976	0.00963	0.00999
	B	0.00155	0.00138	0.00178
	C	0.01142	0.01127	0.01169
	C	0.00155	0.00138	0.00175
	D	0.01290	0.01277	0.01315
	D	0.00151	0.00134	0.00171
sky130_fd_sc_hs__nand4_4	A	0.01258	0.01244	0.01371
	A	0.00289	0.00272	0.00361
	B	0.01572	0.01563	0.01612
	B	0.00296	0.00277	0.00335
	C	0.01884	0.01867	0.01978
	C	0.00299	0.00280	0.00334
	D	0.02207	0.02191	0.02271
	D	0.00282	0.00264	0.00316

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)	0.00046	0.00046	0.00041
	(B * C * !D * Y)	-0.00152	-0.00153	-0.00162
	(B * !C * Y)	0.00045	0.00045	0.00041
	(B * !C * Y)	-0.00156	-0.00157	-0.00163
	(!B * Y)	0.00045	0.00044	0.00043
	(!B * Y)	-0.00161	-0.00161	-0.00164
sky130_fd_sc_hs__nand4_2	(B * C * !D * Y)	0.00084	0.00084	0.00072
	(B * C * !D * Y)	-0.00297	-0.00301	-0.00325
	(B * !C * Y)	0.00078	0.00079	0.00071
	(B * !C * Y)	-0.00309	-0.00314	-0.00327
	(!B * Y)	0.00080	0.00081	0.00076
	(!B * Y)	-0.00319	-0.00323	-0.00329
sky130_fd_sc_hs__nand4_4	(B * C * !D * Y)	0.00164	0.00164	0.00141
	(B * C * !D * Y)	-0.00341	-0.00344	-0.00389
	(B * !C * Y)	0.00154	0.00154	0.00140
	(B * !C * Y)	-0.00364	-0.00367	-0.00394
	(!B * Y)	0.00157	0.00157	0.00148
	(!B * Y)	-0.00383	-0.00386	-0.00397

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)	-0.00041	-0.00041	-0.00041
	(B * C * !D * Y)	0.00163	0.00165	0.00164
	(B * !C * Y)	-0.00041	-0.00041	-0.00041
	(B * !C * Y)	0.00163	0.00165	0.00164
	(!B * Y)	-0.00041	-0.00042	-0.00041
	(!B * Y)	0.00164	0.00165	0.00164
sky130_fd_sc_hs__nand4_2	(B * C * !D * Y)	-0.00071	-0.00070	-0.00071
	(B * C * !D * Y)	0.00330	0.00331	0.00330
	(B * !C * Y)	-0.00070	-0.00071	-0.00071
	(B * !C * Y)	0.00327	0.00331	0.00330
	(!B * Y)	-0.00074	-0.00074	-0.00073
	(!B * Y)	0.00331	0.00331	0.00330
sky130_fd_sc_hs__nand4_4	(B * C * !D * Y)	-0.00139	-0.00139	-0.00139
	(B * C * !D * Y)	0.00399	0.00400	0.00397
	(B * !C * Y)	-0.00140	-0.00140	-0.00139
	(B * !C * Y)	0.00398	0.00400	0.00397
	(!B * Y)	-0.00144	-0.00145	-0.00143
	(!B * Y)	0.00397	0.00401	0.00398

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)**	0.00046	0.00046	0.00047
	(A * C * !D * Y)	-0.00148	-0.00148	-0.00147
	(A * !C * Y)	0.00049	0.00049	0.00049
	(A * !C * Y)	-0.00148	-0.00148	-0.00147
	(!A * C * D * Y)	0.00102	0.00103	0.00102
	(!A * C * D * Y)	-0.00148	-0.00148	-0.00147
	(!A * C * !D * Y)	0.00057	0.00057	0.00057
	(!A * C * !D * Y)	-0.00148	-0.00149	-0.00148
	(!A * !C * Y)	0.00058	0.00058	0.00057
	(!A * !C * Y)	-0.00149	-0.00149	-0.00148
sky130_fd_sc_hs__nand4_2	**(A * C * !D * Y)**	0.00096	0.00097	0.00099
	(A * C * !D * Y)	-0.00281	-0.00283	-0.00280
	(A * !C * Y)	0.00098	0.00099	0.00100
	(A * !C * Y)	-0.00281	-0.00283	-0.00281
	(!A * C * D * Y)	0.00214	0.00216	0.00214
	(!A * C * D * Y)	-0.00283	-0.00283	-0.00282
	(!A * C * !D * Y)	0.00121	0.00121	0.00121
	(!A * C * !D * Y)	-0.00283	-0.00284	-0.00283
	(!A * !C * Y)	0.00115	0.00116	0.00116
	(!A * !C * Y)	-0.00283	-0.00284	-0.00284
sky130_fd_sc_hs__nand4_4	**(A * C * !D * Y)**	0.00186	0.00187	0.00190
	(A * C * !D * Y)	-0.00295	-0.00295	-0.00293
	(A * !C * Y)	0.00190	0.00192	0.00193
	(A * !C * Y)	-0.00294	-0.00296	-0.00293
	(!A * C * D * Y)	0.00421	0.00425	0.00422
	(!A * C * D * Y)	-0.00295	-0.00297	-0.00295
	(!A * C * !D * Y)	0.00231	0.00232	0.00230
	(!A * C * !D * Y)	-0.00298	-0.00299	-0.00297
	(!A * !C * Y)	0.00223	0.00223	0.00222
	(!A * !C * Y)	-0.00299	-0.00299	-0.00299

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)	-0.00045	-0.00046	-0.00046
	(A * C * !D * Y)	0.00151	0.00154	0.00149
	(A * !C * Y)	-0.00046	-0.00047	-0.00047
	(A * !C * Y)	0.00151	0.00154	0.00149
	(!A * C * D * Y)	-0.00094	-0.00103	-0.00102
	(!A * C * D * Y)	0.00154	0.00149	0.00148
	(!A * C * !D * Y)	-0.00057	-0.00057	-0.00057
	(!A * C * !D * Y)	0.00153	0.00152	0.00148
	(!A * !C * Y)	-0.00058	-0.00058	-0.00057
	(!A * !C * Y)	0.00154	0.00156	0.00150
sky130_fd_sc_hs__nand4_2	(A * C * !D * Y)	-0.00091	-0.00093	-0.00093
	(A * C * !D * Y)	0.00290	0.00295	0.00285
	(A * !C * Y)	-0.00093	-0.00094	-0.00096
	(A * !C * Y)	0.00290	0.00295	0.00285
	(!A * C * D * Y)	-0.00194	-0.00216	-0.00214
	(!A * C * D * Y)	0.00298	0.00286	0.00283
	(!A * C * !D * Y)	-0.00121	-0.00121	-0.00121
	(!A * C * !D * Y)	0.00288	0.00290	0.00283
	(!A * !C * Y)	-0.00115	-0.00116	-0.00116
	(!A * !C * Y)	0.00297	0.00300	0.00286

sky130_fd_sc_hs__nand4_4	**(A * C * !D * Y)**	-0.00176	-0.00179	-0.00180
	(A * C * !D * Y)	0.00310	0.00316	0.00300
	(A * !C * Y)	-0.00179	-0.00183	-0.00185
	(A * !C * Y)	0.00310	0.00316	0.00300
	(!A * C * D * Y)	-0.00377	-0.00425	-0.00422
	(!A * C * D * Y)	0.00331	0.00297	0.00296
	(!A * C * !D * Y)	-0.00231	-0.00232	-0.00230
	(!A * C * !D * Y)	0.00313	0.00308	0.00297
	(!A * !C * Y)	-0.00223	-0.00223	-0.00222
	(!A * !C * Y)	0.00324	0.00329	0.00304

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)**	0.00046	0.00047	0.00047
	(A * B * !D * Y)	-0.00145	-0.00146	-0.00145
	(A * !B * D * Y)	0.00101	0.00102	0.00102
	(A * !B * D * Y)	-0.00144	-0.00146	-0.00145
	(A * !B * !D * Y)	0.00054	0.00055	0.00054
	(A * !B * !D * Y)	-0.00145	-0.00146	-0.00146
	(!A * B * D * Y)	0.00098	0.00100	0.00099
	(!A * B * D * Y)	-0.00145	-0.00146	-0.00145
	(!A * B * !D * Y)	0.00055	0.00054	0.00055
	(!A * B * !D * Y)	-0.00145	-0.00145	-0.00145
	(!A * !B * D * Y)	0.00101	0.00102	0.00102
	(!A * !B * D * Y)	-0.00144	-0.00145	-0.00145
	(!A * !B * !D * Y)	0.00057	0.00057	0.00057
	(!A * !B * !D * Y)	-0.00146	-0.00146	-0.00146

sky130_fd_sc_hs__nand4_2	**(A * B * !D * Y)**	0.00105	0.00106	0.00105
	(A * B * !D * Y)	-0.00276	-0.00277	-0.00274
	(A * !B * D * Y)	0.00212	0.00214	0.00213
	(A * !B * D * Y)	-0.00281	-0.00283	-0.00282
	(A * !B * !D * Y)	0.00118	0.00119	0.00118
	(A * !B * !D * Y)	-0.00281	-0.00282	-0.00282
	(!A * B * D * Y)	0.00208	0.00211	0.00209
	(!A * B * D * Y)	-0.00281	-0.00283	-0.00282
	(!A * B * !D * Y)	0.00120	0.00122	0.00121
	(!A * B * !D * Y)	-0.00282	-0.00284	-0.00283
	(!A * !B * D * Y)	0.00212	0.00215	0.00213
	(!A * !B * D * Y)	-0.00281	-0.00284	-0.00282
	(!A * !B * !D * Y)	0.00123	0.00123	0.00123
	(!A * !B * !D * Y)	-0.00281	-0.00282	-0.00282
sky130_fd_sc_hs__nand4_4	**(A * B * !D * Y)**	0.00194	0.00196	0.00195
	(A * B * !D * Y)	-0.00280	-0.00281	-0.00278
	(A * !B * D * Y)	0.00410	0.00417	0.00412
	(A * !B * D * Y)	-0.00290	-0.00293	-0.00292
	(A * !B * !D * Y)	0.00222	0.00222	0.00221
	(A * !B * !D * Y)	-0.00293	-0.00292	-0.00292
	(!A * B * D * Y)	0.00404	0.00406	0.00404
	(!A * B * D * Y)	-0.00292	-0.00292	-0.00291
	(!A * B * !D * Y)	0.00224	0.00225	0.00223
	(!A * B * !D * Y)	-0.00293	-0.00295	-0.00293
	(!A * !B * D * Y)	0.00412	0.00418	0.00414
	(!A * !B * D * Y)	-0.00291	-0.00293	-0.00292
	(!A * !B * !D * Y)	0.00232	0.00230	0.00230
	(!A * !B * !D * Y)	-0.00292	-0.00292	-0.00292

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)	-0.00045	-0.00046	-0.00045
	(A * B * !D * Y)	0.00146	0.00149	0.00146
	(A * !B * D * Y)	-0.00097	-0.00102	-0.00102
	(A * !B * D * Y)	0.00145	0.00147	0.00145
	(A * !B * !D * Y)	-0.00054	-0.00055	-0.00054
	(A * !B * !D * Y)	0.00147	0.00149	0.00147
	(!A * B * D * Y)	-0.00091	-0.00100	-0.00099
	(!A * B * D * Y)	0.00145	0.00146	0.00145
	(!A * B * !D * Y)	-0.00055	-0.00054	-0.00055
	(!A * B * !D * Y)	0.00145	0.00148	0.00146
	(!A * !B * D * Y)	-0.00097	-0.00102	-0.00102
	(!A * !B * D * Y)	0.00145	0.00147	0.00145
	(!A * !B * !D * Y)	-0.00057	-0.00057	-0.00057
	(!A * !B * !D * Y)	0.00146	0.00148	0.00146
sky130_fd_sc_hs__nand4_2	(A * B * !D * Y)	-0.00097	-0.00099	-0.00097
	(A * B * !D * Y)	0.00285	0.00290	0.00284
	(A * !B * D * Y)	-0.00202	-0.00214	-0.00213
	(A * !B * D * Y)	0.00282	0.00286	0.00283
	(A * !B * !D * Y)	-0.00118	-0.00119	-0.00118
	(A * !B * !D * Y)	0.00285	0.00287	0.00283
	(!A * B * D * Y)	-0.00190	-0.00211	-0.00209
	(!A * B * D * Y)	0.00284	0.00286	0.00283
	(!A * B * !D * Y)	-0.00120	-0.00122	-0.00121
	(!A * B * !D * Y)	0.00282	0.00288	0.00283
	(!A * !B * D * Y)	-0.00203	-0.00215	-0.00213
	(!A * !B * D * Y)	0.00281	0.00286	0.00283
	(!A * !B * !D * Y)	-0.00123	-0.00123	-0.00123
	(!A * !B * !D * Y)	0.00283	0.00286	0.00283

sky130_fd_sc_hs__nand4_4	(A * B * !D * Y)	-0.00181	-0.00185	-0.00182
	(A * B * !D * Y)	0.00296	0.00302	0.00294
	(A * !B * D * Y)	-0.00391	-0.00417	-0.00412
	(A * !B * D * Y)	0.00293	0.00296	0.00292
	(A * !B * !D * Y)	-0.00222	-0.00222	-0.00221
	(A * !B * !D * Y)	0.00297	0.00300	0.00293
	(!A * B * D * Y)	-0.00363	-0.00406	-0.00404
	(!A * B * D * Y)	0.00295	0.00295	0.00292
	(!A * B * !D * Y)	-0.00224	-0.00225	-0.00223
	(!A * B * !D * Y)	0.00293	0.00299	0.00293
	(!A * !B * D * Y)	-0.00394	-0.00418	-0.00414
	(!A * !B * D * Y)	0.00293	0.00296	0.00292
	(!A * !B * !D * Y)	-0.00232	-0.00230	-0.00230
	(!A * !B * !D * Y)	0.00292	0.00296	0.00293

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)	0.00102	0.00102	0.00102
	(A * B * !C * Y)	-0.00151	-0.00151	-0.00151
	(A * !B * C * Y)	0.00100	0.00101	0.00101
	(A * !B * C * Y)	-0.00151	-0.00151	-0.00151
	(A * !B * !C * Y)	0.00102	0.00103	0.00102
	(A * !B * !C * Y)	-0.00151	-0.00151	-0.00151
	(!A * B * C * Y)	0.00100	0.00101	0.00100
	(!A * B * C * Y)	-0.00151	-0.00152	-0.00151
	(!A * !C * Y)	0.00102	0.00102	0.00102
	(!A * !C * Y)	-0.00150	-0.00151	-0.00151
	(!A * !B * C * Y)	0.00101	0.00101	0.00101
	(!A * !B * C * Y)	-0.00151	-0.00151	-0.00151

sky130_fd_sc_hs__nand4_2	**(A * B * !C * Y)**	0.00217	0.00219	0.00217
	(A * B * !C * Y)	-0.00278	-0.00279	-0.00278
	(A * !B * C * Y)	0.00208	0.00211	0.00209
	(A * !B * C * Y)	-0.00278	-0.00280	-0.00278
	(A * !B * !C * Y)	0.00216	0.00217	0.00216
	(A * !B * !C * Y)	-0.00278	-0.00279	-0.00278
	(!A * B * C * Y)	0.00207	0.00208	0.00207
	(!A * B * C * Y)	-0.00278	-0.00279	-0.00278
	(!A * !C * Y)	0.00216	0.00218	0.00216
	(!A * !C * Y)	-0.00278	-0.00280	-0.00278
	(!A * !B * C * Y)	0.00209	0.00211	0.00209
	(!A * !B * C * Y)	-0.00279	-0.00279	-0.00278
sky130_fd_sc_hs__nand4_4	**(A * B * !C * Y)**	0.00435	0.00439	0.00434
	(A * B * !C * Y)	-0.00297	-0.00299	-0.00297
	(A * !B * C * Y)	0.00420	0.00419	0.00419
	(A * !B * C * Y)	-0.00298	-0.00297	-0.00298
	(A * !B * !C * Y)	0.00435	0.00439	0.00434
	(A * !B * !C * Y)	-0.00297	-0.00299	-0.00298
	(!A * B * C * Y)	0.00416	0.00420	0.00417
	(!A * B * C * Y)	-0.00297	-0.00299	-0.00298
	(!A * !C * Y)	0.00433	0.00439	0.00434
	(!A * !C * Y)	-0.00297	-0.00299	-0.00298
	(!A * !B * C * Y)	0.00420	0.00422	0.00419
	(!A * !B * C * Y)	-0.00298	-0.00299	-0.00298

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)**	-0.00099	-0.00102	-0.00102
	(A * B * !C * Y)	0.00152	0.00154	0.00151
	(A * !B * C * Y)	-0.00094	-0.00101	-0.00101
	(A * !B * C * Y)	0.00151	0.00151	0.00151
	(A * !B * !C * Y)	-0.00099	-0.00103	-0.00102
	(A * !B * !C * Y)	0.00152	0.00153	0.00151
	(!A * B * C * Y)	-0.00093	-0.00101	-0.00100
	(!A * B * C * Y)	0.00152	0.00154	0.00151
	(!A * !C * Y)	-0.00099	-0.00102	-0.00102
	(!A * !C * Y)	0.00152	0.00154	0.00151
	(!A * !B * C * Y)	-0.00094	-0.00101	-0.00101
	(!A * !B * C * Y)	0.00151	0.00151	0.00151
sky130_fd_sc_hs__nand4_2	**(A * B * !C * Y)**	-0.00206	-0.00217	-0.00217
	(A * B * !C * Y)	0.00278	0.00281	0.00279
	(A * !B * C * Y)	-0.00194	-0.00211	-0.00209
	(A * !B * C * Y)	0.00279	0.00281	0.00279
	(A * !B * !C * Y)	-0.00208	-0.00217	-0.00216
	(A * !B * !C * Y)	0.00278	0.00281	0.00279
	(!A * B * C * Y)	-0.00191	-0.00208	-0.00207
	(!A * B * C * Y)	0.00279	0.00279	0.00279
	(!A * !C * Y)	-0.00207	-0.00217	-0.00216
	(!A * !C * Y)	0.00278	0.00281	0.00279
	(!A * !B * C * Y)	-0.00194	-0.00211	-0.00209
	(!A * !B * C * Y)	0.00279	0.00281	0.00279

sky130_fd_sc_hs__nand4_4	**(A * B * !C * Y)**	-0.00413	-0.00438	-0.00434
	(A * B * !C * Y)	0.00297	0.00302	0.00298
	(A * !B * C * Y)	-0.00390	-0.00419	-0.00419
	(A * !B * C * Y)	0.00298	0.00301	0.00298
	(A * !B * !C * Y)	-0.00416	-0.00438	-0.00434
	(A * !B * !C * Y)	0.00297	0.00302	0.00298
	(!A * B * C * Y)	-0.00384	-0.00420	-0.00417
	(!A * B * C * Y)	0.00298	0.00299	0.00298
	(!A * !C * Y)	-0.00415	-0.00438	-0.00434
	(!A * !C * Y)	0.00297	0.00302	0.00298
	(!A * !B * C * Y)	-0.00390	-0.00422	-0.00419
	(!A * !B * C * Y)	0.00298	0.00301	0.00298

SKY130_FD_SC_HS__NOR2Bx

sky130_fd_sc_hs_tt_1.50v_25C.ccs
Cell Library: Process , Voltage
1.50, 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	0.00268	0.00218	0.41769
sky130_fd_sc_hs__nor2b_2	0.00528	0.00252	0.76819
sky130_fd_sc_hs__nor2b_4	0.00871	0.00362	1.49752

Leakage Information

Cell Name	Leakage(nW)		
	Min.	Avg	Max.
sky130_fd_sc_hs__nor2b_1	0.00000	0.09026	0.16467
sky130_fd_sc_hs__nor2b_2	0.00000	0.06696	0.10140
sky130_fd_sc_hs__nor2b_4	0.00000	0.20217	0.35643

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)	0.09569	1.12422	11.53910
	B_N->Y (RR)	0.10736	0.88673	7.11251
sky130_fd_sc_hs__nor2b_2	A->Y (FR)	0.09174	0.97659	11.46900
	B_N->Y (RR)	0.09452	0.74553	7.04897
sky130_fd_sc_hs__nor2b_4	A->Y (FR)	0.07145	0.82222	11.25800
	B_N->Y (RR)	0.09089	0.64031	7.20256

Delay(ns) to Y falling :

Cell Name	Timing Arc(Dir)	Delay(ns)		
		First	Mid	Last
sky130_fd_sc_hs__nor2b_1	A->Y (RF)	0.02312	0.38855	4.05671
	B_N->Y (FF)	0.09121	0.49827	2.91759
sky130_fd_sc_hs__nor2b_2	A->Y (RF)	0.02112	0.33760	3.94738
	B_N->Y (FF)	0.10311	0.52628	3.10700
sky130_fd_sc_hs__nor2b_4	A->Y (RF)	0.02955	0.42729	5.75541
	B_N->Y (FF)	0.10398	0.54309	3.90767

Power Information

Internal switching power(pJ) to Y rising :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__nor2b_1	A	0.00064	0.00057	0.00088
	A	0.00359	0.00354	0.00384
	B_N	0.00529	0.00526	0.01155
	B_N	0.00287	0.00285	0.00915
sky130_fd_sc_hs__nor2b_2	A	0.00134	0.00124	0.00186
	A	0.00727	0.00719	0.00781
	B_N	0.00765	0.00766	0.01402
	B_N	0.00528	0.00529	0.01167
sky130_fd_sc_hs__nor2b_4	A	0.00230	0.00221	0.00292
	A	0.01201	0.01195	0.01229
	B_N	0.01144	0.01152	0.02238
	B_N	0.00794	0.00803	0.01893

Internal switching power(pJ) to Y falling :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__nor2b_1	A	0.00355	0.00351	0.00402
	A	0.00062	0.00055	0.00100
	B_N	0.00281	0.00320	0.01036
	B_N	0.00522	0.00560	0.01277
sky130_fd_sc_hs__nor2b_2	A	0.00689	0.00665	0.00771
	A	0.00102	0.00074	0.00170
	B_N	0.00480	0.00528	0.01167
	B_N	0.00718	0.00763	0.01402
sky130_fd_sc_hs__nor2b_4	A	0.01084	0.01040	0.01246
	A	0.00119	0.00069	0.00189
	B_N	0.00700	0.00801	0.02094
	B_N	0.01049	0.01148	0.02403

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__nor2b_1	(!B_N * !Y)	0.00128	0.00113	0.00112
	(!B_N * !Y)	-0.00141	-0.00155	-0.00156
sky130_fd_sc_hs__nor2b_2	(!B_N * !Y)	0.00259	0.00232	0.00229
	(!B_N * !Y)	-0.00253	-0.00284	-0.00285
sky130_fd_sc_hs__nor2b_4	(!B_N * !Y)	0.00339	0.00285	0.00280
	(!B_N * !Y)	-0.00503	-0.00568	-0.00572

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__nor2b_1	(!B_N * !Y)	-0.00112	-0.00112	-0.00111
	(!B_N * !Y)	0.00157	0.00158	0.00157
sky130_fd_sc_hs__nor2b_2	(!B_N * !Y)	-0.00228	-0.00229	-0.00229
	(!B_N * !Y)	0.00283	0.00285	0.00285
sky130_fd_sc_hs__nor2b_4	(!B_N * !Y)	-0.00278	-0.00281	-0.00278
	(!B_N * !Y)	0.00567	0.00575	0.00572

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__nor2b_1	(A * !Y)	0.00328	0.00319	0.00989
	(A * !Y)	0.00064	0.00054	0.00726
sky130_fd_sc_hs__nor2b_2	(A * !Y)	0.00429	0.00415	0.01035
	(A * !Y)	0.00134	0.00118	0.00739
sky130_fd_sc_hs__nor2b_4	(A * !Y)	0.00664	0.00640	0.01756
	(A * !Y)	0.00221	0.00196	0.01315

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__nor2b_1	(A * !Y)	0.00107	0.00136	0.00872
	(A * !Y)	0.00369	0.00399	0.01135
sky130_fd_sc_hs__nor2b_2	(A * !Y)	0.00224	0.00239	0.00925
	(A * !Y)	0.00519	0.00534	0.01218
sky130_fd_sc_hs__nor2b_4	(A * !Y)	0.00269	0.00311	0.01588
	(A * !Y)	0.00707	0.00752	0.02029

SKY130_FD_SC_HS__NOR2x

sky130_fd_sc_hs_tt_1.50v_25C.ccs
Cell Library: Process , Voltage
1.50, 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	0.00269	0.00276	0.41068
sky130_fd_sc_hs__nor2_2	0.00426	0.00406	0.75641
sky130_fd_sc_hs__nor2_4	0.00813	0.00810	1.42399
sky130_fd_sc_hs__nor2_8	0.01586	0.01597	2.69877

Leakage Information

Cell Name	Leakage(nW)		
	Min.	Avg	Max.
sky130_fd_sc_hs__nor2_1	0.00000	0.01334	0.02973
sky130_fd_sc_hs__nor2_2	0.00000	0.02436	0.05947
sky130_fd_sc_hs__nor2_4	0.00000	0.04872	0.11893
sky130_fd_sc_hs__nor2_8	0.00000	0.09744	0.23786

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)	0.09312	1.11566	11.41860
	B->Y (FR)	0.07496	1.08620	11.37890
sky130_fd_sc_hs__nor2_2	A->Y (FR)	0.07472	0.95818	11.36730
	B->Y (FR)	0.04704	0.91699	11.30170
sky130_fd_sc_hs__nor2_4	A->Y (FR)	0.07404	0.83020	11.18650
	B->Y (FR)	0.04648	0.79954	11.20930
sky130_fd_sc_hs__nor2_8	A->Y (FR)	0.07233	0.73311	11.19090
	B->Y (FR)	0.05053	0.72212	11.36040

Delay(ns) to Y falling :

Cell Name	Timing Arc(Dir)	Delay(ns)		
		First	Mid	Last
sky130_fd_sc_hs__nor2_1	A->Y (RF)	0.02342	0.38632	4.01450
	B->Y (RF)	0.02111	0.37812	3.99985
sky130_fd_sc_hs__nor2_2	A->Y (RF)	0.02961	0.47599	5.64847
	B->Y (RF)	0.02324	0.45943	5.63365
sky130_fd_sc_hs__nor2_4	A->Y (RF)	0.02909	0.41443	5.51943
	B->Y (RF)	0.02248	0.39174	5.45624
sky130_fd_sc_hs__nor2_8	A->Y (RF)	0.02776	0.36143	5.40188
	B->Y (RF)	0.02928	0.34932	5.38980

Power Information

Internal switching power(pJ) to Y rising :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__nor2_1	A	-0.00035	-0.00042	-0.00011
	A	0.00357	0.00351	0.00382
	B	-0.00044	-0.00036	0.00070
	B	0.00283	0.00291	0.00396
sky130_fd_sc_hs__nor2_2	A	-0.00067	-0.00071	-0.00040
	A	0.00581	0.00576	0.00609
	B	-0.00053	-0.00038	0.00088
	B	0.00419	0.00415	0.00445
sky130_fd_sc_hs__nor2_4	A	0.00008	-0.00005	0.00063
	A	0.01263	0.01254	0.01320
	B	-0.00031	0.00013	0.00260
	B	0.00924	0.00967	0.01146
sky130_fd_sc_hs__nor2_8	A	-0.00045	-0.00066	0.00083
	A	0.02422	0.02407	0.02557
	B	-0.00144	-0.00071	0.00492
	B	0.01747	0.01821	0.02381

Internal switching power(pJ) to Y falling :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__nor2_1	A	0.00443	0.00438	0.00486
	A	0.00056	0.00047	0.00092
	B	0.00318	0.00322	0.00370
	B	-0.00008	-0.00007	0.00037
sky130_fd_sc_hs__nor2_2	A	0.00744	0.00719	0.00774
	A	0.00105	0.00080	0.00136
	B	0.00368	0.00379	0.00437
	B	-0.00104	-0.00097	-0.00035
sky130_fd_sc_hs__nor2_4	A	0.01416	0.01365	0.01579
	A	0.00177	0.00124	0.00244
	B	0.00731	0.00734	0.00921
	B	-0.00222	-0.00220	-0.00079
sky130_fd_sc_hs__nor2_8	A	0.02701	0.02595	0.02907
	A	0.00265	0.00161	0.00424
	B	0.01444	0.01438	0.01915
	B	-0.00446	-0.00456	-0.00124

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__nor2_1	(B * !Y)	0.00136	0.00122	0.00121
	(B * !Y)	-0.00120	-0.00135	-0.00137
sky130_fd_sc_hs__nor2_2	(B * !Y)	0.00182	0.00154	0.00151
	(B * !Y)	-0.00237	-0.00271	-0.00272
sky130_fd_sc_hs__nor2_4	(B * !Y)	0.00314	0.00250	0.00245
	(B * !Y)	-0.00472	-0.00546	-0.00549
sky130_fd_sc_hs__nor2_8	(B * !Y)	0.00601	0.00482	0.00472
	(B * !Y)	-0.00944	-0.01090	-0.01093

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__nor2_1	(B * !Y)	-0.00120	-0.00121	-0.00120
	(B * !Y)	0.00135	0.00138	0.00137
sky130_fd_sc_hs__nor2_2	(B * !Y)	-0.00152	-0.00152	-0.00151
	(B * !Y)	0.00272	0.00274	0.00272
sky130_fd_sc_hs__nor2_4	(B * !Y)	-0.00243	-0.00244	-0.00242
	(B * !Y)	0.00547	0.00552	0.00549
sky130_fd_sc_hs__nor2_8	(B * !Y)	-0.00469	-0.00471	-0.00467
	(B * !Y)	0.01087	0.01093	0.01093

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__nor2_1	(A * !Y)	0.00136	0.00139	0.00136
	(A * !Y)	-0.00069	-0.00070	-0.00069
sky130_fd_sc_hs__nor2_2	(A * !Y)	0.00150	0.00153	0.00150
	(A * !Y)	-0.00140	-0.00143	-0.00140
sky130_fd_sc_hs__nor2_4	(A * !Y)	0.00303	0.00309	0.00304
	(A * !Y)	-0.00277	-0.00282	-0.00277
sky130_fd_sc_hs__nor2_8	(A * !Y)	0.00597	0.00607	0.00598
	(A * !Y)	-0.00550	-0.00558	-0.00549

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__nor2_1	(A * !Y)	-0.00132	-0.00132	-0.00136
	(A * !Y)	0.00074	0.00074	0.00070
sky130_fd_sc_hs__nor2_2	(A * !Y)	-0.00133	-0.00136	-0.00149
	(A * !Y)	0.00154	0.00155	0.00144
sky130_fd_sc_hs__nor2_4	(A * !Y)	-0.00274	-0.00275	-0.00300
	(A * !Y)	0.00303	0.00302	0.00284
sky130_fd_sc_hs__nor2_8	(A * !Y)	-0.00543	-0.00548	-0.00592
	(A * !Y)	0.00596	0.00596	0.00562

SKY130_FD_SC_HS__NOR3Bx

sky130_fd_sc_hs_tt_1.50v_25C.ccs
Cell Library: Process , Voltage
1.50, 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	0.00264	0.00275	0.00211	0.27107
sky130_fd_sc_hs__nor3b_2	0.00517	0.00515	0.00251	0.49072
sky130_fd_sc_hs__nor3b_4	0.01037	0.01030	0.00354	0.87854

Leakage Information

Cell Name	Leakage(nW)		
	Min.	**Avg**	**Max.**
sky130_fd_sc_hs__nor3b_1	0.00000	0.08595	0.16508
sky130_fd_sc_hs__nor3b_2	0.00000	0.05836	0.10223
sky130_fd_sc_hs__nor3b_4	0.00000	0.18962	0.35809

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)	0.18398	1.31361	11.16560
	B->Y (FR)	0.16801	1.31442	11.58700
	C_N->Y (RR)	0.15155	1.06309	7.26863
sky130_fd_sc_hs__nor3b_2	A->Y (FR)	0.17384	1.12425	10.90610
	B->Y (FR)	0.15499	1.12492	11.43930
	C_N->Y (RR)	0.12434	0.87528	7.09951
sky130_fd_sc_hs__nor3b_4	A->Y (FR)	0.17581	0.98442	10.72520
	B->Y (FR)	0.15771	0.99057	11.30090
	C_N->Y (RR)	0.14671	0.81670	7.46291

Delay(ns) to Y falling :

Cell Name	Timing Arc(Dir)	Delay(ns)		
		First	Mid	Last
sky130_fd_sc_hs__nor3b_1	A->Y (RF)	0.02449	0.35070	3.17184
	B->Y (RF)	0.02617	0.35382	3.23251
	C_N->Y (FF)	0.09408	0.47252	2.49756
sky130_fd_sc_hs__nor3b_2	A->Y (RF)	0.02086	0.29806	2.98585
	B->Y (RF)	0.02159	0.28970	2.95821
	C_N->Y (FF)	0.10504	0.50180	2.69021
sky130_fd_sc_hs__nor3b_4	A->Y (RF)	0.02065	0.26551	2.91718
	B->Y (RF)	0.02134	0.25602	2.89426
	C_N->Y (FF)	0.11419	0.49202	2.52491

Power Information

Internal switching power(pJ) to Y rising :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__nor3b_1	A	0.00130	0.00121	0.00143
	A	0.00495	0.00487	0.00510
	B	0.00116	0.00106	0.00142
	B	0.00431	0.00421	0.00458
	C_N	0.00566	0.00560	0.01189
	C_N	0.00361	0.00355	0.00985
sky130_fd_sc_hs__nor3b_2	A	0.00200	0.00185	0.00228
	A	0.00971	0.00955	0.01002
	B	0.00200	0.00185	0.00257
	B	0.00821	0.00800	0.00878
	C_N	0.00826	0.00820	0.01460
	C_N	0.00634	0.00627	0.01270
sky130_fd_sc_hs__nor3b_4	A	0.00375	0.00341	0.00441
	A	0.01916	0.01890	0.01996
	B	0.00384	0.00351	0.00508
	B	0.01644	0.01610	0.01757
	C_N	0.01480	0.01485	0.02540
	C_N	0.01255	0.01261	0.02319

Internal switching power(pJ) to Y falling :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__nor3b_1	A	0.00492	0.00486	0.00533
	A	0.00134	0.00124	0.00174
	B	0.00384	0.00376	0.00429
	B	0.00071	0.00062	0.00115
	C_N	0.00304	0.00343	0.01058
	C_N	0.00508	0.00546	0.01262
sky130_fd_sc_hs__nor3b_2	A	0.00994	0.00975	0.01074
	A	0.00242	0.00219	0.00323
	B	0.00728	0.00704	0.00817
	B	0.00111	0.00086	0.00201
	C_N	0.00532	0.00576	0.01219
	C_N	0.00723	0.00767	0.01410
sky130_fd_sc_hs__nor3b_4	A	0.01962	0.01904	0.02124
	A	0.00447	0.00383	0.00614
	B	0.01437	0.01386	0.01628
	B	0.00191	0.00135	0.00377
	C_N	0.01145	0.01232	0.02476
	C_N	0.01372	0.01457	0.02700

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)	0.00115	0.00113	0.00113
	(B * C_N * !Y)	-0.00128	-0.00133	-0.00133
	(B * !C_N * !Y)	0.00108	0.00108	0.00108
	(B * !C_N * !Y)	-0.00135	-0.00138	-0.00137
	(!B * !C_N * !Y)	0.00109	0.00109	0.00108
	(!B * !C_N * !Y)	-0.00125	-0.00134	-0.00133
sky130_fd_sc_hs__nor3b_2	(B * C_N * !Y)	0.00233	0.00228	0.00228
	(B * C_N * !Y)	-0.00265	-0.00276	-0.00276
	(B * !C_N * !Y)	0.00229	0.00228	0.00227
	(B * !C_N * !Y)	-0.00270	-0.00276	-0.00275
	(!B * !C_N * !Y)	0.00231	0.00231	0.00228
	(!B * !C_N * !Y)	-0.00252	-0.00269	-0.00267
sky130_fd_sc_hs__nor3b_4	(B * C_N * !Y)	0.00492	0.00489	0.00486
	(B * C_N * !Y)	-0.00502	-0.00529	-0.00527
	(B * !C_N * !Y)	0.00456	0.00455	0.00452
	(B * !C_N * !Y)	-0.00549	-0.00563	-0.00561
	(!B * !C_N * !Y)	0.00457	0.00452	0.00452
	(!B * !C_N * !Y)	-0.00516	-0.00548	-0.00545

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)	-0.00112	-0.00113	-0.00112
	(B * C_N * !Y)	0.00132	0.00134	0.00133
	(B * !C_N * !Y)	-0.00108	-0.00108	-0.00108
	(B * !C_N * !Y)	0.00137	0.00139	0.00137
	(!B * !C_N * !Y)	-0.00108	-0.00108	-0.00108
	(!B * !C_N * !Y)	0.00133	0.00134	0.00133
sky130_fd_sc_hs__nor3b_2	(B * C_N * !Y)	-0.00226	-0.00228	-0.00227
	(B * C_N * !Y)	0.00274	0.00278	0.00276
	(B * !C_N * !Y)	-0.00227	-0.00228	-0.00227
	(B * !C_N * !Y)	0.00276	0.00278	0.00275
	(!B * !C_N * !Y)	-0.00227	-0.00228	-0.00227
	(!B * !C_N * !Y)	0.00267	0.00269	0.00267
sky130_fd_sc_hs__nor3b_4	(B * C_N * !Y)	-0.00484	-0.00488	-0.00486
	(B * C_N * !Y)	0.00525	0.00531	0.00527
	(B * !C_N * !Y)	-0.00453	-0.00454	-0.00452
	(B * !C_N * !Y)	0.00562	0.00566	0.00561
	(!B * !C_N * !Y)	-0.00449	-0.00452	-0.00450
	(!B * !C_N * !Y)	0.00541	0.00548	0.00545

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)	0.00132	0.00134	0.00132
	(A * C_N * !Y)	-0.00076	-0.00077	-0.00076
	(A * !C_N * !Y)	0.00119	0.00121	0.00115
	(A * !C_N * !Y)	-0.00108	-0.00109	-0.00108
	(!A * !C_N * !Y)	0.00133	0.00114	0.00113
	(!A * !C_N * !Y)	-0.00131	-0.00150	-0.00150
sky130_fd_sc_hs__nor3b_2	(A * C_N * !Y)	0.00234	0.00238	0.00234
	(A * C_N * !Y)	-0.00160	-0.00163	-0.00161
	(A * !C_N * !Y)	0.00234	0.00240	0.00231
	(A * !C_N * !Y)	-0.00194	-0.00195	-0.00194
	(!A * !C_N * !Y)	0.00262	0.00228	0.00225
	(!A * !C_N * !Y)	-0.00243	-0.00283	-0.00283
sky130_fd_sc_hs__nor3b_4	(A * C_N * !Y)	0.00475	0.00484	0.00474
	(A * C_N * !Y)	-0.00318	-0.00323	-0.00319
	(A * !C_N * !Y)	0.00477	0.00489	0.00464
	(A * !C_N * !Y)	-0.00390	-0.00391	-0.00389
	(!A * !C_N * !Y)	0.00538	0.00460	0.00454
	(!A * !C_N * !Y)	-0.00475	-0.00565	-0.00566

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)	-0.00130	-0.00131	-0.00130
	(A * C_N * !Y)	0.00079	0.00079	0.00079
	(A * !C_N * !Y)	-0.00112	-0.00113	-0.00112
	(A * !C_N * !Y)	0.00108	0.00109	0.00108
	(!A * !C_N * !Y)	-0.00112	-0.00112	-0.00112
	(!A * !C_N * !Y)	0.00150	0.00150	0.00151
sky130_fd_sc_hs__nor3b_2	(A * C_N * !Y)	-0.00230	-0.00231	-0.00230
	(A * C_N * !Y)	0.00165	0.00166	0.00166
	(A * !C_N * !Y)	-0.00226	-0.00227	-0.00227
	(A * !C_N * !Y)	0.00194	0.00195	0.00194
	(!A * !C_N * !Y)	-0.00224	-0.00226	-0.00225
	(!A * !C_N * !Y)	0.00281	0.00284	0.00283
sky130_fd_sc_hs__nor3b_4	(A * C_N * !Y)	-0.00467	-0.00471	-0.00465
	(A * C_N * !Y)	0.00324	0.00328	0.00331
	(A * !C_N * !Y)	-0.00455	-0.00456	-0.00455
	(A * !C_N * !Y)	0.00390	0.00391	0.00389
	(!A * !C_N * !Y)	-0.00450	-0.00453	-0.00450
	(!A * !C_N * !Y)	0.00563	0.00569	0.00567

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__nor3b_1	(B * !Y)	0.00321	0.00313	0.00983
	(B * !Y)	0.00070	0.00061	0.00731
	(A * !B * !Y)	0.00328	0.00321	0.00988
	(A * !B * !Y)	0.00073	0.00063	0.00732
sky130_fd_sc_hs__nor3b_2	(B * !Y)	0.00426	0.00412	0.01033
	(B * !Y)	0.00135	0.00119	0.00742
	(A * !B * !Y)	0.00443	0.00429	0.01045
	(A * !B * !Y)	0.00142	0.00126	0.00746
sky130_fd_sc_hs__nor3b_4	(B * !Y)	0.00691	0.00666	0.01693
	(B * !Y)	0.00250	0.00224	0.01256
	(A * !B * !Y)	0.00722	0.00696	0.01715
	(A * !B * !Y)	0.00262	0.00236	0.01261

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__nor3b_1	(B * !Y)	0.00111	0.00140	0.00876
	(B * !Y)	0.00361	0.00392	0.01127
	(A * !B * !Y)	0.00111	0.00140	0.00876
	(A * !B * !Y)	0.00362	0.00393	0.01127
sky130_fd_sc_hs__nor3b_2	(B * !Y)	0.00221	0.00237	0.00923
	(B * !Y)	0.00512	0.00528	0.01213
	(A * !B * !Y)	0.00222	0.00237	0.00923
	(A * !B * !Y)	0.00512	0.00528	0.01213
sky130_fd_sc_hs__nor3b_4	(B * !Y)	0.00526	0.00562	0.01808
	(B * !Y)	0.00964	0.01001	0.02244
	(A * !B * !Y)	0.00526	0.00563	0.01808
	(A * !B * !Y)	0.00966	0.01003	0.02246

SKY130_FD_SC_HS__NOR3x

sky130_fd_sc_hs_tt_1.50v_25C.ccs
Cell Library: Process , Voltage
1.50, 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	0.00273	0.00296	0.00281	0.26835
sky130_fd_sc_hs__nor3_2	0.00422	0.00443	0.00411	0.51494
sky130_fd_sc_hs__nor3_4	0.00925	0.00912	0.00879	0.88020

Leakage Information

Cell Name	Leakage(nW)		
	Min.	**Avg**	**Max.**
sky130_fd_sc_hs__nor3_1	0.00000	0.00904	0.02973
sky130_fd_sc_hs__nor3_2	0.00000	0.01634	0.05947
sky130_fd_sc_hs__nor3_4	0.00000	0.03268	0.11893

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)	0.18740	1.30444	11.03320
	B->Y (FR)	0.17373	1.30871	11.45920
	C->Y (FR)	0.12644	1.23747	11.23750
sky130_fd_sc_hs__nor3_2	A->Y (FR)	0.14648	1.09746	11.02560
	B->Y (FR)	0.12778	1.09306	11.42560
	C->Y (FR)	0.06690	1.01000	11.19210
sky130_fd_sc_hs__nor3_4	A->Y (FR)	0.15961	0.97392	10.70780
	B->Y (FR)	0.13374	0.95940	11.14420
	C->Y (FR)	0.07290	0.88534	10.98800

Delay(ns) to Y falling :

Cell Name	Timing Arc(Dir)	Delay(ns)		
		First	Mid	Last
sky130_fd_sc_hs__nor3_1	A->Y (RF)	0.02542	0.35028	3.14991
	B->Y (RF)	0.02739	0.35251	3.19775
	C->Y (RF)	0.02407	0.34066	3.19302
sky130_fd_sc_hs__nor3_2	A->Y (RF)	0.03339	0.44284	4.60387
	B->Y (RF)	0.03334	0.43160	4.56284
	C->Y (RF)	0.02560	0.41205	4.54449
sky130_fd_sc_hs__nor3_4	A->Y (RF)	0.02828	0.38309	4.26922
	B->Y (RF)	0.03137	0.37480	4.30269
	C->Y (RF)	0.03164	0.35716	4.28078

Power Information

Internal switching power(pJ) to Y rising :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__nor3_1	A	0.00010	-0.00001	0.00022
	A	0.00515	0.00505	0.00528
	B	0.00015	0.00002	0.00039
	B	0.00451	0.00439	0.00475
	C	0.00008	0.00010	0.00137
	C	0.00377	0.00377	0.00506
sky130_fd_sc_hs__nor3_2	A	-0.00000	-0.00008	0.00013
	A	0.00810	0.00802	0.00826
	B	0.00021	0.00013	0.00049
	B	0.00694	0.00686	0.00721
	C	0.00017	0.00030	0.00182
	C	0.00517	0.00530	0.00683
sky130_fd_sc_hs__nor3_4	A	-0.00024	-0.00045	0.00003
	A	0.01712	0.01695	0.01749
	B	-0.00021	-0.00046	0.00047
	B	0.01376	0.01354	0.01447
	C	-0.00073	-0.00035	0.00315
	C	0.01055	0.01096	0.01448

Internal switching power(pJ) to Y falling :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__nor3_1	A	0.00632	0.00624	0.00670
	A	0.00135	0.00125	0.00174
	B	0.00511	0.00500	0.00553
	B	0.00077	0.00066	0.00119
	C	0.00363	0.00370	0.00419
	C	-0.00005	0.00000	0.00050
sky130_fd_sc_hs__nor3_2	A	0.01044	0.01017	0.01086
	A	0.00256	0.00228	0.00289
	B	0.00782	0.00760	0.00835
	B	0.00122	0.00096	0.00162
	C	0.00404	0.00419	0.00485
	C	-0.00094	-0.00084	-0.00015
sky130_fd_sc_hs__nor3_4	A	0.02222	0.02140	0.02280
	A	0.00530	0.00446	0.00576
	B	0.01613	0.01557	0.01722
	B	0.00228	0.00168	0.00326
	C	0.00928	0.00948	0.01146
	C	-0.00200	-0.00182	-0.00013

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__nor3_1	(B * C * !Y)	0.00124	0.00124	0.00124
	(B * C * !Y)	-0.00132	-0.00135	-0.00135
	(B * !C * !Y)	0.00125	0.00124	0.00124
	(B * !C * !Y)	-0.00130	-0.00135	-0.00135
	(!B * C * !Y)	0.00125	0.00125	0.00124
	(!B * C * !Y)	-0.00121	-0.00131	-0.00130
sky130_fd_sc_hs__nor3_2	(B * C * !Y)	0.00145	0.00146	0.00145
	(B * C * !Y)	-0.00256	-0.00267	-0.00265
	(B * !C * !Y)	0.00146	0.00146	0.00145
	(B * !C * !Y)	-0.00252	-0.00266	-0.00265
	(!B * C * !Y)	0.00148	0.00146	0.00145
	(!B * C * !Y)	-0.00237	-0.00255	-0.00255
sky130_fd_sc_hs__nor3_4	(B * C * !Y)	0.00277	0.00278	0.00277
	(B * C * !Y)	-0.00549	-0.00571	-0.00566
	(B * !C * !Y)	0.00284	0.00279	0.00277
	(B * !C * !Y)	-0.00538	-0.00570	-0.00566
	(!B * C * !Y)	0.00286	0.00279	0.00277
	(!B * C * !Y)	-0.00502	-0.00549	-0.00544

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__nor3_1	(B * C * !Y)	-0.00123	-0.00124	-0.00124
	(B * C * !Y)	0.00134	0.00136	0.00135
	(B * !C * !Y)	-0.00123	-0.00124	-0.00124
	(B * !C * !Y)	0.00134	0.00136	0.00135
	(!B * C * !Y)	-0.00124	-0.00124	-0.00124
	(!B * C * !Y)	0.00130	0.00131	0.00130
sky130_fd_sc_hs__nor3_2	(B * C * !Y)	-0.00145	-0.00145	-0.00144
	(B * C * !Y)	0.00265	0.00267	0.00265
	(B * !C * !Y)	-0.00144	-0.00145	-0.00144
	(B * !C * !Y)	0.00263	0.00266	0.00265
	(!B * C * !Y)	-0.00145	-0.00145	-0.00145
	(!B * C * !Y)	0.00255	0.00255	0.00255
sky130_fd_sc_hs__nor3_4	(B * C * !Y)	-0.00276	-0.00278	-0.00277
	(B * C * !Y)	0.00564	0.00571	0.00566
	(B * !C * !Y)	-0.00276	-0.00278	-0.00277
	(B * !C * !Y)	0.00564	0.00570	0.00566
	(!B * C * !Y)	-0.00276	-0.00278	-0.00276
	(!B * C * !Y)	0.00541	0.00549	0.00544

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__nor3_1	(A * C * !Y)	0.00135	0.00138	0.00131
	(A * C * !Y)	-0.00087	-0.00087	-0.00087
	(A * !C * !Y)	0.00128	0.00131	0.00128
	(A * !C * !Y)	-0.00074	-0.00076	-0.00075
	(!A * C * !Y)	0.00148	0.00129	0.00128
	(!A * C * !Y)	-0.00109	-0.00130	-0.00130
sky130_fd_sc_hs__nor3_2	(A * C * !Y)	0.00140	0.00144	0.00132
	(A * C * !Y)	-0.00189	-0.00190	-0.00190
	(A * !C * !Y)	0.00130	0.00133	0.00128
	(A * !C * !Y)	-0.00164	-0.00168	-0.00167
	(!A * C * !Y)	0.00171	0.00129	0.00126
	(!A * C * !Y)	-0.00233	-0.00281	-0.00281
sky130_fd_sc_hs__nor3_4	(A * C * !Y)	0.00314	0.00316	0.00303
	(A * C * !Y)	-0.00359	-0.00360	-0.00358
	(A * !C * !Y)	0.00299	0.00300	0.00299
	(A * !C * !Y)	-0.00302	-0.00304	-0.00304
	(!A * C * !Y)	0.00372	0.00303	0.00298
	(!A * C * !Y)	-0.00448	-0.00530	-0.00529

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__nor3_1	(A * C * !Y)	-0.00128	-0.00128	-0.00128
	(A * C * !Y)	0.00087	0.00087	0.00087
	(A * !C * !Y)	-0.00127	-0.00127	-0.00126
	(A * !C * !Y)	0.00077	0.00077	0.00077
	(!A * C * !Y)	-0.00127	-0.00128	-0.00127
	(!A * C * !Y)	0.00130	0.00131	0.00130
sky130_fd_sc_hs__nor3_2	(A * C * !Y)	-0.00128	-0.00128	-0.00128
	(A * C * !Y)	0.00189	0.00190	0.00190
	(A * !C * !Y)	-0.00126	-0.00126	-0.00124
	(A * !C * !Y)	0.00171	0.00172	0.00172
	(!A * C * !Y)	-0.00126	-0.00126	-0.00125
	(!A * C * !Y)	0.00279	0.00282	0.00281
sky130_fd_sc_hs__nor3_4	(A * C * !Y)	-0.00298	-0.00299	-0.00298
	(A * C * !Y)	0.00359	0.00360	0.00358
	(A * !C * !Y)	-0.00290	-0.00291	-0.00287
	(A * !C * !Y)	0.00312	0.00313	0.00316
	(!A * C * !Y)	-0.00297	-0.00297	-0.00295
	(!A * C * !Y)	0.00528	0.00531	0.00529

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__nor3_1	(B * !Y)	0.00134	0.00136	0.00134
	(B * !Y)	-0.00069	-0.00070	-0.00069
	(A * !B * !Y)	0.00134	0.00136	0.00134
	(A * !B * !Y)	-0.00069	-0.00070	-0.00069
sky130_fd_sc_hs__nor3_2	(B * !Y)	0.00149	0.00151	0.00149
	(B * !Y)	-0.00139	-0.00141	-0.00139
	(A * !B * !Y)	0.00150	0.00151	0.00149
	(A * !B * !Y)	-0.00140	-0.00141	-0.00139
sky130_fd_sc_hs__nor3_4	(B * !Y)	0.00335	0.00341	0.00336
	(B * !Y)	-0.00284	-0.00290	-0.00286
	(A * !B * !Y)	0.00335	0.00341	0.00336
	(A * !B * !Y)	-0.00283	-0.00289	-0.00285

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__nor3_1	(B * !Y)	-0.00129	-0.00130	-0.00133
	(B * !Y)	0.00075	0.00075	0.00071
	(A * !B * !Y)	-0.00122	-0.00123	-0.00132
	(A * !B * !Y)	0.00078	0.00078	0.00071
sky130_fd_sc_hs__nor3_2	(B * !Y)	-0.00132	-0.00134	-0.00147
	(B * !Y)	0.00154	0.00154	0.00143
	(A * !B * !Y)	-0.00118	-0.00120	-0.00144
	(A * !B * !Y)	0.00162	0.00162	0.00143
sky130_fd_sc_hs__nor3_4	(B * !Y)	-0.00307	-0.00312	-0.00333
	(B * !Y)	0.00310	0.00313	0.00293
	(A * !B * !Y)	-0.00272	-0.00278	-0.00326
	(A * !B * !Y)	0.00327	0.00330	0.00293

SKY130_FD_SC_HS__NOR4BBx

sky130_fd_sc_hs_tt_1.50v_25C.ccs
Cell Library: Process , Voltage
1.50, 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	0.00277	0.00284	0.00225	0.00221	0.19646
sky130_fd_sc_hs__nor4bb_2	0.00516	0.00541	0.00260	0.00247	0.34831
sky130_fd_sc_hs__nor4bb_4	0.01019	0.01087	0.00359	0.00350	0.67801

Leakage Information

Cell Name	Leakage(nW)		
	Min.	**Avg**	**Max.**
sky130_fd_sc_hs__nor4bb_1	0.00000	0.15962	0.32086
sky130_fd_sc_hs__nor4bb_2	0.00000	0.09214	0.18584
sky130_fd_sc_hs__nor4bb_4	0.00000	0.33007	0.67895

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)	0.30664	1.51623	10.79480
	B->Y (FR)	0.29211	1.50310	11.11550
	C_N->Y (RR)	0.28565	1.30595	7.38546
	D_N->Y (RR)	0.18974	1.19468	7.21235
sky130_fd_sc_hs__nor4bb_2	A->Y (FR)	0.30541	1.34391	10.69050
	B->Y (FR)	0.28399	1.31359	10.98480
	C_N->Y (RR)	0.27308	1.12877	7.36121
	D_N->Y (RR)	0.16384	1.00809	7.17704
sky130_fd_sc_hs__nor4bb_4	A->Y (FR)	0.30447	1.18006	10.76340
	B->Y (FR)	0.28365	1.15892	11.09570
	C_N->Y (RR)	0.27093	1.00843	7.79040
	D_N->Y (RR)	0.16841	0.90125	7.64549

Delay(ns) to Y falling :

Cell Name	Timing Arc(Dir)	Delay(ns)		
		First	Mid	Last
sky130_fd_sc_hs__nor4bb_1	A->Y (RF)	0.02578	0.33097	2.63904
	B->Y (RF)	0.02646	0.32484	2.60541
	C_N->Y (FF)	0.11456	0.48845	2.34846
	D_N->Y (FF)	0.09744	0.45701	2.24649
sky130_fd_sc_hs__nor4bb_2	A->Y (RF)	0.02198	0.28220	2.44606
	B->Y (RF)	0.02304	0.27902	2.45057
	C_N->Y (FF)	0.12107	0.51130	2.58365
	D_N->Y (FF)	0.10592	0.49139	2.53455
sky130_fd_sc_hs__nor4bb_4	A->Y (RF)	0.02308	0.26856	2.59179
	B->Y (RF)	0.02353	0.25582	2.50148
	C_N->Y (FF)	0.12412	0.48700	2.34307
	D_N->Y (FF)	0.11587	0.47952	2.33556

Power Information

Internal switching power(pJ) to Y rising :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__nor4bb_1	A	0.00245	0.00233	0.00249
	A	0.00641	0.00630	0.00646
	B	0.00242	0.00228	0.00252
	B	0.00577	0.00565	0.00588
	C_N	0.00750	0.00737	0.01351
	C_N	0.00538	0.00525	0.01140
	D_N	0.00617	0.00606	0.01276
	D_N	0.00429	0.00417	0.01089
sky130_fd_sc_hs__nor4bb_2	A	0.00455	0.00435	0.00464
	A	0.01231	0.01215	0.01245
	B	0.00451	0.00429	0.00475
	B	0.01095	0.01073	0.01122
	C_N	0.01106	0.01094	0.01713
	C_N	0.00919	0.00906	0.01527
	D_N	0.00924	0.00917	0.01559
	D_N	0.00759	0.00750	0.01395
sky130_fd_sc_hs__nor4bb_4	A	0.00936	0.00891	0.00960
	A	0.02439	0.02398	0.02471
	B	0.00916	0.00873	0.00972
	B	0.02197	0.02157	0.02257
	C_N	0.02011	0.01989	0.03031
	C_N	0.01798	0.01779	0.02823
	D_N	0.01638	0.01634	0.02716
	D_N	0.01440	0.01437	0.02525

Internal switching power(pJ) to Y falling :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__nor4bb_1	A	0.00587	0.00577	0.00629
	A	0.00200	0.00187	0.00242
	B	0.00476	0.00463	0.00521
	B	0.00144	0.00130	0.00188
	C_N	0.00451	0.00476	0.01176
	C_N	0.00661	0.00686	0.01386
	D_N	0.00324	0.00360	0.01069
	D_N	0.00512	0.00548	0.01256
sky130_fd_sc_hs__nor4bb_2	A	0.01177	0.01142	0.01248
	A	0.00423	0.00384	0.00496
	B	0.00886	0.00860	0.00980
	B	0.00246	0.00219	0.00340
	C_N	0.00820	0.00844	0.01487
	C_N	0.01007	0.01030	0.01674
	D_N	0.00560	0.00613	0.01280
	D_N	0.00726	0.00778	0.01445
sky130_fd_sc_hs__nor4bb_4	A	0.02256	0.02184	0.02417
	A	0.00794	0.00717	0.00960
	B	0.01784	0.01724	0.01975
	B	0.00517	0.00450	0.00711
	C_N	0.01504	0.01538	0.02720
	C_N	0.01716	0.01750	0.02931
	D_N	0.01158	0.01243	0.02501
	D_N	0.01354	0.01440	0.02696

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)**	0.00130	0.00128	0.00128
	(B * C_N * D_N * !Y)	-0.00129	-0.00133	-0.00133
	(B * !D_N * !Y)	0.00130	0.00128	0.00128
	(B * !D_N * !Y)	-0.00129	-0.00133	-0.00133
	(B * !C_N * D_N * !Y)	0.00119	0.00118	0.00118
	(B * !C_N * D_N * !Y)	-0.00140	-0.00143	-0.00143
	(!B * C_N * !D_N * !Y)	0.00135	0.00132	0.00130
	(!B * C_N * !D_N * !Y)	-0.00119	-0.00127	-0.00127
	(!B * !C_N * D_N * !Y)	0.00118	0.00119	0.00118
	(!B * !C_N * D_N * !Y)	-0.00131	-0.00139	-0.00138
	(!B * !C_N * !D_N * !Y)	0.00118	0.00119	0.00118
	(!B * !C_N * !D_N * !Y)	-0.00131	-0.00139	-0.00138
sky130_fd_sc_hs__nor4bb_2	**(B * C_N * D_N * !Y)**	0.00229	0.00227	0.00226
	(B * C_N * D_N * !Y)	-0.00263	-0.00275	-0.00274
	(B * !D_N * !Y)	0.00229	0.00227	0.00226
	(B * !D_N * !Y)	-0.00263	-0.00275	-0.00274
	(B * !C_N * D_N * !Y)	0.00225	0.00226	0.00225
	(B * !C_N * D_N * !Y)	-0.00265	-0.00275	-0.00274
	(!B * C_N * !D_N * !Y)	0.00243	0.00236	0.00230
	(!B * C_N * !D_N * !Y)	-0.00245	-0.00260	-0.00260
	(!B * !C_N * D_N * !Y)	0.00226	0.00228	0.00225
	(!B * !C_N * D_N * !Y)	-0.00249	-0.00267	-0.00265
	(!B * !C_N * !D_N * !Y)	0.00225	0.00228	0.00225
	(!B * !C_N * !D_N * !Y)	-0.00249	-0.00266	-0.00265

sky130_fd_sc_hs__nor4bb_4	**(B * C_N * D_N * !Y)**	0.00445	0.00442	0.00439
	(B * C_N * D_N * !Y)	-0.00506	-0.00532	-0.00531
	(B * !D_N * !Y)	0.00448	0.00443	0.00440
	(B * !D_N * !Y)	-0.00507	-0.00532	-0.00530
	(B * !C_N * D_N * !Y)	0.00437	0.00441	0.00438
	(B * !C_N * D_N * !Y)	-0.00515	-0.00534	-0.00532
	(!B * C_N * !D_N * !Y)	0.00475	0.00459	0.00446
	(!B * C_N * !D_N * !Y)	-0.00472	-0.00502	-0.00500
	(!B * !C_N * D_N * !Y)	0.00441	0.00441	0.00438
	(!B * !C_N * D_N * !Y)	-0.00483	-0.00515	-0.00511
	(!B * !C_N * !D_N * !Y)	0.00440	0.00440	0.00438
	(!B * !C_N * !D_N * !Y)	-0.00484	-0.00515	-0.00511

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)**	-0.00127	-0.00128	-0.00127
	(B * C_N * D_N * !Y)	0.00132	0.00135	0.00133
	(B * !D_N * !Y)	-0.00127	-0.00128	-0.00127
	(B * !D_N * !Y)	0.00134	0.00134	0.00133
	(B * !C_N * D_N * !Y)	-0.00118	-0.00118	-0.00118
	(B * !C_N * D_N * !Y)	0.00143	0.00144	0.00143
	(!B * C_N * !D_N * !Y)	-0.00132	-0.00132	-0.00130
	(!B * C_N * !D_N * !Y)	0.00127	0.00127	0.00127
	(!B * !C_N * D_N * !Y)	-0.00118	-0.00118	-0.00118
	(!B * !C_N * D_N * !Y)	0.00138	0.00139	0.00138
	(!B * !C_N * !D_N * !Y)	-0.00118	-0.00118	-0.00118
	(!B * !C_N * !D_N * !Y)	0.00138	0.00139	0.00138

sky130_fd_sc_hs__nor4bb_2	**(B * C_N * D_N * !Y)**	-0.00225	-0.00226	-0.00225
	(B * C_N * D_N * !Y)	0.00275	0.00276	0.00274
	(B * !D_N * !Y)	-0.00226	-0.00226	-0.00225
	(B * !D_N * !Y)	0.00274	0.00276	0.00274
	(B * !C_N * D_N * !Y)	-0.00225	-0.00226	-0.00225
	(B * !C_N * D_N * !Y)	0.00275	0.00276	0.00274
	(!B * C_N * !D_N * !Y)	-0.00234	-0.00235	-0.00230
	(!B * C_N * !D_N * !Y)	0.00259	0.00260	0.00260
	(!B * !C_N * D_N * !Y)	-0.00224	-0.00226	-0.00225
	(!B * !C_N * D_N * !Y)	0.00263	0.00267	0.00265
	(!B * !C_N * !D_N * !Y)	-0.00224	-0.00226	-0.00225
	(!B * !C_N * !D_N * !Y)	0.00264	0.00266	0.00265
sky130_fd_sc_hs__nor4bb_4	**(B * C_N * D_N * !Y)**	-0.00436	-0.00439	-0.00437
	(B * C_N * D_N * !Y)	0.00527	0.00535	0.00531
	(B * !D_N * !Y)	-0.00440	-0.00440	-0.00439
	(B * !D_N * !Y)	0.00530	0.00532	0.00530
	(B * !C_N * D_N * !Y)	-0.00437	-0.00438	-0.00437
	(B * !C_N * D_N * !Y)	0.00532	0.00534	0.00532
	(!B * C_N * !D_N * !Y)	-0.00457	-0.00458	-0.00446
	(!B * C_N * !D_N * !Y)	0.00499	0.00502	0.00500
	(!B * !C_N * D_N * !Y)	-0.00437	-0.00439	-0.00437
	(!B * !C_N * D_N * !Y)	0.00510	0.00515	0.00511
	(!B * !C_N * !D_N * !Y)	-0.00436	-0.00439	-0.00437
	(!B * !C_N * !D_N * !Y)	0.00509	0.00515	0.00511

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)**	0.00137	0.00139	0.00137
	(A * C_N * D_N * !Y)	-0.00075	-0.00077	-0.00076
	(A * C_N * !D_N * !Y)	0.00151	0.00155	0.00155
	(A * C_N * !D_N * !Y)	-0.00090	-0.00089	-0.00089
	(A * !C_N * D_N * !Y)	0.00125	0.00127	0.00124
	(A * !C_N * D_N * !Y)	-0.00104	-0.00105	-0.00104
	(A * !C_N * !D_N * !Y)	0.00123	0.00125	0.00124
	(A * !C_N * !D_N * !Y)	-0.00109	-0.00109	-0.00109
	(!A * C_N * !D_N * !Y)	0.00152	0.00141	0.00138
	(!A * C_N * !D_N * !Y)	-0.00117	-0.00126	-0.00125
	(!A * !C_N * D_N * !Y)	0.00127	0.00124	0.00123
	(!A * !C_N * D_N * !Y)	-0.00141	-0.00144	-0.00145
	(!A * !C_N * !D_N * !Y)	0.00124	0.00124	0.00123
	(!A * !C_N * !D_N * !Y)	-0.00144	-0.00144	-0.00144
sky130_fd_sc_hs__nor4bb_2	**(A * C_N * D_N * !Y)**	0.00243	0.00248	0.00243
	(A * C_N * D_N * !Y)	-0.00167	-0.00170	-0.00167
	(A * C_N * !D_N * !Y)	0.00269	0.00281	0.00278
	(A * C_N * !D_N * !Y)	-0.00195	-0.00196	-0.00196
	(A * !C_N * D_N * !Y)	0.00240	0.00243	0.00237
	(A * !C_N * D_N * !Y)	-0.00206	-0.00207	-0.00206
	(A * !C_N * !D_N * !Y)	0.00236	0.00240	0.00236
	(A * !C_N * !D_N * !Y)	-0.00214	-0.00215	-0.00214
	(!A * C_N * !D_N * !Y)	0.00268	0.00252	0.00245
	(!A * C_N * !D_N * !Y)	-0.00254	-0.00271	-0.00270
	(!A * !C_N * D_N * !Y)	0.00241	0.00237	0.00235
	(!A * !C_N * D_N * !Y)	-0.00277	-0.00288	-0.00289
	(!A * !C_N * !D_N * !Y)	0.00235	0.00237	0.00235
	(!A * !C_N * !D_N * !Y)	-0.00284	-0.00288	-0.00289

sky130_fd_sc_hs__nor4bb_4	**(A * C_N * D_N * !Y)**	0.00469	0.00472	0.00470
	(A * C_N * D_N * !Y)	-0.00331	-0.00333	-0.00332
	(A * C_N * !D_N * !Y)	0.00529	0.00551	0.00545
	(A * C_N * !D_N * !Y)	-0.00380	-0.00385	-0.00381
	(A * !C_N * D_N * !Y)	0.00457	0.00460	0.00455
	(A * !C_N * D_N * !Y)	-0.00404	-0.00409	-0.00406
	(A * !C_N * !D_N * !Y)	0.00451	0.00455	0.00452
	(A * !C_N * !D_N * !Y)	-0.00425	-0.00430	-0.00426
	(!A * C_N * !D_N * !Y)	0.00533	0.00492	0.00475
	(!A * C_N * !D_N * !Y)	-0.00494	-0.00531	-0.00530
	(!A * !C_N * D_N * !Y)	0.00469	0.00454	0.00452
	(!A * !C_N * D_N * !Y)	-0.00551	-0.00572	-0.00571
	(!A * !C_N * !D_N * !Y)	0.00453	0.00452	0.00452
	(!A * !C_N * !D_N * !Y)	-0.00564	-0.00573	-0.00571

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)**	-0.00136	-0.00136	-0.00136
	(A * C_N * D_N * !Y)	0.00078	0.00078	0.00077
	(A * C_N * !D_N * !Y)	-0.00147	-0.00147	-0.00147
	(A * C_N * !D_N * !Y)	0.00090	0.00089	0.00089
	(A * !C_N * D_N * !Y)	-0.00123	-0.00123	-0.00123
	(A * !C_N * D_N * !Y)	0.00104	0.00105	0.00104
	(A * !C_N * !D_N * !Y)	-0.00123	-0.00124	-0.00123
	(A * !C_N * !D_N * !Y)	0.00109	0.00109	0.00109
	(!A * C_N * !D_N * !Y)	-0.00142	-0.00141	-0.00138
	(!A * C_N * !D_N * !Y)	0.00125	0.00126	0.00125
	(!A * !C_N * D_N * !Y)	-0.00122	-0.00122	-0.00123
	(!A * !C_N * D_N * !Y)	0.00144	0.00144	0.00145
	(!A * !C_N * !D_N * !Y)	-0.00122	-0.00122	-0.00123
	(!A * !C_N * !D_N * !Y)	0.00144	0.00144	0.00144
sky130_fd_sc_hs__nor4bb_2	**(A * C_N * D_N * !Y)**	-0.00238	-0.00239	-0.00239
	(A * C_N * D_N * !Y)	0.00174	0.00174	0.00174
	(A * C_N * !D_N * !Y)	-0.00263	-0.00264	-0.00264
	(A * C_N * !D_N * !Y)	0.00195	0.00196	0.00196
	(A * !C_N * D_N * !Y)	-0.00235	-0.00236	-0.00235
	(A * !C_N * D_N * !Y)	0.00206	0.00207	0.00206
	(A * !C_N * !D_N * !Y)	-0.00235	-0.00236	-0.00235
	(A * !C_N * !D_N * !Y)	0.00214	0.00215	0.00214
	(!A * C_N * !D_N * !Y)	-0.00255	-0.00252	-0.00245
	(!A * C_N * !D_N * !Y)	0.00269	0.00271	0.00270
	(!A * !C_N * D_N * !Y)	-0.00234	-0.00234	-0.00234
	(!A * !C_N * D_N * !Y)	0.00288	0.00288	0.00289
	(!A * !C_N * !D_N * !Y)	-0.00234	-0.00234	-0.00235
	(!A * !C_N * !D_N * !Y)	0.00288	0.00288	0.00289

sky130_fd_sc_hs__nor4bb_4	(A * C_N * D_N * !Y)	-0.00465	-0.00467	-0.00467
	(A * C_N * D_N * !Y)	0.00338	0.00339	0.00338
	(A * C_N * !D_N * !Y)	-0.00514	-0.00518	-0.00515
	(A * C_N * !D_N * !Y)	0.00380	0.00385	0.00381
	(A * !C_N * D_N * !Y)	-0.00450	-0.00454	-0.00452
	(A * !C_N * D_N * !Y)	0.00404	0.00409	0.00406
	(A * !C_N * !D_N * !Y)	-0.00449	-0.00453	-0.00451
	(A * !C_N * !D_N * !Y)	0.00425	0.00430	0.00426
	(!A * C_N * !D_N * !Y)	-0.00498	-0.00492	-0.00475
	(!A * C_N * !D_N * !Y)	0.00530	0.00531	0.00530
	(!A * !C_N * D_N * !Y)	-0.00451	-0.00452	-0.00451
	(!A * !C_N * D_N * !Y)	0.00571	0.00573	0.00571
	(!A * !C_N * !D_N * !Y)	-0.00451	-0.00452	-0.00451
	(!A * !C_N * !D_N * !Y)	0.00571	0.00573	0.00571

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__nor4bb_1	(B * !Y)	0.00369	0.00357	0.01001
	(B * !Y)	0.00096	0.00082	0.00728
	(A * !B * !Y) + (!A * !B * !D_N * !Y)	0.00376	0.00363	0.01004
	(A * !B * !Y) + (!A * !B * !D_N * !Y)	0.00097	0.00083	0.00726
sky130_fd_sc_hs__nor4bb_2	(B * !Y)	0.00424	0.00412	0.01026
	(B * !Y)	0.00130	0.00117	0.00731
	(A * !B * !Y) + (!A * !B * !D_N * !Y)	0.00443	0.00430	0.01037
	(A * !B * !Y) + (!A * !B * !D_N * !Y)	0.00136	0.00123	0.00732
sky130_fd_sc_hs__nor4bb_4	(B * !Y)	0.00680	0.00654	0.01706
	(B * !Y)	0.00262	0.00237	0.01290
	(A * !B * !Y) + (!A * !B * !D_N * !Y)	0.00704	0.00678	0.01719
	(A * !B * !Y) + (!A * !B * !D_N * !Y)	0.00263	0.00237	0.01285

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__nor4bb_1	(B * !Y)	0.00145	0.00169	0.00891
	(B * !Y)	0.00417	0.00443	0.01163
	(A * !B * !Y) + (!A * !B * !D_N * !Y)	0.00145	0.00169	0.00891
	(A * !B * !Y) + (!A * !B * !D_N * !Y)	0.00418	0.00443	0.01163
sky130_fd_sc_hs__nor4bb_2	(B * !Y)	0.00264	0.00277	0.00957
	(B * !Y)	0.00558	0.00571	0.01250
	(A * !B * !Y) + (!A * !B * !D_N * !Y)	0.00264	0.00278	0.00957
	(A * !B * !Y) + (!A * !B * !D_N * !Y)	0.00559	0.00572	0.01251
sky130_fd_sc_hs__nor4bb_4	(B * !Y)	0.00474	0.00512	0.01757
	(B * !Y)	0.00888	0.00926	0.02170
	(A * !B * !Y) + (!A * !B * !D_N * !Y)	0.00477	0.00515	0.01759
	(A * !B * !Y) + (!A * !B * !D_N * !Y)	0.00892	0.00930	0.02173

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)	0.00328	0.00318	0.00981
	(B * C_N * !Y)	0.00080	0.00067	0.00731
	(A * !B * C_N * !Y)	0.00337	0.00326	0.00987
	(A * !B * C_N * !Y)	0.00085	0.00072	0.00735
	(!C_N * !Y)	0.00349	0.00339	0.01003
	(!C_N * !Y)	0.00102	0.00089	0.00755
sky130_fd_sc_hs__nor4bb_2	(B * C_N * !Y)	0.00415	0.00404	0.01020
	(B * C_N * !Y)	0.00145	0.00132	0.00749
	(A * !B * C_N * !Y)	0.00440	0.00429	0.01038
	(A * !B * C_N * !Y)	0.00159	0.00146	0.00759
	(!C_N * !Y)	0.00437	0.00426	0.01045
	(!C_N * !Y)	0.00169	0.00157	0.00776
sky130_fd_sc_hs__nor4bb_4	(B * C_N * !Y)	0.00643	0.00619	0.01646
	(B * C_N * !Y)	0.00246	0.00220	0.01251
	(A * !B * C_N * !Y)	0.00683	0.00658	0.01675
	(A * !B * C_N * !Y)	0.00271	0.00244	0.01268
	(!C_N * !Y)	0.00676	0.00653	0.01690
	(!C_N * !Y)	0.00286	0.00260	0.01297

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)	0.00129	0.00157	0.00891
	(B * C_N * !Y)	0.00378	0.00406	0.01140
	(A * !B * C_N * !Y)	0.00129	0.00157	0.00891
	(A * !B * C_N * !Y)	0.00378	0.00406	0.01140
	(!C_N * !Y)	0.00103	0.00131	0.00865
	(!C_N * !Y)	0.00352	0.00380	0.01114
sky130_fd_sc_hs__nor4bb_2	(B * C_N * !Y)	0.00240	0.00257	0.00943
	(B * C_N * !Y)	0.00509	0.00525	0.01211
	(A * !B * C_N * !Y)	0.00240	0.00257	0.00943
	(A * !B * C_N * !Y)	0.00509	0.00525	0.01212
	(!C_N * !Y)	0.00209	0.00225	0.00912
	(!C_N * !Y)	0.00477	0.00495	0.01180
sky130_fd_sc_hs__nor4bb_4	(B * C_N * !Y)	0.00561	0.00601	0.01850
	(B * C_N * !Y)	0.00952	0.00994	0.02241
	(A * !B * C_N * !Y)	0.00561	0.00601	0.01850
	(A * !B * C_N * !Y)	0.00952	0.00994	0.02241
	(!C_N * !Y)	0.00501	0.00542	0.01790
	(!C_N * !Y)	0.00892	0.00933	0.02181

SKY130_FD_SC_HS__NOR4Bx

sky130_fd_sc_hs_tt_1.50v_25C.ccs
Cell Library: Process , Voltage
1.50, 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	0.00267	0.00278	0.00277	0.00215	0.19769
sky130_fd_sc_hs__nor4b_2	0.00527	0.00533	0.00536	0.00251	0.34682
sky130_fd_sc_hs__nor4b_4	0.01033	0.01038	0.01055	0.00378	0.64800

Leakage Information

Cell Name	Leakage(nW)		
	Min.	**Avg**	**Max.**
sky130_fd_sc_hs__nor4b_1	0.00000	0.08270	0.16974
sky130_fd_sc_hs__nor4b_2	0.00000	0.05186	0.11153
sky130_fd_sc_hs__nor4b_4	0.00000	0.17662	0.37670

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)	0.29522	1.50699	10.82010
	B->Y (FR)	0.27932	1.49276	11.14100
	C->Y (FR)	0.23513	1.46040	11.45950
	D_N->Y (RR)	0.19561	1.20326	7.25575
sky130_fd_sc_hs__nor4b_2	A->Y (FR)	0.30703	1.34204	10.64940
	B->Y (FR)	0.28523	1.31292	10.94650
	C->Y (FR)	0.23841	1.28441	11.40030
	D_N->Y (RR)	0.16608	1.00596	7.13521
sky130_fd_sc_hs__nor4b_4	A->Y (FR)	0.30172	1.17081	10.50900
	B->Y (FR)	0.28043	1.14531	10.84170
	C->Y (FR)	0.23033	1.11325	11.29850
	D_N->Y (RR)	0.17566	0.89799	7.45822

Delay(ns) to Y falling :

Cell Name	Timing Arc(Dir)	Delay(ns)		
		First	Mid	Last
sky130_fd_sc_hs__nor4b_1	A->Y (RF)	0.02621	0.33726	2.70010
	B->Y (RF)	0.02747	0.33294	2.68798
	C->Y (RF)	0.02750	0.32497	2.67274
	D_N->Y (FF)	0.09778	0.46120	2.29650
sky130_fd_sc_hs__nor4b_2	A->Y (RF)	0.02204	0.28151	2.43500
	B->Y (RF)	0.02307	0.27762	2.44008
	C->Y (RF)	0.02514	0.27417	2.46223
	D_N->Y (FF)	0.10941	0.49362	2.51105
sky130_fd_sc_hs__nor4b_4	A->Y (RF)	0.02239	0.25651	2.43993
	B->Y (RF)	0.02269	0.24912	2.41004
	C->Y (RF)	0.02292	0.23299	2.32764
	D_N->Y (FF)	0.11293	0.47150	2.28802

Power Information

Internal switching power(pJ) to Y rising :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__nor4b_1	A	0.00144	0.00132	0.00148
	A	0.00603	0.00593	0.00609
	B	0.00144	0.00131	0.00154
	B	0.00538	0.00526	0.00549
	C	0.00127	0.00115	0.00157
	C	0.00470	0.00458	0.00499
	D_N	0.00593	0.00582	0.01218
	D_N	0.00405	0.00394	0.01032
sky130_fd_sc_hs__nor4b_2	A	0.00265	0.00243	0.00273
	A	0.01255	0.01237	0.01267
	B	0.00268	0.00245	0.00291
	B	0.01109	0.01086	0.01135
	C	0.00259	0.00235	0.00318
	C	0.00965	0.00941	0.01024
	D_N	0.00895	0.00883	0.01522
	D_N	0.00773	0.00760	0.01401
sky130_fd_sc_hs__nor4b_4	A	0.00523	0.00478	0.00546
	A	0.02470	0.02431	0.02498
	B	0.00523	0.00477	0.00578
	B	0.02182	0.02135	0.02244
	C	0.00499	0.00455	0.00635
	C	0.01898	0.01852	0.02025
	D_N	0.01572	0.01563	0.02639
	D_N	0.01478	0.01469	0.02547

Internal switching power(pJ) to Y falling :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__nor4b_1	A	0.00661	0.00647	0.00699
	A	0.00214	0.00198	0.00254
	B	0.00544	0.00532	0.00587
	B	0.00156	0.00142	0.00200
	C	0.00421	0.00416	0.00477
	C	0.00080	0.00075	0.00135
	D_N	0.00344	0.00382	0.01099
	D_N	0.00531	0.00569	0.01285
sky130_fd_sc_hs__nor4b_2	A	0.01370	0.01334	0.01438
	A	0.00416	0.00378	0.00488
	B	0.01079	0.01053	0.01170
	B	0.00252	0.00225	0.00344
	C	0.00814	0.00801	0.00927
	C	0.00114	0.00097	0.00223
	D_N	0.00620	0.00669	0.01307
	D_N	0.00741	0.00790	0.01428
sky130_fd_sc_hs__nor4b_4	A	0.02668	0.02596	0.02810
	A	0.00784	0.00703	0.00934
	B	0.02109	0.02047	0.02293
	B	0.00478	0.00415	0.00664
	C	0.01574	0.01538	0.01804
	C	0.00184	0.00144	0.00414
	D_N	0.01242	0.01322	0.02547
	D_N	0.01336	0.01415	0.02639

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)**	0.00114	0.00114	0.00114
	(B * C * D_N * !Y)	-0.00129	-0.00133	-0.00133
	(B * !D_N * !Y)	0.00109	0.00110	0.00109
	(B * !D_N * !Y)	-0.00134	-0.00138	-0.00137
	(B * !C * D_N * !Y)	0.00115	0.00114	0.00114
	(B * !C * D_N * !Y)	-0.00128	-0.00133	-0.00133
	(!B * C * D_N * !Y)	0.00114	0.00115	0.00114
	(!B * C * D_N * !Y)	-0.00119	-0.00129	-0.00128
	(!B * C * !D_N * !Y)	0.00109	0.00110	0.00109
	(!B * C * !D_N * !Y)	-0.00124	-0.00133	-0.00132
	(!B * !C * !D_N * !Y)	0.00109	0.00110	0.00109
	(!B * !C * !D_N * !Y)	-0.00123	-0.00131	-0.00131
sky130_fd_sc_hs__nor4b_2	**(B * C * D_N * !Y)**	0.00230	0.00230	0.00230
	(B * C * D_N * !Y)	-0.00267	-0.00278	-0.00277
	(B * !D_N * !Y)	0.00229	0.00230	0.00230
	(B * !D_N * !Y)	-0.00268	-0.00278	-0.00277
	(B * !C * D_N * !Y)	0.00230	0.00230	0.00230
	(B * !C * D_N * !Y)	-0.00265	-0.00278	-0.00277
	(!B * C * D_N * !Y)	0.00230	0.00233	0.00230
	(!B * C * D_N * !Y)	-0.00249	-0.00268	-0.00266
	(!B * C * !D_N * !Y)	0.00230	0.00232	0.00230
	(!B * C * !D_N * !Y)	-0.00249	-0.00268	-0.00266
	(!B * !C * !D_N * !Y)	0.00231	0.00233	0.00230
	(!B * !C * !D_N * !Y)	-0.00247	-0.00262	-0.00263

sky130_fd_sc_hs__nor4b_4	**(B * C * D_N * !Y)**	0.00449	0.00450	0.00449
	(B * C * D_N * !Y)	-0.00528	-0.00548	-0.00546
	(B * !D_N * !Y)	0.00449	0.00450	0.00448
	(B * !D_N * !Y)	-0.00529	-0.00548	-0.00546
	(B * !C * D_N * !Y)	0.00450	0.00450	0.00449
	(B * !C * D_N * !Y)	-0.00524	-0.00547	-0.00546
	(!B * C * D_N * !Y)	0.00450	0.00448	0.00449
	(!B * C * D_N * !Y)	-0.00492	-0.00528	-0.00524
	(!B * C * !D_N * !Y)	0.00451	0.00447	0.00448
	(!B * C * !D_N * !Y)	-0.00494	-0.00528	-0.00524
	(!B * !C * !D_N * !Y)	0.00453	0.00454	0.00449
	(!B * !C * !D_N * !Y)	-0.00490	-0.00518	-0.00517

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)**	-0.00114	-0.00114	-0.00114
	(B * C * D_N * !Y)	0.00133	0.00134	0.00133
	(B * !D_N * !Y)	-0.00109	-0.00110	-0.00109
	(B * !D_N * !Y)	0.00137	0.00139	0.00137
	(B * !C * D_N * !Y)	-0.00113	-0.00114	-0.00114
	(B * !C * D_N * !Y)	0.00132	0.00134	0.00133
	(!B * C * D_N * !Y)	-0.00113	-0.00114	-0.00114
	(!B * C * D_N * !Y)	0.00128	0.00129	0.00128
	(!B * C * !D_N * !Y)	-0.00109	-0.00109	-0.00109
	(!B * C * !D_N * !Y)	0.00132	0.00133	0.00132
	(!B * !C * !D_N * !Y)	-0.00109	-0.00109	-0.00109
	(!B * !C * !D_N * !Y)	0.00131	0.00131	0.00131

sky130_fd_sc_hs__nor4b_2	**(B * C * D_N * !Y)**	-0.00229	-0.00230	-0.00229
	(B * C * D_N * !Y)	0.00278	0.00279	0.00277
	(B * !D_N * !Y)	-0.00229	-0.00230	-0.00229
	(B * !D_N * !Y)	0.00278	0.00279	0.00277
	(B * !C * D_N * !Y)	-0.00229	-0.00230	-0.00229
	(B * !C * D_N * !Y)	0.00278	0.00279	0.00277
	(!B * C * D_N * !Y)	-0.00229	-0.00230	-0.00229
	(!B * C * D_N * !Y)	0.00266	0.00268	0.00266
	(!B * C * !D_N * !Y)	-0.00229	-0.00230	-0.00229
	(!B * C * !D_N * !Y)	0.00265	0.00268	0.00266
	(!B * !C * !D_N * !Y)	-0.00229	-0.00229	-0.00230
	(!B * !C * !D_N * !Y)	0.00262	0.00262	0.00263
sky130_fd_sc_hs__nor4b_4	**(B * C * D_N * !Y)**	-0.00448	-0.00449	-0.00447
	(B * C * D_N * !Y)	0.00547	0.00551	0.00546
	(B * !D_N * !Y)	-0.00448	-0.00450	-0.00447
	(B * !D_N * !Y)	0.00546	0.00550	0.00546
	(B * !C * D_N * !Y)	-0.00448	-0.00449	-0.00447
	(B * !C * D_N * !Y)	0.00547	0.00550	0.00546
	(!B * C * D_N * !Y)	-0.00447	-0.00448	-0.00447
	(!B * C * D_N * !Y)	0.00524	0.00528	0.00524
	(!B * C * !D_N * !Y)	-0.00447	-0.00447	-0.00447
	(!B * C * !D_N * !Y)	0.00524	0.00528	0.00524
	(!B * !C * !D_N * !Y)	-0.00448	-0.00448	-0.00448
	(!B * !C * !D_N * !Y)	0.00517	0.00518	0.00517

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)**	0.00119	0.00121	0.00118
	(A * C * D_N * !Y)	-0.00089	-0.00090	-0.00089
	(A * C * !D_N * !Y)	0.00112	0.00114	0.00112
	(A * C * !D_N * !Y)	-0.00098	-0.00098	-0.00098
	(A * !C * D_N * !Y)	0.00117	0.00119	0.00117
	(A * !C * D_N * !Y)	-0.00076	-0.00077	-0.00076
	(A * !C * !D_N * !Y)	0.00112	0.00113	0.00112
	(A * !C * !D_N * !Y)	-0.00094	-0.00094	-0.00094
	(!A * C * D_N * !Y)	0.00122	0.00118	0.00117
	(!A * C * D_N * !Y)	-0.00125	-0.00131	-0.00131
	(!A * C * !D_N * !Y)	0.00113	0.00113	0.00112
	(!A * C * !D_N * !Y)	-0.00133	-0.00136	-0.00135
	(!A * !C * !D_N * !Y)	0.00114	0.00113	0.00112
	(!A * !C * !D_N * !Y)	-0.00121	-0.00131	-0.00130
sky130_fd_sc_hs__nor4b_2	**(A * C * D_N * !Y)**	0.00239	0.00241	0.00235
	(A * C * D_N * !Y)	-0.00194	-0.00195	-0.00194
	(A * C * !D_N * !Y)	0.00237	0.00238	0.00235
	(A * C * !D_N * !Y)	-0.00202	-0.00203	-0.00202
	(A * !C * D_N * !Y)	0.00234	0.00238	0.00234
	(A * !C * D_N * !Y)	-0.00164	-0.00168	-0.00165
	(A * !C * !D_N * !Y)	0.00236	0.00240	0.00236
	(A * !C * !D_N * !Y)	-0.00192	-0.00194	-0.00193
	(!A * C * D_N * !Y)	0.00240	0.00236	0.00234
	(!A * C * D_N * !Y)	-0.00264	-0.00277	-0.00278
	(!A * C * !D_N * !Y)	0.00234	0.00236	0.00234
	(!A * C * !D_N * !Y)	-0.00270	-0.00280	-0.00278
	(!A * !C * !D_N * !Y)	0.00238	0.00236	0.00234
	(!A * !C * !D_N * !Y)	-0.00251	-0.00267	-0.00266

sky130_fd_sc_hs__nor4b_4	**(A * C * D_N * !Y)**	0.00464	0.00471	0.00459
	(A * C * D_N * !Y)	-0.00380	-0.00382	-0.00380
	(A * C * !D_N * !Y)	0.00462	0.00465	0.00457
	(A * C * !D_N * !Y)	-0.00395	-0.00397	-0.00395
	(A * !C * D_N * !Y)	0.00456	0.00465	0.00457
	(A * !C * D_N * !Y)	-0.00323	-0.00329	-0.00324
	(A * !C * !D_N * !Y)	0.00460	0.00468	0.00460
	(A * !C * !D_N * !Y)	-0.00377	-0.00378	-0.00377
	(!A * C * D_N * !Y)	0.00472	0.00461	0.00457
	(!A * C * D_N * !Y)	-0.00521	-0.00554	-0.00551
	(!A * C * !D_N * !Y)	0.00457	0.00460	0.00456
	(!A * C * !D_N * !Y)	-0.00535	-0.00553	-0.00550
	(!A * !C * !D_N * !Y)	0.00465	0.00461	0.00457
	(!A * !C * !D_N * !Y)	-0.00495	-0.00529	-0.00526

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)**	-0.00117	-0.00117	-0.00117
	(A * C * D_N * !Y)	0.00089	0.00090	0.00089
	(A * C * !D_N * !Y)	-0.00112	-0.00112	-0.00112
	(A * C * !D_N * !Y)	0.00098	0.00098	0.00098
	(A * !C * D_N * !Y)	-0.00116	-0.00116	-0.00115
	(A * !C * D_N * !Y)	0.00078	0.00078	0.00078
	(A * !C * !D_N * !Y)	-0.00112	-0.00112	-0.00112
	(A * !C * !D_N * !Y)	0.00094	0.00094	0.00094
	(!A * C * D_N * !Y)	-0.00116	-0.00116	-0.00116
	(!A * C * D_N * !Y)	0.00131	0.00131	0.00131
	(!A * C * !D_N * !Y)	-0.00112	-0.00112	-0.00112
	(!A * C * !D_N * !Y)	0.00135	0.00136	0.00135
	(!A * !C * !D_N * !Y)	-0.00111	-0.00112	-0.00112
	(!A * !C * !D_N * !Y)	0.00129	0.00131	0.00130
sky130_fd_sc_hs__nor4b_2	**(A * C * D_N * !Y)**	-0.00234	-0.00234	-0.00234
	(A * C * D_N * !Y)	0.00194	0.00195	0.00194
	(A * C * !D_N * !Y)	-0.00233	-0.00234	-0.00234
	(A * C * !D_N * !Y)	0.00202	0.00203	0.00202
	(A * !C * D_N * !Y)	-0.00230	-0.00231	-0.00229
	(A * !C * D_N * !Y)	0.00171	0.00172	0.00171
	(A * !C * !D_N * !Y)	-0.00235	-0.00236	-0.00235
	(A * !C * !D_N * !Y)	0.00192	0.00194	0.00193
	(!A * C * D_N * !Y)	-0.00233	-0.00233	-0.00233
	(!A * C * D_N * !Y)	0.00277	0.00277	0.00278
	(!A * C * !D_N * !Y)	-0.00233	-0.00234	-0.00233
	(!A * C * !D_N * !Y)	0.00277	0.00280	0.00278
	(!A * !C * !D_N * !Y)	-0.00233	-0.00235	-0.00234
	(!A * !C * !D_N * !Y)	0.00265	0.00267	0.00266

sky130_fd_sc_hs__nor4b_4	(A * C * D_N * !Y)	-0.00456	-0.00457	-0.00456
	(A * C * D_N * !Y)	0.00380	0.00382	0.00380
	(A * C * !D_N * !Y)	-0.00455	-0.00458	-0.00456
	(A * C * !D_N * !Y)	0.00395	0.00397	0.00395
	(A * !C * D_N * !Y)	-0.00448	-0.00452	-0.00448
	(A * !C * D_N * !Y)	0.00331	0.00335	0.00334
	(A * !C * !D_N * !Y)	-0.00458	-0.00459	-0.00458
	(A * !C * !D_N * !Y)	0.00377	0.00378	0.00377
	(!A * C * D_N * !Y)	-0.00454	-0.00457	-0.00455
	(!A * C * D_N * !Y)	0.00549	0.00554	0.00551
	(!A * C * !D_N * !Y)	-0.00454	-0.00457	-0.00455
	(!A * C * !D_N * !Y)	0.00548	0.00553	0.00550
	(!A * !C * !D_N * !Y)	-0.00455	-0.00458	-0.00456
	(!A * !C * !D_N * !Y)	0.00524	0.00529	0.00526

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)	0.00132	0.00135	0.00133
	(B * D_N * !Y)	-0.00076	-0.00077	-0.00076
	(B * !D_N * !Y)	0.00115	0.00114	0.00113
	(B * !D_N * !Y)	-0.00109	-0.00109	-0.00109
	(A * !B * D_N * !Y)	0.00133	0.00135	0.00133
	(A * !B * D_N * !Y)	-0.00075	-0.00077	-0.00076
	(A * !B * !D_N * !Y)	0.00119	0.00114	0.00113
	(A * !B * !D_N * !Y)	-0.00112	-0.00112	-0.00111
	(!A * !B * !D_N * !Y)	0.00132	0.00113	0.00113
	(!A * !B * !D_N * !Y)	-0.00130	-0.00150	-0.00151

sky130_fd_sc_hs__nor4b_2	**(B * D_N * !Y)**	0.00252	0.00256	0.00252
	(B * D_N * !Y)	-0.00156	-0.00158	-0.00156
	(B * !D_N * !Y)	0.00241	0.00242	0.00241
	(B * !D_N * !Y)	-0.00195	-0.00196	-0.00195
	(A * !B * D_N * !Y)	0.00254	0.00257	0.00252
	(A * !B * D_N * !Y)	-0.00156	-0.00157	-0.00155
	(A * !B * !D_N * !Y)	0.00247	0.00244	0.00239
	(A * !B * !D_N * !Y)	-0.00202	-0.00203	-0.00201
	(!A * !B * !D_N * !Y)	0.00276	0.00240	0.00237
	(!A * !B * !D_N * !Y)	-0.00238	-0.00280	-0.00280
sky130_fd_sc_hs__nor4b_4	**(B * D_N * !Y)**	0.00494	0.00495	0.00494
	(B * D_N * !Y)	-0.00308	-0.00309	-0.00309
	(B * !D_N * !Y)	0.00489	0.00493	0.00487
	(B * !D_N * !Y)	-0.00373	-0.00375	-0.00373
	(A * !B * D_N * !Y)	0.00495	0.00496	0.00495
	(A * !B * D_N * !Y)	-0.00306	-0.00307	-0.00308
	(A * !B * !D_N * !Y)	0.00507	0.00494	0.00483
	(A * !B * !D_N * !Y)	-0.00386	-0.00387	-0.00384
	(!A * !B * !D_N * !Y)	0.00568	0.00486	0.00480
	(!A * !B * !D_N * !Y)	-0.00457	-0.00542	-0.00545

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)**	-0.00131	-0.00132	-0.00131
	(B * D_N * !Y)	0.00078	0.00079	0.00079
	(B * !D_N * !Y)	-0.00112	-0.00113	-0.00112
	(B * !D_N * !Y)	0.00109	0.00109	0.00109
	(A * !B * D_N * !Y)	-0.00125	-0.00125	-0.00130
	(A * !B * D_N * !Y)	0.00080	0.00079	0.00078
	(A * !B * !D_N * !Y)	-0.00113	-0.00113	-0.00112
	(A * !B * !D_N * !Y)	0.00112	0.00112	0.00111
	(!A * !B * !D_N * !Y)	-0.00112	-0.00113	-0.00112
	(!A * !B * !D_N * !Y)	0.00150	0.00152	0.00151
sky130_fd_sc_hs__nor4b_2	**(B * D_N * !Y)**	-0.00248	-0.00248	-0.00248
	(B * D_N * !Y)	0.00161	0.00160	0.00161
	(B * !D_N * !Y)	-0.00239	-0.00240	-0.00239
	(B * !D_N * !Y)	0.00195	0.00196	0.00195
	(A * !B * D_N * !Y)	-0.00230	-0.00232	-0.00245
	(A * !B * D_N * !Y)	0.00165	0.00166	0.00160
	(A * !B * !D_N * !Y)	-0.00239	-0.00240	-0.00239
	(A * !B * !D_N * !Y)	0.00202	0.00203	0.00201
	(!A * !B * !D_N * !Y)	-0.00237	-0.00237	-0.00236
	(!A * !B * !D_N * !Y)	0.00279	0.00280	0.00280
sky130_fd_sc_hs__nor4b_4	**(B * D_N * !Y)**	-0.00484	-0.00487	-0.00487
	(B * D_N * !Y)	0.00317	0.00319	0.00321
	(B * !D_N * !Y)	-0.00483	-0.00485	-0.00483
	(B * !D_N * !Y)	0.00373	0.00375	0.00373
	(A * !B * D_N * !Y)	-0.00455	-0.00458	-0.00482
	(A * !B * D_N * !Y)	0.00328	0.00328	0.00317
	(A * !B * !D_N * !Y)	-0.00484	-0.00486	-0.00483
	(A * !B * !D_N * !Y)	0.00386	0.00387	0.00384
	(!A * !B * !D_N * !Y)	-0.00479	-0.00481	-0.00478
	(!A * !B * !D_N * !Y)	0.00541	0.00545	0.00545

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__nor4b_1	(C * !Y)	0.00332	0.00324	0.00988
	(C * !Y)	0.00071	0.00061	0.00727
	(B * !C * !Y)	0.00340	0.00331	0.00994
	(B * !C * !Y)	0.00075	0.00064	0.00729
	(A * !B * !C * !Y)	0.00349	0.00340	0.01000
	(A * !B * !C * !Y)	0.00080	0.00069	0.00732
sky130_fd_sc_hs__nor4b_2	(C * !Y)	0.00430	0.00416	0.01036
	(C * !Y)	0.00134	0.00118	0.00739
	(B * !C * !Y)	0.00448	0.00433	0.01049
	(B * !C * !Y)	0.00142	0.00126	0.00744
	(A * !B * !C * !Y)	0.00471	0.00457	0.01066
	(A * !B * !C * !Y)	0.00156	0.00140	0.00754
sky130_fd_sc_hs__nor4b_4	(C * !Y)	0.00662	0.00634	0.01692
	(C * !Y)	0.00223	0.00194	0.01253
	(B * !C * !Y)	0.00697	0.00668	0.01717
	(B * !C * !Y)	0.00241	0.00211	0.01264
	(A * !B * !C * !Y)	0.00743	0.00713	0.01749
	(A * !B * !C * !Y)	0.00268	0.00237	0.01282

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__nor4b_1	(C * !Y)	0.00109	0.00138	0.00871
	(C * !Y)	0.00369	0.00399	0.01132
	(B * !C * !Y)	0.00109	0.00138	0.00871
	(B * !C * !Y)	0.00369	0.00399	0.01132
	(A * !B * !C * !Y)	0.00109	0.00138	0.00870
	(A * !B * !C * !Y)	0.00370	0.00399	0.01132
sky130_fd_sc_hs__nor4b_2	(C * !Y)	0.00222	0.00236	0.00922
	(C * !Y)	0.00517	0.00533	0.01217
	(B * !C * !Y)	0.00222	0.00236	0.00922
	(B * !C * !Y)	0.00517	0.00533	0.01217
	(A * !B * !C * !Y)	0.00222	0.00236	0.00922
	(A * !B * !C * !Y)	0.00518	0.00533	0.01218
sky130_fd_sc_hs__nor4b_4	(C * !Y)	0.00462	0.00498	0.01755
	(C * !Y)	0.00897	0.00936	0.02192
	(B * !C * !Y)	0.00462	0.00498	0.01755
	(B * !C * !Y)	0.00898	0.00937	0.02192
	(A * !B * !C * !Y)	0.00462	0.00498	0.01755
	(A * !B * !C * !Y)	0.00898	0.00937	0.02193

SKY130_FD_SC_HS__NOR4x

sky130_fd_sc_hs_tt_1.50v_25C.ccs
Cell Library: Process , Voltage
1.50, 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	0.00261	0.00278	0.00277	0.00281	0.19974
sky130_fd_sc_hs__nor4_2	0.00404	0.00465	0.00461	0.00431	0.37496
sky130_fd_sc_hs__nor4_4	0.00798	0.00835	0.00814	0.00829	0.66407

Leakage Information

Cell Name	Leakage(nW)		
	Min.	Avg	Max.
sky130_fd_sc_hs__nor4_1	0.00000	0.00579	0.02973
sky130_fd_sc_hs__nor4_2	0.00000	0.01042	0.05947
sky130_fd_sc_hs__nor4_4	0.00000	0.02084	0.11893

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)	0.28834	1.50086	10.84200
	B->Y (FR)	0.27452	1.48867	11.16380
	C->Y (FR)	0.23040	1.45668	11.48280
	D->Y (FR)	0.15795	1.35747	11.15300
sky130_fd_sc_hs__nor4_2	A->Y (FR)	0.24259	1.28143	10.88900
	B->Y (FR)	0.22226	1.25926	11.17440
	C->Y (FR)	0.16663	1.21156	11.49030
	D->Y (FR)	0.08364	1.10106	11.11000
sky130_fd_sc_hs__nor4_4	A->Y (FR)	0.26454	1.13352	10.49990
	B->Y (FR)	0.24507	1.11017	10.84390
	C->Y (FR)	0.19450	1.07545	11.25140
	D->Y (FR)	0.10136	0.95818	10.93920

Delay(ns) to Y falling :

Cell Name	Timing Arc(Dir)	Delay(ns)		
		First	Mid	Last
sky130_fd_sc_hs__nor4_1	A->Y (RF)	0.02514	0.33031	2.65218
	B->Y (RF)	0.02736	0.33392	2.70528
	C->Y (RF)	0.02777	0.32666	2.69773
	D->Y (RF)	0.02448	0.31438	2.66442
sky130_fd_sc_hs__nor4_2	A->Y (RF)	0.03225	0.41825	3.88116
	B->Y (RF)	0.03628	0.42119	3.95482
	C->Y (RF)	0.03626	0.40713	3.92777
	D->Y (RF)	0.02889	0.38011	3.80556
sky130_fd_sc_hs__nor4_4	A->Y (RF)	0.03324	0.36832	3.62904
	B->Y (RF)	0.03538	0.36030	3.63559
	C->Y (RF)	0.03667	0.35326	3.67263
	D->Y (RF)	0.02853	0.32825	3.63615

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	0.00018	0.00034
	A	0.00601	0.00591	0.00608
	B	0.00038	0.00026	0.00049
	B	0.00540	0.00529	0.00552
	C	0.00038	0.00025	0.00067
	C	0.00469	0.00458	0.00498
	D	0.00030	0.00031	0.00171
	D	0.00403	0.00404	0.00545
sky130_fd_sc_hs__nor4_2	A	0.00034	0.00023	0.00039
	A	0.00994	0.00988	0.01004
	B	0.00008	-0.00003	0.00021
	B	0.00880	0.00870	0.00894
	C	0.00028	0.00014	0.00059
	C	0.00731	0.00716	0.00762
	D	0.00006	0.00008	0.00194
	D	0.00564	0.00568	0.00754
sky130_fd_sc_hs__nor4_4	A	0.00279	0.00256	0.00289
	A	0.02242	0.02221	0.02255
	B	0.00287	0.00259	0.00310
	B	0.01974	0.01938	0.02003
	C	0.00295	0.00264	0.00359
	C	0.01678	0.01651	0.01744
	D	0.00271	0.00282	0.00642
	D	0.01371	0.01368	0.01747

Internal switching power(pJ) to Y falling :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__nor4_1	A	0.00761	0.00748	0.00800
	A	0.00204	0.00190	0.00247
	B	0.00640	0.00626	0.00681
	B	0.00147	0.00132	0.00190
	C	0.00500	0.00496	0.00554
	C	0.00072	0.00066	0.00126
	D	0.00358	0.00361	0.00424
	D	-0.00015	-0.00014	0.00050
sky130_fd_sc_hs__nor4_2	A	0.01323	0.01292	0.01345
	A	0.00398	0.00363	0.00427
	B	0.01108	0.01078	0.01145
	B	0.00258	0.00227	0.00294
	C	0.00776	0.00761	0.00839
	C	0.00080	0.00064	0.00139
	D	0.00461	0.00469	0.00558
	D	-0.00096	-0.00090	-0.00005
sky130_fd_sc_hs__nor4_4	A	0.02667	0.02594	0.02722
	A	0.00781	0.00706	0.00844
	B	0.02118	0.02055	0.02198
	B	0.00469	0.00407	0.00557
	C	0.01555	0.01516	0.01677
	C	0.00188	0.00145	0.00309
	D	0.00909	0.00930	0.01100
	D	-0.00190	-0.00172	-0.00005

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

Cell Name	When	Power(pJ)		
		first	mid	last

sky130_fd_sc_hs__nor4_1	**(B * D * !Y)**	0.00118	0.00118	0.00117
	(B * D * !Y)	-0.00133	-0.00136	-0.00136
	(B * C * !D * !Y)	0.00118	0.00118	0.00117
	(B * C * !D * !Y)	-0.00133	-0.00136	-0.00136
	(B * !C * !D * !Y)	0.00118	0.00118	0.00117
	(B * !C * !D * !Y)	-0.00132	-0.00136	-0.00136
	(!B * C * D * !Y)	0.00117	0.00119	0.00117
	(!B * C * D * !Y)	-0.00123	-0.00132	-0.00131
	(!B * C * !D * !Y)	0.00117	0.00119	0.00117
	(!B * C * !D * !Y)	-0.00123	-0.00132	-0.00131
	(!B * !C * D * !Y)	0.00118	0.00119	0.00117
	(!B * !C * D * !Y)	-0.00122	-0.00129	-0.00129
sky130_fd_sc_hs__nor4_2	**(B * D * !Y)**	0.00117	0.00118	0.00117
	(B * D * !Y)	-0.00255	-0.00266	-0.00265
	(B * C * !D * !Y)	0.00117	0.00118	0.00117
	(B * C * !D * !Y)	-0.00255	-0.00266	-0.00265
	(B * !C * !D * !Y)	0.00117	0.00118	0.00117
	(B * !C * !D * !Y)	-0.00251	-0.00265	-0.00265
	(!B * C * D * !Y)	0.00118	0.00117	0.00117
	(!B * C * D * !Y)	-0.00236	-0.00254	-0.00253
	(!B * C * !D * !Y)	0.00118	0.00117	0.00117
	(!B * C * !D * !Y)	-0.00236	-0.00254	-0.00253
	(!B * !C * D * !Y)	0.00118	0.00119	0.00117
	(!B * !C * D * !Y)	-0.00232	-0.00248	-0.00248

sky130_fd_sc_hs__nor4_4	**(B * D * !Y)**	0.00245	0.00245	0.00244
	(B * D * !Y)	-0.00525	-0.00544	-0.00541
	(B * C * !D * !Y)	0.00245	0.00245	0.00244
	(B * C * !D * !Y)	-0.00524	-0.00544	-0.00541
	(B * !C * !D * !Y)	0.00245	0.00245	0.00244
	(B * !C * !D * !Y)	-0.00519	-0.00543	-0.00542
	(!B * C * D * !Y)	0.00244	0.00244	0.00244
	(!B * C * D * !Y)	-0.00487	-0.00523	-0.00519
	(!B * C * !D * !Y)	0.00245	0.00244	0.00244
	(!B * C * !D * !Y)	-0.00487	-0.00523	-0.00520
	(!B * !C * D * !Y)	0.00247	0.00248	0.00244
	(!B * !C * D * !Y)	-0.00479	-0.00511	-0.00510

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

Cell Name	**When**	**Power(pJ)**		
		first	**mid**	**last**
sky130_fd_sc_hs__nor4_1	**(B * D * !Y)**	-0.00117	-0.00118	-0.00117
	(B * D * !Y)	0.00136	0.00137	0.00136
	(B * C * !D * !Y)	-0.00117	-0.00118	-0.00117
	(B * C * !D * !Y)	0.00136	0.00137	0.00136
	(B * !C * !D * !Y)	-0.00117	-0.00118	-0.00117
	(B * !C * !D * !Y)	0.00136	0.00137	0.00136
	(!B * C * D * !Y)	-0.00117	-0.00118	-0.00117
	(!B * C * D * !Y)	0.00131	0.00132	0.00131
	(!B * C * !D * !Y)	-0.00117	-0.00118	-0.00117
	(!B * C * !D * !Y)	0.00131	0.00132	0.00131
	(!B * !C * D * !Y)	-0.00117	-0.00117	-0.00117
	(!B * !C * D * !Y)	0.00129	0.00129	0.00129

sky130_fd_sc_hs__nor4_2	**(B * D * !Y)**	-0.00117	-0.00117	-0.00117
	(B * D * !Y)	0.00265	0.00267	0.00265
	(B * C * !D * !Y)	-0.00117	-0.00117	-0.00117
	(B * C * !D * !Y)	0.00264	0.00267	0.00265
	(B * !C * !D * !Y)	-0.00117	-0.00117	-0.00117
	(B * !C * !D * !Y)	0.00264	0.00267	0.00265
	(!B * C * D * !Y)	-0.00118	-0.00117	-0.00117
	(!B * C * D * !Y)	0.00254	0.00254	0.00253
	(!B * C * !D * !Y)	-0.00117	-0.00117	-0.00117
	(!B * C * !D * !Y)	0.00253	0.00254	0.00253
	(!B * !C * D * !Y)	-0.00117	-0.00117	-0.00117
	(!B * !C * D * !Y)	0.00247	0.00248	0.00248
sky130_fd_sc_hs__nor4_4	**(B * D * !Y)**	-0.00244	-0.00245	-0.00243
	(B * D * !Y)	0.00541	0.00546	0.00541
	(B * C * !D * !Y)	-0.00244	-0.00245	-0.00243
	(B * C * !D * !Y)	0.00541	0.00546	0.00541
	(B * !C * !D * !Y)	-0.00244	-0.00245	-0.00243
	(B * !C * !D * !Y)	0.00541	0.00546	0.00542
	(!B * C * D * !Y)	-0.00243	-0.00244	-0.00243
	(!B * C * D * !Y)	0.00518	0.00523	0.00519
	(!B * C * !D * !Y)	-0.00243	-0.00244	-0.00243
	(!B * C * !D * !Y)	0.00519	0.00523	0.00520
	(!B * !C * D * !Y)	-0.00244	-0.00244	-0.00244
	(!B * !C * D * !Y)	0.00509	0.00511	0.00510

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)**	0.00113	0.00114	0.00113
	(A * C * D * !Y)	-0.00098	-0.00099	-0.00098
	(A * C * !D * !Y)	0.00113	0.00116	0.00113
	(A * C * !D * !Y)	-0.00094	-0.00095	-0.00094
	(A * !C * D * !Y)	0.00113	0.00114	0.00113
	(A * !C * D * !Y)	-0.00094	-0.00093	-0.00093
	(A * !C * !D * !Y)	0.00113	0.00115	0.00113
	(A * !C * !D * !Y)	-0.00081	-0.00083	-0.00081
	(!A * C * D * !Y)	0.00113	0.00114	0.00113
	(!A * C * D * !Y)	-0.00133	-0.00136	-0.00136
	(!A * C * !D * !Y)	0.00115	0.00114	0.00113
	(!A * C * !D * !Y)	-0.00130	-0.00137	-0.00136
	(!A * !C * D * !Y)	0.00114	0.00113	0.00113
	(!A * !C * D * !Y)	-0.00119	-0.00131	-0.00130
sky130_fd_sc_hs__nor4_2	**(A * C * D * !Y)**	0.00150	0.00151	0.00149
	(A * C * D * !Y)	-0.00202	-0.00202	-0.00201
	(A * C * !D * !Y)	0.00150	0.00152	0.00149
	(A * C * !D * !Y)	-0.00192	-0.00193	-0.00192
	(A * !C * D * !Y)	0.00148	0.00149	0.00148
	(A * !C * D * !Y)	-0.00190	-0.00190	-0.00189
	(A * !C * !D * !Y)	0.00147	0.00150	0.00148
	(A * !C * !D * !Y)	-0.00166	-0.00168	-0.00165
	(!A * C * D * !Y)	0.00149	0.00148	0.00147
	(!A * C * D * !Y)	-0.00268	-0.00278	-0.00276
	(!A * C * !D * !Y)	0.00151	0.00148	0.00147
	(!A * C * !D * !Y)	-0.00259	-0.00276	-0.00276
	(!A * !C * D * !Y)	0.00152	0.00148	0.00147
	(!A * !C * D * !Y)	-0.00241	-0.00264	-0.00263

sky130_fd_sc_hs__nor4_4	**(A * C * D * !Y)**	0.00254	0.00257	0.00253
	(A * C * D * !Y)	-0.00398	-0.00400	-0.00399
	(A * C * !D * !Y)	0.00255	0.00259	0.00253
	(A * C * !D * !Y)	-0.00383	-0.00384	-0.00384
	(A * !C * D * !Y)	0.00253	0.00259	0.00255
	(A * !C * D * !Y)	-0.00376	-0.00378	-0.00376
	(A * !C * !D * !Y)	0.00252	0.00257	0.00252
	(A * !C * !D * !Y)	-0.00329	-0.00335	-0.00330
	(!A * C * D * !Y)	0.00252	0.00254	0.00252
	(!A * C * D * !Y)	-0.00536	-0.00556	-0.00557
	(!A * C * !D * !Y)	0.00262	0.00255	0.00252
	(!A * C * !D * !Y)	-0.00530	-0.00556	-0.00557
	(!A * !C * D * !Y)	0.00260	0.00255	0.00253
	(!A * !C * D * !Y)	-0.00490	-0.00532	-0.00529

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)**	-0.00112	-0.00113	-0.00113
	(A * C * D * !Y)	0.00098	0.00099	0.00098
	(A * C * !D * !Y)	-0.00112	-0.00113	-0.00113
	(A * C * !D * !Y)	0.00094	0.00095	0.00094
	(A * !C * D * !Y)	-0.00113	-0.00112	-0.00113
	(A * !C * D * !Y)	0.00094	0.00093	0.00093
	(A * !C * !D * !Y)	-0.00112	-0.00113	-0.00112
	(A * !C * !D * !Y)	0.00083	0.00083	0.00083
	(!A * C * D * !Y)	-0.00112	-0.00113	-0.00113
	(!A * C * D * !Y)	0.00135	0.00136	0.00136
	(!A * C * !D * !Y)	-0.00112	-0.00113	-0.00113
	(!A * C * !D * !Y)	0.00136	0.00137	0.00136
	(!A * !C * D * !Y)	-0.00113	-0.00113	-0.00112
	(!A * !C * D * !Y)	0.00130	0.00131	0.00130
sky130_fd_sc_hs__nor4_2	**(A * C * D * !Y)**	-0.00149	-0.00149	-0.00148
	(A * C * D * !Y)	0.00202	0.00202	0.00201
	(A * C * !D * !Y)	-0.00148	-0.00148	-0.00148
	(A * C * !D * !Y)	0.00192	0.00193	0.00192
	(A * !C * D * !Y)	-0.00148	-0.00148	-0.00147
	(A * !C * D * !Y)	0.00190	0.00190	0.00189
	(A * !C * !D * !Y)	-0.00146	-0.00147	-0.00147
	(A * !C * !D * !Y)	0.00167	0.00168	0.00168
	(!A * C * D * !Y)	-0.00147	-0.00148	-0.00147
	(!A * C * D * !Y)	0.00275	0.00278	0.00276
	(!A * C * !D * !Y)	-0.00147	-0.00147	-0.00147
	(!A * C * !D * !Y)	0.00276	0.00276	0.00276
	(!A * !C * D * !Y)	-0.00146	-0.00147	-0.00146
	(!A * !C * D * !Y)	0.00262	0.00264	0.00263

sky130_fd_sc_hs__nor4_4	(A * C * D * !Y)	-0.00252	-0.00252	-0.00252
	(A * C * D * !Y)	0.00398	0.00400	0.00399
	(A * C * !D * !Y)	-0.00251	-0.00252	-0.00252
	(A * C * !D * !Y)	0.00383	0.00384	0.00384
	(A * !C * D * !Y)	-0.00253	-0.00254	-0.00253
	(A * !C * D * !Y)	0.00376	0.00378	0.00376
	(A * !C * !D * !Y)	-0.00247	-0.00248	-0.00245
	(A * !C * !D * !Y)	0.00338	0.00340	0.00339
	(!A * C * D * !Y)	-0.00252	-0.00252	-0.00252
	(!A * C * D * !Y)	0.00560	0.00556	0.00557
	(!A * C * !D * !Y)	-0.00250	-0.00251	-0.00252
	(!A * C * !D * !Y)	0.00553	0.00556	0.00557
	(!A * !C * D * !Y)	-0.00253	-0.00253	-0.00252
	(!A * !C * D * !Y)	0.00530	0.00532	0.00529

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__nor4_1	(B * D * !Y)	0.00117	0.00119	0.00115
	(B * D * !Y)	-0.00089	-0.00090	-0.00089
	(B * !D * !Y)	0.00114	0.00117	0.00114
	(B * !D * !Y)	-0.00076	-0.00078	-0.00077
	(A * !B * D * !Y)	0.00121	0.00116	0.00114
	(A * !B * D * !Y)	-0.00092	-0.00092	-0.00092
	(A * !B * !D * !Y)	0.00115	0.00117	0.00115
	(A * !B * !D * !Y)	-0.00076	-0.00078	-0.00077
	(!A * !B * D * !Y)	0.00135	0.00115	0.00114
	(!A * !B * D * !Y)	-0.00110	-0.00131	-0.00132

sky130_fd_sc_hs__nor4_2	**(B * D * !Y)**	0.00151	0.00152	0.00147
	(B * D * !Y)	-0.00182	-0.00183	-0.00182
	(B * !D * !Y)	0.00147	0.00149	0.00146
	(B * !D * !Y)	-0.00156	-0.00158	-0.00156
	(A * !B * D * !Y)	0.00159	0.00149	0.00146
	(A * !B * D * !Y)	-0.00187	-0.00189	-0.00186
	(A * !B * !D * !Y)	0.00147	0.00149	0.00146
	(A * !B * !D * !Y)	-0.00155	-0.00158	-0.00156
	(!A * !B * D * !Y)	0.00185	0.00147	0.00145
	(!A * !B * D * !Y)	-0.00227	-0.00269	-0.00271
sky130_fd_sc_hs__nor4_4	**(B * D * !Y)**	0.00255	0.00258	0.00247
	(B * D * !Y)	-0.00364	-0.00365	-0.00365
	(B * !D * !Y)	0.00244	0.00249	0.00243
	(B * !D * !Y)	-0.00318	-0.00324	-0.00320
	(A * !B * D * !Y)	0.00271	0.00251	0.00243
	(A * !B * D * !Y)	-0.00377	-0.00377	-0.00376
	(A * !B * !D * !Y)	0.00246	0.00251	0.00243
	(A * !B * !D * !Y)	-0.00315	-0.00321	-0.00318
	(!A * !B * D * !Y)	0.00334	0.00247	0.00241
	(!A * !B * D * !Y)	-0.00446	-0.00543	-0.00545

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

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

sky130_fd_sc_hs__nor4_1	**(B * D * !Y)**	-0.00114	-0.00114	-0.00114
	(B * D * !Y)	0.00089	0.00090	0.00089
	(B * !D * !Y)	-0.00113	-0.00114	-0.00112
	(B * !D * !Y)	0.00079	0.00079	0.00079
	(A * !B * D * !Y)	-0.00114	-0.00114	-0.00114
	(A * !B * D * !Y)	0.00092	0.00092	0.00092
	(A * !B * !D * !Y)	-0.00109	-0.00109	-0.00112
	(A * !B * !D * !Y)	0.00081	0.00080	0.00078
	(!A * !B * D * !Y)	-0.00114	-0.00113	-0.00113
	(!A * !B * D * !Y)	0.00132	0.00131	0.00132
sky130_fd_sc_hs__nor4_2	**(B * D * !Y)**	-0.00146	-0.00147	-0.00146
	(B * D * !Y)	0.00182	0.00183	0.00182
	(B * !D * !Y)	-0.00143	-0.00144	-0.00141
	(B * !D * !Y)	0.00161	0.00162	0.00162
	(A * !B * D * !Y)	-0.00146	-0.00147	-0.00145
	(A * !B * D * !Y)	0.00187	0.00189	0.00186
	(A * !B * !D * !Y)	-0.00130	-0.00131	-0.00141
	(A * !B * !D * !Y)	0.00166	0.00165	0.00160
	(!A * !B * D * !Y)	-0.00143	-0.00144	-0.00143
	(!A * !B * D * !Y)	0.00269	0.00272	0.00271
sky130_fd_sc_hs__nor4_4	**(B * D * !Y)**	-0.00243	-0.00244	-0.00244
	(B * D * !Y)	0.00364	0.00365	0.00365
	(B * !D * !Y)	-0.00239	-0.00240	-0.00235
	(B * !D * !Y)	0.00328	0.00329	0.00329
	(A * !B * D * !Y)	-0.00244	-0.00244	-0.00243
	(A * !B * D * !Y)	0.00377	0.00377	0.00376
	(A * !B * !D * !Y)	-0.00221	-0.00223	-0.00232
	(A * !B * !D * !Y)	0.00332	0.00333	0.00326
	(!A * !B * D * !Y)	-0.00239	-0.00241	-0.00238
	(!A * !B * D * !Y)	0.00539	0.00546	0.00545

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__nor4_1	(C * !Y)	0.00132	0.00135	0.00132
	(C * !Y)	-0.00070	-0.00071	-0.00070
	(B * !C * !Y)	0.00132	0.00135	0.00132
	(B * !C * !Y)	-0.00070	-0.00071	-0.00070
	(A * !B * !C * !Y)	0.00132	0.00135	0.00132
	(A * !B * !C * !Y)	-0.00070	-0.00071	-0.00070
sky130_fd_sc_hs__nor4_2	(C * !Y)	0.00161	0.00162	0.00161
	(C * !Y)	-0.00139	-0.00140	-0.00139
	(B * !C * !Y)	0.00161	0.00162	0.00161
	(B * !C * !Y)	-0.00138	-0.00140	-0.00139
	(A * !B * !C * !Y)	0.00161	0.00163	0.00161
	(A * !B * !C * !Y)	-0.00138	-0.00140	-0.00139
sky130_fd_sc_hs__nor4_4	(C * !Y)	0.00304	0.00309	0.00304
	(C * !Y)	-0.00279	-0.00282	-0.00278
	(B * !C * !Y)	0.00304	0.00309	0.00304
	(B * !C * !Y)	-0.00278	-0.00282	-0.00277
	(A * !B * !C * !Y)	0.00303	0.00304	0.00304
	(A * !B * !C * !Y)	-0.00277	-0.00277	-0.00277

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__nor4_1	(C * !Y)	-0.00127	-0.00128	-0.00132
	(C * !Y)	0.00076	0.00076	0.00072
	(B * !C * !Y)	-0.00119	-0.00120	-0.00130
	(B * !C * !Y)	0.00080	0.00080	0.00072
	(A * !B * !C * !Y)	-0.00110	-0.00111	-0.00128
	(A * !B * !C * !Y)	0.00086	0.00086	0.00074
sky130_fd_sc_hs__nor4_2	(C * !Y)	-0.00149	-0.00151	-0.00160
	(C * !Y)	0.00150	0.00150	0.00142
	(B * !C * !Y)	-0.00130	-0.00132	-0.00156
	(B * !C * !Y)	0.00160	0.00161	0.00143
	(A * !B * !C * !Y)	-0.00110	-0.00112	-0.00151
	(A * !B * !C * !Y)	0.00173	0.00173	0.00146
sky130_fd_sc_hs__nor4_4	(C * !Y)	-0.00277	-0.00280	-0.00301
	(C * !Y)	0.00304	0.00304	0.00284
	(B * !C * !Y)	-0.00246	-0.00249	-0.00294
	(B * !C * !Y)	0.00322	0.00321	0.00286
	(A * !B * !C * !Y)	-0.00199	-0.00204	-0.00281
	(A * !B * !C * !Y)	0.00346	0.00348	0.00294

SKY130_FD_SC_HS__O2111AIx

sky130_fd_sc_hs_tt_1.50v_25C.ccs
Cell Library: Process , Voltage
1.50, 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	0.00264	0.00276	0.00267	0.00284	0.00277	0.41334
sky130_fd_sc_hs__o2111ai_2	0.00510	0.00516	0.00534	0.00521	0.00519	0.74341
sky130_fd_sc_hs__o2111ai_4	0.01017	0.01031	0.00781	0.00788	0.00781	1.32054

Leakage Information

Cell Name	Leakage(nW)		
	Min.	**Avg**	**Max.**
sky130_fd_sc_hs__o2111ai_1	0.00000	0.01154	0.11893
sky130_fd_sc_hs__o2111ai_2	0.00000	0.02308	0.23786
sky130_fd_sc_hs__o2111ai_4	0.00000	0.02943	0.29733

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)	0.19249	1.22678	11.58250
	A2->Y (FR)	0.17567	1.19352	11.53800
	B1->Y (FR)	0.07378	0.78205	8.25902
	C1->Y (FR)	0.06410	0.77161	8.25679
	D1->Y (FR)	0.05386	0.76217	8.24106
sky130_fd_sc_hs__o2111ai_2	A1->Y (FR)	0.19423	1.08093	11.37590
	A2->Y (FR)	0.16812	1.04309	11.35050
	B1->Y (FR)	0.06874	0.70080	8.01608
	C1->Y (FR)	0.05887	0.68802	7.99848
	D1->Y (FR)	0.04457	0.67270	7.96781
sky130_fd_sc_hs__o2111ai_4	A1->Y (FR)	0.20096	0.97394	11.27690
	A2->Y (FR)	0.17051	0.93246	11.28440
	B1->Y (FR)	0.12096	0.86433	10.78280
	C1->Y (FR)	0.09261	0.81416	10.35500
	D1->Y (FR)	0.06874	0.81249	10.71690

Delay(ns) to Y falling :

Cell Name	Timing Arc(Dir)	Delay(ns)		
		First	Mid	Last
sky130_fd_sc_hs__o2111ai_1	A1->Y (RF)	0.09077	0.59647	5.48886
	A2->Y (RF)	0.07677	0.57086	5.38108
	B1->Y (RF)	0.08414	0.62581	6.02269
	C1->Y (RF)	0.07607	0.65417	6.49059
	D1->Y (RF)	0.06411	0.66181	6.71789
sky130_fd_sc_hs__o2111ai_2	A1->Y (RF)	0.09951	0.54484	5.57963
	A2->Y (RF)	0.08062	0.51541	5.47568
	B1->Y (RF)	0.09197	0.56946	6.10239
	C1->Y (RF)	0.08190	0.61710	6.83876
	D1->Y (RF)	0.06239	0.61534	7.07178
sky130_fd_sc_hs__o2111ai_4	A1->Y (RF)	0.09363	0.45780	5.24191
	A2->Y (RF)	0.08074	0.44534	5.36188
	B1->Y (RF)	0.06912	0.47784	6.04790
	C1->Y (RF)	0.05908	0.51745	6.72879
	D1->Y (RF)	0.03922	0.52256	7.05474

Power Information

Internal switching power(pJ) to Y rising :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__o2111ai_1	A1	0.00171	0.00158	0.00182
	A1	0.00805	0.00792	0.00813
	A2	0.00174	0.00167	0.00254
	A2	0.00736	0.00722	0.00814
	B1	0.00093	0.00091	0.00189
	B1	0.00635	0.00623	0.00725
	C1	0.00045	0.00043	0.00139
	C1	0.00527	0.00515	0.00620
	D1	0.00007	0.00008	0.00105
	D1	0.00418	0.00421	0.00516
sky130_fd_sc_hs__o2111ai_2	A1	0.00275	0.00247	0.00292
	A1	0.01547	0.01520	0.01559
	A2	0.00278	0.00262	0.00434
	A2	0.01396	0.01380	0.01544
	B1	0.00118	0.00120	0.00310
	B1	0.01234	0.01218	0.01411
	C1	0.00039	0.00038	0.00228
	C1	0.00999	0.00996	0.01182
	D1	-0.00111	-0.00103	0.00103
	D1	0.00703	0.00716	0.00917

sky130_fd_sc_hs__o2111ai_4	**A1**	0.00487	0.00423	0.00523
	A1	0.02974	0.02913	0.02990
	A2	0.00474	0.00455	0.00789
	A2	0.02692	0.02635	0.02773
	B1	0.00208	0.00164	0.00400
	B1	0.02103	0.02011	0.02280
	C1	0.00054	0.00002	0.00243
	C1	0.01665	0.01618	0.01865
	D1	-0.00195	-0.00193	0.00044
	D1	0.01116	0.01122	0.01360

Internal switching power(pJ) to Y falling :

Cell Name	**Input**	**Power(pJ)**		
		first	**mid**	**last**
sky130_fd_sc_hs__o2111ai_1	**A1**	0.00815	0.00806	0.00839
	A1	0.00162	0.00151	0.00171
	A2	0.00683	0.00676	0.00709
	A2	0.00098	0.00090	0.00111
	B1	0.00718	0.00707	0.00798
	B1	0.00171	0.00160	0.00181
	C1	0.00653	0.00643	0.00685
	C1	0.00171	0.00159	0.00183
	D1	0.00575	0.00565	0.00604
	D1	0.00167	0.00156	0.00195

sky130_fd_sc_hs__o2111ai_2	**A1**	0.01679	0.01649	0.01703
	A1	0.00366	0.00337	0.00377
	A2	0.01342	0.01332	0.01377
	A2	0.00176	0.00159	0.00208
	B1	0.01491	0.01467	0.01516
	B1	0.00366	0.00340	0.00386
	C1	0.01331	0.01308	0.01353
	C1	0.00371	0.00346	0.00395
	D1	0.01166	0.01153	0.01256
	D1	0.00363	0.00348	0.00422
sky130_fd_sc_hs__o2111ai_4	**A1**	0.03213	0.03143	0.03272
	A1	0.00644	0.00572	0.00663
	A2	0.02545	0.02506	0.02618
	A2	0.00234	0.00195	0.00309
	B1	0.02737	0.02717	0.02803
	B1	0.00817	0.00793	0.00842
	C1	0.02439	0.02421	0.02501
	C1	0.00822	0.00800	0.00852
	D1	0.02111	0.02090	0.02201
	D1	0.00817	0.00793	0.00882

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)**	0.00133	0.00119	0.00118
	(A2 * B1 * C1 * D1 * !Y)	-0.00120	-0.00135	-0.00137
	(A2 * B1 * C1 * !D1 * Y)	0.00117	0.00117	0.00117
	(A2 * B1 * C1 * !D1 * Y)	-0.00134	-0.00137	-0.00137
	(A2 * B1 * !C1 * Y)	0.00117	0.00117	0.00117
	(A2 * B1 * !C1 * Y)	-0.00134	-0.00137	-0.00137
	(A2 * !B1 * Y)	0.00118	0.00117	0.00117
	(A2 * !B1 * Y)	-0.00134	-0.00137	-0.00137
	(!A2 * B1 * C1 * !D1 * Y)	0.00108	0.00109	0.00108
	(!A2 * B1 * C1 * !D1 * Y)	-0.00139	-0.00139	-0.00138
	(!A2 * B1 * !C1 * D1 * Y)	0.00109	0.00109	0.00109
	(!A2 * B1 * !C1 * D1 * Y)	-0.00139	-0.00139	-0.00139
	(!A2 * B1 * !C1 * !D1 * Y)	0.00110	0.00109	0.00109
	(!A2 * B1 * !C1 * !D1 * Y)	-0.00139	-0.00139	-0.00139
	(!A2 * !B1 * C1 * D1 * Y)	0.00110	0.00110	0.00110
	(!A2 * !B1 * C1 * D1 * Y)	-0.00138	-0.00139	-0.00139
	(!A2 * !B1 * !D1 * Y)	0.00110	0.00111	0.00110
	(!A2 * !B1 * !D1 * Y)	-0.00138	-0.00139	-0.00139
	(!A2 * !B1 * !C1 * D1 * Y)	0.00110	0.00112	0.00111
	(!A2 * !B1 * !C1 * D1 * Y)	-0.00138	-0.00139	-0.00139

sky130_fd_sc_hs__o2111ai_2	**(A2 * B1 * C1 * D1 * !Y)**	0.00258	0.00230	0.00228
	(A2 * B1 * C1 * D1 * !Y)	-0.00239	-0.00274	-0.00275
	(A2 * B1 * C1 * !D1 * Y)	0.00227	0.00228	0.00227
	(A2 * B1 * C1 * !D1 * Y)	-0.00268	-0.00276	-0.00275
	(A2 * B1 * !C1 * Y)	0.00227	0.00228	0.00227
	(A2 * B1 * !C1 * Y)	-0.00268	-0.00276	-0.00275
	(A2 * !B1 * Y)	0.00227	0.00228	0.00227
	(A2 * !B1 * Y)	-0.00268	-0.00276	-0.00275
	(!A2 * B1 * C1 * !D1 * Y)	0.00209	0.00211	0.00208
	(!A2 * B1 * C1 * !D1 * Y)	-0.00281	-0.00282	-0.00280
	(!A2 * B1 * !C1 * D1 * Y)	0.00211	0.00211	0.00210
	(!A2 * B1 * !C1 * D1 * Y)	-0.00281	-0.00281	-0.00280
	(!A2 * B1 * !C1 * !D1 * Y)	0.00211	0.00212	0.00210
	(!A2 * B1 * !C1 * !D1 * Y)	-0.00281	-0.00281	-0.00280
	(!A2 * !B1 * C1 * D1 * Y)	0.00213	0.00215	0.00213
	(!A2 * !B1 * C1 * D1 * Y)	-0.00279	-0.00281	-0.00280
	(!A2 * !B1 * !D1 * Y)	0.00213	0.00215	0.00213
	(!A2 * !B1 * !D1 * Y)	-0.00279	-0.00281	-0.00280
	(!A2 * !B1 * !C1 * D1 * Y)	0.00213	0.00215	0.00213
	(!A2 * !B1 * !C1 * D1 * Y)	-0.00279	-0.00281	-0.00280

sky130_fd_sc_hs__o2111ai_4	**(A2 * B1 * C1 * D1 * !Y)**	0.00515	0.00467	0.00462
	(A2 * B1 * C1 * D1 * !Y)	-0.00468	-0.00532	-0.00532
	(A2 * B1 * C1 * !D1 * Y)	0.00442	0.00446	0.00444
	(A2 * B1 * C1 * !D1 * Y)	-0.00537	-0.00553	-0.00551
	(A2 * B1 * !C1 * Y)	0.00442	0.00446	0.00444
	(A2 * B1 * !C1 * Y)	-0.00537	-0.00553	-0.00551
	(A2 * !B1 * Y)	0.00444	0.00446	0.00444
	(A2 * !B1 * Y)	-0.00538	-0.00553	-0.00551
	(!A2 * B1 * C1 * !D1 * Y)	0.00404	0.00407	0.00403
	(!A2 * B1 * C1 * !D1 * Y)	-0.00559	-0.00563	-0.00558
	(!A2 * B1 * !C1 * D1 * Y)	0.00407	0.00410	0.00406
	(!A2 * B1 * !C1 * D1 * Y)	-0.00559	-0.00562	-0.00558
	(!A2 * B1 * !C1 * !D1 * Y)	0.00407	0.00408	0.00406
	(!A2 * B1 * !C1 * !D1 * Y)	-0.00559	-0.00560	-0.00558
	(!A2 * !B1 * C1 * D1 * Y)	0.00415	0.00420	0.00415
	(!A2 * !B1 * C1 * D1 * Y)	-0.00558	-0.00562	-0.00558
	(!A2 * !B1 * !D1 * Y)	0.00413	0.00416	0.00413
	(!A2 * !B1 * !D1 * Y)	-0.00558	-0.00560	-0.00558
	(!A2 * !B1 * !C1 * D1 * Y)	0.00414	0.00418	0.00415
	(!A2 * !B1 * !C1 * D1 * Y)	-0.00558	-0.00561	-0.00558

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)**	-0.00117	-0.00118	-0.00117
	(A2 * B1 * C1 * D1 * !Y)	0.00136	0.00138	0.00137
	(A2 * B1 * C1 * !D1 * Y)	-0.00117	-0.00117	-0.00117
	(A2 * B1 * C1 * !D1 * Y)	0.00136	0.00137	0.00137
	(A2 * B1 * !C1 * Y)	-0.00117	-0.00117	-0.00117
	(A2 * B1 * !C1 * Y)	0.00136	0.00138	0.00137
	(A2 * !B1 * Y)	-0.00117	-0.00117	-0.00117
	(A2 * !B1 * Y)	0.00137	0.00137	0.00137
	(!A2 * B1 * C1 * !D1 * Y)	-0.00099	-0.00109	-0.00108
	(!A2 * B1 * C1 * !D1 * Y)	0.00139	0.00141	0.00139
	(!A2 * B1 * !C1 * D1 * Y)	-0.00101	-0.00109	-0.00109
	(!A2 * B1 * !C1 * D1 * Y)	0.00139	0.00139	0.00139
	(!A2 * B1 * !C1 * !D1 * Y)	-0.00101	-0.00109	-0.00109
	(!A2 * B1 * !C1 * !D1 * Y)	0.00139	0.00139	0.00139
	(!A2 * !B1 * C1 * D1 * Y)	-0.00106	-0.00110	-0.00110
	(!A2 * !B1 * C1 * D1 * Y)	0.00139	0.00139	0.00139
	(!A2 * !B1 * !D1 * Y)	-0.00106	-0.00111	-0.00110
	(!A2 * !B1 * !D1 * Y)	0.00139	0.00139	0.00139
	(!A2 * !B1 * !C1 * D1 * Y)	-0.00106	-0.00112	-0.00111
	(!A2 * !B1 * !C1 * D1 * Y)	0.00139	0.00139	0.00139

sky130_fd_sc_hs__o2111ai_2	**(A2 * B1 * C1 * D1 * !Y)**	-0.00227	-0.00228	-0.00226
	(A2 * B1 * C1 * D1 * !Y)	0.00275	0.00277	0.00275
	(A2 * B1 * C1 * !D1 * Y)	-0.00227	-0.00227	-0.00226
	(A2 * B1 * C1 * !D1 * Y)	0.00275	0.00278	0.00275
	(A2 * B1 * !C1 * Y)	-0.00227	-0.00227	-0.00226
	(A2 * B1 * !C1 * Y)	0.00275	0.00278	0.00275
	(A2 * !B1 * Y)	-0.00225	-0.00228	-0.00226
	(A2 * !B1 * Y)	0.00274	0.00279	0.00275
	(!A2 * B1 * C1 * !D1 * Y)	-0.00191	-0.00210	-0.00208
	(!A2 * B1 * C1 * !D1 * Y)	0.00281	0.00282	0.00281
	(!A2 * B1 * !C1 * D1 * Y)	-0.00194	-0.00211	-0.00210
	(!A2 * B1 * !C1 * D1 * Y)	0.00281	0.00283	0.00281
	(!A2 * B1 * !C1 * !D1 * Y)	-0.00194	-0.00211	-0.00210
	(!A2 * B1 * !C1 * !D1 * Y)	0.00281	0.00283	0.00281
	(!A2 * !B1 * C1 * D1 * Y)	-0.00201	-0.00214	-0.00213
	(!A2 * !B1 * C1 * D1 * Y)	0.00279	0.00283	0.00281
	(!A2 * !B1 * !D1 * Y)	-0.00201	-0.00214	-0.00213
	(!A2 * !B1 * !D1 * Y)	0.00279	0.00283	0.00281
	(!A2 * !B1 * !C1 * D1 * Y)	-0.00201	-0.00214	-0.00213
	(!A2 * !B1 * !C1 * D1 * Y)	0.00279	0.00283	0.00281

sky130_fd_sc_hs__o2111ai_4	**(A2 * B1 * C1 * D1 * !Y)**	-0.00463	-0.00464	-0.00462
	(A2 * B1 * C1 * D1 * !Y)	0.00532	0.00535	0.00532
	(A2 * B1 * C1 * !D1 * Y)	-0.00442	-0.00445	-0.00443
	(A2 * B1 * C1 * !D1 * Y)	0.00552	0.00555	0.00551
	(A2 * B1 * !C1 * Y)	-0.00442	-0.00445	-0.00443
	(A2 * B1 * !C1 * Y)	0.00552	0.00555	0.00551
	(A2 * !B1 * Y)	-0.00441	-0.00445	-0.00443
	(A2 * !B1 * Y)	0.00548	0.00555	0.00551
	(!A2 * B1 * C1 * !D1 * Y)	-0.00369	-0.00407	-0.00403
	(!A2 * B1 * C1 * !D1 * Y)	0.00559	0.00563	0.00560
	(!A2 * B1 * !C1 * D1 * Y)	-0.00376	-0.00410	-0.00406
	(!A2 * B1 * !C1 * D1 * Y)	0.00559	0.00562	0.00560
	(!A2 * B1 * !C1 * !D1 * Y)	-0.00376	-0.00408	-0.00406
	(!A2 * B1 * !C1 * !D1 * Y)	0.00559	0.00562	0.00560
	(!A2 * !B1 * C1 * D1 * Y)	-0.00392	-0.00418	-0.00415
	(!A2 * !B1 * C1 * D1 * Y)	0.00558	0.00562	0.00560
	(!A2 * !B1 * !D1 * Y)	-0.00393	-0.00416	-0.00413
	(!A2 * !B1 * !D1 * Y)	0.00558	0.00561	0.00560
	(!A2 * !B1 * !C1 * D1 * Y)	-0.00393	-0.00418	-0.00415
	(!A2 * !B1 * !C1 * D1 * Y)	0.00558	0.00561	0.00560

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)**	0.00127	0.00130	0.00127
	(A1 * B1 * C1 * D1 * !Y)	-0.00068	-0.00070	-0.00069
	(A1 * B1 * C1 * !D1 * Y)	0.00114	0.00115	0.00114
	(A1 * B1 * C1 * !D1 * Y)	-0.00132	-0.00135	-0.00134
	(A1 * B1 * !C1 * D1 * Y)	0.00114	0.00115	0.00114
	(A1 * B1 * !C1 * D1 * Y)	-0.00132	-0.00135	-0.00134
	(A1 * B1 * !C1 * !D1 * Y)	0.00114	0.00115	0.00114
	(A1 * B1 * !C1 * !D1 * Y)	-0.00132	-0.00134	-0.00135
	(A1 * !B1 * C1 * D1 * Y)	0.00114	0.00115	0.00114
	(A1 * !B1 * C1 * D1 * Y)	-0.00132	-0.00135	-0.00134
	(A1 * !B1 * !D1 * Y)	0.00114	0.00115	0.00114
	(A1 * !B1 * !D1 * Y)	-0.00132	-0.00135	-0.00135
	(A1 * !B1 * !C1 * D1 * Y)	0.00114	0.00115	0.00114
	(A1 * !B1 * !C1 * D1 * Y)	-0.00132	-0.00135	-0.00135
	(!A1 * B1 * C1 * !D1 * Y)	0.00105	0.00106	0.00105
	(!A1 * B1 * C1 * !D1 * Y)	-0.00137	-0.00138	-0.00137
	(!A1 * B1 * !C1 * D1 * Y)	0.00106	0.00107	0.00106
	(!A1 * B1 * !C1 * D1 * Y)	-0.00136	-0.00137	-0.00137
	(!A1 * B1 * !C1 * !D1 * Y)	0.00106	0.00107	0.00106
	(!A1 * B1 * !C1 * !D1 * Y)	-0.00136	-0.00137	-0.00137
	(!A1 * !B1 * C1 * D1 * Y)	0.00107	0.00109	0.00107
	(!A1 * !B1 * C1 * D1 * Y)	-0.00136	-0.00137	-0.00137
	(!A1 * !B1 * !D1 * Y)	0.00107	0.00108	0.00107
	(!A1 * !B1 * !D1 * Y)	-0.00136	-0.00137	-0.00137
	(!A1 * !B1 * !C1 * D1 * Y)	0.00107	0.00108	0.00107
	(!A1 * !B1 * !C1 * D1 * Y)	-0.00136	-0.00137	-0.00137

sky130_fd_sc_hs__o2111ai_2	**(A1 * B1 * C1 * D1 * !Y)**	0.00247	0.00252	0.00248
	(A1 * B1 * C1 * D1 * !Y)	-0.00140	-0.00143	-0.00140
	(A1 * B1 * C1 * !D1 * Y)	0.00221	0.00224	0.00222
	(A1 * B1 * C1 * !D1 * Y)	-0.00264	-0.00270	-0.00271
	(A1 * B1 * !C1 * D1 * Y)	0.00221	0.00224	0.00222
	(A1 * B1 * !C1 * D1 * Y)	-0.00264	-0.00272	-0.00271
	(A1 * B1 * !C1 * !D1 * Y)	0.00221	0.00223	0.00222
	(A1 * B1 * !C1 * !D1 * Y)	-0.00264	-0.00273	-0.00271
	(A1 * !B1 * C1 * D1 * Y)	0.00221	0.00224	0.00222
	(A1 * !B1 * C1 * D1 * Y)	-0.00264	-0.00272	-0.00271
	(A1 * !B1 * !D1 * Y)	0.00221	0.00223	0.00222
	(A1 * !B1 * !D1 * Y)	-0.00264	-0.00273	-0.00271
	(A1 * !B1 * !C1 * D1 * Y)	0.00221	0.00223	0.00222
	(A1 * !B1 * !C1 * D1 * Y)	-0.00264	-0.00273	-0.00271
	(!A1 * B1 * C1 * !D1 * Y)	0.00202	0.00205	0.00203
	(!A1 * B1 * C1 * !D1 * Y)	-0.00276	-0.00278	-0.00276
	(!A1 * B1 * !C1 * D1 * Y)	0.00204	0.00205	0.00205
	(!A1 * B1 * !C1 * D1 * Y)	-0.00276	-0.00277	-0.00276
	(!A1 * B1 * !C1 * !D1 * Y)	0.00205	0.00206	0.00205
	(!A1 * B1 * !C1 * !D1 * Y)	-0.00276	-0.00277	-0.00276
	(!A1 * !B1 * C1 * D1 * Y)	0.00207	0.00210	0.00208
	(!A1 * !B1 * C1 * D1 * Y)	-0.00276	-0.00278	-0.00276
	(!A1 * !B1 * !D1 * Y)	0.00207	0.00210	0.00208
	(!A1 * !B1 * !D1 * Y)	-0.00276	-0.00277	-0.00276
	(!A1 * !B1 * !C1 * D1 * Y)	0.00208	0.00210	0.00208
	(!A1 * !B1 * !C1 * D1 * Y)	-0.00277	-0.00277	-0.00276

sky130_fd_sc_hs__o2111ai_4	**(A1 * B1 * C1 * D1 * !Y)**	0.00511	0.00511	0.00511
	(A1 * B1 * C1 * D1 * !Y)	-0.00281	-0.00280	-0.00280
	(A1 * B1 * C1 * !D1 * Y)	0.00451	0.00456	0.00451
	(A1 * B1 * C1 * !D1 * Y)	-0.00536	-0.00549	-0.00548
	(A1 * B1 * !C1 * D1 * Y)	0.00451	0.00456	0.00451
	(A1 * B1 * !C1 * D1 * Y)	-0.00536	-0.00547	-0.00548
	(A1 * B1 * !C1 * !D1 * Y)	0.00451	0.00455	0.00451
	(A1 * B1 * !C1 * !D1 * Y)	-0.00536	-0.00552	-0.00550
	(A1 * !B1 * C1 * D1 * Y)	0.00451	0.00456	0.00451
	(A1 * !B1 * C1 * D1 * Y)	-0.00537	-0.00549	-0.00548
	(A1 * !B1 * !D1 * Y)	0.00451	0.00455	0.00451
	(A1 * !B1 * !D1 * Y)	-0.00537	-0.00552	-0.00550
	(A1 * !B1 * !C1 * D1 * Y)	0.00451	0.00455	0.00451
	(A1 * !B1 * !C1 * D1 * Y)	-0.00537	-0.00552	-0.00550
	(!A1 * B1 * C1 * !D1 * Y)	0.00410	0.00412	0.00409
	(!A1 * B1 * C1 * !D1 * Y)	-0.00558	-0.00560	-0.00558
	(!A1 * B1 * !C1 * D1 * Y)	0.00413	0.00416	0.00412
	(!A1 * B1 * !C1 * D1 * Y)	-0.00558	-0.00561	-0.00558
	(!A1 * B1 * !C1 * !D1 * Y)	0.00416	0.00417	0.00415
	(!A1 * B1 * !C1 * !D1 * Y)	-0.00558	-0.00560	-0.00558
	(!A1 * !B1 * C1 * D1 * Y)	0.00421	0.00423	0.00420
	(!A1 * !B1 * C1 * D1 * Y)	-0.00556	-0.00560	-0.00558
	(!A1 * !B1 * !D1 * Y)	0.00422	0.00426	0.00421
	(!A1 * !B1 * !D1 * Y)	-0.00556	-0.00561	-0.00558
	(!A1 * !B1 * !C1 * D1 * Y)	0.00422	0.00426	0.00421
	(!A1 * !B1 * !C1 * D1 * Y)	-0.00556	-0.00561	-0.00558

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)**	-0.00122	-0.00123	-0.00127
	(A1 * B1 * C1 * D1 * !Y)	0.00074	0.00074	0.00070
	(A1 * B1 * C1 * !D1 * Y)	-0.00114	-0.00114	-0.00114
	(A1 * B1 * C1 * !D1 * Y)	0.00135	0.00135	0.00134
	(A1 * B1 * !C1 * D1 * Y)	-0.00114	-0.00114	-0.00114
	(A1 * B1 * !C1 * D1 * Y)	0.00135	0.00135	0.00134
	(A1 * B1 * !C1 * !D1 * Y)	-0.00114	-0.00114	-0.00114
	(A1 * B1 * !C1 * !D1 * Y)	0.00135	0.00134	0.00135
	(A1 * !B1 * C1 * D1 * Y)	-0.00114	-0.00114	-0.00114
	(A1 * !B1 * C1 * D1 * Y)	0.00134	0.00135	0.00134
	(A1 * !B1 * !D1 * Y)	-0.00114	-0.00114	-0.00114
	(A1 * !B1 * !D1 * Y)	0.00135	0.00135	0.00135
	(A1 * !B1 * !C1 * D1 * Y)	-0.00114	-0.00114	-0.00114
	(A1 * !B1 * !C1 * D1 * Y)	0.00135	0.00135	0.00135
	(!A1 * B1 * C1 * !D1 * Y)	-0.00096	-0.00106	-0.00105
	(!A1 * B1 * C1 * !D1 * Y)	0.00137	0.00139	0.00137
	(!A1 * B1 * !C1 * D1 * Y)	-0.00098	-0.00107	-0.00106
	(!A1 * B1 * !C1 * D1 * Y)	0.00136	0.00137	0.00137
	(!A1 * B1 * !C1 * !D1 * Y)	-0.00098	-0.00107	-0.00106
	(!A1 * B1 * !C1 * !D1 * Y)	0.00136	0.00137	0.00137
	(!A1 * !B1 * C1 * D1 * Y)	-0.00103	-0.00109	-0.00107
	(!A1 * !B1 * C1 * D1 * Y)	0.00137	0.00137	0.00137
	(!A1 * !B1 * !D1 * Y)	-0.00103	-0.00108	-0.00107
	(!A1 * !B1 * !D1 * Y)	0.00137	0.00137	0.00137
	(!A1 * !B1 * !C1 * D1 * Y)	-0.00103	-0.00108	-0.00107
	(!A1 * !B1 * !C1 * D1 * Y)	0.00137	0.00137	0.00137

sky130_fd_sc_hs__o2111ai_2	**(A1 * B1 * C1 * D1 * !Y)**	-0.00232	-0.00233	-0.00246
	(A1 * B1 * C1 * D1 * !Y)	0.00156	0.00155	0.00144
	(A1 * B1 * C1 * !D1 * Y)	-0.00221	-0.00221	-0.00221
	(A1 * B1 * C1 * !D1 * Y)	0.00272	0.00270	0.00271
	(A1 * B1 * !C1 * D1 * Y)	-0.00220	-0.00222	-0.00221
	(A1 * B1 * !C1 * D1 * Y)	0.00269	0.00272	0.00271
	(A1 * B1 * !C1 * !D1 * Y)	-0.00221	-0.00222	-0.00221
	(A1 * B1 * !C1 * !D1 * Y)	0.00270	0.00273	0.00271
	(A1 * !B1 * C1 * D1 * Y)	-0.00221	-0.00222	-0.00221
	(A1 * !B1 * C1 * D1 * Y)	0.00270	0.00272	0.00271
	(A1 * !B1 * !D1 * Y)	-0.00221	-0.00222	-0.00221
	(A1 * !B1 * !D1 * Y)	0.00270	0.00273	0.00271
	(A1 * !B1 * !C1 * D1 * Y)	-0.00221	-0.00222	-0.00221
	(A1 * !B1 * !C1 * D1 * Y)	0.00270	0.00273	0.00271
	(!A1 * B1 * C1 * !D1 * Y)	-0.00185	-0.00205	-0.00203
	(!A1 * B1 * C1 * !D1 * Y)	0.00276	0.00278	0.00277
	(!A1 * B1 * !C1 * D1 * Y)	-0.00188	-0.00205	-0.00205
	(!A1 * B1 * !C1 * D1 * Y)	0.00276	0.00278	0.00277
	(!A1 * B1 * !C1 * !D1 * Y)	-0.00188	-0.00206	-0.00205
	(!A1 * B1 * !C1 * !D1 * Y)	0.00276	0.00278	0.00277
	(!A1 * !B1 * C1 * D1 * Y)	-0.00197	-0.00209	-0.00208
	(!A1 * !B1 * C1 * D1 * Y)	0.00278	0.00278	0.00277
	(!A1 * !B1 * !D1 * Y)	-0.00198	-0.00209	-0.00208
	(!A1 * !B1 * !D1 * Y)	0.00278	0.00277	0.00277
	(!A1 * !B1 * !C1 * D1 * Y)	-0.00198	-0.00209	-0.00208
	(!A1 * !B1 * !C1 * D1 * Y)	0.00278	0.00277	0.00277

sky130_fd_sc_hs__o2111ai_4	**(A1 * B1 * C1 * D1 * !Y)**	-0.00478	-0.00479	-0.00507
	(A1 * B1 * C1 * D1 * !Y)	0.00313	0.00311	0.00289
	(A1 * B1 * C1 * !D1 * Y)	-0.00451	-0.00451	-0.00450
	(A1 * B1 * C1 * !D1 * Y)	0.00549	0.00549	0.00548
	(A1 * B1 * !C1 * D1 * Y)	-0.00451	-0.00450	-0.00450
	(A1 * B1 * !C1 * D1 * Y)	0.00549	0.00547	0.00548
	(A1 * B1 * !C1 * !D1 * Y)	-0.00451	-0.00452	-0.00450
	(A1 * B1 * !C1 * !D1 * Y)	0.00550	0.00552	0.00550
	(A1 * !B1 * C1 * D1 * Y)	-0.00451	-0.00451	-0.00450
	(A1 * !B1 * C1 * D1 * Y)	0.00550	0.00549	0.00548
	(A1 * !B1 * !D1 * Y)	-0.00447	-0.00452	-0.00450
	(A1 * !B1 * !D1 * Y)	0.00545	0.00552	0.00550
	(A1 * !B1 * !C1 * D1 * Y)	-0.00447	-0.00452	-0.00450
	(A1 * !B1 * !C1 * D1 * Y)	0.00545	0.00552	0.00550
	(!A1 * B1 * C1 * !D1 * Y)	-0.00377	-0.00412	-0.00409
	(!A1 * B1 * C1 * !D1 * Y)	0.00558	0.00563	0.00560
	(!A1 * B1 * !C1 * D1 * Y)	-0.00383	-0.00416	-0.00412
	(!A1 * B1 * !C1 * D1 * Y)	0.00558	0.00561	0.00560
	(!A1 * B1 * !C1 * !D1 * Y)	-0.00383	-0.00417	-0.00415
	(!A1 * B1 * !C1 * !D1 * Y)	0.00558	0.00562	0.00560
	(!A1 * !B1 * C1 * D1 * Y)	-0.00397	-0.00423	-0.00420
	(!A1 * !B1 * C1 * D1 * Y)	0.00556	0.00564	0.00560
	(!A1 * !B1 * !D1 * Y)	-0.00398	-0.00425	-0.00421
	(!A1 * !B1 * !D1 * Y)	0.00556	0.00561	0.00560
	(!A1 * !B1 * !C1 * D1 * Y)	-0.00398	-0.00425	-0.00421
	(!A1 * !B1 * !C1 * D1 * Y)	0.00556	0.00561	0.00560

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)**	0.00101	0.00102	0.00101
	(A2 * C1 * !D1 * Y)	-0.00138	-0.00139	-0.00138
	(A2 * !C1 * D1 * Y)	0.00104	0.00106	0.00105
	(A2 * !C1 * D1 * Y)	-0.00138	-0.00139	-0.00138
	(A2 * !C1 * !D1 * Y)	0.00104	0.00105	0.00105
	(A2 * !C1 * !D1 * Y)	-0.00138	-0.00138	-0.00138
	(A1 * !A2 * C1 * !D1 * Y)	0.00102	0.00103	0.00103
	(A1 * !A2 * C1 * !D1 * Y)	-0.00138	-0.00139	-0.00138
	(A1 * !A2 * !C1 * D1 * Y)	0.00105	0.00105	0.00105
	(A1 * !A2 * !C1 * D1 * Y)	-0.00139	-0.00139	-0.00138
	(A1 * !A2 * !C1 * !D1 * Y)	0.00105	0.00106	0.00105
	(A1 * !A2 * !C1 * !D1 * Y)	-0.00139	-0.00139	-0.00138
	(!A1 * !A2 * C1 * D1 * Y)	0.00052	0.00052	0.00052
	(!A1 * !A2 * C1 * D1 * Y)	-0.00135	-0.00135	-0.00134
	(!A1 * !A2 * C1 * !D1 * Y)	0.00060	0.00060	0.00059
	(!A1 * !A2 * C1 * !D1 * Y)	-0.00139	-0.00139	-0.00138
	(!A1 * !A2 * !C1 * D1 * Y)	0.00063	0.00063	0.00063
	(!A1 * !A2 * !C1 * D1 * Y)	-0.00139	-0.00139	-0.00138
	(!A1 * !A2 * !C1 * !D1 * Y)	0.00064	0.00065	0.00064
	(!A1 * !A2 * !C1 * !D1 * Y)	-0.00138	-0.00139	-0.00138

sky130_fd_sc_hs__o2111ai_2	**(A2 * C1 * !D1 * Y)**	0.00218	0.00219	0.00217
	(A2 * C1 * !D1 * Y)	-0.00288	-0.00288	-0.00287
	(A2 * !C1 * D1 * Y)	0.00222	0.00223	0.00222
	(A2 * !C1 * D1 * Y)	-0.00287	-0.00288	-0.00287
	(A2 * !C1 * !D1 * Y)	0.00222	0.00224	0.00222
	(A2 * !C1 * !D1 * Y)	-0.00287	-0.00288	-0.00287
	(A1 * !A2 * C1 * !D1 * Y)	0.00216	0.00218	0.00217
	(A1 * !A2 * C1 * !D1 * Y)	-0.00286	-0.00288	-0.00287
	(A1 * !A2 * !C1 * D1 * Y)	0.00222	0.00222	0.00222
	(A1 * !A2 * !C1 * D1 * Y)	-0.00286	-0.00287	-0.00287
	(A1 * !A2 * !C1 * !D1 * Y)	0.00222	0.00224	0.00222
	(A1 * !A2 * !C1 * !D1 * Y)	-0.00287	-0.00289	-0.00287
	(!A1 * !A2 * C1 * D1 * Y)	0.00109	0.00111	0.00112
	(!A1 * !A2 * C1 * D1 * Y)	-0.00279	-0.00282	-0.00278
	(!A1 * !A2 * C1 * !D1 * Y)	0.00127	0.00128	0.00127
	(!A1 * !A2 * C1 * !D1 * Y)	-0.00287	-0.00288	-0.00287
	(!A1 * !A2 * !C1 * D1 * Y)	0.00130	0.00131	0.00130
	(!A1 * !A2 * !C1 * D1 * Y)	-0.00287	-0.00287	-0.00287
	(!A1 * !A2 * !C1 * !D1 * Y)	0.00134	0.00134	0.00133
	(!A1 * !A2 * !C1 * !D1 * Y)	-0.00286	-0.00287	-0.00287

sky130_fd_sc_hs__o2111ai_4	**(A2 * C1 * !D1 * Y)**	0.00417	0.00420	0.00418
	(A2 * C1 * !D1 * Y)	-0.00299	-0.00301	-0.00300
	(A2 * !C1 * D1 * Y)	0.00424	0.00427	0.00426
	(A2 * !C1 * D1 * Y)	-0.00299	-0.00300	-0.00300
	(A2 * !C1 * !D1 * Y)	0.00423	0.00429	0.00425
	(A2 * !C1 * !D1 * Y)	-0.00299	-0.00301	-0.00300
	(A1 * !A2 * C1 * !D1 * Y)	0.00416	0.00419	0.00417
	(A1 * !A2 * C1 * !D1 * Y)	-0.00300	-0.00301	-0.00300
	(A1 * !A2 * !C1 * D1 * Y)	0.00423	0.00426	0.00425
	(A1 * !A2 * !C1 * D1 * Y)	-0.00299	-0.00300	-0.00300
	(A1 * !A2 * !C1 * !D1 * Y)	0.00423	0.00427	0.00425
	(A1 * !A2 * !C1 * !D1 * Y)	-0.00299	-0.00301	-0.00300
	(!A1 * !A2 * C1 * D1 * Y)	0.00203	0.00203	0.00205
	(!A1 * !A2 * C1 * D1 * Y)	-0.00286	-0.00286	-0.00283
	(!A1 * !A2 * C1 * !D1 * Y)	0.00235	0.00235	0.00233
	(!A1 * !A2 * C1 * !D1 * Y)	-0.00302	-0.00303	-0.00302
	(!A1 * !A2 * !C1 * D1 * Y)	0.00242	0.00242	0.00240
	(!A1 * !A2 * !C1 * D1 * Y)	-0.00301	-0.00302	-0.00300
	(!A1 * !A2 * !C1 * !D1 * Y)	0.00246	0.00248	0.00246
	(!A1 * !A2 * !C1 * !D1 * Y)	-0.00299	-0.00302	-0.00300

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)**	-0.00094	-0.00102	-0.00101
	(A2 * C1 * !D1 * Y)	0.00138	0.00139	0.00139
	(A2 * !C1 * D1 * Y)	-0.00100	-0.00105	-0.00105
	(A2 * !C1 * D1 * Y)	0.00138	0.00140	0.00139
	(A2 * !C1 * !D1 * Y)	-0.00100	-0.00105	-0.00105
	(A2 * !C1 * !D1 * Y)	0.00138	0.00140	0.00139
	(A1 * !A2 * C1 * !D1 * Y)	-0.00092	-0.00103	-0.00103
	(A1 * !A2 * C1 * !D1 * Y)	0.00138	0.00140	0.00139
	(A1 * !A2 * !C1 * D1 * Y)	-0.00100	-0.00105	-0.00105
	(A1 * !A2 * !C1 * D1 * Y)	0.00139	0.00140	0.00139
	(A1 * !A2 * !C1 * !D1 * Y)	-0.00101	-0.00105	-0.00105
	(A1 * !A2 * !C1 * !D1 * Y)	0.00139	0.00140	0.00139
	(!A1 * !A2 * C1 * D1 * Y)	-0.00048	-0.00049	-0.00049
	(!A1 * !A2 * C1 * D1 * Y)	0.00139	0.00142	0.00139
	(!A1 * !A2 * C1 * !D1 * Y)	-0.00060	-0.00060	-0.00059
	(!A1 * !A2 * C1 * !D1 * Y)	0.00139	0.00141	0.00138
	(!A1 * !A2 * !C1 * D1 * Y)	-0.00063	-0.00063	-0.00063
	(!A1 * !A2 * !C1 * D1 * Y)	0.00139	0.00141	0.00139
	(!A1 * !A2 * !C1 * !D1 * Y)	-0.00064	-0.00065	-0.00064
	(!A1 * !A2 * !C1 * !D1 * Y)	0.00138	0.00140	0.00139

sky130_fd_sc_hs__o2111ai_2	**(A2 * C1 * !D1 * Y)**	-0.00202	-0.00219	-0.00217
	(A2 * C1 * !D1 * Y)	0.00289	0.00290	0.00288
	(A2 * !C1 * D1 * Y)	-0.00212	-0.00223	-0.00222
	(A2 * !C1 * D1 * Y)	0.00287	0.00291	0.00288
	(A2 * !C1 * !D1 * Y)	-0.00213	-0.00224	-0.00222
	(A2 * !C1 * !D1 * Y)	0.00287	0.00291	0.00288
	(A1 * !A2 * C1 * !D1 * Y)	-0.00198	-0.00218	-0.00217
	(A1 * !A2 * C1 * !D1 * Y)	0.00289	0.00290	0.00288
	(A1 * !A2 * !C1 * D1 * Y)	-0.00211	-0.00222	-0.00222
	(A1 * !A2 * !C1 * D1 * Y)	0.00286	0.00291	0.00288
	(A1 * !A2 * !C1 * !D1 * Y)	-0.00212	-0.00224	-0.00222
	(A1 * !A2 * !C1 * !D1 * Y)	0.00287	0.00291	0.00288
	(!A1 * !A2 * C1 * D1 * Y)	-0.00103	-0.00104	-0.00104
	(!A1 * !A2 * C1 * D1 * Y)	0.00287	0.00288	0.00288
	(!A1 * !A2 * C1 * !D1 * Y)	-0.00127	-0.00128	-0.00127
	(!A1 * !A2 * C1 * !D1 * Y)	0.00287	0.00293	0.00288
	(!A1 * !A2 * !C1 * D1 * Y)	-0.00130	-0.00131	-0.00130
	(!A1 * !A2 * !C1 * D1 * Y)	0.00290	0.00287	0.00288
	(!A1 * !A2 * !C1 * !D1 * Y)	-0.00134	-0.00134	-0.00133
	(!A1 * !A2 * !C1 * !D1 * Y)	0.00286	0.00287	0.00288

sky130_fd_sc_hs__o2111ai_4	**(A2 * C1 * !D1 * Y)**	-0.00382	-0.00420	-0.00418
	(A2 * C1 * !D1 * Y)	0.00302	0.00303	0.00301
	(A2 * !C1 * D1 * Y)	-0.00406	-0.00427	-0.00426
	(A2 * !C1 * D1 * Y)	0.00301	0.00304	0.00301
	(A2 * !C1 * !D1 * Y)	-0.00409	-0.00429	-0.00425
	(A2 * !C1 * !D1 * Y)	0.00301	0.00304	0.00301
	(A1 * !A2 * C1 * !D1 * Y)	-0.00377	-0.00419	-0.00417
	(A1 * !A2 * C1 * !D1 * Y)	0.00303	0.00304	0.00301
	(A1 * !A2 * !C1 * D1 * Y)	-0.00403	-0.00426	-0.00425
	(A1 * !A2 * !C1 * D1 * Y)	0.00300	0.00303	0.00301
	(A1 * !A2 * !C1 * !D1 * Y)	-0.00407	-0.00427	-0.00425
	(A1 * !A2 * !C1 * !D1 * Y)	0.00300	0.00304	0.00301
	(!A1 * !A2 * C1 * D1 * Y)	-0.00193	-0.00191	-0.00191
	(!A1 * !A2 * C1 * D1 * Y)	0.00305	0.00305	0.00302
	(!A1 * !A2 * C1 * !D1 * Y)	-0.00235	-0.00235	-0.00233
	(!A1 * !A2 * C1 * !D1 * Y)	0.00302	0.00305	0.00302
	(!A1 * !A2 * !C1 * D1 * Y)	-0.00242	-0.00242	-0.00240
	(!A1 * !A2 * !C1 * D1 * Y)	0.00303	0.00304	0.00301
	(!A1 * !A2 * !C1 * !D1 * Y)	-0.00246	-0.00248	-0.00246
	(!A1 * !A2 * !C1 * !D1 * Y)	0.00303	0.00303	0.00301

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)**	0.00107	0.00109	0.00108
	(A2 * B1 * !D1 * Y)	-0.00143	-0.00144	-0.00143
	(A2 * !B1 * D1 * Y)	0.00052	0.00052	0.00052
	(A2 * !B1 * D1 * Y)	-0.00143	-0.00143	-0.00142
	(A2 * !B1 * !D1 * Y)	0.00059	0.00059	0.00059
	(A2 * !B1 * !D1 * Y)	-0.00143	-0.00144	-0.00143
	(A1 * !A2 * B1 * !D1 * Y)	0.00107	0.00108	0.00107
	(A1 * !A2 * B1 * !D1 * Y)	-0.00142	-0.00143	-0.00143
	(!A2 * !B1 * D1 * Y)	0.00052	0.00052	0.00052
	(!A2 * !B1 * D1 * Y)	-0.00143	-0.00143	-0.00142
	(!A2 * !B1 * !D1 * Y)	0.00059	0.00059	0.00059
	(!A2 * !B1 * !D1 * Y)	-0.00143	-0.00144	-0.00143
	(!A1 * !A2 * B1 * D1 * Y)	0.00051	0.00051	0.00050
	(!A1 * !A2 * B1 * D1 * Y)	-0.00143	-0.00144	-0.00142
	(!A1 * !A2 * B1 * !D1 * Y)	0.00062	0.00063	0.00062
	(!A1 * !A2 * B1 * !D1 * Y)	-0.00143	-0.00144	-0.00143

sky130_fd_sc_hs__o2111ai_2	**(A2 * B1 * !D1 * Y)**	0.00211	0.00213	0.00211
	(A2 * B1 * !D1 * Y)	-0.00280	-0.00281	-0.00279
	(A2 * !B1 * D1 * Y)	0.00103	0.00105	0.00105
	(A2 * !B1 * D1 * Y)	-0.00278	-0.00280	-0.00278
	(A2 * !B1 * !D1 * Y)	0.00122	0.00122	0.00122
	(A2 * !B1 * !D1 * Y)	-0.00280	-0.00281	-0.00280
	(A1 * !A2 * B1 * !D1 * Y)	0.00211	0.00213	0.00211
	(A1 * !A2 * B1 * !D1 * Y)	-0.00280	-0.00281	-0.00279
	(!A2 * !B1 * D1 * Y)	0.00104	0.00105	0.00105
	(!A2 * !B1 * D1 * Y)	-0.00279	-0.00280	-0.00278
	(!A2 * !B1 * !D1 * Y)	0.00122	0.00123	0.00122
	(!A2 * !B1 * !D1 * Y)	-0.00280	-0.00281	-0.00280
	(!A1 * !A2 * B1 * D1 * Y)	0.00098	0.00099	0.00100
	(!A1 * !A2 * B1 * D1 * Y)	-0.00279	-0.00280	-0.00277
	(!A1 * !A2 * B1 * !D1 * Y)	0.00124	0.00125	0.00124
	(!A1 * !A2 * B1 * !D1 * Y)	-0.00280	-0.00282	-0.00280

sky130_fd_sc_hs__o2111ai_4	**(A2 * B1 * !D1 * Y)**	0.00419	0.00424	0.00421
	(A2 * B1 * !D1 * Y)	-0.00295	-0.00297	-0.00295
	(A2 * !B1 * D1 * Y)	0.00195	0.00196	0.00196
	(A2 * !B1 * D1 * Y)	-0.00296	-0.00296	-0.00293
	(A2 * !B1 * !D1 * Y)	0.00226	0.00226	0.00225
	(A2 * !B1 * !D1 * Y)	-0.00300	-0.00300	-0.00299
	(A1 * !A2 * B1 * !D1 * Y)	0.00418	0.00422	0.00420
	(A1 * !A2 * B1 * !D1 * Y)	-0.00294	-0.00296	-0.00295
	(!A2 * !B1 * D1 * Y)	0.00196	0.00196	0.00196
	(!A2 * !B1 * D1 * Y)	-0.00296	-0.00296	-0.00293
	(!A2 * !B1 * !D1 * Y)	0.00224	0.00226	0.00225
	(!A2 * !B1 * !D1 * Y)	-0.00298	-0.00300	-0.00299
	(!A1 * !A2 * B1 * D1 * Y)	0.00188	0.00188	0.00189
	(!A1 * !A2 * B1 * D1 * Y)	-0.00295	-0.00296	-0.00293
	(!A1 * !A2 * B1 * !D1 * Y)	0.00235	0.00236	0.00234
	(!A1 * !A2 * B1 * !D1 * Y)	-0.00299	-0.00299	-0.00298

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)**	-0.00099	-0.00108	-0.00108
	(A2 * B1 * !D1 * Y)	0.00151	0.00145	0.00144
	(A2 * !B1 * D1 * Y)	-0.00049	-0.00050	-0.00050
	(A2 * !B1 * D1 * Y)	0.00146	0.00149	0.00144
	(A2 * !B1 * !D1 * Y)	-0.00059	-0.00059	-0.00059
	(A2 * !B1 * !D1 * Y)	0.00150	0.00152	0.00145
	(A1 * !A2 * B1 * !D1 * Y)	-0.00098	-0.00108	-0.00107
	(A1 * !A2 * B1 * !D1 * Y)	0.00151	0.00145	0.00144
	(!A2 * !B1 * D1 * Y)	-0.00049	-0.00050	-0.00050
	(!A2 * !B1 * D1 * Y)	0.00146	0.00149	0.00144
	(!A2 * !B1 * !D1 * Y)	-0.00059	-0.00059	-0.00059
	(!A2 * !B1 * !D1 * Y)	0.00150	0.00152	0.00145
	(!A1 * !A2 * B1 * D1 * Y)	-0.00047	-0.00047	-0.00048
	(!A1 * !A2 * B1 * D1 * Y)	0.00146	0.00146	0.00144
	(!A1 * !A2 * B1 * !D1 * Y)	-0.00062	-0.00063	-0.00062
	(!A1 * !A2 * B1 * !D1 * Y)	0.00150	0.00148	0.00143

sky130_fd_sc_hs__o2111ai_2	**(A2 * B1 * !D1 * Y)**	-0.00191	-0.00213	-0.00211
	(A2 * B1 * !D1 * Y)	0.00294	0.00283	0.00280
	(A2 * !B1 * D1 * Y)	-0.00097	-0.00099	-0.00100
	(A2 * !B1 * D1 * Y)	0.00288	0.00293	0.00282
	(A2 * !B1 * !D1 * Y)	-0.00122	-0.00122	-0.00122
	(A2 * !B1 * !D1 * Y)	0.00294	0.00295	0.00283
	(A1 * !A2 * B1 * !D1 * Y)	-0.00189	-0.00213	-0.00211
	(A1 * !A2 * B1 * !D1 * Y)	0.00296	0.00284	0.00280
	(!A2 * !B1 * D1 * Y)	-0.00097	-0.00099	-0.00100
	(!A2 * !B1 * D1 * Y)	0.00288	0.00293	0.00282
	(!A2 * !B1 * !D1 * Y)	-0.00122	-0.00123	-0.00122
	(!A2 * !B1 * !D1 * Y)	0.00294	0.00295	0.00283
	(!A1 * !A2 * B1 * D1 * Y)	-0.00094	-0.00096	-0.00097
	(!A1 * !A2 * B1 * D1 * Y)	0.00288	0.00293	0.00282
	(!A1 * !A2 * B1 * !D1 * Y)	-0.00124	-0.00125	-0.00124
	(!A1 * !A2 * B1 * !D1 * Y)	0.00290	0.00283	0.00280

sky130_fd_sc_hs__o2111ai_4	**(A2 * B1 * !D1 * Y)**	-0.00371	-0.00424	-0.00421
	(A2 * B1 * !D1 * Y)	0.00330	0.00300	0.00296
	(A2 * !B1 * D1 * Y)	-0.00182	-0.00186	-0.00188
	(A2 * !B1 * D1 * Y)	0.00313	0.00317	0.00300
	(A2 * !B1 * !D1 * Y)	-0.00226	-0.00226	-0.00225
	(A2 * !B1 * !D1 * Y)	0.00329	0.00330	0.00305
	(A1 * !A2 * B1 * !D1 * Y)	-0.00372	-0.00422	-0.00420
	(A1 * !A2 * B1 * !D1 * Y)	0.00334	0.00298	0.00296
	(!A2 * !B1 * D1 * Y)	-0.00182	-0.00186	-0.00188
	(!A2 * !B1 * D1 * Y)	0.00313	0.00317	0.00300
	(!A2 * !B1 * !D1 * Y)	-0.00224	-0.00226	-0.00225
	(!A2 * !B1 * !D1 * Y)	0.00329	0.00330	0.00305
	(!A1 * !A2 * B1 * D1 * Y)	-0.00178	-0.00181	-0.00183
	(!A1 * !A2 * B1 * D1 * Y)	0.00312	0.00317	0.00300
	(!A1 * !A2 * B1 * !D1 * Y)	-0.00235	-0.00236	-0.00234
	(!A1 * !A2 * B1 * !D1 * Y)	0.00327	0.00307	0.00298

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

Cell Name	When	Power(pJ)		
		first	**mid**	**last**
sky130_fd_sc_hs__o2111ai_1	**(A2 * !C1 * Y)**	0.00039	0.00039	0.00037
	(A2 * !C1 * Y)	-0.00166	-0.00166	-0.00168
	(A2 * !B1 * C1 * Y)	0.00040	0.00040	0.00037
	(A2 * !B1 * C1 * Y)	-0.00161	-0.00162	-0.00168
	(!A2 * !C1 * Y)	0.00038	0.00039	0.00037
	(!A2 * !C1 * Y)	-0.00164	-0.00166	-0.00168
	(!A2 * !B1 * C1 * Y)	0.00040	0.00040	0.00037
	(!A2 * !B1 * C1 * Y)	-0.00160	-0.00162	-0.00168
	(!A1 * !A2 * B1 * C1 * Y)	0.00044	0.00044	0.00038
	(!A1 * !A2 * B1 * C1 * Y)	-0.00153	-0.00154	-0.00166

sky130_fd_sc_hs__o2111ai_2	**(A2 * !C1 * Y)**	0.00088	0.00089	0.00084
	(A2 * !C1 * Y)	-0.00314	-0.00318	-0.00323
	(A2 * !B1 * C1 * Y)	0.00090	0.00090	0.00081
	(A2 * !B1 * C1 * Y)	-0.00304	-0.00308	-0.00322
	(!A2 * !C1 * Y)	0.00088	0.00089	0.00084
	(!A2 * !C1 * Y)	-0.00314	-0.00318	-0.00323
	(!A2 * !B1 * C1 * Y)	0.00089	0.00090	0.00081
	(!A2 * !B1 * C1 * Y)	-0.00304	-0.00308	-0.00322
	(!A1 * !A2 * B1 * C1 * Y)	0.00095	0.00096	0.00082
	(!A1 * !A2 * B1 * C1 * Y)	-0.00288	-0.00292	-0.00318
sky130_fd_sc_hs__o2111ai_4	**(A2 * !C1 * Y)**	0.00158	0.00158	0.00150
	(A2 * !C1 * Y)	-0.00377	-0.00379	-0.00391
	(A2 * !B1 * C1 * Y)	0.00160	0.00160	0.00145
	(A2 * !B1 * C1 * Y)	-0.00357	-0.00360	-0.00387
	(!A2 * !C1 * Y)	0.00157	0.00158	0.00150
	(!A2 * !C1 * Y)	-0.00375	-0.00379	-0.00391
	(!A2 * !B1 * C1 * Y)	0.00159	0.00160	0.00145
	(!A2 * !B1 * C1 * Y)	-0.00355	-0.00360	-0.00387
	(!A1 * !A2 * B1 * C1 * Y)	0.00173	0.00172	0.00147
	(!A1 * !A2 * B1 * C1 * Y)	-0.00327	-0.00329	-0.00381

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

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

sky130_fd_sc_hs__o2111ai_1	**(A2 * !C1 * Y)**	-0.00036	-0.00036	-0.00036
	(A2 * !C1 * Y)	0.00168	0.00169	0.00168
	(A2 * !B1 * C1 * Y)	-0.00036	-0.00036	-0.00036
	(A2 * !B1 * C1 * Y)	0.00168	0.00169	0.00168
	(!A2 * !C1 * Y)	-0.00036	-0.00036	-0.00036
	(!A2 * !C1 * Y)	0.00168	0.00169	0.00168
	(!A2 * !B1 * C1 * Y)	-0.00036	-0.00036	-0.00036
	(!A2 * !B1 * C1 * Y)	0.00168	0.00169	0.00168
	(!A1 * !A2 * B1 * C1 * Y)	-0.00036	-0.00036	-0.00036
	(!A1 * !A2 * B1 * C1 * Y)	0.00168	0.00169	0.00168
sky130_fd_sc_hs__o2111ai_2	**(A2 * !C1 * Y)**	-0.00081	-0.00082	-0.00082
	(A2 * !C1 * Y)	0.00322	0.00326	0.00324
	(A2 * !B1 * C1 * Y)	-0.00079	-0.00080	-0.00079
	(A2 * !B1 * C1 * Y)	0.00323	0.00325	0.00324
	(!A2 * !C1 * Y)	-0.00081	-0.00082	-0.00082
	(!A2 * !C1 * Y)	0.00322	0.00326	0.00324
	(!A2 * !B1 * C1 * Y)	-0.00079	-0.00080	-0.00079
	(!A2 * !B1 * C1 * Y)	0.00323	0.00325	0.00324
	(!A1 * !A2 * B1 * C1 * Y)	-0.00079	-0.00079	-0.00079
	(!A1 * !A2 * B1 * C1 * Y)	0.00323	0.00326	0.00324
sky130_fd_sc_hs__o2111ai_4	**(A2 * !C1 * Y)**	-0.00146	-0.00146	-0.00145
	(A2 * !C1 * Y)	0.00391	0.00394	0.00392
	(A2 * !B1 * C1 * Y)	-0.00142	-0.00143	-0.00141
	(A2 * !B1 * C1 * Y)	0.00390	0.00393	0.00391
	(!A2 * !C1 * Y)	-0.00147	-0.00146	-0.00145
	(!A2 * !C1 * Y)	0.00393	0.00394	0.00391
	(!A2 * !B1 * C1 * Y)	-0.00144	-0.00143	-0.00141
	(!A2 * !B1 * C1 * Y)	0.00392	0.00393	0.00391
	(!A1 * !A2 * B1 * C1 * Y)	-0.00143	-0.00142	-0.00141
	(!A1 * !A2 * B1 * C1 * Y)	0.00392	0.00393	0.00391

SKY130_FD_SC_HS__O2111Ax

sky130_fd_sc_hs_tt_1.50v_25C.ccs
Cell Library: Process , Voltage
1.50, 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	0.00254	0.00260	0.00241	0.00262	0.00263	0.83262
sky130_fd_sc_hs__o2111a_2	0.00257	0.00257	0.00253	0.00263	0.00273	1.71847
sky130_fd_sc_hs__o2111a_4	0.00489	0.00528	0.00448	0.00462	0.00466	3.17825

Leakage Information

Cell Name	Leakage(nW)		
	Min.	**Avg**	**Max.**
sky130_fd_sc_hs__o2111a_1	0.00000	0.07499	0.53232
sky130_fd_sc_hs__o2111a_2	0.00000	0.08077	0.30652
sky130_fd_sc_hs__o2111a_4	0.00000	0.20474	1.07394

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)	0.16167	0.80460	7.02372
	A2->X (RR)	0.14468	0.78032	6.98710
	B1->X (RR)	0.15424	0.81276	7.13040
	C1->X (RR)	0.14712	0.81918	7.13799
	D1->X (RR)	0.13597	0.79912	7.01909
sky130_fd_sc_hs__o2111a_2	A1->X (RR)	0.17765	0.72723	7.21136
	A2->X (RR)	0.16050	0.70633	7.17262
	B1->X (RR)	0.17102	0.74028	7.29746
	C1->X (RR)	0.16335	0.74994	7.32094
	D1->X (RR)	0.15098	0.73735	7.22911
sky130_fd_sc_hs__o2111a_4	A1->X (RR)	0.20390	0.66758	7.14610
	A2->X (RR)	0.18839	0.65588	7.13112
	B1->X (RR)	0.19671	0.68987	7.30514
	C1->X (RR)	0.18840	0.71748	7.39093
	D1->X (RR)	0.16968	0.69635	7.30106

Delay(ns) to X falling :

Cell Name	Timing Arc(Dir)	Delay(ns)		
		First	Mid	Last
sky130_fd_sc_hs__o2111a_1	A1->X (FF)	0.26349	0.82384	5.04637
	A2->X (FF)	0.24641	0.79957	4.79680
	B1->X (FF)	0.14051	0.68342	4.49932
	C1->X (FF)	0.12714	0.65775	4.41740
	D1->X (FF)	0.10669	0.62046	4.32906
sky130_fd_sc_hs__o2111a_2	A1->X (FF)	0.30988	0.86898	5.43382
	A2->X (FF)	0.29252	0.84354	5.19924
	B1->X (FF)	0.14155	0.67993	4.82664
	C1->X (FF)	0.13073	0.65868	4.75113
	D1->X (FF)	0.11312	0.62855	4.65701
sky130_fd_sc_hs__o2111a_4	A1->X (FF)	0.35592	0.88020	5.45437
	A2->X (FF)	0.34072	0.86865	5.33156
	B1->X (FF)	0.18039	0.69621	4.87809
	C1->X (FF)	0.16657	0.67407	4.78628
	D1->X (FF)	0.14471	0.64031	4.68271

Power Information

Internal switching power(pJ) to X rising :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__o2111a_1	A1	0.00999	0.01006	0.01177
	A1	0.00371	0.00377	0.00551
	A2	0.00877	0.00875	0.01218
	A2	0.00314	0.00312	0.00655
	B1	0.00898	0.00901	0.01372
	B1	0.00392	0.00396	0.00872
	C1	0.00832	0.00833	0.01330
	C1	0.00321	0.00322	0.00887
	D1	0.00764	0.00766	0.01263
	D1	0.00318	0.00321	0.00877
sky130_fd_sc_hs__o2111a_2	A1	0.01214	0.01245	0.01410
	A1	0.00585	0.00616	0.00796
	A2	0.01088	0.01113	0.01418
	A2	0.00530	0.00582	0.00868
	B1	0.01115	0.01137	0.01477
	B1	0.00595	0.00617	0.00970
	C1	0.01044	0.01063	0.01430
	C1	0.00593	0.00613	0.00991
	D1	0.00977	0.00995	0.01429
	D1	0.00589	0.00608	0.01056

sky130_fd_sc_hs__o2111a_4	**A1**	0.02494	0.02528	0.02817
	A1	0.01213	0.01249	0.01547
	A2	0.02277	0.02310	0.02808
	A2	0.01101	0.01135	0.01653
	B1	0.02293	0.02322	0.03108
	B1	0.01257	0.01286	0.02116
	C1	0.02151	0.02176	0.02982
	C1	0.01108	0.01152	0.02105
	D1	0.01994	0.02017	0.03061
	D1	0.01102	0.01141	0.02345

Internal switching power(pJ) to X falling :

Cell Name	**Input**	**Power(pJ)**		
		first	**mid**	**last**
sky130_fd_sc_hs__o2111a_1	**A1**	0.00377	0.00386	0.00625
	A1	0.00981	0.00989	0.01224
	A2	0.00384	0.00414	0.00936
	A2	0.00920	0.00953	0.01464
	B1	0.00309	0.00351	0.01094
	B1	0.00807	0.00839	0.01548
	C1	0.00277	0.00307	0.01048
	C1	0.00714	0.00743	0.01456
	D1	0.00232	0.00263	0.01017
	D1	0.00610	0.00635	0.01354

sky130_fd_sc_hs__o2111a_2	**A1**	0.00562	0.00596	0.00899
	A1	0.01166	0.01199	0.01427
	A2	0.00571	0.00611	0.01237
	A2	0.01103	0.01153	0.01660
	B1	0.00489	0.00545	0.01159
	B1	0.01002	0.01048	0.01635
	C1	0.00454	0.00500	0.01156
	C1	0.00903	0.00949	0.01538
	D1	0.00405	0.00455	0.01113
	D1	0.00795	0.00830	0.01435
sky130_fd_sc_hs__o2111a_4	**A1**	0.01106	0.01137	0.01583
	A1	0.02334	0.02364	0.02801
	A2	0.01112	0.01161	0.02223
	A2	0.02230	0.02282	0.03219
	B1	0.00960	0.01077	0.02553
	B1	0.01982	0.02086	0.03427
	C1	0.00893	0.01000	0.02463
	C1	0.01782	0.01870	0.03202
	D1	0.00757	0.00889	0.02329
	D1	0.01504	0.01616	0.02966

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)**	0.00134	0.00120	0.00119
	(A2 * B1 * C1 * D1 * X)	-0.00108	-0.00123	-0.00125
	(A2 * B1 * C1 * !D1 * !X)	0.00118	0.00118	0.00118
	(A2 * B1 * C1 * !D1 * !X)	-0.00123	-0.00125	-0.00125
	(A2 * B1 * !C1 * !X)	0.00118	0.00118	0.00118
	(A2 * B1 * !C1 * !X)	-0.00123	-0.00125	-0.00125
	(A2 * !B1 * !X)	0.00118	0.00118	0.00118
	(A2 * !B1 * !X)	-0.00123	-0.00125	-0.00125
	(!A2 * B1 * C1 * !D1 * !X)	0.00108	0.00108	0.00108
	(!A2 * B1 * C1 * !D1 * !X)	-0.00127	-0.00127	-0.00127
	(!A2 * B1 * !C1 * D1 * !X)	0.00109	0.00110	0.00109
	(!A2 * B1 * !C1 * D1 * !X)	-0.00127	-0.00127	-0.00127
	(!A2 * B1 * !C1 * !D1 * !X)	0.00109	0.00109	0.00109
	(!A2 * B1 * !C1 * !D1 * !X)	-0.00127	-0.00127	-0.00127
	(!A2 * !B1 * C1 * D1 * !X)	0.00111	0.00112	0.00111
	(!A2 * !B1 * C1 * D1 * !X)	-0.00127	-0.00127	-0.00127
	(!A2 * !B1 * !D1 * !X)	0.00112	0.00113	0.00112
	(!A2 * !B1 * !D1 * !X)	-0.00127	-0.00127	-0.00127
	(!A2 * !B1 * !C1 * D1 * !X)	0.00111	0.00112	0.00111
	(!A2 * !B1 * !C1 * D1 * !X)	-0.00127	-0.00127	-0.00127

sky130_fd_sc_hs__o2111a_2	**(A2 * B1 * C1 * D1 * X)**	0.00139	0.00124	0.00123
	(A2 * B1 * C1 * D1 * X)	-0.00107	-0.00122	-0.00124
	(A2 * B1 * C1 * !D1 * !X)	0.00123	0.00122	0.00122
	(A2 * B1 * C1 * !D1 * !X)	-0.00122	-0.00124	-0.00124
	(A2 * B1 * !C1 * !X)	0.00123	0.00122	0.00122
	(A2 * B1 * !C1 * !X)	-0.00122	-0.00124	-0.00124
	(A2 * !B1 * !X)	0.00123	0.00122	0.00122
	(A2 * !B1 * !X)	-0.00122	-0.00124	-0.00124
	(!A2 * B1 * C1 * !D1 * !X)	0.00114	0.00115	0.00114
	(!A2 * B1 * C1 * !D1 * !X)	-0.00125	-0.00126	-0.00125
	(!A2 * B1 * !C1 * D1 * !X)	0.00115	0.00116	0.00114
	(!A2 * B1 * !C1 * D1 * !X)	-0.00126	-0.00126	-0.00125
	(!A2 * B1 * !C1 * !D1 * !X)	0.00115	0.00116	0.00114
	(!A2 * B1 * !C1 * !D1 * !X)	-0.00126	-0.00126	-0.00125
	(!A2 * !B1 * C1 * D1 * !X)	0.00115	0.00117	0.00116
	(!A2 * !B1 * C1 * D1 * !X)	-0.00125	-0.00126	-0.00125
	(!A2 * !B1 * !D1 * !X)	0.00115	0.00117	0.00116
	(!A2 * !B1 * !D1 * !X)	-0.00125	-0.00126	-0.00125
	(!A2 * !B1 * !C1 * D1 * !X)	0.00115	0.00117	0.00116
	(!A2 * !B1 * !C1 * D1 * !X)	-0.00125	-0.00126	-0.00125

sky130_fd_sc_hs__o2111a_4	**(A2 * B1 * C1 * D1 * X)**	0.00269	0.00240	0.00237
	(A2 * B1 * C1 * D1 * X)	-0.00209	-0.00241	-0.00244
	(A2 * B1 * C1 * !D1 * !X)	0.00218	0.00219	0.00218
	(A2 * B1 * C1 * !D1 * !X)	-0.00257	-0.00262	-0.00261
	(A2 * B1 * !C1 * !X)	0.00218	0.00219	0.00218
	(A2 * B1 * !C1 * !X)	-0.00257	-0.00262	-0.00261
	(A2 * !B1 * !X)	0.00218	0.00219	0.00218
	(A2 * !B1 * !X)	-0.00257	-0.00262	-0.00261
	(!A2 * B1 * C1 * !D1 * !X)	0.00202	0.00203	0.00201
	(!A2 * B1 * C1 * !D1 * !X)	-0.00265	-0.00266	-0.00265
	(!A2 * B1 * !C1 * D1 * !X)	0.00201	0.00204	0.00203
	(!A2 * B1 * !C1 * D1 * !X)	-0.00264	-0.00266	-0.00265
	(!A2 * B1 * !C1 * !D1 * !X)	0.00201	0.00204	0.00203
	(!A2 * B1 * !C1 * !D1 * !X)	-0.00264	-0.00266	-0.00265
	(!A2 * !B1 * C1 * D1 * !X)	0.00206	0.00208	0.00206
	(!A2 * !B1 * C1 * D1 * !X)	-0.00265	-0.00266	-0.00265
	(!A2 * !B1 * !D1 * !X)	0.00206	0.00207	0.00206
	(!A2 * !B1 * !D1 * !X)	-0.00265	-0.00266	-0.00265
	(!A2 * !B1 * !C1 * D1 * !X)	0.00206	0.00207	0.00206
	(!A2 * !B1 * !C1 * D1 * !X)	-0.00265	-0.00266	-0.00265

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)**	-0.00117	-0.00118	-0.00117
	(A2 * B1 * C1 * D1 * X)	0.00126	0.00127	0.00126
	(A2 * B1 * C1 * !D1 * !X)	-0.00117	-0.00118	-0.00118
	(A2 * B1 * C1 * !D1 * !X)	0.00124	0.00126	0.00125
	(A2 * B1 * !C1 * !X)	-0.00117	-0.00118	-0.00118
	(A2 * B1 * !C1 * !X)	0.00124	0.00126	0.00125
	(A2 * !B1 * !X)	-0.00118	-0.00118	-0.00118
	(A2 * !B1 * !X)	0.00125	0.00126	0.00125
	(!A2 * B1 * C1 * !D1 * !X)	-0.00099	-0.00108	-0.00108
	(!A2 * B1 * C1 * !D1 * !X)	0.00127	0.00129	0.00127
	(!A2 * B1 * !C1 * D1 * !X)	-0.00101	-0.00110	-0.00109
	(!A2 * B1 * !C1 * D1 * !X)	0.00127	0.00129	0.00127
	(!A2 * B1 * !C1 * !D1 * !X)	-0.00101	-0.00109	-0.00109
	(!A2 * B1 * !C1 * !D1 * !X)	0.00127	0.00129	0.00127
	(!A2 * !B1 * C1 * D1 * !X)	-0.00106	-0.00112	-0.00111
	(!A2 * !B1 * C1 * D1 * !X)	0.00127	0.00128	0.00127
	(!A2 * !B1 * !D1 * !X)	-0.00106	-0.00112	-0.00112
	(!A2 * !B1 * !D1 * !X)	0.00127	0.00128	0.00127
	(!A2 * !B1 * !C1 * D1 * !X)	-0.00106	-0.00112	-0.00111
	(!A2 * !B1 * !C1 * D1 * !X)	0.00127	0.00128	0.00127

sky130_fd_sc_hs__o2111a_2	**(A2 * B1 * C1 * D1 * X)**	-0.00121	-0.00122	-0.00121
	(A2 * B1 * C1 * D1 * X)	0.00124	0.00126	0.00125
	(A2 * B1 * C1 * !D1 * !X)	-0.00122	-0.00122	-0.00122
	(A2 * B1 * C1 * !D1 * !X)	0.00123	0.00125	0.00124
	(A2 * B1 * !C1 * !X)	-0.00122	-0.00122	-0.00122
	(A2 * B1 * !C1 * !X)	0.00123	0.00125	0.00124
	(A2 * !B1 * !X)	-0.00122	-0.00122	-0.00122
	(A2 * !B1 * !X)	0.00123	0.00125	0.00124
	(!A2 * B1 * C1 * !D1 * !X)	-0.00105	-0.00115	-0.00114
	(!A2 * B1 * C1 * !D1 * !X)	0.00126	0.00127	0.00126
	(!A2 * B1 * !C1 * D1 * !X)	-0.00107	-0.00116	-0.00114
	(!A2 * B1 * !C1 * D1 * !X)	0.00126	0.00127	0.00126
	(!A2 * B1 * !C1 * !D1 * !X)	-0.00107	-0.00116	-0.00114
	(!A2 * B1 * !C1 * !D1 * !X)	0.00126	0.00127	0.00126
	(!A2 * !B1 * C1 * D1 * !X)	-0.00111	-0.00117	-0.00116
	(!A2 * !B1 * C1 * D1 * !X)	0.00126	0.00126	0.00126
	(!A2 * !B1 * !D1 * !X)	-0.00111	-0.00117	-0.00116
	(!A2 * !B1 * !D1 * !X)	0.00126	0.00126	0.00126
	(!A2 * !B1 * !C1 * D1 * !X)	-0.00111	-0.00117	-0.00116
	(!A2 * !B1 * !C1 * D1 * !X)	0.00126	0.00126	0.00126

sky130_fd_sc_hs__o2111a_4	**(A2 * B1 * C1 * D1 * X)**	-0.00234	-0.00235	-0.00234
	(A2 * B1 * C1 * D1 * X)	0.00244	0.00246	0.00245
	(A2 * B1 * C1 * !D1 * !X)	-0.00218	-0.00218	-0.00217
	(A2 * B1 * C1 * !D1 * !X)	0.00262	0.00262	0.00261
	(A2 * B1 * !C1 * !X)	-0.00218	-0.00218	-0.00217
	(A2 * B1 * !C1 * !X)	0.00262	0.00262	0.00261
	(A2 * !B1 * !X)	-0.00217	-0.00218	-0.00217
	(A2 * !B1 * !X)	0.00260	0.00262	0.00261
	(!A2 * B1 * C1 * !D1 * !X)	-0.00186	-0.00203	-0.00201
	(!A2 * B1 * C1 * !D1 * !X)	0.00265	0.00267	0.00266
	(!A2 * B1 * !C1 * D1 * !X)	-0.00188	-0.00203	-0.00203
	(!A2 * B1 * !C1 * D1 * !X)	0.00266	0.00267	0.00266
	(!A2 * B1 * !C1 * !D1 * !X)	-0.00188	-0.00203	-0.00203
	(!A2 * B1 * !C1 * !D1 * !X)	0.00266	0.00267	0.00266
	(!A2 * !B1 * C1 * D1 * !X)	-0.00196	-0.00206	-0.00206
	(!A2 * !B1 * C1 * D1 * !X)	0.00266	0.00267	0.00266
	(!A2 * !B1 * !D1 * !X)	-0.00196	-0.00206	-0.00206
	(!A2 * !B1 * !D1 * !X)	0.00266	0.00267	0.00266
	(!A2 * !B1 * !C1 * D1 * !X)	-0.00196	-0.00206	-0.00206
	(!A2 * !B1 * !C1 * D1 * !X)	0.00266	0.00267	0.00266

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)**	0.00123	0.00125	0.00123
	(A1 * B1 * C1 * D1 * X)	-0.00065	-0.00066	-0.00065
	(A1 * B1 * C1 * !D1 * !X)	0.00112	0.00113	0.00112
	(A1 * B1 * C1 * !D1 * !X)	-0.00121	-0.00123	-0.00122
	(A1 * B1 * !C1 * D1 * !X)	0.00112	0.00113	0.00112
	(A1 * B1 * !C1 * D1 * !X)	-0.00121	-0.00123	-0.00122
	(A1 * B1 * !C1 * !D1 * !X)	0.00112	0.00113	0.00112
	(A1 * B1 * !C1 * !D1 * !X)	-0.00121	-0.00123	-0.00123
	(A1 * !B1 * C1 * D1 * !X)	0.00112	0.00113	0.00112
	(A1 * !B1 * C1 * D1 * !X)	-0.00121	-0.00123	-0.00123
	(A1 * !B1 * !D1 * !X)	0.00112	0.00112	0.00112
	(A1 * !B1 * !D1 * !X)	-0.00121	-0.00123	-0.00123
	(A1 * !B1 * !C1 * D1 * !X)	0.00112	0.00113	0.00112
	(A1 * !B1 * !C1 * D1 * !X)	-0.00121	-0.00123	-0.00123
	(!A1 * B1 * C1 * !D1 * !X)	0.00101	0.00103	0.00102
	(!A1 * B1 * C1 * !D1 * !X)	-0.00124	-0.00125	-0.00125
	(!A1 * B1 * !C1 * D1 * !X)	0.00103	0.00104	0.00103
	(!A1 * B1 * !C1 * D1 * !X)	-0.00125	-0.00124	-0.00125
	(!A1 * B1 * !C1 * !D1 * !X)	0.00103	0.00103	0.00103
	(!A1 * B1 * !C1 * !D1 * !X)	-0.00125	-0.00124	-0.00125
	(!A1 * !B1 * C1 * D1 * !X)	0.00105	0.00107	0.00105
	(!A1 * !B1 * C1 * D1 * !X)	-0.00124	-0.00125	-0.00125
	(!A1 * !B1 * !D1 * !X)	0.00106	0.00106	0.00105
	(!A1 * !B1 * !D1 * !X)	-0.00124	-0.00125	-0.00125
	(!A1 * !B1 * !C1 * D1 * !X)	0.00106	0.00106	0.00105
	(!A1 * !B1 * !C1 * D1 * !X)	-0.00124	-0.00125	-0.00125

sky130_fd_sc_hs__o2111a_2	**(A1 * B1 * C1 * D1 * X)**	0.00123	0.00125	0.00123
	(A1 * B1 * C1 * D1 * X)	-0.00064	-0.00064	-0.00063
	(A1 * B1 * C1 * !D1 * !X)	0.00112	0.00113	0.00113
	(A1 * B1 * C1 * !D1 * !X)	-0.00118	-0.00121	-0.00120
	(A1 * B1 * !C1 * D1 * !X)	0.00113	0.00113	0.00113
	(A1 * B1 * !C1 * D1 * !X)	-0.00118	-0.00121	-0.00120
	(A1 * B1 * !C1 * !D1 * !X)	0.00112	0.00113	0.00113
	(A1 * B1 * !C1 * !D1 * !X)	-0.00118	-0.00121	-0.00120
	(A1 * !B1 * C1 * D1 * !X)	0.00112	0.00113	0.00113
	(A1 * !B1 * C1 * D1 * !X)	-0.00118	-0.00121	-0.00120
	(A1 * !B1 * !D1 * !X)	0.00112	0.00113	0.00112
	(A1 * !B1 * !D1 * !X)	-0.00118	-0.00120	-0.00120
	(A1 * !B1 * !C1 * D1 * !X)	0.00112	0.00113	0.00112
	(A1 * !B1 * !C1 * D1 * !X)	-0.00118	-0.00121	-0.00120
	(!A1 * B1 * C1 * !D1 * !X)	0.00104	0.00105	0.00104
	(!A1 * B1 * C1 * !D1 * !X)	-0.00122	-0.00123	-0.00122
	(!A1 * B1 * !C1 * D1 * !X)	0.00105	0.00106	0.00105
	(!A1 * B1 * !C1 * D1 * !X)	-0.00122	-0.00122	-0.00122
	(!A1 * B1 * !C1 * !D1 * !X)	0.00105	0.00106	0.00105
	(!A1 * B1 * !C1 * !D1 * !X)	-0.00122	-0.00122	-0.00122
	(!A1 * !B1 * C1 * D1 * !X)	0.00107	0.00107	0.00106
	(!A1 * !B1 * C1 * D1 * !X)	-0.00122	-0.00122	-0.00122
	(!A1 * !B1 * !D1 * !X)	0.00107	0.00107	0.00106
	(!A1 * !B1 * !D1 * !X)	-0.00122	-0.00122	-0.00122
	(!A1 * !B1 * !C1 * D1 * !X)	0.00107	0.00107	0.00106
	(!A1 * !B1 * !C1 * D1 * !X)	-0.00122	-0.00122	-0.00122

sky130_fd_sc_hs__o2111a_4	**(A1 * B1 * C1 * D1 * X)**	0.00269	0.00274	0.00270
	(A1 * B1 * C1 * D1 * X)	-0.00129	-0.00131	-0.00129
	(A1 * B1 * C1 * !D1 * !X)	0.00229	0.00232	0.00229
	(A1 * B1 * C1 * !D1 * !X)	-0.00258	-0.00264	-0.00262
	(A1 * B1 * !C1 * D1 * !X)	0.00229	0.00232	0.00229
	(A1 * B1 * !C1 * D1 * !X)	-0.00258	-0.00264	-0.00262
	(A1 * B1 * !C1 * !D1 * !X)	0.00229	0.00231	0.00229
	(A1 * B1 * !C1 * !D1 * !X)	-0.00258	-0.00262	-0.00263
	(A1 * !B1 * C1 * D1 * !X)	0.00229	0.00232	0.00229
	(A1 * !B1 * C1 * D1 * !X)	-0.00258	-0.00264	-0.00262
	(A1 * !B1 * !D1 * !X)	0.00229	0.00231	0.00229
	(A1 * !B1 * !D1 * !X)	-0.00258	-0.00262	-0.00263
	(A1 * !B1 * !C1 * D1 * !X)	0.00229	0.00231	0.00229
	(A1 * !B1 * !C1 * D1 * !X)	-0.00258	-0.00262	-0.00263
	(!A1 * B1 * C1 * !D1 * !X)	0.00207	0.00209	0.00207
	(!A1 * B1 * C1 * !D1 * !X)	-0.00267	-0.00268	-0.00267
	(!A1 * B1 * !C1 * D1 * !X)	0.00209	0.00211	0.00209
	(!A1 * B1 * !C1 * D1 * !X)	-0.00268	-0.00268	-0.00267
	(!A1 * B1 * !C1 * !D1 * !X)	0.00209	0.00210	0.00209
	(!A1 * B1 * !C1 * !D1 * !X)	-0.00268	-0.00268	-0.00267
	(!A1 * !B1 * C1 * D1 * !X)	0.00212	0.00214	0.00213
	(!A1 * !B1 * C1 * D1 * !X)	-0.00266	-0.00268	-0.00267
	(!A1 * !B1 * !D1 * !X)	0.00212	0.00213	0.00213
	(!A1 * !B1 * !D1 * !X)	-0.00266	-0.00267	-0.00267
	(!A1 * !B1 * !C1 * D1 * !X)	0.00213	0.00217	0.00214
	(!A1 * !B1 * !C1 * D1 * !X)	-0.00266	-0.00269	-0.00267

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)**	-0.00118	-0.00119	-0.00122
	(A1 * B1 * C1 * D1 * X)	0.00070	0.00070	0.00067
	(A1 * B1 * C1 * !D1 * !X)	-0.00112	-0.00112	-0.00112
	(A1 * B1 * C1 * !D1 * !X)	0.00123	0.00123	0.00122
	(A1 * B1 * !C1 * D1 * !X)	-0.00112	-0.00112	-0.00112
	(A1 * B1 * !C1 * D1 * !X)	0.00123	0.00123	0.00122
	(A1 * B1 * !C1 * !D1 * !X)	-0.00112	-0.00112	-0.00112
	(A1 * B1 * !C1 * !D1 * !X)	0.00123	0.00124	0.00123
	(A1 * !B1 * C1 * D1 * !X)	-0.00112	-0.00112	-0.00112
	(A1 * !B1 * C1 * D1 * !X)	0.00123	0.00123	0.00123
	(A1 * !B1 * !D1 * !X)	-0.00112	-0.00112	-0.00112
	(A1 * !B1 * !D1 * !X)	0.00123	0.00124	0.00123
	(A1 * !B1 * !C1 * D1 * !X)	-0.00112	-0.00112	-0.00112
	(A1 * !B1 * !C1 * D1 * !X)	0.00123	0.00124	0.00123
	(!A1 * B1 * C1 * !D1 * !X)	-0.00093	-0.00103	-0.00102
	(!A1 * B1 * C1 * !D1 * !X)	0.00124	0.00126	0.00125
	(!A1 * B1 * !C1 * D1 * !X)	-0.00096	-0.00104	-0.00103
	(!A1 * B1 * !C1 * D1 * !X)	0.00125	0.00124	0.00125
	(!A1 * B1 * !C1 * !D1 * !X)	-0.00096	-0.00103	-0.00103
	(!A1 * B1 * !C1 * !D1 * !X)	0.00125	0.00124	0.00125
	(!A1 * !B1 * C1 * D1 * !X)	-0.00100	-0.00106	-0.00105
	(!A1 * !B1 * C1 * D1 * !X)	0.00124	0.00125	0.00125
	(!A1 * !B1 * !D1 * !X)	-0.00100	-0.00106	-0.00105
	(!A1 * !B1 * !D1 * !X)	0.00124	0.00126	0.00125
	(!A1 * !B1 * !C1 * D1 * !X)	-0.00100	-0.00106	-0.00105
	(!A1 * !B1 * !C1 * D1 * !X)	0.00124	0.00126	0.00125

sky130_fd_sc_hs__o2111a_2	**(A1 * B1 * C1 * D1 * X)**	-0.00118	-0.00119	-0.00122
	(A1 * B1 * C1 * D1 * X)	0.00068	0.00068	0.00065
	(A1 * B1 * C1 * !D1 * !X)	-0.00112	-0.00113	-0.00112
	(A1 * B1 * C1 * !D1 * !X)	0.00120	0.00121	0.00120
	(A1 * B1 * !C1 * D1 * !X)	-0.00113	-0.00113	-0.00112
	(A1 * B1 * !C1 * D1 * !X)	0.00120	0.00121	0.00120
	(A1 * B1 * !C1 * !D1 * !X)	-0.00112	-0.00113	-0.00112
	(A1 * B1 * !C1 * !D1 * !X)	0.00119	0.00121	0.00120
	(A1 * !B1 * C1 * D1 * !X)	-0.00112	-0.00113	-0.00112
	(A1 * !B1 * C1 * D1 * !X)	0.00120	0.00121	0.00120
	(A1 * !B1 * !D1 * !X)	-0.00112	-0.00113	-0.00112
	(A1 * !B1 * !D1 * !X)	0.00120	0.00121	0.00120
	(A1 * !B1 * !C1 * D1 * !X)	-0.00112	-0.00113	-0.00112
	(A1 * !B1 * !C1 * D1 * !X)	0.00120	0.00121	0.00120
	(!A1 * B1 * C1 * !D1 * !X)	-0.00096	-0.00105	-0.00104
	(!A1 * B1 * C1 * !D1 * !X)	0.00123	0.00124	0.00122
	(!A1 * B1 * !C1 * D1 * !X)	-0.00097	-0.00105	-0.00105
	(!A1 * B1 * !C1 * D1 * !X)	0.00122	0.00122	0.00122
	(!A1 * B1 * !C1 * !D1 * !X)	-0.00097	-0.00105	-0.00105
	(!A1 * B1 * !C1 * !D1 * !X)	0.00122	0.00122	0.00122
	(!A1 * !B1 * C1 * D1 * !X)	-0.00102	-0.00107	-0.00106
	(!A1 * !B1 * C1 * D1 * !X)	0.00122	0.00123	0.00122
	(!A1 * !B1 * !D1 * !X)	-0.00102	-0.00107	-0.00106
	(!A1 * !B1 * !D1 * !X)	0.00122	0.00123	0.00122
	(!A1 * !B1 * !C1 * D1 * !X)	-0.00102	-0.00107	-0.00106
	(!A1 * !B1 * !C1 * D1 * !X)	0.00122	0.00123	0.00122

sky130_fd_sc_hs__o2111a_4	**(A1 * B1 * C1 * D1 * X)**	-0.00258	-0.00260	-0.00267
	(A1 * B1 * C1 * D1 * X)	0.00141	0.00141	0.00133
	(A1 * B1 * C1 * !D1 * !X)	-0.00229	-0.00230	-0.00229
	(A1 * B1 * C1 * !D1 * !X)	0.00264	0.00264	0.00262
	(A1 * B1 * !C1 * D1 * !X)	-0.00229	-0.00230	-0.00229
	(A1 * B1 * !C1 * D1 * !X)	0.00263	0.00264	0.00262
	(A1 * B1 * !C1 * !D1 * !X)	-0.00229	-0.00228	-0.00229
	(A1 * B1 * !C1 * !D1 * !X)	0.00263	0.00262	0.00263
	(A1 * !B1 * C1 * D1 * !X)	-0.00229	-0.00230	-0.00229
	(A1 * !B1 * C1 * D1 * !X)	0.00263	0.00264	0.00262
	(A1 * !B1 * !D1 * !X)	-0.00229	-0.00228	-0.00229
	(A1 * !B1 * !D1 * !X)	0.00263	0.00262	0.00263
	(A1 * !B1 * !C1 * D1 * !X)	-0.00229	-0.00228	-0.00229
	(A1 * !B1 * !C1 * D1 * !X)	0.00263	0.00262	0.00263
	(!A1 * B1 * C1 * !D1 * !X)	-0.00190	-0.00209	-0.00207
	(!A1 * B1 * C1 * !D1 * !X)	0.00267	0.00268	0.00268
	(!A1 * B1 * !C1 * D1 * !X)	-0.00192	-0.00211	-0.00209
	(!A1 * B1 * !C1 * D1 * !X)	0.00268	0.00269	0.00268
	(!A1 * B1 * !C1 * !D1 * !X)	-0.00192	-0.00210	-0.00209
	(!A1 * B1 * !C1 * !D1 * !X)	0.00268	0.00269	0.00268
	(!A1 * !B1 * C1 * D1 * !X)	-0.00202	-0.00214	-0.00213
	(!A1 * !B1 * C1 * D1 * !X)	0.00267	0.00269	0.00268
	(!A1 * !B1 * !D1 * !X)	-0.00203	-0.00213	-0.00213
	(!A1 * !B1 * !D1 * !X)	0.00267	0.00269	0.00268
	(!A1 * !B1 * !C1 * D1 * !X)	-0.00203	-0.00216	-0.00214
	(!A1 * !B1 * !C1 * D1 * !X)	0.00267	0.00269	0.00268

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)**	0.00099	0.00100	0.00099
	(A2 * C1 * !D1 * !X)	-0.00109	-0.00110	-0.00109
	(A2 * !C1 * D1 * !X)	0.00102	0.00101	0.00102
	(A2 * !C1 * D1 * !X)	-0.00109	-0.00109	-0.00109
	(A2 * !C1 * !D1 * !X)	0.00101	0.00103	0.00102
	(A2 * !C1 * !D1 * !X)	-0.00109	-0.00109	-0.00109
	(A1 * !A2 * C1 * !D1 * !X)	0.00099	0.00099	0.00099
	(A1 * !A2 * C1 * !D1 * !X)	-0.00109	-0.00109	-0.00109
	(A1 * !A2 * !C1 * D1 * !X)	0.00102	0.00103	0.00102
	(A1 * !A2 * !C1 * D1 * !X)	-0.00109	-0.00109	-0.00109
	(A1 * !A2 * !C1 * !D1 * !X)	0.00101	0.00103	0.00102
	(A1 * !A2 * !C1 * !D1 * !X)	-0.00109	-0.00110	-0.00109
	(!A1 * !A2 * C1 * D1 * !X)	0.00050	0.00051	0.00050
	(!A1 * !A2 * C1 * D1 * !X)	-0.00106	-0.00106	-0.00106
	(!A1 * !A2 * C1 * !D1 * !X)	0.00057	0.00057	0.00057
	(!A1 * !A2 * C1 * !D1 * !X)	-0.00109	-0.00109	-0.00109
	(!A1 * !A2 * !C1 * D1 * !X)	0.00060	0.00060	0.00060
	(!A1 * !A2 * !C1 * D1 * !X)	-0.00109	-0.00110	-0.00109
	(!A1 * !A2 * !C1 * !D1 * !X)	0.00061	0.00062	0.00061
	(!A1 * !A2 * !C1 * !D1 * !X)	-0.00109	-0.00110	-0.00109

sky130_fd_sc_hs__o2111a_2	**(A2 * C1 * !D1 * !X)**	0.00102	0.00103	0.00102
	(A2 * C1 * !D1 * !X)	-0.00125	-0.00125	-0.00125
	(A2 * !C1 * D1 * !X)	0.00104	0.00106	0.00105
	(A2 * !C1 * D1 * !X)	-0.00125	-0.00126	-0.00125
	(A2 * !C1 * !D1 * !X)	0.00104	0.00106	0.00105
	(A2 * !C1 * !D1 * !X)	-0.00125	-0.00126	-0.00125
	(A1 * !A2 * C1 * !D1 * !X)	0.00102	0.00102	0.00102
	(A1 * !A2 * C1 * !D1 * !X)	-0.00125	-0.00125	-0.00125
	(A1 * !A2 * !C1 * D1 * !X)	0.00104	0.00106	0.00105
	(A1 * !A2 * !C1 * D1 * !X)	-0.00124	-0.00126	-0.00125
	(A1 * !A2 * !C1 * !D1 * !X)	0.00104	0.00106	0.00105
	(A1 * !A2 * !C1 * !D1 * !X)	-0.00124	-0.00126	-0.00125
	(!A1 * !A2 * C1 * D1 * !X)	0.00054	0.00054	0.00053
	(!A1 * !A2 * C1 * D1 * !X)	-0.00122	-0.00122	-0.00121
	(!A1 * !A2 * C1 * !D1 * !X)	0.00062	0.00062	0.00062
	(!A1 * !A2 * C1 * !D1 * !X)	-0.00125	-0.00125	-0.00125
	(!A1 * !A2 * !C1 * D1 * !X)	0.00064	0.00064	0.00063
	(!A1 * !A2 * !C1 * D1 * !X)	-0.00125	-0.00125	-0.00125
	(!A1 * !A2 * !C1 * !D1 * !X)	0.00065	0.00065	0.00065
	(!A1 * !A2 * !C1 * !D1 * !X)	-0.00125	-0.00125	-0.00125

sky130_fd_sc_hs__o2111a_4	**(A2 * C1 * !D1 * !X)**	0.00202	0.00204	0.00202
	(A2 * C1 * !D1 * !X)	-0.00215	-0.00216	-0.00215
	(A2 * !C1 * D1 * !X)	0.00205	0.00208	0.00206
	(A2 * !C1 * D1 * !X)	-0.00215	-0.00216	-0.00215
	(A2 * !C1 * !D1 * !X)	0.00205	0.00207	0.00206
	(A2 * !C1 * !D1 * !X)	-0.00214	-0.00216	-0.00215
	(A1 * !A2 * C1 * !D1 * !X)	0.00202	0.00204	0.00202
	(A1 * !A2 * C1 * !D1 * !X)	-0.00216	-0.00216	-0.00215
	(A1 * !A2 * !C1 * D1 * !X)	0.00206	0.00208	0.00206
	(A1 * !A2 * !C1 * D1 * !X)	-0.00215	-0.00216	-0.00215
	(A1 * !A2 * !C1 * !D1 * !X)	0.00206	0.00209	0.00206
	(A1 * !A2 * !C1 * !D1 * !X)	-0.00215	-0.00216	-0.00215
	(!A1 * !A2 * C1 * D1 * !X)	0.00100	0.00101	0.00100
	(!A1 * !A2 * C1 * D1 * !X)	-0.00209	-0.00210	-0.00206
	(!A1 * !A2 * C1 * !D1 * !X)	0.00116	0.00117	0.00117
	(!A1 * !A2 * C1 * !D1 * !X)	-0.00216	-0.00217	-0.00216
	(!A1 * !A2 * !C1 * D1 * !X)	0.00116	0.00118	0.00116
	(!A1 * !A2 * !C1 * D1 * !X)	-0.00216	-0.00217	-0.00216
	(!A1 * !A2 * !C1 * !D1 * !X)	0.00119	0.00121	0.00120
	(!A1 * !A2 * !C1 * !D1 * !X)	-0.00215	-0.00217	-0.00216

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)**	-0.00091	-0.00100	-0.00099
	(A2 * C1 * !D1 * !X)	0.00109	0.00110	0.00110
	(A2 * !C1 * D1 * !X)	-0.00097	-0.00101	-0.00102
	(A2 * !C1 * D1 * !X)	0.00109	0.00109	0.00110
	(A2 * !C1 * !D1 * !X)	-0.00098	-0.00102	-0.00102
	(A2 * !C1 * !D1 * !X)	0.00109	0.00109	0.00110
	(A1 * !A2 * C1 * !D1 * !X)	-0.00090	-0.00099	-0.00099
	(A1 * !A2 * C1 * !D1 * !X)	0.00110	0.00110	0.00109
	(A1 * !A2 * !C1 * D1 * !X)	-0.00097	-0.00103	-0.00102
	(A1 * !A2 * !C1 * D1 * !X)	0.00110	0.00111	0.00110
	(A1 * !A2 * !C1 * !D1 * !X)	-0.00098	-0.00103	-0.00102
	(A1 * !A2 * !C1 * !D1 * !X)	0.00110	0.00111	0.00110
	(!A1 * !A2 * C1 * D1 * !X)	-0.00046	-0.00047	-0.00046
	(!A1 * !A2 * C1 * D1 * !X)	0.00111	0.00113	0.00110
	(!A1 * !A2 * C1 * !D1 * !X)	-0.00057	-0.00057	-0.00057
	(!A1 * !A2 * C1 * !D1 * !X)	0.00110	0.00112	0.00109
	(!A1 * !A2 * !C1 * D1 * !X)	-0.00060	-0.00060	-0.00060
	(!A1 * !A2 * !C1 * D1 * !X)	0.00111	0.00111	0.00110
	(!A1 * !A2 * !C1 * !D1 * !X)	-0.00061	-0.00062	-0.00061
	(!A1 * !A2 * !C1 * !D1 * !X)	0.00110	0.00111	0.00110

sky130_fd_sc_hs__o2111a_2	**(A2 * C1 * !D1 * !X)**	-0.00095	-0.00103	-0.00102
	(A2 * C1 * !D1 * !X)	0.00125	0.00126	0.00125
	(A2 * !C1 * D1 * !X)	-0.00101	-0.00106	-0.00105
	(A2 * !C1 * D1 * !X)	0.00125	0.00127	0.00125
	(A2 * !C1 * !D1 * !X)	-0.00101	-0.00106	-0.00105
	(A2 * !C1 * !D1 * !X)	0.00126	0.00127	0.00125
	(A1 * !A2 * C1 * !D1 * !X)	-0.00093	-0.00102	-0.00102
	(A1 * !A2 * C1 * !D1 * !X)	0.00125	0.00126	0.00125
	(A1 * !A2 * !C1 * D1 * !X)	-0.00100	-0.00106	-0.00105
	(A1 * !A2 * !C1 * D1 * !X)	0.00126	0.00127	0.00125
	(A1 * !A2 * !C1 * !D1 * !X)	-0.00101	-0.00106	-0.00105
	(A1 * !A2 * !C1 * !D1 * !X)	0.00126	0.00127	0.00125
	(!A1 * !A2 * C1 * D1 * !X)	-0.00049	-0.00050	-0.00049
	(!A1 * !A2 * C1 * D1 * !X)	0.00126	0.00128	0.00126
	(!A1 * !A2 * C1 * !D1 * !X)	-0.00062	-0.00062	-0.00062
	(!A1 * !A2 * C1 * !D1 * !X)	0.00125	0.00128	0.00125
	(!A1 * !A2 * !C1 * D1 * !X)	-0.00064	-0.00064	-0.00063
	(!A1 * !A2 * !C1 * D1 * !X)	0.00125	0.00128	0.00125
	(!A1 * !A2 * !C1 * !D1 * !X)	-0.00065	-0.00065	-0.00065
	(!A1 * !A2 * !C1 * !D1 * !X)	0.00125	0.00127	0.00125

sky130_fd_sc_hs__o2111a_4	**(A2 * C1 * !D1 * !X)**	-0.00187	-0.00204	-0.00202
	(A2 * C1 * !D1 * !X)	0.00217	0.00218	0.00216
	(A2 * !C1 * D1 * !X)	-0.00197	-0.00208	-0.00206
	(A2 * !C1 * D1 * !X)	0.00215	0.00218	0.00216
	(A2 * !C1 * !D1 * !X)	-0.00197	-0.00207	-0.00206
	(A2 * !C1 * !D1 * !X)	0.00215	0.00218	0.00216
	(A1 * !A2 * C1 * !D1 * !X)	-0.00184	-0.00204	-0.00202
	(A1 * !A2 * C1 * !D1 * !X)	0.00217	0.00218	0.00216
	(A1 * !A2 * !C1 * D1 * !X)	-0.00195	-0.00208	-0.00206
	(A1 * !A2 * !C1 * D1 * !X)	0.00215	0.00218	0.00216
	(A1 * !A2 * !C1 * !D1 * !X)	-0.00196	-0.00208	-0.00206
	(A1 * !A2 * !C1 * !D1 * !X)	0.00215	0.00218	0.00216
	(!A1 * !A2 * C1 * D1 * !X)	-0.00091	-0.00093	-0.00091
	(!A1 * !A2 * C1 * D1 * !X)	0.00217	0.00221	0.00217
	(!A1 * !A2 * C1 * !D1 * !X)	-0.00116	-0.00117	-0.00117
	(!A1 * !A2 * C1 * !D1 * !X)	0.00216	0.00221	0.00217
	(!A1 * !A2 * !C1 * D1 * !X)	-0.00116	-0.00118	-0.00116
	(!A1 * !A2 * !C1 * D1 * !X)	0.00218	0.00219	0.00217
	(!A1 * !A2 * !C1 * !D1 * !X)	-0.00119	-0.00121	-0.00120
	(!A1 * !A2 * !C1 * !D1 * !X)	0.00218	0.00219	0.00217

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)**	0.00102	0.00104	0.00102
	(A2 * B1 * !D1 * !X)	-0.00116	-0.00117	-0.00116
	(A2 * !B1 * D1 * !X)	0.00046	0.00046	0.00046
	(A2 * !B1 * D1 * !X)	-0.00116	-0.00116	-0.00115
	(A2 * !B1 * !D1 * !X)	0.00053	0.00052	0.00052
	(A2 * !B1 * !D1 * !X)	-0.00117	-0.00116	-0.00116
	(A1 * !A2 * B1 * !D1 * !X)	0.00102	0.00103	0.00103
	(A1 * !A2 * B1 * !D1 * !X)	-0.00115	-0.00116	-0.00116
	(!A2 * !B1 * D1 * !X)	0.00046	0.00046	0.00046
	(!A2 * !B1 * D1 * !X)	-0.00116	-0.00116	-0.00115
	(!A2 * !B1 * !D1 * !X)	0.00053	0.00052	0.00052
	(!A2 * !B1 * !D1 * !X)	-0.00117	-0.00116	-0.00116
	(!A1 * !A2 * B1 * D1 * !X)	0.00047	0.00048	0.00047
	(!A1 * !A2 * B1 * D1 * !X)	-0.00116	-0.00116	-0.00115
	(!A1 * !A2 * B1 * !D1 * !X)	0.00058	0.00058	0.00058
	(!A1 * !A2 * B1 * !D1 * !X)	-0.00116	-0.00116	-0.00116

sky130_fd_sc_hs__o2111a_2	**(A2 * B1 * !D1 * !X)**	0.00103	0.00104	0.00103
	(A2 * B1 * !D1 * !X)	-0.00129	-0.00130	-0.00129
	(A2 * !B1 * D1 * !X)	0.00049	0.00049	0.00049
	(A2 * !B1 * D1 * !X)	-0.00129	-0.00129	-0.00128
	(A2 * !B1 * !D1 * !X)	0.00057	0.00057	0.00057
	(A2 * !B1 * !D1 * !X)	-0.00130	-0.00130	-0.00129
	(A1 * !A2 * B1 * !D1 * !X)	0.00103	0.00104	0.00103
	(A1 * !A2 * B1 * !D1 * !X)	-0.00129	-0.00130	-0.00129
	(!A2 * !B1 * D1 * !X)	0.00049	0.00049	0.00049
	(!A2 * !B1 * D1 * !X)	-0.00129	-0.00129	-0.00128
	(!A2 * !B1 * !D1 * !X)	0.00057	0.00057	0.00057
	(!A2 * !B1 * !D1 * !X)	-0.00130	-0.00130	-0.00129
	(!A1 * !A2 * B1 * D1 * !X)	0.00049	0.00049	0.00049
	(!A1 * !A2 * B1 * D1 * !X)	-0.00129	-0.00130	-0.00128
	(!A1 * !A2 * B1 * !D1 * !X)	0.00062	0.00062	0.00062
	(!A1 * !A2 * B1 * !D1 * !X)	-0.00129	-0.00130	-0.00129

sky130_fd_sc_hs__o2111a_4	**(A2 * B1 * !D1 * !X)**	0.00212	0.00214	0.00213
	(A2 * B1 * !D1 * !X)	-0.00220	-0.00221	-0.00221
	(A2 * !B1 * D1 * !X)	0.00101	0.00102	0.00102
	(A2 * !B1 * D1 * !X)	-0.00221	-0.00221	-0.00219
	(A2 * !B1 * !D1 * !X)	0.00118	0.00119	0.00118
	(A2 * !B1 * !D1 * !X)	-0.00221	-0.00223	-0.00222
	(A1 * !A2 * B1 * !D1 * !X)	0.00213	0.00213	0.00213
	(A1 * !A2 * B1 * !D1 * !X)	-0.00221	-0.00221	-0.00221
	(!A2 * !B1 * D1 * !X)	0.00101	0.00102	0.00102
	(!A2 * !B1 * D1 * !X)	-0.00221	-0.00221	-0.00219
	(!A2 * !B1 * !D1 * !X)	0.00118	0.00119	0.00118
	(!A2 * !B1 * !D1 * !X)	-0.00221	-0.00223	-0.00222
	(!A1 * !A2 * B1 * D1 * !X)	0.00097	0.00097	0.00100
	(!A1 * !A2 * B1 * D1 * !X)	-0.00221	-0.00221	-0.00219
	(!A1 * !A2 * B1 * !D1 * !X)	0.00124	0.00124	0.00123
	(!A1 * !A2 * B1 * !D1 * !X)	-0.00223	-0.00223	-0.00222

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)**	-0.00094	-0.00103	-0.00102
	(A2 * B1 * !D1 * !X)	0.00122	0.00118	0.00116
	(A2 * !B1 * D1 * !X)	-0.00044	-0.00045	-0.00045
	(A2 * !B1 * D1 * !X)	0.00119	0.00121	0.00117
	(A2 * !B1 * !D1 * !X)	-0.00053	-0.00052	-0.00052
	(A2 * !B1 * !D1 * !X)	0.00123	0.00124	0.00118
	(A1 * !A2 * B1 * !D1 * !X)	-0.00093	-0.00103	-0.00103
	(A1 * !A2 * B1 * !D1 * !X)	0.00123	0.00118	0.00116
	(!A2 * !B1 * D1 * !X)	-0.00044	-0.00045	-0.00045
	(!A2 * !B1 * D1 * !X)	0.00119	0.00121	0.00117
	(!A2 * !B1 * !D1 * !X)	-0.00053	-0.00052	-0.00052
	(!A2 * !B1 * !D1 * !X)	0.00123	0.00124	0.00118
	(!A1 * !A2 * B1 * D1 * !X)	-0.00043	-0.00044	-0.00044
	(!A1 * !A2 * B1 * D1 * !X)	0.00119	0.00121	0.00117
	(!A1 * !A2 * B1 * !D1 * !X)	-0.00058	-0.00058	-0.00058
	(!A1 * !A2 * B1 * !D1 * !X)	0.00124	0.00121	0.00116

sky130_fd_sc_hs__o2111a_2	**(A2 * B1 * !D1 * !X)**	-0.00096	-0.00104	-0.00103
	(A2 * B1 * !D1 * !X)	0.00135	0.00131	0.00130
	(A2 * !B1 * D1 * !X)	-0.00046	-0.00047	-0.00047
	(A2 * !B1 * D1 * !X)	0.00132	0.00135	0.00130
	(A2 * !B1 * !D1 * !X)	-0.00057	-0.00057	-0.00057
	(A2 * !B1 * !D1 * !X)	0.00136	0.00138	0.00131
	(A1 * !A2 * B1 * !D1 * !X)	-0.00095	-0.00104	-0.00103
	(A1 * !A2 * B1 * !D1 * !X)	0.00136	0.00131	0.00130
	(!A2 * !B1 * D1 * !X)	-0.00046	-0.00047	-0.00047
	(!A2 * !B1 * D1 * !X)	0.00132	0.00135	0.00130
	(!A2 * !B1 * !D1 * !X)	-0.00057	-0.00057	-0.00057
	(!A2 * !B1 * !D1 * !X)	0.00136	0.00138	0.00131
	(!A1 * !A2 * B1 * D1 * !X)	-0.00045	-0.00046	-0.00046
	(!A1 * !A2 * B1 * D1 * !X)	0.00132	0.00135	0.00130
	(!A1 * !A2 * B1 * !D1 * !X)	-0.00062	-0.00062	-0.00062
	(!A1 * !A2 * B1 * !D1 * !X)	0.00134	0.00133	0.00130

sky130_fd_sc_hs__o2111a_4	**(A2 * B1 * !D1 * !X)**	-0.00194	-0.00214	-0.00213
	(A2 * B1 * !D1 * !X)	0.00233	0.00224	0.00221
	(A2 * !B1 * D1 * !X)	-0.00095	-0.00097	-0.00098
	(A2 * !B1 * D1 * !X)	0.00228	0.00232	0.00223
	(A2 * !B1 * !D1 * !X)	-0.00118	-0.00119	-0.00118
	(A2 * !B1 * !D1 * !X)	0.00233	0.00237	0.00225
	(A1 * !A2 * B1 * !D1 * !X)	-0.00192	-0.00213	-0.00213
	(A1 * !A2 * B1 * !D1 * !X)	0.00235	0.00224	0.00221
	(!A2 * !B1 * D1 * !X)	-0.00095	-0.00097	-0.00098
	(!A2 * !B1 * D1 * !X)	0.00228	0.00232	0.00223
	(!A2 * !B1 * !D1 * !X)	-0.00118	-0.00119	-0.00118
	(!A2 * !B1 * !D1 * !X)	0.00233	0.00237	0.00225
	(!A1 * !A2 * B1 * D1 * !X)	-0.00092	-0.00094	-0.00095
	(!A1 * !A2 * B1 * D1 * !X)	0.00228	0.00232	0.00223
	(!A1 * !A2 * B1 * !D1 * !X)	-0.00124	-0.00124	-0.00123
	(!A1 * !A2 * B1 * !D1 * !X)	0.00230	0.00224	0.00222

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

Cell Name	When	Power(pJ)		
		first	**mid**	**last**
sky130_fd_sc_hs__o2111a_1	**(A2 * !C1 * !X)**	0.00040	0.00040	0.00039
	(A2 * !C1 * !X)	-0.00140	-0.00140	-0.00142
	(A2 * !B1 * C1 * !X)	0.00040	0.00040	0.00038
	(A2 * !B1 * C1 * !X)	-0.00136	-0.00137	-0.00142
	(!A2 * !C1 * !X)	0.00040	0.00040	0.00039
	(!A2 * !C1 * !X)	-0.00140	-0.00140	-0.00142
	(!A2 * !B1 * C1 * !X)	0.00040	0.00040	0.00038
	(!A2 * !B1 * C1 * !X)	-0.00136	-0.00137	-0.00142
	(!A1 * !A2 * B1 * C1 * !X)	0.00045	0.00045	0.00039
	(!A1 * !A2 * B1 * C1 * !X)	-0.00128	-0.00129	-0.00140

sky130_fd_sc_hs__o2111a_2	**(A2 * !C1 * !X)**	0.00042	0.00042	0.00040
	(A2 * !C1 * !X)	-0.00156	-0.00157	-0.00159
	(A2 * !B1 * C1 * !X)	0.00042	0.00042	0.00039
	(A2 * !B1 * C1 * !X)	-0.00152	-0.00153	-0.00159
	(!A2 * !C1 * !X)	0.00042	0.00042	0.00040
	(!A2 * !C1 * !X)	-0.00156	-0.00157	-0.00159
	(!A2 * !B1 * C1 * !X)	0.00042	0.00042	0.00039
	(!A2 * !B1 * C1 * !X)	-0.00152	-0.00153	-0.00159
	(!A1 * !A2 * B1 * C1 * !X)	0.00047	0.00047	0.00040
	(!A1 * !A2 * B1 * C1 * !X)	-0.00144	-0.00144	-0.00157
sky130_fd_sc_hs__o2111a_4	**(A2 * !C1 * !X)**	0.00087	0.00088	0.00083
	(A2 * !C1 * !X)	-0.00258	-0.00260	-0.00267
	(A2 * !B1 * C1 * !X)	0.00086	0.00086	0.00078
	(A2 * !B1 * C1 * !X)	-0.00249	-0.00251	-0.00265
	(!A2 * !C1 * !X)	0.00087	0.00088	0.00083
	(!A2 * !C1 * !X)	-0.00257	-0.00260	-0.00267
	(!A2 * !B1 * C1 * !X)	0.00085	0.00086	0.00078
	(!A2 * !B1 * C1 * !X)	-0.00248	-0.00251	-0.00265
	(!A1 * !A2 * B1 * C1 * !X)	0.00092	0.00093	0.00079
	(!A1 * !A2 * B1 * C1 * !X)	-0.00232	-0.00235	-0.00262

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

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

sky130_fd_sc_hs__o2111a_1	**(A2 * !C1 * !X)**	-0.00038	-0.00038	-0.00038
	(A2 * !C1 * !X)	0.00142	0.00143	0.00143
	(A2 * !B1 * C1 * !X)	-0.00037	-0.00037	-0.00037
	(A2 * !B1 * C1 * !X)	0.00142	0.00143	0.00142
	(!A2 * !C1 * !X)	-0.00038	-0.00038	-0.00038
	(!A2 * !C1 * !X)	0.00142	0.00143	0.00143
	(!A2 * !B1 * C1 * !X)	-0.00037	-0.00037	-0.00037
	(!A2 * !B1 * C1 * !X)	0.00142	0.00143	0.00142
	(!A1 * !A2 * B1 * C1 * !X)	-0.00037	-0.00037	-0.00037
	(!A1 * !A2 * B1 * C1 * !X)	0.00142	0.00143	0.00142
sky130_fd_sc_hs__o2111a_2	**(A2 * !C1 * !X)**	-0.00039	-0.00039	-0.00039
	(A2 * !C1 * !X)	0.00159	0.00160	0.00160
	(A2 * !B1 * C1 * !X)	-0.00038	-0.00038	-0.00038
	(A2 * !B1 * C1 * !X)	0.00159	0.00160	0.00160
	(!A2 * !C1 * !X)	-0.00039	-0.00039	-0.00039
	(!A2 * !C1 * !X)	0.00159	0.00160	0.00160
	(!A2 * !B1 * C1 * !X)	-0.00038	-0.00038	-0.00038
	(!A2 * !B1 * C1 * !X)	0.00159	0.00160	0.00160
	(!A1 * !A2 * B1 * C1 * !X)	-0.00038	-0.00038	-0.00038
	(!A1 * !A2 * B1 * C1 * !X)	0.00159	0.00160	0.00160
sky130_fd_sc_hs__o2111a_4	**(A2 * !C1 * !X)**	-0.00081	-0.00080	-0.00080
	(A2 * !C1 * !X)	0.00269	0.00268	0.00268
	(A2 * !B1 * C1 * !X)	-0.00078	-0.00077	-0.00077
	(A2 * !B1 * C1 * !X)	0.00269	0.00268	0.00267
	(!A2 * !C1 * !X)	-0.00081	-0.00080	-0.00080
	(!A2 * !C1 * !X)	0.00269	0.00268	0.00268
	(!A2 * !B1 * C1 * !X)	-0.00078	-0.00077	-0.00077
	(!A2 * !B1 * C1 * !X)	0.00269	0.00268	0.00267
	(!A1 * !A2 * B1 * C1 * !X)	-0.00076	-0.00077	-0.00077
	(!A1 * !A2 * B1 * C1 * !X)	0.00266	0.00268	0.00267

SKY130_FD_SC_HS__O211AIx

sky130_fd_sc_hs_tt_1.50v_25C.ccs
Cell Library: Process , Voltage
1.50, 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	0.00264	0.00276	0.00280	0.00274	0.40741
sky130_fd_sc_hs__o211ai_2	0.00513	0.00528	0.00527	0.00514	0.75662
sky130_fd_sc_hs__o211ai_4	0.01012	0.01042	0.00751	0.00774	1.41849

Leakage Information

Cell Name	Leakage(nW)		
	Min.	Avg	Max.
sky130_fd_sc_hs__o211ai_1	0.00000	0.01628	0.08920
sky130_fd_sc_hs__o211ai_2	0.00000	0.03256	0.17840
sky130_fd_sc_hs__o211ai_4	0.00000	0.04282	0.23786

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)	0.17242	1.19697	11.46120
	A2->Y (FR)	0.15522	1.16660	11.41860
	B1->Y (FR)	0.06674	0.77772	8.28369
	C1->Y (FR)	0.05409	0.76692	8.27015
sky130_fd_sc_hs__o211ai_2	A1->Y (FR)	0.16129	1.04988	11.46720
	A2->Y (FR)	0.13573	1.01154	11.43860
	B1->Y (FR)	0.05513	0.68667	8.05122
	C1->Y (FR)	0.03969	0.66847	7.99360
sky130_fd_sc_hs__o211ai_4	A1->Y (FR)	0.15163	0.91563	11.31050
	A2->Y (FR)	0.12755	0.88618	11.37140
	B1->Y (FR)	0.08094	0.82064	10.78510
	C1->Y (FR)	0.05200	0.78583	10.63300

Delay(ns) to Y falling :

Cell Name	Timing Arc(Dir)	Delay(ns)		
		First	Mid	Last
sky130_fd_sc_hs__o211ai_1	A1->Y (RF)	0.06832	0.52389	4.98438
	A2->Y (RF)	0.05759	0.50269	4.89871
	B1->Y (RF)	0.06216	0.56843	5.64845
	C1->Y (RF)	0.05243	0.58544	5.94060
sky130_fd_sc_hs__o211ai_2	A1->Y (RF)	0.06439	0.45115	4.87217
	A2->Y (RF)	0.05366	0.43552	4.86429
	B1->Y (RF)	0.05883	0.51490	5.77626
	C1->Y (RF)	0.04509	0.52418	6.09132
sky130_fd_sc_hs__o211ai_4	A1->Y (RF)	0.06480	0.40818	5.04249
	A2->Y (RF)	0.05025	0.38160	4.90588
	B1->Y (RF)	0.05391	0.45944	5.89640
	C1->Y (RF)	0.04154	0.48997	6.48989

Power Information

Internal switching power(pJ) to Y rising :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__o211ai_1	A1	0.00131	0.00119	0.00144
	A1	0.00683	0.00670	0.00696
	A2	0.00133	0.00129	0.00220
	A2	0.00615	0.00611	0.00700
	B1	0.00052	0.00051	0.00157
	B1	0.00522	0.00509	0.00622
	C1	0.00002	0.00004	0.00109
	C1	0.00398	0.00400	0.00505
sky130_fd_sc_hs__o211ai_2	A1	0.00157	0.00135	0.00184
	A1	0.01273	0.01252	0.01298
	A2	0.00158	0.00153	0.00337
	A2	0.01122	0.01118	0.01296
	B1	0.00040	0.00046	0.00252
	B1	0.00983	0.00985	0.01185
	C1	-0.00114	-0.00103	0.00121
	C1	0.00672	0.00686	0.00904
sky130_fd_sc_hs__o211ai_4	A1	0.00304	0.00252	0.00354
	A1	0.02475	0.02421	0.02487
	A2	0.00303	0.00290	0.00642
	A2	0.02180	0.02169	0.02510
	B1	0.00033	0.00016	0.00251
	B1	0.01576	0.01541	0.01779
	C1	-0.00226	-0.00229	0.00035
	C1	0.01026	0.01022	0.01284

Internal switching power(pJ) to Y falling :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__o211ai_1	A1	0.00729	0.00720	0.00742
	A1	0.00166	0.00155	0.00178
	A2	0.00597	0.00592	0.00620
	A2	0.00100	0.00093	0.00117
	B1	0.00641	0.00649	0.00660
	B1	0.00173	0.00162	0.00186
	C1	0.00562	0.00551	0.00620
	C1	0.00172	0.00161	0.00202
sky130_fd_sc_hs__o211ai_2	A1	0.01420	0.01393	0.01450
	A1	0.00282	0.00252	0.00299
	A2	0.01084	0.01072	0.01153
	A2	0.00088	0.00076	0.00130
	B1	0.01220	0.01200	0.01287
	B1	0.00281	0.00258	0.00310
	C1	0.01047	0.01039	0.01113
	C1	0.00274	0.00263	0.00342
sky130_fd_sc_hs__o211ai_4	A1	0.02596	0.02534	0.02685
	A1	0.00382	0.00317	0.00417
	A2	0.01946	0.01919	0.02109
	A2	0.00004	-0.00029	0.00096
	B1	0.02097	0.02088	0.02191
	B1	0.00566	0.00547	0.00602
	C1	0.01788	0.01775	0.01956
	C1	0.00562	0.00541	0.00630

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)**	0.00133	0.00119	0.00118
	(A2 * B1 * C1 * !Y)	-0.00119	-0.00135	-0.00136
	(A2 * B1 * !C1 * Y)	0.00118	0.00118	0.00118
	(A2 * B1 * !C1 * Y)	-0.00133	-0.00135	-0.00135
	(A2 * !B1 * Y)	0.00118	0.00118	0.00118
	(A2 * !B1 * Y)	-0.00133	-0.00135	-0.00135
	(!A2 * B1 * !C1 * Y)	0.00109	0.00110	0.00109
	(!A2 * B1 * !C1 * Y)	-0.00137	-0.00138	-0.00137
	(!A2 * !B1 * C1 * Y)	0.00110	0.00111	0.00111
	(!A2 * !B1 * C1 * Y)	-0.00137	-0.00138	-0.00137
	(!A2 * !B1 * !C1 * Y)	0.00110	0.00111	0.00111
	(!A2 * !B1 * !C1 * Y)	-0.00137	-0.00138	-0.00137
sky130_fd_sc_hs__o211ai_2	**(A2 * B1 * C1 * !Y)**	0.00263	0.00233	0.00231
	(A2 * B1 * C1 * !Y)	-0.00239	-0.00275	-0.00277
	(A2 * B1 * !C1 * Y)	0.00230	0.00231	0.00230
	(A2 * B1 * !C1 * Y)	-0.00270	-0.00278	-0.00277
	(A2 * !B1 * Y)	0.00230	0.00231	0.00230
	(A2 * !B1 * Y)	-0.00270	-0.00278	-0.00277
	(!A2 * B1 * !C1 * Y)	0.00214	0.00215	0.00213
	(!A2 * B1 * !C1 * Y)	-0.00283	-0.00283	-0.00283
	(!A2 * !B1 * C1 * Y)	0.00216	0.00219	0.00216
	(!A2 * !B1 * C1 * Y)	-0.00282	-0.00284	-0.00283
	(!A2 * !B1 * !C1 * Y)	0.00215	0.00218	0.00216
	(!A2 * !B1 * !C1 * Y)	-0.00282	-0.00284	-0.00283

sky130_fd_sc_hs__o211ai_4	**(A2 * B1 * C1 * !Y)**	0.00518	0.00457	0.00451
	(A2 * B1 * C1 * !Y)	-0.00474	-0.00546	-0.00550
	(A2 * B1 * !C1 * Y)	0.00450	0.00452	0.00450
	(A2 * B1 * !C1 * Y)	-0.00536	-0.00551	-0.00549
	(A2 * !B1 * Y)	0.00451	0.00452	0.00450
	(A2 * !B1 * Y)	-0.00536	-0.00551	-0.00549
	(!A2 * B1 * !C1 * Y)	0.00409	0.00414	0.00412
	(!A2 * B1 * !C1 * Y)	-0.00558	-0.00561	-0.00560
	(!A2 * !B1 * C1 * Y)	0.00418	0.00420	0.00419
	(!A2 * !B1 * C1 * Y)	-0.00559	-0.00561	-0.00560
	(!A2 * !B1 * !C1 * Y)	0.00418	0.00423	0.00419
	(!A2 * !B1 * !C1 * Y)	-0.00559	-0.00563	-0.00560

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)**	-0.00117	-0.00118	-0.00117
	(A2 * B1 * C1 * !Y)	0.00136	0.00137	0.00136
	(A2 * B1 * !C1 * Y)	-0.00117	-0.00118	-0.00117
	(A2 * B1 * !C1 * Y)	0.00135	0.00137	0.00135
	(A2 * !B1 * Y)	-0.00118	-0.00118	-0.00117
	(A2 * !B1 * Y)	0.00136	0.00137	0.00135
	(!A2 * B1 * !C1 * Y)	-0.00102	-0.00110	-0.00109
	(!A2 * B1 * !C1 * Y)	0.00137	0.00139	0.00138
	(!A2 * !B1 * C1 * Y)	-0.00106	-0.00111	-0.00111
	(!A2 * !B1 * C1 * Y)	0.00137	0.00138	0.00138
	(!A2 * !B1 * !C1 * Y)	-0.00106	-0.00111	-0.00111
	(!A2 * !B1 * !C1 * Y)	0.00137	0.00138	0.00138

sky130_fd_sc_hs__o211ai_2	**(A2 * B1 * C1 * !Y)**	-0.00231	-0.00231	-0.00229
	(A2 * B1 * C1 * !Y)	0.00278	0.00278	0.00277
	(A2 * B1 * !C1 * Y)	-0.00230	-0.00231	-0.00229
	(A2 * B1 * !C1 * Y)	0.00279	0.00280	0.00277
	(A2 * !B1 * Y)	-0.00230	-0.00231	-0.00229
	(A2 * !B1 * Y)	0.00277	0.00280	0.00277
	(!A2 * B1 * !C1 * Y)	-0.00201	-0.00215	-0.00213
	(!A2 * B1 * !C1 * Y)	0.00283	0.00283	0.00284
	(!A2 * !B1 * C1 * Y)	-0.00206	-0.00217	-0.00216
	(!A2 * !B1 * C1 * Y)	0.00282	0.00284	0.00283
	(!A2 * !B1 * !C1 * Y)	-0.00206	-0.00218	-0.00216
	(!A2 * !B1 * !C1 * Y)	0.00282	0.00285	0.00283
sky130_fd_sc_hs__o211ai_4	**(A2 * B1 * C1 * !Y)**	-0.00450	-0.00451	-0.00448
	(A2 * B1 * C1 * !Y)	0.00549	0.00553	0.00550
	(A2 * B1 * !C1 * Y)	-0.00450	-0.00452	-0.00449
	(A2 * B1 * !C1 * Y)	0.00549	0.00553	0.00549
	(A2 * !B1 * Y)	-0.00448	-0.00452	-0.00449
	(A2 * !B1 * Y)	0.00546	0.00553	0.00549
	(!A2 * B1 * !C1 * Y)	-0.00383	-0.00414	-0.00412
	(!A2 * B1 * !C1 * Y)	0.00561	0.00565	0.00562
	(!A2 * !B1 * C1 * Y)	-0.00397	-0.00420	-0.00419
	(!A2 * !B1 * C1 * Y)	0.00559	0.00565	0.00562
	(!A2 * !B1 * !C1 * Y)	-0.00398	-0.00423	-0.00419
	(!A2 * !B1 * !C1 * Y)	0.00559	0.00566	0.00562

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)**	0.00126	0.00129	0.00126
	(A1 * B1 * C1 * !Y)	-0.00071	-0.00073	-0.00071
	(A1 * B1 * !C1 * Y)	0.00115	0.00116	0.00115
	(A1 * B1 * !C1 * Y)	-0.00134	-0.00136	-0.00136
	(A1 * !B1 * C1 * Y)	0.00115	0.00116	0.00115
	(A1 * !B1 * C1 * Y)	-0.00134	-0.00136	-0.00136
	(A1 * !B1 * !C1 * Y)	0.00115	0.00115	0.00115
	(A1 * !B1 * !C1 * Y)	-0.00134	-0.00137	-0.00136
	(!A1 * B1 * !C1 * Y)	0.00106	0.00107	0.00106
	(!A1 * B1 * !C1 * Y)	-0.00138	-0.00138	-0.00138
	(!A1 * !B1 * C1 * Y)	0.00107	0.00108	0.00108
	(!A1 * !B1 * C1 * Y)	-0.00138	-0.00139	-0.00139
	(!A1 * !B1 * !C1 * Y)	0.00108	0.00109	0.00108
	(!A1 * !B1 * !C1 * Y)	-0.00139	-0.00139	-0.00139
sky130_fd_sc_hs__o211ai_2	**(A1 * B1 * C1 * !Y)**	0.00261	0.00265	0.00261
	(A1 * B1 * C1 * !Y)	-0.00139	-0.00141	-0.00139
	(A1 * B1 * !C1 * Y)	0.00232	0.00232	0.00231
	(A1 * B1 * !C1 * Y)	-0.00268	-0.00275	-0.00274
	(A1 * !B1 * C1 * Y)	0.00232	0.00232	0.00231
	(A1 * !B1 * C1 * Y)	-0.00268	-0.00275	-0.00274
	(A1 * !B1 * !C1 * Y)	0.00232	0.00232	0.00231
	(A1 * !B1 * !C1 * Y)	-0.00268	-0.00276	-0.00274
	(!A1 * B1 * !C1 * Y)	0.00214	0.00214	0.00213
	(!A1 * B1 * !C1 * Y)	-0.00279	-0.00280	-0.00279
	(!A1 * !B1 * C1 * Y)	0.00215	0.00217	0.00215
	(!A1 * !B1 * C1 * Y)	-0.00278	-0.00281	-0.00279
	(!A1 * !B1 * !C1 * Y)	0.00215	0.00217	0.00215
	(!A1 * !B1 * !C1 * Y)	-0.00278	-0.00281	-0.00279

sky130_fd_sc_hs__o211ai_4	**(A1 * B1 * C1 * !Y)**	0.00509	0.00511	0.00510
	(A1 * B1 * C1 * !Y)	-0.00281	-0.00282	-0.00281
	(A1 * B1 * !C1 * Y)	0.00450	0.00450	0.00450
	(A1 * B1 * !C1 * Y)	-0.00538	-0.00550	-0.00549
	(A1 * !B1 * C1 * Y)	0.00454	0.00450	0.00450
	(A1 * !B1 * C1 * Y)	-0.00540	-0.00550	-0.00549
	(A1 * !B1 * !C1 * Y)	0.00449	0.00454	0.00450
	(A1 * !B1 * !C1 * Y)	-0.00536	-0.00553	-0.00550
	(!A1 * B1 * !C1 * Y)	0.00412	0.00414	0.00411
	(!A1 * B1 * !C1 * Y)	-0.00563	-0.00564	-0.00562
	(!A1 * !B1 * C1 * Y)	0.00418	0.00422	0.00419
	(!A1 * !B1 * C1 * Y)	-0.00560	-0.00564	-0.00562
	(!A1 * !B1 * !C1 * Y)	0.00420	0.00425	0.00420
	(!A1 * !B1 * !C1 * Y)	-0.00560	-0.00564	-0.00562

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)**	-0.00121	-0.00122	-0.00126
	(A1 * B1 * C1 * !Y)	0.00076	0.00077	0.00073
	(A1 * B1 * !C1 * Y)	-0.00115	-0.00115	-0.00115
	(A1 * B1 * !C1 * Y)	0.00136	0.00136	0.00136
	(A1 * !B1 * C1 * Y)	-0.00115	-0.00114	-0.00115
	(A1 * !B1 * C1 * Y)	0.00136	0.00136	0.00136
	(A1 * !B1 * !C1 * Y)	-0.00115	-0.00115	-0.00115
	(A1 * !B1 * !C1 * Y)	0.00136	0.00137	0.00136
	(!A1 * B1 * !C1 * Y)	-0.00099	-0.00107	-0.00106
	(!A1 * B1 * !C1 * Y)	0.00138	0.00138	0.00139
	(!A1 * !B1 * C1 * Y)	-0.00104	-0.00108	-0.00108
	(!A1 * !B1 * C1 * Y)	0.00139	0.00140	0.00139
	(!A1 * !B1 * !C1 * Y)	-0.00104	-0.00109	-0.00108
	(!A1 * !B1 * !C1 * Y)	0.00139	0.00140	0.00139
sky130_fd_sc_hs__o211ai_2	**(A1 * B1 * C1 * !Y)**	-0.00244	-0.00247	-0.00259
	(A1 * B1 * C1 * !Y)	0.00154	0.00154	0.00143
	(A1 * B1 * !C1 * Y)	-0.00230	-0.00231	-0.00230
	(A1 * B1 * !C1 * Y)	0.00274	0.00275	0.00274
	(A1 * !B1 * C1 * Y)	-0.00229	-0.00231	-0.00230
	(A1 * !B1 * C1 * Y)	0.00272	0.00275	0.00274
	(A1 * !B1 * !C1 * Y)	-0.00231	-0.00231	-0.00230
	(A1 * !B1 * !C1 * Y)	0.00274	0.00276	0.00274
	(!A1 * B1 * !C1 * Y)	-0.00198	-0.00214	-0.00213
	(!A1 * B1 * !C1 * Y)	0.00279	0.00283	0.00280
	(!A1 * !B1 * C1 * Y)	-0.00205	-0.00217	-0.00215
	(!A1 * !B1 * C1 * Y)	0.00278	0.00281	0.00280
	(!A1 * !B1 * !C1 * Y)	-0.00205	-0.00217	-0.00215
	(!A1 * !B1 * !C1 * Y)	0.00278	0.00281	0.00280

sky130_fd_sc_hs__o211ai_4	**(A1 * B1 * C1 * !Y)**	-0.00480	-0.00482	-0.00506
	(A1 * B1 * C1 * !Y)	0.00309	0.00307	0.00288
	(A1 * B1 * !C1 * Y)	-0.00450	-0.00450	-0.00449
	(A1 * B1 * !C1 * Y)	0.00549	0.00550	0.00549
	(A1 * !B1 * C1 * Y)	-0.00447	-0.00450	-0.00449
	(A1 * !B1 * C1 * Y)	0.00546	0.00550	0.00549
	(A1 * !B1 * !C1 * Y)	-0.00448	-0.00451	-0.00449
	(A1 * !B1 * !C1 * Y)	0.00548	0.00553	0.00550
	(!A1 * B1 * !C1 * Y)	-0.00381	-0.00414	-0.00411
	(!A1 * B1 * !C1 * Y)	0.00563	0.00565	0.00563
	(!A1 * !B1 * C1 * Y)	-0.00396	-0.00422	-0.00419
	(!A1 * !B1 * C1 * Y)	0.00560	0.00566	0.00563
	(!A1 * !B1 * !C1 * Y)	-0.00397	-0.00423	-0.00420
	(!A1 * !B1 * !C1 * Y)	0.00560	0.00564	0.00563

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__o211ai_1	(A2 * !C1 * Y)	0.00106	0.00107	0.00106
	(A2 * !C1 * Y)	-0.00145	-0.00146	-0.00145
	(A1 * !A2 * !C1 * Y)	0.00106	0.00106	0.00106
	(A1 * !A2 * !C1 * Y)	-0.00145	-0.00145	-0.00145
	(!A1 * !A2 * C1 * Y)	0.00052	0.00053	0.00052
	(!A1 * !A2 * C1 * Y)	-0.00145	-0.00146	-0.00144
	(!A1 * !A2 * !C1 * Y)	0.00064	0.00064	0.00064
	(!A1 * !A2 * !C1 * Y)	-0.00146	-0.00146	-0.00145
sky130_fd_sc_hs__o211ai_2	(A2 * !C1 * Y)	0.00211	0.00214	0.00212
	(A2 * !C1 * Y)	-0.00284	-0.00286	-0.00284
	(A1 * !A2 * !C1 * Y)	0.00211	0.00214	0.00212
	(A1 * !A2 * !C1 * Y)	-0.00283	-0.00286	-0.00284
	(!A1 * !A2 * C1 * Y)	0.00098	0.00099	0.00101
	(!A1 * !A2 * C1 * Y)	-0.00284	-0.00285	-0.00283
	(!A1 * !A2 * !C1 * Y)	0.00121	0.00122	0.00121
	(!A1 * !A2 * !C1 * Y)	-0.00286	-0.00287	-0.00286
sky130_fd_sc_hs__o211ai_4	(A2 * !C1 * Y)	0.00421	0.00423	0.00421
	(A2 * !C1 * Y)	-0.00286	-0.00286	-0.00285
	(A1 * !A2 * !C1 * Y)	0.00418	0.00424	0.00421
	(A1 * !A2 * !C1 * Y)	-0.00284	-0.00287	-0.00285
	(!A1 * !A2 * C1 * Y)	0.00190	0.00192	0.00195
	(!A1 * !A2 * C1 * Y)	-0.00283	-0.00285	-0.00282
	(!A1 * !A2 * !C1 * Y)	0.00233	0.00235	0.00235
	(!A1 * !A2 * !C1 * Y)	-0.00286	-0.00288	-0.00288

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__o211ai_1	(A2 * !C1 * Y)	-0.00099	-0.00106	-0.00106
	(A2 * !C1 * Y)	0.00149	0.00147	0.00146
	(A1 * !A2 * !C1 * Y)	-0.00098	-0.00106	-0.00106
	(A1 * !A2 * !C1 * Y)	0.00151	0.00147	0.00146
	(!A1 * !A2 * C1 * Y)	-0.00049	-0.00049	-0.00050
	(!A1 * !A2 * C1 * Y)	0.00148	0.00148	0.00146
	(!A1 * !A2 * !C1 * Y)	-0.00064	-0.00064	-0.00064
	(!A1 * !A2 * !C1 * Y)	0.00153	0.00154	0.00147
sky130_fd_sc_hs__o211ai_2	(A2 * !C1 * Y)	-0.00197	-0.00214	-0.00212
	(A2 * !C1 * Y)	0.00292	0.00289	0.00285
	(A1 * !A2 * !C1 * Y)	-0.00195	-0.00214	-0.00212
	(A1 * !A2 * !C1 * Y)	0.00297	0.00289	0.00285
	(!A1 * !A2 * C1 * Y)	-0.00093	-0.00092	-0.00096
	(!A1 * !A2 * C1 * Y)	0.00295	0.00293	0.00288
	(!A1 * !A2 * !C1 * Y)	-0.00121	-0.00122	-0.00121
	(!A1 * !A2 * !C1 * Y)	0.00302	0.00303	0.00289
sky130_fd_sc_hs__o211ai_4	(A2 * !C1 * Y)	-0.00390	-0.00423	-0.00421
	(A2 * !C1 * Y)	0.00301	0.00290	0.00286
	(A1 * !A2 * !C1 * Y)	-0.00383	-0.00424	-0.00421
	(A1 * !A2 * !C1 * Y)	0.00311	0.00290	0.00286
	(!A1 * !A2 * C1 * Y)	-0.00180	-0.00183	-0.00186
	(!A1 * !A2 * C1 * Y)	0.00301	0.00306	0.00290
	(!A1 * !A2 * !C1 * Y)	-0.00233	-0.00235	-0.00235
	(!A1 * !A2 * !C1 * Y)	0.00319	0.00316	0.00293

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__o211ai_1	(A2 * !B1 * Y)	0.00041	0.00041	0.00039
	(A2 * !B1 * Y)	-0.00163	-0.00164	-0.00166
	(!A2 * !B1 * Y)	0.00040	0.00041	0.00039
	(!A2 * !B1 * Y)	-0.00162	-0.00164	-0.00166
	(!A1 * !A2 * B1 * Y)	0.00044	0.00044	0.00039
	(!A1 * !A2 * B1 * Y)	-0.00156	-0.00157	-0.00165
sky130_fd_sc_hs__o211ai_2	(A2 * !B1 * Y)	0.00087	0.00087	0.00081
	(A2 * !B1 * Y)	-0.00316	-0.00318	-0.00325
	(!A2 * !B1 * Y)	0.00086	0.00087	0.00081
	(!A2 * !B1 * Y)	-0.00315	-0.00318	-0.00325
	(!A1 * !A2 * B1 * Y)	0.00086	0.00087	0.00077
	(!A1 * !A2 * B1 * Y)	-0.00302	-0.00305	-0.00322
sky130_fd_sc_hs__o211ai_4	(A2 * !B1 * Y)	0.00165	0.00165	0.00155
	(A2 * !B1 * Y)	-0.00368	-0.00371	-0.00383
	(!A2 * !B1 * Y)	0.00163	0.00164	0.00155
	(!A2 * !B1 * Y)	-0.00366	-0.00370	-0.00383
	(!A1 * !A2 * B1 * Y)	0.00165	0.00167	0.00148
	(!A1 * !A2 * B1 * Y)	-0.00338	-0.00343	-0.00378

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__o211ai_1	(A2 * !B1 * Y)	-0.00038	-0.00038	-0.00038
	(A2 * !B1 * Y)	0.00166	0.00167	0.00167
	(!A2 * !B1 * Y)	-0.00038	-0.00038	-0.00038
	(!A2 * !B1 * Y)	0.00166	0.00167	0.00167
	(!A1 * !A2 * B1 * Y)	-0.00037	-0.00038	-0.00037
	(!A1 * !A2 * B1 * Y)	0.00166	0.00167	0.00166
sky130_fd_sc_hs__o211ai_2	(A2 * !B1 * Y)	-0.00078	-0.00079	-0.00078
	(A2 * !B1 * Y)	0.00323	0.00327	0.00325
	(!A2 * !B1 * Y)	-0.00079	-0.00079	-0.00078
	(!A2 * !B1 * Y)	0.00327	0.00327	0.00325
	(!A1 * !A2 * B1 * Y)	-0.00076	-0.00076	-0.00076
	(!A1 * !A2 * B1 * Y)	0.00325	0.00327	0.00325
sky130_fd_sc_hs__o211ai_4	(A2 * !B1 * Y)	-0.00152	-0.00152	-0.00150
	(A2 * !B1 * Y)	0.00386	0.00387	0.00384
	(!A2 * !B1 * Y)	-0.00149	-0.00151	-0.00150
	(!A2 * !B1 * Y)	0.00381	0.00385	0.00384
	(!A1 * !A2 * B1 * Y)	-0.00145	-0.00146	-0.00145
	(!A1 * !A2 * B1 * Y)	0.00382	0.00385	0.00383

SKY130_FD_SC_HS__O211Ax

sky130_fd_sc_hs_tt_1.50v_25C.ccs
Cell Library: Process , Voltage
1.50, 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	0.00256	0.00275	0.00253	0.00249	0.87685
sky130_fd_sc_hs__o211a_2	0.00271	0.00271	0.00270	0.00264	1.70483
sky130_fd_sc_hs__o211a_4	0.00490	0.00468	0.00485	0.00428	3.16020

Leakage Information

Cell Name	Leakage(nW)		
	Min.	**Avg**	**Max.**
sky130_fd_sc_hs__o211a_1	0.00000	0.06254	0.22756
sky130_fd_sc_hs__o211a_2	0.00000	0.08691	0.23222
sky130_fd_sc_hs__o211a_4	0.00000	0.23275	0.77170

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)	0.14531	0.78354	6.97981
	A2->X (RR)	0.12984	0.76035	6.93995
	B1->X (RR)	0.13723	0.79167	7.06449
	C1->X (RR)	0.12797	0.77854	6.98051
sky130_fd_sc_hs__o211a_2	A1->X (RR)	0.14690	0.68835	7.06105
	A2->X (RR)	0.12862	0.66410	7.01398
	B1->X (RR)	0.13992	0.70948	7.16928
	C1->X (RR)	0.13048	0.70179	7.09644
sky130_fd_sc_hs__o211a_4	A1->X (RR)	0.14631	0.61375	7.07930
	A2->X (RR)	0.13655	0.59226	7.03967
	B1->X (RR)	0.13763	0.62503	7.17638
	C1->X (RR)	0.12646	0.61137	7.10458

Delay(ns) to X falling :

Cell Name	Timing Arc(Dir)	Delay(ns)		
		First	Mid	Last
sky130_fd_sc_hs__o211a_1	A1->X (FF)	0.24115	0.79995	5.06272
	A2->X (FF)	0.22366	0.77449	4.81905
	B1->X (FF)	0.10856	0.64003	4.53366
	C1->X (FF)	0.09736	0.61563	4.46793
sky130_fd_sc_hs__o211a_2	A1->X (FF)	0.28305	0.83218	5.29608
	A2->X (FF)	0.26396	0.80766	5.06634
	B1->X (FF)	0.12965	0.65739	4.73269
	C1->X (FF)	0.11689	0.63391	4.65585
sky130_fd_sc_hs__o211a_4	A1->X (FF)	0.26246	0.77145	5.14313
	A2->X (FF)	0.24056	0.74063	4.89985
	B1->X (FF)	0.13229	0.61842	4.59600
	C1->X (FF)	0.13038	0.61204	4.58526

Power Information

Internal switching power(pJ) to X rising :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__o211a_1	A1	0.00926	0.00928	0.01113
	A1	0.00386	0.00388	0.00573
	A2	0.00832	0.00830	0.01165
	A2	0.00332	0.00328	0.00667
	B1	0.00836	0.00833	0.01250
	B1	0.00391	0.00387	0.00809
	C1	0.00770	0.00772	0.01314
	C1	0.00318	0.00322	0.00930
sky130_fd_sc_hs__o211a_2	A1	0.01129	0.01155	0.01334
	A1	0.00561	0.00587	0.00774
	A2	0.01001	0.01025	0.01326
	A2	0.00500	0.00524	0.00825
	B1	0.01036	0.01055	0.01444
	B1	0.00567	0.00586	0.00989
	C1	0.00963	0.00983	0.01482
	C1	0.00492	0.00516	0.01070
sky130_fd_sc_hs__o211a_4	A1	0.02090	0.02146	0.02555
	A1	0.01064	0.01119	0.01529
	A2	0.01811	0.01857	0.02582
	A2	0.00934	0.00982	0.01719
	B1	0.01934	0.01981	0.02870
	B1	0.01101	0.01148	0.02065
	C1	0.01754	0.01802	0.03023
	C1	0.00952	0.01008	0.02344

Internal switching power(pJ) to X falling :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__o211a_1	A1	0.00359	0.00357	0.00615
	A1	0.00885	0.00885	0.01116
	A2	0.00331	0.00346	0.00868
	A2	0.00815	0.00832	0.01349
	B1	0.00290	0.00313	0.00966
	B1	0.00736	0.00756	0.01359
	C1	0.00256	0.00283	0.00962
	C1	0.00642	0.00662	0.01296
sky130_fd_sc_hs__o211a_2	A1	0.00517	0.00527	0.00872
	A1	0.01069	0.01088	0.01322
	A2	0.00518	0.00563	0.01219
	A2	0.01004	0.01048	0.01561
	B1	0.00454	0.00507	0.01125
	B1	0.00925	0.00968	0.01575
	C1	0.00416	0.00486	0.01161
	C1	0.00819	0.00863	0.01487
sky130_fd_sc_hs__o211a_4	A1	0.00977	0.01048	0.01662
	A1	0.01977	0.02047	0.02522
	A2	0.01010	0.01089	0.02257
	A2	0.01856	0.01933	0.02996
	B1	0.00821	0.00962	0.02334
	B1	0.01650	0.01774	0.03152
	C1	0.00798	0.00912	0.02369
	C1	0.01452	0.01565	0.03015

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)**	0.00129	0.00115	0.00114
	(A2 * B1 * C1 * X)	-0.00108	-0.00122	-0.00125
	(A2 * B1 * !C1 * !X)	0.00101	0.00100	0.00101
	(A2 * B1 * !C1 * !X)	-0.00136	-0.00137	-0.00137
	(A2 * !B1 * !X)	0.00101	0.00100	0.00101
	(A2 * !B1 * !X)	-0.00136	-0.00137	-0.00137
	(!A2 * B1 * !C1 * !X)	0.00094	0.00094	0.00094
	(!A2 * B1 * !C1 * !X)	-0.00140	-0.00139	-0.00139
	(!A2 * !B1 * C1 * !X)	0.00096	0.00096	0.00095
	(!A2 * !B1 * C1 * !X)	-0.00140	-0.00140	-0.00140
	(!A2 * !B1 * !C1 * !X)	0.00096	0.00096	0.00095
	(!A2 * !B1 * !C1 * !X)	-0.00140	-0.00140	-0.00140
sky130_fd_sc_hs__o211a_2	**(A2 * B1 * C1 * X)**	0.00143	0.00129	0.00127
	(A2 * B1 * C1 * X)	-0.00104	-0.00119	-0.00121
	(A2 * B1 * !C1 * !X)	0.00110	0.00111	0.00110
	(A2 * B1 * !C1 * !X)	-0.00136	-0.00139	-0.00138
	(A2 * !B1 * !X)	0.00110	0.00111	0.00110
	(A2 * !B1 * !X)	-0.00136	-0.00139	-0.00138
	(!A2 * B1 * !C1 * !X)	0.00101	0.00102	0.00101
	(!A2 * B1 * !C1 * !X)	-0.00140	-0.00140	-0.00140
	(!A2 * !B1 * C1 * !X)	0.00103	0.00104	0.00103
	(!A2 * !B1 * C1 * !X)	-0.00140	-0.00141	-0.00141
	(!A2 * !B1 * !C1 * !X)	0.00103	0.00104	0.00103
	(!A2 * !B1 * !C1 * !X)	-0.00140	-0.00141	-0.00141

sky130_fd_sc_hs__o211a_4	**(A2 * B1 * C1 * X)**	0.00255	0.00229	0.00226
	(A2 * B1 * C1 * X)	-0.00214	-0.00246	-0.00248
	(A2 * B1 * !C1 * !X)	0.00222	0.00223	0.00222
	(A2 * B1 * !C1 * !X)	-0.00245	-0.00251	-0.00250
	(A2 * !B1 * !X)	0.00222	0.00224	0.00222
	(A2 * !B1 * !X)	-0.00245	-0.00251	-0.00250
	(!A2 * B1 * !C1 * !X)	0.00209	0.00210	0.00208
	(!A2 * B1 * !C1 * !X)	-0.00255	-0.00255	-0.00254
	(!A2 * !B1 * C1 * !X)	0.00211	0.00213	0.00212
	(!A2 * !B1 * C1 * !X)	-0.00253	-0.00255	-0.00254
	(!A2 * !B1 * !C1 * !X)	0.00211	0.00213	0.00212
	(!A2 * !B1 * !C1 * !X)	-0.00253	-0.00255	-0.00254

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)**	-0.00113	-0.00114	-0.00113
	(A2 * B1 * C1 * X)	0.00124	0.00126	0.00125
	(A2 * B1 * !C1 * !X)	-0.00100	-0.00100	-0.00100
	(A2 * B1 * !C1 * !X)	0.00137	0.00139	0.00137
	(A2 * !B1 * !X)	-0.00100	-0.00100	-0.00100
	(A2 * !B1 * !X)	0.00137	0.00139	0.00137
	(!A2 * B1 * !C1 * !X)	-0.00087	-0.00094	-0.00094
	(!A2 * B1 * !C1 * !X)	0.00141	0.00139	0.00140
	(!A2 * !B1 * C1 * !X)	-0.00090	-0.00096	-0.00095
	(!A2 * !B1 * C1 * !X)	0.00140	0.00141	0.00140
	(!A2 * !B1 * !C1 * !X)	-0.00090	-0.00096	-0.00095
	(!A2 * !B1 * !C1 * !X)	0.00140	0.00140	0.00140

sky130_fd_sc_hs__o211a_2	**(A2 * B1 * C1 * X)**	-0.00127	-0.00127	-0.00126
	(A2 * B1 * C1 * X)	0.00121	0.00122	0.00121
	(A2 * B1 * !C1 * !X)	-0.00109	-0.00110	-0.00109
	(A2 * B1 * !C1 * !X)	0.00138	0.00139	0.00138
	(A2 * !B1 * !X)	-0.00109	-0.00110	-0.00109
	(A2 * !B1 * !X)	0.00139	0.00139	0.00138
	(!A2 * B1 * !C1 * !X)	-0.00094	-0.00102	-0.00101
	(!A2 * B1 * !C1 * !X)	0.00140	0.00140	0.00141
	(!A2 * !B1 * C1 * !X)	-0.00098	-0.00104	-0.00103
	(!A2 * !B1 * C1 * !X)	0.00141	0.00142	0.00141
	(!A2 * !B1 * !C1 * !X)	-0.00099	-0.00104	-0.00103
	(!A2 * !B1 * !C1 * !X)	0.00141	0.00142	0.00141
sky130_fd_sc_hs__o211a_4	**(A2 * B1 * C1 * X)**	-0.00223	-0.00225	-0.00223
	(A2 * B1 * C1 * X)	0.00246	0.00250	0.00249
	(A2 * B1 * !C1 * !X)	-0.00221	-0.00223	-0.00222
	(A2 * B1 * !C1 * !X)	0.00249	0.00252	0.00250
	(A2 * !B1 * !X)	-0.00221	-0.00223	-0.00222
	(A2 * !B1 * !X)	0.00249	0.00252	0.00250
	(!A2 * B1 * !C1 * !X)	-0.00196	-0.00210	-0.00208
	(!A2 * B1 * !C1 * !X)	0.00256	0.00258	0.00255
	(!A2 * !B1 * C1 * !X)	-0.00203	-0.00213	-0.00212
	(!A2 * !B1 * C1 * !X)	0.00256	0.00258	0.00255
	(!A2 * !B1 * !C1 * !X)	-0.00203	-0.00213	-0.00212
	(!A2 * !B1 * !C1 * !X)	0.00256	0.00258	0.00255

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)**	0.00146	0.00146	0.00146
	(A1 * B1 * C1 * X)	-0.00064	-0.00064	-0.00064
	(A1 * B1 * !C1 * !X)	0.00132	0.00132	0.00131
	(A1 * B1 * !C1 * !X)	-0.00124	-0.00126	-0.00125
	(A1 * !B1 * C1 * !X)	0.00132	0.00132	0.00131
	(A1 * !B1 * C1 * !X)	-0.00124	-0.00126	-0.00125
	(A1 * !B1 * !C1 * !X)	0.00132	0.00132	0.00131
	(A1 * !B1 * !C1 * !X)	-0.00124	-0.00126	-0.00125
	(!A1 * B1 * !C1 * !X)	0.00123	0.00123	0.00123
	(!A1 * B1 * !C1 * !X)	-0.00128	-0.00128	-0.00127
	(!A1 * !B1 * C1 * !X)	0.00125	0.00125	0.00125
	(!A1 * !B1 * C1 * !X)	-0.00127	-0.00128	-0.00128
	(!A1 * !B1 * !C1 * !X)	0.00124	0.00126	0.00124
	(!A1 * !B1 * !C1 * !X)	-0.00127	-0.00128	-0.00128
sky130_fd_sc_hs__o211a_2	**(A1 * B1 * C1 * X)**	0.00128	0.00130	0.00128
	(A1 * B1 * C1 * X)	-0.00063	-0.00065	-0.00064
	(A1 * B1 * !C1 * !X)	0.00108	0.00109	0.00108
	(A1 * B1 * !C1 * !X)	-0.00129	-0.00130	-0.00131
	(A1 * !B1 * C1 * !X)	0.00108	0.00109	0.00108
	(A1 * !B1 * C1 * !X)	-0.00129	-0.00132	-0.00131
	(A1 * !B1 * !C1 * !X)	0.00108	0.00108	0.00108
	(A1 * !B1 * !C1 * !X)	-0.00129	-0.00131	-0.00131
	(!A1 * B1 * !C1 * !X)	0.00100	0.00100	0.00099
	(!A1 * B1 * !C1 * !X)	-0.00133	-0.00133	-0.00133
	(!A1 * !B1 * C1 * !X)	0.00103	0.00102	0.00102
	(!A1 * !B1 * C1 * !X)	-0.00134	-0.00133	-0.00133
	(!A1 * !B1 * !C1 * !X)	0.00102	0.00102	0.00102
	(!A1 * !B1 * !C1 * !X)	-0.00133	-0.00134	-0.00133

sky130_fd_sc_hs__o211a_4	**(A1 * B1 * C1 * X)**	0.00217	0.00221	0.00218
	(A1 * B1 * C1 * X)	-0.00130	-0.00132	-0.00130
	(A1 * B1 * !C1 * !X)	0.00190	0.00192	0.00190
	(A1 * B1 * !C1 * !X)	-0.00246	-0.00250	-0.00250
	(A1 * !B1 * C1 * !X)	0.00190	0.00192	0.00190
	(A1 * !B1 * C1 * !X)	-0.00246	-0.00251	-0.00251
	(A1 * !B1 * !C1 * !X)	0.00190	0.00191	0.00190
	(A1 * !B1 * !C1 * !X)	-0.00246	-0.00253	-0.00251
	(!A1 * B1 * !C1 * !X)	0.00175	0.00175	0.00175
	(!A1 * B1 * !C1 * !X)	-0.00256	-0.00256	-0.00256
	(!A1 * !B1 * C1 * !X)	0.00176	0.00179	0.00178
	(!A1 * !B1 * C1 * !X)	-0.00254	-0.00257	-0.00256
	(!A1 * !B1 * !C1 * !X)	0.00177	0.00178	0.00178
	(!A1 * !B1 * !C1 * !X)	-0.00255	-0.00256	-0.00256

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)**	-0.00141	-0.00141	-0.00145
	(A1 * B1 * C1 * X)	0.00068	0.00068	0.00065
	(A1 * B1 * !C1 * !X)	-0.00131	-0.00132	-0.00131
	(A1 * B1 * !C1 * !X)	0.00125	0.00126	0.00125
	(A1 * !B1 * C1 * !X)	-0.00130	-0.00132	-0.00131
	(A1 * !B1 * C1 * !X)	0.00124	0.00126	0.00125
	(A1 * !B1 * !C1 * !X)	-0.00130	-0.00131	-0.00131
	(A1 * !B1 * !C1 * !X)	0.00124	0.00126	0.00125
	(!A1 * B1 * !C1 * !X)	-0.00117	-0.00123	-0.00123
	(!A1 * B1 * !C1 * !X)	0.00128	0.00128	0.00128
	(!A1 * !B1 * C1 * !X)	-0.00121	-0.00125	-0.00125
	(!A1 * !B1 * C1 * !X)	0.00128	0.00128	0.00128
	(!A1 * !B1 * !C1 * !X)	-0.00121	-0.00125	-0.00124
	(!A1 * !B1 * !C1 * !X)	0.00128	0.00128	0.00128
sky130_fd_sc_hs__o211a_2	**(A1 * B1 * C1 * X)**	-0.00123	-0.00124	-0.00127
	(A1 * B1 * C1 * X)	0.00069	0.00069	0.00065
	(A1 * B1 * !C1 * !X)	-0.00108	-0.00108	-0.00108
	(A1 * B1 * !C1 * !X)	0.00131	0.00130	0.00131
	(A1 * !B1 * C1 * !X)	-0.00108	-0.00108	-0.00108
	(A1 * !B1 * C1 * !X)	0.00131	0.00132	0.00131
	(A1 * !B1 * !C1 * !X)	-0.00108	-0.00108	-0.00108
	(A1 * !B1 * !C1 * !X)	0.00131	0.00132	0.00131
	(!A1 * B1 * !C1 * !X)	-0.00093	-0.00100	-0.00099
	(!A1 * B1 * !C1 * !X)	0.00133	0.00135	0.00133
	(!A1 * !B1 * C1 * !X)	-0.00098	-0.00102	-0.00102
	(!A1 * !B1 * C1 * !X)	0.00134	0.00134	0.00133
	(!A1 * !B1 * !C1 * !X)	-0.00097	-0.00102	-0.00102
	(!A1 * !B1 * !C1 * !X)	0.00133	0.00134	0.00133

sky130_fd_sc_hs__o211a_4	**(A1 * B1 * C1 * X)**	-0.00206	-0.00207	-0.00215
	(A1 * B1 * C1 * X)	0.00141	0.00142	0.00134
	(A1 * B1 * !C1 * !X)	-0.00190	-0.00190	-0.00189
	(A1 * B1 * !C1 * !X)	0.00251	0.00250	0.00250
	(A1 * !B1 * C1 * !X)	-0.00190	-0.00190	-0.00189
	(A1 * !B1 * C1 * !X)	0.00251	0.00251	0.00251
	(A1 * !B1 * !C1 * !X)	-0.00190	-0.00191	-0.00189
	(A1 * !B1 * !C1 * !X)	0.00251	0.00253	0.00251
	(!A1 * B1 * !C1 * !X)	-0.00162	-0.00175	-0.00175
	(!A1 * B1 * !C1 * !X)	0.00256	0.00259	0.00257
	(!A1 * !B1 * C1 * !X)	-0.00170	-0.00179	-0.00178
	(!A1 * !B1 * C1 * !X)	0.00257	0.00258	0.00256
	(!A1 * !B1 * !C1 * !X)	-0.00170	-0.00178	-0.00178
	(!A1 * !B1 * !C1 * !X)	0.00257	0.00257	0.00256

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__o211a_1	(A2 * !C1 * !X)	0.00087	0.00088	0.00087
	(A2 * !C1 * !X)	-0.00142	-0.00143	-0.00142
	(A1 * !A2 * !C1 * !X)	0.00087	0.00088	0.00087
	(A1 * !A2 * !C1 * !X)	-0.00143	-0.00143	-0.00142
	(!A1 * !A2 * C1 * !X)	0.00043	0.00043	0.00042
	(!A1 * !A2 * C1 * !X)	-0.00144	-0.00144	-0.00143
	(!A1 * !A2 * !C1 * !X)	0.00053	0.00054	0.00053
	(!A1 * !A2 * !C1 * !X)	-0.00144	-0.00145	-0.00144
sky130_fd_sc_hs__o211a_2	(A2 * !C1 * !X)	0.00101	0.00102	0.00101
	(A2 * !C1 * !X)	-0.00134	-0.00134	-0.00134
	(A1 * !A2 * !C1 * !X)	0.00100	0.00101	0.00101
	(A1 * !A2 * !C1 * !X)	-0.00134	-0.00134	-0.00134
	(!A1 * !A2 * C1 * !X)	0.00048	0.00048	0.00047
	(!A1 * !A2 * C1 * !X)	-0.00136	-0.00136	-0.00135
	(!A1 * !A2 * !C1 * !X)	0.00059	0.00059	0.00058
	(!A1 * !A2 * !C1 * !X)	-0.00137	-0.00137	-0.00136
sky130_fd_sc_hs__o211a_4	(A2 * !C1 * !X)	0.00219	0.00221	0.00220
	(A2 * !C1 * !X)	-0.00228	-0.00229	-0.00229
	(A1 * !A2 * !C1 * !X)	0.00219	0.00222	0.00220
	(A1 * !A2 * !C1 * !X)	-0.00228	-0.00229	-0.00229
	(!A1 * !A2 * C1 * !X)	0.00125	0.00126	0.00125
	(!A1 * !A2 * C1 * !X)	-0.00228	-0.00229	-0.00228
	(!A1 * !A2 * !C1 * !X)	0.00144	0.00145	0.00144
	(!A1 * !A2 * !C1 * !X)	-0.00231	-0.00231	-0.00231

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__o211a_1	(A2 * !C1 * !X)	-0.00081	-0.00088	-0.00087
	(A2 * !C1 * !X)	0.00148	0.00145	0.00143
	(A1 * !A2 * !C1 * !X)	-0.00080	-0.00087	-0.00087
	(A1 * !A2 * !C1 * !X)	0.00149	0.00145	0.00143
	(!A1 * !A2 * C1 * !X)	-0.00039	-0.00039	-0.00040
	(!A1 * !A2 * C1 * !X)	0.00146	0.00146	0.00144
	(!A1 * !A2 * !C1 * !X)	-0.00053	-0.00054	-0.00053
	(!A1 * !A2 * !C1 * !X)	0.00151	0.00151	0.00145
sky130_fd_sc_hs__o211a_2	(A2 * !C1 * !X)	-0.00094	-0.00101	-0.00101
	(A2 * !C1 * !X)	0.00139	0.00135	0.00135
	(A1 * !A2 * !C1 * !X)	-0.00093	-0.00101	-0.00101
	(A1 * !A2 * !C1 * !X)	0.00141	0.00136	0.00135
	(!A1 * !A2 * C1 * !X)	-0.00044	-0.00045	-0.00045
	(!A1 * !A2 * C1 * !X)	0.00138	0.00141	0.00136
	(!A1 * !A2 * !C1 * !X)	-0.00059	-0.00059	-0.00058
	(!A1 * !A2 * !C1 * !X)	0.00146	0.00144	0.00138
sky130_fd_sc_hs__o211a_4	(A2 * !C1 * !X)	-0.00208	-0.00220	-0.00220
	(A2 * !C1 * !X)	0.00237	0.00229	0.00230
	(A1 * !A2 * !C1 * !X)	-0.00207	-0.00220	-0.00220
	(A1 * !A2 * !C1 * !X)	0.00238	0.00229	0.00229
	(!A1 * !A2 * C1 * !X)	-0.00119	-0.00120	-0.00120
	(!A1 * !A2 * C1 * !X)	0.00237	0.00240	0.00232
	(!A1 * !A2 * !C1 * !X)	-0.00144	-0.00145	-0.00144
	(!A1 * !A2 * !C1 * !X)	0.00246	0.00244	0.00234

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__o211a_1	(A2 * !B1 * !X)	0.00034	0.00034	0.00032
	(A2 * !B1 * !X)	-0.00156	-0.00156	-0.00158
	(!A2 * !B1 * !X)	0.00034	0.00034	0.00032
	(!A2 * !B1 * !X)	-0.00156	-0.00156	-0.00158
	(!A1 * !A2 * B1 * !X)	0.00038	0.00038	0.00033
	(!A1 * !A2 * B1 * !X)	-0.00148	-0.00149	-0.00157
sky130_fd_sc_hs__o211a_2	(A2 * !B1 * !X)	0.00042	0.00042	0.00040
	(A2 * !B1 * !X)	-0.00150	-0.00150	-0.00152
	(!A2 * !B1 * !X)	0.00042	0.00042	0.00040
	(!A2 * !B1 * !X)	-0.00150	-0.00150	-0.00152
	(!A1 * !A2 * B1 * !X)	0.00045	0.00046	0.00041
	(!A1 * !A2 * B1 * !X)	-0.00143	-0.00144	-0.00152
sky130_fd_sc_hs__o211a_4	(A2 * !B1 * !X)	0.00062	0.00062	0.00059
	(A2 * !B1 * !X)	-0.00251	-0.00254	-0.00258
	(!A2 * !B1 * !X)	0.00062	0.00062	0.00059
	(!A2 * !B1 * !X)	-0.00253	-0.00254	-0.00258
	(!A1 * !A2 * B1 * !X)	0.00068	0.00069	0.00060
	(!A1 * !A2 * B1 * !X)	-0.00237	-0.00240	-0.00255

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__o211a_1	(A2 * !B1 * !X)	-0.00031	-0.00032	-0.00031
	(A2 * !B1 * !X)	0.00158	0.00159	0.00158
	(!A2 * !B1 * !X)	-0.00031	-0.00032	-0.00031
	(!A2 * !B1 * !X)	0.00158	0.00159	0.00158
	(!A1 * !A2 * B1 * !X)	-0.00031	-0.00031	-0.00031
	(!A1 * !A2 * B1 * !X)	0.00158	0.00159	0.00158
sky130_fd_sc_hs__o211a_2	(A2 * !B1 * !X)	-0.00039	-0.00040	-0.00039
	(A2 * !B1 * !X)	0.00152	0.00153	0.00153
	(!A2 * !B1 * !X)	-0.00039	-0.00039	-0.00039
	(!A2 * !B1 * !X)	0.00152	0.00153	0.00153
	(!A1 * !A2 * B1 * !X)	-0.00039	-0.00039	-0.00038
	(!A1 * !A2 * B1 * !X)	0.00152	0.00153	0.00153
sky130_fd_sc_hs__o211a_4	(A2 * !B1 * !X)	-0.00057	-0.00058	-0.00057
	(A2 * !B1 * !X)	0.00258	0.00260	0.00259
	(!A2 * !B1 * !X)	-0.00057	-0.00057	-0.00057
	(!A2 * !B1 * !X)	0.00258	0.00259	0.00259
	(!A1 * !A2 * B1 * !X)	-0.00056	-0.00056	-0.00055
	(!A1 * !A2 * B1 * !X)	0.00258	0.00259	0.00258

SKY130_FD_SC_HS__O21AIx

sky130_fd_sc_hs_tt_1.50v_25C.ccs
Cell Library: Process , Voltage
1.50, 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	0.00277	0.00286	0.00278	0.41549
sky130_fd_sc_hs__o21ai_2	0.00561	0.00520	0.00513	0.78981
sky130_fd_sc_hs__o21ai_4	0.00993	0.01027	0.00766	1.40427

Leakage Information

Cell Name	Leakage(nW)		
	Min.	**Avg**	**Max.**
sky130_fd_sc_hs__o21ai_1	0.00000	0.01949	0.05947
sky130_fd_sc_hs__o21ai_2	0.00000	0.03899	0.11893
sky130_fd_sc_hs__o21ai_4	0.00000	0.05568	0.17840

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)	0.13765	1.16568	11.55840
	A2->Y (FR)	0.11964	1.13650	11.51570
	B1->Y (FR)	0.04651	0.75546	8.24328
sky130_fd_sc_hs__o21ai_2	A1->Y (FR)	0.12062	0.99689	11.44600
	A2->Y (FR)	0.09629	0.96134	11.39330
	B1->Y (FR)	0.03505	0.67698	8.20932
sky130_fd_sc_hs__o21ai_4	A1->Y (FR)	0.11859	0.88030	11.30080
	A2->Y (FR)	0.09500	0.85900	11.43640
	B1->Y (FR)	0.04924	0.81350	11.14110

Delay(ns) to Y falling :

Cell Name	Timing Arc(Dir)	Delay(ns)		
		First	Mid	Last
sky130_fd_sc_hs__o21ai_1	A1->Y (RF)	0.04469	0.46355	4.64794
	A2->Y (RF)	0.03777	0.44849	4.59421
	B1->Y (RF)	0.03742	0.50493	5.21204
sky130_fd_sc_hs__o21ai_2	A1->Y (RF)	0.03731	0.39690	4.53930
	A2->Y (RF)	0.03274	0.38745	4.56026
	B1->Y (RF)	0.02427	0.42286	5.18584
sky130_fd_sc_hs__o21ai_4	A1->Y (RF)	0.03642	0.34832	4.43343
	A2->Y (RF)	0.03125	0.33438	4.42511
	B1->Y (RF)	0.02059	0.36267	5.06313

Power Information

Internal switching power(pJ) to Y rising :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__o21ai_1	A1	0.00053	0.00040	0.00067
	A1	0.00547	0.00531	0.00562
	A2	0.00057	0.00055	0.00153
	A2	0.00476	0.00475	0.00573
	B1	-0.00024	-0.00016	0.00095
	B1	0.00383	0.00389	0.00496
sky130_fd_sc_hs__o21ai_2	A1	0.00061	0.00035	0.00091
	A1	0.01005	0.00981	0.01035
	A2	0.00062	0.00070	0.00259
	A2	0.00837	0.00845	0.01032
	B1	-0.00134	-0.00115	0.00119
	B1	0.00610	0.00631	0.00862
sky130_fd_sc_hs__o21ai_4	A1	0.00091	0.00044	0.00164
	A1	0.01922	0.01878	0.01981
	A2	0.00069	0.00087	0.00471
	A2	0.01620	0.01641	0.02017
	B1	-0.00252	-0.00211	0.00048
	B1	0.00958	0.00981	0.01237

Internal switching power(pJ) to Y falling :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__o21ai_1	A1	0.00595	0.00587	0.00617
	A1	0.00096	0.00084	0.00110
	A2	0.00457	0.00451	0.00494
	A2	0.00030	0.00024	0.00051
	B1	0.00491	0.00485	0.00546
	B1	0.00092	0.00082	0.00126
sky130_fd_sc_hs__o21ai_2	A1	0.01103	0.01078	0.01158
	A1	0.00151	0.00122	0.00176
	A2	0.00781	0.00773	0.00842
	A2	-0.00012	-0.00020	0.00042
	B1	0.00880	0.00877	0.01028
	B1	0.00146	0.00141	0.00225
sky130_fd_sc_hs__o21ai_4	A1	0.02082	0.02029	0.02143
	A1	0.00240	0.00182	0.00304
	A2	0.01467	0.01451	0.01629
	A2	-0.00118	-0.00137	0.00008
	B1	0.01599	0.01587	0.01772
	B1	0.00423	0.00406	0.00504

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__o21ai_1	(A2 * B1 * !Y)	0.00146	0.00131	0.00130
	(A2 * B1 * !Y)	-0.00117	-0.00133	-0.00134
	(A2 * !B1 * Y)	0.00120	0.00120	0.00120
	(A2 * !B1 * Y)	-0.00142	-0.00144	-0.00144
	(!A2 * !B1 * Y)	0.00113	0.00114	0.00113
	(!A2 * !B1 * Y)	-0.00146	-0.00147	-0.00146
sky130_fd_sc_hs__o21ai_2	(A2 * B1 * !Y)	0.00275	0.00245	0.00243
	(A2 * B1 * !Y)	-0.00236	-0.00270	-0.00272
	(A2 * !B1 * Y)	0.00229	0.00229	0.00229
	(A2 * !B1 * Y)	-0.00280	-0.00286	-0.00285
	(!A2 * !B1 * Y)	0.00215	0.00217	0.00215
	(!A2 * !B1 * Y)	-0.00289	-0.00291	-0.00289
sky130_fd_sc_hs__o21ai_4	(A2 * B1 * !Y)	0.00507	0.00449	0.00444
	(A2 * B1 * !Y)	-0.00471	-0.00538	-0.00541
	(A2 * !B1 * Y)	0.00442	0.00444	0.00442
	(A2 * !B1 * Y)	-0.00530	-0.00544	-0.00542
	(!A2 * !B1 * Y)	0.00413	0.00415	0.00414
	(!A2 * !B1 * Y)	-0.00552	-0.00553	-0.00553

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__o21ai_1	(A2 * B1 * !Y)	-0.00129	-0.00130	-0.00129
	(A2 * B1 * !Y)	0.00133	0.00135	0.00134
	(A2 * !B1 * Y)	-0.00120	-0.00120	-0.00120
	(A2 * !B1 * Y)	0.00144	0.00145	0.00144
	(!A2 * !B1 * Y)	-0.00108	-0.00114	-0.00113
	(!A2 * !B1 * Y)	0.00148	0.00148	0.00146
sky130_fd_sc_hs__o21ai_2	(A2 * B1 * !Y)	-0.00241	-0.00241	-0.00241
	(A2 * B1 * !Y)	0.00270	0.00270	0.00272
	(A2 * !B1 * Y)	-0.00228	-0.00228	-0.00228
	(A2 * !B1 * Y)	0.00284	0.00286	0.00285
	(!A2 * !B1 * Y)	-0.00203	-0.00216	-0.00215
	(!A2 * !B1 * Y)	0.00290	0.00291	0.00290
sky130_fd_sc_hs__o21ai_4	(A2 * B1 * !Y)	-0.00444	-0.00445	-0.00442
	(A2 * B1 * !Y)	0.00541	0.00544	0.00541
	(A2 * !B1 * Y)	-0.00440	-0.00443	-0.00441
	(A2 * !B1 * Y)	0.00539	0.00546	0.00542
	(!A2 * !B1 * Y)	-0.00392	-0.00415	-0.00414
	(!A2 * !B1 * Y)	0.00557	0.00560	0.00555

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__o21ai_1	(A1 * B1 * !Y)	0.00133	0.00133	0.00134
	(A1 * B1 * !Y)	-0.00069	-0.00068	-0.00069
	(A1 * !B1 * Y)	0.00108	0.00109	0.00109
	(A1 * !B1 * Y)	-0.00144	-0.00147	-0.00146
	(!A1 * !B1 * Y)	0.00103	0.00103	0.00103
	(!A1 * !B1 * Y)	-0.00149	-0.00150	-0.00149
sky130_fd_sc_hs__o21ai_2	(A1 * B1 * !Y)	0.00241	0.00246	0.00242
	(A1 * B1 * !Y)	-0.00138	-0.00141	-0.00139
	(A1 * !B1 * Y)	0.00222	0.00224	0.00222
	(A1 * !B1 * Y)	-0.00258	-0.00262	-0.00264
	(!A1 * !B1 * Y)	0.00207	0.00210	0.00208
	(!A1 * !B1 * Y)	-0.00268	-0.00270	-0.00269
sky130_fd_sc_hs__o21ai_4	(A1 * B1 * !Y)	0.00512	0.00511	0.00510
	(A1 * B1 * !Y)	-0.00283	-0.00281	-0.00280
	(A1 * !B1 * Y)	0.00452	0.00451	0.00449
	(A1 * !B1 * Y)	-0.00541	-0.00552	-0.00549
	(!A1 * !B1 * Y)	0.00420	0.00424	0.00422
	(!A1 * !B1 * Y)	-0.00562	-0.00565	-0.00563

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__o21ai_1	(A1 * B1 * !Y)	-0.00129	-0.00130	-0.00133
	(A1 * B1 * !Y)	0.00074	0.00074	0.00070
	(A1 * !B1 * Y)	-0.00108	-0.00109	-0.00108
	(A1 * !B1 * Y)	0.00146	0.00147	0.00146
	(!A1 * !B1 * Y)	-0.00098	-0.00103	-0.00103
	(!A1 * !B1 * Y)	0.00151	0.00150	0.00149
sky130_fd_sc_hs__o21ai_2	(A1 * B1 * !Y)	-0.00229	-0.00231	-0.00240
	(A1 * B1 * !Y)	0.00150	0.00151	0.00142
	(A1 * !B1 * Y)	-0.00221	-0.00221	-0.00221
	(A1 * !B1 * Y)	0.00262	0.00262	0.00264
	(!A1 * !B1 * Y)	-0.00197	-0.00210	-0.00208
	(!A1 * !B1 * Y)	0.00270	0.00271	0.00270
sky130_fd_sc_hs__o21ai_4	(A1 * B1 * !Y)	-0.00480	-0.00483	-0.00507
	(A1 * B1 * !Y)	0.00305	0.00306	0.00287
	(A1 * !B1 * Y)	-0.00449	-0.00449	-0.00448
	(A1 * !B1 * Y)	0.00550	0.00552	0.00549
	(!A1 * !B1 * Y)	-0.00396	-0.00424	-0.00422
	(!A1 * !B1 * Y)	0.00567	0.00568	0.00565

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__o21ai_1	(!A1 * !A2 * Y)	0.00044	0.00044	0.00041
	(!A1 * !A2 * Y)	-0.00168	-0.00168	-0.00173
sky130_fd_sc_hs__o21ai_2	(!A1 * !A2 * Y)	0.00089	0.00090	0.00083
	(!A1 * !A2 * Y)	-0.00307	-0.00309	-0.00318
sky130_fd_sc_hs__o21ai_4	(!A1 * !A2 * Y)	0.00156	0.00157	0.00146
	(!A1 * !A2 * Y)	-0.00356	-0.00360	-0.00379

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__o21ai_1	(!A1 * !A2 * Y)	-0.00040	-0.00040	-0.00040
	(!A1 * !A2 * Y)	0.00174	0.00174	0.00173
sky130_fd_sc_hs__o21ai_2	(!A1 * !A2 * Y)	-0.00080	-0.00081	-0.00080
	(!A1 * !A2 * Y)	0.00319	0.00322	0.00320
sky130_fd_sc_hs__o21ai_4	(!A1 * !A2 * Y)	-0.00142	-0.00142	-0.00141
	(!A1 * !A2 * Y)	0.00381	0.00382	0.00380

SKY130_FD_SC_HS__O21Ax

sky130_fd_sc_hs_tt_1.50v_25C.ccs
Cell Library: Process , Voltage 1.50, 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	0.00239	0.00241	0.00238	0.85345
sky130_fd_sc_hs__o21a_2	0.00259	0.00256	0.00266	1.67705
sky130_fd_sc_hs__o21a_4	0.00496	0.00459	0.00441	3.22931

Leakage Information

Cell Name	Leakage(nW)		
	Min.	**Avg**	**Max.**
sky130_fd_sc_hs__o21a_1	0.00000	0.09394	0.23008
sky130_fd_sc_hs__o21a_2	0.00000	0.08457	0.15791
sky130_fd_sc_hs__o21a_4	0.00000	0.22853	0.46946

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)	0.09952	0.72667	6.79905
	A2->X (RR)	0.08876	0.70093	6.76252
	B1->X (RR)	0.09252	0.71467	6.81030
sky130_fd_sc_hs__o21a_2	A1->X (RR)	0.10305	0.64187	6.95678
	A2->X (RR)	0.09326	0.62157	6.91961
	B1->X (RR)	0.09604	0.63837	6.93017
sky130_fd_sc_hs__o21a_4	A1->X (RR)	0.10758	0.56813	7.00503
	A2->X (RR)	0.09970	0.54521	6.96516
	B1->X (RR)	0.09666	0.55839	6.99321

Delay(ns) to X falling :

Cell Name	Timing Arc(Dir)	Delay(ns)		
		First	Mid	Last
sky130_fd_sc_hs__o21a_1	A1->X (FF)	0.19008	0.71990	4.71684
	A2->X (FF)	0.17042	0.68467	4.48165
	B1->X (FF)	0.09155	0.58805	4.30137
sky130_fd_sc_hs__o21a_2	A1->X (FF)	0.24480	0.77467	5.04481
	A2->X (FF)	0.22706	0.75043	4.81439
	B1->X (FF)	0.10530	0.60462	4.50249
sky130_fd_sc_hs__o21a_4	A1->X (FF)	0.23516	0.73376	5.03955
	A2->X (FF)	0.21118	0.70154	4.80272
	B1->X (FF)	0.11441	0.58697	4.55491

Power Information

Internal switching power(pJ) to X rising :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__o21a_1	A1	0.00734	0.00738	0.00987
	A1	0.00311	0.00315	0.00658
	A2	0.00602	0.00599	0.01056
	A2	0.00246	0.00248	0.00801
	B1	0.00655	0.00659	0.01269
	B1	0.00253	0.00260	0.00938
sky130_fd_sc_hs__o21a_2	A1	0.00963	0.00994	0.01222
	A1	0.00503	0.00535	0.00763
	A2	0.00836	0.00859	0.01264
	A2	0.00449	0.00472	0.00877
	B1	0.00868	0.00888	0.01359
	B1	0.00442	0.00463	0.01174
sky130_fd_sc_hs__o21a_4	A1	0.01860	0.01914	0.02395
	A1	0.00993	0.01049	0.01529
	A2	0.01572	0.01613	0.02448
	A2	0.00862	0.00903	0.01737
	B1	0.01655	0.01706	0.02840
	B1	0.00871	0.00925	0.02131

Internal switching power(pJ) to X falling :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__o21a_1	A1	0.00295	0.00303	0.00570
	A1	0.00711	0.00720	0.00978
	A2	0.00297	0.00344	0.00909
	A2	0.00645	0.00692	0.01232
	B1	0.00229	0.00280	0.01069
	B1	0.00557	0.00594	0.01361
sky130_fd_sc_hs__o21a_2	A1	0.00488	0.00521	0.00814
	A1	0.00940	0.00972	0.01229
	A2	0.00495	0.00542	0.01114
	A2	0.00872	0.00922	0.01478
	B1	0.00418	0.00462	0.01166
	B1	0.00776	0.00819	0.01455
sky130_fd_sc_hs__o21a_4	A1	0.00898	0.00962	0.01640
	A1	0.01752	0.01815	0.02317
	A2	0.00923	0.01021	0.02153
	A2	0.01618	0.01715	0.02811
	B1	0.00791	0.00904	0.02354
	B1	0.01426	0.01531	0.02989

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__o21a_1	(A2 * B1 * X)	0.00119	0.00104	0.00104
	(A2 * B1 * X)	-0.00110	-0.00124	-0.00126
	(A2 * !B1 * !X)	0.00104	0.00105	0.00104
	(A2 * !B1 * !X)	-0.00124	-0.00127	-0.00126
	(!A2 * !B1 * !X)	0.00097	0.00099	0.00098
	(!A2 * !B1 * !X)	-0.00127	-0.00128	-0.00127
sky130_fd_sc_hs__o21a_2	(A2 * B1 * X)	0.00140	0.00125	0.00124
	(A2 * B1 * X)	-0.00107	-0.00122	-0.00124
	(A2 * !B1 * !X)	0.00124	0.00124	0.00124
	(A2 * !B1 * !X)	-0.00122	-0.00124	-0.00124
	(!A2 * !B1 * !X)	0.00117	0.00118	0.00117
	(!A2 * !B1 * !X)	-0.00125	-0.00126	-0.00125
sky130_fd_sc_hs__o21a_4	(A2 * B1 * X)	0.00259	0.00234	0.00231
	(A2 * B1 * X)	-0.00209	-0.00240	-0.00242
	(A2 * !B1 * !X)	0.00224	0.00225	0.00224
	(A2 * !B1 * !X)	-0.00242	-0.00248	-0.00247
	(!A2 * !B1 * !X)	0.00212	0.00215	0.00214
	(!A2 * !B1 * !X)	-0.00251	-0.00252	-0.00251

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__o21a_1	(A2 * B1 * X)	-0.00103	-0.00103	-0.00103
	(A2 * B1 * X)	0.00126	0.00127	0.00127
	(A2 * !B1 * !X)	-0.00104	-0.00104	-0.00103
	(A2 * !B1 * !X)	0.00126	0.00127	0.00126
	(!A2 * !B1 * !X)	-0.00092	-0.00099	-0.00098
	(!A2 * !B1 * !X)	0.00128	0.00129	0.00128
sky130_fd_sc_hs__o21a_2	(A2 * B1 * X)	-0.00123	-0.00124	-0.00123
	(A2 * B1 * X)	0.00124	0.00125	0.00125
	(A2 * !B1 * !X)	-0.00123	-0.00124	-0.00124
	(A2 * !B1 * !X)	0.00123	0.00125	0.00124
	(!A2 * !B1 * !X)	-0.00112	-0.00118	-0.00117
	(!A2 * !B1 * !X)	0.00127	0.00127	0.00126
sky130_fd_sc_hs__o21a_4	(A2 * B1 * X)	-0.00229	-0.00230	-0.00229
	(A2 * B1 * X)	0.00240	0.00243	0.00242
	(A2 * !B1 * !X)	-0.00223	-0.00225	-0.00224
	(A2 * !B1 * !X)	0.00246	0.00249	0.00247
	(!A2 * !B1 * !X)	-0.00204	-0.00215	-0.00214
	(!A2 * !B1 * !X)	0.00255	0.00255	0.00252

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__o21a_1	(A1 * B1 * X)	0.00106	0.00108	0.00106
	(A1 * B1 * X)	-0.00067	-0.00068	-0.00067
	(A1 * !B1 * !X)	0.00098	0.00099	0.00098
	(A1 * !B1 * !X)	-0.00119	-0.00121	-0.00122
	(!A1 * !B1 * !X)	0.00092	0.00094	0.00093
	(!A1 * !B1 * !X)	-0.00123	-0.00124	-0.00124
sky130_fd_sc_hs__o21a_2	(A1 * B1 * X)	0.00121	0.00124	0.00122
	(A1 * B1 * X)	-0.00063	-0.00064	-0.00063
	(A1 * !B1 * !X)	0.00111	0.00112	0.00111
	(A1 * !B1 * !X)	-0.00118	-0.00121	-0.00120
	(!A1 * !B1 * !X)	0.00106	0.00106	0.00105
	(!A1 * !B1 * !X)	-0.00123	-0.00123	-0.00122
sky130_fd_sc_hs__o21a_4	(A1 * B1 * X)	0.00212	0.00216	0.00212
	(A1 * B1 * X)	-0.00128	-0.00130	-0.00128
	(A1 * !B1 * !X)	0.00188	0.00190	0.00188
	(A1 * !B1 * !X)	-0.00240	-0.00247	-0.00245
	(!A1 * !B1 * !X)	0.00177	0.00178	0.00176
	(!A1 * !B1 * !X)	-0.00251	-0.00251	-0.00250

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__o21a_1	(A1 * B1 * X)	-0.00101	-0.00102	-0.00105
	(A1 * B1 * X)	0.00073	0.00073	0.00069
	(A1 * !B1 * !X)	-0.00098	-0.00098	-0.00098
	(A1 * !B1 * !X)	0.00122	0.00121	0.00122
	(!A1 * !B1 * !X)	-0.00088	-0.00094	-0.00093
	(!A1 * !B1 * !X)	0.00126	0.00125	0.00124
sky130_fd_sc_hs__o21a_2	(A1 * B1 * X)	-0.00117	-0.00118	-0.00121
	(A1 * B1 * X)	0.00068	0.00068	0.00065
	(A1 * !B1 * !X)	-0.00111	-0.00112	-0.00111
	(A1 * !B1 * !X)	0.00120	0.00121	0.00120
	(!A1 * !B1 * !X)	-0.00100	-0.00106	-0.00105
	(!A1 * !B1 * !X)	0.00123	0.00123	0.00123
sky130_fd_sc_hs__o21a_4	(A1 * B1 * X)	-0.00201	-0.00202	-0.00210
	(A1 * B1 * X)	0.00139	0.00139	0.00131
	(A1 * !B1 * !X)	-0.00188	-0.00189	-0.00188
	(A1 * !B1 * !X)	0.00245	0.00247	0.00245
	(!A1 * !B1 * !X)	-0.00167	-0.00178	-0.00176
	(!A1 * !B1 * !X)	0.00253	0.00252	0.00251

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__o21a_1	(!A1 * !A2 * !X)	0.00041	0.00041	0.00038
	(!A1 * !A2 * !X)	-0.00133	-0.00133	-0.00138
sky130_fd_sc_hs__o21a_2	(!A1 * !A2 * !X)	0.00045	0.00045	0.00041
	(!A1 * !A2 * !X)	-0.00150	-0.00151	-0.00156
sky130_fd_sc_hs__o21a_4	(!A1 * !A2 * !X)	0.00069	0.00069	0.00063
	(!A1 * !A2 * !X)	-0.00256	-0.00258	-0.00267

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__o21a_1	(!A1 * !A2 * !X)	-0.00037	-0.00037	-0.00037
	(!A1 * !A2 * !X)	0.00138	0.00139	0.00138
sky130_fd_sc_hs__o21a_2	(!A1 * !A2 * !X)	-0.00040	-0.00040	-0.00040
	(!A1 * !A2 * !X)	0.00156	0.00157	0.00157
sky130_fd_sc_hs__o21a_4	(!A1 * !A2 * !X)	-0.00060	-0.00061	-0.00060
	(!A1 * !A2 * !X)	0.00267	0.00269	0.00268

SKY130_FD_SC_HS__O21BAIx

sky130_fd_sc_hs_tt_1.50v_25C.ccs
Cell Library: Process , Voltage
1.50, 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	0.00264	0.00293	0.00230	0.41002
sky130_fd_sc_hs__o21bai_2	0.00558	0.00514	0.00253	0.78427
sky130_fd_sc_hs__o21bai_4	0.01004	0.01022	0.00343	1.44589

Leakage Information

Cell Name	Leakage(nW)		
	Min.	**Avg**	**Max.**
sky130_fd_sc_hs__o21bai_1	0.00000	0.09641	0.15578
sky130_fd_sc_hs__o21bai_2	0.00000	0.07926	0.12518
sky130_fd_sc_hs__o21bai_4	0.00000	0.20913	0.32086

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)	0.12904	1.15359	11.46620
	A2->Y (FR)	0.11277	1.12624	11.42760
	B1_N->Y (RR)	0.07518	0.49585	3.24389
sky130_fd_sc_hs__o21bai_2	A1->Y (FR)	0.11802	0.98991	11.35040
	A2->Y (FR)	0.09477	0.95669	11.28510
	B1_N->Y (RR)	0.07412	0.44777	3.26741
sky130_fd_sc_hs__o21bai_4	A1->Y (FR)	0.12023	0.88405	11.37490
	A2->Y (FR)	0.09566	0.85674	11.43530
	B1_N->Y (RR)	0.09975	0.63064	6.77383

Delay(ns) to Y falling :

Cell Name	Timing Arc(Dir)	Delay(ns)		
		First	Mid	Last
sky130_fd_sc_hs__o21bai_1	A1->Y (RF)	0.04501	0.46245	4.63783
	A2->Y (RF)	0.03836	0.44890	4.59417
	B1_N->Y (FF)	0.10656	0.57363	3.62140
sky130_fd_sc_hs__o21bai_2	A1->Y (RF)	0.04154	0.39776	4.52704
	A2->Y (RF)	0.03625	0.38867	4.54746
	B1_N->Y (FF)	0.11168	0.59170	3.97473
sky130_fd_sc_hs__o21bai_4	A1->Y (RF)	0.04882	0.36154	4.59514
	A2->Y (RF)	0.03744	0.34227	4.51674
	B1_N->Y (FF)	0.10740	0.52237	3.80712

Power Information

Internal switching power(pJ) to Y rising :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__o21bai_1	A1	0.00049	0.00038	0.00065
	A1	0.00432	0.00417	0.00449
	A2	0.00047	0.00046	0.00145
	A2	0.00376	0.00376	0.00472
	B1_N	0.00516	0.00515	0.01108
	B1_N	0.00348	0.00347	0.00956
sky130_fd_sc_hs__o21bai_2	A1	0.00057	0.00033	0.00091
	A1	0.00827	0.00805	0.00860
	A2	0.00061	0.00061	0.00261
	A2	0.00650	0.00650	0.00732
	B1_N	0.00709	0.00724	0.01267
	B1_N	0.00592	0.00610	0.01187
sky130_fd_sc_hs__o21bai_4	A1	0.00105	0.00062	0.00175
	A1	0.01605	0.01564	0.01673
	A2	0.00093	0.00087	0.00502
	A2	0.01300	0.01295	0.01702
	B1_N	0.00956	0.00999	0.02171
	B1_N	0.00917	0.00962	0.02134

Internal switching power(pJ) to Y falling :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__o21bai_1	A1	0.00552	0.00544	0.00567
	A1	0.00167	0.00157	0.00183
	A2	0.00422	0.00417	0.00463
	A2	0.00088	0.00083	0.00110
	B1_N	0.00425	0.00457	0.01178
	B1_N	0.00601	0.00630	0.01347
sky130_fd_sc_hs__o21bai_2	A1	0.01098	0.01073	0.01126
	A1	0.00325	0.00298	0.00354
	A2	0.00779	0.00771	0.00834
	A2	0.00179	0.00172	0.00233
	B1_N	0.00829	0.00851	0.01502
	B1_N	0.00957	0.00979	0.01631
sky130_fd_sc_hs__o21bai_4	A1	0.02190	0.02138	0.02283
	A1	0.00687	0.00628	0.00747
	A2	0.01554	0.01535	0.01674
	A2	0.00328	0.00307	0.00449
	B1_N	0.01659	0.01717	0.03016
	B1_N	0.01714	0.01763	0.03031

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)	0.00117	0.00117	0.00117
	(A2 * B1_N * Y)	-0.00133	-0.00135	-0.00136
	(A2 * !B1_N * !Y)	0.00132	0.00118	0.00117
	(A2 * !B1_N * !Y)	-0.00120	-0.00135	-0.00136
	(!A2 * B1_N * Y)	0.00112	0.00113	0.00112
	(!A2 * B1_N * Y)	-0.00138	-0.00138	-0.00138
sky130_fd_sc_hs__o21bai_2	(A2 * B1_N * Y)	0.00240	0.00240	0.00240
	(A2 * B1_N * Y)	-0.00277	-0.00283	-0.00282
	(A2 * !B1_N * !Y)	0.00276	0.00246	0.00243
	(A2 * !B1_N * !Y)	-0.00244	-0.00278	-0.00280
	(!A2 * B1_N * Y)	0.00230	0.00233	0.00231
	(!A2 * B1_N * Y)	-0.00286	-0.00288	-0.00287
sky130_fd_sc_hs__o21bai_4	(A2 * B1_N * Y)	0.00446	0.00450	0.00449
	(A2 * B1_N * Y)	-0.00533	-0.00550	-0.00548
	(A2 * !B1_N * !Y)	0.00513	0.00455	0.00450
	(A2 * !B1_N * !Y)	-0.00471	-0.00545	-0.00548
	(!A2 * B1_N * Y)	0.00432	0.00434	0.00432
	(!A2 * B1_N * Y)	-0.00560	-0.00560	-0.00559

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)	-0.00117	-0.00117	-0.00117
	(A2 * B1_N * Y)	0.00136	0.00135	0.00136
	(A2 * !B1_N * !Y)	-0.00116	-0.00117	-0.00116
	(A2 * !B1_N * !Y)	0.00135	0.00137	0.00136
	(!A2 * B1_N * Y)	-0.00107	-0.00113	-0.00112
	(!A2 * B1_N * Y)	0.00139	0.00139	0.00138
sky130_fd_sc_hs__o21bai_2	(A2 * B1_N * Y)	-0.00239	-0.00240	-0.00239
	(A2 * B1_N * Y)	0.00282	0.00285	0.00282
	(A2 * !B1_N * !Y)	-0.00242	-0.00242	-0.00242
	(A2 * !B1_N * !Y)	0.00278	0.00279	0.00280
	(!A2 * B1_N * Y)	-0.00222	-0.00231	-0.00231
	(!A2 * B1_N * Y)	0.00288	0.00289	0.00288
sky130_fd_sc_hs__o21bai_4	(A2 * B1_N * Y)	-0.00446	-0.00448	-0.00447
	(A2 * B1_N * Y)	0.00546	0.00551	0.00548
	(A2 * !B1_N * !Y)	-0.00447	-0.00450	-0.00447
	(A2 * !B1_N * !Y)	0.00543	0.00551	0.00548
	(!A2 * B1_N * Y)	-0.00412	-0.00432	-0.00432
	(!A2 * B1_N * Y)	0.00563	0.00564	0.00561

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)	0.00119	0.00121	0.00120
	(A1 * B1_N * Y)	-0.00144	-0.00147	-0.00147
	(A1 * !B1_N * !Y)	0.00136	0.00138	0.00136
	(A1 * !B1_N * !Y)	-0.00078	-0.00080	-0.00078
	(!A1 * B1_N * Y)	0.00115	0.00116	0.00115
	(!A1 * B1_N * Y)	-0.00150	-0.00151	-0.00150
sky130_fd_sc_hs__o21bai_2	(A1 * B1_N * Y)	0.00218	0.00221	0.00219
	(A1 * B1_N * Y)	-0.00258	-0.00263	-0.00264
	(A1 * !B1_N * !Y)	0.00240	0.00243	0.00239
	(A1 * !B1_N * !Y)	-0.00140	-0.00141	-0.00138
	(!A1 * B1_N * Y)	0.00210	0.00213	0.00211
	(!A1 * B1_N * Y)	-0.00268	-0.00270	-0.00269
sky130_fd_sc_hs__o21bai_4	(A1 * B1_N * Y)	0.00444	0.00446	0.00445
	(A1 * B1_N * Y)	-0.00535	-0.00550	-0.00548
	(A1 * !B1_N * !Y)	0.00499	0.00503	0.00502
	(A1 * !B1_N * !Y)	-0.00281	-0.00283	-0.00282
	(!A1 * B1_N * Y)	0.00428	0.00427	0.00428
	(!A1 * B1_N * Y)	-0.00561	-0.00560	-0.00560

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)	-0.00119	-0.00120	-0.00119
	(A1 * B1_N * Y)	0.00147	0.00147	0.00147
	(A1 * !B1_N * !Y)	-0.00130	-0.00131	-0.00135
	(A1 * !B1_N * !Y)	0.00083	0.00083	0.00080
	(!A1 * B1_N * Y)	-0.00111	-0.00116	-0.00115
	(!A1 * B1_N * Y)	0.00152	0.00152	0.00151
sky130_fd_sc_hs__o21bai_2	(A1 * B1_N * Y)	-0.00218	-0.00218	-0.00218
	(A1 * B1_N * Y)	0.00263	0.00263	0.00264
	(A1 * !B1_N * !Y)	-0.00226	-0.00227	-0.00237
	(A1 * !B1_N * !Y)	0.00148	0.00149	0.00141
	(!A1 * B1_N * Y)	-0.00202	-0.00211	-0.00211
	(!A1 * B1_N * Y)	0.00270	0.00271	0.00270
sky130_fd_sc_hs__o21bai_4	(A1 * B1_N * Y)	-0.00442	-0.00445	-0.00443
	(A1 * B1_N * Y)	0.00546	0.00550	0.00548
	(A1 * !B1_N * !Y)	-0.00472	-0.00475	-0.00498
	(A1 * !B1_N * !Y)	0.00308	0.00307	0.00289
	(!A1 * B1_N * Y)	-0.00409	-0.00427	-0.00428
	(!A1 * B1_N * Y)	0.00564	0.00567	0.00562

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)	0.00422	0.00413	0.01092
	(!A1 * !A2 * Y)	0.00152	0.00142	0.00822
sky130_fd_sc_hs__o21bai_2	(!A1 * !A2 * Y)	0.00614	0.00600	0.01230
	(!A1 * !A2 * Y)	0.00307	0.00291	0.00923
sky130_fd_sc_hs__o21bai_4	(!A1 * !A2 * Y)	0.00738	0.00724	0.01892
	(!A1 * !A2 * Y)	0.00320	0.00302	0.01472

Passive power(pJ) for B1_N falling (conditional):

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__o21bai_1	(!A1 * !A2 * Y)	0.00017	0.00040	0.00770
	(!A1 * !A2 * Y)	0.00289	0.00313	0.01042
sky130_fd_sc_hs__o21bai_2	(!A1 * !A2 * Y)	0.00060	0.00068	0.00730
	(!A1 * !A2 * Y)	0.00371	0.00380	0.01040
sky130_fd_sc_hs__o21bai_4	(!A1 * !A2 * Y)	0.00117	0.00156	0.01427
	(!A1 * !A2 * Y)	0.00544	0.00585	0.01851

SKY130_FD_SC_HS__O21BAx

sky130_fd_sc_hs_tt_1.50v_25C.ccs
Cell Library: Process , Voltage 1.50, 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	0.00241	0.00256	0.00210	0.77745
sky130_fd_sc_hs__o21ba_2	0.00251	0.00263	0.00223	1.53640
sky130_fd_sc_hs__o21ba_4	0.00502	0.00478	0.00271	2.88053

Leakage Information

Cell Name	Leakage(nW)		
	Min.	Avg	Max.
sky130_fd_sc_hs__o21ba_1	0.00000	0.14204	0.18710
sky130_fd_sc_hs__o21ba_2	0.00000	0.16148	0.21524
sky130_fd_sc_hs__o21ba_4	0.00000	0.24572	0.47412

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)	0.11169	0.75878	6.85809
	A2->X (RR)	0.10096	0.73456	6.82367
	B1_N->X (FR)	0.17843	0.95710	8.37721
sky130_fd_sc_hs__o21ba_2	A1->X (RR)	0.11010	0.64644	6.79899
	A2->X (RR)	0.09844	0.62476	6.75737
	B1_N->X (FR)	0.18192	0.84647	8.26107
sky130_fd_sc_hs__o21ba_4	A1->X (RR)	0.11655	0.57947	6.89211
	A2->X (RR)	0.10944	0.55747	6.85209
	B1_N->X (FR)	0.19411	0.82187	8.67642

Delay(ns) to X falling :

Cell Name	Timing Arc(Dir)	Delay(ns)		
		First	Mid	Last
sky130_fd_sc_hs__o21ba_1	A1->X (FF)	0.19871	0.72670	4.57369
	A2->X (FF)	0.18219	0.69761	4.34578
	B1_N->X (RF)	0.12508	0.41858	2.16540
sky130_fd_sc_hs__o21ba_2	A1->X (FF)	0.24059	0.76917	4.92282
	A2->X (FF)	0.22330	0.74355	4.69438
	B1_N->X (RF)	0.14085	0.42119	2.32887
sky130_fd_sc_hs__o21ba_4	A1->X (FF)	0.23422	0.72660	4.78157
	A2->X (FF)	0.21047	0.69389	4.54448
	B1_N->X (RF)	0.14735	0.40371	2.15114

Power Information

Internal switching power(pJ) to X rising :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__o21ba_1	A1	0.00777	0.00782	0.01026
	A1	0.00425	0.00429	0.00676
	A2	0.00662	0.00657	0.01101
	A2	0.00361	0.00355	0.00801
	B1_N	0.00693	0.00729	0.01467
	B1_N	0.00853	0.00890	0.01702
sky130_fd_sc_hs__o21ba_2	A1	0.00958	0.00988	0.01219
	A1	0.00596	0.00627	0.01067
	A2	0.00838	0.00860	0.01269
	A2	0.00528	0.00551	0.00960
	B1_N	0.00855	0.00914	0.01622
	B1_N	0.01033	0.01094	0.01806
sky130_fd_sc_hs__o21ba_4	A1	0.01855	0.01902	0.02389
	A1	0.01134	0.01186	0.01684
	A2	0.01568	0.01610	0.02439
	A2	0.01002	0.01046	0.01883
	B1_N	0.01613	0.01716	0.02343
	B1_N	0.01766	0.01871	0.02511

Internal switching power(pJ) to X falling :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__o21ba_1	A1	0.00293	0.00306	0.00580
	A1	0.00642	0.00655	0.00912
	A2	0.00293	0.00324	0.00878
	A2	0.00589	0.00620	0.01172
	B1_N	0.00761	0.00752	0.01378
	B1_N	0.00601	0.00590	0.01216
sky130_fd_sc_hs__o21ba_2	A1	0.00456	0.00490	0.00797
	A1	0.00815	0.00848	0.01104
	A2	0.00459	0.00505	0.01144
	A2	0.00764	0.00808	0.01366
	B1_N	0.00965	0.00957	0.01559
	B1_N	0.00788	0.00782	0.01373
sky130_fd_sc_hs__o21ba_4	A1	0.00868	0.00937	0.01512
	A1	0.01581	0.01650	0.02148
	A2	0.00895	0.01012	0.02168
	A2	0.01448	0.01566	0.02637
	B1_N	0.01594	0.01643	0.02215
	B1_N	0.01448	0.01493	0.02053

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)	0.00103	0.00103	0.00103
	(A2 * B1_N * !X)	-0.00125	-0.00127	-0.00127
	(A2 * !B1_N * X)	0.00119	0.00104	0.00103
	(A2 * !B1_N * X)	-0.00110	-0.00125	-0.00127
	(!A2 * B1_N * !X)	0.00100	0.00100	0.00100
	(!A2 * B1_N * !X)	-0.00129	-0.00129	-0.00128
sky130_fd_sc_hs__o21ba_2	(A2 * B1_N * !X)	0.00117	0.00117	0.00117
	(A2 * B1_N * !X)	-0.00122	-0.00124	-0.00124
	(A2 * !B1_N * X)	0.00133	0.00118	0.00117
	(A2 * !B1_N * X)	-0.00107	-0.00122	-0.00124
	(!A2 * B1_N * !X)	0.00112	0.00113	0.00112
	(!A2 * B1_N * !X)	-0.00125	-0.00126	-0.00125
sky130_fd_sc_hs__o21ba_4	(A2 * B1_N * !X)	0.00228	0.00230	0.00229
	(A2 * B1_N * !X)	-0.00246	-0.00253	-0.00252
	(A2 * !B1_N * X)	0.00260	0.00234	0.00231
	(A2 * !B1_N * X)	-0.00217	-0.00249	-0.00251
	(!A2 * B1_N * !X)	0.00220	0.00223	0.00221
	(!A2 * B1_N * !X)	-0.00256	-0.00257	-0.00256

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)	-0.00102	-0.00103	-0.00102
	(A2 * B1_N * !X)	0.00126	0.00128	0.00127
	(A2 * !B1_N * X)	-0.00102	-0.00103	-0.00102
	(A2 * !B1_N * X)	0.00127	0.00128	0.00128
	(!A2 * B1_N * !X)	-0.00095	-0.00099	-0.00100
	(!A2 * B1_N * !X)	0.00130	0.00130	0.00129
sky130_fd_sc_hs__o21ba_2	(A2 * B1_N * !X)	-0.00117	-0.00117	-0.00116
	(A2 * B1_N * !X)	0.00124	0.00124	0.00124
	(A2 * !B1_N * X)	-0.00116	-0.00117	-0.00116
	(A2 * !B1_N * X)	0.00124	0.00125	0.00124
	(!A2 * B1_N * !X)	-0.00107	-0.00113	-0.00112
	(!A2 * B1_N * !X)	0.00126	0.00127	0.00126
sky130_fd_sc_hs__o21ba_4	(A2 * B1_N * !X)	-0.00227	-0.00230	-0.00228
	(A2 * B1_N * !X)	0.00250	0.00253	0.00252
	(A2 * !B1_N * X)	-0.00228	-0.00230	-0.00229
	(A2 * !B1_N * X)	0.00249	0.00252	0.00251
	(!A2 * B1_N * !X)	-0.00213	-0.00223	-0.00221
	(!A2 * B1_N * !X)	0.00260	0.00260	0.00257

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)	0.00108	0.00109	0.00109
	(A1 * B1_N * !X)	-0.00125	-0.00128	-0.00127
	(A1 * !B1_N * X)	0.00114	0.00116	0.00114
	(A1 * !B1_N * X)	-0.00075	-0.00076	-0.00075
	(!A1 * B1_N * !X)	0.00104	0.00105	0.00104
	(!A1 * B1_N * !X)	-0.00129	-0.00130	-0.00129
sky130_fd_sc_hs__o21ba_2	(A1 * B1_N * !X)	0.00120	0.00121	0.00120
	(A1 * B1_N * !X)	-0.00123	-0.00125	-0.00125
	(A1 * !B1_N * X)	0.00128	0.00130	0.00128
	(A1 * !B1_N * X)	-0.00070	-0.00071	-0.00070
	(!A1 * B1_N * !X)	0.00115	0.00116	0.00115
	(!A1 * B1_N * !X)	-0.00127	-0.00128	-0.00127
sky130_fd_sc_hs__o21ba_4	(A1 * B1_N * !X)	0.00194	0.00196	0.00194
	(A1 * B1_N * !X)	-0.00248	-0.00253	-0.00252
	(A1 * !B1_N * X)	0.00218	0.00221	0.00218
	(A1 * !B1_N * X)	-0.00135	-0.00137	-0.00135
	(!A1 * B1_N * !X)	0.00184	0.00186	0.00185
	(!A1 * B1_N * !X)	-0.00258	-0.00260	-0.00258

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)	-0.00108	-0.00109	-0.00108
	(A1 * B1_N * !X)	0.00128	0.00128	0.00127
	(A1 * !B1_N * X)	-0.00109	-0.00110	-0.00113
	(A1 * !B1_N * X)	0.00079	0.00080	0.00076
	(!A1 * B1_N * !X)	-0.00100	-0.00105	-0.00104
	(!A1 * B1_N * !X)	0.00131	0.00130	0.00130
sky130_fd_sc_hs__o21ba_2	(A1 * B1_N * !X)	-0.00120	-0.00119	-0.00119
	(A1 * B1_N * !X)	0.00125	0.00125	0.00125
	(A1 * !B1_N * X)	-0.00123	-0.00124	-0.00127
	(A1 * !B1_N * X)	0.00075	0.00075	0.00072
	(!A1 * B1_N * !X)	-0.00111	-0.00116	-0.00115
	(!A1 * B1_N * !X)	0.00129	0.00128	0.00128
sky130_fd_sc_hs__o21ba_4	(A1 * B1_N * !X)	-0.00193	-0.00195	-0.00194
	(A1 * B1_N * !X)	0.00251	0.00253	0.00252
	(A1 * !B1_N * X)	-0.00206	-0.00206	-0.00216
	(A1 * !B1_N * X)	0.00146	0.00145	0.00138
	(!A1 * B1_N * !X)	-0.00177	-0.00185	-0.00185
	(!A1 * B1_N * !X)	0.00263	0.00260	0.00259

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)	0.00390	0.00384	0.01063
	(!A1 * !A2 * !X)	0.00139	0.00132	0.00812
sky130_fd_sc_hs__o21ba_2	(!A1 * !A2 * !X)	0.00427	0.00418	0.01086
	(!A1 * !A2 * !X)	0.00163	0.00152	0.00821
sky130_fd_sc_hs__o21ba_4	(!A1 * !A2 * !X)	0.00596	0.00580	0.01128
	(!A1 * !A2 * !X)	0.00271	0.00254	0.00802

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)	0.00025	0.00051	0.00776
	(!A1 * !A2 * !X)	0.00277	0.00304	0.01027
sky130_fd_sc_hs__o21ba_2	(!A1 * !A2 * !X)	0.00020	0.00043	0.00763
	(!A1 * !A2 * !X)	0.00286	0.00309	0.01029
sky130_fd_sc_hs__o21ba_4	(!A1 * !A2 * !X)	0.00039	0.00047	0.00629
	(!A1 * !A2 * !X)	0.00368	0.00377	0.00957

SKY130_FD_SC_HS__O221AIx

sky130_fd_sc_hs_tt_1.50v_25C.ccs
Cell Library: Process , Voltage
1.50, 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	0.00272	0.00289	0.00284	0.00277	0.00281	0.40394
sky130_fd_sc_hs__o221ai_2	0.00558	0.00511	0.00586	0.00511	0.00517	0.76403
sky130_fd_sc_hs__o221ai_4	0.01061	0.01013	0.01074	0.01010	0.01029	1.45620

Leakage Information

Cell Name	Leakage(nW)		
	Min.	Avg	Max.
sky130_fd_sc_hs__o221ai_1	0.00000	0.01963	0.08920
sky130_fd_sc_hs__o221ai_2	0.00000	0.03926	0.17840
sky130_fd_sc_hs__o221ai_4	0.00000	0.07851	0.35679

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)	0.19928	1.22653	11.44320
	A2->Y (FR)	0.18129	1.18945	11.40410
	B1->Y (FR)	0.14918	1.15957	11.31690
	B2->Y (FR)	0.12977	1.12920	11.26000
	C1->Y (FR)	0.05088	0.75130	8.12107
sky130_fd_sc_hs__o221ai_2	A1->Y (FR)	0.17906	1.05275	11.30230
	A2->Y (FR)	0.15606	1.01869	11.24320
	B1->Y (FR)	0.13492	0.99793	11.21840
	B2->Y (FR)	0.11042	0.96290	11.16410
	C1->Y (FR)	0.03963	0.66951	8.01113
sky130_fd_sc_hs__o221ai_4	A1->Y (FR)	0.16920	0.92472	11.18180
	A2->Y (FR)	0.14705	0.89362	11.20490
	B1->Y (FR)	0.13343	0.89187	11.37730
	B2->Y (FR)	0.10861	0.86294	11.39320
	C1->Y (FR)	0.03958	0.61511	8.08268

Delay(ns) to Y falling :

Cell Name	Timing Arc(Dir)	Delay(ns)		
		First	Mid	Last
sky130_fd_sc_hs__o221ai_1	A1->Y (RF)	0.08631	0.55078	4.99656
	A2->Y (RF)	0.07617	0.53558	4.96274
	B1->Y (RF)	0.07765	0.59279	5.69983
	B2->Y (RF)	0.06569	0.57060	5.59756
	C1->Y (RF)	0.06452	0.61909	6.16662
sky130_fd_sc_hs__o221ai_2	A1->Y (RF)	0.06882	0.46382	4.95421
	A2->Y (RF)	0.05980	0.45316	4.98999
	B1->Y (RF)	0.05975	0.50551	5.67210
	B2->Y (RF)	0.05089	0.50601	5.85804
	C1->Y (RF)	0.03382	0.51987	6.28705
sky130_fd_sc_hs__o221ai_4	A1->Y (RF)	0.07409	0.42276	5.13302
	A2->Y (RF)	0.06239	0.40689	5.14684
	B1->Y (RF)	0.06586	0.47548	6.01228
	B2->Y (RF)	0.05345	0.45962	6.05883
	C1->Y (RF)	0.03642	0.48409	6.69846

Power Information

Internal switching power(pJ) to Y rising :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__o221ai_1	A1	0.00178	0.00164	0.00187
	A1	0.00852	0.00838	0.00860
	A2	0.00186	0.00176	0.00267
	A2	0.00788	0.00780	0.00865
	B1	0.00061	0.00044	0.00071
	B1	0.00641	0.00622	0.00649
	B2	0.00063	0.00059	0.00152
	B2	0.00564	0.00559	0.00583
	C1	-0.00035	-0.00031	0.00075
	C1	0.00462	0.00467	0.00566
sky130_fd_sc_hs__o221ai_2	A1	0.00287	0.00253	0.00304
	A1	0.01587	0.01557	0.01601
	A2	0.00291	0.00278	0.00464
	A2	0.01418	0.01408	0.01545
	B1	0.00072	0.00036	0.00092
	B1	0.01207	0.01171	0.01206
	B2	0.00083	0.00075	0.00257
	B2	0.01039	0.01028	0.01165
	C1	-0.00127	-0.00115	0.00112
	C1	0.00805	0.00819	0.01038

sky130_fd_sc_hs__o221ai_4	**A1**	0.00484	0.00420	0.00523
	A1	0.03052	0.02992	0.03089
	A2	0.00497	0.00473	0.00807
	A2	0.02741	0.02726	0.02967
	B1	0.00108	0.00032	0.00178
	B1	0.02337	0.02259	0.02399
	B2	0.00108	0.00085	0.00503
	B2	0.02018	0.01995	0.02393
	C1	-0.00238	-0.00176	0.00412
	C1	0.01618	0.01663	0.02240

Internal switching power(pJ) to Y falling :

Cell Name	**Input**	**Power(pJ)**		
		first	**mid**	**last**
sky130_fd_sc_hs__o221ai_1	**A1**	0.00929	0.00918	0.00956
	A1	0.00225	0.00214	0.00233
	A2	0.00785	0.00780	0.00810
	A2	0.00149	0.00140	0.00160
	B1	0.00807	0.00798	0.00831
	B1	0.00228	0.00216	0.00238
	B2	0.00667	0.00659	0.00720
	B2	0.00167	0.00159	0.00181
	C1	0.00720	0.00709	0.00745
	C1	0.00232	0.00220	0.00258

sky130_fd_sc_hs__o221ai_2	**A1**	0.01749	0.01725	0.01765
	A1	0.00394	0.00365	0.00405
	A2	0.01440	0.01431	0.01470
	A2	0.00248	0.00233	0.00279
	B1	0.01534	0.01508	0.01604
	B1	0.00400	0.00371	0.00416
	B2	0.01209	0.01194	0.01261
	B2	0.00246	0.00233	0.00282
	C1	0.01310	0.01297	0.01402
	C1	0.00396	0.00384	0.00460
sky130_fd_sc_hs__o221ai_4	**A1**	0.03462	0.03409	0.03569
	A1	0.00783	0.00726	0.00818
	A2	0.02855	0.02816	0.02954
	A2	0.00487	0.00444	0.00553
	B1	0.03015	0.02959	0.03099
	B1	0.00792	0.00732	0.00853
	B2	0.02421	0.02380	0.02607
	B2	0.00504	0.00460	0.00596
	C1	0.02594	0.02572	0.02835
	C1	0.00779	0.00755	0.00979

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

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

	(A2 * B2 * C1 * !Y)	0.00138	0.00125	0.00125
	(A2 * B2 * C1 * !Y)	-0.00123	-0.00138	-0.00139
	(A2 * B1 * !C1 * Y) + (A2 * !B1 * B2 * !C1 * Y)	0.00125	0.00125	0.00125
	(A2 * B1 * !C1 * Y) + (A2 * !B1 * B2 * !C1 * Y)	-0.00135	-0.00138	-0.00138
	(A2 * B1 * !B2 * C1 * !Y)	0.00139	0.00125	0.00125
	(A2 * B1 * !B2 * C1 * !Y)	-0.00123	-0.00138	-0.00139
	(A2 * !B1 * !B2 * Y)	0.00125	0.00125	0.00125
sky130_fd_sc_hs__o221ai_1	**(A2 * !B1 * !B2 * Y)**	-0.00135	-0.00138	-0.00138
	(!A2 * B2 * !C1 * Y)	0.00115	0.00116	0.00115
	(!A2 * B2 * !C1 * Y)	-0.00140	-0.00141	-0.00140
	(!A2 * B1 * !B2 * !C1 * Y)	0.00116	0.00117	0.00116
	(!A2 * B1 * !B2 * !C1 * Y)	-0.00140	-0.00141	-0.00140
	(!A2 * !B1 * !B2 * C1 * Y)	0.00117	0.00117	0.00117
	(!A2 * !B1 * !B2 * C1 * Y)	-0.00140	-0.00140	-0.00140
	(!A2 * !B1 * !B2 * !C1 * Y)	0.00117	0.00117	0.00117
	(!A2 * !B1 * !B2 * !C1 * Y)	-0.00140	-0.00140	-0.00140

sky130_fd_sc_hs__o221ai_2	**(A2 * B2 * C1 * !Y)**	0.00271	0.00241	0.00239
	(A2 * B2 * C1 * !Y)	-0.00239	-0.00273	-0.00275
	(A2 * B1 * !C1 * Y) + (A2 * !B1 * B2 * !C1 * Y)	0.00230	0.00230	0.00230
	(A2 * B1 * !C1 * Y) + (A2 * !B1 * B2 * !C1 * Y)	-0.00278	-0.00283	-0.00283
	(A2 * B1 * !B2 * C1 * !Y)	0.00271	0.00241	0.00239
	(A2 * B1 * !B2 * C1 * !Y)	-0.00239	-0.00273	-0.00275
	(A2 * !B1 * !B2 * Y)	0.00230	0.00230	0.00230
	(A2 * !B1 * !B2 * Y)	-0.00278	-0.00283	-0.00283
	(!A2 * B2 * !C1 * Y)	0.00209	0.00211	0.00209
	(!A2 * B2 * !C1 * Y)	-0.00288	-0.00290	-0.00288
	(!A2 * B1 * !B2 * !C1 * Y)	0.00211	0.00214	0.00211
	(!A2 * B1 * !B2 * !C1 * Y)	-0.00288	-0.00290	-0.00288
	(!A2 * !B1 * !B2 * C1 * Y)	0.00214	0.00217	0.00215
	(!A2 * !B1 * !B2 * C1 * Y)	-0.00288	-0.00290	-0.00288
	(!A2 * !B1 * !B2 * !C1 * Y)	0.00214	0.00216	0.00215
	(!A2 * !B1 * !B2 * !C1 * Y)	-0.00288	-0.00289	-0.00288

sky130_fd_sc_hs__o221ai_4	**(A2 * B2 * C1 * !Y)**	0.00536	0.00475	0.00469
	(A2 * B2 * C1 * !Y)	-0.00469	-0.00538	-0.00542
	(A2 * B1 * !C1 * Y) + (A2 * !B1 * B2 * !C1 * Y)	0.00462	0.00466	0.00464
	(A2 * B1 * !C1 * Y) + (A2 * !B1 * B2 * !C1 * Y)	-0.00531	-0.00547	-0.00545
	(A2 * B1 * !B2 * C1 * !Y)	0.00536	0.00475	0.00469
	(A2 * B1 * !B2 * C1 * !Y)	-0.00469	-0.00538	-0.00542
	(A2 * !B1 * !B2 * Y)	0.00462	0.00466	0.00465
	(A2 * !B1 * !B2 * Y)	-0.00531	-0.00547	-0.00545
	(!A2 * B2 * !C1 * Y)	0.00422	0.00426	0.00421
	(!A2 * B2 * !C1 * Y)	-0.00556	-0.00559	-0.00555
	(!A2 * B1 * !B2 * !C1 * Y)	0.00427	0.00431	0.00426
	(!A2 * B1 * !B2 * !C1 * Y)	-0.00556	-0.00559	-0.00555
	(!A2 * !B1 * !B2 * C1 * Y)	0.00433	0.00439	0.00434
	(!A2 * !B1 * !B2 * C1 * Y)	-0.00554	-0.00558	-0.00555
	(!A2 * !B1 * !B2 * !C1 * Y)	0.00433	0.00437	0.00434
	(!A2 * !B1 * !B2 * !C1 * Y)	-0.00554	-0.00557	-0.00555

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)**	-0.00124	-0.00125	-0.00124
	(A2 * B2 * C1 * !Y)	0.00138	0.00140	0.00139
	(A2 * B1 * !C1 * Y) + (A2 * !B1 * B2 * !C1 * Y)	-0.00124	-0.00125	-0.00124
	(A2 * B1 * !C1 * Y) + (A2 * !B1 * B2 * !C1 * Y)	0.00138	0.00138	0.00138
	(A2 * B1 * !B2 * C1 * !Y)	-0.00124	-0.00125	-0.00124
	(A2 * B1 * !B2 * C1 * !Y)	0.00138	0.00140	0.00139
	(A2 * !B1 * !B2 * Y)	-0.00125	-0.00125	-0.00124
	(A2 * !B1 * !B2 * Y)	0.00138	0.00138	0.00138
	(!A2 * B2 * !C1 * Y)	-0.00106	-0.00116	-0.00115
	(!A2 * B2 * !C1 * Y)	0.00141	0.00142	0.00140
	(!A2 * B1 * !B2 * !C1 * Y)	-0.00108	-0.00117	-0.00116
	(!A2 * B1 * !B2 * !C1 * Y)	0.00141	0.00142	0.00140
	(!A2 * !B1 * !B2 * C1 * Y)	-0.00110	-0.00117	-0.00117
	(!A2 * !B1 * !B2 * C1 * Y)	0.00140	0.00141	0.00140
	(!A2 * !B1 * !B2 * !C1 * Y)	-0.00111	-0.00117	-0.00117
	(!A2 * !B1 * !B2 * !C1 * Y)	0.00140	0.00141	0.00140

sky130_fd_sc_hs__o221ai_2	**(A2 * B2 * C1 * !Y)**	-0.00238	-0.00239	-0.00237
	(A2 * B2 * C1 * !Y)	0.00275	0.00277	0.00275
	(A2 * B1 * !C1 * Y) + (A2 * !B1 * B2 * !C1 * Y)	-0.00229	-0.00229	-0.00229
	(A2 * B1 * !C1 * Y) + (A2 * !B1 * B2 * !C1 * Y)	0.00284	0.00283	0.00283
	(A2 * B1 * !B2 * C1 * !Y)	-0.00238	-0.00239	-0.00237
	(A2 * B1 * !B2 * C1 * !Y)	0.00275	0.00277	0.00275
	(A2 * !B1 * !B2 * Y)	-0.00229	-0.00229	-0.00229
	(A2 * !B1 * !B2 * Y)	0.00282	0.00283	0.00283
	(!A2 * B2 * !C1 * Y)	-0.00192	-0.00211	-0.00209
	(!A2 * B2 * !C1 * Y)	0.00288	0.00291	0.00289
	(!A2 * B1 * !B2 * !C1 * Y)	-0.00196	-0.00214	-0.00211
	(!A2 * B1 * !B2 * !C1 * Y)	0.00288	0.00290	0.00289
	(!A2 * !B1 * !B2 * C1 * Y)	-0.00205	-0.00217	-0.00215
	(!A2 * !B1 * !B2 * C1 * Y)	0.00290	0.00291	0.00289
	(!A2 * !B1 * !B2 * !C1 * Y)	-0.00205	-0.00216	-0.00215
	(!A2 * !B1 * !B2 * !C1 * Y)	0.00290	0.00290	0.00289

sky130_fd_sc_hs__o221ai_4	**(A2 * B2 * C1 * !Y)**	-0.00468	-0.00467	-0.00466
	(A2 * B2 * C1 * !Y)	0.00541	0.00540	0.00542
	(A2 * B1 * !C1 * Y) + (A2 * !B1 * B2 * !C1 * Y)	-0.00462	-0.00465	-0.00464
	(A2 * B1 * !C1 * Y) + (A2 * !B1 * B2 * !C1 * Y)	0.00546	0.00547	0.00545
	(A2 * B1 * !B2 * C1 * !Y)	-0.00468	-0.00467	-0.00466
	(A2 * B1 * !B2 * C1 * !Y)	0.00541	0.00540	0.00542
	(A2 * !B1 * !B2 * Y)	-0.00462	-0.00464	-0.00464
	(A2 * !B1 * !B2 * Y)	0.00542	0.00547	0.00545
	(!A2 * B2 * !C1 * Y)	-0.00386	-0.00426	-0.00421
	(!A2 * B2 * !C1 * Y)	0.00556	0.00559	0.00557
	(!A2 * B1 * !B2 * !C1 * Y)	-0.00395	-0.00431	-0.00426
	(!A2 * B1 * !B2 * !C1 * Y)	0.00556	0.00560	0.00557
	(!A2 * !B1 * !B2 * C1 * Y)	-0.00409	-0.00437	-0.00434
	(!A2 * !B1 * !B2 * C1 * Y)	0.00555	0.00560	0.00557
	(!A2 * !B1 * !B2 * !C1 * Y)	-0.00410	-0.00437	-0.00434
	(!A2 * !B1 * !B2 * !C1 * Y)	0.00555	0.00560	0.00557

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)**	0.00131	0.00133	0.00131
	(A1 * B2 * C1 * !Y)	-0.00077	-0.00078	-0.00076
	(A1 * B2 * !C1 * Y)	0.00113	0.00114	0.00113
	(A1 * B2 * !C1 * Y)	-0.00145	-0.00147	-0.00147
	(A1 * B1 * !B2 * C1 * !Y)	0.00131	0.00133	0.00131
	(A1 * B1 * !B2 * C1 * !Y)	-0.00076	-0.00078	-0.00076
	(A1 * B1 * !B2 * !C1 * Y)	0.00113	0.00114	0.00113
	(A1 * B1 * !B2 * !C1 * Y)	-0.00145	-0.00147	-0.00147
	(A1 * !B1 * !B2 * C1 * Y)	0.00113	0.00113	0.00113
	(A1 * !B1 * !B2 * C1 * Y)	-0.00145	-0.00147	-0.00147
	(A1 * !B1 * !B2 * !C1 * Y)	0.00112	0.00114	0.00113
	(A1 * !B1 * !B2 * !C1 * Y)	-0.00145	-0.00147	-0.00147
	(!A1 * B2 * !C1 * Y)	0.00103	0.00104	0.00103
	(!A1 * B2 * !C1 * Y)	-0.00149	-0.00151	-0.00150
	(!A1 * B1 * !B2 * !C1 * Y)	0.00104	0.00105	0.00104
	(!A1 * B1 * !B2 * !C1 * Y)	-0.00149	-0.00151	-0.00150
	(!A1 * !B1 * !B2 * C1 * Y)	0.00106	0.00106	0.00105
	(!A1 * !B1 * !B2 * C1 * Y)	-0.00150	-0.00150	-0.00150
	(!A1 * !B1 * !B2 * !C1 * Y)	0.00106	0.00106	0.00105
	(!A1 * !B1 * !B2 * !C1 * Y)	-0.00150	-0.00150	-0.00150

sky130_fd_sc_hs__o221ai_2	**(A1 * B2 * C1 * !Y)**	0.00237	0.00242	0.00238
	(A1 * B2 * C1 * !Y)	-0.00138	-0.00140	-0.00138
	(A1 * B2 * !C1 * Y)	0.00218	0.00220	0.00218
	(A1 * B2 * !C1 * Y)	-0.00258	-0.00263	-0.00263
	(A1 * B1 * !B2 * C1 * !Y)	0.00237	0.00242	0.00238
	(A1 * B1 * !B2 * C1 * !Y)	-0.00138	-0.00140	-0.00138
	(A1 * B1 * !B2 * !C1 * Y)	0.00218	0.00218	0.00218
	(A1 * B1 * !B2 * !C1 * Y)	-0.00258	-0.00263	-0.00263
	(A1 * !B1 * !B2 * C1 * Y)	0.00217	0.00218	0.00218
	(A1 * !B1 * !B2 * C1 * Y)	-0.00257	-0.00263	-0.00262
	(A1 * !B1 * !B2 * !C1 * Y)	0.00218	0.00220	0.00218
	(A1 * !B1 * !B2 * !C1 * Y)	-0.00258	-0.00263	-0.00263
	(!A1 * B2 * !C1 * Y)	0.00199	0.00202	0.00199
	(!A1 * B2 * !C1 * Y)	-0.00268	-0.00271	-0.00269
	(!A1 * B1 * !B2 * !C1 * Y)	0.00201	0.00202	0.00201
	(!A1 * B1 * !B2 * !C1 * Y)	-0.00268	-0.00269	-0.00269
	(!A1 * !B1 * !B2 * C1 * Y)	0.00205	0.00206	0.00205
	(!A1 * !B1 * !B2 * C1 * Y)	-0.00269	-0.00269	-0.00269
	(!A1 * !B1 * !B2 * !C1 * Y)	0.00205	0.00207	0.00205
	(!A1 * !B1 * !B2 * !C1 * Y)	-0.00269	-0.00270	-0.00269

sky130_fd_sc_hs__o221ai_4	**(A1 * B2 * C1 * !Y)**	0.00480	0.00480	0.00481
	(A1 * B2 * C1 * !Y)	-0.00275	-0.00275	-0.00275
	(A1 * B2 * !C1 * Y)	0.00423	0.00429	0.00425
	(A1 * B2 * !C1 * Y)	-0.00530	-0.00540	-0.00541
	(A1 * B1 * !B2 * C1 * !Y)	0.00480	0.00481	0.00481
	(A1 * B1 * !B2 * C1 * !Y)	-0.00275	-0.00275	-0.00275
	(A1 * B1 * !B2 * !C1 * Y)	0.00425	0.00426	0.00425
	(A1 * B1 * !B2 * !C1 * Y)	-0.00532	-0.00540	-0.00541
	(A1 * !B1 * !B2 * C1 * Y)	0.00423	0.00426	0.00425
	(A1 * !B1 * !B2 * C1 * Y)	-0.00529	-0.00541	-0.00540
	(A1 * !B1 * !B2 * !C1 * Y)	0.00425	0.00428	0.00424
	(A1 * !B1 * !B2 * !C1 * Y)	-0.00532	-0.00539	-0.00542
	(!A1 * B2 * !C1 * Y)	0.00388	0.00392	0.00387
	(!A1 * B2 * !C1 * Y)	-0.00552	-0.00555	-0.00552
	(!A1 * B1 * !B2 * !C1 * Y)	0.00392	0.00390	0.00391
	(!A1 * B1 * !B2 * !C1 * Y)	-0.00552	-0.00552	-0.00552
	(!A1 * !B1 * !B2 * C1 * Y)	0.00400	0.00401	0.00399
	(!A1 * !B1 * !B2 * C1 * Y)	-0.00554	-0.00554	-0.00552
	(!A1 * !B1 * !B2 * !C1 * Y)	0.00400	0.00399	0.00398
	(!A1 * !B1 * !B2 * !C1 * Y)	-0.00554	-0.00553	-0.00552

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)**	-0.00125	-0.00126	-0.00130
	(A1 * B2 * C1 * !Y)	0.00082	0.00082	0.00078
	(A1 * B2 * !C1 * Y)	-0.00113	-0.00113	-0.00113
	(A1 * B2 * !C1 * Y)	0.00148	0.00147	0.00147
	(A1 * B1 * !B2 * C1 * !Y)	-0.00125	-0.00126	-0.00130
	(A1 * B1 * !B2 * C1 * !Y)	0.00082	0.00082	0.00078
	(A1 * B1 * !B2 * !C1 * Y)	-0.00113	-0.00113	-0.00113
	(A1 * B1 * !B2 * !C1 * Y)	0.00148	0.00147	0.00147
	(A1 * !B1 * !B2 * C1 * Y)	-0.00113	-0.00112	-0.00113
	(A1 * !B1 * !B2 * C1 * Y)	0.00147	0.00147	0.00147
	(A1 * !B1 * !B2 * !C1 * Y)	-0.00112	-0.00113	-0.00113
	(A1 * !B1 * !B2 * !C1 * Y)	0.00147	0.00147	0.00147
	(!A1 * B2 * !C1 * Y)	-0.00096	-0.00104	-0.00103
	(!A1 * B2 * !C1 * Y)	0.00151	0.00152	0.00150
	(!A1 * B1 * !B2 * !C1 * Y)	-0.00097	-0.00105	-0.00104
	(!A1 * B1 * !B2 * !C1 * Y)	0.00149	0.00152	0.00150
	(!A1 * !B1 * !B2 * C1 * Y)	-0.00100	-0.00106	-0.00105
	(!A1 * !B1 * !B2 * C1 * Y)	0.00150	0.00151	0.00150
	(!A1 * !B1 * !B2 * !C1 * Y)	-0.00101	-0.00106	-0.00105
	(!A1 * !B1 * !B2 * !C1 * Y)	0.00150	0.00150	0.00150

sky130_fd_sc_hs__o221ai_2	**(A1 * B2 * C1 * !Y)**	-0.00226	-0.00227	-0.00236
	(A1 * B2 * C1 * !Y)	0.00149	0.00149	0.00141
	(A1 * B2 * !C1 * Y)	-0.00216	-0.00217	-0.00217
	(A1 * B2 * !C1 * Y)	0.00261	0.00263	0.00263
	(A1 * B1 * !B2 * C1 * !Y)	-0.00226	-0.00227	-0.00236
	(A1 * B1 * !B2 * C1 * !Y)	0.00149	0.00149	0.00141
	(A1 * B1 * !B2 * !C1 * Y)	-0.00216	-0.00217	-0.00217
	(A1 * B1 * !B2 * !C1 * Y)	0.00262	0.00263	0.00263
	(A1 * !B1 * !B2 * C1 * Y)	-0.00217	-0.00218	-0.00217
	(A1 * !B1 * !B2 * C1 * Y)	0.00261	0.00263	0.00262
	(A1 * !B1 * !B2 * !C1 * Y)	-0.00217	-0.00217	-0.00217
	(A1 * !B1 * !B2 * !C1 * Y)	0.00263	0.00263	0.00263
	(!A1 * B2 * !C1 * Y)	-0.00182	-0.00202	-0.00199
	(!A1 * B2 * !C1 * Y)	0.00268	0.00271	0.00269
	(!A1 * B1 * !B2 * !C1 * Y)	-0.00186	-0.00202	-0.00201
	(!A1 * B1 * !B2 * !C1 * Y)	0.00268	0.00271	0.00269
	(!A1 * !B1 * !B2 * C1 * Y)	-0.00194	-0.00206	-0.00205
	(!A1 * !B1 * !B2 * C1 * Y)	0.00270	0.00270	0.00269
	(!A1 * !B1 * !B2 * !C1 * Y)	-0.00194	-0.00206	-0.00205
	(!A1 * !B1 * !B2 * !C1 * Y)	0.00270	0.00270	0.00269

sky130_fd_sc_hs__o221ai_4	**(A1 * B2 * C1 * !Y)**	-0.00456	-0.00458	-0.00478
	(A1 * B2 * C1 * !Y)	0.00298	0.00297	0.00281
	(A1 * B2 * !C1 * Y)	-0.00422	-0.00423	-0.00423
	(A1 * B2 * !C1 * Y)	0.00538	0.00540	0.00541
	(A1 * B1 * !B2 * C1 * !Y)	-0.00456	-0.00458	-0.00478
	(A1 * B1 * !B2 * C1 * !Y)	0.00299	0.00298	0.00281
	(A1 * B1 * !B2 * !C1 * Y)	-0.00422	-0.00423	-0.00423
	(A1 * B1 * !B2 * !C1 * Y)	0.00539	0.00540	0.00541
	(A1 * !B1 * !B2 * C1 * Y)	-0.00422	-0.00424	-0.00423
	(A1 * !B1 * !B2 * C1 * Y)	0.00538	0.00541	0.00540
	(A1 * !B1 * !B2 * !C1 * Y)	-0.00424	-0.00422	-0.00423
	(A1 * !B1 * !B2 * !C1 * Y)	0.00542	0.00539	0.00542
	(!A1 * B2 * !C1 * Y)	-0.00356	-0.00392	-0.00387
	(!A1 * B2 * !C1 * Y)	0.00552	0.00555	0.00554
	(!A1 * B1 * !B2 * !C1 * Y)	-0.00364	-0.00390	-0.00391
	(!A1 * B1 * !B2 * !C1 * Y)	0.00552	0.00555	0.00554
	(!A1 * !B1 * !B2 * C1 * Y)	-0.00378	-0.00401	-0.00399
	(!A1 * !B1 * !B2 * C1 * Y)	0.00555	0.00555	0.00554
	(!A1 * !B1 * !B2 * !C1 * Y)	-0.00379	-0.00399	-0.00398
	(!A1 * !B1 * !B2 * !C1 * Y)	0.00555	0.00557	0.00554

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)**	0.00145	0.00132	0.00130
	(A2 * B2 * C1 * !Y)	-0.00118	-0.00134	-0.00135
	(A2 * !B2 * !C1 * Y)	0.00113	0.00113	0.00113
	(A2 * !B2 * !C1 * Y)	-0.00149	-0.00149	-0.00149
	(A1 * B2 * !C1 * Y) + (!A1 * A2 * B2 * !C1 * Y)	0.00118	0.00118	0.00118
	(A1 * B2 * !C1 * Y) + (!A1 * A2 * B2 * !C1 * Y)	-0.00144	-0.00147	-0.00147
	(A1 * !A2 * B2 * C1 * !Y)	0.00145	0.00131	0.00130
	(A1 * !A2 * B2 * C1 * !Y)	-0.00118	-0.00134	-0.00135
	(A1 * !A2 * !B2 * !C1 * Y)	0.00113	0.00113	0.00112
	(A1 * !A2 * !B2 * !C1 * Y)	-0.00149	-0.00149	-0.00149
	(!A1 * !A2 * B2 * C1 * Y)	0.00056	0.00055	0.00055
	(!A1 * !A2 * B2 * C1 * Y)	-0.00145	-0.00147	-0.00147
	(!A1 * !A2 * B2 * !C1 * Y)	0.00069	0.00069	0.00069
	(!A1 * !A2 * B2 * !C1 * Y)	-0.00145	-0.00147	-0.00147
	(!A1 * !A2 * !B2 * C1 * Y)	0.00057	0.00058	0.00059
	(!A1 * !A2 * !B2 * C1 * Y)	-0.00148	-0.00149	-0.00147
	(!A1 * !A2 * !B2 * !C1 * Y)	0.00073	0.00073	0.00073
	(!A1 * !A2 * !B2 * !C1 * Y)	-0.00149	-0.00150	-0.00149

sky130_fd_sc_hs__o221ai_2	**(A2 * B2 * C1 * !Y)**	0.00286	0.00258	0.00255
	(A2 * B2 * C1 * !Y)	-0.00233	-0.00265	-0.00267
	(A2 * !B2 * !C1 * Y)	0.00216	0.00218	0.00217
	(A2 * !B2 * !C1 * Y)	-0.00294	-0.00296	-0.00294
	(A1 * B2 * !C1 * Y) + (!A1 * A2 * B2 * !C1 * Y)	0.00231	0.00232	0.00231
	(A1 * B2 * !C1 * Y) + (!A1 * A2 * B2 * !C1 * Y)	-0.00285	-0.00291	-0.00291
	(A1 * !A2 * B2 * C1 * !Y)	0.00286	0.00257	0.00255
	(A1 * !A2 * B2 * C1 * !Y)	-0.00233	-0.00265	-0.00267
	(A1 * !A2 * !B2 * !C1 * Y)	0.00216	0.00218	0.00217
	(A1 * !A2 * !B2 * !C1 * Y)	-0.00294	-0.00296	-0.00294
	(!A1 * !A2 * B2 * C1 * Y)	0.00101	0.00101	0.00101
	(!A1 * !A2 * B2 * C1 * Y)	-0.00286	-0.00291	-0.00292
	(!A1 * !A2 * B2 * !C1 * Y)	0.00127	0.00127	0.00126
	(!A1 * !A2 * B2 * !C1 * Y)	-0.00286	-0.00291	-0.00290
	(!A1 * !A2 * !B2 * C1 * Y)	0.00106	0.00107	0.00107
	(!A1 * !A2 * !B2 * C1 * Y)	-0.00293	-0.00295	-0.00292
	(!A1 * !A2 * !B2 * !C1 * Y)	0.00134	0.00135	0.00134
	(!A1 * !A2 * !B2 * !C1 * Y)	-0.00295	-0.00297	-0.00295

	(A2 * B2 * C1 * !Y)	0.00541	0.00483	0.00478
	(A2 * B2 * C1 * !Y)	-0.00458	-0.00529	-0.00531
	(A2 * !B2 * !C1 * Y)	0.00418	0.00424	0.00421
	(A2 * !B2 * !C1 * Y)	-0.00567	-0.00572	-0.00569
	(A1 * B2 * !C1 * Y) + (!A1 * A2 * B2 * !C1 * Y)	0.00446	0.00449	0.00448
	(A1 * B2 * !C1 * Y) + (!A1 * A2 * B2 * !C1 * Y)	-0.00548	-0.00562	-0.00560
	(A1 * !A2 * B2 * C1 * !Y)	0.00541	0.00483	0.00478
	(A1 * !A2 * B2 * C1 * !Y)	-0.00458	-0.00529	-0.00531
sky130_fd_sc_hs__o221ai_4	**(A1 * !A2 * !B2 * !C1 * Y)**	0.00417	0.00424	0.00420
	(A1 * !A2 * !B2 * !C1 * Y)	-0.00567	-0.00572	-0.00569
	(!A1 * !A2 * B2 * C1 * Y)	0.00188	0.00189	0.00189
	(!A1 * !A2 * B2 * C1 * Y)	-0.00549	-0.00563	-0.00563
	(!A1 * !A2 * B2 * !C1 * Y)	0.00236	0.00237	0.00236
	(!A1 * !A2 * B2 * !C1 * Y)	-0.00549	-0.00564	-0.00560
	(!A1 * !A2 * !B2 * C1 * Y)	0.00200	0.00201	0.00200
	(!A1 * !A2 * !B2 * C1 * Y)	-0.00569	-0.00571	-0.00564
	(!A1 * !A2 * !B2 * !C1 * Y)	0.00251	0.00252	0.00250
	(!A1 * !A2 * !B2 * !C1 * Y)	-0.00572	-0.00574	-0.00571

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)**	-0.00130	-0.00130	-0.00130
	(A2 * B2 * C1 * !Y)	0.00134	0.00136	0.00135
	(A2 * !B2 * !C1 * Y)	-0.00107	-0.00113	-0.00113
	(A2 * !B2 * !C1 * Y)	0.00151	0.00149	0.00149
	(A1 * B2 * !C1 * Y) + (!A1 * A2 * B2 * !C1 * Y)	-0.00118	-0.00118	-0.00118
	(A1 * B2 * !C1 * Y) + (!A1 * A2 * B2 * !C1 * Y)	0.00146	0.00147	0.00147
	(A1 * !A2 * B2 * C1 * !Y)	-0.00130	-0.00130	-0.00130
	(A1 * !A2 * B2 * C1 * !Y)	0.00135	0.00135	0.00135
	(A1 * !A2 * !B2 * !C1 * Y)	-0.00106	-0.00113	-0.00112
	(A1 * !A2 * !B2 * !C1 * Y)	0.00150	0.00151	0.00149
	(!A1 * !A2 * B2 * C1 * Y)	-0.00054	-0.00055	-0.00055
	(!A1 * !A2 * B2 * C1 * Y)	0.00149	0.00151	0.00147
	(!A1 * !A2 * B2 * !C1 * Y)	-0.00069	-0.00069	-0.00069
	(!A1 * !A2 * B2 * !C1 * Y)	0.00146	0.00149	0.00147
	(!A1 * !A2 * !B2 * C1 * Y)	-0.00055	-0.00056	-0.00056
	(!A1 * !A2 * !B2 * C1 * Y)	0.00153	0.00154	0.00150
	(!A1 * !A2 * !B2 * !C1 * Y)	-0.00073	-0.00073	-0.00073
	(!A1 * !A2 * !B2 * !C1 * Y)	0.00152	0.00153	0.00149

sky130_fd_sc_hs__o221ai_2	**(A2 * B2 * C1 * !Y)**	-0.00255	-0.00256	-0.00254
	(A2 * B2 * C1 * !Y)	0.00267	0.00269	0.00267
	(A2 * !B2 * !C1 * Y)	-0.00201	-0.00218	-0.00217
	(A2 * !B2 * !C1 * Y)	0.00297	0.00297	0.00295
	(A1 * B2 * !C1 * Y) + (!A1 * A2 * B2 * !C1 * Y)	-0.00231	-0.00231	-0.00231
	(A1 * B2 * !C1 * Y) + (!A1 * A2 * B2 * !C1 * Y)	0.00291	0.00292	0.00291
	(A1 * !A2 * B2 * C1 * !Y)	-0.00255	-0.00255	-0.00254
	(A1 * !A2 * B2 * C1 * !Y)	0.00267	0.00269	0.00267
	(A1 * !A2 * !B2 * !C1 * Y)	-0.00201	-0.00218	-0.00217
	(A1 * !A2 * !B2 * !C1 * Y)	0.00301	0.00297	0.00295
	(!A1 * !A2 * B2 * C1 * Y)	-0.00097	-0.00099	-0.00100
	(!A1 * !A2 * B2 * C1 * Y)	0.00297	0.00302	0.00292
	(!A1 * !A2 * B2 * !C1 * Y)	-0.00127	-0.00127	-0.00126
	(!A1 * !A2 * B2 * !C1 * Y)	0.00292	0.00295	0.00290
	(!A1 * !A2 * !B2 * C1 * Y)	-0.00098	-0.00098	-0.00101
	(!A1 * !A2 * !B2 * C1 * Y)	0.00306	0.00304	0.00297
	(!A1 * !A2 * !B2 * !C1 * Y)	-0.00134	-0.00135	-0.00134
	(!A1 * !A2 * !B2 * !C1 * Y)	0.00301	0.00305	0.00296

sky130_fd_sc_hs__o221ai_4	**(A2 * B2 * C1 * !Y)**	-0.00476	-0.00479	-0.00476
	(A2 * B2 * C1 * !Y)	0.00527	0.00533	0.00531
	(A2 * !B2 * !C1 * Y)	-0.00386	-0.00424	-0.00421
	(A2 * !B2 * !C1 * Y)	0.00579	0.00576	0.00571
	(A1 * B2 * !C1 * Y) + (!A1 * A2 * B2 * !C1 * Y)	-0.00446	-0.00447	-0.00447
	(A1 * B2 * !C1 * Y) + (!A1 * A2 * B2 * !C1 * Y)	0.00560	0.00562	0.00560
	(A1 * !A2 * B2 * C1 * !Y)	-0.00476	-0.00478	-0.00476
	(A1 * !A2 * B2 * C1 * !Y)	0.00527	0.00532	0.00531
	(A1 * !A2 * !B2 * !C1 * Y)	-0.00381	-0.00424	-0.00420
	(A1 * !A2 * !B2 * !C1 * Y)	0.00581	0.00576	0.00571
	(!A1 * !A2 * B2 * C1 * Y)	-0.00181	-0.00183	-0.00187
	(!A1 * !A2 * B2 * C1 * Y)	0.00571	0.00575	0.00563
	(!A1 * !A2 * B2 * !C1 * Y)	-0.00236	-0.00237	-0.00236
	(!A1 * !A2 * B2 * !C1 * Y)	0.00564	0.00567	0.00560
	(!A1 * !A2 * !B2 * C1 * Y)	-0.00184	-0.00185	-0.00190
	(!A1 * !A2 * !B2 * C1 * Y)	0.00588	0.00589	0.00575
	(!A1 * !A2 * !B2 * !C1 * Y)	-0.00251	-0.00252	-0.00250
	(!A1 * !A2 * !B2 * !C1 * Y)	0.00587	0.00584	0.00572

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)**	0.00129	0.00128	0.00128
	(A2 * B1 * C1 * !Y)	-0.00071	-0.00069	-0.00069
	(A2 * B1 * !C1 * Y)	0.00113	0.00114	0.00113
	(A2 * B1 * !C1 * Y)	-0.00135	-0.00137	-0.00137
	(A2 * !B1 * !C1 * Y)	0.00109	0.00109	0.00108
	(A2 * !B1 * !C1 * Y)	-0.00140	-0.00140	-0.00140
	(A1 * !A2 * B1 * C1 * !Y)	0.00127	0.00128	0.00128
	(A1 * !A2 * B1 * C1 * !Y)	-0.00069	-0.00070	-0.00069
	(A1 * !A2 * B1 * !C1 * Y)	0.00112	0.00114	0.00113
	(A1 * !A2 * B1 * !C1 * Y)	-0.00135	-0.00138	-0.00137
	(A1 * !A2 * !B1 * !C1 * Y)	0.00107	0.00108	0.00107
	(A1 * !A2 * !B1 * !C1 * Y)	-0.00140	-0.00140	-0.00140
	(!A1 * !A2 * B1 * C1 * Y)	0.00051	0.00051	0.00051
	(!A1 * !A2 * B1 * C1 * Y)	-0.00136	-0.00138	-0.00138
	(!A1 * !A2 * B1 * !C1 * Y)	0.00064	0.00064	0.00064
	(!A1 * !A2 * B1 * !C1 * Y)	-0.00136	-0.00138	-0.00138
	(!A1 * !A2 * !B1 * C1 * Y)	0.00053	0.00053	0.00054
	(!A1 * !A2 * !B1 * C1 * Y)	-0.00140	-0.00140	-0.00138
	(!A1 * !A2 * !B1 * !C1 * Y)	0.00068	0.00069	0.00068
	(!A1 * !A2 * !B1 * !C1 * Y)	-0.00140	-0.00141	-0.00140

sky130_fd_sc_hs__o221ai_2	**(A2 * B1 * C1 * !Y)**	0.00236	0.00237	0.00237
	(A2 * B1 * C1 * !Y)	-0.00137	-0.00137	-0.00137
	(A2 * B1 * !C1 * Y)	0.00215	0.00218	0.00215
	(A2 * B1 * !C1 * Y)	-0.00259	-0.00265	-0.00264
	(A2 * !B1 * !C1 * Y)	0.00204	0.00206	0.00204
	(A2 * !B1 * !C1 * Y)	-0.00269	-0.00270	-0.00268
	(A1 * !A2 * B1 * C1 * !Y)	0.00236	0.00237	0.00237
	(A1 * !A2 * B1 * C1 * !Y)	-0.00137	-0.00138	-0.00137
	(A1 * !A2 * B1 * !C1 * Y)	0.00215	0.00215	0.00215
	(A1 * !A2 * B1 * !C1 * Y)	-0.00259	-0.00263	-0.00264
	(A1 * !A2 * !B1 * !C1 * Y)	0.00204	0.00206	0.00204
	(A1 * !A2 * !B1 * !C1 * Y)	-0.00269	-0.00270	-0.00268
	(!A1 * !A2 * B1 * C1 * Y)	0.00091	0.00091	0.00091
	(!A1 * !A2 * B1 * C1 * Y)	-0.00258	-0.00265	-0.00264
	(!A1 * !A2 * B1 * !C1 * Y)	0.00117	0.00117	0.00116
	(!A1 * !A2 * B1 * !C1 * Y)	-0.00259	-0.00263	-0.00264
	(!A1 * !A2 * !B1 * C1 * Y)	0.00095	0.00097	0.00097
	(!A1 * !A2 * !B1 * C1 * Y)	-0.00266	-0.00269	-0.00265
	(!A1 * !A2 * !B1 * !C1 * Y)	0.00123	0.00124	0.00123
	(!A1 * !A2 * !B1 * !C1 * Y)	-0.00269	-0.00271	-0.00269

sky130_fd_sc_hs__o221ai_4	**(A2 * B1 * C1 * !Y)**	0.00481	0.00485	0.00483
	(A2 * B1 * C1 * !Y)	-0.00273	-0.00276	-0.00274
	(A2 * B1 * !C1 * Y)	0.00435	0.00441	0.00437
	(A2 * B1 * !C1 * Y)	-0.00519	-0.00534	-0.00530
	(A2 * !B1 * !C1 * Y)	0.00411	0.00414	0.00410
	(A2 * !B1 * !C1 * Y)	-0.00542	-0.00544	-0.00541
	(A1 * !A2 * B1 * C1 * !Y)	0.00481	0.00484	0.00483
	(A1 * !A2 * B1 * C1 * !Y)	-0.00273	-0.00275	-0.00274
	(A1 * !A2 * B1 * !C1 * Y)	0.00436	0.00437	0.00437
	(A1 * !A2 * B1 * !C1 * Y)	-0.00520	-0.00529	-0.00530
	(A1 * !A2 * !B1 * !C1 * Y)	0.00410	0.00412	0.00410
	(A1 * !A2 * !B1 * !C1 * Y)	-0.00542	-0.00542	-0.00541
	(!A1 * !A2 * B1 * C1 * Y)	0.00182	0.00183	0.00182
	(!A1 * !A2 * B1 * C1 * Y)	-0.00520	-0.00535	-0.00532
	(!A1 * !A2 * B1 * !C1 * Y)	0.00230	0.00231	0.00230
	(!A1 * !A2 * B1 * !C1 * Y)	-0.00521	-0.00533	-0.00531
	(!A1 * !A2 * !B1 * C1 * Y)	0.00192	0.00195	0.00193
	(!A1 * !A2 * !B1 * C1 * Y)	-0.00538	-0.00543	-0.00536
	(!A1 * !A2 * !B1 * !C1 * Y)	0.00242	0.00245	0.00243
	(!A1 * !A2 * !B1 * !C1 * Y)	-0.00542	-0.00546	-0.00542

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)**	-0.00123	-0.00123	-0.00127
	(A2 * B1 * C1 * !Y)	0.00074	0.00074	0.00071
	(A2 * B1 * !C1 * Y)	-0.00113	-0.00112	-0.00112
	(A2 * B1 * !C1 * Y)	0.00137	0.00137	0.00137
	(A2 * !B1 * !C1 * Y)	-0.00103	-0.00108	-0.00108
	(A2 * !B1 * !C1 * Y)	0.00141	0.00141	0.00140
	(A1 * !A2 * B1 * C1 * !Y)	-0.00123	-0.00124	-0.00127
	(A1 * !A2 * B1 * C1 * !Y)	0.00074	0.00074	0.00071
	(A1 * !A2 * B1 * !C1 * Y)	-0.00112	-0.00113	-0.00112
	(A1 * !A2 * B1 * !C1 * Y)	0.00138	0.00138	0.00137
	(A1 * !A2 * !B1 * !C1 * Y)	-0.00101	-0.00108	-0.00107
	(A1 * !A2 * !B1 * !C1 * Y)	0.00141	0.00141	0.00140
	(!A1 * !A2 * B1 * C1 * Y)	-0.00050	-0.00050	-0.00051
	(!A1 * !A2 * B1 * C1 * Y)	0.00139	0.00140	0.00138
	(!A1 * !A2 * B1 * !C1 * Y)	-0.00064	-0.00064	-0.00064
	(!A1 * !A2 * B1 * !C1 * Y)	0.00138	0.00138	0.00138
	(!A1 * !A2 * !B1 * C1 * Y)	-0.00051	-0.00051	-0.00051
	(!A1 * !A2 * !B1 * C1 * Y)	0.00143	0.00145	0.00141
	(!A1 * !A2 * !B1 * !C1 * Y)	-0.00068	-0.00069	-0.00068
	(!A1 * !A2 * !B1 * !C1 * Y)	0.00142	0.00144	0.00141

sky130_fd_sc_hs__o221ai_2	**(A2 * B1 * C1 * !Y)**	-0.00225	-0.00226	-0.00235
	(A2 * B1 * C1 * !Y)	0.00149	0.00149	0.00140
	(A2 * B1 * !C1 * Y)	-0.00214	-0.00216	-0.00215
	(A2 * B1 * !C1 * Y)	0.00262	0.00265	0.00264
	(A2 * !B1 * !C1 * Y)	-0.00189	-0.00205	-0.00204
	(A2 * !B1 * !C1 * Y)	0.00272	0.00272	0.00269
	(A1 * !A2 * B1 * C1 * !Y)	-0.00225	-0.00226	-0.00235
	(A1 * !A2 * B1 * C1 * !Y)	0.00149	0.00149	0.00140
	(A1 * !A2 * B1 * !C1 * Y)	-0.00215	-0.00215	-0.00215
	(A1 * !A2 * B1 * !C1 * Y)	0.00263	0.00263	0.00264
	(A1 * !A2 * !B1 * !C1 * Y)	-0.00187	-0.00206	-0.00204
	(A1 * !A2 * !B1 * !C1 * Y)	0.00273	0.00271	0.00269
	(!A1 * !A2 * B1 * C1 * Y)	-0.00089	-0.00089	-0.00090
	(!A1 * !A2 * B1 * C1 * Y)	0.00268	0.00269	0.00264
	(!A1 * !A2 * B1 * !C1 * Y)	-0.00117	-0.00117	-0.00116
	(!A1 * !A2 * B1 * !C1 * Y)	0.00263	0.00263	0.00264
	(!A1 * !A2 * !B1 * C1 * Y)	-0.00090	-0.00091	-0.00092
	(!A1 * !A2 * !B1 * C1 * Y)	0.00276	0.00279	0.00270
	(!A1 * !A2 * !B1 * !C1 * Y)	-0.00123	-0.00124	-0.00123
	(!A1 * !A2 * !B1 * !C1 * Y)	0.00272	0.00272	0.00269

sky130_fd_sc_hs__o221ai_4	**(A2 * B1 * C1 * !Y)**	-0.00459	-0.00461	-0.00479
	(A2 * B1 * C1 * !Y)	0.00297	0.00297	0.00280
	(A2 * B1 * !C1 * Y)	-0.00435	-0.00438	-0.00436
	(A2 * B1 * !C1 * Y)	0.00528	0.00534	0.00530
	(A2 * !B1 * !C1 * Y)	-0.00378	-0.00414	-0.00410
	(A2 * !B1 * !C1 * Y)	0.00552	0.00547	0.00542
	(A1 * !A2 * B1 * C1 * !Y)	-0.00458	-0.00462	-0.00479
	(A1 * !A2 * B1 * C1 * !Y)	0.00297	0.00297	0.00281
	(A1 * !A2 * B1 * !C1 * Y)	-0.00436	-0.00436	-0.00436
	(A1 * !A2 * B1 * !C1 * Y)	0.00531	0.00529	0.00530
	(A1 * !A2 * !B1 * !C1 * Y)	-0.00373	-0.00412	-0.00410
	(A1 * !A2 * !B1 * !C1 * Y)	0.00555	0.00547	0.00542
	(!A1 * !A2 * B1 * C1 * Y)	-0.00177	-0.00178	-0.00181
	(!A1 * !A2 * B1 * C1 * Y)	0.00542	0.00544	0.00532
	(!A1 * !A2 * B1 * !C1 * Y)	-0.00230	-0.00231	-0.00230
	(!A1 * !A2 * B1 * !C1 * Y)	0.00535	0.00533	0.00531
	(!A1 * !A2 * !B1 * C1 * Y)	-0.00179	-0.00181	-0.00183
	(!A1 * !A2 * !B1 * C1 * Y)	0.00559	0.00565	0.00546
	(!A1 * !A2 * !B1 * !C1 * Y)	-0.00242	-0.00245	-0.00243
	(!A1 * !A2 * !B1 * !C1 * Y)	0.00557	0.00560	0.00544

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)	0.00050	0.00050	0.00046
	(A2 * !B1 * !B2 * Y)	-0.00169	-0.00170	-0.00174
	(!A2 * !B1 * !B2 * Y)	0.00049	0.00050	0.00046
	(!A2 * !B1 * !B2 * Y)	-0.00168	-0.00170	-0.00174
	(!A1 * !A2 * B2 * Y)	0.00053	0.00053	0.00045
	(!A1 * !A2 * B2 * Y)	-0.00156	-0.00157	-0.00172
	(!A1 * !A2 * B1 * !B2 * Y)	0.00053	0.00053	0.00045
	(!A1 * !A2 * B1 * !B2 * Y)	-0.00157	-0.00159	-0.00172
sky130_fd_sc_hs__o221ai_2	(A2 * !B1 * !B2 * Y)	0.00090	0.00091	0.00084
	(A2 * !B1 * !B2 * Y)	-0.00311	-0.00315	-0.00324
	(!A2 * !B1 * !B2 * Y)	0.00090	0.00091	0.00084
	(!A2 * !B1 * !B2 * Y)	-0.00312	-0.00315	-0.00324
	(!A1 * !A2 * B2 * Y)	0.00096	0.00097	0.00082
	(!A1 * !A2 * B2 * Y)	-0.00289	-0.00293	-0.00321
	(!A1 * !A2 * B1 * !B2 * Y)	0.00097	0.00097	0.00083
	(!A1 * !A2 * B1 * !B2 * Y)	-0.00293	-0.00297	-0.00321
sky130_fd_sc_hs__o221ai_4	(A2 * !B1 * !B2 * Y)	0.00156	0.00156	0.00145
	(A2 * !B1 * !B2 * Y)	-0.00635	-0.00641	-0.00657
	(!A2 * !B1 * !B2 * Y)	0.00156	0.00156	0.00145
	(!A2 * !B1 * !B2 * Y)	-0.00635	-0.00641	-0.00657
	(!A1 * !A2 * B2 * Y)	0.00167	0.00168	0.00142
	(!A1 * !A2 * B2 * Y)	-0.00593	-0.00600	-0.00650
	(!A1 * !A2 * B1 * !B2 * Y)	0.00168	0.00169	0.00145
	(!A1 * !A2 * B1 * !B2 * Y)	-0.00601	-0.00607	-0.00651

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)	-0.00045	-0.00045	-0.00045
	(A2 * !B1 * !B2 * Y)	0.00175	0.00176	0.00175
	(!A2 * !B1 * !B2 * Y)	-0.00045	-0.00045	-0.00045
	(!A2 * !B1 * !B2 * Y)	0.00175	0.00175	0.00175
	(!A1 * !A2 * B2 * Y)	-0.00043	-0.00043	-0.00043
	(!A1 * !A2 * B2 * Y)	0.00175	0.00176	0.00175
	(!A1 * !A2 * B1 * !B2 * Y)	-0.00044	-0.00044	-0.00043
	(!A1 * !A2 * B1 * !B2 * Y)	0.00175	0.00175	0.00175
sky130_fd_sc_hs__o221ai_2	(A2 * !B1 * !B2 * Y)	-0.00081	-0.00082	-0.00081
	(A2 * !B1 * !B2 * Y)	0.00324	0.00327	0.00325
	(!A2 * !B1 * !B2 * Y)	-0.00081	-0.00081	-0.00081
	(!A2 * !B1 * !B2 * Y)	0.00324	0.00327	0.00325
	(!A1 * !A2 * B2 * Y)	-0.00079	-0.00079	-0.00078
	(!A1 * !A2 * B2 * Y)	0.00326	0.00327	0.00325
	(!A1 * !A2 * B1 * !B2 * Y)	-0.00079	-0.00079	-0.00079
	(!A1 * !A2 * B1 * !B2 * Y)	0.00324	0.00327	0.00325
sky130_fd_sc_hs__o221ai_4	(A2 * !B1 * !B2 * Y)	-0.00140	-0.00141	-0.00140
	(A2 * !B1 * !B2 * Y)	0.00657	0.00663	0.00659
	(!A2 * !B1 * !B2 * Y)	-0.00141	-0.00141	-0.00140
	(!A2 * !B1 * !B2 * Y)	0.00660	0.00661	0.00659
	(!A1 * !A2 * B2 * Y)	-0.00136	-0.00136	-0.00134
	(!A1 * !A2 * B2 * Y)	0.00660	0.00664	0.00659
	(!A1 * !A2 * B1 * !B2 * Y)	-0.00138	-0.00137	-0.00136
	(!A1 * !A2 * B1 * !B2 * Y)	0.00660	0.00661	0.00659

SKY130_FD_SC_HS__O221Ax

sky130_fd_sc_hs_tt_1.50v_25C.ccs
Cell Library: Process , Voltage
1.50, 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	0.00251	0.00249	0.00244	0.00261	0.00257	0.84355
sky130_fd_sc_hs__o221a_2	0.00267	0.00262	0.00262	0.00274	0.00268	1.67370
sky130_fd_sc_hs__o221a_4	0.00500	0.00453	0.00532	0.00455	0.00463	3.21957

Leakage Information

Cell Name	Leakage(nW)		
	Min.	Avg	Max.
sky130_fd_sc_hs__o221a_1	0.00000	0.06728	0.22756
sky130_fd_sc_hs__o221a_2	0.00000	0.08908	0.23222
sky130_fd_sc_hs__o221a_4	0.00000	0.17991	0.46443

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)	0.16498	0.82924	7.21733
	A2->X (RR)	0.15561	0.81559	7.18075
	B1->X (RR)	0.15551	0.84611	7.25077
	B2->X (RR)	0.14707	0.82235	7.20491
	C1->X (RR)	0.14152	0.82336	7.18388
sky130_fd_sc_hs__o221a_2	A1->X (RR)	0.16164	0.71715	7.17566
	A2->X (RR)	0.15334	0.70754	7.14174
	B1->X (RR)	0.15269	0.73838	7.22707
	B2->X (RR)	0.14757	0.72182	7.18742
	C1->X (RR)	0.13946	0.72381	7.17478
sky130_fd_sc_hs__o221a_4	A1->X (RR)	0.17215	0.65178	7.26956
	A2->X (RR)	0.16349	0.64125	7.24552
	B1->X (RR)	0.16413	0.67388	7.32504
	B2->X (RR)	0.15445	0.65054	7.27631
	C1->X (RR)	0.14657	0.65660	7.27283

Delay(ns) to X falling :

Cell Name	Timing Arc(Dir)	Delay(ns)		
		First	Mid	Last
sky130_fd_sc_hs__o221a_1	A1->X (FF)	0.26240	0.84859	5.14281
	A2->X (FF)	0.24294	0.82305	4.92889
	B1->X (FF)	0.22393	0.79576	4.96234
	B2->X (FF)	0.20590	0.76838	4.75391
	C1->X (FF)	0.09917	0.63429	4.47414
sky130_fd_sc_hs__o221a_2	A1->X (FF)	0.31053	0.88356	5.40094
	A2->X (FF)	0.28883	0.85478	5.19480
	B1->X (FF)	0.26313	0.82340	5.22013
	B2->X (FF)	0.24559	0.80102	5.02356
	C1->X (FF)	0.11525	0.64433	4.66590
sky130_fd_sc_hs__o221a_4	A1->X (FF)	0.27759	0.81118	5.33291
	A2->X (FF)	0.25422	0.78037	5.11567
	B1->X (FF)	0.24802	0.77122	5.19069
	B2->X (FF)	0.22319	0.73964	4.98176
	C1->X (FF)	0.10744	0.59876	4.67691

Power Information

Internal switching power(pJ) to X rising :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__o221a_1	A1	0.01095	0.01077	0.01208
	A1	0.00468	0.00451	0.00587
	A2	0.00973	0.00970	0.01207
	A2	0.00411	0.00409	0.00652
	B1	0.00981	0.00970	0.01164
	B1	0.00465	0.00455	0.00656
	B2	0.00870	0.00853	0.01200
	B2	0.00400	0.00384	0.00736
	C1	0.00913	0.00902	0.01392
	C1	0.00467	0.00458	0.00954
sky130_fd_sc_hs__o221a_2	A1	0.01323	0.01328	0.01452
	A1	0.00651	0.00656	0.00794
	A2	0.01192	0.01215	0.01442
	A2	0.00587	0.00635	0.00847
	B1	0.01199	0.01208	0.01394
	B1	0.00650	0.00660	0.00859
	B2	0.01089	0.01094	0.01416
	B2	0.00592	0.00597	0.00933
	C1	0.01120	0.01126	0.01576
	C1	0.00653	0.00660	0.01124

sky130_fd_sc_hs__o221a_4	**A1**	0.02461	0.02494	0.02808
	A1	0.01234	0.01268	0.01609
	A2	0.02163	0.02203	0.02747
	A2	0.01098	0.01139	0.01709
	B1	0.02281	0.02312	0.02722
	B1	0.01231	0.01264	0.01693
	B2	0.01973	0.01998	0.02674
	B2	0.01102	0.01128	0.01830
	C1	0.02066	0.02097	0.03042
	C1	0.01234	0.01266	0.02236

Internal switching power(pJ) to X falling :

Cell Name	**Input**	**Power(pJ)**		
		first	**mid**	**last**
sky130_fd_sc_hs__o221a_1	**A1**	0.00401	0.00391	0.00607
	A1	0.00999	0.00991	0.01200
	A2	0.00401	0.00419	0.00903
	A2	0.00933	0.00955	0.01431
	B1	0.00333	0.00334	0.00610
	B1	0.00844	0.00845	0.01078
	B2	0.00318	0.00338	0.00893
	B2	0.00786	0.00806	0.01315
	C1	0.00250	0.00273	0.00928
	C1	0.00698	0.00720	0.01319

sky130_fd_sc_hs__o221a_2	**A1**	0.00572	0.00557	0.00907
	A1	0.01206	0.01215	0.01428
	A2	0.00562	0.00593	0.01255
	A2	0.01144	0.01177	0.01663
	B1	0.00488	0.00508	0.00754
	B1	0.01032	0.01051	0.01295
	B2	0.00476	0.00511	0.01073
	B2	0.00967	0.01000	0.01532
	C1	0.00402	0.00446	0.01101
	C1	0.00873	0.00917	0.01522
sky130_fd_sc_hs__o221a_4	**A1**	0.01055	0.01098	0.01708
	A1	0.02227	0.02275	0.02713
	A2	0.01090	0.01172	0.02376
	A2	0.02096	0.02181	0.03177
	B1	0.00900	0.00946	0.01612
	B1	0.01950	0.01997	0.02475
	B2	0.00953	0.01029	0.02226
	B2	0.01812	0.01889	0.02937
	C1	0.00796	0.00907	0.02163
	C1	0.01643	0.01743	0.02943

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)**	0.00126	0.00112	0.00110
	(A2 * B2 * C1 * X)	-0.00105	-0.00120	-0.00122
	(A2 * B1 * !C1 * !X) + (A2 * !B1 * B2 * !C1 * !X)	0.00095	0.00095	0.00095
	(A2 * B1 * !C1 * !X) + (A2 * !B1 * B2 * !C1 * !X)	-0.00134	-0.00136	-0.00136
	(A2 * B1 * !B2 * C1 * X)	0.00126	0.00112	0.00110
	(A2 * B1 * !B2 * C1 * X)	-0.00105	-0.00120	-0.00122
	(A2 * !B1 * !B2 * !X)	0.00095	0.00095	0.00095
	(A2 * !B1 * !B2 * !X)	-0.00134	-0.00136	-0.00136
	(!A2 * B2 * !C1 * !X)	0.00087	0.00088	0.00088
	(!A2 * B2 * !C1 * !X)	-0.00138	-0.00139	-0.00138
	(!A2 * B1 * !B2 * !C1 * !X)	0.00089	0.00088	0.00088
	(!A2 * B1 * !B2 * !C1 * !X)	-0.00138	-0.00138	-0.00138
	(!A2 * !B1 * !B2 * C1 * !X)	0.00089	0.00089	0.00089
	(!A2 * !B1 * !B2 * C1 * !X)	-0.00138	-0.00138	-0.00138
	(!A2 * !B1 * !B2 * !C1 * !X)	0.00089	0.00090	0.00089
	(!A2 * !B1 * !B2 * !C1 * !X)	-0.00138	-0.00138	-0.00138

sky130_fd_sc_hs__o221a_2	**(A2 * B2 * C1 * X)**	0.00142	0.00128	0.00127
	(A2 * B2 * C1 * X)	-0.00104	-0.00120	-0.00121
	(A2 * B1 * !C1 * !X) + (A2 * !B1 * B2 * !C1 * !X)	0.00110	0.00110	0.00110
	(A2 * B1 * !C1 * !X) + (A2 * !B1 * B2 * !C1 * !X)	-0.00135	-0.00137	-0.00137
	(A2 * B1 * !B2 * C1 * X)	0.00142	0.00128	0.00127
	(A2 * B1 * !B2 * C1 * X)	-0.00104	-0.00120	-0.00121
	(A2 * !B1 * !B2 * !X)	0.00110	0.00110	0.00110
	(A2 * !B1 * !B2 * !X)	-0.00135	-0.00137	-0.00137
	(!A2 * B2 * !C1 * !X)	0.00101	0.00102	0.00101
	(!A2 * B2 * !C1 * !X)	-0.00139	-0.00139	-0.00139
	(!A2 * B1 * !B2 * !C1 * !X)	0.00102	0.00102	0.00102
	(!A2 * B1 * !B2 * !C1 * !X)	-0.00139	-0.00139	-0.00139
	(!A2 * !B1 * !B2 * C1 * !X)	0.00105	0.00104	0.00104
	(!A2 * !B1 * !B2 * C1 * !X)	-0.00139	-0.00139	-0.00139
	(!A2 * !B1 * !B2 * !C1 * !X)	0.00104	0.00104	0.00103
	(!A2 * !B1 * !B2 * !C1 * !X)	-0.00139	-0.00139	-0.00139

sky130_fd_sc_hs__o221a_4	**(A2 * B2 * C1 * X)**	0.00261	0.00236	0.00233
	(A2 * B2 * C1 * X)	-0.00207	-0.00238	-0.00241
	(A2 * B1 * !C1 * !X) + (A2 * !B1 * B2 * !C1 * !X)	0.00212	0.00214	0.00213
	(A2 * B1 * !C1 * !X) + (A2 * !B1 * B2 * !C1 * !X)	-0.00253	-0.00260	-0.00259
	(A2 * B1 * !B2 * C1 * X)	0.00261	0.00236	0.00233
	(A2 * B1 * !B2 * C1 * X)	-0.00207	-0.00238	-0.00241
	(A2 * !B1 * !B2 * !X)	0.00213	0.00214	0.00213
	(A2 * !B1 * !B2 * !X)	-0.00253	-0.00260	-0.00259
	(!A2 * B2 * !C1 * !X)	0.00198	0.00199	0.00198
	(!A2 * B2 * !C1 * !X)	-0.00262	-0.00263	-0.00263
	(!A2 * B1 * !B2 * !C1 * !X)	0.00199	0.00201	0.00200
	(!A2 * B1 * !B2 * !C1 * !X)	-0.00262	-0.00263	-0.00263
	(!A2 * !B1 * !B2 * C1 * !X)	0.00201	0.00204	0.00202
	(!A2 * !B1 * !B2 * C1 * !X)	-0.00261	-0.00264	-0.00263
	(!A2 * !B1 * !B2 * !C1 * !X)	0.00201	0.00204	0.00202
	(!A2 * !B1 * !B2 * !C1 * !X)	-0.00262	-0.00264	-0.00263

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)**	-0.00109	-0.00110	-0.00109
	(A2 * B2 * C1 * X)	0.00122	0.00123	0.00122
	(A2 * B1 * !C1 * !X) + (A2 * !B1 * B2 * !C1 * !X)	-0.00095	-0.00095	-0.00095
	(A2 * B1 * !C1 * !X) + (A2 * !B1 * B2 * !C1 * !X)	0.00136	0.00137	0.00136
	(A2 * B1 * !B2 * C1 * X)	-0.00109	-0.00110	-0.00109
	(A2 * B1 * !B2 * C1 * X)	0.00122	0.00123	0.00122
	(A2 * !B1 * !B2 * !X)	-0.00095	-0.00095	-0.00095
	(A2 * !B1 * !B2 * !X)	0.00136	0.00137	0.00136
	(!A2 * B2 * !C1 * !X)	-0.00081	-0.00088	-0.00088
	(!A2 * B2 * !C1 * !X)	0.00139	0.00140	0.00138
	(!A2 * B1 * !B2 * !C1 * !X)	-0.00082	-0.00088	-0.00088
	(!A2 * B1 * !B2 * !C1 * !X)	0.00138	0.00140	0.00138
	(!A2 * !B1 * !B2 * C1 * !X)	-0.00084	-0.00089	-0.00089
	(!A2 * !B1 * !B2 * C1 * !X)	0.00138	0.00138	0.00138
	(!A2 * !B1 * !B2 * !C1 * !X)	-0.00084	-0.00090	-0.00089
	(!A2 * !B1 * !B2 * !C1 * !X)	0.00138	0.00138	0.00138

sky130_fd_sc_hs__o221a_2	**(A2 * B2 * C1 * X)**	-0.00126	-0.00127	-0.00126
	(A2 * B2 * C1 * X)	0.00121	0.00122	0.00121
	(A2 * B1 * !C1 * !X) + (A2 * !B1 * B2 * !C1 * !X)	-0.00110	-0.00110	-0.00110
	(A2 * B1 * !C1 * !X) + (A2 * !B1 * B2 * !C1 * !X)	0.00137	0.00138	0.00137
	(A2 * B1 * !B2 * C1 * X)	-0.00126	-0.00127	-0.00126
	(A2 * B1 * !B2 * C1 * X)	0.00121	0.00122	0.00121
	(A2 * !B1 * !B2 * !X)	-0.00110	-0.00110	-0.00110
	(A2 * !B1 * !B2 * !X)	0.00137	0.00138	0.00137
	(!A2 * B2 * !C1 * !X)	-0.00093	-0.00102	-0.00101
	(!A2 * B2 * !C1 * !X)	0.00139	0.00141	0.00139
	(!A2 * B1 * !B2 * !C1 * !X)	-0.00095	-0.00102	-0.00102
	(!A2 * B1 * !B2 * !C1 * !X)	0.00139	0.00141	0.00139
	(!A2 * !B1 * !B2 * C1 * !X)	-0.00098	-0.00104	-0.00104
	(!A2 * !B1 * !B2 * C1 * !X)	0.00139	0.00139	0.00139
	(!A2 * !B1 * !B2 * !C1 * !X)	-0.00098	-0.00104	-0.00103
	(!A2 * !B1 * !B2 * !C1 * !X)	0.00139	0.00139	0.00139

sky130_fd_sc_hs__o221a_4	**(A2 * B2 * C1 * X)**	-0.00230	-0.00232	-0.00231
	(A2 * B2 * C1 * X)	0.00238	0.00241	0.00241
	(A2 * B1 * !C1 * !X) + (A2 * !B1 * B2 * !C1 * !X)	-0.00212	-0.00214	-0.00213
	(A2 * B1 * !C1 * !X) + (A2 * !B1 * B2 * !C1 * !X)	0.00257	0.00260	0.00259
	(A2 * B1 * !B2 * C1 * X)	-0.00230	-0.00232	-0.00231
	(A2 * B1 * !B2 * C1 * X)	0.00238	0.00241	0.00241
	(A2 * !B1 * !B2 * !X)	-0.00212	-0.00214	-0.00213
	(A2 * !B1 * !B2 * !X)	0.00257	0.00260	0.00259
	(!A2 * B2 * !C1 * !X)	-0.00183	-0.00199	-0.00198
	(!A2 * B2 * !C1 * !X)	0.00262	0.00266	0.00263
	(!A2 * B1 * !B2 * !C1 * !X)	-0.00188	-0.00201	-0.00200
	(!A2 * B1 * !B2 * !C1 * !X)	0.00264	0.00266	0.00263
	(!A2 * !B1 * !B2 * C1 * !X)	-0.00191	-0.00204	-0.00202
	(!A2 * !B1 * !B2 * C1 * !X)	0.00264	0.00266	0.00263
	(!A2 * !B1 * !B2 * !C1 * !X)	-0.00192	-0.00204	-0.00202
	(!A2 * !B1 * !B2 * !C1 * !X)	0.00264	0.00266	0.00263

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)**	0.00113	0.00114	0.00113
	(A1 * B2 * C1 * X)	-0.00065	-0.00066	-0.00064
	(A1 * B2 * !C1 * !X)	0.00098	0.00099	0.00098
	(A1 * B2 * !C1 * !X)	-0.00124	-0.00127	-0.00126
	(A1 * B1 * !B2 * C1 * X)	0.00113	0.00114	0.00113
	(A1 * B1 * !B2 * C1 * X)	-0.00065	-0.00066	-0.00064
	(A1 * B1 * !B2 * !C1 * !X)	0.00098	0.00099	0.00098
	(A1 * B1 * !B2 * !C1 * !X)	-0.00124	-0.00127	-0.00126
	(A1 * !B1 * !B2 * C1 * !X)	0.00097	0.00099	0.00098
	(A1 * !B1 * !B2 * C1 * !X)	-0.00124	-0.00125	-0.00125
	(A1 * !B1 * !B2 * !C1 * !X)	0.00097	0.00098	0.00098
	(A1 * !B1 * !B2 * !C1 * !X)	-0.00123	-0.00127	-0.00126
	(!A1 * B2 * !C1 * !X)	0.00089	0.00090	0.00089
	(!A1 * B2 * !C1 * !X)	-0.00127	-0.00129	-0.00128
	(!A1 * B1 * !B2 * !C1 * !X)	0.00090	0.00091	0.00090
	(!A1 * B1 * !B2 * !C1 * !X)	-0.00128	-0.00129	-0.00128
	(!A1 * !B1 * !B2 * C1 * !X)	0.00091	0.00091	0.00091
	(!A1 * !B1 * !B2 * C1 * !X)	-0.00128	-0.00128	-0.00128
	(!A1 * !B1 * !B2 * !C1 * !X)	0.00091	0.00091	0.00091
	(!A1 * !B1 * !B2 * !C1 * !X)	-0.00128	-0.00128	-0.00128

sky130_fd_sc_hs__o221a_2	**(A1 * B2 * C1 * X)**	0.00128	0.00129	0.00127
	(A1 * B2 * C1 * X)	-0.00064	-0.00065	-0.00064
	(A1 * B2 * !C1 * !X)	0.00112	0.00113	0.00112
	(A1 * B2 * !C1 * !X)	-0.00122	-0.00124	-0.00125
	(A1 * B1 * !B2 * C1 * X)	0.00126	0.00129	0.00127
	(A1 * B1 * !B2 * C1 * X)	-0.00063	-0.00065	-0.00064
	(A1 * B1 * !B2 * !C1 * !X)	0.00112	0.00113	0.00112
	(A1 * B1 * !B2 * !C1 * !X)	-0.00123	-0.00124	-0.00125
	(A1 * !B1 * !B2 * C1 * !X)	0.00112	0.00113	0.00112
	(A1 * !B1 * !B2 * C1 * !X)	-0.00122	-0.00126	-0.00125
	(A1 * !B1 * !B2 * !C1 * !X)	0.00111	0.00113	0.00112
	(A1 * !B1 * !B2 * !C1 * !X)	-0.00122	-0.00126	-0.00125
	(!A1 * B2 * !C1 * !X)	0.00102	0.00104	0.00103
	(!A1 * B2 * !C1 * !X)	-0.00127	-0.00128	-0.00127
	(!A1 * B1 * !B2 * !C1 * !X)	0.00103	0.00105	0.00104
	(!A1 * B1 * !B2 * !C1 * !X)	-0.00127	-0.00128	-0.00127
	(!A1 * !B1 * !B2 * C1 * !X)	0.00105	0.00105	0.00104
	(!A1 * !B1 * !B2 * C1 * !X)	-0.00127	-0.00127	-0.00127
	(!A1 * !B1 * !B2 * !C1 * !X)	0.00105	0.00105	0.00105
	(!A1 * !B1 * !B2 * !C1 * !X)	-0.00127	-0.00127	-0.00127

sky130_fd_sc_hs__o221a_4	**(A1 * B2 * C1 * X)**	0.00207	0.00211	0.00207
	(A1 * B2 * C1 * X)	-0.00127	-0.00130	-0.00127
	(A1 * B2 * !C1 * !X)	0.00183	0.00185	0.00183
	(A1 * B2 * !C1 * !X)	-0.00240	-0.00245	-0.00245
	(A1 * B1 * !B2 * C1 * X)	0.00207	0.00211	0.00207
	(A1 * B1 * !B2 * C1 * X)	-0.00127	-0.00130	-0.00127
	(A1 * B1 * !B2 * !C1 * !X)	0.00183	0.00185	0.00183
	(A1 * B1 * !B2 * !C1 * !X)	-0.00240	-0.00245	-0.00245
	(A1 * !B1 * !B2 * C1 * !X)	0.00183	0.00185	0.00183
	(A1 * !B1 * !B2 * C1 * !X)	-0.00240	-0.00245	-0.00244
	(A1 * !B1 * !B2 * !C1 * !X)	0.00183	0.00185	0.00183
	(A1 * !B1 * !B2 * !C1 * !X)	-0.00240	-0.00246	-0.00245
	(!A1 * B2 * !C1 * !X)	0.00166	0.00168	0.00166
	(!A1 * B2 * !C1 * !X)	-0.00250	-0.00250	-0.00249
	(!A1 * B1 * !B2 * !C1 * !X)	0.00168	0.00167	0.00168
	(!A1 * B1 * !B2 * !C1 * !X)	-0.00250	-0.00249	-0.00249
	(!A1 * !B1 * !B2 * C1 * !X)	0.00169	0.00171	0.00170
	(!A1 * !B1 * !B2 * C1 * !X)	-0.00248	-0.00250	-0.00249
	(!A1 * !B1 * !B2 * !C1 * !X)	0.00169	0.00170	0.00170
	(!A1 * !B1 * !B2 * !C1 * !X)	-0.00248	-0.00250	-0.00249

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)**	-0.00108	-0.00109	-0.00112
	(A1 * B2 * C1 * X)	0.00069	0.00069	0.00066
	(A1 * B2 * !C1 * !X)	-0.00098	-0.00098	-0.00098
	(A1 * B2 * !C1 * !X)	0.00126	0.00127	0.00126
	(A1 * B1 * !B2 * C1 * X)	-0.00108	-0.00109	-0.00112
	(A1 * B1 * !B2 * C1 * X)	0.00069	0.00069	0.00066
	(A1 * B1 * !B2 * !C1 * !X)	-0.00098	-0.00098	-0.00098
	(A1 * B1 * !B2 * !C1 * !X)	0.00126	0.00127	0.00126
	(A1 * !B1 * !B2 * C1 * !X)	-0.00097	-0.00098	-0.00098
	(A1 * !B1 * !B2 * C1 * !X)	0.00126	0.00125	0.00125
	(A1 * !B1 * !B2 * !C1 * !X)	-0.00097	-0.00098	-0.00098
	(A1 * !B1 * !B2 * !C1 * !X)	0.00126	0.00127	0.00126
	(!A1 * B2 * !C1 * !X)	-0.00082	-0.00090	-0.00089
	(!A1 * B2 * !C1 * !X)	0.00128	0.00129	0.00128
	(!A1 * B1 * !B2 * !C1 * !X)	-0.00084	-0.00091	-0.00090
	(!A1 * B1 * !B2 * !C1 * !X)	0.00128	0.00129	0.00128
	(!A1 * !B1 * !B2 * C1 * !X)	-0.00086	-0.00091	-0.00091
	(!A1 * !B1 * !B2 * C1 * !X)	0.00128	0.00129	0.00128
	(!A1 * !B1 * !B2 * !C1 * !X)	-0.00086	-0.00091	-0.00091
	(!A1 * !B1 * !B2 * !C1 * !X)	0.00128	0.00129	0.00128

sky130_fd_sc_hs__o221a_2	**(A1 * B2 * C1 * X)**	-0.00122	-0.00123	-0.00126
	(A1 * B2 * C1 * X)	0.00069	0.00069	0.00065
	(A1 * B2 * !C1 * !X)	-0.00112	-0.00112	-0.00112
	(A1 * B2 * !C1 * !X)	0.00125	0.00124	0.00125
	(A1 * B1 * !B2 * C1 * X)	-0.00122	-0.00123	-0.00126
	(A1 * B1 * !B2 * C1 * X)	0.00069	0.00069	0.00065
	(A1 * B1 * !B2 * !C1 * !X)	-0.00112	-0.00112	-0.00112
	(A1 * B1 * !B2 * !C1 * !X)	0.00125	0.00124	0.00125
	(A1 * !B1 * !B2 * C1 * !X)	-0.00112	-0.00113	-0.00112
	(A1 * !B1 * !B2 * C1 * !X)	0.00125	0.00126	0.00125
	(A1 * !B1 * !B2 * !C1 * !X)	-0.00111	-0.00113	-0.00112
	(A1 * !B1 * !B2 * !C1 * !X)	0.00125	0.00126	0.00125
	(!A1 * B2 * !C1 * !X)	-0.00094	-0.00104	-0.00103
	(!A1 * B2 * !C1 * !X)	0.00128	0.00129	0.00127
	(!A1 * B1 * !B2 * !C1 * !X)	-0.00096	-0.00105	-0.00104
	(!A1 * B1 * !B2 * !C1 * !X)	0.00127	0.00129	0.00127
	(!A1 * !B1 * !B2 * C1 * !X)	-0.00099	-0.00105	-0.00104
	(!A1 * !B1 * !B2 * C1 * !X)	0.00127	0.00127	0.00127
	(!A1 * !B1 * !B2 * !C1 * !X)	-0.00099	-0.00105	-0.00105
	(!A1 * !B1 * !B2 * !C1 * !X)	0.00127	0.00128	0.00127

sky130_fd_sc_hs__o221a_4	**(A1 * B2 * C1 * X)**	-0.00196	-0.00196	-0.00206
	(A1 * B2 * C1 * X)	0.00138	0.00137	0.00130
	(A1 * B2 * !C1 * !X)	-0.00183	-0.00183	-0.00182
	(A1 * B2 * !C1 * !X)	0.00246	0.00245	0.00245
	(A1 * B1 * !B2 * C1 * X)	-0.00196	-0.00196	-0.00206
	(A1 * B1 * !B2 * C1 * X)	0.00138	0.00137	0.00131
	(A1 * B1 * !B2 * !C1 * !X)	-0.00183	-0.00183	-0.00182
	(A1 * B1 * !B2 * !C1 * !X)	0.00246	0.00245	0.00245
	(A1 * !B1 * !B2 * C1 * !X)	-0.00183	-0.00183	-0.00182
	(A1 * !B1 * !B2 * C1 * !X)	0.00245	0.00245	0.00244
	(A1 * !B1 * !B2 * !C1 * !X)	-0.00183	-0.00184	-0.00182
	(A1 * !B1 * !B2 * !C1 * !X)	0.00245	0.00246	0.00245
	(!A1 * B2 * !C1 * !X)	-0.00151	-0.00168	-0.00166
	(!A1 * B2 * !C1 * !X)	0.00250	0.00250	0.00250
	(!A1 * B1 * !B2 * !C1 * !X)	-0.00154	-0.00167	-0.00168
	(!A1 * B1 * !B2 * !C1 * !X)	0.00250	0.00251	0.00250
	(!A1 * !B1 * !B2 * C1 * !X)	-0.00160	-0.00171	-0.00170
	(!A1 * !B1 * !B2 * C1 * !X)	0.00251	0.00251	0.00250
	(!A1 * !B1 * !B2 * !C1 * !X)	-0.00160	-0.00170	-0.00170
	(!A1 * !B1 * !B2 * !C1 * !X)	0.00251	0.00251	0.00250

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)**	0.00117	0.00105	0.00103
	(A2 * B2 * C1 * X)	-0.00108	-0.00124	-0.00124
	(A2 * !B2 * !C1 * !X)	0.00093	0.00093	0.00093
	(A2 * !B2 * !C1 * !X)	-0.00131	-0.00131	-0.00130
	(A1 * B2 * !C1 * !X) + (!A1 * A2 * B2 * !C1 * !X)	0.00097	0.00099	0.00098
	(A1 * B2 * !C1 * !X) + (!A1 * A2 * B2 * !C1 * !X)	-0.00127	-0.00130	-0.00129
	(A1 * !A2 * B2 * C1 * X)	0.00117	0.00105	0.00103
	(A1 * !A2 * B2 * C1 * X)	-0.00108	-0.00124	-0.00124
	(A1 * !A2 * !B2 * !C1 * !X)	0.00093	0.00094	0.00093
	(A1 * !A2 * !B2 * !C1 * !X)	-0.00131	-0.00131	-0.00130
	(!A1 * !A2 * B2 * C1 * !X)	0.00044	0.00044	0.00044
	(!A1 * !A2 * B2 * C1 * !X)	-0.00127	-0.00130	-0.00129
	(!A1 * !A2 * B2 * !C1 * !X)	0.00054	0.00055	0.00054
	(!A1 * !A2 * B2 * !C1 * !X)	-0.00127	-0.00130	-0.00129
	(!A1 * !A2 * !B2 * C1 * !X)	0.00044	0.00045	0.00046
	(!A1 * !A2 * !B2 * C1 * !X)	-0.00130	-0.00131	-0.00129
	(!A1 * !A2 * !B2 * !C1 * !X)	0.00057	0.00058	0.00057
	(!A1 * !A2 * !B2 * !C1 * !X)	-0.00131	-0.00131	-0.00131

sky130_fd_sc_hs__o221a_2	**(A2 * B2 * C1 * X)**	0.00136	0.00121	0.00120
	(A2 * B2 * C1 * X)	-0.00105	-0.00120	-0.00122
	(A2 * !B2 * !C1 * !X)	0.00106	0.00106	0.00105
	(A2 * !B2 * !C1 * !X)	-0.00132	-0.00132	-0.00132
	(A1 * B2 * !C1 * !X) + (!A1 * A2 * B2 * !C1 * !X)	0.00111	0.00111	0.00111
	(A1 * B2 * !C1 * !X) + (!A1 * A2 * B2 * !C1 * !X)	-0.00128	-0.00129	-0.00130
	(A1 * !A2 * B2 * C1 * X)	0.00136	0.00121	0.00120
	(A1 * !A2 * B2 * C1 * X)	-0.00105	-0.00120	-0.00122
	(A1 * !A2 * !B2 * !C1 * !X)	0.00106	0.00106	0.00105
	(A1 * !A2 * !B2 * !C1 * !X)	-0.00132	-0.00132	-0.00132
	(!A1 * !A2 * B2 * C1 * !X)	0.00049	0.00048	0.00049
	(!A1 * !A2 * B2 * C1 * !X)	-0.00129	-0.00130	-0.00131
	(!A1 * !A2 * B2 * !C1 * !X)	0.00061	0.00060	0.00061
	(!A1 * !A2 * B2 * !C1 * !X)	-0.00129	-0.00131	-0.00131
	(!A1 * !A2 * !B2 * C1 * !X)	0.00050	0.00051	0.00052
	(!A1 * !A2 * !B2 * C1 * !X)	-0.00131	-0.00132	-0.00131
	(!A1 * !A2 * !B2 * !C1 * !X)	0.00064	0.00064	0.00064
	(!A1 * !A2 * !B2 * !C1 * !X)	-0.00133	-0.00133	-0.00133

sky130_fd_sc_hs__o221a_4	**(A2 * B2 * C1 * X)**	0.00285	0.00260	0.00257
	(A2 * B2 * C1 * X)	-0.00209	-0.00240	-0.00242
	(A2 * !B2 * !C1 * !X)	0.00229	0.00231	0.00230
	(A2 * !B2 * !C1 * !X)	-0.00261	-0.00262	-0.00262
	(A1 * B2 * !C1 * !X) + (!A1 * A2 * B2 * !C1 * !X)	0.00239	0.00241	0.00240
	(A1 * B2 * !C1 * !X) + (!A1 * A2 * B2 * !C1 * !X)	-0.00253	-0.00259	-0.00258
	(A1 * !A2 * B2 * C1 * X)	0.00285	0.00260	0.00257
	(A1 * !A2 * B2 * C1 * X)	-0.00209	-0.00240	-0.00242
	(A1 * !A2 * !B2 * !C1 * !X)	0.00230	0.00231	0.00230
	(A1 * !A2 * !B2 * !C1 * !X)	-0.00262	-0.00262	-0.00262
	(!A1 * !A2 * B2 * C1 * !X)	0.00124	0.00125	0.00124
	(!A1 * !A2 * B2 * C1 * !X)	-0.00254	-0.00260	-0.00261
	(!A1 * !A2 * B2 * !C1 * !X)	0.00145	0.00145	0.00145
	(!A1 * !A2 * B2 * !C1 * !X)	-0.00255	-0.00261	-0.00260
	(!A1 * !A2 * !B2 * C1 * !X)	0.00127	0.00127	0.00129
	(!A1 * !A2 * !B2 * C1 * !X)	-0.00262	-0.00262	-0.00260
	(!A1 * !A2 * !B2 * !C1 * !X)	0.00151	0.00152	0.00151
	(!A1 * !A2 * !B2 * !C1 * !X)	-0.00264	-0.00266	-0.00264

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)**	-0.00102	-0.00103	-0.00102
	(A2 * B2 * C1 * X)	0.00124	0.00125	0.00124
	(A2 * !B2 * !C1 * !X)	-0.00088	-0.00093	-0.00093
	(A2 * !B2 * !C1 * !X)	0.00133	0.00132	0.00131
	(A1 * B2 * !C1 * !X) + (!A1 * A2 * B2 * !C1 * !X)	-0.00097	-0.00098	-0.00097
	(A1 * B2 * !C1 * !X) + (!A1 * A2 * B2 * !C1 * !X)	0.00129	0.00130	0.00129
	(A1 * !A2 * B2 * C1 * X)	-0.00102	-0.00103	-0.00102
	(A1 * !A2 * B2 * C1 * X)	0.00124	0.00125	0.00124
	(A1 * !A2 * !B2 * !C1 * !X)	-0.00087	-0.00094	-0.00093
	(A1 * !A2 * !B2 * !C1 * !X)	0.00133	0.00132	0.00131
	(!A1 * !A2 * B2 * C1 * !X)	-0.00043	-0.00043	-0.00043
	(!A1 * !A2 * B2 * C1 * !X)	0.00132	0.00133	0.00129
	(!A1 * !A2 * B2 * !C1 * !X)	-0.00054	-0.00055	-0.00054
	(!A1 * !A2 * B2 * !C1 * !X)	0.00129	0.00131	0.00129
	(!A1 * !A2 * !B2 * C1 * !X)	-0.00043	-0.00044	-0.00044
	(!A1 * !A2 * !B2 * C1 * !X)	0.00134	0.00135	0.00131
	(!A1 * !A2 * !B2 * !C1 * !X)	-0.00057	-0.00058	-0.00057
	(!A1 * !A2 * !B2 * !C1 * !X)	0.00133	0.00135	0.00131

sky130_fd_sc_hs__o221a_2	**(A2 * B2 * C1 * X)**	-0.00119	-0.00120	-0.00119
	(A2 * B2 * C1 * X)	0.00122	0.00123	0.00122
	(A2 * !B2 * !C1 * !X)	-0.00100	-0.00106	-0.00105
	(A2 * !B2 * !C1 * !X)	0.00134	0.00135	0.00132
	(A1 * B2 * !C1 * !X) + (!A1 * A2 * B2 * !C1 * !X)	-0.00111	-0.00111	-0.00111
	(A1 * B2 * !C1 * !X) + (!A1 * A2 * B2 * !C1 * !X)	0.00129	0.00130	0.00130
	(A1 * !A2 * B2 * C1 * X)	-0.00119	-0.00120	-0.00119
	(A1 * !A2 * B2 * C1 * X)	0.00122	0.00123	0.00122
	(A1 * !A2 * !B2 * !C1 * !X)	-0.00098	-0.00106	-0.00105
	(A1 * !A2 * !B2 * !C1 * !X)	0.00135	0.00134	0.00132
	(!A1 * !A2 * B2 * C1 * !X)	-0.00047	-0.00048	-0.00048
	(!A1 * !A2 * B2 * C1 * !X)	0.00133	0.00135	0.00131
	(!A1 * !A2 * B2 * !C1 * !X)	-0.00061	-0.00060	-0.00061
	(!A1 * !A2 * B2 * !C1 * !X)	0.00131	0.00133	0.00131
	(!A1 * !A2 * !B2 * C1 * !X)	-0.00048	-0.00049	-0.00049
	(!A1 * !A2 * !B2 * C1 * !X)	0.00136	0.00137	0.00133
	(!A1 * !A2 * !B2 * !C1 * !X)	-0.00064	-0.00064	-0.00064
	(!A1 * !A2 * !B2 * !C1 * !X)	0.00136	0.00137	0.00133

sky130_fd_sc_hs__o221a_4	**(A2 * B2 * C1 * X)**	-0.00255	-0.00257	-0.00255
	(A2 * B2 * C1 * X)	0.00239	0.00243	0.00242
	(A2 * !B2 * !C1 * !X)	-0.00219	-0.00231	-0.00230
	(A2 * !B2 * !C1 * !X)	0.00266	0.00265	0.00263
	(A1 * B2 * !C1 * !X) + (!A1 * A2 * B2 * !C1 * !X)	-0.00238	-0.00240	-0.00239
	(A1 * B2 * !C1 * !X) + (!A1 * A2 * B2 * !C1 * !X)	0.00256	0.00260	0.00258
	(A1 * !A2 * B2 * C1 * X)	-0.00255	-0.00257	-0.00255
	(A1 * !A2 * B2 * C1 * X)	0.00239	0.00243	0.00242
	(A1 * !A2 * !B2 * !C1 * !X)	-0.00217	-0.00231	-0.00230
	(A1 * !A2 * !B2 * !C1 * !X)	0.00267	0.00265	0.00263
	(!A1 * !A2 * B2 * C1 * !X)	-0.00119	-0.00121	-0.00123
	(!A1 * !A2 * B2 * C1 * !X)	0.00266	0.00269	0.00261
	(!A1 * !A2 * B2 * !C1 * !X)	-0.00145	-0.00145	-0.00145
	(!A1 * !A2 * B2 * !C1 * !X)	0.00260	0.00263	0.00260
	(!A1 * !A2 * !B2 * C1 * !X)	-0.00122	-0.00124	-0.00125
	(!A1 * !A2 * !B2 * C1 * !X)	0.00268	0.00273	0.00265
	(!A1 * !A2 * !B2 * !C1 * !X)	-0.00151	-0.00152	-0.00151
	(!A1 * !A2 * !B2 * !C1 * !X)	0.00268	0.00273	0.00265

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)**	0.00127	0.00126	0.00126
	(A2 * B1 * C1 * X)	-0.00067	-0.00065	-0.00066
	(A2 * B1 * !C1 * !X)	0.00108	0.00110	0.00109
	(A2 * B1 * !C1 * !X)	-0.00127	-0.00129	-0.00129
	(A2 * !B1 * !C1 * !X)	0.00104	0.00105	0.00104
	(A2 * !B1 * !C1 * !X)	-0.00131	-0.00132	-0.00131
	(A1 * !A2 * B1 * C1 * X)	0.00126	0.00126	0.00126
	(A1 * !A2 * B1 * C1 * X)	-0.00065	-0.00066	-0.00066
	(A1 * !A2 * B1 * !C1 * !X)	0.00109	0.00109	0.00109
	(A1 * !A2 * B1 * !C1 * !X)	-0.00127	-0.00130	-0.00129
	(A1 * !A2 * !B1 * !C1 * !X)	0.00104	0.00105	0.00104
	(A1 * !A2 * !B1 * !C1 * !X)	-0.00131	-0.00132	-0.00131
	(!A1 * !A2 * B1 * C1 * !X)	0.00051	0.00051	0.00051
	(!A1 * !A2 * B1 * C1 * !X)	-0.00127	-0.00130	-0.00130
	(!A1 * !A2 * B1 * !C1 * !X)	0.00063	0.00062	0.00062
	(!A1 * !A2 * B1 * !C1 * !X)	-0.00129	-0.00130	-0.00130
	(!A1 * !A2 * !B1 * C1 * !X)	0.00051	0.00052	0.00054
	(!A1 * !A2 * !B1 * C1 * !X)	-0.00130	-0.00132	-0.00130
	(!A1 * !A2 * !B1 * !C1 * !X)	0.00064	0.00065	0.00065
	(!A1 * !A2 * !B1 * !C1 * !X)	-0.00131	-0.00132	-0.00132

sky130_fd_sc_hs__o221a_2	**(A2 * B1 * C1 * X)**	0.00136	0.00138	0.00136
	(A2 * B1 * C1 * X)	-0.00064	-0.00065	-0.00064
	(A2 * B1 * !C1 * !X)	0.00119	0.00120	0.00120
	(A2 * B1 * !C1 * !X)	-0.00125	-0.00127	-0.00127
	(A2 * !B1 * !C1 * !X)	0.00114	0.00115	0.00114
	(A2 * !B1 * !C1 * !X)	-0.00130	-0.00130	-0.00129
	(A1 * !A2 * B1 * C1 * X)	0.00136	0.00136	0.00136
	(A1 * !A2 * B1 * C1 * X)	-0.00064	-0.00064	-0.00064
	(A1 * !A2 * B1 * !C1 * !X)	0.00119	0.00120	0.00120
	(A1 * !A2 * B1 * !C1 * !X)	-0.00125	-0.00128	-0.00127
	(A1 * !A2 * !B1 * !C1 * !X)	0.00114	0.00115	0.00114
	(A1 * !A2 * !B1 * !C1 * !X)	-0.00130	-0.00130	-0.00129
	(!A1 * !A2 * B1 * C1 * !X)	0.00053	0.00053	0.00053
	(!A1 * !A2 * B1 * C1 * !X)	-0.00126	-0.00128	-0.00128
	(!A1 * !A2 * B1 * !C1 * !X)	0.00065	0.00066	0.00065
	(!A1 * !A2 * B1 * !C1 * !X)	-0.00126	-0.00129	-0.00128
	(!A1 * !A2 * !B1 * C1 * !X)	0.00055	0.00056	0.00056
	(!A1 * !A2 * !B1 * C1 * !X)	-0.00129	-0.00130	-0.00128
	(!A1 * !A2 * !B1 * !C1 * !X)	0.00069	0.00069	0.00069
	(!A1 * !A2 * !B1 * !C1 * !X)	-0.00130	-0.00131	-0.00130

sky130_fd_sc_hs__o221a_4	**(A2 * B1 * C1 * X)**	0.00214	0.00218	0.00215
	(A2 * B1 * C1 * X)	-0.00128	-0.00131	-0.00128
	(A2 * B1 * !C1 * !X)	0.00187	0.00189	0.00187
	(A2 * B1 * !C1 * !X)	-0.00244	-0.00248	-0.00249
	(A2 * !B1 * !C1 * !X)	0.00178	0.00180	0.00178
	(A2 * !B1 * !C1 * !X)	-0.00254	-0.00255	-0.00254
	(A1 * !A2 * B1 * C1 * X)	0.00214	0.00214	0.00215
	(A1 * !A2 * B1 * C1 * X)	-0.00128	-0.00128	-0.00128
	(A1 * !A2 * B1 * !C1 * !X)	0.00187	0.00189	0.00187
	(A1 * !A2 * B1 * !C1 * !X)	-0.00244	-0.00250	-0.00249
	(A1 * !A2 * !B1 * !C1 * !X)	0.00178	0.00179	0.00178
	(A1 * !A2 * !B1 * !C1 * !X)	-0.00254	-0.00254	-0.00254
	(!A1 * !A2 * B1 * C1 * !X)	0.00077	0.00078	0.00077
	(!A1 * !A2 * B1 * C1 * !X)	-0.00245	-0.00252	-0.00250
	(!A1 * !A2 * B1 * !C1 * !X)	0.00098	0.00099	0.00098
	(!A1 * !A2 * B1 * !C1 * !X)	-0.00246	-0.00250	-0.00251
	(!A1 * !A2 * !B1 * C1 * !X)	0.00079	0.00081	0.00082
	(!A1 * !A2 * !B1 * C1 * !X)	-0.00253	-0.00255	-0.00251
	(!A1 * !A2 * !B1 * !C1 * !X)	0.00103	0.00105	0.00104
	(!A1 * !A2 * !B1 * !C1 * !X)	-0.00255	-0.00257	-0.00256

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)**	-0.00121	-0.00121	-0.00125
	(A2 * B1 * C1 * X)	0.00071	0.00071	0.00067
	(A2 * B1 * !C1 * !X)	-0.00108	-0.00109	-0.00109
	(A2 * B1 * !C1 * !X)	0.00129	0.00129	0.00129
	(A2 * !B1 * !C1 * !X)	-0.00099	-0.00105	-0.00104
	(A2 * !B1 * !C1 * !X)	0.00133	0.00132	0.00132
	(A1 * !A2 * B1 * C1 * X)	-0.00121	-0.00121	-0.00125
	(A1 * !A2 * B1 * C1 * X)	0.00071	0.00071	0.00067
	(A1 * !A2 * B1 * !C1 * !X)	-0.00109	-0.00109	-0.00109
	(A1 * !A2 * B1 * !C1 * !X)	0.00130	0.00130	0.00129
	(A1 * !A2 * !B1 * !C1 * !X)	-0.00098	-0.00105	-0.00104
	(A1 * !A2 * !B1 * !C1 * !X)	0.00133	0.00133	0.00131
	(!A1 * !A2 * B1 * C1 * !X)	-0.00049	-0.00049	-0.00050
	(!A1 * !A2 * B1 * C1 * !X)	0.00133	0.00134	0.00130
	(!A1 * !A2 * B1 * !C1 * !X)	-0.00063	-0.00062	-0.00062
	(!A1 * !A2 * B1 * !C1 * !X)	0.00131	0.00130	0.00130
	(!A1 * !A2 * !B1 * C1 * !X)	-0.00051	-0.00051	-0.00051
	(!A1 * !A2 * !B1 * C1 * !X)	0.00134	0.00136	0.00132
	(!A1 * !A2 * !B1 * !C1 * !X)	-0.00064	-0.00065	-0.00065
	(!A1 * !A2 * !B1 * !C1 * !X)	0.00134	0.00136	0.00132

sky130_fd_sc_hs__o221a_2	**(A2 * B1 * C1 * X)**	-0.00132	-0.00132	-0.00135
	(A2 * B1 * C1 * X)	0.00068	0.00068	0.00065
	(A2 * B1 * !C1 * !X)	-0.00119	-0.00120	-0.00119
	(A2 * B1 * !C1 * !X)	0.00127	0.00127	0.00127
	(A2 * !B1 * !C1 * !X)	-0.00108	-0.00115	-0.00114
	(A2 * !B1 * !C1 * !X)	0.00131	0.00132	0.00130
	(A1 * !A2 * B1 * C1 * X)	-0.00131	-0.00132	-0.00135
	(A1 * !A2 * B1 * C1 * X)	0.00068	0.00068	0.00065
	(A1 * !A2 * B1 * !C1 * !X)	-0.00119	-0.00120	-0.00119
	(A1 * !A2 * B1 * !C1 * !X)	0.00127	0.00128	0.00127
	(A1 * !A2 * !B1 * !C1 * !X)	-0.00107	-0.00115	-0.00114
	(A1 * !A2 * !B1 * !C1 * !X)	0.00132	0.00131	0.00130
	(!A1 * !A2 * B1 * C1 * !X)	-0.00051	-0.00051	-0.00053
	(!A1 * !A2 * B1 * C1 * !X)	0.00130	0.00130	0.00128
	(!A1 * !A2 * B1 * !C1 * !X)	-0.00065	-0.00066	-0.00065
	(!A1 * !A2 * B1 * !C1 * !X)	0.00129	0.00130	0.00128
	(!A1 * !A2 * !B1 * C1 * !X)	-0.00053	-0.00054	-0.00054
	(!A1 * !A2 * !B1 * C1 * !X)	0.00133	0.00134	0.00130
	(!A1 * !A2 * !B1 * !C1 * !X)	-0.00069	-0.00069	-0.00069
	(!A1 * !A2 * !B1 * !C1 * !X)	0.00133	0.00134	0.00131

sky130_fd_sc_hs__o221a_4	**(A2 * B1 * C1 * X)**	-0.00203	-0.00204	-0.00213
	(A2 * B1 * C1 * X)	0.00137	0.00138	0.00131
	(A2 * B1 * !C1 * !X)	-0.00187	-0.00186	-0.00187
	(A2 * B1 * !C1 * !X)	0.00249	0.00248	0.00249
	(A2 * !B1 * !C1 * !X)	-0.00168	-0.00180	-0.00178
	(A2 * !B1 * !C1 * !X)	0.00257	0.00259	0.00254
	(A1 * !A2 * B1 * C1 * X)	-0.00202	-0.00204	-0.00213
	(A1 * !A2 * B1 * C1 * X)	0.00137	0.00139	0.00131
	(A1 * !A2 * B1 * !C1 * !X)	-0.00187	-0.00188	-0.00187
	(A1 * !A2 * B1 * !C1 * !X)	0.00249	0.00250	0.00249
	(A1 * !A2 * !B1 * !C1 * !X)	-0.00166	-0.00179	-0.00178
	(A1 * !A2 * !B1 * !C1 * !X)	0.00258	0.00256	0.00254
	(!A1 * !A2 * B1 * C1 * !X)	-0.00076	-0.00075	-0.00077
	(!A1 * !A2 * B1 * C1 * !X)	0.00254	0.00253	0.00250
	(!A1 * !A2 * B1 * !C1 * !X)	-0.00098	-0.00099	-0.00098
	(!A1 * !A2 * B1 * !C1 * !X)	0.00252	0.00250	0.00251
	(!A1 * !A2 * !B1 * C1 * !X)	-0.00078	-0.00078	-0.00078
	(!A1 * !A2 * !B1 * C1 * !X)	0.00260	0.00262	0.00256
	(!A1 * !A2 * !B1 * !C1 * !X)	-0.00103	-0.00105	-0.00104
	(!A1 * !A2 * !B1 * !C1 * !X)	0.00258	0.00263	0.00256

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)	0.00044	0.00044	0.00041
	(A2 * !B1 * !B2 * !X)	-0.00153	-0.00153	-0.00158
	(!A2 * !B1 * !B2 * !X)	0.00044	0.00044	0.00041
	(!A2 * !B1 * !B2 * !X)	-0.00153	-0.00153	-0.00158
	(!A1 * !A2 * B2 * !X)	0.00044	0.00044	0.00038
	(!A1 * !A2 * B2 * !X)	-0.00143	-0.00144	-0.00156
	(!A1 * !A2 * B1 * !B2 * !X)	0.00045	0.00044	0.00038
	(!A1 * !A2 * B1 * !B2 * !X)	-0.00145	-0.00146	-0.00157
sky130_fd_sc_hs__o221a_2	(A2 * !B1 * !B2 * !X)	0.00051	0.00051	0.00047
	(A2 * !B1 * !B2 * !X)	-0.00153	-0.00154	-0.00159
	(!A2 * !B1 * !B2 * !X)	0.00051	0.00051	0.00047
	(!A2 * !B1 * !B2 * !X)	-0.00153	-0.00154	-0.00159
	(!A1 * !A2 * B2 * !X)	0.00052	0.00052	0.00045
	(!A1 * !A2 * B2 * !X)	-0.00142	-0.00143	-0.00157
	(!A1 * !A2 * B1 * !B2 * !X)	0.00053	0.00053	0.00046
	(!A1 * !A2 * B1 * !B2 * !X)	-0.00144	-0.00145	-0.00157
sky130_fd_sc_hs__o221a_4	(A2 * !B1 * !B2 * !X)	0.00074	0.00075	0.00068
	(A2 * !B1 * !B2 * !X)	-0.00286	-0.00289	-0.00298
	(!A2 * !B1 * !B2 * !X)	0.00074	0.00075	0.00068
	(!A2 * !B1 * !B2 * !X)	-0.00286	-0.00289	-0.00298
	(!A1 * !A2 * B2 * !X)	0.00075	0.00076	0.00064
	(!A1 * !A2 * B2 * !X)	-0.00269	-0.00272	-0.00295
	(!A1 * !A2 * B1 * !B2 * !X)	0.00076	0.00076	0.00065
	(!A1 * !A2 * B1 * !B2 * !X)	-0.00274	-0.00275	-0.00295

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)	-0.00039	-0.00039	-0.00039
	(A2 * !B1 * !B2 * !X)	0.00158	0.00159	0.00158
	(!A2 * !B1 * !B2 * !X)	-0.00039	-0.00039	-0.00039
	(!A2 * !B1 * !B2 * !X)	0.00158	0.00159	0.00158
	(!A1 * !A2 * B2 * !X)	-0.00037	-0.00037	-0.00037
	(!A1 * !A2 * B2 * !X)	0.00158	0.00159	0.00159
	(!A1 * !A2 * B1 * !B2 * !X)	-0.00038	-0.00038	-0.00038
	(!A1 * !A2 * B1 * !B2 * !X)	0.00158	0.00159	0.00158
sky130_fd_sc_hs__o221a_2	(A2 * !B1 * !B2 * !X)	-0.00046	-0.00046	-0.00046
	(A2 * !B1 * !B2 * !X)	0.00159	0.00160	0.00159
	(!A2 * !B1 * !B2 * !X)	-0.00046	-0.00046	-0.00046
	(!A2 * !B1 * !B2 * !X)	0.00159	0.00159	0.00159
	(!A1 * !A2 * B2 * !X)	-0.00045	-0.00045	-0.00044
	(!A1 * !A2 * B2 * !X)	0.00160	0.00160	0.00159
	(!A1 * !A2 * B1 * !B2 * !X)	-0.00045	-0.00045	-0.00045
	(!A1 * !A2 * B1 * !B2 * !X)	0.00159	0.00159	0.00159
sky130_fd_sc_hs__o221a_4	(A2 * !B1 * !B2 * !X)	-0.00065	-0.00066	-0.00065
	(A2 * !B1 * !B2 * !X)	0.00299	0.00300	0.00299
	(!A2 * !B1 * !B2 * !X)	-0.00065	-0.00065	-0.00065
	(!A2 * !B1 * !B2 * !X)	0.00299	0.00299	0.00299
	(!A1 * !A2 * B2 * !X)	-0.00063	-0.00063	-0.00062
	(!A1 * !A2 * B2 * !X)	0.00300	0.00301	0.00299
	(!A1 * !A2 * B1 * !B2 * !X)	-0.00064	-0.00063	-0.00063
	(!A1 * !A2 * B1 * !B2 * !X)	0.00301	0.00299	0.00299

SKY130_FD_SC_HS__O22AIx

sky130_fd_sc_hs_tt_1.50v_25C.ccs
Cell Library: Process , Voltage
1.50, 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	0.00273	0.00270	0.00278	0.00285	0.41038
sky130_fd_sc_hs__o22ai_2	0.00514	0.00530	0.00529	0.00521	0.74663
sky130_fd_sc_hs__o22ai_4	0.01058	0.01010	0.01101	0.01031	1.36387

Leakage Information

Cell Name	Leakage(nW)		
	Min.	**Avg**	**Max.**
sky130_fd_sc_hs__o22ai_1	0.00000	0.01978	0.05947
sky130_fd_sc_hs__o22ai_2	0.00000	0.03957	0.11893
sky130_fd_sc_hs__o22ai_4	0.00000	0.07913	0.23786

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)	0.16626	1.19170	11.50150
	A2->Y (FR)	0.14586	1.15795	11.45940
	B1->Y (FR)	0.10660	1.12917	11.44540
	B2->Y (FR)	0.08820	1.09952	11.40150
sky130_fd_sc_hs__o22ai_2	A1->Y (FR)	0.16434	1.04408	11.38080
	A2->Y (FR)	0.13840	1.00572	11.35160
	B1->Y (FR)	0.10093	0.97644	11.28110
	B2->Y (FR)	0.07250	0.93602	11.24340
sky130_fd_sc_hs__o22ai_4	A1->Y (FR)	0.15601	0.89768	10.96140
	A2->Y (FR)	0.13273	0.87480	11.04170
	B1->Y (FR)	0.09595	0.84366	10.99080
	B2->Y (FR)	0.07090	0.81607	11.01970

Delay(ns) to Y falling :

Cell Name	Timing Arc(Dir)	Delay(ns)		
		First	Mid	Last
sky130_fd_sc_hs__o22ai_1	A1->Y (RF)	0.05554	0.48359	4.69008
	A2->Y (RF)	0.04829	0.47161	4.66604
	B1->Y (RF)	0.04469	0.51944	5.23058
	B2->Y (RF)	0.03804	0.50449	5.17369
sky130_fd_sc_hs__o22ai_2	A1->Y (RF)	0.05594	0.43268	4.62774
	A2->Y (RF)	0.04672	0.41753	4.59081
	B1->Y (RF)	0.04419	0.46951	5.24412
	B2->Y (RF)	0.03460	0.44433	5.15092
sky130_fd_sc_hs__o22ai_4	A1->Y (RF)	0.04405	0.35472	4.36533
	A2->Y (RF)	0.03730	0.33841	4.33619
	B1->Y (RF)	0.03300	0.39049	5.05182
	B2->Y (RF)	0.03407	0.40652	5.23811

Power Information

Internal switching power(pJ) to Y rising :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__o22ai_1	A1	0.00128	0.00114	0.00140
	A1	0.00703	0.00685	0.00715
	A2	0.00135	0.00131	0.00229
	A2	0.00625	0.00623	0.00716
	B1	-0.00011	-0.00023	0.00006
	B1	0.00471	0.00459	0.00488
	B2	-0.00009	-0.00006	0.00093
	B2	0.00397	0.00398	0.00491
sky130_fd_sc_hs__o22ai_2	A1	0.00231	0.00199	0.00252
	A1	0.01376	0.01348	0.01397
	A2	0.00226	0.00218	0.00415
	A2	0.01225	0.01220	0.01403
	B1	-0.00043	-0.00063	-0.00005
	B1	0.00923	0.00904	0.00958
	B2	-0.00055	-0.00048	0.00166
	B2	0.00752	0.00739	0.00899
sky130_fd_sc_hs__o22ai_4	A1	0.00353	0.00292	0.00431
	A1	0.02612	0.02560	0.02694
	A2	0.00352	0.00354	0.00787
	A2	0.02287	0.02296	0.02706
	B1	-0.00108	-0.00152	-0.00001
	B1	0.01808	0.01765	0.01915
	B2	-0.00105	-0.00095	0.00377
	B2	0.01493	0.01498	0.01957

Internal switching power(pJ) to Y falling :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__o22ai_1	A1	0.00761	0.00754	0.00774
	A1	0.00164	0.00153	0.00176
	A2	0.00610	0.00603	0.00645
	A2	0.00095	0.00088	0.00112
	B1	0.00640	0.00629	0.00685
	B1	0.00166	0.00156	0.00195
	B2	0.00504	0.00504	0.00555
	B2	0.00105	0.00102	0.00138
sky130_fd_sc_hs__o22ai_2	A1	0.01559	0.01530	0.01605
	A1	0.00378	0.00350	0.00395
	A2	0.01241	0.01231	0.01281
	A2	0.00197	0.00183	0.00235
	B1	0.01320	0.01294	0.01367
	B1	0.00378	0.00349	0.00429
	B2	0.00978	0.00970	0.01083
	B2	0.00189	0.00180	0.00263
sky130_fd_sc_hs__o22ai_4	A1	0.02941	0.02880	0.03049
	A1	0.00609	0.00549	0.00662
	A2	0.02337	0.02298	0.02484
	A2	0.00315	0.00274	0.00404
	B1	0.02497	0.02440	0.02632
	B1	0.00616	0.00555	0.00738
	B2	0.01896	0.01865	0.02068
	B2	0.00322	0.00293	0.00494

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__o22ai_1	(A2 * B2 * !Y)	0.00137	0.00124	0.00123
	(A2 * B2 * !Y)	-0.00123	-0.00138	-0.00139
	(A2 * B1 * !B2 * !Y)	0.00137	0.00124	0.00123
	(A2 * B1 * !B2 * !Y)	-0.00123	-0.00138	-0.00139
	(A2 * !B1 * !B2 * Y)	0.00123	0.00123	0.00123
	(A2 * !B1 * !B2 * Y)	-0.00136	-0.00139	-0.00139
	(!A2 * !B1 * !B2 * Y)	0.00116	0.00117	0.00116
	(!A2 * !B1 * !B2 * Y)	-0.00141	-0.00141	-0.00141
sky130_fd_sc_hs__o22ai_2	(A2 * B2 * !Y)	0.00259	0.00231	0.00229
	(A2 * B2 * !Y)	-0.00239	-0.00274	-0.00275
	(A2 * B1 * !B2 * !Y)	0.00259	0.00231	0.00229
	(A2 * B1 * !B2 * !Y)	-0.00239	-0.00274	-0.00274
	(A2 * !B1 * !B2 * Y)	0.00228	0.00229	0.00228
	(A2 * !B1 * !B2 * Y)	-0.00268	-0.00276	-0.00275
	(!A2 * !B1 * !B2 * Y)	0.00215	0.00216	0.00214
	(!A2 * !B1 * !B2 * Y)	-0.00281	-0.00282	-0.00280
sky130_fd_sc_hs__o22ai_4	(A2 * B2 * !Y)	0.00527	0.00466	0.00460
	(A2 * B2 * !Y)	-0.00466	-0.00539	-0.00543
	(A2 * B1 * !B2 * !Y)	0.00527	0.00466	0.00460
	(A2 * B1 * !B2 * !Y)	-0.00466	-0.00539	-0.00543
	(A2 * !B1 * !B2 * Y)	0.00445	0.00449	0.00447
	(A2 * !B1 * !B2 * Y)	-0.00542	-0.00557	-0.00554
	(!A2 * !B1 * !B2 * Y)	0.00419	0.00424	0.00421
	(!A2 * !B1 * !B2 * Y)	-0.00565	-0.00568	-0.00566

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__o22ai_1	(A2 * B2 * !Y)	-0.00122	-0.00123	-0.00123
	(A2 * B2 * !Y)	0.00138	0.00140	0.00139
	(A2 * B1 * !B2 * !Y)	-0.00122	-0.00123	-0.00123
	(A2 * B1 * !B2 * !Y)	0.00139	0.00140	0.00139
	(A2 * !B1 * !B2 * Y)	-0.00123	-0.00123	-0.00123
	(A2 * !B1 * !B2 * Y)	0.00139	0.00139	0.00139
	(!A2 * !B1 * !B2 * Y)	-0.00110	-0.00117	-0.00116
	(!A2 * !B1 * !B2 * Y)	0.00142	0.00142	0.00141
sky130_fd_sc_hs__o22ai_2	(A2 * B2 * !Y)	-0.00229	-0.00229	-0.00228
	(A2 * B2 * !Y)	0.00274	0.00276	0.00275
	(A2 * B1 * !B2 * !Y)	-0.00229	-0.00229	-0.00228
	(A2 * B1 * !B2 * !Y)	0.00274	0.00276	0.00274
	(A2 * !B1 * !B2 * Y)	-0.00227	-0.00229	-0.00228
	(A2 * !B1 * !B2 * Y)	0.00273	0.00277	0.00275
	(!A2 * !B1 * !B2 * Y)	-0.00203	-0.00216	-0.00214
	(!A2 * !B1 * !B2 * Y)	0.00284	0.00283	0.00281
sky130_fd_sc_hs__o22ai_4	(A2 * B2 * !Y)	-0.00458	-0.00460	-0.00457
	(A2 * B2 * !Y)	0.00540	0.00545	0.00543
	(A2 * B1 * !B2 * !Y)	-0.00458	-0.00460	-0.00457
	(A2 * B1 * !B2 * !Y)	0.00540	0.00545	0.00543
	(A2 * !B1 * !B2 * Y)	-0.00443	-0.00447	-0.00446
	(A2 * !B1 * !B2 * Y)	0.00550	0.00557	0.00554
	(!A2 * !B1 * !B2 * Y)	-0.00394	-0.00422	-0.00421
	(!A2 * !B1 * !B2 * Y)	0.00568	0.00573	0.00568

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__o22ai_1	(A1 * B2 * !Y)	0.00122	0.00124	0.00122
	(A1 * B2 * !Y)	-0.00071	-0.00072	-0.00071
	(A1 * B1 * !B2 * !Y)	0.00121	0.00124	0.00122
	(A1 * B1 * !B2 * !Y)	-0.00070	-0.00072	-0.00071
	(A1 * !B1 * !B2 * Y)	0.00112	0.00113	0.00112
	(A1 * !B1 * !B2 * Y)	-0.00130	-0.00132	-0.00133
	(!A1 * !B1 * !B2 * Y)	0.00105	0.00106	0.00105
	(!A1 * !B1 * !B2 * Y)	-0.00135	-0.00135	-0.00135
sky130_fd_sc_hs__o22ai_2	(A1 * B2 * !Y)	0.00259	0.00265	0.00260
	(A1 * B2 * !Y)	-0.00139	-0.00143	-0.00140
	(A1 * B1 * !B2 * !Y)	0.00259	0.00260	0.00260
	(A1 * B1 * !B2 * !Y)	-0.00139	-0.00140	-0.00140
	(A1 * !B1 * !B2 * Y)	0.00227	0.00227	0.00228
	(A1 * !B1 * !B2 * Y)	-0.00270	-0.00278	-0.00277
	(!A1 * !B1 * !B2 * Y)	0.00213	0.00215	0.00214
	(!A1 * !B1 * !B2 * Y)	-0.00283	-0.00284	-0.00284
sky130_fd_sc_hs__o22ai_4	(A1 * B2 * !Y)	0.00479	0.00488	0.00479
	(A1 * B2 * !Y)	-0.00274	-0.00278	-0.00273
	(A1 * B1 * !B2 * !Y)	0.00479	0.00488	0.00480
	(A1 * B1 * !B2 * !Y)	-0.00273	-0.00278	-0.00273
	(A1 * !B1 * !B2 * Y)	0.00440	0.00441	0.00439
	(A1 * !B1 * !B2 * Y)	-0.00514	-0.00525	-0.00522
	(!A1 * !B1 * !B2 * Y)	0.00408	0.00413	0.00412
	(!A1 * !B1 * !B2 * Y)	-0.00533	-0.00537	-0.00536

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__o22ai_1	(A1 * B2 * !Y)	-0.00116	-0.00117	-0.00121
	(A1 * B2 * !Y)	0.00076	0.00076	0.00072
	(A1 * B1 * !B2 * !Y)	-0.00116	-0.00117	-0.00121
	(A1 * B1 * !B2 * !Y)	0.00076	0.00077	0.00072
	(A1 * !B1 * !B2 * Y)	-0.00112	-0.00112	-0.00112
	(A1 * !B1 * !B2 * Y)	0.00133	0.00132	0.00133
	(!A1 * !B1 * !B2 * Y)	-0.00100	-0.00106	-0.00105
	(!A1 * !B1 * !B2 * Y)	0.00136	0.00136	0.00135
sky130_fd_sc_hs__o22ai_2	(A1 * B2 * !Y)	-0.00244	-0.00247	-0.00258
	(A1 * B2 * !Y)	0.00155	0.00155	0.00144
	(A1 * B1 * !B2 * !Y)	-0.00244	-0.00245	-0.00258
	(A1 * B1 * !B2 * !Y)	0.00155	0.00154	0.00144
	(A1 * !B1 * !B2 * Y)	-0.00226	-0.00227	-0.00227
	(A1 * !B1 * !B2 * Y)	0.00275	0.00278	0.00277
	(!A1 * !B1 * !B2 * Y)	-0.00202	-0.00215	-0.00214
	(!A1 * !B1 * !B2 * Y)	0.00286	0.00285	0.00284
sky130_fd_sc_hs__o22ai_4	(A1 * B2 * !Y)	-0.00455	-0.00459	-0.00476
	(A1 * B2 * !Y)	0.00295	0.00296	0.00279
	(A1 * B1 * !B2 * !Y)	-0.00455	-0.00455	-0.00476
	(A1 * B1 * !B2 * !Y)	0.00295	0.00293	0.00279
	(A1 * !B1 * !B2 * Y)	-0.00437	-0.00440	-0.00438
	(A1 * !B1 * !B2 * Y)	0.00520	0.00525	0.00522
	(!A1 * !B1 * !B2 * Y)	-0.00388	-0.00413	-0.00412
	(!A1 * !B1 * !B2 * Y)	0.00540	0.00540	0.00537

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__o22ai_1	(A2 * B2 * !Y)	0.00143	0.00129	0.00128
	(A2 * B2 * !Y)	-0.00120	-0.00135	-0.00136
	(A1 * !A2 * B2 * !Y)	0.00143	0.00129	0.00128
	(A1 * !A2 * B2 * !Y)	-0.00120	-0.00135	-0.00136
	(!A1 * !A2 * B2 * Y)	0.00046	0.00046	0.00046
	(!A1 * !A2 * B2 * Y)	-0.00163	-0.00166	-0.00166
	(!A1 * !A2 * !B2 * Y)	0.00053	0.00053	0.00048
	(!A1 * !A2 * !B2 * Y)	-0.00158	-0.00160	-0.00167
sky130_fd_sc_hs__o22ai_2	(A2 * B2 * !Y)	0.00260	0.00230	0.00227
	(A2 * B2 * !Y)	-0.00241	-0.00277	-0.00279
	(A1 * !A2 * B2 * !Y)	0.00260	0.00230	0.00227
	(A1 * !A2 * B2 * !Y)	-0.00241	-0.00277	-0.00279
	(!A1 * !A2 * B2 * Y)	0.00077	0.00077	0.00077
	(!A1 * !A2 * B2 * Y)	-0.00320	-0.00328	-0.00327
	(!A1 * !A2 * !B2 * Y)	0.00091	0.00091	0.00081
	(!A1 * !A2 * !B2 * Y)	-0.00316	-0.00319	-0.00333
sky130_fd_sc_hs__o22ai_4	(A2 * B2 * !Y)	0.00549	0.00492	0.00486
	(A2 * B2 * !Y)	-0.00456	-0.00527	-0.00529
	(A1 * !A2 * B2 * !Y)	0.00549	0.00492	0.00486
	(A1 * !A2 * B2 * !Y)	-0.00456	-0.00527	-0.00529
	(!A1 * !A2 * B2 * Y)	0.00145	0.00146	0.00145
	(!A1 * !A2 * B2 * Y)	-0.00653	-0.00668	-0.00666
	(!A1 * !A2 * !B2 * Y)	0.00167	0.00169	0.00153
	(!A1 * !A2 * !B2 * Y)	-0.00643	-0.00651	-0.00674

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__o22ai_1	(A2 * B2 * !Y)	-0.00127	-0.00128	-0.00127
	(A2 * B2 * !Y)	0.00136	0.00137	0.00136
	(A1 * !A2 * B2 * !Y)	-0.00127	-0.00127	-0.00127
	(A1 * !A2 * B2 * !Y)	0.00136	0.00137	0.00136
	(!A1 * !A2 * B2 * Y)	-0.00046	-0.00046	-0.00046
	(!A1 * !A2 * B2 * Y)	0.00166	0.00167	0.00166
	(!A1 * !A2 * !B2 * Y)	-0.00046	-0.00047	-0.00046
	(!A1 * !A2 * !B2 * Y)	0.00168	0.00169	0.00168
sky130_fd_sc_hs__o22ai_2	(A2 * B2 * !Y)	-0.00227	-0.00227	-0.00226
	(A2 * B2 * !Y)	0.00279	0.00279	0.00279
	(A1 * !A2 * B2 * !Y)	-0.00227	-0.00227	-0.00226
	(A1 * !A2 * B2 * !Y)	0.00279	0.00280	0.00279
	(!A1 * !A2 * B2 * Y)	-0.00077	-0.00077	-0.00077
	(!A1 * !A2 * B2 * Y)	0.00329	0.00332	0.00327
	(!A1 * !A2 * !B2 * Y)	-0.00078	-0.00078	-0.00078
	(!A1 * !A2 * !B2 * Y)	0.00335	0.00336	0.00335
sky130_fd_sc_hs__o22ai_4	(A2 * B2 * !Y)	-0.00486	-0.00487	-0.00485
	(A2 * B2 * !Y)	0.00528	0.00531	0.00529
	(A1 * !A2 * B2 * !Y)	-0.00486	-0.00487	-0.00485
	(A1 * !A2 * B2 * !Y)	0.00528	0.00531	0.00529
	(!A1 * !A2 * B2 * Y)	-0.00145	-0.00146	-0.00145
	(!A1 * !A2 * B2 * Y)	0.00667	0.00675	0.00666
	(!A1 * !A2 * !B2 * Y)	-0.00148	-0.00148	-0.00147
	(!A1 * !A2 * !B2 * Y)	0.00677	0.00680	0.00677

Passive power(pJ) for B2 rising (conditional):

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__o22ai_1	(A2 * B1 * !Y)	0.00131	0.00131	0.00131
	(A2 * B1 * !Y)	-0.00068	-0.00068	-0.00068
	(A1 * !A2 * B1 * !Y)	0.00131	0.00132	0.00131
	(A1 * !A2 * B1 * !Y)	-0.00068	-0.00069	-0.00068
	(!A1 * !A2 * B1 * Y)	0.00038	0.00038	0.00038
	(!A1 * !A2 * B1 * Y)	-0.00163	-0.00165	-0.00164
	(!A1 * !A2 * !B1 * Y)	0.00045	0.00045	0.00040
	(!A1 * !A2 * !B1 * Y)	-0.00158	-0.00159	-0.00166
sky130_fd_sc_hs__o22ai_2	(A2 * B1 * !Y)	0.00248	0.00250	0.00249
	(A2 * B1 * !Y)	-0.00140	-0.00141	-0.00141
	(A1 * !A2 * B1 * !Y)	0.00248	0.00250	0.00249
	(A1 * !A2 * B1 * !Y)	-0.00140	-0.00141	-0.00140
	(!A1 * !A2 * B1 * Y)	0.00073	0.00073	0.00073
	(!A1 * !A2 * B1 * Y)	-0.00314	-0.00322	-0.00321
	(!A1 * !A2 * !B1 * Y)	0.00087	0.00086	0.00077
	(!A1 * !A2 * !B1 * Y)	-0.00311	-0.00311	-0.00327
sky130_fd_sc_hs__o22ai_4	(A2 * B1 * !Y)	0.00485	0.00486	0.00485
	(A2 * B1 * !Y)	-0.00277	-0.00276	-0.00275
	(A1 * !A2 * B1 * !Y)	0.00485	0.00487	0.00486
	(A1 * !A2 * B1 * !Y)	-0.00276	-0.00277	-0.00275
	(!A1 * !A2 * B1 * Y)	0.00136	0.00137	0.00137
	(!A1 * !A2 * B1 * Y)	-0.00618	-0.00633	-0.00629
	(!A1 * !A2 * !B1 * Y)	0.00159	0.00159	0.00145
	(!A1 * !A2 * !B1 * Y)	-0.00610	-0.00614	-0.00641

Passive power(pJ) for B2 falling (conditional):

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__o22ai_1	(A2 * B1 * !Y)	-0.00126	-0.00127	-0.00130
	(A2 * B1 * !Y)	0.00072	0.00073	0.00070
	(A1 * !A2 * B1 * !Y)	-0.00126	-0.00127	-0.00130
	(A1 * !A2 * B1 * !Y)	0.00073	0.00073	0.00070
	(!A1 * !A2 * B1 * Y)	-0.00038	-0.00038	-0.00038
	(!A1 * !A2 * B1 * Y)	0.00163	0.00165	0.00164
	(!A1 * !A2 * !B1 * Y)	-0.00039	-0.00038	-0.00038
	(!A1 * !A2 * !B1 * Y)	0.00167	0.00168	0.00167
sky130_fd_sc_hs__o22ai_2	(A2 * B1 * !Y)	-0.00232	-0.00235	-0.00247
	(A2 * B1 * !Y)	0.00154	0.00155	0.00144
	(A1 * !A2 * B1 * !Y)	-0.00232	-0.00235	-0.00247
	(A1 * !A2 * B1 * !Y)	0.00154	0.00155	0.00144
	(!A1 * !A2 * B1 * Y)	-0.00073	-0.00073	-0.00073
	(!A1 * !A2 * B1 * Y)	0.00321	0.00322	0.00321
	(!A1 * !A2 * !B1 * Y)	-0.00073	-0.00074	-0.00074
	(!A1 * !A2 * !B1 * Y)	0.00327	0.00330	0.00329
sky130_fd_sc_hs__o22ai_4	(A2 * B1 * !Y)	-0.00460	-0.00465	-0.00483
	(A2 * B1 * !Y)	0.00296	0.00298	0.00281
	(A1 * !A2 * B1 * !Y)	-0.00460	-0.00465	-0.00483
	(A1 * !A2 * B1 * !Y)	0.00295	0.00298	0.00281
	(!A1 * !A2 * B1 * Y)	-0.00136	-0.00137	-0.00137
	(!A1 * !A2 * B1 * Y)	0.00631	0.00633	0.00629
	(!A1 * !A2 * !B1 * Y)	-0.00138	-0.00140	-0.00138
	(!A1 * !A2 * !B1 * Y)	0.00641	0.00647	0.00644

SKY130_FD_SC_HS__O22Ax

sky130_fd_sc_hs_tt_1.50v_25C.ccs
Cell Library: Process , Voltage 1.50, 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	0.00235	0.00246	0.00254	0.00272	0.87866
sky130_fd_sc_hs__o22a_2	0.00253	0.00258	0.00269	0.00268	1.69378
sky130_fd_sc_hs__o22a_4	0.00492	0.00457	0.00507	0.00479	3.17557

Leakage Information

Cell Name	Leakage(nW)		
	Min.	Avg	Max.
sky130_fd_sc_hs__o22a_1	0.00000	0.05956	0.15326
sky130_fd_sc_hs__o22a_2	0.00000	0.07416	0.15791
sky130_fd_sc_hs__o22a_4	0.00000	0.15036	0.31583

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)	0.11445	0.75533	6.91897
	A2->X (RR)	0.10636	0.73405	6.88225
	B1->X (RR)	0.10501	0.74448	6.79424
	B2->X (RR)	0.09608	0.71797	6.76689
sky130_fd_sc_hs__o22a_2	A1->X (RR)	0.11660	0.66651	7.03553
	A2->X (RR)	0.10799	0.64925	6.99782
	B1->X (RR)	0.10714	0.66617	6.94623
	B2->X (RR)	0.09717	0.64008	6.89713
sky130_fd_sc_hs__o22a_4	A1->X (RR)	0.12253	0.59972	7.07253
	A2->X (RR)	0.11760	0.58114	7.03207
	B1->X (RR)	0.11178	0.59384	6.96990
	B2->X (RR)	0.10816	0.58512	6.96645

Delay(ns) to X falling :

Cell Name	Timing Arc(Dir)	Delay(ns)		
		First	Mid	Last
sky130_fd_sc_hs__o22a_1	A1->X (FF)	0.20852	0.77577	4.98402
	A2->X (FF)	0.19056	0.74877	4.78040
	B1->X (FF)	0.16384	0.70896	4.78274
	B2->X (FF)	0.14538	0.67907	4.62130
sky130_fd_sc_hs__o22a_2	A1->X (FF)	0.25910	0.81944	5.25655
	A2->X (FF)	0.24023	0.79432	5.05342
	B1->X (FF)	0.20979	0.75215	5.04213
	B2->X (FF)	0.18967	0.72699	4.85979
sky130_fd_sc_hs__o22a_4	A1->X (FF)	0.24811	0.77376	5.18788
	A2->X (FF)	0.22441	0.74337	4.98312
	B1->X (FF)	0.20770	0.71896	5.02033
	B2->X (FF)	0.18561	0.68789	4.82798

Power Information

Internal switching power(pJ) to X rising :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__o22a_1	A1	0.00902	0.00907	0.01121
	A1	0.00373	0.00377	0.00592
	A2	0.00780	0.00775	0.01169
	A2	0.00240	0.00253	0.00768
	B1	0.00797	0.00800	0.01131
	B1	0.00368	0.00372	0.00704
	B2	0.00709	0.00708	0.01212
	B2	0.00319	0.00318	0.00928
sky130_fd_sc_hs__o22a_2	A1	0.01124	0.01154	0.01357
	A1	0.00568	0.00600	0.00809
	A2	0.00993	0.01019	0.01377
	A2	0.00504	0.00530	0.00888
	B1	0.01011	0.01034	0.01339
	B1	0.00570	0.00596	0.00901
	B2	0.00884	0.00904	0.01347
	B2	0.00433	0.00454	0.01132
sky130_fd_sc_hs__o22a_4	A1	0.02229	0.02283	0.02719
	A1	0.01171	0.01230	0.01679
	A2	0.01930	0.01978	0.02718
	A2	0.01025	0.01076	0.01826
	B1	0.02029	0.02078	0.02743
	B1	0.01170	0.01220	0.01885
	B2	0.01738	0.01777	0.02704
	B2	0.01028	0.01071	0.01995

Internal switching power(pJ) to X falling :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__o22a_1	A1	0.00333	0.00338	0.00604
	A1	0.00840	0.00848	0.01098
	A2	0.00332	0.00355	0.00926
	A2	0.00779	0.00802	0.01347
	B1	0.00239	0.00237	0.00568
	B1	0.00674	0.00668	0.00959
	B2	0.00201	0.00227	0.00858
	B2	0.00596	0.00617	0.01201
sky130_fd_sc_hs__o22a_2	A1	0.00521	0.00551	0.00894
	A1	0.01056	0.01083	0.01333
	A2	0.00527	0.00582	0.01125
	A2	0.00989	0.01052	0.01584
	B1	0.00404	0.00420	0.00727
	B1	0.00847	0.00863	0.01135
	B2	0.00402	0.00439	0.01018
	B2	0.00777	0.00818	0.01385
sky130_fd_sc_hs__o22a_4	A1	0.00952	0.00988	0.01715
	A1	0.01998	0.02063	0.02553
	A2	0.01010	0.01096	0.02320
	A2	0.01871	0.01963	0.03045
	B1	0.00806	0.00850	0.01597
	B1	0.01675	0.01725	0.02260
	B2	0.00837	0.00929	0.02168
	B2	0.01556	0.01635	0.02751

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__o22a_1	(A2 * B2 * X)	0.00115	0.00101	0.00100
	(A2 * B2 * X)	-0.00111	-0.00126	-0.00128
	(A2 * B1 * !B2 * X)	0.00115	0.00101	0.00100
	(A2 * B1 * !B2 * X)	-0.00111	-0.00126	-0.00128
	(A2 * !B1 * !B2 * !X)	0.00100	0.00099	0.00100
	(A2 * !B1 * !B2 * !X)	-0.00125	-0.00127	-0.00127
	(!A2 * !B1 * !B2 * !X)	0.00093	0.00094	0.00093
	(!A2 * !B1 * !B2 * !X)	-0.00129	-0.00130	-0.00129
sky130_fd_sc_hs__o22a_2	(A2 * B2 * X)	0.00133	0.00118	0.00118
	(A2 * B2 * X)	-0.00109	-0.00124	-0.00126
	(A2 * B1 * !B2 * X)	0.00133	0.00118	0.00118
	(A2 * B1 * !B2 * X)	-0.00110	-0.00124	-0.00126
	(A2 * !B1 * !B2 * !X)	0.00118	0.00119	0.00118
	(A2 * !B1 * !B2 * !X)	-0.00123	-0.00127	-0.00126
	(!A2 * !B1 * !B2 * !X)	0.00111	0.00111	0.00111
	(!A2 * !B1 * !B2 * !X)	-0.00127	-0.00127	-0.00127
sky130_fd_sc_hs__o22a_4	(A2 * B2 * X)	0.00253	0.00228	0.00225
	(A2 * B2 * X)	-0.00210	-0.00241	-0.00243
	(A2 * B1 * !B2 * X)	0.00253	0.00228	0.00225
	(A2 * B1 * !B2 * X)	-0.00210	-0.00241	-0.00243
	(A2 * !B1 * !B2 * !X)	0.00218	0.00220	0.00219
	(A2 * !B1 * !B2 * !X)	-0.00243	-0.00249	-0.00249
	(!A2 * !B1 * !B2 * !X)	0.00207	0.00208	0.00207
	(!A2 * !B1 * !B2 * !X)	-0.00253	-0.00254	-0.00253

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__o22a_1	(A2 * B2 * X)	-0.00099	-0.00100	-0.00099
	(A2 * B2 * X)	0.00127	0.00128	0.00128
	(A2 * B1 * !B2 * X)	-0.00099	-0.00100	-0.00099
	(A2 * B1 * !B2 * X)	0.00127	0.00128	0.00128
	(A2 * !B1 * !B2 * !X)	-0.00100	-0.00099	-0.00100
	(A2 * !B1 * !B2 * !X)	0.00128	0.00128	0.00127
	(!A2 * !B1 * !B2 * !X)	-0.00087	-0.00094	-0.00093
	(!A2 * !B1 * !B2 * !X)	0.00131	0.00130	0.00130
sky130_fd_sc_hs__o22a_2	(A2 * B2 * X)	-0.00117	-0.00117	-0.00116
	(A2 * B2 * X)	0.00125	0.00127	0.00126
	(A2 * B1 * !B2 * X)	-0.00117	-0.00117	-0.00116
	(A2 * B1 * !B2 * X)	0.00126	0.00127	0.00126
	(A2 * !B1 * !B2 * !X)	-0.00117	-0.00118	-0.00117
	(A2 * !B1 * !B2 * !X)	0.00126	0.00127	0.00126
	(!A2 * !B1 * !B2 * !X)	-0.00105	-0.00111	-0.00111
	(!A2 * !B1 * !B2 * !X)	0.00128	0.00128	0.00128
sky130_fd_sc_hs__o22a_4	(A2 * B2 * X)	-0.00223	-0.00224	-0.00223
	(A2 * B2 * X)	0.00241	0.00244	0.00243
	(A2 * B1 * !B2 * X)	-0.00223	-0.00224	-0.00223
	(A2 * B1 * !B2 * X)	0.00241	0.00244	0.00243
	(A2 * !B1 * !B2 * !X)	-0.00217	-0.00219	-0.00218
	(A2 * !B1 * !B2 * !X)	0.00247	0.00250	0.00249
	(!A2 * !B1 * !B2 * !X)	-0.00195	-0.00208	-0.00207
	(!A2 * !B1 * !B2 * !X)	0.00256	0.00257	0.00254

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__o22a_1	(A1 * B2 * X)	0.00112	0.00113	0.00111
	(A1 * B2 * X)	-0.00066	-0.00067	-0.00066
	(A1 * B1 * !B2 * X)	0.00111	0.00113	0.00111
	(A1 * B1 * !B2 * X)	-0.00066	-0.00067	-0.00066
	(A1 * !B1 * !B2 * !X)	0.00098	0.00098	0.00097
	(A1 * !B1 * !B2 * !X)	-0.00126	-0.00127	-0.00127
	(!A1 * !B1 * !B2 * !X)	0.00090	0.00090	0.00090
	(!A1 * !B1 * !B2 * !X)	-0.00129	-0.00129	-0.00129
sky130_fd_sc_hs__o22a_2	(A1 * B2 * X)	0.00120	0.00123	0.00121
	(A1 * B2 * X)	-0.00066	-0.00068	-0.00066
	(A1 * B1 * !B2 * X)	0.00120	0.00123	0.00121
	(A1 * B1 * !B2 * X)	-0.00066	-0.00068	-0.00066
	(A1 * !B1 * !B2 * !X)	0.00112	0.00113	0.00113
	(A1 * !B1 * !B2 * !X)	-0.00119	-0.00121	-0.00121
	(!A1 * !B1 * !B2 * !X)	0.00106	0.00106	0.00106
	(!A1 * !B1 * !B2 * !X)	-0.00123	-0.00123	-0.00123
sky130_fd_sc_hs__o22a_4	(A1 * B2 * X)	0.00209	0.00213	0.00210
	(A1 * B2 * X)	-0.00131	-0.00133	-0.00131
	(A1 * B1 * !B2 * X)	0.00209	0.00213	0.00210
	(A1 * B1 * !B2 * X)	-0.00131	-0.00133	-0.00131
	(A1 * !B1 * !B2 * !X)	0.00186	0.00188	0.00186
	(A1 * !B1 * !B2 * !X)	-0.00243	-0.00246	-0.00247
	(!A1 * !B1 * !B2 * !X)	0.00175	0.00176	0.00174
	(!A1 * !B1 * !B2 * !X)	-0.00254	-0.00255	-0.00253

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__o22a_1	(A1 * B2 * X)	-0.00106	-0.00107	-0.00111
	(A1 * B2 * X)	0.00070	0.00071	0.00067
	(A1 * B1 * !B2 * X)	-0.00106	-0.00107	-0.00110
	(A1 * B1 * !B2 * X)	0.00071	0.00071	0.00067
	(A1 * !B1 * !B2 * !X)	-0.00097	-0.00097	-0.00096
	(A1 * !B1 * !B2 * !X)	0.00127	0.00127	0.00127
	(!A1 * !B1 * !B2 * !X)	-0.00084	-0.00090	-0.00090
	(!A1 * !B1 * !B2 * !X)	0.00130	0.00130	0.00129
sky130_fd_sc_hs__o22a_2	(A1 * B2 * X)	-0.00116	-0.00117	-0.00120
	(A1 * B2 * X)	0.00071	0.00072	0.00068
	(A1 * B1 * !B2 * X)	-0.00116	-0.00117	-0.00120
	(A1 * B1 * !B2 * X)	0.00071	0.00072	0.00068
	(A1 * !B1 * !B2 * !X)	-0.00112	-0.00113	-0.00112
	(A1 * !B1 * !B2 * !X)	0.00120	0.00121	0.00121
	(!A1 * !B1 * !B2 * !X)	-0.00100	-0.00106	-0.00106
	(!A1 * !B1 * !B2 * !X)	0.00124	0.00124	0.00124
sky130_fd_sc_hs__o22a_4	(A1 * B2 * X)	-0.00198	-0.00200	-0.00208
	(A1 * B2 * X)	0.00141	0.00142	0.00134
	(A1 * B1 * !B2 * X)	-0.00198	-0.00200	-0.00208
	(A1 * B1 * !B2 * X)	0.00142	0.00142	0.00134
	(A1 * !B1 * !B2 * !X)	-0.00186	-0.00186	-0.00186
	(A1 * !B1 * !B2 * !X)	0.00247	0.00246	0.00247
	(!A1 * !B1 * !B2 * !X)	-0.00163	-0.00176	-0.00174
	(!A1 * !B1 * !B2 * !X)	0.00256	0.00255	0.00254

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__o22a_1	(A2 * B2 * X)	0.00122	0.00108	0.00107
	(A2 * B2 * X)	-0.00113	-0.00128	-0.00130
	(A1 * !A2 * B2 * X)	0.00122	0.00107	0.00107
	(A1 * !A2 * B2 * X)	-0.00113	-0.00128	-0.00130
	(!A1 * !A2 * B2 * !X)	0.00032	0.00032	0.00032
	(!A1 * !A2 * B2 * !X)	-0.00159	-0.00160	-0.00161
	(!A1 * !A2 * !B2 * !X)	0.00037	0.00037	0.00033
	(!A1 * !A2 * !B2 * !X)	-0.00155	-0.00157	-0.00162
sky130_fd_sc_hs__o22a_2	(A2 * B2 * X)	0.00139	0.00125	0.00124
	(A2 * B2 * X)	-0.00105	-0.00120	-0.00122
	(A1 * !A2 * B2 * X)	0.00139	0.00125	0.00124
	(A1 * !A2 * B2 * X)	-0.00105	-0.00120	-0.00122
	(!A1 * !A2 * B2 * !X)	0.00038	0.00038	0.00038
	(!A1 * !A2 * B2 * !X)	-0.00154	-0.00156	-0.00157
	(!A1 * !A2 * !B2 * !X)	0.00045	0.00045	0.00040
	(!A1 * !A2 * !B2 * !X)	-0.00150	-0.00151	-0.00158
sky130_fd_sc_hs__o22a_4	(A2 * B2 * X)	0.00265	0.00239	0.00236
	(A2 * B2 * X)	-0.00208	-0.00240	-0.00242
	(A1 * !A2 * B2 * X)	0.00265	0.00239	0.00236
	(A1 * !A2 * B2 * X)	-0.00208	-0.00240	-0.00242
	(!A1 * !A2 * B2 * !X)	0.00098	0.00099	0.00098
	(!A1 * !A2 * B2 * !X)	-0.00284	-0.00291	-0.00290
	(!A1 * !A2 * !B2 * !X)	0.00108	0.00109	0.00102
	(!A1 * !A2 * !B2 * !X)	-0.00280	-0.00284	-0.00293

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__o22a_1	(A2 * B2 * X)	-0.00106	-0.00106	-0.00105
	(A2 * B2 * X)	0.00129	0.00131	0.00130
	(A1 * !A2 * B2 * X)	-0.00106	-0.00106	-0.00105
	(A1 * !A2 * B2 * X)	0.00129	0.00130	0.00130
	(!A1 * !A2 * B2 * !X)	-0.00031	-0.00031	-0.00032
	(!A1 * !A2 * B2 * !X)	0.00160	0.00160	0.00161
	(!A1 * !A2 * !B2 * !X)	-0.00032	-0.00032	-0.00032
	(!A1 * !A2 * !B2 * !X)	0.00164	0.00164	0.00163
sky130_fd_sc_hs__o22a_2	(A2 * B2 * X)	-0.00123	-0.00123	-0.00123
	(A2 * B2 * X)	0.00121	0.00123	0.00122
	(A1 * !A2 * B2 * X)	-0.00123	-0.00123	-0.00122
	(A1 * !A2 * B2 * X)	0.00121	0.00122	0.00122
	(!A1 * !A2 * B2 * !X)	-0.00038	-0.00038	-0.00038
	(!A1 * !A2 * B2 * !X)	0.00156	0.00159	0.00157
	(!A1 * !A2 * !B2 * !X)	-0.00039	-0.00039	-0.00038
	(!A1 * !A2 * !B2 * !X)	0.00159	0.00159	0.00159
sky130_fd_sc_hs__o22a_4	(A2 * B2 * X)	-0.00235	-0.00236	-0.00234
	(A2 * B2 * X)	0.00241	0.00243	0.00242
	(A1 * !A2 * B2 * X)	-0.00235	-0.00236	-0.00234
	(A1 * !A2 * B2 * X)	0.00241	0.00243	0.00242
	(!A1 * !A2 * B2 * !X)	-0.00097	-0.00098	-0.00098
	(!A1 * !A2 * B2 * !X)	0.00289	0.00292	0.00290
	(!A1 * !A2 * !B2 * !X)	-0.00099	-0.00100	-0.00099
	(!A1 * !A2 * !B2 * !X)	0.00294	0.00297	0.00295

Passive power(pJ) for B2 rising (conditional):

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__o22a_1	(A2 * B1 * X)	0.00144	0.00145	0.00144
	(A2 * B1 * X)	-0.00064	-0.00064	-0.00064
	(A1 * !A2 * B1 * X)	0.00144	0.00145	0.00144
	(A1 * !A2 * B1 * X)	-0.00064	-0.00064	-0.00064
	(!A1 * !A2 * B1 * !X)	0.00064	0.00064	0.00064
	(!A1 * !A2 * B1 * !X)	-0.00141	-0.00143	-0.00143
	(!A1 * !A2 * !B1 * !X)	0.00069	0.00069	0.00066
	(!A1 * !A2 * !B1 * !X)	-0.00138	-0.00139	-0.00145
sky130_fd_sc_hs__o22a_2	(A2 * B1 * X)	0.00124	0.00126	0.00124
	(A2 * B1 * X)	-0.00064	-0.00066	-0.00064
	(A1 * !A2 * B1 * X)	0.00124	0.00124	0.00124
	(A1 * !A2 * B1 * X)	-0.00064	-0.00064	-0.00064
	(!A1 * !A2 * B1 * !X)	0.00037	0.00037	0.00037
	(!A1 * !A2 * B1 * !X)	-0.00145	-0.00148	-0.00148
	(!A1 * !A2 * !B1 * !X)	0.00044	0.00044	0.00039
	(!A1 * !A2 * !B1 * !X)	-0.00142	-0.00143	-0.00150
sky130_fd_sc_hs__o22a_4	(A2 * B1 * X)	0.00221	0.00225	0.00222
	(A2 * B1 * X)	-0.00130	-0.00133	-0.00130
	(A1 * !A2 * B1 * X)	0.00221	0.00221	0.00222
	(A1 * !A2 * B1 * X)	-0.00130	-0.00129	-0.00130
	(!A1 * !A2 * B1 * !X)	0.00059	0.00060	0.00059
	(!A1 * !A2 * B1 * !X)	-0.00291	-0.00296	-0.00295
	(!A1 * !A2 * !B1 * !X)	0.00069	0.00069	0.00062
	(!A1 * !A2 * !B1 * !X)	-0.00288	-0.00290	-0.00299

Passive power(pJ) for B2 falling (conditional):

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__o22a_1	(A2 * B1 * X)	-0.00139	-0.00140	-0.00144
	(A2 * B1 * X)	0.00068	0.00068	0.00065
	(A1 * !A2 * B1 * X)	-0.00139	-0.00140	-0.00143
	(A1 * !A2 * B1 * X)	0.00067	0.00068	0.00065
	(!A1 * !A2 * B1 * !X)	-0.00064	-0.00063	-0.00064
	(!A1 * !A2 * B1 * !X)	0.00144	0.00143	0.00143
	(!A1 * !A2 * !B1 * !X)	-0.00064	-0.00065	-0.00064
	(!A1 * !A2 * !B1 * !X)	0.00145	0.00146	0.00146
sky130_fd_sc_hs__o22a_2	(A2 * B1 * X)	-0.00120	-0.00120	-0.00124
	(A2 * B1 * X)	0.00069	0.00068	0.00066
	(A1 * !A2 * B1 * X)	-0.00120	-0.00120	-0.00124
	(A1 * !A2 * B1 * X)	0.00069	0.00069	0.00066
	(!A1 * !A2 * B1 * !X)	-0.00037	-0.00037	-0.00037
	(!A1 * !A2 * B1 * !X)	0.00148	0.00148	0.00148
	(!A1 * !A2 * !B1 * !X)	-0.00038	-0.00038	-0.00037
	(!A1 * !A2 * !B1 * !X)	0.00151	0.00151	0.00150
sky130_fd_sc_hs__o22a_4	(A2 * B1 * X)	-0.00210	-0.00211	-0.00220
	(A2 * B1 * X)	0.00141	0.00140	0.00133
	(A1 * !A2 * B1 * X)	-0.00210	-0.00211	-0.00220
	(A1 * !A2 * B1 * X)	0.00141	0.00140	0.00133
	(!A1 * !A2 * B1 * !X)	-0.00058	-0.00059	-0.00059
	(!A1 * !A2 * B1 * !X)	0.00295	0.00296	0.00295
	(!A1 * !A2 * !B1 * !X)	-0.00061	-0.00060	-0.00060
	(!A1 * !A2 * !B1 * !X)	0.00302	0.00301	0.00301

SKY130_FD_SC_HS__O2BB2AIx

sky130_fd_sc_hs_tt_1.50v_25C.ccs
Cell Library: Process , Voltage 1.50, 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	0.00220	0.00240	0.00267	0.00283	0.41696
sky130_fd_sc_hs__o2bb2ai_2	0.00501	0.00441	0.00543	0.00505	0.80905
sky130_fd_sc_hs__o2bb2ai_4	0.01031	0.01041	0.01011	0.01042	1.44377

Leakage Information

Cell Name	Leakage(nW)		
	Min.	**Avg**	**Max.**
sky130_fd_sc_hs__o2bb2ai_1	0.00000	0.10590	0.30690
sky130_fd_sc_hs__o2bb2ai_2	0.00000	0.21180	0.61379
sky130_fd_sc_hs__o2bb2ai_4	0.00000	0.17807	0.25648

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)	0.08859	0.51953	3.34687
	A2_N->Y (RR)	0.08510	0.50839	3.26314
	B1->Y (FR)	0.12842	1.15900	11.57440
	B2->Y (FR)	0.11095	1.12907	11.53230
sky130_fd_sc_hs__o2bb2ai_2	A1_N->Y (RR)	0.07932	0.43392	3.26607
	A2_N->Y (RR)	0.07364	0.41698	3.21014
	B1->Y (FR)	0.11433	0.98524	11.41580
	B2->Y (FR)	0.09193	0.95219	11.36900
sky130_fd_sc_hs__o2bb2ai_4	A1_N->Y (RR)	0.08607	0.38240	3.03305
	A2_N->Y (RR)	0.08018	0.37385	2.96937
	B1->Y (FR)	0.12212	0.88428	11.36810
	B2->Y (FR)	0.09811	0.85734	11.42770

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)	0.12455	0.62242	3.86967
	A2_N->Y (FF)	0.11149	0.59053	3.81125
	B1->Y (RF)	0.04571	0.46852	4.71634
	B2->Y (RF)	0.03808	0.45339	4.66280
sky130_fd_sc_hs__o2bb2ai_2	A1_N->Y (FF)	0.10774	0.55800	3.81861
	A2_N->Y (FF)	0.10065	0.53346	3.79221
	B1->Y (RF)	0.04004	0.39988	4.60137
	B2->Y (RF)	0.03459	0.39030	4.61539
sky130_fd_sc_hs__o2bb2ai_4	A1_N->Y (FF)	0.11503	0.55893	4.14810
	A2_N->Y (FF)	0.09947	0.51875	4.02782
	B1->Y (RF)	0.04524	0.36133	4.59752
	B2->Y (RF)	0.03520	0.34140	4.50835

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	0.00597	0.00604	0.01244
	A1_N	0.00350	0.00357	0.01009
	A2_N	0.00535	0.00542	0.01203
	A2_N	0.00350	0.00357	0.01036
	B1	0.00044	0.00033	0.00060
	B1	0.00423	0.00408	0.00439
	B2	0.00043	0.00043	0.00142
	B2	0.00361	0.00361	0.00461
sky130_fd_sc_hs__o2bb2ai_2	A1_N	0.01099	0.01103	0.02287
	A1_N	0.00560	0.00567	0.01781
	A2_N	0.00943	0.00966	0.02484
	A2_N	0.00583	0.00607	0.02155
	B1	0.00062	0.00039	0.00095
	B1	0.00821	0.00799	0.00854
	B2	0.00063	0.00074	0.00261
	B2	0.00645	0.00656	0.00841
sky130_fd_sc_hs__o2bb2ai_4	A1_N	0.02413	0.02416	0.04182
	A1_N	0.01224	0.01229	0.03029
	A2_N	0.02067	0.02079	0.04194
	A2_N	0.01217	0.01239	0.03356
	B1	0.00090	0.00044	0.00159
	B1	0.01602	0.01559	0.01668
	B2	0.00075	0.00092	0.00475
	B2	0.01304	0.01320	0.01696

Internal switching power(pJ) to Y falling :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__o2bb2ai_1	A1_N	0.00454	0.00488	0.01240
	A1_N	0.00700	0.00732	0.01485
	A2_N	0.00425	0.00455	0.01244
	A2_N	0.00617	0.00645	0.01430
	B1	0.00554	0.00544	0.00570
	B1	0.00173	0.00163	0.00189
	B2	0.00420	0.00416	0.00449
	B2	0.00097	0.00093	0.00120
sky130_fd_sc_hs__o2bb2ai_2	A1_N	0.00829	0.00909	0.02377
	A1_N	0.01368	0.01441	0.02911
	A2_N	0.00777	0.00846	0.02421
	A2_N	0.01142	0.01207	0.02778
	B1	0.01079	0.01054	0.01126
	B1	0.00318	0.00293	0.00347
	B2	0.00763	0.00755	0.00820
	B2	0.00171	0.00163	0.00225
sky130_fd_sc_hs__o2bb2ai_4	A1_N	0.01805	0.01857	0.04058
	A1_N	0.02982	0.03029	0.05232
	A2_N	0.01609	0.01667	0.04013
	A2_N	0.02491	0.02543	0.04861
	B1	0.02236	0.02183	0.02338
	B1	0.00719	0.00660	0.00779
	B2	0.01602	0.01574	0.01722
	B2	0.00355	0.00330	0.00473

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)	0.00506	0.00497	0.01155
	(A2_N * !B1 * !B2 * Y)	0.00174	0.00163	0.00822
	(!A2_N * B1 * !Y) + (!A2_N * !B1 * B2 * !Y) + (!A2_N * !B1 * !B2 * Y)	0.00097	0.00097	0.00097
	(!A2_N * B1 * !Y) + (!A2_N * !B1 * B2 * !Y) + (!A2_N * !B1 * !B2 * Y)	-0.00109	-0.00108	-0.00109
sky130_fd_sc_hs__o2bb2ai_2	(A2_N * !B1 * !B2 * Y)	0.00989	0.00962	0.02288
	(A2_N * !B1 * !B2 * Y)	0.00276	0.00246	0.01573
	(!A2_N * B1 * !Y) + (!A2_N * !B1 * B2 * !Y) + (!A2_N * !B1 * !B2 * Y)	0.00190	0.00190	0.00189
	(!A2_N * B1 * !Y) + (!A2_N * !B1 * B2 * !Y) + (!A2_N * !B1 * !B2 * Y)	-0.00263	-0.00263	-0.00263
sky130_fd_sc_hs__o2bb2ai_4	(A2_N * !B1 * !B2 * Y)	0.02168	0.02089	0.03916
	(A2_N * !B1 * !B2 * Y)	0.00628	0.00544	0.02374
	(!A2_N * B1 * !Y) + (!A2_N * !B1 * B2 * !Y) + (!A2_N * !B1 * !B2 * Y)	0.00425	0.00431	0.00426
	(!A2_N * B1 * !Y) + (!A2_N * !B1 * B2 * !Y) + (!A2_N * !B1 * !B2 * Y)	-0.00558	-0.00562	-0.00558

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)	0.00042	0.00066	0.00819
	(A2_N * !B1 * !B2 * Y)	0.00377	0.00402	0.01152
	(!A2_N * B1 * !Y) + (!A2_N * !B1 * B2 * !Y) + (!A2_N * !B1 * !B2 * Y)	-0.00092	-0.00097	-0.00097
	(!A2_N * B1 * !Y) + (!A2_N * !B1 * B2 * !Y) + (!A2_N * !B1 * !B2 * Y)	0.00114	0.00110	0.00109
sky130_fd_sc_hs__o2bb2ai_2	(A2_N * !B1 * !B2 * Y)	0.00067	0.00128	0.01608
	(A2_N * !B1 * !B2 * Y)	0.00788	0.00850	0.02320
	(!A2_N * B1 * !Y) + (!A2_N * !B1 * B2 * !Y) + (!A2_N * !B1 * !B2 * Y)	-0.00180	-0.00190	-0.00189
	(!A2_N * B1 * !Y) + (!A2_N * !B1 * B2 * !Y) + (!A2_N * !B1 * !B2 * Y)	0.00271	0.00267	0.00264
sky130_fd_sc_hs__o2bb2ai_4	(A2_N * !B1 * !B2 * Y)	0.00170	0.00205	0.02376
	(A2_N * !B1 * !B2 * Y)	0.01723	0.01763	0.03915
	(!A2_N * B1 * !Y) + (!A2_N * !B1 * B2 * !Y) + (!A2_N * !B1 * !B2 * Y)	-0.00399	-0.00427	-0.00426
	(!A2_N * B1 * !Y) + (!A2_N * !B1 * B2 * !Y) + (!A2_N * !B1 * !B2 * Y)	0.00573	0.00566	0.00560

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)	0.00454	0.00448	0.01218
	(A1_N * !B1 * !B2 * Y)	0.00175	0.00168	0.00939
	(!A1_N * B1 * !Y) + (!A1_N * !B1 * B2 * !Y) + (!A1_N * !B1 * !B2 * Y)	0.00036	0.00036	0.00035
	(!A1_N * B1 * !Y) + (!A1_N * !B1 * B2 * !Y) + (!A1_N * !B1 * !B2 * Y)	-0.00135	-0.00135	-0.00137
sky130_fd_sc_hs__o2bb2ai_2	(A1_N * !B1 * !B2 * Y)	0.00842	0.00835	0.02359
	(A1_N * !B1 * !B2 * Y)	0.00300	0.00291	0.01817
	(!A1_N * B1 * !Y) + (!A1_N * !B1 * B2 * !Y) + (!A1_N * !B1 * !B2 * Y)	0.00067	0.00068	0.00065
	(!A1_N * B1 * !Y) + (!A1_N * !B1 * B2 * !Y) + (!A1_N * !B1 * !B2 * Y)	-0.00251	-0.00254	-0.00258
sky130_fd_sc_hs__o2bb2ai_4	(A1_N * !B1 * !B2 * Y)	0.01868	0.01812	0.04013
	(A1_N * !B1 * !B2 * Y)	0.00619	0.00557	0.02765
	(!A1_N * B1 * !Y) + (!A1_N * !B1 * B2 * !Y) + (!A1_N * !B1 * !B2 * Y)	0.00155	0.00156	0.00147
	(!A1_N * B1 * !Y) + (!A1_N * !B1 * B2 * !Y) + (!A1_N * !B1 * !B2 * Y)	-0.00644	-0.00650	-0.00660

Passive power(pJ) for A2_N falling (conditional):

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__o2bb2ai_1	(A1_N * !B1 * !B2 * Y)	0.00014	0.00037	0.00839
	(A1_N * !B1 * !B2 * Y)	0.00295	0.00319	0.01119
	(!A1_N * B1 * !Y) + (!A1_N * !B1 * B2 * !Y) + (!A1_N * !B1 * !B2 * Y)	-0.00034	-0.00034	-0.00034
	(!A1_N * B1 * !Y) + (!A1_N * !B1 * B2 * !Y) + (!A1_N * !B1 * !B2 * Y)	0.00137	0.00138	0.00137
sky130_fd_sc_hs__o2bb2ai_2	(A1_N * !B1 * !B2 * Y)	0.00008	0.00054	0.01628
	(A1_N * !B1 * !B2 * Y)	0.00554	0.00603	0.02173
	(!A1_N * B1 * !Y) + (!A1_N * !B1 * B2 * !Y) + (!A1_N * !B1 * !B2 * Y)	-0.00064	-0.00063	-0.00063
	(!A1_N * B1 * !Y) + (!A1_N * !B1 * B2 * !Y) + (!A1_N * !B1 * !B2 * Y)	0.00259	0.00259	0.00259
sky130_fd_sc_hs__o2bb2ai_4	(A1_N * !B1 * !B2 * Y)	-0.00032	-0.00005	0.02335
	(A1_N * !B1 * !B2 * Y)	0.01226	0.01254	0.03591
	(!A1_N * B1 * !Y) + (!A1_N * !B1 * B2 * !Y) + (!A1_N * !B1 * !B2 * Y)	-0.00141	-0.00143	-0.00142
	(!A1_N * B1 * !Y) + (!A1_N * !B1 * B2 * !Y) + (!A1_N * !B1 * !B2 * Y)	0.00659	0.00665	0.00662

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)	0.00118	0.00118	0.00118
	(A1_N * A2_N * B2 * Y)	-0.00135	-0.00138	-0.00138
	(A1_N * A2_N * !B2 * Y)	0.00112	0.00114	0.00113
	(A1_N * A2_N * !B2 * Y)	-0.00139	-0.00140	-0.00139
	(A1_N * !A2_N * B2 * !Y) + (!A1_N * B2 * !Y)	0.00133	0.00119	0.00118
	(A1_N * !A2_N * B2 * !Y) + (!A1_N * B2 * !Y)	-0.00122	-0.00137	-0.00138
sky130_fd_sc_hs__o2bb2ai_2	(A1_N * A2_N * B2 * Y)	0.00234	0.00234	0.00234
	(A1_N * A2_N * B2 * Y)	-0.00276	-0.00282	-0.00282
	(A1_N * A2_N * !B2 * Y)	0.00225	0.00227	0.00225
	(A1_N * A2_N * !B2 * Y)	-0.00285	-0.00287	-0.00286
	(A1_N * !A2_N * B2 * !Y) + (!A1_N * B2 * !Y)	0.00268	0.00239	0.00237
	(A1_N * !A2_N * B2 * !Y) + (!A1_N * B2 * !Y)	-0.00245	-0.00277	-0.00279
sky130_fd_sc_hs__o2bb2ai_4	(A1_N * A2_N * B2 * Y)	0.00452	0.00453	0.00451
	(A1_N * A2_N * B2 * Y)	-0.00537	-0.00550	-0.00548
	(A1_N * A2_N * !B2 * Y)	0.00432	0.00437	0.00433
	(A1_N * A2_N * !B2 * Y)	-0.00558	-0.00562	-0.00559
	(A1_N * !A2_N * B2 * !Y) + (!A1_N * B2 * !Y)	0.00522	0.00457	0.00451
	(A1_N * !A2_N * B2 * !Y) + (!A1_N * B2 * !Y)	-0.00475	-0.00546	-0.00550

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)	-0.00117	-0.00117	-0.00117
	(A1_N * A2_N * B2 * Y)	0.00139	0.00138	0.00138
	(A1_N * A2_N * !B2 * Y)	-0.00108	-0.00113	-0.00113
	(A1_N * A2_N * !B2 * Y)	0.00141	0.00141	0.00140
	(A1_N * !A2_N * B2 * !Y) + (!A1_N * B2 * !Y)	-0.00117	-0.00118	-0.00117
	(A1_N * !A2_N * B2 * !Y) + (!A1_N * B2 * !Y)	0.00137	0.00139	0.00138
sky130_fd_sc_hs__o2bb2ai_2	(A1_N * A2_N * B2 * Y)	-0.00232	-0.00232	-0.00232
	(A1_N * A2_N * B2 * Y)	0.00281	0.00283	0.00282
	(A1_N * A2_N * !B2 * Y)	-0.00216	-0.00225	-0.00225
	(A1_N * A2_N * !B2 * Y)	0.00288	0.00289	0.00288
	(A1_N * !A2_N * B2 * !Y) + (!A1_N * B2 * !Y)	-0.00235	-0.00237	-0.00235
	(A1_N * !A2_N * B2 * !Y) + (!A1_N * B2 * !Y)	0.00278	0.00281	0.00279
sky130_fd_sc_hs__o2bb2ai_4	(A1_N * A2_N * B2 * Y)	-0.00448	-0.00452	-0.00450
	(A1_N * A2_N * B2 * Y)	0.00546	0.00553	0.00548
	(A1_N * A2_N * !B2 * Y)	-0.00412	-0.00434	-0.00433
	(A1_N * A2_N * !B2 * Y)	0.00564	0.00566	0.00561
	(A1_N * !A2_N * B2 * !Y) + (!A1_N * B2 * !Y)	-0.00450	-0.00451	-0.00448
	(A1_N * !A2_N * B2 * !Y) + (!A1_N * B2 * !Y)	0.00550	0.00553	0.00550

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)	0.00122	0.00123	0.00122
	(A1_N * A2_N * B1 * Y)	-0.00136	-0.00139	-0.00139
	(A1_N * A2_N * !B1 * Y)	0.00117	0.00119	0.00117
	(A1_N * A2_N * !B1 * Y)	-0.00140	-0.00141	-0.00141
	(A1_N * !A2_N * B1 * !Y) + (!A1_N * B1 * !Y)	0.00130	0.00133	0.00131
	(A1_N * !A2_N * B1 * !Y) + (!A1_N * B1 * !Y)	-0.00077	-0.00079	-0.00077
sky130_fd_sc_hs__o2bb2ai_2	(A1_N * A2_N * B1 * Y)	0.00217	0.00220	0.00218
	(A1_N * A2_N * B1 * Y)	-0.00256	-0.00263	-0.00263
	(A1_N * A2_N * !B1 * Y)	0.00209	0.00212	0.00210
	(A1_N * A2_N * !B1 * Y)	-0.00266	-0.00268	-0.00267
	(A1_N * !A2_N * B1 * !Y) + (!A1_N * B1 * !Y)	0.00236	0.00241	0.00237
	(A1_N * !A2_N * B1 * !Y) + (!A1_N * B1 * !Y)	-0.00137	-0.00140	-0.00137
sky130_fd_sc_hs__o2bb2ai_4	(A1_N * A2_N * B1 * Y)	0.00451	0.00455	0.00451
	(A1_N * A2_N * B1 * Y)	-0.00540	-0.00554	-0.00553
	(A1_N * A2_N * !B1 * Y)	0.00431	0.00437	0.00432
	(A1_N * A2_N * !B1 * Y)	-0.00562	-0.00567	-0.00563
	(A1_N * !A2_N * B1 * !Y) + (!A1_N * B1 * !Y)	0.00511	0.00513	0.00512
	(A1_N * !A2_N * B1 * !Y) + (!A1_N * B1 * !Y)	-0.00282	-0.00283	-0.00282

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)	-0.00121	-0.00122	-0.00122
	(A1_N * A2_N * B1 * Y)	0.00138	0.00139	0.00139
	(A1_N * A2_N * !B1 * Y)	-0.00113	-0.00118	-0.00117
	(A1_N * A2_N * !B1 * Y)	0.00143	0.00142	0.00142
	(A1_N * !A2_N * B1 * !Y) + (!A1_N * B1 * !Y)	-0.00125	-0.00126	-0.00130
	(A1_N * !A2_N * B1 * !Y) + (!A1_N * B1 * !Y)	0.00082	0.00082	0.00079
sky130_fd_sc_hs__o2bb2ai_2	(A1_N * A2_N * B1 * Y)	-0.00216	-0.00217	-0.00216
	(A1_N * A2_N * B1 * Y)	0.00261	0.00263	0.00263
	(A1_N * A2_N * !B1 * Y)	-0.00203	-0.00210	-0.00210
	(A1_N * A2_N * !B1 * Y)	0.00270	0.00270	0.00269
	(A1_N * !A2_N * B1 * !Y) + (!A1_N * B1 * !Y)	-0.00223	-0.00224	-0.00235
	(A1_N * !A2_N * B1 * !Y) + (!A1_N * B1 * !Y)	0.00147	0.00148	0.00141
sky130_fd_sc_hs__o2bb2ai_4	(A1_N * A2_N * B1 * Y)	-0.00449	-0.00451	-0.00450
	(A1_N * A2_N * B1 * Y)	0.00551	0.00554	0.00553
	(A1_N * A2_N * !B1 * Y)	-0.00412	-0.00434	-0.00432
	(A1_N * A2_N * !B1 * Y)	0.00568	0.00569	0.00566
	(A1_N * !A2_N * B1 * !Y) + (!A1_N * B1 * !Y)	-0.00482	-0.00486	-0.00508
	(A1_N * !A2_N * B1 * !Y) + (!A1_N * B1 * !Y)	0.00306	0.00307	0.00289

SKY130_FD_SC_HS__O2BB2Ax

sky130_fd_sc_hs_tt_1.50v_25C.ccs
Cell Library: Process , Voltage
1.50, 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	0.00219	0.00235	0.00236	0.00257	0.84720
sky130_fd_sc_hs__o2bb2a_2	0.00221	0.00243	0.00253	0.00262	1.59352
sky130_fd_sc_hs__o2bb2a_4	0.00219	0.00236	0.00472	0.00466	3.19776

Leakage Information

Cell Name	Leakage(nW)		
	Min.	**Avg**	**Max.**
sky130_fd_sc_hs__o2bb2a_1	0.00000	0.20209	0.33822
sky130_fd_sc_hs__o2bb2a_2	0.00000	0.17379	0.36636
sky130_fd_sc_hs__o2bb2a_4	0.00000	0.35687	0.47571

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)	0.17966	0.95401	8.43180
	A2_N->X (FR)	0.16666	0.91949	8.32514
	B1->X (RR)	0.10720	0.73485	6.81220
	B2->X (RR)	0.09683	0.71127	6.78088
sky130_fd_sc_hs__o2bb2a_2	A1_N->X (FR)	0.19530	0.87734	8.50550
	A2_N->X (FR)	0.18033	0.84219	8.39700
	B1->X (RR)	0.11129	0.64961	6.91026
	B2->X (RR)	0.09992	0.62942	6.87319
sky130_fd_sc_hs__o2bb2a_4	A1_N->X (FR)	0.22773	0.84830	8.68020
	A2_N->X (FR)	0.21372	0.81924	8.57763
	B1->X (RR)	0.12608	0.58545	6.99689
	B2->X (RR)	0.11141	0.55725	6.94084

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)	0.14095	0.44592	2.33087
	A2_N->X (RF)	0.13773	0.43447	2.27623
	B1->X (FF)	0.19782	0.73413	4.76239
	B2->X (FF)	0.18203	0.70550	4.54075
sky130_fd_sc_hs__o2bb2a_2	A1_N->X (RF)	0.16268	0.44183	2.29277
	A2_N->X (RF)	0.15982	0.43145	2.22894
	B1->X (FF)	0.25020	0.78245	4.98186
	B2->X (FF)	0.23288	0.75840	4.75813
sky130_fd_sc_hs__o2bb2a_4	A1_N->X (RF)	0.18004	0.46876	2.59717
	A2_N->X (RF)	0.17687	0.46384	2.53803
	B1->X (FF)	0.25228	0.75809	5.07824
	B2->X (FF)	0.22478	0.72068	4.84450

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	0.00665	0.00706	0.01489
	A1_N	0.00830	0.00869	0.01752
	A2_N	0.00634	0.00677	0.01501
	A2_N	0.00809	0.00856	0.01676
	B1	0.00748	0.00752	0.00998
	B1	0.00395	0.00399	0.00645
	B2	0.00636	0.00631	0.01073
	B2	0.00330	0.00324	0.00866
sky130_fd_sc_hs__o2bb2a_2	A1_N	0.00903	0.00969	0.01737
	A1_N	0.01145	0.01210	0.01978
	A2_N	0.00858	0.00930	0.01735
	A2_N	0.00973	0.01047	0.01995
	B1	0.00991	0.01021	0.01247
	B1	0.00614	0.00643	0.00869
	B2	0.00875	0.00897	0.01296
	B2	0.00550	0.00572	0.00977
sky130_fd_sc_hs__o2bb2a_4	A1_N	0.01739	0.01850	0.02667
	A1_N	0.01890	0.02002	0.02834
	A2_N	0.01700	0.01811	0.02633
	A2_N	0.01791	0.01903	0.02724
	B1	0.01940	0.01989	0.02459
	B1	0.01226	0.01279	0.01747
	B2	0.01616	0.01664	0.02473
	B2	0.01039	0.01088	0.01896

Internal switching power(pJ) to X falling :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__o2bb2a_1	A1_N	0.00843	0.00832	0.01485
	A1_N	0.00605	0.00593	0.01239
	A2_N	0.00779	0.00775	0.01551
	A2_N	0.00605	0.00599	0.01370
	B1	0.00312	0.00322	0.00615
	B1	0.00662	0.00672	0.00931
	B2	0.00312	0.00338	0.00929
	B2	0.00613	0.00639	0.01191
sky130_fd_sc_hs__o2bb2a_2	A1_N	0.01055	0.01080	0.01695
	A1_N	0.00811	0.00833	0.01436
	A2_N	0.00995	0.01020	0.01758
	A2_N	0.00810	0.00836	0.01559
	B1	0.00491	0.00518	0.00784
	B1	0.00865	0.00899	0.01155
	B2	0.00495	0.00534	0.01137
	B2	0.00814	0.00880	0.01415
sky130_fd_sc_hs__o2bb2a_4	A1_N	0.01605	0.01681	0.02314
	A1_N	0.01457	0.01530	0.02122
	A2_N	0.01533	0.01622	0.02386
	A2_N	0.01457	0.01536	0.02251
	B1	0.00932	0.00993	0.01603
	B1	0.01642	0.01702	0.02175
	B2	0.00933	0.01036	0.02160
	B2	0.01500	0.01607	0.02661

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)	0.00456	0.00448	0.01122
	(A2_N * !B1 * !B2 * !X)	0.00128	0.00118	0.00792
	(!A2_N * B1 * X) + (!A2_N * !B1 * B2 * X) + (!A2_N * !B1 * !B2 * !X)	0.00102	0.00102	0.00102
	(!A2_N * B1 * X) + (!A2_N * !B1 * B2 * X) + (!A2_N * !B1 * !B2 * !X)	-0.00105	-0.00105	-0.00105
sky130_fd_sc_hs__o2bb2a_2	(A2_N * !B1 * !B2 * !X)	0.00482	0.00473	0.01132
	(A2_N * !B1 * !B2 * !X)	0.00144	0.00133	0.00793
	(!A2_N * B1 * X) + (!A2_N * !B1 * B2 * X) + (!A2_N * !B1 * !B2 * !X)	0.00107	0.00109	0.00108
	(!A2_N * B1 * X) + (!A2_N * !B1 * B2 * X) + (!A2_N * !B1 * !B2 * !X)	-0.00103	-0.00104	-0.00103
sky130_fd_sc_hs__o2bb2a_4	(A2_N * !B1 * !B2 * !X)	0.00572	0.00561	0.01179
	(A2_N * !B1 * !B2 * !X)	0.00234	0.00221	0.00840
	(!A2_N * B1 * X) + (!A2_N * !B1 * B2 * X) + (!A2_N * !B1 * !B2 * !X)	0.00107	0.00108	0.00107
	(!A2_N * B1 * X) + (!A2_N * !B1 * B2 * X) + (!A2_N * !B1 * !B2 * !X)	-0.00101	-0.00102	-0.00101

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)	0.00042	0.00069	0.00831
	(A2_N * !B1 * !B2 * !X)	0.00373	0.00401	0.01159
	(!A2_N * B1 * X) + (!A2_N * !B1 * B2 * X) + (!A2_N * !B1 * !B2 * !X)	-0.00097	-0.00102	-0.00102
	(!A2_N * B1 * X) + (!A2_N * !B1 * B2 * X) + (!A2_N * !B1 * !B2 * !X)	0.00111	0.00107	0.00106
sky130_fd_sc_hs__o2bb2a_2	(A2_N * !B1 * !B2 * !X)	0.00043	0.00068	0.00818
	(A2_N * !B1 * !B2 * !X)	0.00385	0.00410	0.01156
	(!A2_N * B1 * X) + (!A2_N * !B1 * B2 * X) + (!A2_N * !B1 * !B2 * !X)	-0.00102	-0.00108	-0.00108
	(!A2_N * B1 * X) + (!A2_N * !B1 * B2 * X) + (!A2_N * !B1 * !B2 * !X)	0.00108	0.00105	0.00104
sky130_fd_sc_hs__o2bb2a_4	(A2_N * !B1 * !B2 * !X)	0.00086	0.00105	0.00836
	(A2_N * !B1 * !B2 * !X)	0.00428	0.00449	0.01175
	(!A2_N * B1 * X) + (!A2_N * !B1 * B2 * X) + (!A2_N * !B1 * !B2 * !X)	-0.00101	-0.00107	-0.00107
	(!A2_N * B1 * X) + (!A2_N * !B1 * B2 * X) + (!A2_N * !B1 * !B2 * !X)	0.00107	0.00104	0.00102

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)	0.00407	0.00405	0.01190
	(A1_N * !B1 * !B2 * !X)	0.00138	0.00133	0.00920
	(!A1_N * B1 * X) + (!A1_N * !B1 * B2 * X) + (!A1_N * !B1 * !B2 * !X)	0.00033	0.00034	0.00032
	(!A1_N * B1 * X) + (!A1_N * !B1 * B2 * X) + (!A1_N * !B1 * !B2 * !X)	-0.00133	-0.00133	-0.00135
sky130_fd_sc_hs__o2bb2a_2	(A1_N * !B1 * !B2 * !X)	0.00440	0.00434	0.01201
	(A1_N * !B1 * !B2 * !X)	0.00155	0.00148	0.00917
	(!A1_N * B1 * X) + (!A1_N * !B1 * B2 * X) + (!A1_N * !B1 * !B2 * !X)	0.00039	0.00040	0.00038
	(!A1_N * B1 * X) + (!A1_N * !B1 * B2 * X) + (!A1_N * !B1 * !B2 * !X)	-0.00135	-0.00136	-0.00137
sky130_fd_sc_hs__o2bb2a_4	(A1_N * !B1 * !B2 * !X)	0.00526	0.00516	0.01243
	(A1_N * !B1 * !B2 * !X)	0.00247	0.00236	0.00963
	(!A1_N * B1 * X) + (!A1_N * !B1 * B2 * X) + (!A1_N * !B1 * !B2 * !X)	0.00036	0.00036	0.00035
	(!A1_N * B1 * X) + (!A1_N * !B1 * B2 * X) + (!A1_N * !B1 * !B2 * !X)	-0.00131	-0.00132	-0.00134

Passive power(pJ) for A2_N falling (conditional):

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__o2bb2a_1	(A1_N * !B1 * !B2 * !X)	0.00009	0.00034	0.00849
	(A1_N * !B1 * !B2 * !X)	0.00280	0.00307	0.01121
	(!A1_N * B1 * X) + (!A1_N * !B1 * B2 * X) + (!A1_N * !B1 * !B2 * !X)	-0.00031	-0.00031	-0.00031
	(!A1_N * B1 * X) + (!A1_N * !B1 * B2 * X) + (!A1_N * !B1 * !B2 * !X)	0.00135	0.00136	0.00136
sky130_fd_sc_hs__o2bb2a_2	(A1_N * !B1 * !B2 * !X)	0.00007	0.00030	0.00828
	(A1_N * !B1 * !B2 * !X)	0.00293	0.00317	0.01114
	(!A1_N * B1 * X) + (!A1_N * !B1 * B2 * X) + (!A1_N * !B1 * !B2 * !X)	-0.00037	-0.00038	-0.00037
	(!A1_N * B1 * X) + (!A1_N * !B1 * B2 * X) + (!A1_N * !B1 * !B2 * !X)	0.00137	0.00138	0.00138
sky130_fd_sc_hs__o2bb2a_4	(A1_N * !B1 * !B2 * !X)	0.00056	0.00070	0.00839
	(A1_N * !B1 * !B2 * !X)	0.00339	0.00354	0.01121
	(!A1_N * B1 * X) + (!A1_N * !B1 * B2 * X) + (!A1_N * !B1 * !B2 * !X)	-0.00034	-0.00033	-0.00033
	(!A1_N * B1 * X) + (!A1_N * !B1 * B2 * X) + (!A1_N * !B1 * !B2 * !X)	0.00136	0.00135	0.00135

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)	0.00103	0.00102	0.00103
	(A1_N * A2_N * B2 * !X)	-0.00122	-0.00123	-0.00124
	(A1_N * A2_N * !B2 * !X)	0.00099	0.00100	0.00099
	(A1_N * A2_N * !B2 * !X)	-0.00125	-0.00125	-0.00125
	(A1_N * !A2_N * B2 * X) + (!A1_N * B2 * X)	0.00119	0.00104	0.00103
	(A1_N * !A2_N * B2 * X) + (!A1_N * B2 * X)	-0.00107	-0.00122	-0.00124
sky130_fd_sc_hs__o2bb2a_2	(A1_N * A2_N * B2 * !X)	0.00116	0.00116	0.00116
	(A1_N * A2_N * B2 * !X)	-0.00125	-0.00127	-0.00127
	(A1_N * A2_N * !B2 * !X)	0.00111	0.00112	0.00111
	(A1_N * A2_N * !B2 * !X)	-0.00128	-0.00128	-0.00128
	(A1_N * !A2_N * B2 * X) + (!A1_N * B2 * X)	0.00132	0.00117	0.00116
	(A1_N * !A2_N * B2 * X) + (!A1_N * B2 * X)	-0.00110	-0.00126	-0.00128
sky130_fd_sc_hs__o2bb2a_4	(A1_N * A2_N * B2 * !X)	0.00207	0.00207	0.00207
	(A1_N * A2_N * B2 * !X)	-0.00246	-0.00253	-0.00253
	(A1_N * A2_N * !B2 * !X)	0.00197	0.00200	0.00198
	(A1_N * A2_N * !B2 * !X)	-0.00257	-0.00259	-0.00258
	(A1_N * !A2_N * B2 * X) + (!A1_N * B2 * X)	0.00242	0.00211	0.00208
	(A1_N * !A2_N * B2 * X) + (!A1_N * B2 * X)	-0.00214	-0.00250	-0.00254

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)	-0.00102	-0.00102	-0.00102
	(A1_N * A2_N * B2 * !X)	0.00124	0.00125	0.00124
	(A1_N * A2_N * !B2 * !X)	-0.00094	-0.00099	-0.00099
	(A1_N * A2_N * !B2 * !X)	0.00126	0.00127	0.00126
	(A1_N * !A2_N * B2 * X) + (!A1_N * B2 * X)	-0.00102	-0.00102	-0.00101
	(A1_N * !A2_N * B2 * X) + (!A1_N * B2 * X)	0.00124	0.00125	0.00124
sky130_fd_sc_hs__o2bb2a_2	(A1_N * A2_N * B2 * !X)	-0.00115	-0.00116	-0.00115
	(A1_N * A2_N * B2 * !X)	0.00128	0.00128	0.00127
	(A1_N * A2_N * !B2 * !X)	-0.00107	-0.00112	-0.00111
	(A1_N * A2_N * !B2 * !X)	0.00129	0.00130	0.00129
	(A1_N * !A2_N * B2 * X) + (!A1_N * B2 * X)	-0.00115	-0.00115	-0.00115
	(A1_N * !A2_N * B2 * X) + (!A1_N * B2 * X)	0.00128	0.00129	0.00128
sky130_fd_sc_hs__o2bb2a_4	(A1_N * A2_N * B2 * !X)	-0.00206	-0.00207	-0.00206
	(A1_N * A2_N * B2 * !X)	0.00254	0.00255	0.00253
	(A1_N * A2_N * !B2 * !X)	-0.00190	-0.00198	-0.00198
	(A1_N * A2_N * !B2 * !X)	0.00264	0.00261	0.00259
	(A1_N * !A2_N * B2 * X) + (!A1_N * B2 * X)	-0.00207	-0.00207	-0.00206
	(A1_N * !A2_N * B2 * X) + (!A1_N * B2 * X)	0.00255	0.00254	0.00254

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)	0.00110	0.00111	0.00110
	(A1_N * A2_N * B1 * !X)	-0.00124	-0.00127	-0.00126
	(A1_N * A2_N * !B1 * !X)	0.00106	0.00107	0.00106
	(A1_N * A2_N * !B1 * !X)	-0.00128	-0.00128	-0.00127
	(A1_N * !A2_N * B1 * X) + (!A1_N * B1 * X)	0.00117	0.00119	0.00117
	(A1_N * !A2_N * B1 * X) + (!A1_N * B1 * X)	-0.00071	-0.00073	-0.00072
sky130_fd_sc_hs__o2bb2a_2	(A1_N * A2_N * B1 * !X)	0.00124	0.00125	0.00125
	(A1_N * A2_N * B1 * !X)	-0.00121	-0.00123	-0.00123
	(A1_N * A2_N * !B1 * !X)	0.00120	0.00121	0.00120
	(A1_N * A2_N * !B1 * !X)	-0.00125	-0.00125	-0.00124
	(A1_N * !A2_N * B1 * X) + (!A1_N * B1 * X)	0.00123	0.00126	0.00124
	(A1_N * !A2_N * B1 * X) + (!A1_N * B1 * X)	-0.00076	-0.00078	-0.00077
sky130_fd_sc_hs__o2bb2a_4	(A1_N * A2_N * B1 * !X)	0.00200	0.00202	0.00200
	(A1_N * A2_N * B1 * !X)	-0.00244	-0.00252	-0.00251
	(A1_N * A2_N * !B1 * !X)	0.00193	0.00194	0.00192
	(A1_N * A2_N * !B1 * !X)	-0.00257	-0.00257	-0.00256
	(A1_N * !A2_N * B1 * X) + (!A1_N * B1 * X)	0.00219	0.00223	0.00219
	(A1_N * !A2_N * B1 * X) + (!A1_N * B1 * X)	-0.00139	-0.00141	-0.00139

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)	-0.00109	-0.00110	-0.00109
	(A1_N * A2_N * B1 * !X)	0.00126	0.00127	0.00126
	(A1_N * A2_N * !B1 * !X)	-0.00101	-0.00105	-0.00106
	(A1_N * A2_N * !B1 * !X)	0.00130	0.00129	0.00128
	(A1_N * !A2_N * B1 * X) + (!A1_N * B1 * X)	-0.00113	-0.00113	-0.00116
	(A1_N * !A2_N * B1 * X) + (!A1_N * B1 * X)	0.00076	0.00076	0.00073
sky130_fd_sc_hs__o2bb2a_2	(A1_N * A2_N * B1 * !X)	-0.00124	-0.00124	-0.00124
	(A1_N * A2_N * B1 * !X)	0.00123	0.00123	0.00123
	(A1_N * A2_N * !B1 * !X)	-0.00115	-0.00120	-0.00120
	(A1_N * A2_N * !B1 * !X)	0.00125	0.00126	0.00125
	(A1_N * !A2_N * B1 * X) + (!A1_N * B1 * X)	-0.00119	-0.00120	-0.00123
	(A1_N * !A2_N * B1 * X) + (!A1_N * B1 * X)	0.00081	0.00081	0.00078
sky130_fd_sc_hs__o2bb2a_4	(A1_N * A2_N * B1 * !X)	-0.00199	-0.00200	-0.00199
	(A1_N * A2_N * B1 * !X)	0.00251	0.00252	0.00251
	(A1_N * A2_N * !B1 * !X)	-0.00185	-0.00192	-0.00192
	(A1_N * A2_N * !B1 * !X)	0.00260	0.00258	0.00257
	(A1_N * !A2_N * B1 * X) + (!A1_N * B1 * X)	-0.00204	-0.00206	-0.00217
	(A1_N * !A2_N * B1 * X) + (!A1_N * B1 * X)	0.00154	0.00154	0.00143

SKY130_FD_SC_HS__O311AIx

sky130_fd_sc_hs_tt_1.50v_25C.ccs
Cell Library: Process , Voltage
1.50, 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	0.00259	0.00274	0.00266	0.00276	0.00283	0.26977
sky130_fd_sc_hs__o311ai_2	0.00505	0.00519	0.00527	0.00528	0.00537	0.47861
sky130_fd_sc_hs__o311ai_4	0.00995	0.01000	0.01051	0.00802	0.00759	0.92684

Leakage Information

Cell Name	Leakage(nW)		
	Min.	Avg	Max.
sky130_fd_sc_hs__o311ai_1	0.00000	0.01731	0.08920
sky130_fd_sc_hs__o311ai_2	0.00000	0.03462	0.17840
sky130_fd_sc_hs__o311ai_4	0.00000	0.04321	0.23786

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)	0.28327	1.40937	11.17120
	A2->Y (FR)	0.26934	1.41305	11.59760
	A3->Y (FR)	0.22263	1.33996	11.36130
	B1->Y (FR)	0.06086	0.69779	6.97251
	C1->Y (FR)	0.05025	0.68820	6.95724
sky130_fd_sc_hs__o311ai_2	A1->Y (FR)	0.30547	1.26982	11.03690
	A2->Y (FR)	0.28136	1.25534	11.44430
	A3->Y (FR)	0.23268	1.19178	11.33430
	B1->Y (FR)	0.06034	0.64103	6.85111
	C1->Y (FR)	0.04771	0.62743	6.85058
sky130_fd_sc_hs__o311ai_4	A1->Y (FR)	0.27291	1.09063	10.96640
	A2->Y (FR)	0.25542	1.09386	11.50130
	A3->Y (FR)	0.19968	1.01783	11.32250
	B1->Y (FR)	0.08321	0.73932	8.71090
	C1->Y (FR)	0.05745	0.71933	8.76330

Delay(ns) to Y falling :

Cell Name	Timing Arc(Dir)	Delay(ns)		
		First	Mid	Last
sky130_fd_sc_hs__o311ai_1	A1->Y (RF)	0.06830	0.46220	3.81741
	A2->Y (RF)	0.06841	0.46107	3.86872
	A3->Y (RF)	0.05606	0.44080	3.81909
	B1->Y (RF)	0.05944	0.49967	4.45190
	C1->Y (RF)	0.05116	0.51401	4.66002
sky130_fd_sc_hs__o311ai_2	A1->Y (RF)	0.07772	0.43328	3.83311
	A2->Y (RF)	0.07305	0.41704	3.79673
	A3->Y (RF)	0.06101	0.39747	3.75115
	B1->Y (RF)	0.06822	0.47022	4.45797
	C1->Y (RF)	0.05746	0.50217	4.95791
sky130_fd_sc_hs__o311ai_4	A1->Y (RF)	0.07653	0.38097	3.80870
	A2->Y (RF)	0.07072	0.36549	3.78007
	A3->Y (RF)	0.05566	0.34132	3.72489
	B1->Y (RF)	0.06725	0.46087	4.96937
	C1->Y (RF)	0.05191	0.47420	5.31754

Power Information

Internal switching power(pJ) to Y rising :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__o311ai_1	A1	0.00102	0.00090	0.00109
	A1	0.00742	0.00730	0.00748
	A2	0.00109	0.00094	0.00125
	A2	0.00680	0.00666	0.00694
	A3	0.00107	0.00101	0.00215
	A3	0.00605	0.00599	0.00699
	B1	0.00014	0.00016	0.00160
	B1	0.00557	0.00548	0.00693
	C1	-0.00034	-0.00030	0.00113
	C1	0.00448	0.00451	0.00592
sky130_fd_sc_hs__o311ai_2	A1	0.00240	0.00209	0.00245
	A1	0.01538	0.01509	0.01543
	A2	0.00242	0.00210	0.00276
	A2	0.01395	0.01363	0.01424
	A3	0.00239	0.00218	0.00447
	A3	0.01250	0.01227	0.01429
	B1	0.00035	0.00034	0.00333
	B1	0.01136	0.01126	0.01408
	C1	-0.00068	-0.00070	0.00230
	C1	0.00888	0.00891	0.01177

sky130_fd_sc_hs__o311ai_4	**A1**	0.00346	0.00299	0.00374
	A1	0.02885	0.02843	0.02916
	A2	0.00359	0.00304	0.00423
	A2	0.02606	0.02550	0.02661
	A3	0.00360	0.00333	0.00744
	A3	0.02339	0.02313	0.02672
	B1	0.00042	0.00000	0.00313
	B1	0.01947	0.01890	0.02202
	C1	-0.00181	-0.00193	0.00131
	C1	0.01401	0.01395	0.01719

Internal switching power(pJ) to Y falling :

Cell Name	**Input**	**Power(pJ)**		
		first	**mid**	**last**
sky130_fd_sc_hs__o311ai_1	**A1**	0.00874	0.00864	0.00888
	A1	0.00225	0.00211	0.00236
	A2	0.00750	0.00742	0.00770
	A2	0.00166	0.00154	0.00180
	A3	0.00599	0.00597	0.00630
	A3	0.00085	0.00082	0.00109
	B1	0.00771	0.00761	0.00791
	B1	0.00235	0.00222	0.00253
	C1	0.00704	0.00692	0.00755
	C1	0.00233	0.00221	0.00271

sky130_fd_sc_hs__o311ai_2	**A1**	0.01789	0.01757	0.01823
	A1	0.00475	0.00440	0.00488
	A2	0.01477	0.01457	0.01521
	A2	0.00295	0.00272	0.00327
	A3	0.01192	0.01182	0.01243
	A3	0.00146	0.00133	0.00195
	B1	0.01560	0.01536	0.01592
	B1	0.00483	0.00452	0.00517
	C1	0.01409	0.01395	0.01500
	C1	0.00478	0.00460	0.00554
sky130_fd_sc_hs__o311ai_4	**A1**	0.03265	0.03200	0.03313
	A1	0.00694	0.00632	0.00740
	A2	0.02729	0.02669	0.02789
	A2	0.00430	0.00366	0.00488
	A3	0.02082	0.02053	0.02200
	A3	0.00034	0.00007	0.00154
	B1	0.02751	0.02734	0.02775
	B1	0.00886	0.00861	0.00920
	C1	0.02420	0.02398	0.02542
	C1	0.00888	0.00864	0.00966

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)**	0.00116	0.00116	0.00116
	(A2 * B1 * !C1 * Y)	-0.00135	-0.00138	-0.00138
	(A2 * A3 * B1 * C1 * !Y)	0.00116	0.00116	0.00116
	(A2 * A3 * B1 * C1 * !Y)	-0.00135	-0.00138	-0.00138
	(A2 * !B1 * Y)	0.00116	0.00116	0.00116
	(A2 * !B1 * Y)	-0.00135	-0.00138	-0.00138
	(A2 * !A3 * B1 * C1 * !Y)	0.00117	0.00116	0.00116
	(A2 * !A3 * B1 * C1 * !Y)	-0.00133	-0.00138	-0.00138
	(!A2 * A3 * B1 * C1 * !Y)	0.00117	0.00117	0.00116
	(!A2 * A3 * B1 * C1 * !Y)	-0.00124	-0.00134	-0.00133
	(!A2 * A3 * B1 * !C1 * Y)	0.00116	0.00117	0.00116
	(!A2 * A3 * B1 * !C1 * Y)	-0.00125	-0.00133	-0.00132
	(!A2 * A3 * !B1 * Y)	0.00116	0.00117	0.00116
	(!A2 * A3 * !B1 * Y)	-0.00125	-0.00133	-0.00132
	(!A2 * !A3 * B1 * !C1 * Y)	0.00108	0.00108	0.00108
	(!A2 * !A3 * B1 * !C1 * Y)	-0.00140	-0.00140	-0.00140
	(!A2 * !A3 * !B1 * C1 * Y)	0.00109	0.00110	0.00109
	(!A2 * !A3 * !B1 * C1 * Y)	-0.00139	-0.00140	-0.00140
	(!A2 * !A3 * !B1 * !C1 * Y)	0.00108	0.00109	0.00109
	(!A2 * !A3 * !B1 * !C1 * Y)	-0.00139	-0.00140	-0.00140

sky130_fd_sc_hs__o311ai_2	**(A2 * B1 * !C1 * Y)**	0.00225	0.00227	0.00226
	(A2 * B1 * !C1 * Y)	-0.00264	-0.00274	-0.00273
	(A2 * A3 * B1 * C1 * !Y)	0.00227	0.00227	0.00226
	(A2 * A3 * B1 * C1 * !Y)	-0.00262	-0.00274	-0.00273
	(A2 * !B1 * Y)	0.00225	0.00227	0.00226
	(A2 * !B1 * Y)	-0.00264	-0.00274	-0.00273
	(A2 * !A3 * B1 * C1 * !Y)	0.00228	0.00227	0.00226
	(A2 * !A3 * B1 * C1 * !Y)	-0.00259	-0.00274	-0.00273
	(!A2 * A3 * B1 * C1 * !Y)	0.00229	0.00229	0.00226
	(!A2 * A3 * B1 * C1 * !Y)	-0.00242	-0.00263	-0.00262
	(!A2 * A3 * B1 * !C1 * Y)	0.00225	0.00228	0.00226
	(!A2 * A3 * B1 * !C1 * Y)	-0.00246	-0.00264	-0.00263
	(!A2 * A3 * !B1 * Y)	0.00225	0.00228	0.00226
	(!A2 * A3 * !B1 * Y)	-0.00246	-0.00264	-0.00263
	(!A2 * !A3 * B1 * !C1 * Y)	0.00208	0.00211	0.00208
	(!A2 * !A3 * B1 * !C1 * Y)	-0.00280	-0.00281	-0.00280
	(!A2 * !A3 * !B1 * C1 * Y)	0.00212	0.00214	0.00211
	(!A2 * !A3 * !B1 * C1 * Y)	-0.00281	-0.00281	-0.00280
	(!A2 * !A3 * !B1 * !C1 * Y)	0.00212	0.00214	0.00211
	(!A2 * !A3 * !B1 * !C1 * Y)	-0.00281	-0.00281	-0.00280

sky130_fd_sc_hs__o311ai_4	**(A2 * B1 * !C1 * Y)**	0.00453	0.00453	0.00452
	(A2 * B1 * !C1 * Y)	-0.00531	-0.00546	-0.00545
	(A2 * A3 * B1 * C1 * !Y)	0.00454	0.00453	0.00452
	(A2 * A3 * B1 * C1 * !Y)	-0.00529	-0.00546	-0.00545
	(A2 * !B1 * Y)	0.00453	0.00453	0.00452
	(A2 * !B1 * Y)	-0.00531	-0.00546	-0.00545
	(A2 * !A3 * B1 * C1 * !Y)	0.00453	0.00453	0.00452
	(A2 * !A3 * B1 * C1 * !Y)	-0.00520	-0.00546	-0.00545
	(!A2 * A3 * B1 * C1 * !Y)	0.00456	0.00458	0.00452
	(!A2 * A3 * B1 * C1 * !Y)	-0.00489	-0.00528	-0.00525
	(!A2 * A3 * B1 * !C1 * Y)	0.00450	0.00457	0.00451
	(!A2 * A3 * B1 * !C1 * Y)	-0.00494	-0.00528	-0.00525
	(!A2 * A3 * !B1 * Y)	0.00450	0.00457	0.00451
	(!A2 * A3 * !B1 * Y)	-0.00494	-0.00528	-0.00525
	(!A2 * !A3 * B1 * !C1 * Y)	0.00415	0.00419	0.00417
	(!A2 * !A3 * B1 * !C1 * Y)	-0.00557	-0.00560	-0.00559
	(!A2 * !A3 * !B1 * C1 * Y)	0.00422	0.00425	0.00423
	(!A2 * !A3 * !B1 * C1 * Y)	-0.00558	-0.00560	-0.00559
	(!A2 * !A3 * !B1 * !C1 * Y)	0.00422	0.00425	0.00423
	(!A2 * !A3 * !B1 * !C1 * Y)	-0.00558	-0.00560	-0.00559

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)**	-0.00115	-0.00116	-0.00115
	(A2 * B1 * !C1 * Y)	0.00137	0.00139	0.00138
	(A2 * A3 * B1 * C1 * !Y)	-0.00115	-0.00116	-0.00115
	(A2 * A3 * B1 * C1 * !Y)	0.00137	0.00139	0.00138
	(A2 * !B1 * Y)	-0.00116	-0.00116	-0.00115
	(A2 * !B1 * Y)	0.00138	0.00139	0.00138
	(A2 * !A3 * B1 * C1 * !Y)	-0.00115	-0.00116	-0.00115
	(A2 * !A3 * B1 * C1 * !Y)	0.00137	0.00139	0.00138
	(!A2 * A3 * B1 * C1 * !Y)	-0.00115	-0.00116	-0.00115
	(!A2 * A3 * B1 * C1 * !Y)	0.00133	0.00134	0.00133
	(!A2 * A3 * B1 * !C1 * Y)	-0.00116	-0.00116	-0.00115
	(!A2 * A3 * B1 * !C1 * Y)	0.00133	0.00133	0.00132
	(!A2 * A3 * !B1 * Y)	-0.00115	-0.00116	-0.00115
	(!A2 * A3 * !B1 * Y)	0.00132	0.00133	0.00132
	(!A2 * !A3 * B1 * !C1 * Y)	-0.00101	-0.00108	-0.00108
	(!A2 * !A3 * B1 * !C1 * Y)	0.00140	0.00142	0.00140
	(!A2 * !A3 * !B1 * C1 * Y)	-0.00104	-0.00110	-0.00109
	(!A2 * !A3 * !B1 * C1 * Y)	0.00140	0.00140	0.00140
	(!A2 * !A3 * !B1 * !C1 * Y)	-0.00104	-0.00109	-0.00109
	(!A2 * !A3 * !B1 * !C1 * Y)	0.00140	0.00140	0.00140

sky130_fd_sc_hs__o311ai_2	**(A2 * B1 * !C1 * Y)**	-0.00225	-0.00226	-0.00225
	(A2 * B1 * !C1 * Y)	0.00273	0.00275	0.00273
	(A2 * A3 * B1 * C1 * !Y)	-0.00226	-0.00227	-0.00226
	(A2 * A3 * B1 * C1 * !Y)	0.00273	0.00275	0.00273
	(A2 * !B1 * Y)	-0.00225	-0.00226	-0.00225
	(A2 * !B1 * Y)	0.00273	0.00275	0.00273
	(A2 * !A3 * B1 * C1 * !Y)	-0.00226	-0.00226	-0.00226
	(A2 * !A3 * B1 * C1 * !Y)	0.00273	0.00274	0.00273
	(!A2 * A3 * B1 * C1 * !Y)	-0.00225	-0.00226	-0.00226
	(!A2 * A3 * B1 * C1 * !Y)	0.00261	0.00263	0.00262
	(!A2 * A3 * B1 * !C1 * Y)	-0.00224	-0.00226	-0.00225
	(!A2 * A3 * B1 * !C1 * Y)	0.00261	0.00264	0.00263
	(!A2 * A3 * !B1 * Y)	-0.00225	-0.00226	-0.00225
	(!A2 * A3 * !B1 * Y)	0.00262	0.00264	0.00263
	(!A2 * !A3 * B1 * !C1 * Y)	-0.00191	-0.00210	-0.00208
	(!A2 * !A3 * B1 * !C1 * Y)	0.00280	0.00282	0.00280
	(!A2 * !A3 * !B1 * C1 * Y)	-0.00198	-0.00212	-0.00211
	(!A2 * !A3 * !B1 * C1 * Y)	0.00281	0.00281	0.00280
	(!A2 * !A3 * !B1 * !C1 * Y)	-0.00199	-0.00213	-0.00211
	(!A2 * !A3 * !B1 * !C1 * Y)	0.00281	0.00284	0.00280

sky130_fd_sc_hs__o311ai_4	**(A2 * B1 * !C1 * Y)**	-0.00449	-0.00452	-0.00451
	(A2 * B1 * !C1 * Y)	0.00541	0.00546	0.00545
	(A2 * A3 * B1 * C1 * !Y)	-0.00449	-0.00452	-0.00451
	(A2 * A3 * B1 * C1 * !Y)	0.00541	0.00546	0.00545
	(A2 * !B1 * Y)	-0.00449	-0.00452	-0.00451
	(A2 * !B1 * Y)	0.00541	0.00546	0.00545
	(A2 * !A3 * B1 * C1 * !Y)	-0.00449	-0.00452	-0.00451
	(A2 * !A3 * B1 * C1 * !Y)	0.00542	0.00546	0.00545
	(!A2 * A3 * B1 * C1 * !Y)	-0.00449	-0.00452	-0.00451
	(!A2 * A3 * B1 * C1 * !Y)	0.00521	0.00528	0.00525
	(!A2 * A3 * B1 * !C1 * Y)	-0.00449	-0.00452	-0.00451
	(!A2 * A3 * B1 * !C1 * Y)	0.00522	0.00528	0.00525
	(!A2 * A3 * !B1 * Y)	-0.00449	-0.00452	-0.00451
	(!A2 * A3 * !B1 * Y)	0.00521	0.00528	0.00525
	(!A2 * !A3 * B1 * !C1 * Y)	-0.00389	-0.00419	-0.00417
	(!A2 * !A3 * B1 * !C1 * Y)	0.00562	0.00562	0.00560
	(!A2 * !A3 * !B1 * C1 * Y)	-0.00399	-0.00425	-0.00423
	(!A2 * !A3 * !B1 * C1 * Y)	0.00559	0.00564	0.00560
	(!A2 * !A3 * !B1 * !C1 * Y)	-0.00399	-0.00425	-0.00423
	(!A2 * !A3 * !B1 * !C1 * Y)	0.00559	0.00564	0.00560

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)**	0.00122	0.00125	0.00118
	(A1 * A3 * B1 * C1 * !Y)	-0.00091	-0.00092	-0.00091
	(A1 * A3 * B1 * !C1 * Y)	0.00110	0.00112	0.00110
	(A1 * A3 * B1 * !C1 * Y)	-0.00103	-0.00104	-0.00103
	(A1 * A3 * !B1 * Y)	0.00110	0.00112	0.00110
	(A1 * A3 * !B1 * Y)	-0.00103	-0.00104	-0.00103
	(A1 * !A3 * B1 * C1 * !Y)	0.00115	0.00118	0.00115
	(A1 * !A3 * B1 * C1 * !Y)	-0.00078	-0.00080	-0.00079
	(A1 * !A3 * B1 * !C1 * Y)	0.00111	0.00111	0.00110
	(A1 * !A3 * B1 * !C1 * Y)	-0.00138	-0.00140	-0.00139
	(A1 * !A3 * !B1 * C1 * Y)	0.00111	0.00111	0.00110
	(A1 * !A3 * !B1 * C1 * Y)	-0.00138	-0.00140	-0.00139
	(A1 * !A3 * !B1 * !C1 * Y)	0.00111	0.00111	0.00110
	(A1 * !A3 * !B1 * !C1 * Y)	-0.00138	-0.00140	-0.00139
	(!A1 * A3 * B1 * C1 * !Y)	0.00136	0.00117	0.00115
	(!A1 * A3 * B1 * C1 * !Y)	-0.00113	-0.00135	-0.00135
	(!A1 * A3 * B1 * !C1 * Y)	0.00111	0.00111	0.00110
	(!A1 * A3 * B1 * !C1 * Y)	-0.00138	-0.00140	-0.00139
	(!A1 * A3 * !B1 * Y)	0.00111	0.00111	0.00110
	(!A1 * A3 * !B1 * Y)	-0.00138	-0.00140	-0.00139
	(!A1 * !A3 * B1 * !C1 * Y)	0.00101	0.00102	0.00101
	(!A1 * !A3 * B1 * !C1 * Y)	-0.00142	-0.00142	-0.00142
	(!A1 * !A3 * !B1 * C1 * Y)	0.00103	0.00104	0.00103
	(!A1 * !A3 * !B1 * C1 * Y)	-0.00143	-0.00143	-0.00142
	(!A1 * !A3 * !B1 * !C1 * Y)	0.00103	0.00104	0.00103
	(!A1 * !A3 * !B1 * !C1 * Y)	-0.00143	-0.00143	-0.00142

sky130_fd_sc_hs__o311ai_2	**(A1 * A3 * B1 * C1 * !Y)**	0.00243	0.00246	0.00235
	(A1 * A3 * B1 * C1 * !Y)	-0.00190	-0.00191	-0.00191
	(A1 * A3 * B1 * !C1 * Y)	0.00227	0.00231	0.00228
	(A1 * A3 * B1 * !C1 * Y)	-0.00207	-0.00209	-0.00208
	(A1 * A3 * !B1 * Y)	0.00227	0.00231	0.00228
	(A1 * A3 * !B1 * Y)	-0.00208	-0.00209	-0.00208
	(A1 * !A3 * B1 * C1 * !Y)	0.00230	0.00235	0.00230
	(A1 * !A3 * B1 * C1 * !Y)	-0.00163	-0.00166	-0.00164
	(A1 * !A3 * B1 * !C1 * Y)	0.00226	0.00228	0.00228
	(A1 * !A3 * B1 * !C1 * Y)	-0.00268	-0.00277	-0.00276
	(A1 * !A3 * !B1 * C1 * Y)	0.00226	0.00228	0.00228
	(A1 * !A3 * !B1 * C1 * Y)	-0.00268	-0.00277	-0.00276
	(A1 * !A3 * !B1 * !C1 * Y)	0.00229	0.00230	0.00228
	(A1 * !A3 * !B1 * !C1 * Y)	-0.00272	-0.00277	-0.00276
	(!A1 * A3 * B1 * C1 * !Y)	0.00269	0.00231	0.00228
	(!A1 * A3 * B1 * C1 * !Y)	-0.00238	-0.00280	-0.00280
	(!A1 * A3 * B1 * !C1 * Y)	0.00229	0.00229	0.00228
	(!A1 * A3 * B1 * !C1 * Y)	-0.00276	-0.00281	-0.00280
	(!A1 * A3 * !B1 * Y)	0.00229	0.00229	0.00228
	(!A1 * A3 * !B1 * Y)	-0.00276	-0.00282	-0.00279
	(!A1 * !A3 * B1 * !C1 * Y)	0.00207	0.00209	0.00208
	(!A1 * !A3 * B1 * !C1 * Y)	-0.00284	-0.00285	-0.00285
	(!A1 * !A3 * !B1 * C1 * Y)	0.00211	0.00212	0.00211
	(!A1 * !A3 * !B1 * C1 * Y)	-0.00285	-0.00285	-0.00285
	(!A1 * !A3 * !B1 * !C1 * Y)	0.00211	0.00212	0.00211
	(!A1 * !A3 * !B1 * !C1 * Y)	-0.00285	-0.00286	-0.00285

sky130_fd_sc_hs__o311ai_4	**(A1 * A3 * B1 * C1 * !Y)**	0.00474	0.00485	0.00463
	(A1 * A3 * B1 * C1 * !Y)	-0.00364	-0.00367	-0.00366
	(A1 * A3 * B1 * !C1 * Y)	0.00450	0.00453	0.00447
	(A1 * A3 * B1 * !C1 * Y)	-0.00404	-0.00407	-0.00405
	(A1 * A3 * !B1 * Y)	0.00450	0.00453	0.00447
	(A1 * A3 * !B1 * Y)	-0.00407	-0.00407	-0.00405
	(A1 * !A3 * B1 * C1 * !Y)	0.00455	0.00463	0.00454
	(A1 * !A3 * B1 * C1 * !Y)	-0.00316	-0.00321	-0.00317
	(A1 * !A3 * B1 * !C1 * Y)	0.00446	0.00449	0.00446
	(A1 * !A3 * B1 * !C1 * Y)	-0.00533	-0.00544	-0.00541
	(A1 * !A3 * !B1 * C1 * Y)	0.00446	0.00449	0.00446
	(A1 * !A3 * !B1 * C1 * Y)	-0.00533	-0.00544	-0.00542
	(A1 * !A3 * !B1 * !C1 * Y)	0.00446	0.00448	0.00446
	(A1 * !A3 * !B1 * !C1 * Y)	-0.00533	-0.00544	-0.00543
	(!A1 * A3 * B1 * C1 * !Y)	0.00531	0.00458	0.00452
	(!A1 * A3 * B1 * C1 * !Y)	-0.00450	-0.00545	-0.00544
	(!A1 * A3 * B1 * !C1 * Y)	0.00449	0.00449	0.00446
	(!A1 * A3 * B1 * !C1 * Y)	-0.00540	-0.00552	-0.00549
	(!A1 * A3 * !B1 * Y)	0.00445	0.00449	0.00446
	(!A1 * A3 * !B1 * Y)	-0.00537	-0.00552	-0.00549
	(!A1 * !A3 * B1 * !C1 * Y)	0.00408	0.00410	0.00407
	(!A1 * !A3 * B1 * !C1 * Y)	-0.00561	-0.00562	-0.00560
	(!A1 * !A3 * !B1 * C1 * Y)	0.00415	0.00416	0.00414
	(!A1 * !A3 * !B1 * C1 * Y)	-0.00562	-0.00562	-0.00560
	(!A1 * !A3 * !B1 * !C1 * Y)	0.00412	0.00415	0.00414
	(!A1 * !A3 * !B1 * !C1 * Y)	-0.00559	-0.00562	-0.00560

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)**	-0.00115	-0.00115	-0.00115
	(A1 * A3 * B1 * C1 * !Y)	0.00091	0.00092	0.00091
	(A1 * A3 * B1 * !C1 * Y)	-0.00110	-0.00110	-0.00110
	(A1 * A3 * B1 * !C1 * Y)	0.00103	0.00104	0.00103
	(A1 * A3 * !B1 * Y)	-0.00110	-0.00110	-0.00110
	(A1 * A3 * !B1 * Y)	0.00103	0.00104	0.00103
	(A1 * !A3 * B1 * C1 * !Y)	-0.00114	-0.00115	-0.00113
	(A1 * !A3 * B1 * C1 * !Y)	0.00081	0.00082	0.00082
	(A1 * !A3 * B1 * !C1 * Y)	-0.00110	-0.00110	-0.00110
	(A1 * !A3 * B1 * !C1 * Y)	0.00140	0.00140	0.00139
	(A1 * !A3 * !B1 * C1 * Y)	-0.00109	-0.00110	-0.00110
	(A1 * !A3 * !B1 * C1 * Y)	0.00139	0.00140	0.00139
	(A1 * !A3 * !B1 * !C1 * Y)	-0.00110	-0.00110	-0.00110
	(A1 * !A3 * !B1 * !C1 * Y)	0.00139	0.00140	0.00139
	(!A1 * A3 * B1 * C1 * !Y)	-0.00114	-0.00115	-0.00114
	(!A1 * A3 * B1 * C1 * !Y)	0.00134	0.00136	0.00135
	(!A1 * A3 * B1 * !C1 * Y)	-0.00109	-0.00110	-0.00110
	(!A1 * A3 * B1 * !C1 * Y)	0.00138	0.00140	0.00139
	(!A1 * A3 * !B1 * Y)	-0.00109	-0.00110	-0.00110
	(!A1 * A3 * !B1 * Y)	0.00139	0.00140	0.00139
	(!A1 * !A3 * B1 * !C1 * Y)	-0.00094	-0.00102	-0.00101
	(!A1 * !A3 * B1 * !C1 * Y)	0.00142	0.00144	0.00142
	(!A1 * !A3 * !B1 * C1 * Y)	-0.00098	-0.00104	-0.00103
	(!A1 * !A3 * !B1 * C1 * Y)	0.00143	0.00143	0.00142
	(!A1 * !A3 * !B1 * !C1 * Y)	-0.00098	-0.00104	-0.00103
	(!A1 * !A3 * !B1 * !C1 * Y)	0.00143	0.00143	0.00142

sky130_fd_sc_hs__o311ai_2	**(A1 * A3 * B1 * C1 * !Y)**	-0.00230	-0.00231	-0.00231
	(A1 * A3 * B1 * C1 * !Y)	0.00190	0.00191	0.00191
	(A1 * A3 * B1 * !C1 * Y)	-0.00227	-0.00228	-0.00227
	(A1 * A3 * B1 * !C1 * Y)	0.00207	0.00209	0.00208
	(A1 * A3 * !B1 * Y)	-0.00227	-0.00228	-0.00227
	(A1 * A3 * !B1 * Y)	0.00208	0.00209	0.00208
	(A1 * !A3 * B1 * C1 * !Y)	-0.00225	-0.00226	-0.00224
	(A1 * !A3 * B1 * C1 * !Y)	0.00170	0.00171	0.00170
	(A1 * !A3 * B1 * !C1 * Y)	-0.00226	-0.00228	-0.00227
	(A1 * !A3 * B1 * !C1 * Y)	0.00277	0.00277	0.00276
	(A1 * !A3 * !B1 * C1 * Y)	-0.00226	-0.00228	-0.00227
	(A1 * !A3 * !B1 * C1 * Y)	0.00275	0.00277	0.00276
	(A1 * !A3 * !B1 * !C1 * Y)	-0.00227	-0.00228	-0.00227
	(A1 * !A3 * !B1 * !C1 * Y)	0.00276	0.00277	0.00276
	(!A1 * A3 * B1 * C1 * !Y)	-0.00227	-0.00229	-0.00227
	(!A1 * A3 * B1 * C1 * !Y)	0.00278	0.00281	0.00280
	(!A1 * A3 * B1 * !C1 * Y)	-0.00226	-0.00228	-0.00227
	(!A1 * A3 * B1 * !C1 * Y)	0.00278	0.00281	0.00280
	(!A1 * A3 * !B1 * Y)	-0.00227	-0.00228	-0.00227
	(!A1 * A3 * !B1 * Y)	0.00279	0.00282	0.00279
	(!A1 * !A3 * B1 * !C1 * Y)	-0.00191	-0.00209	-0.00208
	(!A1 * !A3 * B1 * !C1 * Y)	0.00285	0.00286	0.00285
	(!A1 * !A3 * !B1 * C1 * Y)	-0.00199	-0.00212	-0.00211
	(!A1 * !A3 * !B1 * C1 * Y)	0.00286	0.00287	0.00285
	(!A1 * !A3 * !B1 * !C1 * Y)	-0.00199	-0.00212	-0.00211
	(!A1 * !A3 * !B1 * !C1 * Y)	0.00286	0.00287	0.00285

sky130_fd_sc_hs__o311ai_4	**(A1 * A3 * B1 * C1 * !Y)**	-0.00453	-0.00455	-0.00454
	(A1 * A3 * B1 * C1 * !Y)	0.00364	0.00367	0.00366
	(A1 * A3 * B1 * !C1 * Y)	-0.00445	-0.00447	-0.00446
	(A1 * A3 * B1 * !C1 * Y)	0.00404	0.00407	0.00405
	(A1 * A3 * !B1 * Y)	-0.00447	-0.00447	-0.00446
	(A1 * A3 * !B1 * Y)	0.00407	0.00407	0.00405
	(A1 * !A3 * B1 * C1 * !Y)	-0.00447	-0.00449	-0.00443
	(A1 * !A3 * B1 * C1 * !Y)	0.00325	0.00327	0.00328
	(A1 * !A3 * B1 * !C1 * Y)	-0.00446	-0.00447	-0.00445
	(A1 * !A3 * B1 * !C1 * Y)	0.00543	0.00544	0.00541
	(A1 * !A3 * !B1 * C1 * Y)	-0.00444	-0.00447	-0.00445
	(A1 * !A3 * !B1 * C1 * Y)	0.00540	0.00544	0.00542
	(A1 * !A3 * !B1 * !C1 * Y)	-0.00444	-0.00447	-0.00445
	(A1 * !A3 * !B1 * !C1 * Y)	0.00541	0.00544	0.00543
	(!A1 * A3 * B1 * C1 * !Y)	-0.00450	-0.00452	-0.00449
	(!A1 * A3 * B1 * C1 * !Y)	0.00541	0.00545	0.00544
	(!A1 * A3 * B1 * !C1 * Y)	-0.00444	-0.00446	-0.00445
	(!A1 * A3 * B1 * !C1 * Y)	0.00547	0.00552	0.00549
	(!A1 * A3 * !B1 * Y)	-0.00443	-0.00446	-0.00445
	(!A1 * A3 * !B1 * Y)	0.00547	0.00552	0.00549
	(!A1 * !A3 * B1 * !C1 * Y)	-0.00380	-0.00410	-0.00407
	(!A1 * !A3 * B1 * !C1 * Y)	0.00562	0.00564	0.00561
	(!A1 * !A3 * !B1 * C1 * Y)	-0.00393	-0.00416	-0.00414
	(!A1 * !A3 * !B1 * C1 * Y)	0.00564	0.00564	0.00561
	(!A1 * !A3 * !B1 * !C1 * Y)	-0.00393	-0.00415	-0.00414
	(!A1 * !A3 * !B1 * !C1 * Y)	0.00564	0.00564	0.00561

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)**	0.00124	0.00126	0.00124
	(A2 * B1 * C1 * !Y)	-0.00069	-0.00070	-0.00069
	(A2 * B1 * !C1 * Y)	0.00112	0.00113	0.00112
	(A2 * B1 * !C1 * Y)	-0.00129	-0.00133	-0.00133
	(A2 * !B1 * C1 * Y)	0.00112	0.00113	0.00112
	(A2 * !B1 * C1 * Y)	-0.00129	-0.00133	-0.00133
	(A2 * !B1 * !C1 * Y)	0.00112	0.00113	0.00112
	(A2 * !B1 * !C1 * Y)	-0.00129	-0.00133	-0.00133
	(A1 * !A2 * B1 * C1 * !Y)	0.00123	0.00126	0.00124
	(A1 * !A2 * B1 * C1 * !Y)	-0.00068	-0.00070	-0.00069
	(A1 * !A2 * B1 * !C1 * Y)	0.00112	0.00113	0.00112
	(A1 * !A2 * B1 * !C1 * Y)	-0.00118	-0.00127	-0.00126
	(A1 * !A2 * !B1 * C1 * Y)	0.00112	0.00113	0.00112
	(A1 * !A2 * !B1 * C1 * Y)	-0.00118	-0.00127	-0.00126
	(A1 * !A2 * !B1 * !C1 * Y)	0.00112	0.00112	0.00112
	(A1 * !A2 * !B1 * !C1 * Y)	-0.00118	-0.00128	-0.00127
	(!A1 * !A2 * B1 * !C1 * Y)	0.00104	0.00104	0.00104
	(!A1 * !A2 * B1 * !C1 * Y)	-0.00135	-0.00135	-0.00135
	(!A1 * !A2 * !B1 * C1 * Y)	0.00105	0.00106	0.00105
	(!A1 * !A2 * !B1 * C1 * Y)	-0.00135	-0.00136	-0.00135
	(!A1 * !A2 * !B1 * !C1 * Y)	0.00106	0.00106	0.00105
	(!A1 * !A2 * !B1 * !C1 * Y)	-0.00136	-0.00135	-0.00135

sky130_fd_sc_hs__o311ai_2	**(A2 * B1 * C1 * !Y)**	0.00254	0.00259	0.00255
	(A2 * B1 * C1 * !Y)	-0.00142	-0.00144	-0.00142
	(A2 * B1 * !C1 * Y)	0.00224	0.00227	0.00224
	(A2 * B1 * !C1 * Y)	-0.00269	-0.00275	-0.00277
	(A2 * !B1 * C1 * Y)	0.00224	0.00227	0.00224
	(A2 * !B1 * C1 * Y)	-0.00269	-0.00275	-0.00277
	(A2 * !B1 * !C1 * Y)	0.00224	0.00226	0.00224
	(A2 * !B1 * !C1 * Y)	-0.00269	-0.00279	-0.00277
	(A1 * !A2 * B1 * C1 * !Y)	0.00254	0.00255	0.00255
	(A1 * !A2 * B1 * C1 * !Y)	-0.00141	-0.00141	-0.00141
	(A1 * !A2 * B1 * !C1 * Y)	0.00224	0.00226	0.00224
	(A1 * !A2 * B1 * !C1 * Y)	-0.00249	-0.00266	-0.00263
	(A1 * !A2 * !B1 * C1 * Y)	0.00224	0.00226	0.00224
	(A1 * !A2 * !B1 * C1 * Y)	-0.00250	-0.00266	-0.00263
	(A1 * !A2 * !B1 * !C1 * Y)	0.00225	0.00225	0.00224
	(A1 * !A2 * !B1 * !C1 * Y)	-0.00251	-0.00266	-0.00265
	(!A1 * !A2 * B1 * !C1 * Y)	0.00207	0.00208	0.00207
	(!A1 * !A2 * B1 * !C1 * Y)	-0.00282	-0.00282	-0.00282
	(!A1 * !A2 * !B1 * C1 * Y)	0.00211	0.00211	0.00210
	(!A1 * !A2 * !B1 * C1 * Y)	-0.00283	-0.00282	-0.00282
	(!A1 * !A2 * !B1 * !C1 * Y)	0.00209	0.00212	0.00210
	(!A1 * !A2 * !B1 * !C1 * Y)	-0.00281	-0.00283	-0.00282

sky130_fd_sc_hs__o311ai_4	**(A2 * B1 * C1 * !Y)**	0.00517	0.00520	0.00517
	(A2 * B1 * C1 * !Y)	-0.00282	-0.00283	-0.00282
	(A2 * B1 * !C1 * Y)	0.00434	0.00431	0.00431
	(A2 * B1 * !C1 * Y)	-0.00564	-0.00578	-0.00577
	(A2 * !B1 * C1 * Y)	0.00434	0.00431	0.00431
	(A2 * !B1 * C1 * Y)	-0.00564	-0.00580	-0.00577
	(A2 * !B1 * !C1 * Y)	0.00430	0.00434	0.00431
	(A2 * !B1 * !C1 * Y)	-0.00560	-0.00581	-0.00578
	(A1 * !A2 * B1 * C1 * !Y)	0.00519	0.00519	0.00517
	(A1 * !A2 * B1 * C1 * !Y)	-0.00284	-0.00282	-0.00281
	(A1 * !A2 * B1 * !C1 * Y)	0.00430	0.00434	0.00431
	(A1 * !A2 * B1 * !C1 * Y)	-0.00513	-0.00542	-0.00541
	(A1 * !A2 * !B1 * C1 * Y)	0.00430	0.00434	0.00431
	(A1 * !A2 * !B1 * C1 * Y)	-0.00513	-0.00543	-0.00541
	(A1 * !A2 * !B1 * !C1 * Y)	0.00430	0.00434	0.00431
	(A1 * !A2 * !B1 * !C1 * Y)	-0.00515	-0.00551	-0.00548
	(!A1 * !A2 * B1 * !C1 * Y)	0.00395	0.00397	0.00396
	(!A1 * !A2 * B1 * !C1 * Y)	-0.00589	-0.00591	-0.00590
	(!A1 * !A2 * !B1 * C1 * Y)	0.00403	0.00403	0.00402
	(!A1 * !A2 * !B1 * C1 * Y)	-0.00591	-0.00591	-0.00590
	(!A1 * !A2 * !B1 * !C1 * Y)	0.00399	0.00403	0.00401
	(!A1 * !A2 * !B1 * !C1 * Y)	-0.00588	-0.00591	-0.00590

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)**	-0.00117	-0.00119	-0.00123
	(A2 * B1 * C1 * !Y)	0.00074	0.00075	0.00070
	(A2 * B1 * !C1 * Y)	-0.00112	-0.00112	-0.00112
	(A2 * B1 * !C1 * Y)	0.00133	0.00133	0.00133
	(A2 * !B1 * C1 * Y)	-0.00112	-0.00112	-0.00112
	(A2 * !B1 * C1 * Y)	0.00133	0.00133	0.00133
	(A2 * !B1 * !C1 * Y)	-0.00112	-0.00112	-0.00112
	(A2 * !B1 * !C1 * Y)	0.00133	0.00133	0.00133
	(A1 * !A2 * B1 * C1 * !Y)	-0.00111	-0.00112	-0.00122
	(A1 * !A2 * B1 * C1 * !Y)	0.00078	0.00078	0.00071
	(A1 * !A2 * B1 * !C1 * Y)	-0.00112	-0.00113	-0.00112
	(A1 * !A2 * B1 * !C1 * Y)	0.00126	0.00127	0.00126
	(A1 * !A2 * !B1 * C1 * Y)	-0.00112	-0.00113	-0.00112
	(A1 * !A2 * !B1 * C1 * Y)	0.00126	0.00127	0.00126
	(A1 * !A2 * !B1 * !C1 * Y)	-0.00112	-0.00112	-0.00112
	(A1 * !A2 * !B1 * !C1 * Y)	0.00127	0.00128	0.00127
	(!A1 * !A2 * B1 * !C1 * Y)	-0.00096	-0.00104	-0.00104
	(!A1 * !A2 * B1 * !C1 * Y)	0.00136	0.00135	0.00135
	(!A1 * !A2 * !B1 * C1 * Y)	-0.00100	-0.00106	-0.00105
	(!A1 * !A2 * !B1 * C1 * Y)	0.00136	0.00136	0.00136
	(!A1 * !A2 * !B1 * !C1 * Y)	-0.00100	-0.00106	-0.00105
	(!A1 * !A2 * !B1 * !C1 * Y)	0.00136	0.00136	0.00136

sky130_fd_sc_hs__o311ai_2	**(A2 * B1 * C1 * !Y)**	-0.00242	-0.00243	-0.00253
	(A2 * B1 * C1 * !Y)	0.00154	0.00153	0.00145
	(A2 * B1 * !C1 * Y)	-0.00223	-0.00223	-0.00224
	(A2 * B1 * !C1 * Y)	0.00275	0.00275	0.00277
	(A2 * !B1 * C1 * Y)	-0.00224	-0.00223	-0.00224
	(A2 * !B1 * C1 * Y)	0.00276	0.00275	0.00277
	(A2 * !B1 * !C1 * Y)	-0.00224	-0.00225	-0.00224
	(A2 * !B1 * !C1 * Y)	0.00277	0.00279	0.00277
	(A1 * !A2 * B1 * C1 * !Y)	-0.00222	-0.00223	-0.00248
	(A1 * !A2 * B1 * C1 * !Y)	0.00165	0.00165	0.00147
	(A1 * !A2 * B1 * !C1 * Y)	-0.00223	-0.00226	-0.00224
	(A1 * !A2 * B1 * !C1 * Y)	0.00262	0.00266	0.00263
	(A1 * !A2 * !B1 * C1 * Y)	-0.00223	-0.00226	-0.00224
	(A1 * !A2 * !B1 * C1 * Y)	0.00262	0.00266	0.00263
	(A1 * !A2 * !B1 * !C1 * Y)	-0.00223	-0.00225	-0.00224
	(A1 * !A2 * !B1 * !C1 * Y)	0.00264	0.00266	0.00265
	(!A1 * !A2 * B1 * !C1 * Y)	-0.00189	-0.00208	-0.00207
	(!A1 * !A2 * B1 * !C1 * Y)	0.00282	0.00283	0.00282
	(!A1 * !A2 * !B1 * C1 * Y)	-0.00197	-0.00211	-0.00210
	(!A1 * !A2 * !B1 * C1 * Y)	0.00283	0.00283	0.00282
	(!A1 * !A2 * !B1 * !C1 * Y)	-0.00197	-0.00211	-0.00210
	(!A1 * !A2 * !B1 * !C1 * Y)	0.00283	0.00283	0.00282

sky130_fd_sc_hs__o311ai_4	**(A2 * B1 * C1 * !Y)**	-0.00488	-0.00490	-0.00513
	(A2 * B1 * C1 * !Y)	0.00309	0.00308	0.00289
	(A2 * B1 * !C1 * Y)	-0.00430	-0.00430	-0.00429
	(A2 * B1 * !C1 * Y)	0.00577	0.00578	0.00577
	(A2 * !B1 * C1 * Y)	-0.00431	-0.00431	-0.00429
	(A2 * !B1 * C1 * Y)	0.00578	0.00580	0.00577
	(A2 * !B1 * !C1 * Y)	-0.00428	-0.00431	-0.00429
	(A2 * !B1 * !C1 * Y)	0.00575	0.00581	0.00578
	(A1 * !A2 * B1 * C1 * !Y)	-0.00457	-0.00459	-0.00507
	(A1 * !A2 * B1 * C1 * !Y)	0.00325	0.00324	0.00289
	(A1 * !A2 * B1 * !C1 * Y)	-0.00430	-0.00431	-0.00430
	(A1 * !A2 * B1 * !C1 * Y)	0.00542	0.00542	0.00541
	(A1 * !A2 * !B1 * C1 * Y)	-0.00429	-0.00431	-0.00430
	(A1 * !A2 * !B1 * C1 * Y)	0.00539	0.00543	0.00541
	(A1 * !A2 * !B1 * !C1 * Y)	-0.00429	-0.00432	-0.00430
	(A1 * !A2 * !B1 * !C1 * Y)	0.00545	0.00551	0.00548
	(!A1 * !A2 * B1 * !C1 * Y)	-0.00368	-0.00397	-0.00396
	(!A1 * !A2 * B1 * !C1 * Y)	0.00591	0.00593	0.00591
	(!A1 * !A2 * !B1 * C1 * Y)	-0.00381	-0.00403	-0.00402
	(!A1 * !A2 * !B1 * C1 * Y)	0.00592	0.00595	0.00591
	(!A1 * !A2 * !B1 * !C1 * Y)	-0.00381	-0.00403	-0.00401
	(!A1 * !A2 * !B1 * !C1 * Y)	0.00592	0.00593	0.00591

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

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

sky130_fd_sc_hs__o311ai_1	**(A3 * !C1 * Y)**	0.00104	0.00106	0.00105
	(A3 * !C1 * Y)	-0.00144	-0.00145	-0.00144
	(A2 * !A3 * !C1 * Y)	0.00104	0.00106	0.00105
	(A2 * !A3 * !C1 * Y)	-0.00144	-0.00145	-0.00144
	(A1 * !A2 * !A3 * !C1 * Y)	0.00104	0.00105	0.00105
	(A1 * !A2 * !A3 * !C1 * Y)	-0.00144	-0.00145	-0.00144
	(!A1 * !A2 * !A3 * C1 * Y)	0.00050	0.00050	0.00050
	(!A1 * !A2 * !A3 * C1 * Y)	-0.00145	-0.00145	-0.00144
	(!A1 * !A2 * !A3 * !C1 * Y)	0.00061	0.00062	0.00061
	(!A1 * !A2 * !A3 * !C1 * Y)	-0.00145	-0.00146	-0.00145
sky130_fd_sc_hs__o311ai_2	**(A3 * !C1 * Y)**	0.00217	0.00221	0.00219
	(A3 * !C1 * Y)	-0.00283	-0.00286	-0.00284
	(A2 * !A3 * !C1 * Y)	0.00219	0.00220	0.00219
	(A2 * !A3 * !C1 * Y)	-0.00284	-0.00285	-0.00284
	(A1 * !A2 * !A3 * !C1 * Y)	0.00218	0.00220	0.00218
	(A1 * !A2 * !A3 * !C1 * Y)	-0.00283	-0.00285	-0.00284
	(!A1 * !A2 * !A3 * C1 * Y)	0.00103	0.00104	0.00104
	(!A1 * !A2 * !A3 * C1 * Y)	-0.00284	-0.00286	-0.00283
	(!A1 * !A2 * !A3 * !C1 * Y)	0.00129	0.00130	0.00129
	(!A1 * !A2 * !A3 * !C1 * Y)	-0.00287	-0.00288	-0.00286
sky130_fd_sc_hs__o311ai_4	**(A3 * !C1 * Y)**	0.00408	0.00410	0.00408
	(A3 * !C1 * Y)	-0.00326	-0.00326	-0.00325
	(A2 * !A3 * !C1 * Y)	0.00406	0.00407	0.00408
	(A2 * !A3 * !C1 * Y)	-0.00325	-0.00325	-0.00325
	(A1 * !A2 * !A3 * !C1 * Y)	0.00406	0.00411	0.00408
	(A1 * !A2 * !A3 * !C1 * Y)	-0.00324	-0.00327	-0.00325
	(!A1 * !A2 * !A3 * C1 * Y)	0.00186	0.00188	0.00188
	(!A1 * !A2 * !A3 * C1 * Y)	-0.00328	-0.00329	-0.00326
	(!A1 * !A2 * !A3 * !C1 * Y)	0.00234	0.00236	0.00234
	(!A1 * !A2 * !A3 * !C1 * Y)	-0.00334	-0.00335	-0.00334

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__o311ai_1	(A3 * !C1 * Y)	-0.00098	-0.00105	-0.00105
	(A3 * !C1 * Y)	0.00148	0.00147	0.00145
	(A2 * !A3 * !C1 * Y)	-0.00097	-0.00105	-0.00105
	(A2 * !A3 * !C1 * Y)	0.00148	0.00147	0.00145
	(A1 * !A2 * !A3 * !C1 * Y)	-0.00097	-0.00105	-0.00105
	(A1 * !A2 * !A3 * !C1 * Y)	0.00151	0.00147	0.00145
	(!A1 * !A2 * !A3 * C1 * Y)	-0.00046	-0.00046	-0.00047
	(!A1 * !A2 * !A3 * C1 * Y)	0.00148	0.00148	0.00146
	(!A1 * !A2 * !A3 * !C1 * Y)	-0.00061	-0.00062	-0.00061
	(!A1 * !A2 * !A3 * !C1 * Y)	0.00154	0.00154	0.00147
sky130_fd_sc_hs__o311ai_2	(A3 * !C1 * Y)	-0.00205	-0.00220	-0.00219
	(A3 * !C1 * Y)	0.00290	0.00288	0.00285
	(A2 * !A3 * !C1 * Y)	-0.00204	-0.00220	-0.00219
	(A2 * !A3 * !C1 * Y)	0.00291	0.00288	0.00285
	(A1 * !A2 * !A3 * !C1 * Y)	-0.00201	-0.00220	-0.00218
	(A1 * !A2 * !A3 * !C1 * Y)	0.00293	0.00288	0.00285
	(!A1 * !A2 * !A3 * C1 * Y)	-0.00098	-0.00099	-0.00100
	(!A1 * !A2 * !A3 * C1 * Y)	0.00294	0.00297	0.00287
	(!A1 * !A2 * !A3 * !C1 * Y)	-0.00129	-0.00130	-0.00129
	(!A1 * !A2 * !A3 * !C1 * Y)	0.00299	0.00297	0.00288

sky130_fd_sc_hs__o311ai_4	**(A3 * !C1 * Y)**	-0.00374	-0.00410	-0.00408
	(A3 * !C1 * Y)	0.00345	0.00330	0.00326
	(A2 * !A3 * !C1 * Y)	-0.00370	-0.00407	-0.00408
	(A2 * !A3 * !C1 * Y)	0.00350	0.00329	0.00326
	(A1 * !A2 * !A3 * !C1 * Y)	-0.00365	-0.00411	-0.00408
	(A1 * !A2 * !A3 * !C1 * Y)	0.00356	0.00329	0.00326
	(!A1 * !A2 * !A3 * C1 * Y)	-0.00175	-0.00173	-0.00179
	(!A1 * !A2 * !A3 * C1 * Y)	0.00346	0.00343	0.00333
	(!A1 * !A2 * !A3 * !C1 * Y)	-0.00234	-0.00236	-0.00234
	(!A1 * !A2 * !A3 * !C1 * Y)	0.00365	0.00358	0.00337

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__o311ai_1	(A3 * !B1 * Y)	0.00044	0.00044	0.00042
	(A3 * !B1 * Y)	-0.00169	-0.00170	-0.00171
	(A2 * !A3 * !B1 * Y)	0.00044	0.00044	0.00042
	(A2 * !A3 * !B1 * Y)	-0.00168	-0.00170	-0.00171
	(!A2 * !A3 * !B1 * Y)	0.00044	0.00044	0.00042
	(!A2 * !A3 * !B1 * Y)	-0.00169	-0.00170	-0.00171
	(!A1 * !A2 * !A3 * B1 * Y)	0.00048	0.00048	0.00042
	(!A1 * !A2 * !A3 * B1 * Y)	-0.00160	-0.00161	-0.00170
sky130_fd_sc_hs__o311ai_2	(A3 * !B1 * Y)	0.00086	0.00086	0.00082
	(A3 * !B1 * Y)	-0.00331	-0.00332	-0.00337
	(A2 * !A3 * !B1 * Y)	0.00085	0.00086	0.00082
	(A2 * !A3 * !B1 * Y)	-0.00329	-0.00332	-0.00337
	(!A2 * !A3 * !B1 * Y)	0.00085	0.00086	0.00082
	(!A2 * !A3 * !B1 * Y)	-0.00328	-0.00332	-0.00337
	(!A1 * !A2 * !A3 * B1 * Y)	0.00090	0.00091	0.00079
	(!A1 * !A2 * !A3 * B1 * Y)	-0.00310	-0.00314	-0.00334
sky130_fd_sc_hs__o311ai_4	(A3 * !B1 * Y)	0.00160	0.00160	0.00152
	(A3 * !B1 * Y)	-0.00366	-0.00369	-0.00380
	(A2 * !A3 * !B1 * Y)	0.00159	0.00159	0.00152
	(A2 * !A3 * !B1 * Y)	-0.00365	-0.00368	-0.00380
	(!A2 * !A3 * !B1 * Y)	0.00159	0.00159	0.00152
	(!A2 * !A3 * !B1 * Y)	-0.00365	-0.00367	-0.00380
	(!A1 * !A2 * !A3 * B1 * Y)	0.00169	0.00170	0.00149
	(!A1 * !A2 * !A3 * B1 * Y)	-0.00329	-0.00333	-0.00373

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__o311ai_1	(A3 * !B1 * Y)	-0.00041	-0.00042	-0.00041
	(A3 * !B1 * Y)	0.00171	0.00173	0.00172
	(A2 * !A3 * !B1 * Y)	-0.00042	-0.00042	-0.00041
	(A2 * !A3 * !B1 * Y)	0.00172	0.00172	0.00172
	(!A2 * !A3 * !B1 * Y)	-0.00042	-0.00042	-0.00041
	(!A2 * !A3 * !B1 * Y)	0.00172	0.00172	0.00172
	(!A1 * !A2 * !A3 * B1 * Y)	-0.00041	-0.00041	-0.00040
	(!A1 * !A2 * !A3 * B1 * Y)	0.00172	0.00172	0.00172
sky130_fd_sc_hs__o311ai_2	(A3 * !B1 * Y)	-0.00080	-0.00080	-0.00079
	(A3 * !B1 * Y)	0.00339	0.00340	0.00338
	(A2 * !A3 * !B1 * Y)	-0.00080	-0.00080	-0.00079
	(A2 * !A3 * !B1 * Y)	0.00339	0.00339	0.00338
	(!A2 * !A3 * !B1 * Y)	-0.00080	-0.00079	-0.00079
	(!A2 * !A3 * !B1 * Y)	0.00339	0.00339	0.00338
	(!A1 * !A2 * !A3 * B1 * Y)	-0.00078	-0.00077	-0.00077
	(!A1 * !A2 * !A3 * B1 * Y)	0.00338	0.00339	0.00338
sky130_fd_sc_hs__o311ai_4	(A3 * !B1 * Y)	-0.00149	-0.00148	-0.00147
	(A3 * !B1 * Y)	0.00381	0.00383	0.00380
	(A2 * !A3 * !B1 * Y)	-0.00149	-0.00148	-0.00147
	(A2 * !A3 * !B1 * Y)	0.00382	0.00381	0.00380
	(!A2 * !A3 * !B1 * Y)	-0.00149	-0.00150	-0.00147
	(!A2 * !A3 * !B1 * Y)	0.00382	0.00386	0.00380
	(!A1 * !A2 * !A3 * B1 * Y)	-0.00145	-0.00143	-0.00142
	(!A1 * !A2 * !A3 * B1 * Y)	0.00381	0.00380	0.00379

SKY130_FD_SC_HS__O311Ax

sky130_fd_sc_hs_tt_1.50v_25C.ccs
Cell Library: Process , Voltage
1.50, 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	0.00249	0.00297	0.00256	0.00251	0.00257	0.86148
sky130_fd_sc_hs__o311a_2	0.00276	0.00277	0.00276	0.00273	0.00271	1.69181
sky130_fd_sc_hs__o311a_4	0.00457	0.00501	0.00463	0.00563	0.00487	3.26954

Leakage Information

Cell Name	Leakage(nW)		
	Min.	Avg	Max.
sky130_fd_sc_hs__o311a_1	0.00000	0.06418	0.22756
sky130_fd_sc_hs__o311a_2	0.00000	0.08530	0.18765
sky130_fd_sc_hs__o311a_4	0.00000	0.17686	0.46443

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)	0.15570	0.81820	7.14975
	A2->X (RR)	0.15179	0.80980	7.10066
	A3->X (RR)	0.13804	0.78185	7.02393
	B1->X (RR)	0.14432	0.82158	7.21934
	C1->X (RR)	0.13701	0.81330	7.13272
sky130_fd_sc_hs__o311a_2	A1->X (RR)	0.15906	0.71142	7.15615
	A2->X (RR)	0.15139	0.69736	7.09004
	A3->X (RR)	0.13196	0.67188	7.02343
	B1->X (RR)	0.15148	0.73628	7.27455
	C1->X (RR)	0.14252	0.73094	7.20112
sky130_fd_sc_hs__o311a_4	A1->X (RR)	0.17058	0.64994	7.18052
	A2->X (RR)	0.15961	0.63122	7.11089
	A3->X (RR)	0.14484	0.61097	7.06213
	B1->X (RR)	0.16369	0.67633	7.30389
	C1->X (RR)	0.15002	0.66138	7.21128

Delay(ns) to X falling :

Cell Name	Timing Arc(Dir)	Delay(ns)		
		First	Mid	Last
sky130_fd_sc_hs__o311a_1	A1->X (FF)	0.41373	0.98552	5.27813
	A2->X (FF)	0.39983	0.98493	5.39921
	A3->X (FF)	0.33276	0.90403	5.09358
	B1->X (FF)	0.10879	0.65724	4.61288
	C1->X (FF)	0.09909	0.63441	4.55070
sky130_fd_sc_hs__o311a_2	A1->X (FF)	0.42650	0.98653	5.56169
	A2->X (FF)	0.40403	0.98130	5.69720
	A3->X (FF)	0.36412	0.92827	5.44462
	B1->X (FF)	0.13242	0.67606	4.88714
	C1->X (FF)	0.11987	0.65282	4.80901
sky130_fd_sc_hs__o311a_4	A1->X (FF)	0.49375	1.02887	5.60926
	A2->X (FF)	0.47313	1.01668	5.72353
	A3->X (FF)	0.40511	0.92959	5.43116
	B1->X (FF)	0.12182	0.61677	4.80567
	C1->X (FF)	0.10790	0.59098	4.74020

Power Information

Internal switching power(pJ) to X rising :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__o311a_1	A1	0.01121	0.01105	0.01229
	A1	0.00501	0.00501	0.00616
	A2	0.01009	0.01000	0.01144
	A2	0.00436	0.00428	0.00576
	A3	0.00823	0.00819	0.01086
	A3	0.00329	0.00325	0.00595
	B1	0.01020	0.01009	0.01372
	B1	0.00504	0.00493	0.00863
	C1	0.00963	0.00955	0.01438
	C1	0.00501	0.00495	0.00982
sky130_fd_sc_hs__o311a_2	A1	0.01310	0.01302	0.01416
	A1	0.00640	0.00632	0.00756
	A2	0.01167	0.01190	0.01338
	A2	0.00567	0.00590	0.00748
	A3	0.01032	0.01055	0.01279
	A3	0.00501	0.00524	0.00755
	B1	0.01205	0.01201	0.01521
	B1	0.00657	0.00653	0.00987
	C1	0.01136	0.01135	0.01560
	C1	0.00655	0.00654	0.01093

sky130_fd_sc_hs__o311a_4	**A1**	0.02491	0.02534	0.02854
	A1	0.01327	0.01372	0.01709
	A2	0.02266	0.02314	0.02652
	A2	0.01190	0.01293	0.01599
	A3	0.01900	0.01951	0.02554
	A3	0.00964	0.01017	0.01634
	B1	0.02348	0.02382	0.03019
	B1	0.01324	0.01359	0.02020
	C1	0.02167	0.02207	0.03153
	C1	0.01326	0.01368	0.02340

Internal switching power(pJ) to X falling :

Cell Name	**Input**	**Power(pJ)**		
		first	**mid**	**last**
sky130_fd_sc_hs__o311a_1	**A1**	0.00374	0.00365	0.00534
	A1	0.00983	0.00974	0.01104
	A2	0.00378	0.00367	0.00612
	A2	0.00937	0.00925	0.01109
	A3	0.00377	0.00396	0.00865
	A3	0.00855	0.00875	0.01312
	B1	0.00262	0.00290	0.00922
	B1	0.00782	0.00806	0.01390
	C1	0.00230	0.00252	0.00914
	C1	0.00699	0.00720	0.01321

sky130_fd_sc_hs__o311a_2	**A1**	0.00535	0.00533	0.00684
	A1	0.01193	0.01200	0.01334
	A2	0.00540	0.00536	0.00836
	A2	0.01123	0.01132	0.01322
	A3	0.00537	0.00565	0.01070
	A3	0.01049	0.01077	0.01476
	B1	0.00467	0.00512	0.01194
	B1	0.01016	0.01057	0.01640
	C1	0.00421	0.00478	0.01101
	C1	0.00911	0.00953	0.01541
sky130_fd_sc_hs__o311a_4	**A1**	0.01139	0.01162	0.01613
	A1	0.02278	0.02304	0.02586
	A2	0.01122	0.01122	0.01672
	A2	0.02165	0.02190	0.02578
	A3	0.01135	0.01148	0.02087
	A3	0.02033	0.02080	0.02978
	B1	0.00906	0.00985	0.02237
	B1	0.01937	0.02013	0.03165
	C1	0.00823	0.00927	0.02205
	C1	0.01679	0.01784	0.02993

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)**	0.00102	0.00101	0.00102
	(A2 * B1 * !C1 * !X)	-0.00134	-0.00136	-0.00136
	(A2 * A3 * B1 * C1 * X)	0.00119	0.00118	0.00118
	(A2 * A3 * B1 * C1 * X)	-0.00117	-0.00119	-0.00120
	(A2 * !B1 * !X)	0.00102	0.00101	0.00102
	(A2 * !B1 * !X)	-0.00134	-0.00136	-0.00136
	(A2 * !A3 * B1 * C1 * X)	0.00119	0.00118	0.00118
	(A2 * !A3 * B1 * C1 * X)	-0.00115	-0.00119	-0.00120
	(!A2 * A3 * B1 * C1 * X)	0.00120	0.00120	0.00118
	(!A2 * A3 * B1 * C1 * X)	-0.00108	-0.00116	-0.00116
	(!A2 * A3 * B1 * !C1 * !X)	0.00102	0.00103	0.00102
	(!A2 * A3 * B1 * !C1 * !X)	-0.00126	-0.00133	-0.00132
	(!A2 * A3 * !B1 * !X)	0.00102	0.00103	0.00102
	(!A2 * A3 * !B1 * !X)	-0.00126	-0.00133	-0.00132
	(!A2 * !A3 * B1 * !C1 * !X)	0.00096	0.00096	0.00096
	(!A2 * !A3 * B1 * !C1 * !X)	-0.00138	-0.00138	-0.00138
	(!A2 * !A3 * !B1 * C1 * !X)	0.00098	0.00099	0.00098
	(!A2 * !A3 * !B1 * C1 * !X)	-0.00138	-0.00138	-0.00138
	(!A2 * !A3 * !B1 * !C1 * !X)	0.00098	0.00099	0.00098
	(!A2 * !A3 * !B1 * !C1 * !X)	-0.00138	-0.00138	-0.00138

sky130_fd_sc_hs__o311a_2	**(A2 * B1 * !C1 * !X)**	0.00108	0.00108	0.00108
	(A2 * B1 * !C1 * !X)	-0.00146	-0.00150	-0.00150
	(A2 * A3 * B1 * C1 * X)	0.00122	0.00122	0.00122
	(A2 * A3 * B1 * C1 * X)	-0.00132	-0.00135	-0.00136
	(A2 * !B1 * !X)	0.00108	0.00108	0.00108
	(A2 * !B1 * !X)	-0.00146	-0.00150	-0.00150
	(A2 * !A3 * B1 * C1 * X)	0.00123	0.00122	0.00122
	(A2 * !A3 * B1 * C1 * X)	-0.00130	-0.00135	-0.00136
	(!A2 * A3 * B1 * C1 * X)	0.00123	0.00124	0.00122
	(!A2 * A3 * B1 * C1 * X)	-0.00121	-0.00131	-0.00131
	(!A2 * A3 * B1 * !C1 * !X)	0.00108	0.00109	0.00108
	(!A2 * A3 * B1 * !C1 * !X)	-0.00136	-0.00146	-0.00145
	(!A2 * A3 * !B1 * !X)	0.00108	0.00109	0.00108
	(!A2 * A3 * !B1 * !X)	-0.00137	-0.00146	-0.00145
	(!A2 * !A3 * B1 * !C1 * !X)	0.00100	0.00100	0.00100
	(!A2 * !A3 * B1 * !C1 * !X)	-0.00152	-0.00152	-0.00152
	(!A2 * !A3 * !B1 * C1 * !X)	0.00101	0.00102	0.00101
	(!A2 * !A3 * !B1 * C1 * !X)	-0.00152	-0.00153	-0.00152
	(!A2 * !A3 * !B1 * !C1 * !X)	0.00101	0.00102	0.00102
	(!A2 * !A3 * !B1 * !C1 * !X)	-0.00152	-0.00153	-0.00152

sky130_fd_sc_hs__o311a_4	**(A2 * B1 * !C1 * !X)**	0.00184	0.00186	0.00185
	(A2 * B1 * !C1 * !X)	-0.00243	-0.00251	-0.00250
	(A2 * A3 * B1 * C1 * X)	0.00185	0.00186	0.00185
	(A2 * A3 * B1 * C1 * X)	-0.00243	-0.00251	-0.00250
	(A2 * !B1 * !X)	0.00184	0.00186	0.00185
	(A2 * !B1 * !X)	-0.00243	-0.00251	-0.00250
	(A2 * !A3 * B1 * C1 * X)	0.00186	0.00186	0.00185
	(A2 * !A3 * B1 * C1 * X)	-0.00239	-0.00250	-0.00250
	(!A2 * A3 * B1 * C1 * X)	0.00190	0.00186	0.00185
	(!A2 * A3 * B1 * C1 * X)	-0.00224	-0.00242	-0.00241
	(!A2 * A3 * B1 * !C1 * !X)	0.00185	0.00185	0.00185
	(!A2 * A3 * B1 * !C1 * !X)	-0.00227	-0.00242	-0.00241
	(!A2 * A3 * !B1 * !X)	0.00186	0.00185	0.00185
	(!A2 * A3 * !B1 * !X)	-0.00227	-0.00242	-0.00241
	(!A2 * !A3 * B1 * !C1 * !X)	0.00172	0.00174	0.00172
	(!A2 * !A3 * B1 * !C1 * !X)	-0.00255	-0.00256	-0.00254
	(!A2 * !A3 * !B1 * C1 * !X)	0.00175	0.00175	0.00174
	(!A2 * !A3 * !B1 * C1 * !X)	-0.00256	-0.00255	-0.00255
	(!A2 * !A3 * !B1 * !C1 * !X)	0.00175	0.00176	0.00174
	(!A2 * !A3 * !B1 * !C1 * !X)	-0.00256	-0.00256	-0.00255

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)**	-0.00101	-0.00101	-0.00101
	(A2 * B1 * !C1 * !X)	0.00136	0.00137	0.00136
	(A2 * A3 * B1 * C1 * X)	-0.00118	-0.00118	-0.00118
	(A2 * A3 * B1 * C1 * X)	0.00119	0.00121	0.00120
	(A2 * !B1 * !X)	-0.00101	-0.00101	-0.00101
	(A2 * !B1 * !X)	0.00136	0.00137	0.00136
	(A2 * !A3 * B1 * C1 * X)	-0.00118	-0.00118	-0.00118
	(A2 * !A3 * B1 * C1 * X)	0.00119	0.00121	0.00120
	(!A2 * A3 * B1 * C1 * X)	-0.00118	-0.00118	-0.00118
	(!A2 * A3 * B1 * C1 * X)	0.00116	0.00116	0.00116
	(!A2 * A3 * B1 * !C1 * !X)	-0.00102	-0.00102	-0.00101
	(!A2 * A3 * B1 * !C1 * !X)	0.00132	0.00133	0.00132
	(!A2 * A3 * !B1 * !X)	-0.00102	-0.00102	-0.00101
	(!A2 * A3 * !B1 * !X)	0.00132	0.00133	0.00132
	(!A2 * !A3 * B1 * !C1 * !X)	-0.00091	-0.00096	-0.00096
	(!A2 * !A3 * B1 * !C1 * !X)	0.00139	0.00140	0.00138
	(!A2 * !A3 * !B1 * C1 * !X)	-0.00094	-0.00099	-0.00098
	(!A2 * !A3 * !B1 * C1 * !X)	0.00138	0.00140	0.00138
	(!A2 * !A3 * !B1 * !C1 * !X)	-0.00094	-0.00099	-0.00098
	(!A2 * !A3 * !B1 * !C1 * !X)	0.00138	0.00140	0.00138

sky130_fd_sc_hs__o311a_2	**(A2 * B1 * !C1 * !X)**	-0.00108	-0.00108	-0.00108
	(A2 * B1 * !C1 * !X)	0.00150	0.00150	0.00150
	(A2 * A3 * B1 * C1 * X)	-0.00122	-0.00122	-0.00122
	(A2 * A3 * B1 * C1 * X)	0.00136	0.00137	0.00136
	(A2 * !B1 * !X)	-0.00108	-0.00108	-0.00108
	(A2 * !B1 * !X)	0.00150	0.00150	0.00150
	(A2 * !A3 * B1 * C1 * X)	-0.00122	-0.00122	-0.00122
	(A2 * !A3 * B1 * C1 * X)	0.00136	0.00137	0.00136
	(!A2 * A3 * B1 * C1 * X)	-0.00122	-0.00122	-0.00122
	(!A2 * A3 * B1 * C1 * X)	0.00130	0.00131	0.00131
	(!A2 * A3 * B1 * !C1 * !X)	-0.00108	-0.00108	-0.00108
	(!A2 * A3 * B1 * !C1 * !X)	0.00144	0.00146	0.00145
	(!A2 * A3 * !B1 * !X)	-0.00108	-0.00108	-0.00108
	(!A2 * A3 * !B1 * !X)	0.00144	0.00146	0.00145
	(!A2 * !A3 * B1 * !C1 * !X)	-0.00093	-0.00100	-0.00100
	(!A2 * !A3 * B1 * !C1 * !X)	0.00152	0.00154	0.00152
	(!A2 * !A3 * !B1 * C1 * !X)	-0.00096	-0.00102	-0.00101
	(!A2 * !A3 * !B1 * C1 * !X)	0.00154	0.00154	0.00153
	(!A2 * !A3 * !B1 * !C1 * !X)	-0.00096	-0.00102	-0.00102
	(!A2 * !A3 * !B1 * !C1 * !X)	0.00154	0.00154	0.00153

sky130_fd_sc_hs__o311a_4	**(A2 * B1 * !C1 * !X)**	-0.00184	-0.00185	-0.00184
	(A2 * B1 * !C1 * !X)	0.00250	0.00252	0.00250
	(A2 * A3 * B1 * C1 * X)	-0.00184	-0.00185	-0.00184
	(A2 * A3 * B1 * C1 * X)	0.00250	0.00252	0.00250
	(A2 * !B1 * !X)	-0.00184	-0.00185	-0.00184
	(A2 * !B1 * !X)	0.00250	0.00252	0.00250
	(A2 * !A3 * B1 * C1 * X)	-0.00184	-0.00185	-0.00184
	(A2 * !A3 * B1 * C1 * X)	0.00250	0.00252	0.00250
	(!A2 * A3 * B1 * C1 * X)	-0.00184	-0.00184	-0.00184
	(!A2 * A3 * B1 * C1 * X)	0.00242	0.00242	0.00241
	(!A2 * A3 * B1 * !C1 * !X)	-0.00185	-0.00185	-0.00184
	(!A2 * A3 * B1 * !C1 * !X)	0.00241	0.00242	0.00241
	(!A2 * A3 * !B1 * !X)	-0.00184	-0.00185	-0.00184
	(!A2 * A3 * !B1 * !X)	0.00240	0.00242	0.00241
	(!A2 * !A3 * B1 * !C1 * !X)	-0.00160	-0.00174	-0.00172
	(!A2 * !A3 * B1 * !C1 * !X)	0.00255	0.00258	0.00255
	(!A2 * !A3 * !B1 * C1 * !X)	-0.00166	-0.00175	-0.00174
	(!A2 * !A3 * !B1 * C1 * !X)	0.00256	0.00256	0.00255
	(!A2 * !A3 * !B1 * !C1 * !X)	-0.00166	-0.00176	-0.00174
	(!A2 * !A3 * !B1 * !C1 * !X)	0.00256	0.00256	0.00255

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)**	0.00128	0.00130	0.00124
	(A1 * A3 * B1 * C1 * X)	-0.00088	-0.00089	-0.00088
	(A1 * A3 * B1 * !C1 * !X)	0.00102	0.00103	0.00102
	(A1 * A3 * B1 * !C1 * !X)	-0.00117	-0.00117	-0.00116
	(A1 * A3 * !B1 * !X)	0.00102	0.00103	0.00102
	(A1 * A3 * !B1 * !X)	-0.00116	-0.00117	-0.00116
	(A1 * !A3 * B1 * C1 * X)	0.00123	0.00125	0.00122
	(A1 * !A3 * B1 * C1 * X)	-0.00076	-0.00076	-0.00075
	(A1 * !A3 * B1 * !C1 * !X)	0.00103	0.00102	0.00102
	(A1 * !A3 * B1 * !C1 * !X)	-0.00144	-0.00145	-0.00144
	(A1 * !A3 * !B1 * C1 * !X)	0.00103	0.00102	0.00102
	(A1 * !A3 * !B1 * C1 * !X)	-0.00144	-0.00145	-0.00144
	(A1 * !A3 * !B1 * !C1 * !X)	0.00103	0.00103	0.00102
	(A1 * !A3 * !B1 * !C1 * !X)	-0.00144	-0.00145	-0.00144
	(!A1 * A3 * B1 * C1 * X)	0.00141	0.00123	0.00122
	(!A1 * A3 * B1 * C1 * X)	-0.00105	-0.00124	-0.00125
	(!A1 * A3 * B1 * !C1 * !X)	0.00102	0.00102	0.00102
	(!A1 * A3 * B1 * !C1 * !X)	-0.00142	-0.00145	-0.00144
	(!A1 * A3 * !B1 * !X)	0.00102	0.00102	0.00102
	(!A1 * A3 * !B1 * !X)	-0.00142	-0.00145	-0.00144
	(!A1 * !A3 * B1 * !C1 * !X)	0.00096	0.00097	0.00096
	(!A1 * !A3 * B1 * !C1 * !X)	-0.00146	-0.00147	-0.00147
	(!A1 * !A3 * !B1 * C1 * !X)	0.00098	0.00098	0.00098
	(!A1 * !A3 * !B1 * C1 * !X)	-0.00146	-0.00147	-0.00147
	(!A1 * !A3 * !B1 * !C1 * !X)	0.00098	0.00099	0.00098
	(!A1 * !A3 * !B1 * !C1 * !X)	-0.00146	-0.00147	-0.00147

sky130_fd_sc_hs__o311a_2	**(A1 * A3 * B1 * C1 * X)**	0.00121	0.00122	0.00115
	(A1 * A3 * B1 * C1 * X)	-0.00095	-0.00096	-0.00095
	(A1 * A3 * B1 * !C1 * !X)	0.00108	0.00110	0.00108
	(A1 * A3 * B1 * !C1 * !X)	-0.00106	-0.00107	-0.00106
	(A1 * A3 * !B1 * !X)	0.00108	0.00110	0.00108
	(A1 * A3 * !B1 * !X)	-0.00106	-0.00107	-0.00106
	(A1 * !A3 * B1 * C1 * X)	0.00113	0.00115	0.00113
	(A1 * !A3 * B1 * C1 * X)	-0.00082	-0.00084	-0.00083
	(A1 * !A3 * B1 * !C1 * !X)	0.00109	0.00109	0.00108
	(A1 * !A3 * B1 * !C1 * !X)	-0.00141	-0.00142	-0.00142
	(A1 * !A3 * !B1 * C1 * !X)	0.00109	0.00109	0.00108
	(A1 * !A3 * !B1 * C1 * !X)	-0.00141	-0.00142	-0.00142
	(A1 * !A3 * !B1 * !C1 * !X)	0.00109	0.00108	0.00108
	(A1 * !A3 * !B1 * !C1 * !X)	-0.00141	-0.00142	-0.00142
	(!A1 * A3 * B1 * C1 * X)	0.00134	0.00114	0.00113
	(!A1 * A3 * B1 * C1 * X)	-0.00117	-0.00138	-0.00139
	(!A1 * A3 * B1 * !C1 * !X)	0.00109	0.00109	0.00108
	(!A1 * A3 * B1 * !C1 * !X)	-0.00141	-0.00143	-0.00143
	(!A1 * A3 * !B1 * !X)	0.00109	0.00109	0.00108
	(!A1 * A3 * !B1 * !X)	-0.00141	-0.00143	-0.00143
	(!A1 * !A3 * B1 * !C1 * !X)	0.00100	0.00100	0.00100
	(!A1 * !A3 * B1 * !C1 * !X)	-0.00145	-0.00146	-0.00145
	(!A1 * !A3 * !B1 * C1 * !X)	0.00102	0.00102	0.00101
	(!A1 * !A3 * !B1 * C1 * !X)	-0.00146	-0.00146	-0.00146
	(!A1 * !A3 * !B1 * !C1 * !X)	0.00102	0.00102	0.00101
	(!A1 * !A3 * !B1 * !C1 * !X)	-0.00146	-0.00146	-0.00146

sky130_fd_sc_hs__o311a_4	**(A1 * A3 * B1 * C1 * X)**	0.00220	0.00227	0.00216
	(A1 * A3 * B1 * C1 * X)	-0.00177	-0.00179	-0.00178
	(A1 * A3 * B1 * !C1 * !X)	0.00215	0.00211	0.00213
	(A1 * A3 * B1 * !C1 * !X)	-0.00192	-0.00193	-0.00192
	(A1 * A3 * !B1 * !X)	0.00215	0.00211	0.00213
	(A1 * A3 * !B1 * !X)	-0.00192	-0.00193	-0.00192
	(A1 * !A3 * B1 * C1 * X)	0.00213	0.00217	0.00213
	(A1 * !A3 * B1 * C1 * X)	-0.00150	-0.00154	-0.00151
	(A1 * !A3 * B1 * !C1 * !X)	0.00213	0.00213	0.00213
	(A1 * !A3 * B1 * !C1 * !X)	-0.00244	-0.00249	-0.00248
	(A1 * !A3 * !B1 * C1 * !X)	0.00213	0.00213	0.00213
	(A1 * !A3 * !B1 * C1 * !X)	-0.00244	-0.00249	-0.00248
	(A1 * !A3 * !B1 * !C1 * !X)	0.00213	0.00213	0.00213
	(A1 * !A3 * !B1 * !C1 * !X)	-0.00244	-0.00249	-0.00248
	(!A1 * A3 * B1 * C1 * X)	0.00250	0.00216	0.00213
	(!A1 * A3 * B1 * C1 * X)	-0.00211	-0.00249	-0.00250
	(!A1 * A3 * B1 * !C1 * !X)	0.00215	0.00214	0.00213
	(!A1 * A3 * B1 * !C1 * !X)	-0.00244	-0.00249	-0.00249
	(!A1 * A3 * !B1 * !X)	0.00215	0.00214	0.00213
	(!A1 * A3 * !B1 * !X)	-0.00244	-0.00249	-0.00249
	(!A1 * !A3 * B1 * !C1 * !X)	0.00195	0.00197	0.00196
	(!A1 * !A3 * B1 * !C1 * !X)	-0.00252	-0.00254	-0.00253
	(!A1 * !A3 * !B1 * C1 * !X)	0.00199	0.00200	0.00199
	(!A1 * !A3 * !B1 * C1 * !X)	-0.00253	-0.00253	-0.00253
	(!A1 * !A3 * !B1 * !C1 * !X)	0.00200	0.00200	0.00199
	(!A1 * !A3 * !B1 * !C1 * !X)	-0.00253	-0.00253	-0.00253

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)**	-0.00122	-0.00122	-0.00122
	(A1 * A3 * B1 * C1 * X)	0.00088	0.00089	0.00088
	(A1 * A3 * B1 * !C1 * !X)	-0.00102	-0.00102	-0.00101
	(A1 * A3 * B1 * !C1 * !X)	0.00117	0.00117	0.00116
	(A1 * A3 * !B1 * !X)	-0.00101	-0.00102	-0.00101
	(A1 * A3 * !B1 * !X)	0.00116	0.00117	0.00116
	(A1 * !A3 * B1 * C1 * X)	-0.00121	-0.00121	-0.00119
	(A1 * !A3 * B1 * C1 * X)	0.00077	0.00078	0.00078
	(A1 * !A3 * B1 * !C1 * !X)	-0.00101	-0.00102	-0.00101
	(A1 * !A3 * B1 * !C1 * !X)	0.00144	0.00145	0.00144
	(A1 * !A3 * !B1 * C1 * !X)	-0.00102	-0.00102	-0.00101
	(A1 * !A3 * !B1 * C1 * !X)	0.00145	0.00145	0.00144
	(A1 * !A3 * !B1 * !C1 * !X)	-0.00102	-0.00102	-0.00101
	(A1 * !A3 * !B1 * !C1 * !X)	0.00145	0.00145	0.00144
	(!A1 * A3 * B1 * C1 * X)	-0.00121	-0.00121	-0.00121
	(!A1 * A3 * B1 * C1 * X)	0.00125	0.00125	0.00125
	(!A1 * A3 * B1 * !C1 * !X)	-0.00102	-0.00102	-0.00101
	(!A1 * A3 * B1 * !C1 * !X)	0.00145	0.00145	0.00144
	(!A1 * A3 * !B1 * !X)	-0.00102	-0.00102	-0.00101
	(!A1 * A3 * !B1 * !X)	0.00145	0.00145	0.00144
	(!A1 * !A3 * B1 * !C1 * !X)	-0.00090	-0.00097	-0.00096
	(!A1 * !A3 * B1 * !C1 * !X)	0.00147	0.00147	0.00147
	(!A1 * !A3 * !B1 * C1 * !X)	-0.00094	-0.00098	-0.00098
	(!A1 * !A3 * !B1 * C1 * !X)	0.00147	0.00147	0.00147
	(!A1 * !A3 * !B1 * !C1 * !X)	-0.00094	-0.00098	-0.00098
	(!A1 * !A3 * !B1 * !C1 * !X)	0.00147	0.00147	0.00147

sky130_fd_sc_hs__o311a_2	**(A1 * A3 * B1 * C1 * X)**	-0.00112	-0.00113	-0.00112
	(A1 * A3 * B1 * C1 * X)	0.00095	0.00096	0.00095
	(A1 * A3 * B1 * !C1 * !X)	-0.00108	-0.00108	-0.00108
	(A1 * A3 * B1 * !C1 * !X)	0.00106	0.00107	0.00106
	(A1 * A3 * !B1 * !X)	-0.00108	-0.00108	-0.00108
	(A1 * A3 * !B1 * !X)	0.00106	0.00107	0.00106
	(A1 * !A3 * B1 * C1 * X)	-0.00111	-0.00112	-0.00111
	(A1 * !A3 * B1 * C1 * X)	0.00085	0.00086	0.00086
	(A1 * !A3 * B1 * !C1 * !X)	-0.00108	-0.00108	-0.00108
	(A1 * !A3 * B1 * !C1 * !X)	0.00143	0.00142	0.00142
	(A1 * !A3 * !B1 * C1 * !X)	-0.00108	-0.00108	-0.00108
	(A1 * !A3 * !B1 * C1 * !X)	0.00142	0.00142	0.00142
	(A1 * !A3 * !B1 * !C1 * !X)	-0.00108	-0.00108	-0.00108
	(A1 * !A3 * !B1 * !C1 * !X)	0.00142	0.00142	0.00142
	(!A1 * A3 * B1 * C1 * X)	-0.00112	-0.00112	-0.00112
	(!A1 * A3 * B1 * C1 * X)	0.00138	0.00140	0.00139
	(!A1 * A3 * B1 * !C1 * !X)	-0.00107	-0.00108	-0.00108
	(!A1 * A3 * B1 * !C1 * !X)	0.00142	0.00143	0.00143
	(!A1 * A3 * !B1 * !X)	-0.00108	-0.00108	-0.00108
	(!A1 * A3 * !B1 * !X)	0.00142	0.00143	0.00143
	(!A1 * !A3 * B1 * !C1 * !X)	-0.00092	-0.00100	-0.00100
	(!A1 * !A3 * B1 * !C1 * !X)	0.00146	0.00147	0.00146
	(!A1 * !A3 * !B1 * C1 * !X)	-0.00096	-0.00102	-0.00101
	(!A1 * !A3 * !B1 * C1 * !X)	0.00147	0.00146	0.00146
	(!A1 * !A3 * !B1 * !C1 * !X)	-0.00096	-0.00102	-0.00101
	(!A1 * !A3 * !B1 * !C1 * !X)	0.00147	0.00146	0.00146

sky130_fd_sc_hs__o311a_4	**(A1 * A3 * B1 * C1 * X)**	-0.00211	-0.00213	-0.00212
	(A1 * A3 * B1 * C1 * X)	0.00177	0.00179	0.00178
	(A1 * A3 * B1 * !C1 * !X)	-0.00212	-0.00211	-0.00212
	(A1 * A3 * B1 * !C1 * !X)	0.00192	0.00193	0.00192
	(A1 * A3 * !B1 * !X)	-0.00212	-0.00211	-0.00212
	(A1 * A3 * !B1 * !X)	0.00192	0.00193	0.00192
	(A1 * !A3 * B1 * C1 * X)	-0.00209	-0.00210	-0.00207
	(A1 * !A3 * B1 * C1 * X)	0.00156	0.00157	0.00158
	(A1 * !A3 * B1 * !C1 * !X)	-0.00213	-0.00213	-0.00212
	(A1 * !A3 * B1 * !C1 * !X)	0.00249	0.00249	0.00248
	(A1 * !A3 * !B1 * C1 * !X)	-0.00211	-0.00213	-0.00212
	(A1 * !A3 * !B1 * C1 * !X)	0.00247	0.00249	0.00248
	(A1 * !A3 * !B1 * !C1 * !X)	-0.00211	-0.00213	-0.00212
	(A1 * !A3 * !B1 * !C1 * !X)	0.00247	0.00250	0.00248
	(!A1 * A3 * B1 * C1 * X)	-0.00212	-0.00212	-0.00210
	(!A1 * A3 * B1 * C1 * X)	0.00250	0.00250	0.00250
	(!A1 * A3 * B1 * !C1 * !X)	-0.00212	-0.00213	-0.00212
	(!A1 * A3 * B1 * !C1 * !X)	0.00249	0.00249	0.00249
	(!A1 * A3 * !B1 * !X)	-0.00211	-0.00213	-0.00212
	(!A1 * A3 * !B1 * !X)	0.00247	0.00249	0.00249
	(!A1 * !A3 * B1 * !C1 * !X)	-0.00182	-0.00197	-0.00196
	(!A1 * !A3 * B1 * !C1 * !X)	0.00253	0.00256	0.00254
	(!A1 * !A3 * !B1 * C1 * !X)	-0.00189	-0.00200	-0.00199
	(!A1 * !A3 * !B1 * C1 * !X)	0.00254	0.00254	0.00254
	(!A1 * !A3 * !B1 * !C1 * !X)	-0.00190	-0.00200	-0.00199
	(!A1 * !A3 * !B1 * !C1 * !X)	0.00254	0.00254	0.00254

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)**	0.00114	0.00115	0.00113
	(A2 * B1 * C1 * X)	-0.00069	-0.00070	-0.00069
	(A2 * B1 * !C1 * !X)	0.00100	0.00101	0.00101
	(A2 * B1 * !C1 * !X)	-0.00124	-0.00128	-0.00128
	(A2 * !B1 * C1 * !X)	0.00100	0.00101	0.00101
	(A2 * !B1 * C1 * !X)	-0.00124	-0.00128	-0.00128
	(A2 * !B1 * !C1 * !X)	0.00100	0.00101	0.00101
	(A2 * !B1 * !C1 * !X)	-0.00124	-0.00128	-0.00128
	(A1 * !A2 * B1 * C1 * X)	0.00115	0.00115	0.00113
	(A1 * !A2 * B1 * C1 * X)	-0.00070	-0.00070	-0.00069
	(A1 * !A2 * B1 * !C1 * !X)	0.00101	0.00101	0.00101
	(A1 * !A2 * B1 * !C1 * !X)	-0.00116	-0.00123	-0.00122
	(A1 * !A2 * !B1 * C1 * !X)	0.00101	0.00101	0.00101
	(A1 * !A2 * !B1 * C1 * !X)	-0.00116	-0.00123	-0.00122
	(A1 * !A2 * !B1 * !C1 * !X)	0.00101	0.00101	0.00101
	(A1 * !A2 * !B1 * !C1 * !X)	-0.00117	-0.00123	-0.00123
	(!A1 * !A2 * B1 * !C1 * !X)	0.00094	0.00096	0.00095
	(!A1 * !A2 * B1 * !C1 * !X)	-0.00129	-0.00131	-0.00130
	(!A1 * !A2 * !B1 * C1 * !X)	0.00097	0.00097	0.00096
	(!A1 * !A2 * !B1 * C1 * !X)	-0.00130	-0.00130	-0.00130
	(!A1 * !A2 * !B1 * !C1 * !X)	0.00097	0.00097	0.00096
	(!A1 * !A2 * !B1 * !C1 * !X)	-0.00130	-0.00130	-0.00130

sky130_fd_sc_hs__o311a_2	**(A2 * B1 * C1 * X)**	0.00124	0.00127	0.00125
	(A2 * B1 * C1 * X)	-0.00069	-0.00071	-0.00069
	(A2 * B1 * !C1 * !X)	0.00108	0.00109	0.00109
	(A2 * B1 * !C1 * !X)	-0.00135	-0.00139	-0.00138
	(A2 * !B1 * C1 * !X)	0.00108	0.00109	0.00109
	(A2 * !B1 * C1 * !X)	-0.00135	-0.00139	-0.00139
	(A2 * !B1 * !C1 * !X)	0.00108	0.00109	0.00108
	(A2 * !B1 * !C1 * !X)	-0.00135	-0.00139	-0.00139
	(A1 * !A2 * B1 * C1 * X)	0.00124	0.00127	0.00125
	(A1 * !A2 * B1 * C1 * X)	-0.00069	-0.00070	-0.00069
	(A1 * !A2 * B1 * !C1 * !X)	0.00108	0.00109	0.00108
	(A1 * !A2 * B1 * !C1 * !X)	-0.00124	-0.00132	-0.00132
	(A1 * !A2 * !B1 * C1 * !X)	0.00108	0.00109	0.00108
	(A1 * !A2 * !B1 * C1 * !X)	-0.00124	-0.00132	-0.00132
	(A1 * !A2 * !B1 * !C1 * !X)	0.00108	0.00109	0.00108
	(A1 * !A2 * !B1 * !C1 * !X)	-0.00125	-0.00133	-0.00133
	(!A1 * !A2 * B1 * !C1 * !X)	0.00100	0.00100	0.00100
	(!A1 * !A2 * B1 * !C1 * !X)	-0.00142	-0.00141	-0.00141
	(!A1 * !A2 * !B1 * C1 * !X)	0.00102	0.00102	0.00102
	(!A1 * !A2 * !B1 * C1 * !X)	-0.00142	-0.00142	-0.00142
	(!A1 * !A2 * !B1 * !C1 * !X)	0.00102	0.00102	0.00101
	(!A1 * !A2 * !B1 * !C1 * !X)	-0.00142	-0.00142	-0.00142

sky130_fd_sc_hs__o311a_4	**(A2 * B1 * C1 * X)**	0.00215	0.00219	0.00215
	(A2 * B1 * C1 * X)	-0.00136	-0.00138	-0.00136
	(A2 * B1 * !C1 * !X)	0.00188	0.00190	0.00188
	(A2 * B1 * !C1 * !X)	-0.00248	-0.00257	-0.00256
	(A2 * !B1 * C1 * !X)	0.00188	0.00190	0.00188
	(A2 * !B1 * C1 * !X)	-0.00248	-0.00257	-0.00256
	(A2 * !B1 * !C1 * !X)	0.00188	0.00189	0.00188
	(A2 * !B1 * !C1 * !X)	-0.00248	-0.00257	-0.00256
	(A1 * !A2 * B1 * C1 * X)	0.00215	0.00219	0.00215
	(A1 * !A2 * B1 * C1 * X)	-0.00136	-0.00138	-0.00136
	(A1 * !A2 * B1 * !C1 * !X)	0.00188	0.00189	0.00188
	(A1 * !A2 * B1 * !C1 * !X)	-0.00232	-0.00244	-0.00244
	(A1 * !A2 * !B1 * C1 * !X)	0.00188	0.00189	0.00188
	(A1 * !A2 * !B1 * C1 * !X)	-0.00232	-0.00244	-0.00244
	(A1 * !A2 * !B1 * !C1 * !X)	0.00188	0.00189	0.00188
	(A1 * !A2 * !B1 * !C1 * !X)	-0.00232	-0.00246	-0.00245
	(!A1 * !A2 * B1 * !C1 * !X)	0.00175	0.00175	0.00175
	(!A1 * !A2 * B1 * !C1 * !X)	-0.00260	-0.00260	-0.00260
	(!A1 * !A2 * !B1 * C1 * !X)	0.00178	0.00179	0.00178
	(!A1 * !A2 * !B1 * C1 * !X)	-0.00261	-0.00261	-0.00260
	(!A1 * !A2 * !B1 * !C1 * !X)	0.00178	0.00179	0.00178
	(!A1 * !A2 * !B1 * !C1 * !X)	-0.00261	-0.00261	-0.00260

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)**	-0.00105	-0.00106	-0.00112
	(A2 * B1 * C1 * X)	0.00077	0.00077	0.00071
	(A2 * B1 * !C1 * !X)	-0.00100	-0.00101	-0.00100
	(A2 * B1 * !C1 * !X)	0.00129	0.00128	0.00128
	(A2 * !B1 * C1 * !X)	-0.00100	-0.00101	-0.00100
	(A2 * !B1 * C1 * !X)	0.00128	0.00128	0.00128
	(A2 * !B1 * !C1 * !X)	-0.00100	-0.00101	-0.00100
	(A2 * !B1 * !C1 * !X)	0.00128	0.00129	0.00128
	(A1 * !A2 * B1 * C1 * X)	-0.00098	-0.00099	-0.00110
	(A1 * !A2 * B1 * C1 * X)	0.00081	0.00081	0.00071
	(A1 * !A2 * B1 * !C1 * !X)	-0.00101	-0.00101	-0.00100
	(A1 * !A2 * B1 * !C1 * !X)	0.00122	0.00123	0.00122
	(A1 * !A2 * !B1 * C1 * !X)	-0.00100	-0.00101	-0.00100
	(A1 * !A2 * !B1 * C1 * !X)	0.00122	0.00123	0.00122
	(A1 * !A2 * !B1 * !C1 * !X)	-0.00100	-0.00101	-0.00100
	(A1 * !A2 * !B1 * !C1 * !X)	0.00122	0.00123	0.00123
	(!A1 * !A2 * B1 * !C1 * !X)	-0.00089	-0.00096	-0.00095
	(!A1 * !A2 * B1 * !C1 * !X)	0.00129	0.00131	0.00130
	(!A1 * !A2 * !B1 * C1 * !X)	-0.00093	-0.00097	-0.00096
	(!A1 * !A2 * !B1 * C1 * !X)	0.00130	0.00130	0.00130
	(!A1 * !A2 * !B1 * !C1 * !X)	-0.00093	-0.00097	-0.00096
	(!A1 * !A2 * !B1 * !C1 * !X)	0.00130	0.00130	0.00130

sky130_fd_sc_hs__o311a_2	**(A2 * B1 * C1 * X)**	-0.00120	-0.00120	-0.00124
	(A2 * B1 * C1 * X)	0.00074	0.00075	0.00071
	(A2 * B1 * !C1 * !X)	-0.00108	-0.00109	-0.00108
	(A2 * B1 * !C1 * !X)	0.00138	0.00139	0.00138
	(A2 * !B1 * C1 * !X)	-0.00108	-0.00109	-0.00108
	(A2 * !B1 * C1 * !X)	0.00139	0.00139	0.00139
	(A2 * !B1 * !C1 * !X)	-0.00108	-0.00109	-0.00108
	(A2 * !B1 * !C1 * !X)	0.00139	0.00140	0.00139
	(A1 * !A2 * B1 * C1 * X)	-0.00112	-0.00113	-0.00123
	(A1 * !A2 * B1 * C1 * X)	0.00079	0.00079	0.00071
	(A1 * !A2 * B1 * !C1 * !X)	-0.00108	-0.00109	-0.00108
	(A1 * !A2 * B1 * !C1 * !X)	0.00132	0.00132	0.00132
	(A1 * !A2 * !B1 * C1 * !X)	-0.00108	-0.00109	-0.00108
	(A1 * !A2 * !B1 * C1 * !X)	0.00132	0.00132	0.00132
	(A1 * !A2 * !B1 * !C1 * !X)	-0.00108	-0.00109	-0.00108
	(A1 * !A2 * !B1 * !C1 * !X)	0.00132	0.00133	0.00133
	(!A1 * !A2 * B1 * !C1 * !X)	-0.00092	-0.00100	-0.00100
	(!A1 * !A2 * B1 * !C1 * !X)	0.00142	0.00143	0.00142
	(!A1 * !A2 * !B1 * C1 * !X)	-0.00096	-0.00102	-0.00102
	(!A1 * !A2 * !B1 * C1 * !X)	0.00142	0.00142	0.00142
	(!A1 * !A2 * !B1 * !C1 * !X)	-0.00096	-0.00102	-0.00101
	(!A1 * !A2 * !B1 * !C1 * !X)	0.00142	0.00142	0.00142

sky130_fd_sc_hs__o311a_4	**(A2 * B1 * C1 * X)**	-0.00198	-0.00199	-0.00213
	(A2 * B1 * C1 * X)	0.00152	0.00152	0.00140
	(A2 * B1 * !C1 * !X)	-0.00188	-0.00188	-0.00188
	(A2 * B1 * !C1 * !X)	0.00257	0.00257	0.00256
	(A2 * !B1 * C1 * !X)	-0.00187	-0.00188	-0.00188
	(A2 * !B1 * C1 * !X)	0.00254	0.00257	0.00256
	(A2 * !B1 * !C1 * !X)	-0.00188	-0.00188	-0.00187
	(A2 * !B1 * !C1 * !X)	0.00256	0.00257	0.00256
	(A1 * !A2 * B1 * C1 * X)	-0.00185	-0.00186	-0.00210
	(A1 * !A2 * B1 * C1 * X)	0.00160	0.00159	0.00141
	(A1 * !A2 * B1 * !C1 * !X)	-0.00187	-0.00188	-0.00187
	(A1 * !A2 * B1 * !C1 * !X)	0.00242	0.00244	0.00244
	(A1 * !A2 * !B1 * C1 * !X)	-0.00187	-0.00188	-0.00188
	(A1 * !A2 * !B1 * C1 * !X)	0.00243	0.00244	0.00244
	(A1 * !A2 * !B1 * !C1 * !X)	-0.00187	-0.00188	-0.00187
	(A1 * !A2 * !B1 * !C1 * !X)	0.00244	0.00246	0.00245
	(!A1 * !A2 * B1 * !C1 * !X)	-0.00161	-0.00175	-0.00175
	(!A1 * !A2 * B1 * !C1 * !X)	0.00260	0.00262	0.00261
	(!A1 * !A2 * !B1 * C1 * !X)	-0.00168	-0.00179	-0.00178
	(!A1 * !A2 * !B1 * C1 * !X)	0.00262	0.00262	0.00261
	(!A1 * !A2 * !B1 * !C1 * !X)	-0.00168	-0.00179	-0.00178
	(!A1 * !A2 * !B1 * !C1 * !X)	0.00262	0.00262	0.00261

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

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

sky130_fd_sc_hs__o311a_1	**(A3 * !C1 * !X)**	0.00091	0.00092	0.00091
	(A3 * !C1 * !X)	-0.00132	-0.00132	-0.00132
	(A2 * !A3 * !C1 * !X)	0.00091	0.00092	0.00091
	(A2 * !A3 * !C1 * !X)	-0.00132	-0.00132	-0.00132
	(A1 * !A2 * !A3 * !C1 * !X)	0.00091	0.00092	0.00091
	(A1 * !A2 * !A3 * !C1 * !X)	-0.00132	-0.00132	-0.00132
	(!A1 * !A2 * !A3 * C1 * !X)	0.00050	0.00050	0.00048
	(!A1 * !A2 * !A3 * C1 * !X)	-0.00132	-0.00133	-0.00132
	(!A1 * !A2 * !A3 * !C1 * !X)	0.00061	0.00062	0.00061
	(!A1 * !A2 * !A3 * !C1 * !X)	-0.00132	-0.00133	-0.00132
sky130_fd_sc_hs__o311a_2	**(A3 * !C1 * !X)**	0.00102	0.00102	0.00102
	(A3 * !C1 * !X)	-0.00137	-0.00137	-0.00137
	(A2 * !A3 * !C1 * !X)	0.00101	0.00102	0.00102
	(A2 * !A3 * !C1 * !X)	-0.00136	-0.00137	-0.00137
	(A1 * !A2 * !A3 * !C1 * !X)	0.00101	0.00102	0.00101
	(A1 * !A2 * !A3 * !C1 * !X)	-0.00137	-0.00138	-0.00137
	(!A1 * !A2 * !A3 * C1 * !X)	0.00047	0.00047	0.00047
	(!A1 * !A2 * !A3 * C1 * !X)	-0.00139	-0.00139	-0.00138
	(!A1 * !A2 * !A3 * !C1 * !X)	0.00058	0.00059	0.00058
	(!A1 * !A2 * !A3 * !C1 * !X)	-0.00140	-0.00140	-0.00140
sky130_fd_sc_hs__o311a_4	**(A3 * !C1 * !X)**	0.00200	0.00202	0.00200
	(A3 * !C1 * !X)	-0.00295	-0.00296	-0.00294
	(A2 * !A3 * !C1 * !X)	0.00199	0.00202	0.00200
	(A2 * !A3 * !C1 * !X)	-0.00294	-0.00296	-0.00294
	(A1 * !A2 * !A3 * !C1 * !X)	0.00199	0.00202	0.00200
	(A1 * !A2 * !A3 * !C1 * !X)	-0.00294	-0.00296	-0.00294
	(!A1 * !A2 * !A3 * C1 * !X)	0.00105	0.00107	0.00105
	(!A1 * !A2 * !A3 * C1 * !X)	-0.00294	-0.00296	-0.00294
	(!A1 * !A2 * !A3 * !C1 * !X)	0.00130	0.00130	0.00129
	(!A1 * !A2 * !A3 * !C1 * !X)	-0.00297	-0.00298	-0.00296

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__o311a_1	(A3 * !C1 * !X)	-0.00085	-0.00092	-0.00091
	(A3 * !C1 * !X)	0.00137	0.00135	0.00132
	(A2 * !A3 * !C1 * !X)	-0.00085	-0.00092	-0.00091
	(A2 * !A3 * !C1 * !X)	0.00137	0.00135	0.00132
	(A1 * !A2 * !A3 * !C1 * !X)	-0.00084	-0.00091	-0.00091
	(A1 * !A2 * !A3 * !C1 * !X)	0.00139	0.00133	0.00132
	(!A1 * !A2 * !A3 * C1 * !X)	-0.00044	-0.00045	-0.00045
	(!A1 * !A2 * !A3 * C1 * !X)	0.00135	0.00137	0.00133
	(!A1 * !A2 * !A3 * !C1 * !X)	-0.00061	-0.00062	-0.00061
	(!A1 * !A2 * !A3 * !C1 * !X)	0.00140	0.00138	0.00133
sky130_fd_sc_hs__o311a_2	(A3 * !C1 * !X)	-0.00095	-0.00102	-0.00102
	(A3 * !C1 * !X)	0.00141	0.00139	0.00137
	(A2 * !A3 * !C1 * !X)	-0.00094	-0.00102	-0.00102
	(A2 * !A3 * !C1 * !X)	0.00142	0.00139	0.00137
	(A1 * !A2 * !A3 * !C1 * !X)	-0.00094	-0.00102	-0.00101
	(A1 * !A2 * !A3 * !C1 * !X)	0.00144	0.00139	0.00137
	(!A1 * !A2 * !A3 * C1 * !X)	-0.00043	-0.00044	-0.00044
	(!A1 * !A2 * !A3 * C1 * !X)	0.00141	0.00144	0.00139
	(!A1 * !A2 * !A3 * !C1 * !X)	-0.00058	-0.00059	-0.00058
	(!A1 * !A2 * !A3 * !C1 * !X)	0.00149	0.00148	0.00141

sky130_fd_sc_hs__o311a_4	**(A3 * !C1 * !X)**	-0.00187	-0.00201	-0.00200
	(A3 * !C1 * !X)	0.00302	0.00299	0.00295
	(A2 * !A3 * !C1 * !X)	-0.00186	-0.00201	-0.00200
	(A2 * !A3 * !C1 * !X)	0.00304	0.00299	0.00295
	(A1 * !A2 * !A3 * !C1 * !X)	-0.00183	-0.00202	-0.00200
	(A1 * !A2 * !A3 * !C1 * !X)	0.00304	0.00299	0.00295
	(!A1 * !A2 * !A3 * C1 * !X)	-0.00099	-0.00100	-0.00101
	(!A1 * !A2 * !A3 * C1 * !X)	0.00305	0.00308	0.00298
	(!A1 * !A2 * !A3 * !C1 * !X)	-0.00130	-0.00130	-0.00129
	(!A1 * !A2 * !A3 * !C1 * !X)	0.00309	0.00305	0.00298

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__o311a_1	(A3 * !B1 * !X)	0.00039	0.00039	0.00037
	(A3 * !B1 * !X)	-0.00154	-0.00154	-0.00156
	(A2 * !A3 * !B1 * !X)	0.00039	0.00039	0.00037
	(A2 * !A3 * !B1 * !X)	-0.00154	-0.00154	-0.00156
	(!A2 * !A3 * !B1 * !X)	0.00039	0.00039	0.00037
	(!A2 * !A3 * !B1 * !X)	-0.00154	-0.00154	-0.00156
	(!A1 * !A2 * !A3 * B1 * !X)	0.00047	0.00047	0.00040
	(!A1 * !A2 * !A3 * B1 * !X)	-0.00144	-0.00145	-0.00154
sky130_fd_sc_hs__o311a_2	(A3 * !B1 * !X)	0.00044	0.00044	0.00042
	(A3 * !B1 * !X)	-0.00155	-0.00156	-0.00158
	(A2 * !A3 * !B1 * !X)	0.00044	0.00044	0.00042
	(A2 * !A3 * !B1 * !X)	-0.00155	-0.00156	-0.00158
	(!A2 * !A3 * !B1 * !X)	0.00044	0.00044	0.00042
	(!A2 * !A3 * !B1 * !X)	-0.00155	-0.00156	-0.00158
	(!A1 * !A2 * !A3 * B1 * !X)	0.00047	0.00047	0.00042
	(!A1 * !A2 * !A3 * B1 * !X)	-0.00148	-0.00149	-0.00158
sky130_fd_sc_hs__o311a_4	(A3 * !B1 * !X)	0.00080	0.00080	0.00076
	(A3 * !B1 * !X)	-0.00290	-0.00292	-0.00297
	(A2 * !A3 * !B1 * !X)	0.00079	0.00080	0.00076
	(A2 * !A3 * !B1 * !X)	-0.00288	-0.00292	-0.00297
	(!A2 * !A3 * !B1 * !X)	0.00080	0.00080	0.00076
	(!A2 * !A3 * !B1 * !X)	-0.00290	-0.00292	-0.00297
	(!A1 * !A2 * !A3 * B1 * !X)	0.00085	0.00086	0.00074
	(!A1 * !A2 * !A3 * B1 * !X)	-0.00271	-0.00274	-0.00294

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__o311a_1	(A3 * !B1 * !X)	-0.00037	-0.00037	-0.00036
	(A3 * !B1 * !X)	0.00156	0.00157	0.00156
	(A2 * !A3 * !B1 * !X)	-0.00037	-0.00037	-0.00036
	(A2 * !A3 * !B1 * !X)	0.00156	0.00157	0.00156
	(!A2 * !A3 * !B1 * !X)	-0.00037	-0.00037	-0.00036
	(!A2 * !A3 * !B1 * !X)	0.00156	0.00156	0.00156
	(!A1 * !A2 * !A3 * B1 * !X)	-0.00036	-0.00037	-0.00036
	(!A1 * !A2 * !A3 * B1 * !X)	0.00156	0.00156	0.00156
sky130_fd_sc_hs__o311a_2	(A3 * !B1 * !X)	-0.00041	-0.00041	-0.00041
	(A3 * !B1 * !X)	0.00158	0.00159	0.00158
	(A2 * !A3 * !B1 * !X)	-0.00041	-0.00041	-0.00041
	(A2 * !A3 * !B1 * !X)	0.00158	0.00159	0.00158
	(!A2 * !A3 * !B1 * !X)	-0.00041	-0.00041	-0.00041
	(!A2 * !A3 * !B1 * !X)	0.00158	0.00158	0.00158
	(!A1 * !A2 * !A3 * B1 * !X)	-0.00040	-0.00040	-0.00040
	(!A1 * !A2 * !A3 * B1 * !X)	0.00158	0.00158	0.00158
sky130_fd_sc_hs__o311a_4	(A3 * !B1 * !X)	-0.00074	-0.00074	-0.00073
	(A3 * !B1 * !X)	0.00299	0.00300	0.00298
	(A2 * !A3 * !B1 * !X)	-0.00074	-0.00074	-0.00073
	(A2 * !A3 * !B1 * !X)	0.00299	0.00299	0.00298
	(!A2 * !A3 * !B1 * !X)	-0.00074	-0.00073	-0.00073
	(!A2 * !A3 * !B1 * !X)	0.00299	0.00298	0.00298
	(!A1 * !A2 * !A3 * B1 * !X)	-0.00071	-0.00070	-0.00070
	(!A1 * !A2 * !A3 * B1 * !X)	0.00299	0.00297	0.00298

SKY130_FD_SC_HS__O31AIx

sky130_fd_sc_hs_tt_1.50v_25C.ccs
Cell Library: Process , Voltage
1.50, 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	0.00256	0.00302	0.00296	0.00268	0.26773
sky130_fd_sc_hs__o31ai_2	0.00523	0.00513	0.00541	0.00534	0.47607
sky130_fd_sc_hs__o31ai_4	0.01005	0.01007	0.01053	0.00784	0.90607

Leakage Information

Cell Name	Leakage(nW)		
	Min.	**Avg**	**Max.**
sky130_fd_sc_hs__o31ai_1	0.00000	0.01949	0.05947
sky130_fd_sc_hs__o31ai_2	0.00000	0.03897	0.11893
sky130_fd_sc_hs__o31ai_4	0.00000	0.05193	0.17840

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)	0.23780	1.35642	11.06250
	A2->Y (FR)	0.22933	1.36356	11.49600
	A3->Y (FR)	0.18334	1.29281	11.26950
	B1->Y (FR)	0.04632	0.68207	6.91912
sky130_fd_sc_hs__o31ai_2	A1->Y (FR)	0.24991	1.20702	10.93180
	A2->Y (FR)	0.22460	1.19135	11.32920
	A3->Y (FR)	0.17712	1.13010	11.24020
	B1->Y (FR)	0.04101	0.62156	6.84993
sky130_fd_sc_hs__o31ai_4	A1->Y (FR)	0.23149	1.04932	10.90500
	A2->Y (FR)	0.20883	1.04018	11.37430
	A3->Y (FR)	0.15731	0.97891	11.29990
	B1->Y (FR)	0.05282	0.71622	8.72820

Delay(ns) to Y falling :

Cell Name	Timing Arc(Dir)	Delay(ns)		
		First	Mid	Last
sky130_fd_sc_hs__o31ai_1	A1->Y (RF)	0.04573	0.41354	3.59516
	A2->Y (RF)	0.04717	0.40718	3.57949
	A3->Y (RF)	0.03915	0.39196	3.54175
	B1->Y (RF)	0.03848	0.45052	4.03232
sky130_fd_sc_hs__o31ai_2	A1->Y (RF)	0.04692	0.37866	3.57255
	A2->Y (RF)	0.04613	0.36663	3.54394
	A3->Y (RF)	0.03931	0.35201	3.51703
	B1->Y (RF)	0.03588	0.41154	4.05853
sky130_fd_sc_hs__o31ai_4	A1->Y (RF)	0.04735	0.33664	3.54153
	A2->Y (RF)	0.04513	0.32153	3.49368
	A3->Y (RF)	0.03522	0.29766	3.38936
	B1->Y (RF)	0.03565	0.39761	4.48070

Power Information

Internal switching power(pJ) to Y rising :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__o31ai_1	A1	0.00058	0.00047	0.00067
	A1	0.00629	0.00618	0.00639
	A2	0.00062	0.00045	0.00078
	A2	0.00586	0.00570	0.00602
	A3	0.00060	0.00054	0.00173
	A3	0.00510	0.00504	0.00623
	B1	-0.00027	-0.00017	0.00136
	B1	0.00450	0.00457	0.00609
sky130_fd_sc_hs__o31ai_2	A1	0.00115	0.00084	0.00125
	A1	0.01268	0.01238	0.01279
	A2	0.00120	0.00089	0.00158
	A2	0.01110	0.01079	0.01111
	A3	0.00112	0.00089	0.00342
	A3	0.00971	0.00949	0.01198
	B1	-0.00122	-0.00090	0.00220
	B1	0.00813	0.00832	0.01141
sky130_fd_sc_hs__o31ai_4	A1	0.00173	0.00120	0.00206
	A1	0.02408	0.02360	0.02445
	A2	0.00178	0.00120	0.00263
	A2	0.02115	0.02058	0.02173
	A3	0.00163	0.00130	0.00623
	A3	0.01826	0.01790	0.02236
	B1	-0.00225	-0.00219	0.00145
	B1	0.01326	0.01320	0.01675

Internal switching power(pJ) to Y falling :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__o31ai_1	A1	0.00752	0.00740	0.00771
	A1	0.00180	0.00167	0.00197
	A2	0.00644	0.00632	0.00664
	A2	0.00114	0.00101	0.00130
	A3	0.00495	0.00493	0.00525
	A3	0.00035	0.00031	0.00063
	B1	0.00643	0.00634	0.00689
	B1	0.00181	0.00169	0.00224
sky130_fd_sc_hs__o31ai_2	A1	0.01544	0.01512	0.01570
	A1	0.00390	0.00355	0.00414
	A2	0.01225	0.01204	0.01273
	A2	0.00218	0.00196	0.00263
	A3	0.00943	0.00933	0.01014
	A3	0.00061	0.00051	0.00124
	B1	0.01295	0.01269	0.01385
	B1	0.00395	0.00368	0.00483
sky130_fd_sc_hs__o31ai_4	A1	0.02859	0.02793	0.02916
	A1	0.00625	0.00555	0.00681
	A2	0.02261	0.02208	0.02367
	A2	0.00294	0.00241	0.00386
	A3	0.01670	0.01654	0.01827
	A3	-0.00034	-0.00058	0.00114
	B1	0.02302	0.02291	0.02410
	B1	0.00813	0.00803	0.00900

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)**	0.00116	0.00116	0.00116
	(A2 * A3 * B1 * !Y)	-0.00131	-0.00134	-0.00134
	(A2 * !B1 * Y)	0.00116	0.00116	0.00116
	(A2 * !B1 * Y)	-0.00131	-0.00134	-0.00134
	(A2 * !A3 * B1 * !Y)	0.00117	0.00116	0.00116
	(A2 * !A3 * B1 * !Y)	-0.00129	-0.00134	-0.00134
	(!A2 * A3 * B1 * !Y)	0.00117	0.00117	0.00116
	(!A2 * A3 * B1 * !Y)	-0.00120	-0.00130	-0.00129
	(!A2 * A3 * !B1 * Y)	0.00116	0.00117	0.00116
	(!A2 * A3 * !B1 * Y)	-0.00121	-0.00130	-0.00129
	(!A2 * !A3 * !B1 * Y)	0.00109	0.00110	0.00109
	(!A2 * !A3 * !B1 * Y)	-0.00136	-0.00137	-0.00136
sky130_fd_sc_hs__o31ai_2	**(A2 * A3 * B1 * !Y)**	0.00234	0.00235	0.00234
	(A2 * A3 * B1 * !Y)	-0.00266	-0.00277	-0.00276
	(A2 * !B1 * Y)	0.00233	0.00234	0.00233
	(A2 * !B1 * Y)	-0.00268	-0.00277	-0.00277
	(A2 * !A3 * B1 * !Y)	0.00236	0.00235	0.00234
	(A2 * !A3 * B1 * !Y)	-0.00263	-0.00277	-0.00276
	(!A2 * A3 * B1 * !Y)	0.00237	0.00233	0.00234
	(!A2 * A3 * B1 * !Y)	-0.00245	-0.00267	-0.00265
	(!A2 * A3 * !B1 * Y)	0.00233	0.00232	0.00233
	(!A2 * A3 * !B1 * Y)	-0.00249	-0.00268	-0.00266
	(!A2 * !A3 * !B1 * Y)	0.00216	0.00218	0.00217
	(!A2 * !A3 * !B1 * Y)	-0.00283	-0.00284	-0.00284

sky130_fd_sc_hs__o31ai_4	**(A2 * A3 * B1 * !Y)**	0.00450	0.00452	0.00450
	(A2 * A3 * B1 * !Y)	-0.00527	-0.00550	-0.00547
	(A2 * !B1 * Y)	0.00448	0.00452	0.00450
	(A2 * !B1 * Y)	-0.00529	-0.00550	-0.00548
	(A2 * !A3 * B1 * !Y)	0.00452	0.00452	0.00450
	(A2 * !A3 * B1 * !Y)	-0.00520	-0.00549	-0.00547
	(!A2 * A3 * B1 * !Y)	0.00454	0.00452	0.00450
	(!A2 * A3 * B1 * !Y)	-0.00486	-0.00525	-0.00525
	(!A2 * A3 * !B1 * Y)	0.00447	0.00451	0.00450
	(!A2 * A3 * !B1 * Y)	-0.00492	-0.00533	-0.00526
	(!A2 * !A3 * !B1 * Y)	0.00420	0.00424	0.00421
	(!A2 * !A3 * !B1 * Y)	-0.00561	-0.00563	-0.00561

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)**	-0.00115	-0.00116	-0.00115
	(A2 * A3 * B1 * !Y)	0.00133	0.00135	0.00134
	(A2 * !B1 * Y)	-0.00115	-0.00116	-0.00115
	(A2 * !B1 * Y)	0.00133	0.00135	0.00134
	(A2 * !A3 * B1 * !Y)	-0.00115	-0.00116	-0.00115
	(A2 * !A3 * B1 * !Y)	0.00134	0.00135	0.00134
	(!A2 * A3 * B1 * !Y)	-0.00115	-0.00116	-0.00115
	(!A2 * A3 * B1 * !Y)	0.00129	0.00130	0.00129
	(!A2 * A3 * !B1 * Y)	-0.00116	-0.00116	-0.00115
	(!A2 * A3 * !B1 * Y)	0.00129	0.00130	0.00129
	(!A2 * !A3 * !B1 * Y)	-0.00104	-0.00110	-0.00109
	(!A2 * !A3 * !B1 * Y)	0.00137	0.00138	0.00137

sky130_fd_sc_hs__o31ai_2	**(A2 * A3 * B1 * !Y)**	-0.00234	-0.00234	-0.00233
	(A2 * A3 * B1 * !Y)	0.00276	0.00277	0.00276
	(A2 * !B1 * Y)	-0.00233	-0.00233	-0.00233
	(A2 * !B1 * Y)	0.00277	0.00277	0.00277
	(A2 * !A3 * B1 * !Y)	-0.00233	-0.00234	-0.00233
	(A2 * !A3 * B1 * !Y)	0.00276	0.00278	0.00276
	(!A2 * A3 * B1 * !Y)	-0.00233	-0.00233	-0.00233
	(!A2 * A3 * B1 * !Y)	0.00264	0.00267	0.00265
	(!A2 * A3 * !B1 * Y)	-0.00232	-0.00232	-0.00233
	(!A2 * A3 * !B1 * Y)	0.00265	0.00268	0.00266
	(!A2 * !A3 * !B1 * Y)	-0.00205	-0.00218	-0.00217
	(!A2 * !A3 * !B1 * Y)	0.00287	0.00284	0.00285
sky130_fd_sc_hs__o31ai_4	**(A2 * A3 * B1 * !Y)**	-0.00448	-0.00451	-0.00450
	(A2 * A3 * B1 * !Y)	0.00543	0.00551	0.00547
	(A2 * !B1 * Y)	-0.00447	-0.00451	-0.00449
	(A2 * !B1 * Y)	0.00544	0.00552	0.00548
	(A2 * !A3 * B1 * !Y)	-0.00447	-0.00451	-0.00449
	(A2 * !A3 * B1 * !Y)	0.00543	0.00551	0.00547
	(!A2 * A3 * B1 * !Y)	-0.00449	-0.00449	-0.00449
	(!A2 * A3 * B1 * !Y)	0.00525	0.00525	0.00525
	(!A2 * A3 * !B1 * Y)	-0.00447	-0.00451	-0.00449
	(!A2 * A3 * !B1 * Y)	0.00526	0.00533	0.00526
	(!A2 * !A3 * !B1 * Y)	-0.00393	-0.00424	-0.00421
	(!A2 * !A3 * !B1 * Y)	0.00563	0.00574	0.00563

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)**	0.00139	0.00142	0.00135
	(A1 * A3 * B1 * !Y)	-0.00095	-0.00096	-0.00095
	(A1 * A3 * !B1 * Y)	0.00114	0.00116	0.00115
	(A1 * A3 * !B1 * Y)	-0.00120	-0.00120	-0.00120
	(A1 * !A3 * B1 * !Y)	0.00132	0.00135	0.00132
	(A1 * !A3 * B1 * !Y)	-0.00082	-0.00084	-0.00083
	(A1 * !A3 * !B1 * Y)	0.00116	0.00115	0.00115
	(A1 * !A3 * !B1 * Y)	-0.00154	-0.00155	-0.00155
	(!A1 * A3 * B1 * !Y)	0.00153	0.00133	0.00132
	(!A1 * A3 * B1 * !Y)	-0.00118	-0.00139	-0.00139
	(!A1 * A3 * !B1 * Y)	0.00115	0.00115	0.00115
	(!A1 * A3 * !B1 * Y)	-0.00154	-0.00156	-0.00156
	(!A1 * !A3 * !B1 * Y)	0.00107	0.00107	0.00106
	(!A1 * !A3 * !B1 * Y)	-0.00159	-0.00159	-0.00158
sky130_fd_sc_hs__o31ai_2	**(A1 * A3 * B1 * !Y)**	0.00244	0.00240	0.00235
	(A1 * A3 * B1 * !Y)	-0.00187	-0.00188	-0.00187
	(A1 * A3 * !B1 * Y)	0.00227	0.00226	0.00226
	(A1 * A3 * !B1 * Y)	-0.00205	-0.00207	-0.00205
	(A1 * !A3 * B1 * !Y)	0.00231	0.00235	0.00230
	(A1 * !A3 * B1 * !Y)	-0.00160	-0.00162	-0.00160
	(A1 * !A3 * !B1 * Y)	0.00225	0.00227	0.00226
	(A1 * !A3 * !B1 * Y)	-0.00267	-0.00275	-0.00274
	(!A1 * A3 * B1 * !Y)	0.00267	0.00232	0.00229
	(!A1 * A3 * B1 * !Y)	-0.00231	-0.00275	-0.00275
	(!A1 * A3 * !B1 * Y)	0.00225	0.00228	0.00226
	(!A1 * A3 * !B1 * Y)	-0.00271	-0.00276	-0.00277
	(!A1 * !A3 * !B1 * Y)	0.00212	0.00212	0.00211
	(!A1 * !A3 * !B1 * Y)	-0.00283	-0.00283	-0.00282

sky130_fd_sc_hs__o31ai_4	**(A1 * A3 * B1 * !Y)**	0.00479	0.00483	0.00466
	(A1 * A3 * B1 * !Y)	-0.00373	-0.00375	-0.00372
	(A1 * A3 * !B1 * Y)	0.00444	0.00450	0.00447
	(A1 * A3 * !B1 * Y)	-0.00412	-0.00414	-0.00410
	(A1 * !A3 * B1 * !Y)	0.00459	0.00459	0.00457
	(A1 * !A3 * B1 * !Y)	-0.00319	-0.00319	-0.00320
	(A1 * !A3 * !B1 * Y)	0.00448	0.00449	0.00447
	(A1 * !A3 * !B1 * Y)	-0.00538	-0.00549	-0.00547
	(!A1 * A3 * B1 * !Y)	0.00536	0.00463	0.00454
	(!A1 * A3 * B1 * !Y)	-0.00457	-0.00548	-0.00548
	(!A1 * A3 * !B1 * Y)	0.00446	0.00452	0.00447
	(!A1 * A3 * !B1 * Y)	-0.00542	-0.00557	-0.00553
	(!A1 * !A3 * !B1 * Y)	0.00417	0.00423	0.00419
	(!A1 * !A3 * !B1 * Y)	-0.00563	-0.00567	-0.00565

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)**	-0.00131	-0.00132	-0.00132
	(A1 * A3 * B1 * !Y)	0.00095	0.00096	0.00095
	(A1 * A3 * !B1 * Y)	-0.00114	-0.00115	-0.00114
	(A1 * A3 * !B1 * Y)	0.00120	0.00120	0.00120
	(A1 * !A3 * B1 * !Y)	-0.00131	-0.00131	-0.00130
	(A1 * !A3 * B1 * !Y)	0.00085	0.00086	0.00086
	(A1 * !A3 * !B1 * Y)	-0.00115	-0.00114	-0.00114
	(A1 * !A3 * !B1 * Y)	0.00156	0.00155	0.00155
	(!A1 * A3 * B1 * !Y)	-0.00132	-0.00132	-0.00131
	(!A1 * A3 * B1 * !Y)	0.00139	0.00140	0.00139
	(!A1 * A3 * !B1 * Y)	-0.00114	-0.00115	-0.00114
	(!A1 * A3 * !B1 * Y)	0.00155	0.00156	0.00156
	(!A1 * !A3 * !B1 * Y)	-0.00101	-0.00107	-0.00106
	(!A1 * !A3 * !B1 * Y)	0.00160	0.00160	0.00159
sky130_fd_sc_hs__o31ai_2	**(A1 * A3 * B1 * !Y)**	-0.00230	-0.00232	-0.00231
	(A1 * A3 * B1 * !Y)	0.00187	0.00188	0.00187
	(A1 * A3 * !B1 * Y)	-0.00225	-0.00226	-0.00225
	(A1 * A3 * !B1 * Y)	0.00205	0.00207	0.00205
	(A1 * !A3 * B1 * !Y)	-0.00226	-0.00226	-0.00225
	(A1 * !A3 * B1 * !Y)	0.00166	0.00166	0.00166
	(A1 * !A3 * !B1 * Y)	-0.00225	-0.00226	-0.00226
	(A1 * !A3 * !B1 * Y)	0.00273	0.00275	0.00274
	(!A1 * A3 * B1 * !Y)	-0.00228	-0.00229	-0.00228
	(!A1 * A3 * B1 * !Y)	0.00273	0.00276	0.00275
	(!A1 * A3 * !B1 * Y)	-0.00225	-0.00225	-0.00226
	(!A1 * A3 * !B1 * Y)	0.00276	0.00276	0.00277
	(!A1 * !A3 * !B1 * Y)	-0.00198	-0.00212	-0.00211
	(!A1 * !A3 * !B1 * Y)	0.00285	0.00283	0.00283

sky130_fd_sc_hs__o31ai_4	**(A1 * A3 * B1 * !Y)**	-0.00457	-0.00460	-0.00457
	(A1 * A3 * B1 * !Y)	0.00373	0.00375	0.00372
	(A1 * A3 * !B1 * Y)	-0.00444	-0.00449	-0.00446
	(A1 * A3 * !B1 * Y)	0.00412	0.00414	0.00410
	(A1 * !A3 * B1 * !Y)	-0.00447	-0.00450	-0.00446
	(A1 * !A3 * B1 * !Y)	0.00328	0.00330	0.00332
	(A1 * !A3 * !B1 * Y)	-0.00445	-0.00448	-0.00446
	(A1 * !A3 * !B1 * Y)	0.00546	0.00549	0.00547
	(!A1 * A3 * B1 * !Y)	-0.00453	-0.00454	-0.00451
	(!A1 * A3 * B1 * !Y)	0.00547	0.00549	0.00548
	(!A1 * A3 * !B1 * Y)	-0.00446	-0.00448	-0.00446
	(!A1 * A3 * !B1 * Y)	0.00554	0.00557	0.00553
	(!A1 * !A3 * !B1 * Y)	-0.00393	-0.00422	-0.00419
	(!A1 * !A3 * !B1 * Y)	0.00570	0.00572	0.00566

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

Cell Name	When	Power(pJ)		
		first	**mid**	**last**
sky130_fd_sc_hs__o31ai_1	**(A2 * B1 * !Y)**	0.00141	0.00143	0.00141
	(A2 * B1 * !Y)	-0.00070	-0.00071	-0.00070
	(A2 * !B1 * Y)	0.00111	0.00111	0.00110
	(A2 * !B1 * Y)	-0.00151	-0.00154	-0.00154
	(A1 * !A2 * B1 * !Y)	0.00141	0.00141	0.00141
	(A1 * !A2 * B1 * !Y)	-0.00070	-0.00070	-0.00070
	(A1 * !A2 * !B1 * Y)	0.00110	0.00111	0.00110
	(A1 * !A2 * !B1 * Y)	-0.00138	-0.00148	-0.00147
	(!A1 * !A2 * !B1 * Y)	0.00102	0.00104	0.00103
	(!A1 * !A2 * !B1 * Y)	-0.00156	-0.00157	-0.00157

sky130_fd_sc_hs__o31ai_2	**(A2 * B1 * !Y)**	0.00264	0.00264	0.00264
	(A2 * B1 * !Y)	-0.00141	-0.00140	-0.00140
	(A2 * !B1 * Y)	0.00220	0.00223	0.00221
	(A2 * !B1 * Y)	-0.00280	-0.00290	-0.00288
	(A1 * !A2 * B1 * !Y)	0.00264	0.00265	0.00264
	(A1 * !A2 * B1 * !Y)	-0.00140	-0.00140	-0.00139
	(A1 * !A2 * !B1 * Y)	0.00220	0.00222	0.00221
	(A1 * !A2 * !B1 * Y)	-0.00259	-0.00275	-0.00274
	(!A1 * !A2 * !B1 * Y)	0.00209	0.00209	0.00208
	(!A1 * !A2 * !B1 * Y)	-0.00295	-0.00294	-0.00294
sky130_fd_sc_hs__o31ai_4	**(A2 * B1 * !Y)**	0.00514	0.00519	0.00516
	(A2 * B1 * !Y)	-0.00277	-0.00280	-0.00278
	(A2 * !B1 * Y)	0.00432	0.00434	0.00433
	(A2 * !B1 * Y)	-0.00554	-0.00572	-0.00570
	(A1 * !A2 * B1 * !Y)	0.00515	0.00518	0.00516
	(A1 * !A2 * B1 * !Y)	-0.00277	-0.00279	-0.00277
	(A1 * !A2 * !B1 * Y)	0.00435	0.00437	0.00433
	(A1 * !A2 * !B1 * Y)	-0.00513	-0.00540	-0.00537
	(!A1 * !A2 * !B1 * Y)	0.00406	0.00409	0.00408
	(!A1 * !A2 * !B1 * Y)	-0.00582	-0.00584	-0.00583

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

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

sky130_fd_sc_hs__o31ai_1	**(A2 * B1 * !Y)**	-0.00135	-0.00137	-0.00140
	(A2 * B1 * !Y)	0.00076	0.00076	0.00072
	(A2 * !B1 * Y)	-0.00110	-0.00110	-0.00110
	(A2 * !B1 * Y)	0.00154	0.00154	0.00154
	(A1 * !A2 * B1 * !Y)	-0.00129	-0.00130	-0.00139
	(A1 * !A2 * B1 * !Y)	0.00079	0.00079	0.00072
	(A1 * !A2 * !B1 * Y)	-0.00110	-0.00110	-0.00110
	(A1 * !A2 * !B1 * Y)	0.00147	0.00148	0.00147
	(!A1 * !A2 * !B1 * Y)	-0.00098	-0.00104	-0.00103
	(!A1 * !A2 * !B1 * Y)	0.00157	0.00157	0.00157
sky130_fd_sc_hs__o31ai_2	**(A2 * B1 * !Y)**	-0.00251	-0.00252	-0.00262
	(A2 * B1 * !Y)	0.00151	0.00151	0.00143
	(A2 * !B1 * Y)	-0.00220	-0.00221	-0.00220
	(A2 * !B1 * Y)	0.00287	0.00290	0.00288
	(A1 * !A2 * B1 * !Y)	-0.00232	-0.00234	-0.00258
	(A1 * !A2 * B1 * !Y)	0.00162	0.00162	0.00144
	(A1 * !A2 * !B1 * Y)	-0.00220	-0.00221	-0.00220
	(A1 * !A2 * !B1 * Y)	0.00274	0.00275	0.00274
	(!A1 * !A2 * !B1 * Y)	-0.00195	-0.00208	-0.00208
	(!A1 * !A2 * !B1 * Y)	0.00296	0.00297	0.00295
sky130_fd_sc_hs__o31ai_4	**(A2 * B1 * !Y)**	-0.00491	-0.00494	-0.00513
	(A2 * B1 * !Y)	0.00301	0.00301	0.00284
	(A2 * !B1 * Y)	-0.00431	-0.00433	-0.00432
	(A2 * !B1 * Y)	0.00568	0.00572	0.00570
	(A1 * !A2 * B1 * !Y)	-0.00455	-0.00459	-0.00505
	(A1 * !A2 * B1 * !Y)	0.00322	0.00322	0.00287
	(A1 * !A2 * !B1 * Y)	-0.00432	-0.00433	-0.00432
	(A1 * !A2 * !B1 * Y)	0.00537	0.00540	0.00537
	(!A1 * !A2 * !B1 * Y)	-0.00385	-0.00409	-0.00408
	(!A1 * !A2 * !B1 * Y)	0.00588	0.00589	0.00584

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)	0.00045	0.00045	0.00042
	(!A1 * !A2 * !A3 * Y)	-0.00159	-0.00159	-0.00165
sky130_fd_sc_hs__o31ai_2	(!A1 * !A2 * !A3 * Y)	0.00090	0.00090	0.00081
	(!A1 * !A2 * !A3 * Y)	-0.00314	-0.00316	-0.00329
sky130_fd_sc_hs__o31ai_4	(!A1 * !A2 * !A3 * Y)	0.00159	0.00160	0.00146
	(!A1 * !A2 * !A3 * Y)	-0.00361	-0.00366	-0.00390

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)	-0.00041	-0.00041	-0.00041
	(!A1 * !A2 * !A3 * Y)	0.00166	0.00166	0.00166
sky130_fd_sc_hs__o31ai_2	(!A1 * !A2 * !A3 * Y)	-0.00079	-0.00079	-0.00078
	(!A1 * !A2 * !A3 * Y)	0.00332	0.00333	0.00331
sky130_fd_sc_hs__o31ai_4	(!A1 * !A2 * !A3 * Y)	-0.00142	-0.00141	-0.00140
	(!A1 * !A2 * !A3 * Y)	0.00394	0.00394	0.00393

SKY130_FD_SC_HS__O31Ax

sky130_fd_sc_hs_tt_1.50v_25C.ccs
Cell Library: Process , Voltage 1.50, 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	0.00253	0.00247	0.00248	0.00229	0.83792
sky130_fd_sc_hs__o31a_2	0.00267	0.00260	0.00262	0.00274	1.49426
sky130_fd_sc_hs__o31a_4	0.00457	0.00488	0.00485	0.00482	3.18121

Leakage Information

Cell Name	Leakage(nW)		
	Min.	Avg	Max.
sky130_fd_sc_hs__o31a_1	0.00000	0.09710	0.23008
sky130_fd_sc_hs__o31a_2	0.00000	0.08134	0.15791
sky130_fd_sc_hs__o31a_4	0.00000	0.16450	0.31583

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)	0.10945	0.76219	6.97783
	A2->X (RR)	0.10688	0.75067	6.91006
	A3->X (RR)	0.09535	0.72480	6.85302
	B1->X (RR)	0.09964	0.74997	6.99397
sky130_fd_sc_hs__o31a_2	A1->X (RR)	0.11336	0.67362	6.91410
	A2->X (RR)	0.11140	0.66507	6.86169
	A3->X (RR)	0.09947	0.64403	6.79952
	B1->X (RR)	0.10451	0.67372	6.91475
sky130_fd_sc_hs__o31a_4	A1->X (RR)	0.11920	0.59316	7.03979
	A2->X (RR)	0.11477	0.57893	6.97048
	A3->X (RR)	0.10283	0.55824	6.92314
	B1->X (RR)	0.10924	0.59535	7.03519

Delay(ns) to X falling :

Cell Name	Timing Arc(Dir)	Delay(ns)		
		First	Mid	Last
sky130_fd_sc_hs__o31a_1	A1->X (FF)	0.32508	0.86776	4.95377
	A2->X (FF)	0.30425	0.86129	5.02893
	A3->X (FF)	0.26090	0.80370	4.75652
	B1->X (FF)	0.10052	0.62087	4.40600
sky130_fd_sc_hs__o31a_2	A1->X (FF)	0.41536	0.95012	5.07152
	A2->X (FF)	0.39399	0.94763	5.20272
	A3->X (FF)	0.35015	0.88338	4.93182
	B1->X (FF)	0.10908	0.61294	4.36527
sky130_fd_sc_hs__o31a_4	A1->X (FF)	0.41319	0.92623	5.30963
	A2->X (FF)	0.39218	0.91673	5.40304
	A3->X (FF)	0.33351	0.84030	5.12382
	B1->X (FF)	0.10185	0.57416	4.62189

Power Information

Internal switching power(pJ) to X rising :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__o31a_1	A1	0.00906	0.00891	0.01055
	A1	0.00389	0.00375	0.00541
	A2	0.00786	0.00784	0.00969
	A2	0.00335	0.00333	0.00519
	A3	0.00657	0.00653	0.00965
	A3	0.00263	0.00259	0.00573
	B1	0.00798	0.00795	0.01436
	B1	0.00343	0.00344	0.01053
sky130_fd_sc_hs__o31a_2	A1	0.01139	0.01146	0.01286
	A1	0.00590	0.00599	0.00748
	A2	0.01013	0.01036	0.01195
	A2	0.00534	0.00559	0.00722
	A3	0.00887	0.00908	0.01145
	A3	0.00461	0.00482	0.00913
	B1	0.01029	0.01037	0.01533
	B1	0.00523	0.00539	0.01278
sky130_fd_sc_hs__o31a_4	A1	0.02168	0.02218	0.02610
	A1	0.01167	0.01222	0.01625
	A2	0.01957	0.02006	0.02427
	A2	0.01037	0.01091	0.01509
	A3	0.01616	0.01665	0.02386
	A3	0.00843	0.00894	0.01614
	B1	0.01966	0.02011	0.02978
	B1	0.00843	0.00892	0.02437

Internal switching power(pJ) to X falling :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__o31a_1	A1	0.00306	0.00292	0.00478
	A1	0.00817	0.00808	0.00974
	A2	0.00307	0.00297	0.00534
	A2	0.00750	0.00748	0.00964
	A3	0.00307	0.00321	0.00798
	A3	0.00691	0.00709	0.01178
	B1	0.00233	0.00284	0.01066
	B1	0.00634	0.00672	0.01407
sky130_fd_sc_hs__o31a_2	A1	0.00496	0.00488	0.00662
	A1	0.01036	0.01028	0.01185
	A2	0.00500	0.00500	0.00708
	A2	0.00968	0.00968	0.01174
	A3	0.00497	0.00531	0.01008
	A3	0.00911	0.00945	0.01380
	B1	0.00396	0.00454	0.01111
	B1	0.00844	0.00891	0.01516
sky130_fd_sc_hs__o31a_4	A1	0.00989	0.01034	0.01499
	A1	0.01983	0.02027	0.02346
	A2	0.00951	0.00996	0.01485
	A2	0.01856	0.01900	0.02329
	A3	0.00988	0.01043	0.02008
	A3	0.01737	0.01807	0.02745
	B1	0.00784	0.00900	0.02281
	B1	0.01615	0.01711	0.02962

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)**	0.00112	0.00111	0.00111
	(A2 * A3 * B1 * X)	-0.00116	-0.00119	-0.00119
	(A2 * !B1 * !X)	0.00095	0.00095	0.00095
	(A2 * !B1 * !X)	-0.00133	-0.00135	-0.00135
	(A2 * !A3 * B1 * X)	0.00113	0.00111	0.00111
	(A2 * !A3 * B1 * X)	-0.00113	-0.00119	-0.00119
	(!A2 * A3 * B1 * X)	0.00113	0.00113	0.00111
	(!A2 * A3 * B1 * X)	-0.00106	-0.00116	-0.00115
	(!A2 * A3 * !B1 * !X)	0.00095	0.00096	0.00095
	(!A2 * A3 * !B1 * !X)	-0.00123	-0.00132	-0.00131
	(!A2 * !A3 * !B1 * !X)	0.00090	0.00090	0.00089
	(!A2 * !A3 * !B1 * !X)	-0.00137	-0.00137	-0.00137
sky130_fd_sc_hs__o31a_2	**(A2 * A3 * B1 * X)**	0.00123	0.00123	0.00123
	(A2 * A3 * B1 * X)	-0.00122	-0.00125	-0.00125
	(A2 * !B1 * !X)	0.00114	0.00114	0.00114
	(A2 * !B1 * !X)	-0.00131	-0.00133	-0.00133
	(A2 * !A3 * B1 * X)	0.00124	0.00123	0.00123
	(A2 * !A3 * B1 * X)	-0.00119	-0.00125	-0.00125
	(!A2 * A3 * B1 * X)	0.00125	0.00124	0.00123
	(!A2 * A3 * B1 * X)	-0.00111	-0.00121	-0.00120
	(!A2 * A3 * !B1 * !X)	0.00114	0.00115	0.00114
	(!A2 * A3 * !B1 * !X)	-0.00121	-0.00130	-0.00129
	(!A2 * !A3 * !B1 * !X)	0.00107	0.00108	0.00107
	(!A2 * !A3 * !B1 * !X)	-0.00134	-0.00135	-0.00135

sky130_fd_sc_hs__o31a_4	**(A2 * A3 * B1 * X)**	0.00187	0.00187	0.00187
	(A2 * A3 * B1 * X)	-0.00241	-0.00248	-0.00249
	(A2 * !B1 * !X)	0.00187	0.00187	0.00187
	(A2 * !B1 * !X)	-0.00242	-0.00249	-0.00249
	(A2 * !A3 * B1 * X)	0.00191	0.00188	0.00187
	(A2 * !A3 * B1 * X)	-0.00234	-0.00248	-0.00249
	(!A2 * A3 * B1 * X)	0.00193	0.00188	0.00187
	(!A2 * A3 * B1 * X)	-0.00219	-0.00240	-0.00239
	(!A2 * A3 * !B1 * !X)	0.00187	0.00187	0.00187
	(!A2 * A3 * !B1 * !X)	-0.00223	-0.00240	-0.00239
	(!A2 * !A3 * !B1 * !X)	0.00174	0.00177	0.00175
	(!A2 * !A3 * !B1 * !X)	-0.00255	-0.00257	-0.00256

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)**	-0.00111	-0.00111	-0.00111
	(A2 * A3 * B1 * X)	0.00119	0.00120	0.00119
	(A2 * !B1 * !X)	-0.00095	-0.00095	-0.00095
	(A2 * !B1 * !X)	0.00135	0.00136	0.00135
	(A2 * !A3 * B1 * X)	-0.00111	-0.00111	-0.00111
	(A2 * !A3 * B1 * X)	0.00119	0.00120	0.00119
	(!A2 * A3 * B1 * X)	-0.00111	-0.00111	-0.00111
	(!A2 * A3 * B1 * X)	0.00115	0.00116	0.00115
	(!A2 * A3 * !B1 * !X)	-0.00095	-0.00095	-0.00095
	(!A2 * A3 * !B1 * !X)	0.00131	0.00132	0.00131
	(!A2 * !A3 * !B1 * !X)	-0.00085	-0.00090	-0.00089
	(!A2 * !A3 * !B1 * !X)	0.00138	0.00138	0.00137

sky130_fd_sc_hs__o31a_2	**(A2 * A3 * B1 * X)**	-0.00122	-0.00123	-0.00122
	(A2 * A3 * B1 * X)	0.00124	0.00126	0.00125
	(A2 * !B1 * !X)	-0.00114	-0.00114	-0.00113
	(A2 * !B1 * !X)	0.00133	0.00134	0.00133
	(A2 * !A3 * B1 * X)	-0.00122	-0.00123	-0.00122
	(A2 * !A3 * B1 * X)	0.00124	0.00126	0.00125
	(!A2 * A3 * B1 * X)	-0.00122	-0.00122	-0.00122
	(!A2 * A3 * B1 * X)	0.00120	0.00121	0.00120
	(!A2 * A3 * !B1 * !X)	-0.00114	-0.00114	-0.00113
	(!A2 * A3 * !B1 * !X)	0.00129	0.00130	0.00129
	(!A2 * !A3 * !B1 * !X)	-0.00103	-0.00108	-0.00107
	(!A2 * !A3 * !B1 * !X)	0.00136	0.00135	0.00135
sky130_fd_sc_hs__o31a_4	**(A2 * A3 * B1 * X)**	-0.00186	-0.00186	-0.00186
	(A2 * A3 * B1 * X)	0.00249	0.00248	0.00249
	(A2 * !B1 * !X)	-0.00186	-0.00186	-0.00186
	(A2 * !B1 * !X)	0.00250	0.00249	0.00249
	(A2 * !A3 * B1 * X)	-0.00186	-0.00187	-0.00186
	(A2 * !A3 * B1 * X)	0.00249	0.00251	0.00249
	(!A2 * A3 * B1 * X)	-0.00186	-0.00187	-0.00186
	(!A2 * A3 * B1 * X)	0.00238	0.00240	0.00239
	(!A2 * A3 * !B1 * !X)	-0.00186	-0.00187	-0.00186
	(!A2 * A3 * !B1 * !X)	0.00238	0.00240	0.00239
	(!A2 * !A3 * !B1 * !X)	-0.00165	-0.00176	-0.00175
	(!A2 * !A3 * !B1 * !X)	0.00258	0.00257	0.00256

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)**	0.00111	0.00114	0.00107
	(A1 * A3 * B1 * X)	-0.00080	-0.00080	-0.00080
	(A1 * A3 * !B1 * !X)	0.00098	0.00100	0.00098
	(A1 * A3 * !B1 * !X)	-0.00090	-0.00091	-0.00091
	(A1 * !A3 * B1 * X)	0.00104	0.00106	0.00103
	(A1 * !A3 * B1 * X)	-0.00069	-0.00069	-0.00069
	(A1 * !A3 * !B1 * !X)	0.00099	0.00099	0.00098
	(A1 * !A3 * !B1 * !X)	-0.00121	-0.00122	-0.00122
	(!A1 * A3 * B1 * X)	0.00124	0.00105	0.00103
	(!A1 * A3 * B1 * X)	-0.00097	-0.00117	-0.00118
	(!A1 * A3 * !B1 * !X)	0.00099	0.00099	0.00098
	(!A1 * A3 * !B1 * !X)	-0.00121	-0.00122	-0.00122
	(!A1 * !A3 * !B1 * !X)	0.00092	0.00092	0.00092
	(!A1 * !A3 * !B1 * !X)	-0.00124	-0.00124	-0.00124
sky130_fd_sc_hs__o31a_2	**(A1 * A3 * B1 * X)**	0.00122	0.00125	0.00118
	(A1 * A3 * B1 * X)	-0.00082	-0.00083	-0.00082
	(A1 * A3 * !B1 * !X)	0.00109	0.00111	0.00110
	(A1 * A3 * !B1 * !X)	-0.00093	-0.00093	-0.00093
	(A1 * !A3 * B1 * X)	0.00114	0.00117	0.00114
	(A1 * !A3 * B1 * X)	-0.00070	-0.00072	-0.00071
	(A1 * !A3 * !B1 * !X)	0.00110	0.00110	0.00110
	(A1 * !A3 * !B1 * !X)	-0.00123	-0.00124	-0.00123
	(!A1 * A3 * B1 * X)	0.00135	0.00116	0.00114
	(!A1 * A3 * B1 * X)	-0.00099	-0.00119	-0.00120
	(!A1 * A3 * !B1 * !X)	0.00110	0.00110	0.00110
	(!A1 * A3 * !B1 * !X)	-0.00122	-0.00124	-0.00124
	(!A1 * !A3 * !B1 * !X)	0.00103	0.00104	0.00103
	(!A1 * !A3 * !B1 * !X)	-0.00126	-0.00126	-0.00126

sky130_fd_sc_hs__o31a_4	**(A1 * A3 * B1 * X)**	0.00234	0.00241	0.00228
	(A1 * A3 * B1 * X)	-0.00169	-0.00169	-0.00169
	(A1 * A3 * !B1 * !X)	0.00221	0.00225	0.00222
	(A1 * A3 * !B1 * !X)	-0.00183	-0.00183	-0.00183
	(A1 * !A3 * B1 * X)	0.00223	0.00227	0.00223
	(A1 * !A3 * B1 * X)	-0.00146	-0.00149	-0.00147
	(A1 * !A3 * !B1 * !X)	0.00221	0.00223	0.00222
	(A1 * !A3 * !B1 * !X)	-0.00244	-0.00249	-0.00248
	(!A1 * A3 * B1 * X)	0.00260	0.00225	0.00222
	(!A1 * A3 * B1 * X)	-0.00203	-0.00245	-0.00247
	(!A1 * A3 * !B1 * !X)	0.00221	0.00223	0.00222
	(!A1 * A3 * !B1 * !X)	-0.00238	-0.00247	-0.00245
	(!A1 * !A3 * !B1 * !X)	0.00211	0.00213	0.00211
	(!A1 * !A3 * !B1 * !X)	-0.00253	-0.00254	-0.00253

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)**	-0.00103	-0.00103	-0.00103
	(A1 * A3 * B1 * X)	0.00080	0.00080	0.00080
	(A1 * A3 * !B1 * !X)	-0.00098	-0.00098	-0.00098
	(A1 * A3 * !B1 * !X)	0.00090	0.00091	0.00091
	(A1 * !A3 * B1 * X)	-0.00101	-0.00102	-0.00101
	(A1 * !A3 * B1 * X)	0.00071	0.00071	0.00071
	(A1 * !A3 * !B1 * !X)	-0.00098	-0.00098	-0.00098
	(A1 * !A3 * !B1 * !X)	0.00122	0.00122	0.00122
	(!A1 * A3 * B1 * X)	-0.00102	-0.00103	-0.00102
	(!A1 * A3 * B1 * X)	0.00118	0.00119	0.00118
	(!A1 * A3 * !B1 * !X)	-0.00097	-0.00098	-0.00098
	(!A1 * A3 * !B1 * !X)	0.00121	0.00122	0.00122
	(!A1 * !A3 * !B1 * !X)	-0.00087	-0.00092	-0.00092
	(!A1 * !A3 * !B1 * !X)	0.00125	0.00125	0.00124
sky130_fd_sc_hs__o31a_2	**(A1 * A3 * B1 * X)**	-0.00114	-0.00114	-0.00114
	(A1 * A3 * B1 * X)	0.00082	0.00083	0.00082
	(A1 * A3 * !B1 * !X)	-0.00109	-0.00110	-0.00109
	(A1 * A3 * !B1 * !X)	0.00093	0.00093	0.00093
	(A1 * !A3 * B1 * X)	-0.00113	-0.00113	-0.00112
	(A1 * !A3 * B1 * X)	0.00073	0.00073	0.00073
	(A1 * !A3 * !B1 * !X)	-0.00109	-0.00110	-0.00109
	(A1 * !A3 * !B1 * !X)	0.00123	0.00124	0.00123
	(!A1 * A3 * B1 * X)	-0.00113	-0.00114	-0.00113
	(!A1 * A3 * B1 * X)	0.00120	0.00121	0.00120
	(!A1 * A3 * !B1 * !X)	-0.00109	-0.00109	-0.00109
	(!A1 * A3 * !B1 * !X)	0.00123	0.00124	0.00124
	(!A1 * !A3 * !B1 * !X)	-0.00098	-0.00104	-0.00103
	(!A1 * !A3 * !B1 * !X)	0.00126	0.00127	0.00126

sky130_fd_sc_hs__o31a_4	**(A1 * A3 * B1 * X)**	-0.00222	-0.00223	-0.00223
	(A1 * A3 * B1 * X)	0.00169	0.00169	0.00169
	(A1 * A3 * !B1 * !X)	-0.00221	-0.00222	-0.00221
	(A1 * A3 * !B1 * !X)	0.00183	0.00183	0.00183
	(A1 * !A3 * B1 * X)	-0.00220	-0.00221	-0.00217
	(A1 * !A3 * B1 * X)	0.00152	0.00153	0.00152
	(A1 * !A3 * !B1 * !X)	-0.00221	-0.00223	-0.00221
	(A1 * !A3 * !B1 * !X)	0.00248	0.00249	0.00248
	(!A1 * A3 * B1 * X)	-0.00221	-0.00222	-0.00220
	(!A1 * A3 * B1 * X)	0.00245	0.00247	0.00247
	(!A1 * A3 * !B1 * !X)	-0.00221	-0.00222	-0.00221
	(!A1 * A3 * !B1 * !X)	0.00245	0.00247	0.00245
	(!A1 * !A3 * !B1 * !X)	-0.00200	-0.00213	-0.00211
	(!A1 * !A3 * !B1 * !X)	0.00255	0.00256	0.00254

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

Cell Name	**When**	**Power(pJ)**		
		first	**mid**	**last**
sky130_fd_sc_hs__o31a_1	**(A2 * B1 * X)**	0.00112	0.00113	0.00111
	(A2 * B1 * X)	-0.00064	-0.00065	-0.00064
	(A2 * !B1 * !X)	0.00096	0.00098	0.00097
	(A2 * !B1 * !X)	-0.00121	-0.00124	-0.00124
	(A1 * !A2 * B1 * X)	0.00110	0.00113	0.00111
	(A1 * !A2 * B1 * X)	-0.00063	-0.00065	-0.00064
	(A1 * !A2 * !B1 * !X)	0.00097	0.00097	0.00097
	(A1 * !A2 * !B1 * !X)	-0.00111	-0.00119	-0.00118
	(!A1 * !A2 * !B1 * !X)	0.00091	0.00091	0.00091
	(!A1 * !A2 * !B1 * !X)	-0.00127	-0.00126	-0.00126

sky130_fd_sc_hs__o31a_2	**(A2 * B1 * X)**	0.00129	0.00131	0.00129
	(A2 * B1 * X)	-0.00064	-0.00065	-0.00064
	(A2 * !B1 * !X)	0.00113	0.00114	0.00113
	(A2 * !B1 * !X)	-0.00123	-0.00126	-0.00126
	(A1 * !A2 * B1 * X)	0.00128	0.00131	0.00129
	(A1 * !A2 * B1 * X)	-0.00063	-0.00065	-0.00064
	(A1 * !A2 * !B1 * !X)	0.00113	0.00113	0.00113
	(A1 * !A2 * !B1 * !X)	-0.00114	-0.00121	-0.00120
	(!A1 * !A2 * !B1 * !X)	0.00107	0.00107	0.00106
	(!A1 * !A2 * !B1 * !X)	-0.00128	-0.00128	-0.00128
sky130_fd_sc_hs__o31a_4	**(A2 * B1 * X)**	0.00222	0.00225	0.00221
	(A2 * B1 * X)	-0.00143	-0.00144	-0.00141
	(A2 * !B1 * !X)	0.00200	0.00202	0.00200
	(A2 * !B1 * !X)	-0.00248	-0.00258	-0.00257
	(A1 * !A2 * B1 * X)	0.00220	0.00224	0.00221
	(A1 * !A2 * B1 * X)	-0.00141	-0.00144	-0.00141
	(A1 * !A2 * !B1 * !X)	0.00199	0.00201	0.00200
	(A1 * !A2 * !B1 * !X)	-0.00229	-0.00246	-0.00244
	(!A1 * !A2 * !B1 * !X)	0.00188	0.00188	0.00187
	(!A1 * !A2 * !B1 * !X)	-0.00267	-0.00267	-0.00266

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

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

sky130_fd_sc_hs__o31a_1	**(A2 * B1 * X)**	-0.00106	-0.00107	-0.00110
	(A2 * B1 * X)	0.00069	0.00069	0.00065
	(A2 * !B1 * !X)	-0.00096	-0.00097	-0.00097
	(A2 * !B1 * !X)	0.00125	0.00124	0.00124
	(A1 * !A2 * B1 * X)	-0.00100	-0.00101	-0.00109
	(A1 * !A2 * B1 * X)	0.00072	0.00072	0.00065
	(A1 * !A2 * !B1 * !X)	-0.00097	-0.00097	-0.00097
	(A1 * !A2 * !B1 * !X)	0.00118	0.00119	0.00118
	(!A1 * !A2 * !B1 * !X)	-0.00086	-0.00091	-0.00091
	(!A1 * !A2 * !B1 * !X)	0.00127	0.00127	0.00127
sky130_fd_sc_hs__o31a_2	**(A2 * B1 * X)**	-0.00123	-0.00124	-0.00128
	(A2 * B1 * X)	0.00069	0.00069	0.00065
	(A2 * !B1 * !X)	-0.00113	-0.00112	-0.00113
	(A2 * !B1 * !X)	0.00127	0.00126	0.00126
	(A1 * !A2 * B1 * X)	-0.00118	-0.00119	-0.00127
	(A1 * !A2 * B1 * X)	0.00072	0.00072	0.00065
	(A1 * !A2 * !B1 * !X)	-0.00113	-0.00113	-0.00112
	(A1 * !A2 * !B1 * !X)	0.00121	0.00121	0.00120
	(!A1 * !A2 * !B1 * !X)	-0.00101	-0.00107	-0.00106
	(!A1 * !A2 * !B1 * !X)	0.00128	0.00129	0.00128
sky130_fd_sc_hs__o31a_4	**(A2 * B1 * X)**	-0.00206	-0.00208	-0.00219
	(A2 * B1 * X)	0.00154	0.00155	0.00145
	(A2 * !B1 * !X)	-0.00200	-0.00201	-0.00199
	(A2 * !B1 * !X)	0.00259	0.00258	0.00257
	(A1 * !A2 * B1 * X)	-0.00193	-0.00193	-0.00216
	(A1 * !A2 * B1 * X)	0.00161	0.00159	0.00146
	(A1 * !A2 * !B1 * !X)	-0.00199	-0.00201	-0.00199
	(A1 * !A2 * !B1 * !X)	0.00245	0.00246	0.00244
	(!A1 * !A2 * !B1 * !X)	-0.00174	-0.00188	-0.00187
	(!A1 * !A2 * !B1 * !X)	0.00269	0.00268	0.00267

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)	0.00038	0.00038	0.00035
	(!A1 * !A2 * !A3 * !X)	-0.00126	-0.00127	-0.00132
sky130_fd_sc_hs__o31a_2	(!A1 * !A2 * !A3 * !X)	0.00049	0.00049	0.00045
	(!A1 * !A2 * !A3 * !X)	-0.00157	-0.00158	-0.00164
sky130_fd_sc_hs__o31a_4	(!A1 * !A2 * !A3 * !X)	0.00073	0.00074	0.00066
	(!A1 * !A2 * !A3 * !X)	-0.00294	-0.00297	-0.00309

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)	-0.00034	-0.00034	-0.00034
	(!A1 * !A2 * !A3 * !X)	0.00132	0.00133	0.00133
sky130_fd_sc_hs__o31a_2	(!A1 * !A2 * !A3 * !X)	-0.00044	-0.00044	-0.00043
	(!A1 * !A2 * !A3 * !X)	0.00164	0.00165	0.00165
sky130_fd_sc_hs__o31a_4	(!A1 * !A2 * !A3 * !X)	-0.00064	-0.00063	-0.00063
	(!A1 * !A2 * !A3 * !X)	0.00312	0.00312	0.00311

SKY130_FD_SC_HS__O32AIx

sky130_fd_sc_hs_tt_1.50v_25C.ccs
Cell Library: Process , Voltage
1.50, 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	0.00257	0.00283	0.00277	0.00273	0.00283	0.26929
sky130_fd_sc_hs__o32ai_2	0.00543	0.00508	0.00553	0.00523	0.00531	0.48832
sky130_fd_sc_hs__o32ai_4	0.01023	0.01028	0.01043	0.01068	0.01036	0.90807

Leakage Information

Cell Name	Leakage(nW)		
	Min.	Avg	Max.
sky130_fd_sc_hs__o32ai_1	0.00000	0.01826	0.05947
sky130_fd_sc_hs__o32ai_2	0.00000	0.03652	0.11893
sky130_fd_sc_hs__o32ai_4	0.00000	0.07304	0.23786

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)	0.28310	1.40658	11.16330
	A2->Y (FR)	0.26693	1.40599	11.58940
	A3->Y (FR)	0.22040	1.33400	11.35500
	B1->Y (FR)	0.10595	0.97387	9.01191
	B2->Y (FR)	0.08721	0.94575	9.01884
sky130_fd_sc_hs__o32ai_2	A1->Y (FR)	0.29433	1.24515	11.00740
	A2->Y (FR)	0.27494	1.24737	11.53690
	A3->Y (FR)	0.21811	1.16591	11.30390
	B1->Y (FR)	0.10826	0.88825	9.17119
	B2->Y (FR)	0.07824	0.84904	9.15666
sky130_fd_sc_hs__o32ai_4	A1->Y (FR)	0.29258	1.10255	10.87550
	A2->Y (FR)	0.27349	1.10317	11.41490
	A3->Y (FR)	0.21573	1.02829	11.25540
	B1->Y (FR)	0.10379	0.77785	8.98491
	B2->Y (FR)	0.07503	0.74942	9.05637

Delay(ns) to Y falling :

Cell Name	Timing Arc(Dir)	Delay(ns)		
		First	Mid	Last
sky130_fd_sc_hs__o32ai_1	A1->Y (RF)	0.05612	0.43074	3.63141
	A2->Y (RF)	0.05722	0.43246	3.69370
	A3->Y (RF)	0.04916	0.41934	3.66867
	B1->Y (RF)	0.04458	0.46042	4.10673
	B2->Y (RF)	0.03800	0.44377	4.05890
sky130_fd_sc_hs__o32ai_2	A1->Y (RF)	0.05716	0.38558	3.50686
	A2->Y (RF)	0.05879	0.39189	3.63526
	A3->Y (RF)	0.04883	0.37553	3.59927
	B1->Y (RF)	0.04467	0.41659	4.08432
	B2->Y (RF)	0.03664	0.40470	4.10686
sky130_fd_sc_hs__o32ai_4	A1->Y (RF)	0.06022	0.35741	3.61715
	A2->Y (RF)	0.05604	0.34143	3.56354
	A3->Y (RF)	0.04453	0.31907	3.49761
	B1->Y (RF)	0.05746	0.43075	4.51051
	B2->Y (RF)	0.04782	0.43040	4.68686

Power Information

Internal switching power(pJ) to Y rising :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__o32ai_1	A1	0.00133	0.00119	0.00138
	A1	0.00783	0.00769	0.00788
	A2	0.00142	0.00125	0.00158
	A2	0.00726	0.00711	0.00742
	A3	0.00141	0.00135	0.00256
	A3	0.00646	0.00641	0.00745
	B1	-0.00012	-0.00024	0.00017
	B1	0.00537	0.00523	0.00562
	B2	-0.00010	-0.00006	0.00130
	B2	0.00465	0.00466	0.00599
sky130_fd_sc_hs__o32ai_2	A1	0.00238	0.00204	0.00241
	A1	0.01604	0.01575	0.01611
	A2	0.00254	0.00218	0.00281
	A2	0.01439	0.01406	0.01463
	A3	0.00244	0.00214	0.00470
	A3	0.01308	0.01281	0.01527
	B1	-0.00044	-0.00065	0.00015
	B1	0.01069	0.01045	0.01125
	B2	-0.00059	-0.00047	0.00225
	B2	0.00923	0.00932	0.01192

sky130_fd_sc_hs__o32ai_4	**A1**	0.00474	0.00412	0.00516
	A1	0.03159	0.03102	0.03207
	A2	0.00481	0.00413	0.00578
	A2	0.02867	0.02800	0.02954
	A3	0.00484	0.00437	0.00987
	A3	0.02570	0.02530	0.03065
	B1	-0.00097	-0.00147	0.00021
	B1	0.02160	0.02095	0.02266
	B2	-0.00108	-0.00106	0.00409
	B2	0.01850	0.01844	0.02337

Internal switching power(pJ) to Y falling :

Cell Name	**Input**	**Power(pJ)**		
		first	**mid**	**last**
sky130_fd_sc_hs__o32ai_1	**A1**	0.00912	0.00900	0.00925
	A1	0.00245	0.00232	0.00257
	A2	0.00776	0.00769	0.00794
	A2	0.00169	0.00159	0.00185
	A3	0.00627	0.00623	0.00655
	A3	0.00094	0.00091	0.00119
	B1	0.00780	0.00769	0.00819
	B1	0.00248	0.00237	0.00285
	B2	0.00647	0.00641	0.00687
	B2	0.00184	0.00179	0.00223

sky130_fd_sc_hs__o32ai_2	**A1**	0.01909	0.01882	0.01924
	A1	0.00512	0.00482	0.00532
	A2	0.01621	0.01597	0.01655
	A2	0.00394	0.00368	0.00419
	A3	0.01307	0.01298	0.01358
	A3	0.00193	0.00184	0.00244
	B1	0.01611	0.01581	0.01688
	B1	0.00535	0.00505	0.00601
	B2	0.01306	0.01296	0.01392
	B2	0.00354	0.00342	0.00440
sky130_fd_sc_hs__o32ai_4	**A1**	0.03717	0.03656	0.03791
	A1	0.00977	0.00914	0.01054
	A2	0.03168	0.03109	0.03270
	A2	0.00701	0.00644	0.00796
	A3	0.02527	0.02498	0.02671
	A3	0.00343	0.00312	0.00487
	B1	0.03186	0.03122	0.03341
	B1	0.01003	0.00936	0.01133
	B2	0.02577	0.02544	0.02765
	B2	0.00679	0.00645	0.00845

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)**	0.00118	0.00118	0.00118
	(A2 * A3 * B2 * !Y)	-0.00133	-0.00136	-0.00136
	(A2 * A3 * B1 * !B2 * !Y)	0.00118	0.00118	0.00118
	(A2 * A3 * B1 * !B2 * !Y)	-0.00133	-0.00136	-0.00136
	(A2 * !B1 * !B2 * Y)	0.00118	0.00118	0.00118
	(A2 * !B1 * !B2 * Y)	-0.00133	-0.00136	-0.00136
	(A2 * !A3 * B2 * !Y)	0.00118	0.00118	0.00118
	(A2 * !A3 * B2 * !Y)	-0.00131	-0.00136	-0.00136
	(A2 * !A3 * B1 * !B2 * !Y)	0.00118	0.00118	0.00118
	(A2 * !A3 * B1 * !B2 * !Y)	-0.00131	-0.00136	-0.00136
	(!A2 * A3 * B2 * !Y)	0.00119	0.00119	0.00118
	(!A2 * A3 * B2 * !Y)	-0.00122	-0.00132	-0.00131
	(!A2 * A3 * B1 * !B2 * !Y)	0.00119	0.00119	0.00118
	(!A2 * A3 * B1 * !B2 * !Y)	-0.00122	-0.00132	-0.00131
	(!A2 * A3 * !B1 * !B2 * Y)	0.00118	0.00119	0.00118
	(!A2 * A3 * !B1 * !B2 * Y)	-0.00123	-0.00132	-0.00131
	(!A2 * !A3 * !B1 * !B2 * Y)	0.00112	0.00112	0.00112
	(!A2 * !A3 * !B1 * !B2 * Y)	-0.00138	-0.00138	-0.00138

sky130_fd_sc_hs__o32ai_2	**(A2 * A3 * B2 * !Y)**	0.00244	0.00243	0.00243
	(A2 * A3 * B2 * !Y)	-0.00275	-0.00284	-0.00283
	(A2 * A3 * B1 * !B2 * !Y)	0.00244	0.00243	0.00243
	(A2 * A3 * B1 * !B2 * !Y)	-0.00275	-0.00284	-0.00283
	(A2 * !B1 * !B2 * Y)	0.00244	0.00243	0.00243
	(A2 * !B1 * !B2 * Y)	-0.00276	-0.00284	-0.00283
	(A2 * !A3 * B2 * !Y)	0.00246	0.00244	0.00243
	(A2 * !A3 * B2 * !Y)	-0.00272	-0.00284	-0.00283
	(A2 * !A3 * B1 * !B2 * !Y)	0.00246	0.00244	0.00243
	(A2 * !A3 * B1 * !B2 * !Y)	-0.00272	-0.00284	-0.00284
	(!A2 * A3 * B2 * !Y)	0.00247	0.00247	0.00243
	(!A2 * A3 * B2 * !Y)	-0.00256	-0.00275	-0.00273
	(!A2 * A3 * B1 * !B2 * !Y)	0.00247	0.00247	0.00244
	(!A2 * A3 * B1 * !B2 * !Y)	-0.00256	-0.00275	-0.00273
	(!A2 * A3 * !B1 * !B2 * Y)	0.00243	0.00246	0.00243
	(!A2 * A3 * !B1 * !B2 * Y)	-0.00259	-0.00275	-0.00273
	(!A2 * !A3 * !B1 * !B2 * Y)	0.00226	0.00228	0.00226
	(!A2 * !A3 * !B1 * !B2 * Y)	-0.00292	-0.00293	-0.00291

sky130_fd_sc_hs__o32ai_4	**(A2 * A3 * B2 * !Y)**	0.00459	0.00459	0.00458
	(A2 * A3 * B2 * !Y)	-0.00535	-0.00553	-0.00551
	(A2 * A3 * B1 * !B2 * !Y)	0.00459	0.00459	0.00458
	(A2 * A3 * B1 * !B2 * !Y)	-0.00535	-0.00553	-0.00551
	(A2 * !B1 * !B2 * Y)	0.00458	0.00459	0.00458
	(A2 * !B1 * !B2 * Y)	-0.00536	-0.00553	-0.00551
	(A2 * !A3 * B2 * !Y)	0.00462	0.00459	0.00458
	(A2 * !A3 * B2 * !Y)	-0.00529	-0.00552	-0.00551
	(A2 * !A3 * B1 * !B2 * !Y)	0.00462	0.00459	0.00458
	(A2 * !A3 * B1 * !B2 * !Y)	-0.00529	-0.00552	-0.00551
	(!A2 * A3 * B2 * !Y)	0.00465	0.00457	0.00458
	(!A2 * A3 * B2 * !Y)	-0.00497	-0.00534	-0.00530
	(!A2 * A3 * B1 * !B2 * !Y)	0.00465	0.00457	0.00458
	(!A2 * A3 * B1 * !B2 * !Y)	-0.00497	-0.00534	-0.00531
	(!A2 * A3 * !B1 * !B2 * Y)	0.00454	0.00456	0.00458
	(!A2 * A3 * !B1 * !B2 * Y)	-0.00498	-0.00535	-0.00531
	(!A2 * !A3 * !B1 * !B2 * Y)	0.00424	0.00430	0.00426
	(!A2 * !A3 * !B1 * !B2 * Y)	-0.00564	-0.00569	-0.00566

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)**	-0.00117	-0.00118	-0.00118
	(A2 * A3 * B2 * !Y)	0.00135	0.00137	0.00136
	(A2 * A3 * B1 * !B2 * !Y)	-0.00117	-0.00118	-0.00117
	(A2 * A3 * B1 * !B2 * !Y)	0.00135	0.00137	0.00136
	(A2 * !B1 * !B2 * Y)	-0.00117	-0.00118	-0.00117
	(A2 * !B1 * !B2 * Y)	0.00136	0.00136	0.00136
	(A2 * !A3 * B2 * !Y)	-0.00117	-0.00118	-0.00118
	(A2 * !A3 * B2 * !Y)	0.00136	0.00137	0.00136
	(A2 * !A3 * B1 * !B2 * !Y)	-0.00117	-0.00118	-0.00117
	(A2 * !A3 * B1 * !B2 * !Y)	0.00136	0.00137	0.00136
	(!A2 * A3 * B2 * !Y)	-0.00117	-0.00118	-0.00117
	(!A2 * A3 * B2 * !Y)	0.00131	0.00132	0.00131
	(!A2 * A3 * B1 * !B2 * !Y)	-0.00117	-0.00118	-0.00117
	(!A2 * A3 * B1 * !B2 * !Y)	0.00131	0.00132	0.00131
	(!A2 * A3 * !B1 * !B2 * Y)	-0.00118	-0.00118	-0.00117
	(!A2 * A3 * !B1 * !B2 * Y)	0.00131	0.00132	0.00131
	(!A2 * !A3 * !B1 * !B2 * Y)	-0.00106	-0.00112	-0.00112
	(!A2 * !A3 * !B1 * !B2 * Y)	0.00138	0.00140	0.00138

sky130_fd_sc_hs__o32ai_2	**(A2 * A3 * B2 * !Y)**	-0.00242	-0.00243	-0.00243
	(A2 * A3 * B2 * !Y)	0.00282	0.00286	0.00283
	(A2 * A3 * B1 * !B2 * !Y)	-0.00242	-0.00243	-0.00243
	(A2 * A3 * B1 * !B2 * !Y)	0.00282	0.00286	0.00283
	(A2 * !B1 * !B2 * Y)	-0.00243	-0.00243	-0.00243
	(A2 * !B1 * !B2 * Y)	0.00284	0.00286	0.00283
	(A2 * !A3 * B2 * !Y)	-0.00242	-0.00244	-0.00243
	(A2 * !A3 * B2 * !Y)	0.00283	0.00286	0.00283
	(A2 * !A3 * B1 * !B2 * !Y)	-0.00242	-0.00244	-0.00243
	(A2 * !A3 * B1 * !B2 * !Y)	0.00283	0.00286	0.00284
	(!A2 * A3 * B2 * !Y)	-0.00243	-0.00244	-0.00243
	(!A2 * A3 * B2 * !Y)	0.00272	0.00275	0.00273
	(!A2 * A3 * B1 * !B2 * !Y)	-0.00243	-0.00244	-0.00243
	(!A2 * A3 * B1 * !B2 * !Y)	0.00272	0.00275	0.00273
	(!A2 * A3 * !B1 * !B2 * Y)	-0.00243	-0.00244	-0.00243
	(!A2 * A3 * !B1 * !B2 * Y)	0.00274	0.00275	0.00273
	(!A2 * !A3 * !B1 * !B2 * Y)	-0.00212	-0.00228	-0.00226
	(!A2 * !A3 * !B1 * !B2 * Y)	0.00293	0.00294	0.00292

sky130_fd_sc_hs__o32ai_4	**(A2 * A3 * B2 * !Y)**	-0.00457	-0.00459	-0.00457
	(A2 * A3 * B2 * !Y)	0.00551	0.00555	0.00551
	(A2 * A3 * B1 * !B2 * !Y)	-0.00457	-0.00459	-0.00457
	(A2 * A3 * B1 * !B2 * !Y)	0.00551	0.00555	0.00551
	(A2 * !B1 * !B2 * Y)	-0.00457	-0.00459	-0.00457
	(A2 * !B1 * !B2 * Y)	0.00551	0.00556	0.00551
	(A2 * !A3 * B2 * !Y)	-0.00457	-0.00459	-0.00457
	(A2 * !A3 * B2 * !Y)	0.00552	0.00556	0.00551
	(A2 * !A3 * B1 * !B2 * !Y)	-0.00457	-0.00459	-0.00457
	(A2 * !A3 * B1 * !B2 * !Y)	0.00552	0.00556	0.00551
	(!A2 * A3 * B2 * !Y)	-0.00457	-0.00457	-0.00457
	(!A2 * A3 * B2 * !Y)	0.00530	0.00534	0.00530
	(!A2 * A3 * B1 * !B2 * !Y)	-0.00457	-0.00457	-0.00457
	(!A2 * A3 * B1 * !B2 * !Y)	0.00530	0.00534	0.00531
	(!A2 * A3 * !B1 * !B2 * Y)	-0.00454	-0.00456	-0.00457
	(!A2 * A3 * !B1 * !B2 * Y)	0.00531	0.00535	0.00531
	(!A2 * !A3 * !B1 * !B2 * Y)	-0.00402	-0.00430	-0.00426
	(!A2 * !A3 * !B1 * !B2 * Y)	0.00571	0.00569	0.00567

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)**	0.00121	0.00123	0.00117
	(A1 * A3 * B2 * !Y)	-0.00098	-0.00099	-0.00098
	(A1 * A3 * B1 * !B2 * !Y)	0.00121	0.00123	0.00117
	(A1 * A3 * B1 * !B2 * !Y)	-0.00098	-0.00099	-0.00098
	(A1 * A3 * !B1 * !B2 * Y)	0.00113	0.00115	0.00114
	(A1 * A3 * !B1 * !B2 * Y)	-0.00107	-0.00107	-0.00107
	(A1 * !A3 * B2 * !Y)	0.00116	0.00117	0.00115
	(A1 * !A3 * B2 * !Y)	-0.00086	-0.00087	-0.00086
	(A1 * !A3 * B1 * !B2 * !Y)	0.00115	0.00117	0.00115
	(A1 * !A3 * B1 * !B2 * !Y)	-0.00085	-0.00087	-0.00086
	(A1 * !A3 * !B1 * !B2 * Y)	0.00114	0.00114	0.00114
	(A1 * !A3 * !B1 * !B2 * Y)	-0.00140	-0.00141	-0.00142
	(!A1 * A3 * B2 * !Y)	0.00135	0.00116	0.00115
	(!A1 * A3 * B2 * !Y)	-0.00120	-0.00141	-0.00142
	(!A1 * A3 * B1 * !B2 * !Y)	0.00135	0.00116	0.00115
	(!A1 * A3 * B1 * !B2 * !Y)	-0.00120	-0.00141	-0.00142
	(!A1 * A3 * !B1 * !B2 * Y)	0.00114	0.00114	0.00114
	(!A1 * A3 * !B1 * !B2 * Y)	-0.00140	-0.00142	-0.00142
	(!A1 * !A3 * !B1 * !B2 * Y)	0.00106	0.00107	0.00106
	(!A1 * !A3 * !B1 * !B2 * Y)	-0.00144	-0.00145	-0.00144

sky130_fd_sc_hs__o32ai_2	**(A1 * A3 * B2 * !Y)**	0.00234	0.00236	0.00230
	(A1 * A3 * B2 * !Y)	-0.00182	-0.00184	-0.00183
	(A1 * A3 * B1 * !B2 * !Y)	0.00234	0.00236	0.00230
	(A1 * A3 * B1 * !B2 * !Y)	-0.00183	-0.00184	-0.00183
	(A1 * A3 * !B1 * !B2 * Y)	0.00223	0.00223	0.00222
	(A1 * A3 * !B1 * !B2 * Y)	-0.00205	-0.00206	-0.00204
	(A1 * !A3 * B2 * !Y)	0.00226	0.00230	0.00226
	(A1 * !A3 * B2 * !Y)	-0.00158	-0.00160	-0.00158
	(A1 * !A3 * B1 * !B2 * !Y)	0.00226	0.00230	0.00226
	(A1 * !A3 * B1 * !B2 * !Y)	-0.00158	-0.00160	-0.00158
	(A1 * !A3 * !B1 * !B2 * Y)	0.00221	0.00223	0.00222
	(A1 * !A3 * !B1 * !B2 * Y)	-0.00265	-0.00271	-0.00270
	(!A1 * A3 * B2 * !Y)	0.00263	0.00228	0.00225
	(!A1 * A3 * B2 * !Y)	-0.00228	-0.00272	-0.00271
	(!A1 * A3 * B1 * !B2 * !Y)	0.00263	0.00228	0.00225
	(!A1 * A3 * B1 * !B2 * !Y)	-0.00228	-0.00272	-0.00271
	(!A1 * A3 * !B1 * !B2 * Y)	0.00221	0.00224	0.00222
	(!A1 * A3 * !B1 * !B2 * Y)	-0.00267	-0.00276	-0.00274
	(!A1 * !A3 * !B1 * !B2 * Y)	0.00208	0.00210	0.00208
	(!A1 * !A3 * !B1 * !B2 * Y)	-0.00279	-0.00281	-0.00279

sky130_fd_sc_hs__o32ai_4	**(A1 * A3 * B2 * !Y)**	0.00482	0.00494	0.00471
	(A1 * A3 * B2 * !Y)	-0.00370	-0.00373	-0.00372
	(A1 * A3 * B1 * !B2 * !Y)	0.00483	0.00494	0.00472
	(A1 * A3 * B1 * !B2 * !Y)	-0.00371	-0.00373	-0.00372
	(A1 * A3 * !B1 * !B2 * Y)	0.00461	0.00464	0.00458
	(A1 * A3 * !B1 * !B2 * Y)	-0.00408	-0.00410	-0.00408
	(A1 * !A3 * B2 * !Y)	0.00463	0.00472	0.00462
	(A1 * !A3 * B2 * !Y)	-0.00323	-0.00328	-0.00324
	(A1 * !A3 * B1 * !B2 * !Y)	0.00463	0.00472	0.00462
	(A1 * !A3 * B1 * !B2 * !Y)	-0.00322	-0.00328	-0.00324
	(A1 * !A3 * !B1 * !B2 * Y)	0.00457	0.00459	0.00458
	(A1 * !A3 * !B1 * !B2 * Y)	-0.00538	-0.00545	-0.00546
	(!A1 * A3 * B2 * !Y)	0.00547	0.00467	0.00461
	(!A1 * A3 * B2 * !Y)	-0.00467	-0.00555	-0.00554
	(!A1 * A3 * B1 * !B2 * !Y)	0.00547	0.00467	0.00461
	(!A1 * A3 * B1 * !B2 * !Y)	-0.00466	-0.00555	-0.00554
	(!A1 * A3 * !B1 * !B2 * Y)	0.00460	0.00461	0.00458
	(!A1 * A3 * !B1 * !B2 * Y)	-0.00547	-0.00560	-0.00556
	(!A1 * !A3 * !B1 * !B2 * Y)	0.00426	0.00429	0.00426
	(!A1 * !A3 * !B1 * !B2 * Y)	-0.00567	-0.00569	-0.00567

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)**	-0.00114	-0.00115	-0.00115
	(A1 * A3 * B2 * !Y)	0.00098	0.00099	0.00098
	(A1 * A3 * B1 * !B2 * !Y)	-0.00114	-0.00115	-0.00115
	(A1 * A3 * B1 * !B2 * !Y)	0.00098	0.00099	0.00098
	(A1 * A3 * !B1 * !B2 * Y)	-0.00113	-0.00113	-0.00113
	(A1 * A3 * !B1 * !B2 * Y)	0.00107	0.00107	0.00107
	(A1 * !A3 * B2 * !Y)	-0.00113	-0.00114	-0.00113
	(A1 * !A3 * B2 * !Y)	0.00088	0.00088	0.00088
	(A1 * !A3 * B1 * !B2 * !Y)	-0.00113	-0.00114	-0.00112
	(A1 * !A3 * B1 * !B2 * !Y)	0.00088	0.00088	0.00088
	(A1 * !A3 * !B1 * !B2 * Y)	-0.00113	-0.00113	-0.00113
	(A1 * !A3 * !B1 * !B2 * Y)	0.00141	0.00141	0.00142
	(!A1 * A3 * B2 * !Y)	-0.00115	-0.00115	-0.00114
	(!A1 * A3 * B2 * !Y)	0.00142	0.00142	0.00142
	(!A1 * A3 * B1 * !B2 * !Y)	-0.00114	-0.00115	-0.00114
	(!A1 * A3 * B1 * !B2 * !Y)	0.00140	0.00142	0.00142
	(!A1 * A3 * !B1 * !B2 * Y)	-0.00113	-0.00113	-0.00113
	(!A1 * A3 * !B1 * !B2 * Y)	0.00142	0.00142	0.00142
	(!A1 * !A3 * !B1 * !B2 * Y)	-0.00100	-0.00107	-0.00106
	(!A1 * !A3 * !B1 * !B2 * Y)	0.00145	0.00145	0.00145

sky130_fd_sc_hs__o32ai_2	**(A1 * A3 * B2 * !Y)**	-0.00226	-0.00227	-0.00226
	(A1 * A3 * B2 * !Y)	0.00182	0.00184	0.00183
	(A1 * A3 * B1 * !B2 * !Y)	-0.00226	-0.00227	-0.00226
	(A1 * A3 * B1 * !B2 * !Y)	0.00183	0.00184	0.00183
	(A1 * A3 * !B1 * !B2 * Y)	-0.00222	-0.00223	-0.00221
	(A1 * A3 * !B1 * !B2 * Y)	0.00205	0.00206	0.00204
	(A1 * !A3 * B2 * !Y)	-0.00222	-0.00222	-0.00220
	(A1 * !A3 * B2 * !Y)	0.00162	0.00162	0.00164
	(A1 * !A3 * B1 * !B2 * !Y)	-0.00222	-0.00222	-0.00220
	(A1 * !A3 * B1 * !B2 * !Y)	0.00162	0.00162	0.00164
	(A1 * !A3 * !B1 * !B2 * Y)	-0.00221	-0.00222	-0.00221
	(A1 * !A3 * !B1 * !B2 * Y)	0.00269	0.00271	0.00270
	(!A1 * A3 * B2 * !Y)	-0.00224	-0.00225	-0.00224
	(!A1 * A3 * B2 * !Y)	0.00269	0.00272	0.00271
	(!A1 * A3 * B1 * !B2 * !Y)	-0.00224	-0.00225	-0.00224
	(!A1 * A3 * B1 * !B2 * !Y)	0.00269	0.00272	0.00271
	(!A1 * A3 * !B1 * !B2 * Y)	-0.00221	-0.00222	-0.00221
	(!A1 * A3 * !B1 * !B2 * Y)	0.00273	0.00276	0.00274
	(!A1 * !A3 * !B1 * !B2 * Y)	-0.00194	-0.00209	-0.00208
	(!A1 * !A3 * !B1 * !B2 * Y)	0.00281	0.00281	0.00280

sky130_fd_sc_hs__o32ai_4	**(A1 * A3 * B2 * !Y)**	-0.00461	-0.00464	-0.00463
	(A1 * A3 * B2 * !Y)	0.00370	0.00373	0.00372
	(A1 * A3 * B1 * !B2 * !Y)	-0.00462	-0.00464	-0.00463
	(A1 * A3 * B1 * !B2 * !Y)	0.00371	0.00373	0.00372
	(A1 * A3 * !B1 * !B2 * Y)	-0.00456	-0.00458	-0.00457
	(A1 * A3 * !B1 * !B2 * Y)	0.00408	0.00410	0.00408
	(A1 * !A3 * B2 * !Y)	-0.00455	-0.00457	-0.00452
	(A1 * !A3 * B2 * !Y)	0.00332	0.00334	0.00335
	(A1 * !A3 * B1 * !B2 * !Y)	-0.00455	-0.00457	-0.00452
	(A1 * !A3 * B1 * !B2 * !Y)	0.00332	0.00334	0.00335
	(A1 * !A3 * !B1 * !B2 * Y)	-0.00456	-0.00456	-0.00457
	(A1 * !A3 * !B1 * !B2 * Y)	0.00544	0.00545	0.00546
	(!A1 * A3 * B2 * !Y)	-0.00459	-0.00462	-0.00459
	(!A1 * A3 * B2 * !Y)	0.00551	0.00557	0.00554
	(!A1 * A3 * B1 * !B2 * !Y)	-0.00459	-0.00462	-0.00459
	(!A1 * A3 * B1 * !B2 * !Y)	0.00551	0.00557	0.00554
	(!A1 * A3 * !B1 * !B2 * Y)	-0.00456	-0.00459	-0.00457
	(!A1 * A3 * !B1 * !B2 * Y)	0.00554	0.00560	0.00556
	(!A1 * !A3 * !B1 * !B2 * Y)	-0.00399	-0.00429	-0.00426
	(!A1 * !A3 * !B1 * !B2 * Y)	0.00570	0.00570	0.00568

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

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

sky130_fd_sc_hs__o32ai_1	**(A2 * B2 * !Y)**	0.00123	0.00125	0.00123
	(A2 * B2 * !Y)	-0.00072	-0.00072	-0.00071
	(A2 * B1 * !B2 * !Y)	0.00122	0.00125	0.00123
	(A2 * B1 * !B2 * !Y)	-0.00071	-0.00072	-0.00071
	(A2 * !B1 * !B2 * Y)	0.00112	0.00114	0.00113
	(A2 * !B1 * !B2 * Y)	-0.00130	-0.00133	-0.00133
	(A1 * !A2 * B2 * !Y)	0.00123	0.00125	0.00123
	(A1 * !A2 * B2 * !Y)	-0.00071	-0.00072	-0.00071
	(A1 * !A2 * B1 * !B2 * !Y)	0.00122	0.00125	0.00123
	(A1 * !A2 * B1 * !B2 * !Y)	-0.00070	-0.00072	-0.00071
	(A1 * !A2 * !B1 * !B2 * Y)	0.00113	0.00113	0.00113
	(A1 * !A2 * !B1 * !B2 * Y)	-0.00119	-0.00126	-0.00126
	(!A1 * !A2 * !B1 * !B2 * Y)	0.00105	0.00106	0.00105
	(!A1 * !A2 * !B1 * !B2 * Y)	-0.00136	-0.00137	-0.00136
sky130_fd_sc_hs__o32ai_2	**(A2 * B2 * !Y)**	0.00270	0.00270	0.00270
	(A2 * B2 * !Y)	-0.00141	-0.00141	-0.00141
	(A2 * B1 * !B2 * !Y)	0.00270	0.00270	0.00270
	(A2 * B1 * !B2 * !Y)	-0.00141	-0.00141	-0.00141
	(A2 * !B1 * !B2 * Y)	0.00220	0.00221	0.00221
	(A2 * !B1 * !B2 * Y)	-0.00285	-0.00294	-0.00294
	(A1 * !A2 * B2 * !Y)	0.00270	0.00270	0.00270
	(A1 * !A2 * B2 * !Y)	-0.00141	-0.00141	-0.00140
	(A1 * !A2 * B1 * !B2 * !Y)	0.00270	0.00271	0.00270
	(A1 * !A2 * B1 * !B2 * !Y)	-0.00141	-0.00141	-0.00140
	(A1 * !A2 * !B1 * !B2 * Y)	0.00220	0.00222	0.00221
	(A1 * !A2 * !B1 * !B2 * Y)	-0.00263	-0.00277	-0.00276
	(!A1 * !A2 * !B1 * !B2 * Y)	0.00208	0.00210	0.00208
	(!A1 * !A2 * !B1 * !B2 * Y)	-0.00299	-0.00300	-0.00300

sky130_fd_sc_hs__o32ai_4	**(A2 * B2 * !Y)**	0.00510	0.00519	0.00511
	(A2 * B2 * !Y)	-0.00279	-0.00283	-0.00278
	(A2 * B1 * !B2 * !Y)	0.00510	0.00511	0.00511
	(A2 * B1 * !B2 * !Y)	-0.00278	-0.00278	-0.00278
	(A2 * !B1 * !B2 * Y)	0.00429	0.00433	0.00431
	(A2 * !B1 * !B2 * Y)	-0.00550	-0.00569	-0.00567
	(A1 * !A2 * B2 * !Y)	0.00510	0.00512	0.00511
	(A1 * !A2 * B2 * !Y)	-0.00278	-0.00278	-0.00278
	(A1 * !A2 * B1 * !B2 * !Y)	0.00510	0.00514	0.00511
	(A1 * !A2 * B1 * !B2 * !Y)	-0.00278	-0.00279	-0.00277
	(A1 * !A2 * !B1 * !B2 * Y)	0.00430	0.00432	0.00430
	(A1 * !A2 * !B1 * !B2 * Y)	-0.00505	-0.00531	-0.00530
	(!A1 * !A2 * !B1 * !B2 * Y)	0.00406	0.00405	0.00405
	(!A1 * !A2 * !B1 * !B2 * Y)	-0.00580	-0.00578	-0.00579

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

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

sky130_fd_sc_hs__o32ai_1	**(A2 * B2 * !Y)**	-0.00117	-0.00118	-0.00122
	(A2 * B2 * !Y)	0.00077	0.00077	0.00073
	(A2 * B1 * !B2 * !Y)	-0.00117	-0.00118	-0.00122
	(A2 * B1 * !B2 * !Y)	0.00076	0.00077	0.00073
	(A2 * !B1 * !B2 * Y)	-0.00112	-0.00113	-0.00113
	(A2 * !B1 * !B2 * Y)	0.00134	0.00133	0.00133
	(A1 * !A2 * B2 * !Y)	-0.00110	-0.00111	-0.00121
	(A1 * !A2 * B2 * !Y)	0.00081	0.00081	0.00073
	(A1 * !A2 * B1 * !B2 * !Y)	-0.00110	-0.00111	-0.00121
	(A1 * !A2 * B1 * !B2 * !Y)	0.00081	0.00081	0.00073
	(A1 * !A2 * !B1 * !B2 * Y)	-0.00113	-0.00113	-0.00113
	(A1 * !A2 * !B1 * !B2 * Y)	0.00126	0.00126	0.00126
	(!A1 * !A2 * !B1 * !B2 * Y)	-0.00099	-0.00106	-0.00105
	(!A1 * !A2 * !B1 * !B2 * Y)	0.00137	0.00137	0.00136
sky130_fd_sc_hs__o32ai_2	**(A2 * B2 * !Y)**	-0.00253	-0.00255	-0.00268
	(A2 * B2 * !Y)	0.00155	0.00155	0.00145
	(A2 * B1 * !B2 * !Y)	-0.00253	-0.00255	-0.00268
	(A2 * B1 * !B2 * !Y)	0.00155	0.00155	0.00145
	(A2 * !B1 * !B2 * Y)	-0.00220	-0.00221	-0.00220
	(A2 * !B1 * !B2 * Y)	0.00292	0.00294	0.00294
	(A1 * !A2 * B2 * !Y)	-0.00237	-0.00239	-0.00264
	(A1 * !A2 * B2 * !Y)	0.00163	0.00163	0.00145
	(A1 * !A2 * B1 * !B2 * !Y)	-0.00237	-0.00240	-0.00264
	(A1 * !A2 * B1 * !B2 * !Y)	0.00163	0.00163	0.00145
	(A1 * !A2 * !B1 * !B2 * Y)	-0.00220	-0.00221	-0.00220
	(A1 * !A2 * !B1 * !B2 * Y)	0.00275	0.00277	0.00276
	(!A1 * !A2 * !B1 * !B2 * Y)	-0.00194	-0.00209	-0.00208
	(!A1 * !A2 * !B1 * !B2 * Y)	0.00301	0.00302	0.00300

sky130_fd_sc_hs__o32ai_4	**(A2 * B2 * !Y)**	-0.00482	-0.00485	-0.00507
	(A2 * B2 * !Y)	0.00306	0.00305	0.00285
	(A2 * B1 * !B2 * !Y)	-0.00480	-0.00484	-0.00507
	(A2 * B1 * !B2 * !Y)	0.00303	0.00304	0.00285
	(A2 * !B1 * !B2 * Y)	-0.00429	-0.00431	-0.00429
	(A2 * !B1 * !B2 * Y)	0.00565	0.00569	0.00567
	(A1 * !A2 * B2 * !Y)	-0.00450	-0.00452	-0.00500
	(A1 * !A2 * B2 * !Y)	0.00322	0.00320	0.00286
	(A1 * !A2 * B1 * !B2 * !Y)	-0.00448	-0.00453	-0.00500
	(A1 * !A2 * B1 * !B2 * !Y)	0.00320	0.00321	0.00286
	(A1 * !A2 * !B1 * !B2 * Y)	-0.00429	-0.00431	-0.00429
	(A1 * !A2 * !B1 * !B2 * Y)	0.00528	0.00531	0.00530
	(!A1 * !A2 * !B1 * !B2 * Y)	-0.00379	-0.00405	-0.00405
	(!A1 * !A2 * !B1 * !B2 * Y)	0.00581	0.00583	0.00580

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

Cell Name	When	Power(pJ)		
		first	**mid**	**last**
sky130_fd_sc_hs__o32ai_1	**(A3 * B2 * !Y)**	0.00141	0.00127	0.00126
	(A3 * B2 * !Y)	-0.00118	-0.00133	-0.00134
	(A2 * !A3 * B2 * !Y)	0.00141	0.00127	0.00126
	(A2 * !A3 * B2 * !Y)	-0.00118	-0.00133	-0.00134
	(A1 * !A2 * !A3 * B2 * !Y)	0.00141	0.00127	0.00126
	(A1 * !A2 * !A3 * B2 * !Y)	-0.00118	-0.00133	-0.00134
	(!A1 * !A2 * !A3 * B2 * Y)	0.00045	0.00044	0.00044
	(!A1 * !A2 * !A3 * B2 * Y)	-0.00160	-0.00162	-0.00162
	(!A1 * !A2 * !A3 * !B2 * Y)	0.00051	0.00052	0.00047
	(!A1 * !A2 * !A3 * !B2 * Y)	-0.00153	-0.00155	-0.00163

sky130_fd_sc_hs__o32ai_2	**(A3 * B2 * !Y)**	0.00256	0.00230	0.00227
	(A3 * B2 * !Y)	-0.00231	-0.00265	-0.00265
	(A2 * !A3 * B2 * !Y)	0.00256	0.00230	0.00227
	(A2 * !A3 * B2 * !Y)	-0.00231	-0.00265	-0.00265
	(A1 * !A2 * !A3 * B2 * !Y)	0.00256	0.00229	0.00227
	(A1 * !A2 * !A3 * B2 * !Y)	-0.00231	-0.00265	-0.00265
	(!A1 * !A2 * !A3 * B2 * Y)	0.00070	0.00071	0.00070
	(!A1 * !A2 * !A3 * B2 * Y)	-0.00314	-0.00322	-0.00322
	(!A1 * !A2 * !A3 * !B2 * Y)	0.00085	0.00085	0.00075
	(!A1 * !A2 * !A3 * !B2 * Y)	-0.00305	-0.00308	-0.00324
sky130_fd_sc_hs__o32ai_4	**(A3 * B2 * !Y)**	0.00541	0.00482	0.00477
	(A3 * B2 * !Y)	-0.00462	-0.00533	-0.00533
	(A2 * !A3 * B2 * !Y)	0.00541	0.00482	0.00477
	(A2 * !A3 * B2 * !Y)	-0.00460	-0.00533	-0.00533
	(A1 * !A2 * !A3 * B2 * !Y)	0.00541	0.00482	0.00477
	(A1 * !A2 * !A3 * B2 * !Y)	-0.00460	-0.00533	-0.00533
	(!A1 * !A2 * !A3 * B2 * Y)	0.00141	0.00142	0.00141
	(!A1 * !A2 * !A3 * B2 * Y)	-0.00653	-0.00669	-0.00667
	(!A1 * !A2 * !A3 * !B2 * Y)	0.00170	0.00171	0.00150
	(!A1 * !A2 * !A3 * !B2 * Y)	-0.00634	-0.00642	-0.00674

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

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

sky130_fd_sc_hs__o32ai_1	**(A3 * B2 * !Y)**	-0.00125	-0.00125	-0.00125
	(A3 * B2 * !Y)	0.00134	0.00135	0.00134
	(A2 * !A3 * B2 * !Y)	-0.00125	-0.00125	-0.00125
	(A2 * !A3 * B2 * !Y)	0.00133	0.00135	0.00134
	(A1 * !A2 * !A3 * B2 * !Y)	-0.00125	-0.00125	-0.00125
	(A1 * !A2 * !A3 * B2 * !Y)	0.00133	0.00135	0.00134
	(!A1 * !A2 * !A3 * B2 * Y)	-0.00045	-0.00044	-0.00044
	(!A1 * !A2 * !A3 * B2 * Y)	0.00163	0.00163	0.00162
	(!A1 * !A2 * !A3 * !B2 * Y)	-0.00045	-0.00045	-0.00045
	(!A1 * !A2 * !A3 * !B2 * Y)	0.00164	0.00165	0.00165
sky130_fd_sc_hs__o32ai_2	**(A3 * B2 * !Y)**	-0.00227	-0.00228	-0.00227
	(A3 * B2 * !Y)	0.00265	0.00267	0.00265
	(A2 * !A3 * B2 * !Y)	-0.00227	-0.00228	-0.00227
	(A2 * !A3 * B2 * !Y)	0.00265	0.00266	0.00265
	(A1 * !A2 * !A3 * B2 * !Y)	-0.00227	-0.00228	-0.00227
	(A1 * !A2 * !A3 * B2 * !Y)	0.00265	0.00267	0.00265
	(!A1 * !A2 * !A3 * B2 * Y)	-0.00070	-0.00071	-0.00070
	(!A1 * !A2 * !A3 * B2 * Y)	0.00323	0.00326	0.00322
	(!A1 * !A2 * !A3 * !B2 * Y)	-0.00072	-0.00071	-0.00071
	(!A1 * !A2 * !A3 * !B2 * Y)	0.00327	0.00327	0.00327
sky130_fd_sc_hs__o32ai_4	**(A3 * B2 * !Y)**	-0.00477	-0.00479	-0.00476
	(A3 * B2 * !Y)	0.00533	0.00536	0.00533
	(A2 * !A3 * B2 * !Y)	-0.00475	-0.00478	-0.00476
	(A2 * !A3 * B2 * !Y)	0.00528	0.00535	0.00533
	(A1 * !A2 * !A3 * B2 * !Y)	-0.00475	-0.00478	-0.00476
	(A1 * !A2 * !A3 * B2 * !Y)	0.00529	0.00536	0.00533
	(!A1 * !A2 * !A3 * B2 * Y)	-0.00141	-0.00142	-0.00141
	(!A1 * !A2 * !A3 * B2 * Y)	0.00669	0.00671	0.00667
	(!A1 * !A2 * !A3 * !B2 * Y)	-0.00144	-0.00143	-0.00143
	(!A1 * !A2 * !A3 * !B2 * Y)	0.00680	0.00680	0.00678

Passive power(pJ) for B2 rising (conditional):

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__o32ai_1	(A3 * B1 * !Y)	0.00131	0.00133	0.00131
	(A3 * B1 * !Y)	-0.00069	-0.00070	-0.00069
	(A2 * !A3 * B1 * !Y)	0.00131	0.00130	0.00131
	(A2 * !A3 * B1 * !Y)	-0.00069	-0.00068	-0.00069
	(A1 * !A2 * !A3 * B1 * !Y)	0.00130	0.00131	0.00131
	(A1 * !A2 * !A3 * B1 * !Y)	-0.00069	-0.00069	-0.00069
	(!A1 * !A2 * !A3 * B1 * Y)	0.00038	0.00038	0.00037
	(!A1 * !A2 * !A3 * B1 * Y)	-0.00163	-0.00164	-0.00163
	(!A1 * !A2 * !A3 * !B1 * Y)	0.00045	0.00045	0.00040
	(!A1 * !A2 * !A3 * !B1 * Y)	-0.00157	-0.00158	-0.00166
sky130_fd_sc_hs__o32ai_2	(A3 * B1 * !Y)	0.00257	0.00256	0.00256
	(A3 * B1 * !Y)	-0.00143	-0.00142	-0.00142
	(A2 * !A3 * B1 * !Y)	0.00256	0.00257	0.00256
	(A2 * !A3 * B1 * !Y)	-0.00142	-0.00142	-0.00142
	(A1 * !A2 * !A3 * B1 * !Y)	0.00256	0.00257	0.00256
	(A1 * !A2 * !A3 * B1 * !Y)	-0.00142	-0.00143	-0.00142
	(!A1 * !A2 * !A3 * B1 * Y)	0.00075	0.00075	0.00074
	(!A1 * !A2 * !A3 * B1 * Y)	-0.00322	-0.00327	-0.00325
	(!A1 * !A2 * !A3 * !B1 * Y)	0.00089	0.00088	0.00079
	(!A1 * !A2 * !A3 * !B1 * Y)	-0.00312	-0.00312	-0.00331

sky130_fd_sc_hs__o32ai_4	**(A3 * B1 * !Y)**	0.00503	0.00504	0.00503
	(A3 * B1 * !Y)	-0.00284	-0.00282	-0.00281
	(A2 * !A3 * B1 * !Y)	0.00502	0.00504	0.00503
	(A2 * !A3 * B1 * !Y)	-0.00282	-0.00282	-0.00281
	(A1 * !A2 * !A3 * B1 * !Y)	0.00502	0.00505	0.00503
	(A1 * !A2 * !A3 * B1 * !Y)	-0.00281	-0.00283	-0.00281
	(!A1 * !A2 * !A3 * B1 * Y)	0.00142	0.00143	0.00142
	(!A1 * !A2 * !A3 * B1 * Y)	-0.00633	-0.00647	-0.00645
	(!A1 * !A2 * !A3 * !B1 * Y)	0.00170	0.00171	0.00151
	(!A1 * !A2 * !A3 * !B1 * Y)	-0.00616	-0.00621	-0.00657

Passive power(pJ) for B2 falling (conditional):

Cell Name	**When**	**Power(pJ)**		
		first	**mid**	**last**
sky130_fd_sc_hs__o32ai_1	**(A3 * B1 * !Y)**	-0.00126	-0.00126	-0.00130
	(A3 * B1 * !Y)	0.00073	0.00073	0.00070
	(A2 * !A3 * B1 * !Y)	-0.00126	-0.00126	-0.00130
	(A2 * !A3 * B1 * !Y)	0.00073	0.00073	0.00070
	(A1 * !A2 * !A3 * B1 * !Y)	-0.00126	-0.00127	-0.00130
	(A1 * !A2 * !A3 * B1 * !Y)	0.00074	0.00073	0.00070
	(!A1 * !A2 * !A3 * B1 * Y)	-0.00038	-0.00038	-0.00037
	(!A1 * !A2 * !A3 * B1 * Y)	0.00164	0.00164	0.00163
	(!A1 * !A2 * !A3 * !B1 * Y)	-0.00038	-0.00038	-0.00038
	(!A1 * !A2 * !A3 * !B1 * Y)	0.00167	0.00167	0.00167

sky130_fd_sc_hs__o32ai_2	**(A3 * B1 * !Y)**	-0.00240	-0.00242	-0.00254
	(A3 * B1 * !Y)	0.00156	0.00156	0.00145
	(A2 * !A3 * B1 * !Y)	-0.00240	-0.00243	-0.00254
	(A2 * !A3 * B1 * !Y)	0.00155	0.00156	0.00145
	(A1 * !A2 * !A3 * B1 * !Y)	-0.00241	-0.00243	-0.00254
	(A1 * !A2 * !A3 * B1 * !Y)	0.00156	0.00156	0.00145
	(!A1 * !A2 * !A3 * B1 * Y)	-0.00074	-0.00075	-0.00074
	(!A1 * !A2 * !A3 * B1 * Y)	0.00325	0.00327	0.00325
	(!A1 * !A2 * !A3 * !B1 * Y)	-0.00076	-0.00075	-0.00075
	(!A1 * !A2 * !A3 * !B1 * Y)	0.00333	0.00334	0.00333
sky130_fd_sc_hs__o32ai_4	**(A3 * B1 * !Y)**	-0.00474	-0.00479	-0.00499
	(A3 * B1 * !Y)	0.00305	0.00306	0.00287
	(A2 * !A3 * B1 * !Y)	-0.00475	-0.00479	-0.00499
	(A2 * !A3 * B1 * !Y)	0.00307	0.00307	0.00287
	(A1 * !A2 * !A3 * B1 * !Y)	-0.00475	-0.00479	-0.00499
	(A1 * !A2 * !A3 * B1 * !Y)	0.00306	0.00307	0.00287
	(!A1 * !A2 * !A3 * B1 * Y)	-0.00142	-0.00143	-0.00142
	(!A1 * !A2 * !A3 * B1 * Y)	0.00644	0.00647	0.00645
	(!A1 * !A2 * !A3 * !B1 * Y)	-0.00143	-0.00145	-0.00144
	(!A1 * !A2 * !A3 * !B1 * Y)	0.00657	0.00662	0.00661

SKY130_FD_SC_HS__O32Ax

sky130_fd_sc_hs_tt_1.50v_25C.ccs
Cell Library: Process , Voltage 1.50, 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	0.00255	0.00249	0.00247	0.00250	0.00254	0.83771
sky130_fd_sc_hs__o32a_2	0.00268	0.00263	0.00268	0.00288	0.00269	1.64102
sky130_fd_sc_hs__o32a_4	0.00457	0.00490	0.00459	0.00618	0.00487	3.19774

Leakage Information

Cell Name	Leakage(nW)		
	Min.	Avg	Max.
sky130_fd_sc_hs__o32a_1	0.00000	0.05328	0.15326
sky130_fd_sc_hs__o32a_2	0.00000	0.06555	0.15791
sky130_fd_sc_hs__o32a_4	0.00000	0.13312	0.31582

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)	0.12518	0.79199	7.05636
	A2->X (RR)	0.12210	0.78275	6.99862
	A3->X (RR)	0.11184	0.76105	6.93952
	B1->X (RR)	0.11309	0.78040	6.93403
	B2->X (RR)	0.10363	0.75543	6.90229
sky130_fd_sc_hs__o32a_2	A1->X (RR)	0.12786	0.69329	7.08116
	A2->X (RR)	0.12595	0.68759	7.03907
	A3->X (RR)	0.11672	0.67027	6.98764
	B1->X (RR)	0.11633	0.69299	7.00436
	B2->X (RR)	0.10683	0.67064	6.96249
sky130_fd_sc_hs__o32a_4	A1->X (RR)	0.14361	0.63779	7.19291
	A2->X (RR)	0.13574	0.62139	7.12468
	A3->X (RR)	0.12182	0.59642	7.06062
	B1->X (RR)	0.13356	0.64314	7.12219
	B2->X (RR)	0.11781	0.61117	7.05774

Delay(ns) to X falling :

Cell Name	Timing Arc(Dir)	Delay(ns)		
		First	Mid	Last
sky130_fd_sc_hs__o32a_1	A1->X (FF)	0.35438	0.93771	5.14804
	A2->X (FF)	0.33334	0.93198	5.25265
	A3->X (FF)	0.28901	0.87452	5.00776
	B1->X (FF)	0.17593	0.74048	4.80512
	B2->X (FF)	0.15527	0.70855	4.65526
sky130_fd_sc_hs__o32a_2	A1->X (FF)	0.44828	1.02695	5.49323
	A2->X (FF)	0.42817	1.02445	5.63107
	A3->X (FF)	0.38527	0.96319	5.39848
	B1->X (FF)	0.23283	0.79162	5.12135
	B2->X (FF)	0.21063	0.76508	4.95545
sky130_fd_sc_hs__o32a_4	A1->X (FF)	0.44430	0.99233	5.51657
	A2->X (FF)	0.42204	0.97973	5.64057
	A3->X (FF)	0.35692	0.90020	5.39201
	B1->X (FF)	0.21603	0.73411	5.13266
	B2->X (FF)	0.18829	0.69760	4.96819

Power Information

Internal switching power(pJ) to X rising :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__o32a_1	A1	0.01088	0.01071	0.01210
	A1	0.00465	0.00449	0.00592
	A2	0.00967	0.00968	0.01127
	A2	0.00412	0.00413	0.00573
	A3	0.00838	0.00838	0.01101
	A3	0.00339	0.00339	0.00604
	B1	0.00969	0.00961	0.01268
	B1	0.00462	0.00454	0.00762
	B2	0.00837	0.00826	0.01310
	B2	0.00335	0.00328	0.00957
sky130_fd_sc_hs__o32a_2	A1	0.01321	0.01327	0.01456
	A1	0.00653	0.00660	0.00799
	A2	0.01200	0.01225	0.01375
	A2	0.00598	0.00624	0.00782
	A3	0.01074	0.01097	0.01335
	A3	0.00526	0.00552	0.00789
	B1	0.01196	0.01203	0.01487
	B1	0.00499	0.00515	0.01057
	B2	0.01054	0.01061	0.01496
	B2	0.00585	0.00595	0.01029

sky130_fd_sc_hs__o32a_4	**A1**	0.02570	0.02616	0.02963
	A1	0.01349	0.01397	0.01772
	A2	0.02326	0.02371	0.02738
	A2	0.01205	0.01253	0.01641
	A3	0.01977	0.02034	0.02665
	A3	0.01018	0.01080	0.01722
	B1	0.02392	0.02422	0.03030
	B1	0.01312	0.01345	0.01973
	B2	0.02060	0.02103	0.02962
	B2	0.00854	0.00905	0.02326

Internal switching power(pJ) to X falling :

Cell Name	**Input**	**Power(pJ)**		
		first	**mid**	**last**
sky130_fd_sc_hs__o32a_1	**A1**	0.00355	0.00332	0.00503
	A1	0.00956	0.00945	0.01104
	A2	0.00356	0.00336	0.00585
	A2	0.00889	0.00883	0.01093
	A3	0.00354	0.00366	0.00841
	A3	0.00829	0.00842	0.01304
	B1	0.00235	0.00235	0.00564
	B1	0.00748	0.00749	0.01014
	B2	0.00238	0.00262	0.00873
	B2	0.00682	0.00705	0.01263

sky130_fd_sc_hs__o32a_2	**A1**	0.00584	0.00566	0.00804
	A1	0.01243	0.01239	0.01398
	A2	0.00601	0.00576	0.00839
	A2	0.01175	0.01177	0.01385
	A3	0.00601	0.00581	0.01146
	A3	0.01115	0.01144	0.01595
	B1	0.00444	0.00465	0.00808
	B1	0.01013	0.01028	0.01286
	B2	0.00453	0.00497	0.01063
	B2	0.00928	0.00967	0.01523
sky130_fd_sc_hs__o32a_4	**A1**	0.01111	0.01109	0.01463
	A1	0.02293	0.02324	0.02632
	A2	0.01096	0.01084	0.01550
	A2	0.02176	0.02208	0.02619
	A3	0.01074	0.01138	0.02188
	A3	0.02013	0.02083	0.03005
	B1	0.00829	0.00860	0.01596
	B1	0.01929	0.01959	0.02479
	B2	0.00822	0.00908	0.02154
	B2	0.01713	0.01805	0.02900

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)**	0.00113	0.00113	0.00113
	(A2 * A3 * B2 * X)	-0.00118	-0.00120	-0.00120
	(A2 * A3 * B1 * !B2 * X)	0.00113	0.00113	0.00113
	(A2 * A3 * B1 * !B2 * X)	-0.00118	-0.00120	-0.00120
	(A2 * !B1 * !B2 * !X)	0.00096	0.00096	0.00096
	(A2 * !B1 * !B2 * !X)	-0.00134	-0.00137	-0.00137
	(A2 * !A3 * B2 * X)	0.00115	0.00113	0.00113
	(A2 * !A3 * B2 * X)	-0.00115	-0.00120	-0.00120
	(A2 * !A3 * B1 * !B2 * X)	0.00115	0.00113	0.00113
	(A2 * !A3 * B1 * !B2 * X)	-0.00115	-0.00120	-0.00120
	(!A2 * A3 * B2 * X)	0.00115	0.00114	0.00113
	(!A2 * A3 * B2 * X)	-0.00107	-0.00117	-0.00116
	(!A2 * A3 * B1 * !B2 * X)	0.00115	0.00114	0.00113
	(!A2 * A3 * B1 * !B2 * X)	-0.00107	-0.00117	-0.00116
	(!A2 * A3 * !B1 * !B2 * !X)	0.00096	0.00097	0.00096
	(!A2 * A3 * !B1 * !B2 * !X)	-0.00125	-0.00133	-0.00132
	(!A2 * !A3 * !B1 * !B2 * !X)	0.00091	0.00091	0.00090
	(!A2 * !A3 * !B1 * !B2 * !X)	-0.00139	-0.00139	-0.00139

sky130_fd_sc_hs__o32a_2	**(A2 * A3 * B2 * X)**	0.00126	0.00126	0.00126
	(A2 * A3 * B2 * X)	-0.00118	-0.00121	-0.00120
	(A2 * A3 * B1 * !B2 * X)	0.00126	0.00126	0.00126
	(A2 * A3 * B1 * !B2 * X)	-0.00118	-0.00120	-0.00120
	(A2 * !B1 * !B2 * !X)	0.00111	0.00110	0.00110
	(A2 * !B1 * !B2 * !X)	-0.00134	-0.00136	-0.00136
	(A2 * !A3 * B2 * X)	0.00128	0.00126	0.00126
	(A2 * !A3 * B2 * X)	-0.00115	-0.00120	-0.00121
	(A2 * !A3 * B1 * !B2 * X)	0.00128	0.00126	0.00126
	(A2 * !A3 * B1 * !B2 * X)	-0.00115	-0.00120	-0.00121
	(!A2 * A3 * B2 * X)	0.00128	0.00128	0.00126
	(!A2 * A3 * B2 * X)	-0.00107	-0.00117	-0.00116
	(!A2 * A3 * B1 * !B2 * X)	0.00128	0.00128	0.00126
	(!A2 * A3 * B1 * !B2 * X)	-0.00107	-0.00117	-0.00116
	(!A2 * A3 * !B1 * !B2 * !X)	0.00110	0.00112	0.00110
	(!A2 * A3 * !B1 * !B2 * !X)	-0.00124	-0.00133	-0.00132
	(!A2 * !A3 * !B1 * !B2 * !X)	0.00104	0.00105	0.00104
	(!A2 * !A3 * !B1 * !B2 * !X)	-0.00138	-0.00139	-0.00138

sky130_fd_sc_hs__o32a_4	**(A2 * A3 * B2 * X)**	0.00193	0.00195	0.00194
	(A2 * A3 * B2 * X)	-0.00234	-0.00244	-0.00243
	(A2 * A3 * B1 * !B2 * X)	0.00193	0.00195	0.00194
	(A2 * A3 * B1 * !B2 * X)	-0.00234	-0.00244	-0.00243
	(A2 * !B1 * !B2 * !X)	0.00193	0.00195	0.00194
	(A2 * !B1 * !B2 * !X)	-0.00234	-0.00244	-0.00243
	(A2 * !A3 * B2 * X)	0.00196	0.00195	0.00194
	(A2 * !A3 * B2 * X)	-0.00231	-0.00244	-0.00243
	(A2 * !A3 * B1 * !B2 * X)	0.00196	0.00195	0.00194
	(A2 * !A3 * B1 * !B2 * X)	-0.00231	-0.00244	-0.00243
	(!A2 * A3 * B2 * X)	0.00199	0.00195	0.00194
	(!A2 * A3 * B2 * X)	-0.00216	-0.00236	-0.00235
	(!A2 * A3 * B1 * !B2 * X)	0.00199	0.00195	0.00194
	(!A2 * A3 * B1 * !B2 * X)	-0.00216	-0.00236	-0.00235
	(!A2 * A3 * !B1 * !B2 * !X)	0.00195	0.00194	0.00194
	(!A2 * A3 * !B1 * !B2 * !X)	-0.00219	-0.00236	-0.00234
	(!A2 * !A3 * !B1 * !B2 * !X)	0.00183	0.00184	0.00182
	(!A2 * !A3 * !B1 * !B2 * !X)	-0.00250	-0.00250	-0.00249

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)**	-0.00112	-0.00113	-0.00113
	(A2 * A3 * B2 * X)	0.00120	0.00121	0.00120
	(A2 * A3 * B1 * !B2 * X)	-0.00112	-0.00113	-0.00113
	(A2 * A3 * B1 * !B2 * X)	0.00120	0.00121	0.00120
	(A2 * !B1 * !B2 * !X)	-0.00096	-0.00096	-0.00096
	(A2 * !B1 * !B2 * !X)	0.00137	0.00138	0.00137
	(A2 * !A3 * B2 * X)	-0.00112	-0.00113	-0.00113
	(A2 * !A3 * B2 * X)	0.00120	0.00121	0.00120
	(A2 * !A3 * B1 * !B2 * X)	-0.00112	-0.00113	-0.00113
	(A2 * !A3 * B1 * !B2 * X)	0.00120	0.00122	0.00120
	(!A2 * A3 * B2 * X)	-0.00112	-0.00113	-0.00112
	(!A2 * A3 * B2 * X)	0.00116	0.00117	0.00116
	(!A2 * A3 * B1 * !B2 * X)	-0.00112	-0.00113	-0.00112
	(!A2 * A3 * B1 * !B2 * X)	0.00116	0.00117	0.00116
	(!A2 * A3 * !B1 * !B2 * !X)	-0.00096	-0.00096	-0.00096
	(!A2 * A3 * !B1 * !B2 * !X)	0.00132	0.00133	0.00132
	(!A2 * !A3 * !B1 * !B2 * !X)	-0.00085	-0.00091	-0.00090
	(!A2 * !A3 * !B1 * !B2 * !X)	0.00139	0.00141	0.00139

sky130_fd_sc_hs__o32a_2	**(A2 * A3 * B2 * X)**	-0.00126	-0.00126	-0.00126
	(A2 * A3 * B2 * X)	0.00120	0.00122	0.00120
	(A2 * A3 * B1 * !B2 * X)	-0.00126	-0.00126	-0.00126
	(A2 * A3 * B1 * !B2 * X)	0.00120	0.00122	0.00120
	(A2 * !B1 * !B2 * !X)	-0.00110	-0.00110	-0.00110
	(A2 * !B1 * !B2 * !X)	0.00136	0.00137	0.00136
	(A2 * !A3 * B2 * X)	-0.00125	-0.00126	-0.00126
	(A2 * !A3 * B2 * X)	0.00120	0.00122	0.00121
	(A2 * !A3 * B1 * !B2 * X)	-0.00125	-0.00126	-0.00126
	(A2 * !A3 * B1 * !B2 * X)	0.00120	0.00122	0.00121
	(!A2 * A3 * B2 * X)	-0.00126	-0.00126	-0.00126
	(!A2 * A3 * B2 * X)	0.00117	0.00117	0.00116
	(!A2 * A3 * B1 * !B2 * X)	-0.00126	-0.00126	-0.00125
	(!A2 * A3 * B1 * !B2 * X)	0.00116	0.00117	0.00116
	(!A2 * A3 * !B1 * !B2 * !X)	-0.00110	-0.00110	-0.00110
	(!A2 * A3 * !B1 * !B2 * !X)	0.00132	0.00133	0.00132
	(!A2 * !A3 * !B1 * !B2 * !X)	-0.00098	-0.00105	-0.00104
	(!A2 * !A3 * !B1 * !B2 * !X)	0.00139	0.00140	0.00138

sky130_fd_sc_hs__o32a_4	**(A2 * A3 * B2 * X)**	-0.00193	-0.00194	-0.00194
	(A2 * A3 * B2 * X)	0.00243	0.00245	0.00243
	(A2 * A3 * B1 * !B2 * X)	-0.00193	-0.00194	-0.00193
	(A2 * A3 * B1 * !B2 * X)	0.00243	0.00245	0.00243
	(A2 * !B1 * !B2 * !X)	-0.00193	-0.00194	-0.00193
	(A2 * !B1 * !B2 * !X)	0.00243	0.00245	0.00243
	(A2 * !A3 * B2 * X)	-0.00194	-0.00194	-0.00193
	(A2 * !A3 * B2 * X)	0.00243	0.00245	0.00243
	(A2 * !A3 * B1 * !B2 * X)	-0.00194	-0.00194	-0.00193
	(A2 * !A3 * B1 * !B2 * X)	0.00243	0.00245	0.00243
	(!A2 * A3 * B2 * X)	-0.00192	-0.00194	-0.00193
	(!A2 * A3 * B2 * X)	0.00232	0.00236	0.00235
	(!A2 * A3 * B1 * !B2 * X)	-0.00192	-0.00194	-0.00193
	(!A2 * A3 * B1 * !B2 * X)	0.00233	0.00236	0.00235
	(!A2 * A3 * !B1 * !B2 * !X)	-0.00193	-0.00194	-0.00193
	(!A2 * A3 * !B1 * !B2 * !X)	0.00233	0.00236	0.00234
	(!A2 * !A3 * !B1 * !B2 * !X)	-0.00171	-0.00183	-0.00182
	(!A2 * !A3 * !B1 * !B2 * !X)	0.00251	0.00251	0.00250

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)**	0.00111	0.00114	0.00107
	(A1 * A3 * B2 * X)	-0.00080	-0.00081	-0.00080
	(A1 * A3 * B1 * !B2 * X)	0.00111	0.00114	0.00107
	(A1 * A3 * B1 * !B2 * X)	-0.00080	-0.00081	-0.00080
	(A1 * A3 * !B1 * !B2 * !X)	0.00098	0.00100	0.00099
	(A1 * A3 * !B1 * !B2 * !X)	-0.00091	-0.00092	-0.00091
	(A1 * !A3 * B2 * X)	0.00104	0.00105	0.00103
	(A1 * !A3 * B2 * X)	-0.00070	-0.00070	-0.00069
	(A1 * !A3 * B1 * !B2 * X)	0.00104	0.00105	0.00103
	(A1 * !A3 * B1 * !B2 * X)	-0.00070	-0.00070	-0.00069
	(A1 * !A3 * !B1 * !B2 * !X)	0.00099	0.00098	0.00099
	(A1 * !A3 * !B1 * !B2 * !X)	-0.00121	-0.00122	-0.00122
	(!A1 * A3 * B2 * X)	0.00123	0.00104	0.00103
	(!A1 * A3 * B2 * X)	-0.00098	-0.00118	-0.00119
	(!A1 * A3 * B1 * !B2 * X)	0.00124	0.00105	0.00103
	(!A1 * A3 * B1 * !B2 * X)	-0.00097	-0.00118	-0.00119
	(!A1 * A3 * !B1 * !B2 * !X)	0.00099	0.00099	0.00098
	(!A1 * A3 * !B1 * !B2 * !X)	-0.00121	-0.00122	-0.00122
	(!A1 * !A3 * !B1 * !B2 * !X)	0.00092	0.00093	0.00092
	(!A1 * !A3 * !B1 * !B2 * !X)	-0.00124	-0.00125	-0.00124

sky130_fd_sc_hs__o32a_2	**(A1 * A3 * B2 * X)**	0.00125	0.00128	0.00121
	(A1 * A3 * B2 * X)	-0.00081	-0.00081	-0.00081
	(A1 * A3 * B1 * !B2 * X)	0.00125	0.00128	0.00121
	(A1 * A3 * B1 * !B2 * X)	-0.00081	-0.00081	-0.00081
	(A1 * A3 * !B1 * !B2 * !X)	0.00112	0.00114	0.00112
	(A1 * A3 * !B1 * !B2 * !X)	-0.00092	-0.00092	-0.00092
	(A1 * !A3 * B2 * X)	0.00118	0.00120	0.00117
	(A1 * !A3 * B2 * X)	-0.00070	-0.00071	-0.00070
	(A1 * !A3 * B1 * !B2 * X)	0.00117	0.00120	0.00117
	(A1 * !A3 * B1 * !B2 * X)	-0.00069	-0.00071	-0.00070
	(A1 * !A3 * !B1 * !B2 * !X)	0.00113	0.00113	0.00112
	(A1 * !A3 * !B1 * !B2 * !X)	-0.00122	-0.00122	-0.00123
	(!A1 * A3 * B2 * X)	0.00138	0.00119	0.00117
	(!A1 * A3 * B2 * X)	-0.00098	-0.00118	-0.00119
	(!A1 * A3 * B1 * !B2 * X)	0.00138	0.00119	0.00117
	(!A1 * A3 * B1 * !B2 * X)	-0.00098	-0.00118	-0.00119
	(!A1 * A3 * !B1 * !B2 * !X)	0.00113	0.00113	0.00112
	(!A1 * A3 * !B1 * !B2 * !X)	-0.00122	-0.00123	-0.00123
	(!A1 * !A3 * !B1 * !B2 * !X)	0.00106	0.00107	0.00106
	(!A1 * !A3 * !B1 * !B2 * !X)	-0.00125	-0.00126	-0.00125

sky130_fd_sc_hs__o32a_4	**(A1 * A3 * B2 * X)**	0.00211	0.00217	0.00204
	(A1 * A3 * B2 * X)	-0.00180	-0.00180	-0.00179
	(A1 * A3 * B1 * !B2 * X)	0.00211	0.00217	0.00204
	(A1 * A3 * B1 * !B2 * X)	-0.00180	-0.00180	-0.00179
	(A1 * A3 * !B1 * !B2 * !X)	0.00199	0.00201	0.00199
	(A1 * A3 * !B1 * !B2 * !X)	-0.00191	-0.00192	-0.00192
	(A1 * !A3 * B2 * X)	0.00201	0.00203	0.00199
	(A1 * !A3 * B2 * X)	-0.00158	-0.00159	-0.00157
	(A1 * !A3 * B1 * !B2 * X)	0.00201	0.00203	0.00199
	(A1 * !A3 * B1 * !B2 * X)	-0.00158	-0.00159	-0.00157
	(A1 * !A3 * !B1 * !B2 * !X)	0.00200	0.00201	0.00199
	(A1 * !A3 * !B1 * !B2 * !X)	-0.00255	-0.00258	-0.00257
	(!A1 * A3 * B2 * X)	0.00238	0.00202	0.00199
	(!A1 * A3 * B2 * X)	-0.00217	-0.00259	-0.00260
	(!A1 * A3 * B1 * !B2 * X)	0.00238	0.00202	0.00199
	(!A1 * A3 * B1 * !B2 * X)	-0.00217	-0.00259	-0.00260
	(!A1 * A3 * !B1 * !B2 * !X)	0.00200	0.00200	0.00199
	(!A1 * A3 * !B1 * !B2 * !X)	-0.00253	-0.00260	-0.00259
	(!A1 * !A3 * !B1 * !B2 * !X)	0.00189	0.00189	0.00187
	(!A1 * !A3 * !B1 * !B2 * !X)	-0.00266	-0.00266	-0.00265

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)**	-0.00103	-0.00103	-0.00103
	(A1 * A3 * B2 * X)	0.00080	0.00081	0.00080
	(A1 * A3 * B1 * !B2 * X)	-0.00103	-0.00103	-0.00103
	(A1 * A3 * B1 * !B2 * X)	0.00080	0.00081	0.00080
	(A1 * A3 * !B1 * !B2 * !X)	-0.00098	-0.00099	-0.00098
	(A1 * A3 * !B1 * !B2 * !X)	0.00091	0.00092	0.00091
	(A1 * !A3 * B2 * X)	-0.00102	-0.00102	-0.00101
	(A1 * !A3 * B2 * X)	0.00071	0.00072	0.00072
	(A1 * !A3 * B1 * !B2 * X)	-0.00102	-0.00102	-0.00101
	(A1 * !A3 * B1 * !B2 * X)	0.00071	0.00072	0.00072
	(A1 * !A3 * !B1 * !B2 * !X)	-0.00098	-0.00098	-0.00098
	(A1 * !A3 * !B1 * !B2 * !X)	0.00121	0.00122	0.00122
	(!A1 * A3 * B2 * X)	-0.00103	-0.00103	-0.00102
	(!A1 * A3 * B2 * X)	0.00119	0.00119	0.00119
	(!A1 * A3 * B1 * !B2 * X)	-0.00102	-0.00103	-0.00102
	(!A1 * A3 * B1 * !B2 * X)	0.00118	0.00119	0.00119
	(!A1 * A3 * !B1 * !B2 * !X)	-0.00098	-0.00098	-0.00098
	(!A1 * A3 * !B1 * !B2 * !X)	0.00122	0.00122	0.00122
	(!A1 * !A3 * !B1 * !B2 * !X)	-0.00087	-0.00093	-0.00092
	(!A1 * !A3 * !B1 * !B2 * !X)	0.00125	0.00125	0.00125

sky130_fd_sc_hs__o32a_2	**(A1 * A3 * B2 * X)**	-0.00117	-0.00118	-0.00117
	(A1 * A3 * B2 * X)	0.00081	0.00081	0.00081
	(A1 * A3 * B1 * !B2 * X)	-0.00117	-0.00118	-0.00117
	(A1 * A3 * B1 * !B2 * X)	0.00081	0.00081	0.00081
	(A1 * A3 * !B1 * !B2 * !X)	-0.00112	-0.00112	-0.00112
	(A1 * A3 * !B1 * !B2 * !X)	0.00092	0.00092	0.00092
	(A1 * !A3 * B2 * X)	-0.00116	-0.00117	-0.00115
	(A1 * !A3 * B2 * X)	0.00072	0.00072	0.00072
	(A1 * !A3 * B1 * !B2 * X)	-0.00116	-0.00116	-0.00115
	(A1 * !A3 * B1 * !B2 * X)	0.00072	0.00072	0.00072
	(A1 * !A3 * !B1 * !B2 * !X)	-0.00112	-0.00112	-0.00112
	(A1 * !A3 * !B1 * !B2 * !X)	0.00122	0.00122	0.00123
	(!A1 * A3 * B2 * X)	-0.00117	-0.00117	-0.00116
	(!A1 * A3 * B2 * X)	0.00119	0.00120	0.00119
	(!A1 * A3 * B1 * !B2 * X)	-0.00116	-0.00117	-0.00116
	(!A1 * A3 * B1 * !B2 * X)	0.00118	0.00120	0.00119
	(!A1 * A3 * !B1 * !B2 * !X)	-0.00112	-0.00112	-0.00112
	(!A1 * A3 * !B1 * !B2 * !X)	0.00123	0.00123	0.00123
	(!A1 * !A3 * !B1 * !B2 * !X)	-0.00099	-0.00106	-0.00106
	(!A1 * !A3 * !B1 * !B2 * !X)	0.00126	0.00126	0.00126

sky130_fd_sc_hs__o32a_4	**(A1 * A3 * B2 * X)**	-0.00198	-0.00198	-0.00198
	(A1 * A3 * B2 * X)	0.00180	0.00180	0.00179
	(A1 * A3 * B1 * !B2 * X)	-0.00198	-0.00198	-0.00198
	(A1 * A3 * B1 * !B2 * X)	0.00180	0.00180	0.00179
	(A1 * A3 * !B1 * !B2 * !X)	-0.00197	-0.00198	-0.00198
	(A1 * A3 * !B1 * !B2 * !X)	0.00191	0.00192	0.00192
	(A1 * !A3 * B2 * X)	-0.00196	-0.00197	-0.00194
	(A1 * !A3 * B2 * X)	0.00160	0.00162	0.00162
	(A1 * !A3 * B1 * !B2 * X)	-0.00196	-0.00197	-0.00194
	(A1 * !A3 * B1 * !B2 * X)	0.00161	0.00162	0.00162
	(A1 * !A3 * !B1 * !B2 * !X)	-0.00199	-0.00199	-0.00198
	(A1 * !A3 * !B1 * !B2 * !X)	0.00259	0.00258	0.00257
	(!A1 * A3 * B2 * X)	-0.00197	-0.00198	-0.00196
	(!A1 * A3 * B2 * X)	0.00260	0.00261	0.00260
	(!A1 * A3 * B1 * !B2 * X)	-0.00197	-0.00198	-0.00196
	(!A1 * A3 * B1 * !B2 * X)	0.00260	0.00261	0.00260
	(!A1 * A3 * !B1 * !B2 * !X)	-0.00198	-0.00199	-0.00198
	(!A1 * A3 * !B1 * !B2 * !X)	0.00259	0.00260	0.00259
	(!A1 * !A3 * !B1 * !B2 * !X)	-0.00174	-0.00188	-0.00187
	(!A1 * !A3 * !B1 * !B2 * !X)	0.00266	0.00266	0.00265

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

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

sky130_fd_sc_hs__o32a_1	**(A2 * B2 * X)**	0.00112	0.00113	0.00111
	(A2 * B2 * X)	-0.00064	-0.00065	-0.00064
	(A2 * B1 * !B2 * X)	0.00112	0.00113	0.00111
	(A2 * B1 * !B2 * X)	-0.00064	-0.00065	-0.00064
	(A2 * !B1 * !B2 * !X)	0.00098	0.00100	0.00099
	(A2 * !B1 * !B2 * !X)	-0.00119	-0.00122	-0.00122
	(A1 * !A2 * B2 * X)	0.00112	0.00113	0.00111
	(A1 * !A2 * B2 * X)	-0.00064	-0.00065	-0.00063
	(A1 * !A2 * B1 * !B2 * X)	0.00111	0.00113	0.00111
	(A1 * !A2 * B1 * !B2 * X)	-0.00063	-0.00065	-0.00063
	(A1 * !A2 * !B1 * !B2 * !X)	0.00098	0.00100	0.00099
	(A1 * !A2 * !B1 * !B2 * !X)	-0.00110	-0.00116	-0.00116
	(!A1 * !A2 * !B1 * !B2 * !X)	0.00092	0.00093	0.00092
	(!A1 * !A2 * !B1 * !B2 * !X)	-0.00124	-0.00125	-0.00124
sky130_fd_sc_hs__o32a_2	**(A2 * B2 * X)**	0.00129	0.00130	0.00128
	(A2 * B2 * X)	-0.00064	-0.00065	-0.00064
	(A2 * B1 * !B2 * X)	0.00128	0.00130	0.00128
	(A2 * B1 * !B2 * X)	-0.00063	-0.00065	-0.00064
	(A2 * !B1 * !B2 * !X)	0.00112	0.00113	0.00113
	(A2 * !B1 * !B2 * !X)	-0.00122	-0.00125	-0.00125
	(A1 * !A2 * B2 * X)	0.00129	0.00130	0.00128
	(A1 * !A2 * B2 * X)	-0.00064	-0.00065	-0.00063
	(A1 * !A2 * B1 * !B2 * X)	0.00128	0.00130	0.00128
	(A1 * !A2 * B1 * !B2 * X)	-0.00063	-0.00065	-0.00063
	(A1 * !A2 * !B1 * !B2 * !X)	0.00112	0.00114	0.00113
	(A1 * !A2 * !B1 * !B2 * !X)	-0.00113	-0.00119	-0.00119
	(!A1 * !A2 * !B1 * !B2 * !X)	0.00105	0.00106	0.00105
	(!A1 * !A2 * !B1 * !B2 * !X)	-0.00128	-0.00128	-0.00128

sky130_fd_sc_hs__o32a_4	**(A2 * B2 * X)**	0.00209	0.00212	0.00209
	(A2 * B2 * X)	-0.00129	-0.00130	-0.00128
	(A2 * B1 * !B2 * X)	0.00210	0.00212	0.00209
	(A2 * B1 * !B2 * X)	-0.00129	-0.00130	-0.00128
	(A2 * !B1 * !B2 * !X)	0.00192	0.00194	0.00192
	(A2 * !B1 * !B2 * !X)	-0.00228	-0.00237	-0.00236
	(A1 * !A2 * B2 * X)	0.00209	0.00212	0.00209
	(A1 * !A2 * B2 * X)	-0.00129	-0.00130	-0.00127
	(A1 * !A2 * B1 * !B2 * X)	0.00207	0.00212	0.00209
	(A1 * !A2 * B1 * !B2 * X)	-0.00127	-0.00130	-0.00127
	(A1 * !A2 * !B1 * !B2 * !X)	0.00192	0.00194	0.00192
	(A1 * !A2 * !B1 * !B2 * !X)	-0.00211	-0.00223	-0.00222
	(!A1 * !A2 * !B1 * !B2 * !X)	0.00180	0.00182	0.00180
	(!A1 * !A2 * !B1 * !B2 * !X)	-0.00243	-0.00244	-0.00242

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

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

sky130_fd_sc_hs__o32a_1	**(A2 * B2 * X)**	-0.00106	-0.00107	-0.00111
	(A2 * B2 * X)	0.00068	0.00069	0.00065
	(A2 * B1 * !B2 * X)	-0.00107	-0.00107	-0.00111
	(A2 * B1 * !B2 * X)	0.00069	0.00069	0.00065
	(A2 * !B1 * !B2 * !X)	-0.00098	-0.00098	-0.00099
	(A2 * !B1 * !B2 * !X)	0.00123	0.00122	0.00122
	(A1 * !A2 * B2 * X)	-0.00100	-0.00101	-0.00109
	(A1 * !A2 * B2 * X)	0.00072	0.00072	0.00065
	(A1 * !A2 * B1 * !B2 * X)	-0.00100	-0.00101	-0.00109
	(A1 * !A2 * B1 * !B2 * X)	0.00072	0.00072	0.00065
	(A1 * !A2 * !B1 * !B2 * !X)	-0.00098	-0.00099	-0.00099
	(A1 * !A2 * !B1 * !B2 * !X)	0.00116	0.00116	0.00116
	(!A1 * !A2 * !B1 * !B2 * !X)	-0.00087	-0.00093	-0.00092
	(!A1 * !A2 * !B1 * !B2 * !X)	0.00125	0.00125	0.00125
sky130_fd_sc_hs__o32a_2	**(A2 * B2 * X)**	-0.00123	-0.00124	-0.00127
	(A2 * B2 * X)	0.00068	0.00069	0.00065
	(A2 * B1 * !B2 * X)	-0.00123	-0.00124	-0.00127
	(A2 * B1 * !B2 * X)	0.00069	0.00069	0.00065
	(A2 * !B1 * !B2 * !X)	-0.00112	-0.00112	-0.00112
	(A2 * !B1 * !B2 * !X)	0.00126	0.00125	0.00125
	(A1 * !A2 * B2 * X)	-0.00117	-0.00118	-0.00126
	(A1 * !A2 * B2 * X)	0.00072	0.00072	0.00065
	(A1 * !A2 * B1 * !B2 * X)	-0.00117	-0.00118	-0.00126
	(A1 * !A2 * B1 * !B2 * X)	0.00072	0.00072	0.00065
	(A1 * !A2 * !B1 * !B2 * !X)	-0.00112	-0.00113	-0.00112
	(A1 * !A2 * !B1 * !B2 * !X)	0.00119	0.00119	0.00119
	(!A1 * !A2 * !B1 * !B2 * !X)	-0.00099	-0.00106	-0.00105
	(!A1 * !A2 * !B1 * !B2 * !X)	0.00128	0.00128	0.00128

sky130_fd_sc_hs__o32a_4	**(A2 * B2 * X)**	-0.00193	-0.00195	-0.00207
	(A2 * B2 * X)	0.00141	0.00142	0.00131
	(A2 * B1 * !B2 * X)	-0.00193	-0.00195	-0.00206
	(A2 * B1 * !B2 * X)	0.00141	0.00142	0.00131
	(A2 * !B1 * !B2 * !X)	-0.00192	-0.00192	-0.00191
	(A2 * !B1 * !B2 * !X)	0.00236	0.00237	0.00236
	(A1 * !A2 * B2 * X)	-0.00180	-0.00182	-0.00204
	(A1 * !A2 * B2 * X)	0.00148	0.00149	0.00132
	(A1 * !A2 * B1 * !B2 * X)	-0.00180	-0.00182	-0.00204
	(A1 * !A2 * B1 * !B2 * X)	0.00149	0.00149	0.00132
	(A1 * !A2 * !B1 * !B2 * !X)	-0.00192	-0.00193	-0.00191
	(A1 * !A2 * !B1 * !B2 * !X)	0.00223	0.00223	0.00222
	(!A1 * !A2 * !B1 * !B2 * !X)	-0.00168	-0.00182	-0.00180
	(!A1 * !A2 * !B1 * !B2 * !X)	0.00244	0.00244	0.00243

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

Cell Name	When	Power(pJ)		
		first	**mid**	**last**
sky130_fd_sc_hs__o32a_1	**(A3 * B2 * X)**	0.00128	0.00114	0.00113
	(A3 * B2 * X)	-0.00108	-0.00123	-0.00124
	(A2 * !A3 * B2 * X)	0.00128	0.00114	0.00113
	(A2 * !A3 * B2 * X)	-0.00108	-0.00123	-0.00124
	(A1 * !A2 * !A3 * B2 * X)	0.00128	0.00114	0.00113
	(A1 * !A2 * !A3 * B2 * X)	-0.00108	-0.00123	-0.00124
	(!A1 * !A2 * !A3 * B2 * !X)	0.00041	0.00040	0.00041
	(!A1 * !A2 * !A3 * B2 * !X)	-0.00150	-0.00152	-0.00152
	(!A1 * !A2 * !A3 * !B2 * !X)	0.00046	0.00047	0.00042
	(!A1 * !A2 * !A3 * !B2 * !X)	-0.00144	-0.00146	-0.00153

sky130_fd_sc_hs__o32a_2	**(A3 * B2 * X)**	0.00153	0.00139	0.00138
	(A3 * B2 * X)	-0.00120	-0.00134	-0.00136
	(A2 * !A3 * B2 * X)	0.00153	0.00139	0.00138
	(A2 * !A3 * B2 * X)	-0.00119	-0.00134	-0.00136
	(A1 * !A2 * !A3 * B2 * X)	0.00153	0.00139	0.00138
	(A1 * !A2 * !A3 * B2 * X)	-0.00119	-0.00134	-0.00136
	(!A1 * !A2 * !A3 * B2 * !X)	0.00049	0.00049	0.00049
	(!A1 * !A2 * !A3 * B2 * !X)	-0.00171	-0.00173	-0.00173
	(!A1 * !A2 * !A3 * !B2 * !X)	0.00056	0.00056	0.00051
	(!A1 * !A2 * !A3 * !B2 * !X)	-0.00164	-0.00166	-0.00174
sky130_fd_sc_hs__o32a_4	**(A3 * B2 * X)**	0.00277	0.00246	0.00242
	(A3 * B2 * X)	-0.00248	-0.00286	-0.00289
	(A2 * !A3 * B2 * X)	0.00277	0.00246	0.00242
	(A2 * !A3 * B2 * X)	-0.00247	-0.00285	-0.00289
	(A1 * !A2 * !A3 * B2 * X)	0.00277	0.00246	0.00242
	(A1 * !A2 * !A3 * B2 * X)	-0.00247	-0.00285	-0.00289
	(!A1 * !A2 * !A3 * B2 * !X)	0.00071	0.00072	0.00071
	(!A1 * !A2 * !A3 * B2 * !X)	-0.00367	-0.00374	-0.00373
	(!A1 * !A2 * !A3 * !B2 * !X)	0.00083	0.00085	0.00075
	(!A1 * !A2 * !A3 * !B2 * !X)	-0.00360	-0.00364	-0.00377

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

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

sky130_fd_sc_hs__o32a_1	**(A3 * B2 * X)**	-0.00113	-0.00113	-0.00113
	(A3 * B2 * X)	0.00124	0.00125	0.00124
	(A2 * !A3 * B2 * X)	-0.00113	-0.00113	-0.00113
	(A2 * !A3 * B2 * X)	0.00123	0.00125	0.00124
	(A1 * !A2 * !A3 * B2 * X)	-0.00113	-0.00113	-0.00113
	(A1 * !A2 * !A3 * B2 * X)	0.00123	0.00124	0.00124
	(!A1 * !A2 * !A3 * B2 * !X)	-0.00040	-0.00040	-0.00041
	(!A1 * !A2 * !A3 * B2 * !X)	0.00152	0.00154	0.00152
	(!A1 * !A2 * !A3 * !B2 * !X)	-0.00041	-0.00041	-0.00041
	(!A1 * !A2 * !A3 * !B2 * !X)	0.00154	0.00154	0.00154
sky130_fd_sc_hs__o32a_2	**(A3 * B2 * X)**	-0.00137	-0.00138	-0.00137
	(A3 * B2 * X)	0.00136	0.00137	0.00136
	(A2 * !A3 * B2 * X)	-0.00137	-0.00138	-0.00137
	(A2 * !A3 * B2 * X)	0.00136	0.00137	0.00136
	(A1 * !A2 * !A3 * B2 * X)	-0.00137	-0.00137	-0.00137
	(A1 * !A2 * !A3 * B2 * X)	0.00136	0.00136	0.00136
	(!A1 * !A2 * !A3 * B2 * !X)	-0.00048	-0.00049	-0.00049
	(!A1 * !A2 * !A3 * B2 * !X)	0.00172	0.00175	0.00173
	(!A1 * !A2 * !A3 * !B2 * !X)	-0.00050	-0.00050	-0.00049
	(!A1 * !A2 * !A3 * !B2 * !X)	0.00175	0.00177	0.00175
sky130_fd_sc_hs__o32a_4	**(A3 * B2 * X)**	-0.00239	-0.00241	-0.00239
	(A3 * B2 * X)	0.00287	0.00290	0.00289
	(A2 * !A3 * B2 * X)	-0.00239	-0.00241	-0.00239
	(A2 * !A3 * B2 * X)	0.00287	0.00290	0.00289
	(A1 * !A2 * !A3 * B2 * X)	-0.00239	-0.00241	-0.00239
	(A1 * !A2 * !A3 * B2 * X)	0.00287	0.00290	0.00289
	(!A1 * !A2 * !A3 * B2 * !X)	-0.00070	-0.00071	-0.00071
	(!A1 * !A2 * !A3 * B2 * !X)	0.00372	0.00374	0.00373
	(!A1 * !A2 * !A3 * !B2 * !X)	-0.00072	-0.00072	-0.00072
	(!A1 * !A2 * !A3 * !B2 * !X)	0.00379	0.00382	0.00380

Passive power(pJ) for B2 rising (conditional):

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__o32a_1	(A3 * B1 * X)	0.00116	0.00118	0.00116
	(A3 * B1 * X)	-0.00065	-0.00065	-0.00064
	(A2 * !A3 * B1 * X)	0.00117	0.00118	0.00116
	(A2 * !A3 * B1 * X)	-0.00066	-0.00065	-0.00064
	(A1 * !A2 * !A3 * B1 * X)	0.00117	0.00116	0.00116
	(A1 * !A2 * !A3 * B1 * X)	-0.00066	-0.00064	-0.00064
	(!A1 * !A2 * !A3 * B1 * !X)	0.00034	0.00034	0.00033
	(!A1 * !A2 * !A3 * B1 * !X)	-0.00149	-0.00150	-0.00149
	(!A1 * !A2 * !A3 * !B1 * !X)	0.00040	0.00040	0.00035
	(!A1 * !A2 * !A3 * !B1 * !X)	-0.00143	-0.00144	-0.00151
sky130_fd_sc_hs__o32a_2	(A3 * B1 * X)	0.00131	0.00132	0.00130
	(A3 * B1 * X)	-0.00065	-0.00066	-0.00064
	(A2 * !A3 * B1 * X)	0.00130	0.00132	0.00130
	(A2 * !A3 * B1 * X)	-0.00064	-0.00066	-0.00064
	(A1 * !A2 * !A3 * B1 * X)	0.00130	0.00130	0.00130
	(A1 * !A2 * !A3 * B1 * X)	-0.00064	-0.00064	-0.00064
	(!A1 * !A2 * !A3 * B1 * !X)	0.00039	0.00038	0.00038
	(!A1 * !A2 * !A3 * B1 * !X)	-0.00151	-0.00153	-0.00152
	(!A1 * !A2 * !A3 * !B1 * !X)	0.00045	0.00046	0.00040
	(!A1 * !A2 * !A3 * !B1 * !X)	-0.00145	-0.00146	-0.00154

sky130_fd_sc_hs__o32a_4	**(A3 * B1 * X)**	0.00224	0.00225	0.00224
	(A3 * B1 * X)	-0.00131	-0.00131	-0.00130
	(A2 * !A3 * B1 * X)	0.00224	0.00225	0.00224
	(A2 * !A3 * B1 * X)	-0.00130	-0.00131	-0.00130
	(A1 * !A2 * !A3 * B1 * X)	0.00224	0.00225	0.00224
	(A1 * !A2 * !A3 * B1 * X)	-0.00130	-0.00131	-0.00130
	(!A1 * !A2 * !A3 * B1 * !X)	0.00069	0.00069	0.00068
	(!A1 * !A2 * !A3 * B1 * !X)	-0.00287	-0.00292	-0.00291
	(!A1 * !A2 * !A3 * !B1 * !X)	0.00081	0.00081	0.00072
	(!A1 * !A2 * !A3 * !B1 * !X)	-0.00280	-0.00281	-0.00297

Passive power(pJ) for B2 falling (conditional):

Cell Name	**When**	**Power(pJ)**		
		first	**mid**	**last**
sky130_fd_sc_hs__o32a_1	**(A3 * B1 * X)**	-0.00111	-0.00112	-0.00116
	(A3 * B1 * X)	0.00069	0.00069	0.00066
	(A2 * !A3 * B1 * X)	-0.00111	-0.00111	-0.00115
	(A2 * !A3 * B1 * X)	0.00070	0.00069	0.00066
	(A1 * !A2 * !A3 * B1 * X)	-0.00111	-0.00111	-0.00115
	(A1 * !A2 * !A3 * B1 * X)	0.00069	0.00069	0.00066
	(!A1 * !A2 * !A3 * B1 * !X)	-0.00033	-0.00034	-0.00033
	(!A1 * !A2 * !A3 * B1 * !X)	0.00149	0.00150	0.00149
	(!A1 * !A2 * !A3 * !B1 * !X)	-0.00034	-0.00034	-0.00034
	(!A1 * !A2 * !A3 * !B1 * !X)	0.00152	0.00152	0.00152

sky130_fd_sc_hs__o32a_2	**(A3 * B1 * X)**	-0.00125	-0.00126	-0.00130
	(A3 * B1 * X)	0.00070	0.00070	0.00066
	(A2 * !A3 * B1 * X)	-0.00125	-0.00125	-0.00130
	(A2 * !A3 * B1 * X)	0.00070	0.00069	0.00066
	(A1 * !A2 * !A3 * B1 * X)	-0.00125	-0.00126	-0.00130
	(A1 * !A2 * !A3 * B1 * X)	0.00070	0.00069	0.00066
	(!A1 * !A2 * !A3 * B1 * !X)	-0.00038	-0.00038	-0.00038
	(!A1 * !A2 * !A3 * B1 * !X)	0.00153	0.00153	0.00152
	(!A1 * !A2 * !A3 * !B1 * !X)	-0.00039	-0.00038	-0.00038
	(!A1 * !A2 * !A3 * !B1 * !X)	0.00155	0.00155	0.00155
sky130_fd_sc_hs__o32a_4	**(A3 * B1 * X)**	-0.00213	-0.00213	-0.00222
	(A3 * B1 * X)	0.00140	0.00140	0.00133
	(A2 * !A3 * B1 * X)	-0.00213	-0.00214	-0.00222
	(A2 * !A3 * B1 * X)	0.00140	0.00140	0.00133
	(A1 * !A2 * !A3 * B1 * X)	-0.00212	-0.00214	-0.00222
	(A1 * !A2 * !A3 * B1 * X)	0.00140	0.00141	0.00133
	(!A1 * !A2 * !A3 * B1 * !X)	-0.00069	-0.00069	-0.00068
	(!A1 * !A2 * !A3 * B1 * !X)	0.00292	0.00292	0.00291
	(!A1 * !A2 * !A3 * !B1 * !X)	-0.00069	-0.00069	-0.00069
	(!A1 * !A2 * !A3 * !B1 * !X)	0.00297	0.00299	0.00299

SKY130_FD_SC_HS__O41AIx

sky130_fd_sc_hs_tt_1.50v_25C.ccs
Cell Library: Process , Voltage
1.50, 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	0.00262	0.00268	0.00279	0.00277	0.00282	0.19932
sky130_fd_sc_hs__o41ai_2	0.00516	0.00526	0.00505	0.00517	0.00546	0.35671
sky130_fd_sc_hs__o41ai_4	0.01001	0.00996	0.01012	0.01035	0.00758	0.67153

Leakage Information

Cell Name	Leakage(nW)		
	Min.	Avg	Max.
sky130_fd_sc_hs__o41ai_1	0.00000	0.01895	0.05947
sky130_fd_sc_hs__o41ai_2	0.00000	0.03790	0.11893
sky130_fd_sc_hs__o41ai_4	0.00000	0.04792	0.17840

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)	0.36983	1.58720	10.92510
	A2->Y (FR)	0.35145	1.56991	11.24420
	A3->Y (FR)	0.30859	1.53806	11.56270
	A4->Y (FR)	0.23768	1.43807	11.22850
	B1->Y (FR)	0.04311	0.63762	6.16181
sky130_fd_sc_hs__o41ai_2	A1->Y (FR)	0.38735	1.42545	10.82930
	A2->Y (FR)	0.36507	1.39699	11.12910
	A3->Y (FR)	0.31559	1.36441	11.54140
	A4->Y (FR)	0.21480	1.23784	11.18990
	B1->Y (FR)	0.03403	0.56087	5.91818
sky130_fd_sc_hs__o41ai_4	A1->Y (FR)	0.36414	1.23850	10.69170
	A2->Y (FR)	0.34204	1.21428	11.04330
	A3->Y (FR)	0.29390	1.17964	11.45240
	A4->Y (FR)	0.19738	1.06424	11.14800
	B1->Y (FR)	0.04544	0.65892	7.65194

Delay(ns) to Y falling :

Cell Name	Timing Arc(Dir)	Delay(ns)		
		First	Mid	Last
sky130_fd_sc_hs__o41ai_1	A1->Y (RF)	0.04631	0.39806	3.11042
	A2->Y (RF)	0.04739	0.39176	3.09319
	A3->Y (RF)	0.04703	0.38305	3.07800
	A4->Y (RF)	0.03969	0.36799	3.04613
	B1->Y (RF)	0.03541	0.42114	3.44505
sky130_fd_sc_hs__o41ai_2	A1->Y (RF)	0.04443	0.35855	3.03045
	A2->Y (RF)	0.04551	0.35201	3.01288
	A3->Y (RF)	0.04543	0.34089	2.98465
	A4->Y (RF)	0.03771	0.32281	2.95452
	B1->Y (RF)	0.03183	0.38759	3.44154
sky130_fd_sc_hs__o41ai_4	A1->Y (RF)	0.04759	0.32388	2.98864
	A2->Y (RF)	0.04684	0.31308	2.94635
	A3->Y (RF)	0.04482	0.29896	2.90643
	A4->Y (RF)	0.03456	0.27426	2.82579
	B1->Y (RF)	0.03405	0.39107	3.89494

Power Information

Internal switching power(pJ) to Y rising :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__o41ai_1	A1	0.00103	0.00088	0.00100
	A1	0.00752	0.00738	0.00750
	A2	0.00107	0.00091	0.00112
	A2	0.00683	0.00668	0.00687
	A3	0.00106	0.00089	0.00127
	A3	0.00618	0.00602	0.00637
	A4	0.00104	0.00097	0.00231
	A4	0.00547	0.00541	0.00674
	B1	-0.00040	-0.00026	0.00158
	B1	0.00495	0.00502	0.00705
sky130_fd_sc_hs__o41ai_2	A1	0.00153	0.00120	0.00142
	A1	0.01462	0.01431	0.01453
	A2	0.00158	0.00123	0.00161
	A2	0.01319	0.01286	0.01321
	A3	0.00164	0.00130	0.00199
	A3	0.01169	0.01137	0.01200
	A4	0.00155	0.00133	0.00413
	A4	0.01017	0.00997	0.01274
	B1	-0.00165	-0.00124	0.00259
	B1	0.00918	0.00942	0.01308

sky130_fd_sc_hs__o41ai_4	**A1**	0.00262	0.00206	0.00260
	A1	0.02831	0.02776	0.02829
	A2	0.00270	0.00210	0.00294
	A2	0.02537	0.02480	0.02560
	A3	0.00267	0.00207	0.00353
	A3	0.02257	0.02191	0.02332
	A4	0.00253	0.00223	0.00755
	A4	0.01950	0.01922	0.02449
	B1	-0.00254	-0.00237	0.00223
	B1	0.01554	0.01559	0.01980

Internal switching power(pJ) to Y falling :

Cell Name	**Input**	**Power(pJ)**		
		first	**mid**	**last**
sky130_fd_sc_hs__o41ai_1	**A1**	0.00866	0.00852	0.00874
	A1	0.00217	0.00202	0.00229
	A2	0.00736	0.00723	0.00750
	A2	0.00155	0.00141	0.00170
	A3	0.00600	0.00594	0.00623
	A3	0.00077	0.00070	0.00102
	A4	0.00456	0.00456	0.00490
	A4	-0.00002	-0.00003	0.00033
	B1	0.00736	0.00731	0.00784
	B1	0.00222	0.00216	0.00271

sky130_fd_sc_hs__o41ai_2	**A1**	0.01814	0.01775	0.01818
	A1	0.00516	0.00479	0.00528
	A2	0.01517	0.01490	0.01544
	A2	0.00349	0.00321	0.00380
	A3	0.01240	0.01221	0.01282
	A3	0.00216	0.00195	0.00261
	A4	0.00882	0.00883	0.00965
	A4	-0.00008	-0.00008	0.00072
	B1	0.01542	0.01521	0.01647
	B1	0.00507	0.00486	0.00616
sky130_fd_sc_hs__o41ai_4	**A1**	0.03416	0.03341	0.03440
	A1	0.00871	0.00797	0.00911
	A2	0.02847	0.02786	0.02908
	A2	0.00567	0.00503	0.00635
	A3	0.02302	0.02257	0.02404
	A3	0.00277	0.00228	0.00379
	A4	0.01638	0.01634	0.01821
	A4	-0.00113	-0.00118	0.00069
	B1	0.02762	0.02744	0.02857
	B1	0.01054	0.01035	0.01159

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)**	0.00117	0.00117	0.00117
	(A2 * A4 * B1 * !Y)	-0.00135	-0.00138	-0.00138
	(A2 * A3 * !A4 * B1 * !Y)	0.00117	0.00117	0.00117
	(A2 * A3 * !A4 * B1 * !Y)	-0.00135	-0.00138	-0.00138
	(A2 * !B1 * Y)	0.00117	0.00117	0.00117
	(A2 * !B1 * Y)	-0.00135	-0.00138	-0.00138
	(A2 * !A3 * !A4 * B1 * !Y)	0.00117	0.00117	0.00117
	(A2 * !A3 * !A4 * B1 * !Y)	-0.00134	-0.00138	-0.00138
	(!A2 * A3 * A4 * B1 * !Y)	0.00117	0.00118	0.00117
	(!A2 * A3 * A4 * B1 * !Y)	-0.00125	-0.00134	-0.00133
	(!A2 * A3 * !B1 * Y)	0.00117	0.00118	0.00117
	(!A2 * A3 * !B1 * Y)	-0.00125	-0.00134	-0.00133
	(!A2 * A3 * !A4 * B1 * !Y)	0.00117	0.00118	0.00117
	(!A2 * A3 * !A4 * B1 * !Y)	-0.00125	-0.00134	-0.00133
	(!A2 * !A3 * A4 * B1 * !Y)	0.00117	0.00118	0.00117
	(!A2 * !A3 * A4 * B1 * !Y)	-0.00123	-0.00131	-0.00131
	(!A2 * !A3 * A4 * !B1 * Y)	0.00117	0.00118	0.00117
	(!A2 * !A3 * A4 * !B1 * Y)	-0.00124	-0.00131	-0.00131
	(!A2 * !A3 * !A4 * !B1 * Y)	0.00109	0.00110	0.00109
	(!A2 * !A3 * !A4 * !B1 * Y)	-0.00140	-0.00141	-0.00140

sky130_fd_sc_hs__o41ai_2	**(A2 * A4 * B1 * !Y)**	0.00232	0.00233	0.00232
	(A2 * A4 * B1 * !Y)	-0.00264	-0.00275	-0.00274
	(A2 * A3 * !A4 * B1 * !Y)	0.00232	0.00233	0.00232
	(A2 * A3 * !A4 * B1 * !Y)	-0.00264	-0.00275	-0.00274
	(A2 * !B1 * Y)	0.00232	0.00233	0.00232
	(A2 * !B1 * Y)	-0.00265	-0.00275	-0.00274
	(A2 * !A3 * !A4 * B1 * !Y)	0.00232	0.00233	0.00232
	(A2 * !A3 * !A4 * B1 * !Y)	-0.00262	-0.00275	-0.00274
	(!A2 * A3 * A4 * B1 * !Y)	0.00232	0.00235	0.00232
	(!A2 * A3 * A4 * B1 * !Y)	-0.00246	-0.00265	-0.00263
	(!A2 * A3 * !B1 * Y)	0.00232	0.00235	0.00232
	(!A2 * A3 * !B1 * Y)	-0.00246	-0.00265	-0.00263
	(!A2 * A3 * !A4 * B1 * !Y)	0.00232	0.00235	0.00232
	(!A2 * A3 * !A4 * B1 * !Y)	-0.00246	-0.00265	-0.00263
	(!A2 * !A3 * A4 * B1 * !Y)	0.00233	0.00235	0.00232
	(!A2 * !A3 * A4 * B1 * !Y)	-0.00243	-0.00258	-0.00259
	(!A2 * !A3 * A4 * !B1 * Y)	0.00232	0.00235	0.00232
	(!A2 * !A3 * A4 * !B1 * Y)	-0.00244	-0.00258	-0.00259
	(!A2 * !A3 * !A4 * !B1 * Y)	0.00216	0.00218	0.00216
	(!A2 * !A3 * !A4 * !B1 * Y)	-0.00281	-0.00282	-0.00281

sky130_fd_sc_hs__o41ai_4	**(A2 * A4 * B1 * !Y)**	0.00448	0.00449	0.00447
	(A2 * A4 * B1 * !Y)	-0.00529	-0.00549	-0.00547
	(A2 * A3 * !A4 * B1 * !Y)	0.00448	0.00449	0.00447
	(A2 * A3 * !A4 * B1 * !Y)	-0.00529	-0.00549	-0.00547
	(A2 * !B1 * Y)	0.00448	0.00449	0.00447
	(A2 * !B1 * Y)	-0.00530	-0.00549	-0.00547
	(A2 * !A3 * !A4 * B1 * !Y)	0.00448	0.00449	0.00447
	(A2 * !A3 * !A4 * B1 * !Y)	-0.00521	-0.00548	-0.00547
	(!A2 * A3 * A4 * B1 * !Y)	0.00448	0.00447	0.00447
	(!A2 * A3 * A4 * B1 * !Y)	-0.00489	-0.00527	-0.00523
	(!A2 * A3 * !B1 * Y)	0.00448	0.00447	0.00447
	(!A2 * A3 * !B1 * Y)	-0.00489	-0.00527	-0.00523
	(!A2 * A3 * !A4 * B1 * !Y)	0.00448	0.00447	0.00447
	(!A2 * A3 * !A4 * B1 * !Y)	-0.00489	-0.00526	-0.00523
	(!A2 * !A3 * A4 * B1 * !Y)	0.00446	0.00453	0.00447
	(!A2 * !A3 * A4 * B1 * !Y)	-0.00480	-0.00515	-0.00514
	(!A2 * !A3 * A4 * !B1 * Y)	0.00445	0.00452	0.00447
	(!A2 * !A3 * A4 * !B1 * Y)	-0.00482	-0.00515	-0.00514
	(!A2 * !A3 * !A4 * !B1 * Y)	0.00413	0.00419	0.00415
	(!A2 * !A3 * !A4 * !B1 * Y)	-0.00559	-0.00563	-0.00560

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)**	-0.00117	-0.00117	-0.00117
	(A2 * A4 * B1 * !Y)	0.00138	0.00139	0.00138
	(A2 * A3 * !A4 * B1 * !Y)	-0.00117	-0.00117	-0.00117
	(A2 * A3 * !A4 * B1 * !Y)	0.00138	0.00139	0.00138
	(A2 * !B1 * Y)	-0.00117	-0.00117	-0.00117
	(A2 * !B1 * Y)	0.00138	0.00138	0.00138
	(A2 * !A3 * !A4 * B1 * !Y)	-0.00117	-0.00117	-0.00117
	(A2 * !A3 * !A4 * B1 * !Y)	0.00138	0.00139	0.00138
	(!A2 * A3 * A4 * B1 * !Y)	-0.00117	-0.00117	-0.00117
	(!A2 * A3 * A4 * B1 * !Y)	0.00133	0.00134	0.00133
	(!A2 * A3 * !B1 * Y)	-0.00117	-0.00117	-0.00117
	(!A2 * A3 * !B1 * Y)	0.00133	0.00134	0.00133
	(!A2 * A3 * !A4 * B1 * !Y)	-0.00117	-0.00117	-0.00117
	(!A2 * A3 * !A4 * B1 * !Y)	0.00134	0.00134	0.00133
	(!A2 * !A3 * A4 * B1 * !Y)	-0.00117	-0.00117	-0.00117
	(!A2 * !A3 * A4 * B1 * !Y)	0.00131	0.00131	0.00131
	(!A2 * !A3 * A4 * !B1 * Y)	-0.00117	-0.00117	-0.00117
	(!A2 * !A3 * A4 * !B1 * Y)	0.00131	0.00131	0.00131
	(!A2 * !A3 * !A4 * !B1 * Y)	-0.00103	-0.00110	-0.00109
	(!A2 * !A3 * !A4 * !B1 * Y)	0.00141	0.00141	0.00140

sky130_fd_sc_hs__o41ai_2	**(A2 * A4 * B1 * !Y)**	-0.00232	-0.00233	-0.00232
	(A2 * A4 * B1 * !Y)	0.00274	0.00276	0.00274
	(A2 * A3 * !A4 * B1 * !Y)	-0.00232	-0.00233	-0.00232
	(A2 * A3 * !A4 * B1 * !Y)	0.00274	0.00276	0.00274
	(A2 * !B1 * Y)	-0.00232	-0.00233	-0.00232
	(A2 * !B1 * Y)	0.00274	0.00276	0.00274
	(A2 * !A3 * !A4 * B1 * !Y)	-0.00232	-0.00233	-0.00232
	(A2 * !A3 * !A4 * B1 * !Y)	0.00274	0.00276	0.00274
	(!A2 * A3 * A4 * B1 * !Y)	-0.00231	-0.00233	-0.00232
	(!A2 * A3 * A4 * B1 * !Y)	0.00263	0.00265	0.00263
	(!A2 * A3 * !B1 * Y)	-0.00231	-0.00233	-0.00232
	(!A2 * A3 * !B1 * Y)	0.00262	0.00265	0.00263
	(!A2 * A3 * !A4 * B1 * !Y)	-0.00231	-0.00232	-0.00232
	(!A2 * A3 * !A4 * B1 * !Y)	0.00262	0.00265	0.00263
	(!A2 * !A3 * A4 * B1 * !Y)	-0.00231	-0.00231	-0.00232
	(!A2 * !A3 * A4 * B1 * !Y)	0.00258	0.00258	0.00259
	(!A2 * !A3 * A4 * !B1 * Y)	-0.00231	-0.00231	-0.00232
	(!A2 * !A3 * A4 * !B1 * Y)	0.00258	0.00258	0.00259
	(!A2 * !A3 * !A4 * !B1 * Y)	-0.00203	-0.00218	-0.00216
	(!A2 * !A3 * !A4 * !B1 * Y)	0.00283	0.00283	0.00282

sky130_fd_sc_hs__o41ai_4	**(A2 * A4 * B1 * !Y)**	-0.00447	-0.00448	-0.00446
	(A2 * A4 * B1 * !Y)	0.00548	0.00551	0.00547
	(A2 * A3 * !A4 * B1 * !Y)	-0.00447	-0.00448	-0.00446
	(A2 * A3 * !A4 * B1 * !Y)	0.00547	0.00551	0.00547
	(A2 * !B1 * Y)	-0.00447	-0.00449	-0.00446
	(A2 * !B1 * Y)	0.00548	0.00553	0.00547
	(A2 * !A3 * !A4 * B1 * !Y)	-0.00447	-0.00448	-0.00446
	(A2 * !A3 * !A4 * B1 * !Y)	0.00548	0.00551	0.00547
	(!A2 * A3 * A4 * B1 * !Y)	-0.00446	-0.00447	-0.00446
	(!A2 * A3 * A4 * B1 * !Y)	0.00522	0.00527	0.00523
	(!A2 * A3 * !B1 * Y)	-0.00446	-0.00447	-0.00446
	(!A2 * A3 * !B1 * Y)	0.00522	0.00527	0.00523
	(!A2 * A3 * !A4 * B1 * !Y)	-0.00446	-0.00447	-0.00446
	(!A2 * A3 * !A4 * B1 * !Y)	0.00522	0.00526	0.00523
	(!A2 * !A3 * A4 * B1 * !Y)	-0.00446	-0.00446	-0.00446
	(!A2 * !A3 * A4 * B1 * !Y)	0.00514	0.00515	0.00514
	(!A2 * !A3 * A4 * !B1 * Y)	-0.00445	-0.00447	-0.00446
	(!A2 * !A3 * A4 * !B1 * Y)	0.00514	0.00515	0.00514
	(!A2 * !A3 * !A4 * !B1 * Y)	-0.00390	-0.00419	-0.00415
	(!A2 * !A3 * !A4 * !B1 * Y)	0.00562	0.00564	0.00562

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)**	0.00113	0.00115	0.00113
	(A1 * A3 * A4 * B1 * !Y)	-0.00098	-0.00098	-0.00098
	(A1 * A3 * !B1 * Y)	0.00113	0.00115	0.00113
	(A1 * A3 * !B1 * Y)	-0.00099	-0.00100	-0.00099
	(A1 * A3 * !A4 * B1 * !Y)	0.00113	0.00116	0.00113
	(A1 * A3 * !A4 * B1 * !Y)	-0.00094	-0.00094	-0.00094
	(A1 * !A3 * A4 * B1 * !Y)	0.00113	0.00114	0.00113
	(A1 * !A3 * A4 * B1 * !Y)	-0.00092	-0.00092	-0.00092
	(A1 * !A3 * A4 * !B1 * Y)	0.00113	0.00114	0.00113
	(A1 * !A3 * A4 * !B1 * Y)	-0.00097	-0.00098	-0.00097
	(A1 * !A3 * !A4 * B1 * !Y)	0.00113	0.00115	0.00113
	(A1 * !A3 * !A4 * B1 * !Y)	-0.00079	-0.00081	-0.00079
	(A1 * !A3 * !A4 * !B1 * Y)	0.00113	0.00114	0.00113
	(A1 * !A3 * !A4 * !B1 * Y)	-0.00132	-0.00135	-0.00134
	(!A1 * A3 * A4 * B1 * !Y)	0.00114	0.00114	0.00113
	(!A1 * A3 * A4 * B1 * !Y)	-0.00131	-0.00134	-0.00134
	(!A1 * A3 * !B1 * Y)	0.00114	0.00114	0.00113
	(!A1 * A3 * !B1 * Y)	-0.00131	-0.00134	-0.00134
	(!A1 * A3 * !A4 * B1 * !Y)	0.00116	0.00114	0.00113
	(!A1 * A3 * !A4 * B1 * !Y)	-0.00127	-0.00134	-0.00134
	(!A1 * !A3 * A4 * B1 * !Y)	0.00115	0.00114	0.00113
	(!A1 * !A3 * A4 * B1 * !Y)	-0.00117	-0.00128	-0.00128
	(!A1 * !A3 * A4 * !B1 * Y)	0.00113	0.00114	0.00113
	(!A1 * !A3 * A4 * !B1 * Y)	-0.00118	-0.00128	-0.00127
	(!A1 * !A3 * !A4 * !B1 * Y)	0.00105	0.00105	0.00105
	(!A1 * !A3 * !A4 * !B1 * Y)	-0.00136	-0.00136	-0.00137

sky130_fd_sc_hs__o41ai_2	**(A1 * A3 * A4 * B1 * !Y)**	0.00235	0.00233	0.00233
	(A1 * A3 * A4 * B1 * !Y)	-0.00203	-0.00204	-0.00203
	(A1 * A3 * !B1 * Y)	0.00234	0.00236	0.00233
	(A1 * A3 * !B1 * Y)	-0.00206	-0.00207	-0.00206
	(A1 * A3 * !A4 * B1 * !Y)	0.00235	0.00233	0.00233
	(A1 * A3 * !A4 * B1 * !Y)	-0.00195	-0.00197	-0.00196
	(A1 * !A3 * A4 * B1 * !Y)	0.00234	0.00238	0.00234
	(A1 * !A3 * A4 * B1 * !Y)	-0.00191	-0.00193	-0.00192
	(A1 * !A3 * A4 * !B1 * Y)	0.00232	0.00235	0.00233
	(A1 * !A3 * A4 * !B1 * Y)	-0.00205	-0.00207	-0.00205
	(A1 * !A3 * !A4 * B1 * !Y)	0.00232	0.00237	0.00233
	(A1 * !A3 * !A4 * B1 * !Y)	-0.00166	-0.00169	-0.00166
	(A1 * !A3 * !A4 * !B1 * Y)	0.00232	0.00233	0.00233
	(A1 * !A3 * !A4 * !B1 * Y)	-0.00270	-0.00277	-0.00275
	(!A1 * A3 * A4 * B1 * !Y)	0.00232	0.00235	0.00233
	(!A1 * A3 * A4 * B1 * !Y)	-0.00271	-0.00280	-0.00280
	(!A1 * A3 * !B1 * Y)	0.00232	0.00234	0.00233
	(!A1 * A3 * !B1 * Y)	-0.00272	-0.00281	-0.00280
	(!A1 * A3 * !A4 * B1 * !Y)	0.00234	0.00235	0.00233
	(!A1 * A3 * !A4 * B1 * !Y)	-0.00266	-0.00280	-0.00280
	(!A1 * !A3 * A4 * B1 * !Y)	0.00235	0.00235	0.00233
	(!A1 * !A3 * A4 * B1 * !Y)	-0.00249	-0.00268	-0.00266
	(!A1 * !A3 * A4 * !B1 * Y)	0.00232	0.00234	0.00232
	(!A1 * !A3 * A4 * !B1 * Y)	-0.00252	-0.00268	-0.00267
	(!A1 * !A3 * !A4 * !B1 * Y)	0.00216	0.00216	0.00215
	(!A1 * !A3 * !A4 * !B1 * Y)	-0.00285	-0.00285	-0.00285

sky130_fd_sc_hs__o41ai_4	**(A1 * A3 * A4 * B1 * !Y)**	0.00447	0.00450	0.00443
	(A1 * A3 * A4 * B1 * !Y)	-0.00384	-0.00386	-0.00385
	(A1 * A3 * !B1 * Y)	0.00443	0.00449	0.00443
	(A1 * A3 * !B1 * Y)	-0.00390	-0.00392	-0.00391
	(A1 * A3 * !A4 * B1 * !Y)	0.00448	0.00453	0.00443
	(A1 * A3 * !A4 * B1 * !Y)	-0.00369	-0.00371	-0.00371
	(A1 * !A3 * A4 * B1 * !Y)	0.00443	0.00451	0.00444
	(A1 * !A3 * A4 * B1 * !Y)	-0.00366	-0.00369	-0.00367
	(A1 * !A3 * A4 * !B1 * Y)	0.00442	0.00447	0.00443
	(A1 * !A3 * A4 * !B1 * Y)	-0.00389	-0.00394	-0.00391
	(A1 * !A3 * !A4 * B1 * !Y)	0.00442	0.00451	0.00443
	(A1 * !A3 * !A4 * B1 * !Y)	-0.00317	-0.00323	-0.00317
	(A1 * !A3 * !A4 * !B1 * Y)	0.00441	0.00447	0.00442
	(A1 * !A3 * !A4 * !B1 * Y)	-0.00530	-0.00538	-0.00540
	(!A1 * A3 * A4 * B1 * !Y)	0.00443	0.00447	0.00443
	(!A1 * A3 * A4 * B1 * !Y)	-0.00524	-0.00542	-0.00542
	(!A1 * A3 * !B1 * Y)	0.00442	0.00447	0.00443
	(!A1 * A3 * !B1 * Y)	-0.00526	-0.00542	-0.00542
	(!A1 * A3 * !A4 * B1 * !Y)	0.00450	0.00447	0.00443
	(!A1 * A3 * !A4 * B1 * !Y)	-0.00512	-0.00547	-0.00543
	(!A1 * !A3 * A4 * B1 * !Y)	0.00450	0.00447	0.00443
	(!A1 * !A3 * A4 * B1 * !Y)	-0.00476	-0.00519	-0.00516
	(!A1 * !A3 * A4 * !B1 * Y)	0.00442	0.00446	0.00442
	(!A1 * !A3 * A4 * !B1 * Y)	-0.00482	-0.00519	-0.00516
	(!A1 * !A3 * !A4 * !B1 * Y)	0.00412	0.00415	0.00411
	(!A1 * !A3 * !A4 * !B1 * Y)	-0.00559	-0.00560	-0.00558

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)**	-0.00113	-0.00113	-0.00113
	(A1 * A3 * A4 * B1 * !Y)	0.00098	0.00098	0.00098
	(A1 * A3 * !B1 * Y)	-0.00113	-0.00113	-0.00113
	(A1 * A3 * !B1 * Y)	0.00099	0.00100	0.00099
	(A1 * A3 * !A4 * B1 * !Y)	-0.00113	-0.00113	-0.00113
	(A1 * A3 * !A4 * B1 * !Y)	0.00094	0.00094	0.00094
	(A1 * !A3 * A4 * B1 * !Y)	-0.00113	-0.00113	-0.00113
	(A1 * !A3 * A4 * B1 * !Y)	0.00092	0.00092	0.00092
	(A1 * !A3 * A4 * !B1 * Y)	-0.00113	-0.00114	-0.00113
	(A1 * !A3 * A4 * !B1 * Y)	0.00097	0.00098	0.00097
	(A1 * !A3 * !A4 * B1 * !Y)	-0.00111	-0.00111	-0.00110
	(A1 * !A3 * !A4 * B1 * !Y)	0.00082	0.00083	0.00083
	(A1 * !A3 * !A4 * !B1 * Y)	-0.00113	-0.00113	-0.00113
	(A1 * !A3 * !A4 * !B1 * Y)	0.00134	0.00135	0.00134
	(!A1 * A3 * A4 * B1 * !Y)	-0.00113	-0.00113	-0.00113
	(!A1 * A3 * A4 * B1 * !Y)	0.00135	0.00134	0.00134
	(!A1 * A3 * !B1 * Y)	-0.00112	-0.00113	-0.00113
	(!A1 * A3 * !B1 * Y)	0.00133	0.00134	0.00134
	(!A1 * A3 * !A4 * B1 * !Y)	-0.00112	-0.00113	-0.00113
	(!A1 * A3 * !A4 * B1 * !Y)	0.00133	0.00134	0.00134
	(!A1 * !A3 * A4 * B1 * !Y)	-0.00113	-0.00113	-0.00113
	(!A1 * !A3 * A4 * B1 * !Y)	0.00128	0.00128	0.00128
	(!A1 * !A3 * A4 * !B1 * Y)	-0.00112	-0.00113	-0.00113
	(!A1 * !A3 * A4 * !B1 * Y)	0.00126	0.00128	0.00127
	(!A1 * !A3 * !A4 * !B1 * Y)	-0.00099	-0.00105	-0.00105
	(!A1 * !A3 * !A4 * !B1 * Y)	0.00137	0.00137	0.00137

sky130_fd_sc_hs__o41ai_2	**(A1 * A3 * A4 * B1 * !Y)**	-0.00232	-0.00233	-0.00232
	(A1 * A3 * A4 * B1 * !Y)	0.00203	0.00204	0.00203
	(A1 * A3 * !B1 * Y)	-0.00232	-0.00233	-0.00232
	(A1 * A3 * !B1 * Y)	0.00206	0.00207	0.00206
	(A1 * A3 * !A4 * B1 * !Y)	-0.00232	-0.00233	-0.00232
	(A1 * A3 * !A4 * B1 * !Y)	0.00195	0.00197	0.00196
	(A1 * !A3 * A4 * B1 * !Y)	-0.00232	-0.00234	-0.00233
	(A1 * !A3 * A4 * B1 * !Y)	0.00191	0.00193	0.00192
	(A1 * !A3 * A4 * !B1 * Y)	-0.00232	-0.00233	-0.00232
	(A1 * !A3 * A4 * !B1 * Y)	0.00205	0.00207	0.00205
	(A1 * !A3 * !A4 * B1 * !Y)	-0.00229	-0.00228	-0.00228
	(A1 * !A3 * !A4 * B1 * !Y)	0.00171	0.00170	0.00172
	(A1 * !A3 * !A4 * !B1 * Y)	-0.00231	-0.00233	-0.00232
	(A1 * !A3 * !A4 * !B1 * Y)	0.00274	0.00277	0.00275
	(!A1 * A3 * A4 * B1 * !Y)	-0.00231	-0.00233	-0.00232
	(!A1 * A3 * A4 * B1 * !Y)	0.00278	0.00280	0.00280
	(!A1 * A3 * !B1 * Y)	-0.00232	-0.00233	-0.00232
	(!A1 * A3 * !B1 * Y)	0.00279	0.00281	0.00280
	(!A1 * A3 * !A4 * B1 * !Y)	-0.00231	-0.00232	-0.00232
	(!A1 * A3 * !A4 * B1 * !Y)	0.00279	0.00280	0.00280
	(!A1 * !A3 * A4 * B1 * !Y)	-0.00232	-0.00233	-0.00232
	(!A1 * !A3 * A4 * B1 * !Y)	0.00265	0.00268	0.00266
	(!A1 * !A3 * A4 * !B1 * Y)	-0.00231	-0.00233	-0.00232
	(!A1 * !A3 * A4 * !B1 * Y)	0.00265	0.00268	0.00267
	(!A1 * !A3 * !A4 * !B1 * Y)	-0.00202	-0.00216	-0.00215
	(!A1 * !A3 * !A4 * !B1 * Y)	0.00287	0.00287	0.00285

sky130_fd_sc_hs__o41ai_4	**(A1 * A3 * A4 * B1 * !Y)**	-0.00441	-0.00443	-0.00442
	(A1 * A3 * A4 * B1 * !Y)	0.00384	0.00386	0.00385
	(A1 * A3 * !B1 * Y)	-0.00441	-0.00443	-0.00442
	(A1 * A3 * !B1 * Y)	0.00390	0.00392	0.00391
	(A1 * A3 * !A4 * B1 * !Y)	-0.00441	-0.00442	-0.00442
	(A1 * A3 * !A4 * B1 * !Y)	0.00369	0.00371	0.00371
	(A1 * !A3 * A4 * B1 * !Y)	-0.00441	-0.00444	-0.00442
	(A1 * !A3 * A4 * B1 * !Y)	0.00366	0.00369	0.00367
	(A1 * !A3 * A4 * !B1 * Y)	-0.00440	-0.00444	-0.00442
	(A1 * !A3 * A4 * !B1 * Y)	0.00389	0.00394	0.00391
	(A1 * !A3 * !A4 * B1 * !Y)	-0.00433	-0.00435	-0.00430
	(A1 * !A3 * !A4 * B1 * !Y)	0.00331	0.00333	0.00331
	(A1 * !A3 * !A4 * !B1 * Y)	-0.00440	-0.00440	-0.00441
	(A1 * !A3 * !A4 * !B1 * Y)	0.00538	0.00538	0.00540
	(!A1 * A3 * A4 * B1 * !Y)	-0.00440	-0.00442	-0.00442
	(!A1 * A3 * A4 * B1 * !Y)	0.00539	0.00542	0.00542
	(!A1 * A3 * !B1 * Y)	-0.00441	-0.00442	-0.00442
	(!A1 * A3 * !B1 * Y)	0.00540	0.00542	0.00542
	(!A1 * A3 * !A4 * B1 * !Y)	-0.00441	-0.00444	-0.00441
	(!A1 * A3 * !A4 * B1 * !Y)	0.00541	0.00547	0.00543
	(!A1 * !A3 * A4 * B1 * !Y)	-0.00440	-0.00443	-0.00441
	(!A1 * !A3 * A4 * B1 * !Y)	0.00513	0.00519	0.00516
	(!A1 * !A3 * A4 * !B1 * Y)	-0.00440	-0.00443	-0.00442
	(!A1 * !A3 * A4 * !B1 * Y)	0.00513	0.00519	0.00516
	(!A1 * !A3 * !A4 * !B1 * Y)	-0.00385	-0.00415	-0.00411
	(!A1 * !A3 * !A4 * !B1 * Y)	0.00559	0.00561	0.00559

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)**	0.00121	0.00123	0.00118
	(A2 * A4 * B1 * !Y)	-0.00090	-0.00091	-0.00090
	(A2 * A4 * !B1 * Y)	0.00113	0.00115	0.00113
	(A2 * A4 * !B1 * Y)	-0.00102	-0.00103	-0.00102
	(A2 * !A4 * B1 * !Y)	0.00119	0.00120	0.00118
	(A2 * !A4 * B1 * !Y)	-0.00078	-0.00079	-0.00078
	(A2 * !A4 * !B1 * Y)	0.00114	0.00114	0.00113
	(A2 * !A4 * !B1 * Y)	-0.00135	-0.00138	-0.00137
	(A1 * !A2 * A4 * B1 * !Y)	0.00126	0.00120	0.00118
	(A1 * !A2 * A4 * B1 * !Y)	-0.00093	-0.00094	-0.00093
	(A1 * !A2 * A4 * !B1 * Y)	0.00113	0.00114	0.00113
	(A1 * !A2 * A4 * !B1 * Y)	-0.00101	-0.00102	-0.00101
	(A1 * !A2 * !A4 * B1 * !Y)	0.00118	0.00121	0.00118
	(A1 * !A2 * !A4 * B1 * !Y)	-0.00077	-0.00079	-0.00078
	(A1 * !A2 * !A4 * !B1 * Y)	0.00113	0.00114	0.00113
	(A1 * !A2 * !A4 * !B1 * Y)	-0.00122	-0.00131	-0.00130
	(!A1 * !A2 * A4 * B1 * !Y)	0.00139	0.00119	0.00118
	(!A1 * !A2 * A4 * B1 * !Y)	-0.00110	-0.00133	-0.00134
	(!A1 * !A2 * A4 * !B1 * Y)	0.00113	0.00114	0.00113
	(!A1 * !A2 * A4 * !B1 * Y)	-0.00135	-0.00138	-0.00137
	(!A1 * !A2 * !A4 * !B1 * Y)	0.00105	0.00105	0.00105
	(!A1 * !A2 * !A4 * !B1 * Y)	-0.00140	-0.00140	-0.00140

sky130_fd_sc_hs__o41ai_2	**(A2 * A4 * B1 * !Y)**	0.00222	0.00224	0.00222
	(A2 * A4 * B1 * !Y)	-0.00184	-0.00185	-0.00184
	(A2 * A4 * !B1 * Y)	0.00221	0.00218	0.00220
	(A2 * A4 * !B1 * Y)	-0.00205	-0.00206	-0.00204
	(A2 * !A4 * B1 * !Y)	0.00221	0.00225	0.00221
	(A2 * !A4 * B1 * !Y)	-0.00160	-0.00163	-0.00161
	(A2 * !A4 * !B1 * Y)	0.00219	0.00221	0.00220
	(A2 * !A4 * !B1 * Y)	-0.00265	-0.00273	-0.00272
	(A1 * !A2 * A4 * B1 * !Y)	0.00230	0.00226	0.00221
	(A1 * !A2 * A4 * B1 * !Y)	-0.00190	-0.00192	-0.00190
	(A1 * !A2 * A4 * !B1 * Y)	0.00219	0.00221	0.00219
	(A1 * !A2 * A4 * !B1 * Y)	-0.00200	-0.00202	-0.00200
	(A1 * !A2 * !A4 * B1 * !Y)	0.00221	0.00225	0.00221
	(A1 * !A2 * !A4 * B1 * !Y)	-0.00159	-0.00162	-0.00160
	(A1 * !A2 * !A4 * !B1 * Y)	0.00219	0.00221	0.00219
	(A1 * !A2 * !A4 * !B1 * Y)	-0.00243	-0.00256	-0.00256
	(!A1 * !A2 * A4 * B1 * !Y)	0.00260	0.00223	0.00220
	(!A1 * !A2 * A4 * B1 * !Y)	-0.00226	-0.00271	-0.00272
	(!A1 * !A2 * A4 * !B1 * Y)	0.00219	0.00221	0.00220
	(!A1 * !A2 * A4 * !B1 * Y)	-0.00265	-0.00272	-0.00271
	(!A1 * !A2 * !A4 * !B1 * Y)	0.00206	0.00205	0.00206
	(!A1 * !A2 * !A4 * !B1 * Y)	-0.00278	-0.00277	-0.00278

sky130_fd_sc_hs__o41ai_4	**(A2 * A4 * B1 * !Y)**	0.00458	0.00463	0.00455
	(A2 * A4 * B1 * !Y)	-0.00366	-0.00369	-0.00367
	(A2 * A4 * !B1 * Y)	0.00453	0.00451	0.00451
	(A2 * A4 * !B1 * Y)	-0.00401	-0.00403	-0.00401
	(A2 * !A4 * B1 * !Y)	0.00452	0.00460	0.00451
	(A2 * !A4 * B1 * !Y)	-0.00323	-0.00329	-0.00325
	(A2 * !A4 * !B1 * Y)	0.00452	0.00452	0.00450
	(A2 * !A4 * !B1 * Y)	-0.00534	-0.00548	-0.00547
	(A1 * !A2 * A4 * B1 * !Y)	0.00479	0.00462	0.00452
	(A1 * !A2 * A4 * B1 * !Y)	-0.00383	-0.00386	-0.00382
	(A1 * !A2 * A4 * !B1 * Y)	0.00450	0.00455	0.00451
	(A1 * !A2 * A4 * !B1 * Y)	-0.00399	-0.00401	-0.00398
	(A1 * !A2 * !A4 * B1 * !Y)	0.00457	0.00462	0.00452
	(A1 * !A2 * !A4 * B1 * !Y)	-0.00325	-0.00327	-0.00323
	(A1 * !A2 * !A4 * !B1 * Y)	0.00450	0.00451	0.00450
	(A1 * !A2 * !A4 * !B1 * Y)	-0.00487	-0.00510	-0.00510
	(!A1 * !A2 * A4 * B1 * !Y)	0.00539	0.00456	0.00451
	(!A1 * !A2 * A4 * B1 * !Y)	-0.00459	-0.00554	-0.00556
	(!A1 * !A2 * A4 * !B1 * Y)	0.00450	0.00452	0.00450
	(!A1 * !A2 * A4 * !B1 * Y)	-0.00543	-0.00555	-0.00554
	(!A1 * !A2 * !A4 * !B1 * Y)	0.00421	0.00420	0.00419
	(!A1 * !A2 * !A4 * !B1 * Y)	-0.00568	-0.00567	-0.00566

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)**	-0.00117	-0.00118	-0.00117
	(A2 * A4 * B1 * !Y)	0.00090	0.00091	0.00090
	(A2 * A4 * !B1 * Y)	-0.00113	-0.00113	-0.00113
	(A2 * A4 * !B1 * Y)	0.00102	0.00103	0.00102
	(A2 * !A4 * B1 * !Y)	-0.00117	-0.00117	-0.00116
	(A2 * !A4 * B1 * !Y)	0.00080	0.00081	0.00081
	(A2 * !A4 * !B1 * Y)	-0.00113	-0.00114	-0.00113
	(A2 * !A4 * !B1 * Y)	0.00138	0.00138	0.00137
	(A1 * !A2 * A4 * B1 * !Y)	-0.00117	-0.00118	-0.00117
	(A1 * !A2 * A4 * B1 * !Y)	0.00093	0.00094	0.00093
	(A1 * !A2 * A4 * !B1 * Y)	-0.00113	-0.00114	-0.00113
	(A1 * !A2 * A4 * !B1 * Y)	0.00101	0.00102	0.00101
	(A1 * !A2 * !A4 * B1 * !Y)	-0.00112	-0.00113	-0.00116
	(A1 * !A2 * !A4 * B1 * !Y)	0.00082	0.00083	0.00080
	(A1 * !A2 * !A4 * !B1 * Y)	-0.00113	-0.00114	-0.00113
	(A1 * !A2 * !A4 * !B1 * Y)	0.00130	0.00131	0.00130
	(!A1 * !A2 * A4 * B1 * !Y)	-0.00116	-0.00116	-0.00117
	(!A1 * !A2 * A4 * B1 * !Y)	0.00132	0.00133	0.00134
	(!A1 * !A2 * A4 * !B1 * Y)	-0.00113	-0.00114	-0.00113
	(!A1 * !A2 * A4 * !B1 * Y)	0.00137	0.00138	0.00137
	(!A1 * !A2 * !A4 * !B1 * Y)	-0.00099	-0.00105	-0.00105
	(!A1 * !A2 * !A4 * !B1 * Y)	0.00141	0.00141	0.00140

sky130_fd_sc_hs__o41ai_2	**(A2 * A4 * B1 * !Y)**	-0.00220	-0.00221	-0.00221
	(A2 * A4 * B1 * !Y)	0.00184	0.00185	0.00184
	(A2 * A4 * !B1 * Y)	-0.00219	-0.00218	-0.00219
	(A2 * A4 * !B1 * Y)	0.00205	0.00206	0.00204
	(A2 * !A4 * B1 * !Y)	-0.00218	-0.00218	-0.00217
	(A2 * !A4 * B1 * !Y)	0.00164	0.00164	0.00165
	(A2 * !A4 * !B1 * Y)	-0.00219	-0.00220	-0.00219
	(A2 * !A4 * !B1 * Y)	0.00271	0.00273	0.00272
	(A1 * !A2 * A4 * B1 * !Y)	-0.00220	-0.00222	-0.00221
	(A1 * !A2 * A4 * B1 * !Y)	0.00190	0.00192	0.00190
	(A1 * !A2 * A4 * !B1 * Y)	-0.00219	-0.00220	-0.00219
	(A1 * !A2 * A4 * !B1 * Y)	0.00200	0.00202	0.00200
	(A1 * !A2 * !A4 * B1 * !Y)	-0.00208	-0.00209	-0.00213
	(A1 * !A2 * !A4 * B1 * !Y)	0.00168	0.00167	0.00165
	(A1 * !A2 * !A4 * !B1 * Y)	-0.00218	-0.00219	-0.00219
	(A1 * !A2 * !A4 * !B1 * Y)	0.00255	0.00256	0.00256
	(!A1 * !A2 * A4 * B1 * !Y)	-0.00220	-0.00220	-0.00218
	(!A1 * !A2 * A4 * B1 * !Y)	0.00272	0.00272	0.00272
	(!A1 * !A2 * A4 * !B1 * Y)	-0.00218	-0.00219	-0.00219
	(!A1 * !A2 * A4 * !B1 * Y)	0.00270	0.00272	0.00271
	(!A1 * !A2 * !A4 * !B1 * Y)	-0.00192	-0.00205	-0.00206
	(!A1 * !A2 * !A4 * !B1 * Y)	0.00279	0.00280	0.00279

sky130_fd_sc_hs__o41ai_4	**(A2 * A4 * B1 * !Y)**	-0.00450	-0.00452	-0.00451
	(A2 * A4 * B1 * !Y)	0.00366	0.00369	0.00367
	(A2 * A4 * !B1 * Y)	-0.00450	-0.00451	-0.00450
	(A2 * A4 * !B1 * Y)	0.00401	0.00403	0.00401
	(A2 * !A4 * B1 * !Y)	-0.00448	-0.00450	-0.00445
	(A2 * !A4 * B1 * !Y)	0.00330	0.00332	0.00333
	(A2 * !A4 * !B1 * Y)	-0.00449	-0.00450	-0.00449
	(A2 * !A4 * !B1 * Y)	0.00545	0.00548	0.00547
	(A1 * !A2 * A4 * B1 * !Y)	-0.00451	-0.00454	-0.00451
	(A1 * !A2 * A4 * B1 * !Y)	0.00383	0.00386	0.00382
	(A1 * !A2 * A4 * !B1 * Y)	-0.00450	-0.00452	-0.00449
	(A1 * !A2 * A4 * !B1 * Y)	0.00399	0.00401	0.00398
	(A1 * !A2 * !A4 * B1 * !Y)	-0.00426	-0.00428	-0.00439
	(A1 * !A2 * !A4 * B1 * !Y)	0.00338	0.00336	0.00332
	(A1 * !A2 * !A4 * !B1 * Y)	-0.00449	-0.00450	-0.00449
	(A1 * !A2 * !A4 * !B1 * Y)	0.00509	0.00510	0.00510
	(!A1 * !A2 * A4 * B1 * !Y)	-0.00447	-0.00450	-0.00446
	(!A1 * !A2 * A4 * B1 * !Y)	0.00552	0.00557	0.00556
	(!A1 * !A2 * A4 * !B1 * Y)	-0.00448	-0.00450	-0.00449
	(!A1 * !A2 * A4 * !B1 * Y)	0.00552	0.00555	0.00554
	(!A1 * !A2 * !A4 * !B1 * Y)	-0.00391	-0.00420	-0.00419
	(!A1 * !A2 * !A4 * !B1 * Y)	0.00568	0.00571	0.00568

Passive power(pJ) for A4 rising (conditional):

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

sky130_fd_sc_hs__o41ai_1	**(A3 * B1 * !Y)**	0.00128	0.00131	0.00129
	(A3 * B1 * !Y)	-0.00069	-0.00071	-0.00069
	(A3 * !B1 * Y)	0.00114	0.00113	0.00113
	(A3 * !B1 * Y)	-0.00135	-0.00138	-0.00138
	(A2 * !A3 * B1 * !Y)	0.00128	0.00131	0.00129
	(A2 * !A3 * B1 * !Y)	-0.00069	-0.00070	-0.00069
	(A2 * !A3 * !B1 * Y)	0.00112	0.00113	0.00113
	(A2 * !A3 * !B1 * Y)	-0.00123	-0.00132	-0.00132
	(A1 * !A2 * !A3 * B1 * !Y)	0.00128	0.00131	0.00129
	(A1 * !A2 * !A3 * B1 * !Y)	-0.00069	-0.00070	-0.00069
	(A1 * !A2 * !A3 * !B1 * Y)	0.00114	0.00113	0.00113
	(A1 * !A2 * !A3 * !B1 * Y)	-0.00122	-0.00129	-0.00128
	(!A1 * !A2 * !A3 * !B1 * Y)	0.00105	0.00105	0.00105
	(!A1 * !A2 * !A3 * !B1 * Y)	-0.00140	-0.00140	-0.00141
sky130_fd_sc_hs__o41ai_2	**(A3 * B1 * !Y)**	0.00250	0.00249	0.00249
	(A3 * B1 * !Y)	-0.00144	-0.00142	-0.00143
	(A3 * !B1 * Y)	0.00224	0.00225	0.00223
	(A3 * !B1 * Y)	-0.00268	-0.00276	-0.00275
	(A2 * !A3 * B1 * !Y)	0.00249	0.00248	0.00249
	(A2 * !A3 * B1 * !Y)	-0.00143	-0.00142	-0.00143
	(A2 * !A3 * !B1 * Y)	0.00223	0.00224	0.00223
	(A2 * !A3 * !B1 * Y)	-0.00245	-0.00261	-0.00261
	(A1 * !A2 * !A3 * B1 * !Y)	0.00249	0.00249	0.00249
	(A1 * !A2 * !A3 * B1 * !Y)	-0.00143	-0.00142	-0.00143
	(A1 * !A2 * !A3 * !B1 * Y)	0.00222	0.00223	0.00222
	(A1 * !A2 * !A3 * !B1 * Y)	-0.00240	-0.00255	-0.00254
	(!A1 * !A2 * !A3 * !B1 * Y)	0.00209	0.00208	0.00209
	(!A1 * !A2 * !A3 * !B1 * Y)	-0.00282	-0.00281	-0.00281

sky130_fd_sc_hs__o41ai_4	**(A3 * B1 * !Y)**	0.00512	0.00521	0.00513
	(A3 * B1 * !Y)	-0.00277	-0.00282	-0.00277
	(A3 * !B1 * Y)	0.00455	0.00452	0.00451
	(A3 * !B1 * Y)	-0.00532	-0.00550	-0.00547
	(A2 * !A3 * B1 * !Y)	0.00511	0.00514	0.00513
	(A2 * !A3 * B1 * !Y)	-0.00276	-0.00277	-0.00276
	(A2 * !A3 * !B1 * Y)	0.00450	0.00455	0.00451
	(A2 * !A3 * !B1 * Y)	-0.00480	-0.00514	-0.00512
	(A1 * !A2 * !A3 * B1 * !Y)	0.00512	0.00515	0.00513
	(A1 * !A2 * !A3 * B1 * !Y)	-0.00277	-0.00278	-0.00276
	(A1 * !A2 * !A3 * !B1 * Y)	0.00450	0.00453	0.00451
	(A1 * !A2 * !A3 * !B1 * Y)	-0.00473	-0.00499	-0.00497
	(!A1 * !A2 * !A3 * !B1 * Y)	0.00422	0.00424	0.00421
	(!A1 * !A2 * !A3 * !B1 * Y)	-0.00560	-0.00561	-0.00559

Passive power(pJ) for A4 falling (conditional):

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

sky130_fd_sc_hs__o41ai_1	**(A3 * B1 * !Y)**	-0.00123	-0.00124	-0.00128
	(A3 * B1 * !Y)	0.00075	0.00075	0.00071
	(A3 * !B1 * Y)	-0.00113	-0.00113	-0.00112
	(A3 * !B1 * Y)	0.00138	0.00138	0.00138
	(A2 * !A3 * B1 * !Y)	-0.00116	-0.00117	-0.00126
	(A2 * !A3 * B1 * !Y)	0.00079	0.00079	0.00071
	(A2 * !A3 * !B1 * Y)	-0.00112	-0.00113	-0.00112
	(A2 * !A3 * !B1 * Y)	0.00132	0.00132	0.00132
	(A1 * !A2 * !A3 * B1 * !Y)	-0.00106	-0.00106	-0.00124
	(A1 * !A2 * !A3 * B1 * !Y)	0.00085	0.00085	0.00073
	(A1 * !A2 * !A3 * !B1 * Y)	-0.00112	-0.00113	-0.00112
	(A1 * !A2 * !A3 * !B1 * Y)	0.00127	0.00129	0.00128
	(!A1 * !A2 * !A3 * !B1 * Y)	-0.00099	-0.00105	-0.00105
	(!A1 * !A2 * !A3 * !B1 * Y)	0.00141	0.00141	0.00141
sky130_fd_sc_hs__o41ai_2	**(A3 * B1 * !Y)**	-0.00232	-0.00234	-0.00247
	(A3 * B1 * !Y)	0.00158	0.00158	0.00147
	(A3 * !B1 * Y)	-0.00221	-0.00223	-0.00222
	(A3 * !B1 * Y)	0.00273	0.00276	0.00275
	(A2 * !A3 * B1 * !Y)	-0.00216	-0.00218	-0.00244
	(A2 * !A3 * B1 * !Y)	0.00166	0.00166	0.00148
	(A2 * !A3 * !B1 * Y)	-0.00221	-0.00222	-0.00222
	(A2 * !A3 * !B1 * Y)	0.00260	0.00261	0.00261
	(A1 * !A2 * !A3 * B1 * !Y)	-0.00192	-0.00194	-0.00237
	(A1 * !A2 * !A3 * B1 * !Y)	0.00181	0.00181	0.00152
	(A1 * !A2 * !A3 * !B1 * Y)	-0.00222	-0.00223	-0.00222
	(A1 * !A2 * !A3 * !B1 * Y)	0.00253	0.00255	0.00254
	(!A1 * !A2 * !A3 * !B1 * Y)	-0.00195	-0.00208	-0.00209
	(!A1 * !A2 * !A3 * !B1 * Y)	0.00283	0.00283	0.00282

sky130_fd_sc_hs__o41ai_4	(A3 * B1 * !Y)	-0.00483	-0.00486	-0.00509
	(A3 * B1 * !Y)	0.00302	0.00303	0.00284
	(A3 * !B1 * Y)	-0.00448	-0.00452	-0.00450
	(A3 * !B1 * Y)	0.00544	0.00550	0.00547
	(A2 * !A3 * B1 * !Y)	-0.00452	-0.00456	-0.00503
	(A2 * !A3 * B1 * !Y)	0.00317	0.00317	0.00284
	(A2 * !A3 * !B1 * Y)	-0.00449	-0.00452	-0.00450
	(A2 * !A3 * !B1 * Y)	0.00510	0.00514	0.00512
	(A1 * !A2 * !A3 * B1 * !Y)	-0.00405	-0.00409	-0.00489
	(A1 * !A2 * !A3 * B1 * !Y)	0.00346	0.00346	0.00293
	(A1 * !A2 * !A3 * !B1 * Y)	-0.00450	-0.00452	-0.00450
	(A1 * !A2 * !A3 * !B1 * Y)	0.00496	0.00499	0.00497
	(!A1 * !A2 * !A3 * !B1 * Y)	-0.00394	-0.00423	-0.00421
	(!A1 * !A2 * !A3 * !B1 * Y)	0.00562	0.00563	0.00560

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)	0.00050	0.00051	0.00045
	(!A1 * !A2 * !A3 * !A4 * Y)	-0.00162	-0.00164	-0.00172
sky130_fd_sc_hs__o41ai_2	(!A1 * !A2 * !A3 * !A4 * Y)	0.00116	0.00117	0.00107
	(!A1 * !A2 * !A3 * !A4 * Y)	-0.00308	-0.00312	-0.00328
sky130_fd_sc_hs__o41ai_4	(!A1 * !A2 * !A3 * !A4 * Y)	0.00170	0.00171	0.00153
	(!A1 * !A2 * !A3 * !A4 * Y)	-0.00337	-0.00342	-0.00374

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)	-0.00044	-0.00044	-0.00044
	(!A1 * !A2 * !A3 * !A4 * Y)	0.00174	0.00174	0.00173
sky130_fd_sc_hs__o41ai_2	(!A1 * !A2 * !A3 * !A4 * Y)	-0.00103	-0.00104	-0.00103
	(!A1 * !A2 * !A3 * !A4 * Y)	0.00329	0.00333	0.00331
sky130_fd_sc_hs__o41ai_4	(!A1 * !A2 * !A3 * !A4 * Y)	-0.00149	-0.00148	-0.00147
	(!A1 * !A2 * !A3 * !A4 * Y)	0.00379	0.00379	0.00378

SKY130_FD_SC_HS__O41Ax

sky130_fd_sc_hs_tt_1.50v_25C.ccs
Cell Library: Process , Voltage 1.50, 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	0.00250	0.00260	0.00260	0.00263	0.00241	0.83843
sky130_fd_sc_hs__o41a_2	0.00265	0.00278	0.00285	0.00272	0.00275	1.73856
sky130_fd_sc_hs__o41a_4	0.00478	0.00517	0.00521	0.00487	0.00450	3.11817

Leakage Information

Cell Name	Leakage(nW)		
	Min.	Avg	Max.
sky130_fd_sc_hs__o41a_1	0.00000	0.09472	0.18551
sky130_fd_sc_hs__o41a_2	0.00000	0.07580	0.11334
sky130_fd_sc_hs__o41a_4	0.00000	0.22538	0.38032

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)	0.11721	0.78961	7.05134
	A2->X (RR)	0.11451	0.77417	6.96981
	A3->X (RR)	0.10848	0.75418	6.87579
	A4->X (RR)	0.09686	0.72758	6.80747
	B1->X (RR)	0.10551	0.77641	7.00746
sky130_fd_sc_hs__o41a_2	A1->X (RR)	0.11697	0.68412	7.17587
	A2->X (RR)	0.11512	0.67277	7.11474
	A3->X (RR)	0.11055	0.65744	7.04082
	A4->X (RR)	0.09778	0.63356	6.97072
	B1->X (RR)	0.10597	0.67806	7.14097
sky130_fd_sc_hs__o41a_4	A1->X (RR)	0.12795	0.61944	7.14473
	A2->X (RR)	0.12612	0.60739	7.07919
	A3->X (RR)	0.11468	0.58566	6.98646
	A4->X (RR)	0.10564	0.56099	6.91200
	B1->X (RR)	0.11612	0.62561	7.16492

Delay(ns) to X falling :

Cell Name	Timing Arc(Dir)	Delay(ns)		
		First	Mid	Last
sky130_fd_sc_hs__o41a_1	A1->X (FF)	0.44927	1.01564	5.14751
	A2->X (FF)	0.42917	0.99432	5.24120
	A3->X (FF)	0.38423	0.95862	5.27474
	A4->X (FF)	0.31746	0.87940	4.98873
	B1->X (FF)	0.09530	0.61940	4.52788
sky130_fd_sc_hs__o41a_2	A1->X (FF)	0.55028	1.12130	5.62135
	A2->X (FF)	0.53328	1.10721	5.76268
	A3->X (FF)	0.49134	1.07500	5.83201
	A4->X (FF)	0.41549	0.98184	5.55483
	B1->X (FF)	0.10466	0.62582	4.83836
sky130_fd_sc_hs__o41a_4	A1->X (FF)	0.55635	1.08963	5.49295
	A2->X (FF)	0.53417	1.06601	5.60593
	A3->X (FF)	0.47502	1.01421	5.67067
	A4->X (FF)	0.39231	0.91527	5.37497
	B1->X (FF)	0.11502	0.59266	4.74132

Power Information

Internal switching power(pJ) to X rising :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__o41a_1	A1	0.01083	0.01085	0.01240
	A1	0.00474	0.00477	0.00637
	A2	0.00946	0.00945	0.01109
	A2	0.00406	0.00406	0.00571
	A3	0.00802	0.00800	0.00982
	A3	0.00329	0.00329	0.00514
	A4	0.00669	0.00663	0.00973
	A4	0.00257	0.00252	0.00563
	B1	0.00965	0.00971	0.01460
	B1	0.00501	0.00508	0.00998
sky130_fd_sc_hs__o41a_2	A1	0.01316	0.01343	0.01494
	A1	0.00661	0.00689	0.00855
	A2	0.01191	0.01215	0.01370
	A2	0.00602	0.00628	0.00793
	A3	0.01051	0.01077	0.01243
	A3	0.00523	0.00550	0.00724
	A4	0.00899	0.00921	0.01200
	A4	0.00441	0.00465	0.00743
	B1	0.01182	0.01210	0.01642
	B1	0.00675	0.00704	0.01142

sky130_fd_sc_hs__o41a_4	**A1**	0.02553	0.02596	0.02911
	A1	0.01345	0.01390	0.01725
	A2	0.02339	0.02382	0.02710
	A2	0.01214	0.01260	0.01605
	A3	0.02008	0.02058	0.02413
	A3	0.01028	0.01082	0.01434
	A4	0.01667	0.01712	0.02291
	A4	0.00855	0.00903	0.01483
	B1	0.02300	0.02356	0.03369
	B1	0.01384	0.01444	0.02480

Internal switching power(pJ) to X falling :

Cell Name	**Input**	**Power(pJ)**		
		first	**mid**	**last**
sky130_fd_sc_hs__o41a_1	**A1**	0.00343	0.00352	0.00476
	A1	0.00949	0.00958	0.01051
	A2	0.00345	0.00352	0.00524
	A2	0.00877	0.00887	0.01023
	A3	0.00345	0.00349	0.00583
	A3	0.00807	0.00816	0.01005
	A4	0.00344	0.00365	0.00765
	A4	0.00742	0.00771	0.01156
	B1	0.00230	0.00281	0.01085
	B1	0.00708	0.00743	0.01488

sky130_fd_sc_hs__o41a_2	**A1**	0.00535	0.00546	0.00663
	A1	0.01184	0.01196	0.01294
	A2	0.00538	0.00547	0.00715
	A2	0.01116	0.01129	0.01263
	A3	0.00537	0.00534	0.00974
	A3	0.01051	0.01060	0.01251
	A4	0.00536	0.00542	0.00964
	A4	0.00977	0.01008	0.01401
	B1	0.00403	0.00460	0.01131
	B1	0.00925	0.00970	0.01607
sky130_fd_sc_hs__o41a_4	**A1**	0.01055	0.01075	0.01386
	A1	0.02264	0.02290	0.02470
	A2	0.01004	0.01023	0.01397
	A2	0.02118	0.02145	0.02403
	A3	0.01013	0.01006	0.01441
	A3	0.01972	0.01993	0.02366
	A4	0.01051	0.01072	0.01883
	A4	0.01834	0.01892	0.02653
	B1	0.00809	0.00925	0.02445
	B1	0.01761	0.01870	0.03331

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)**	0.00103	0.00103	0.00103
	(A2 * A4 * B1 * X)	-0.00136	-0.00140	-0.00140
	(A2 * A3 * !A4 * B1 * X)	0.00103	0.00103	0.00103
	(A2 * A3 * !A4 * B1 * X)	-0.00136	-0.00140	-0.00140
	(A2 * !B1 * !X)	0.00103	0.00103	0.00103
	(A2 * !B1 * !X)	-0.00137	-0.00140	-0.00140
	(A2 * !A3 * !A4 * B1 * X)	0.00103	0.00103	0.00103
	(A2 * !A3 * !A4 * B1 * X)	-0.00135	-0.00140	-0.00140
	(!A2 * A3 * A4 * B1 * X)	0.00102	0.00104	0.00103
	(!A2 * A3 * A4 * B1 * X)	-0.00127	-0.00136	-0.00135
	(!A2 * A3 * !B1 * !X)	0.00102	0.00104	0.00103
	(!A2 * A3 * !B1 * !X)	-0.00127	-0.00136	-0.00135
	(!A2 * A3 * !A4 * B1 * X)	0.00102	0.00104	0.00103
	(!A2 * A3 * !A4 * B1 * X)	-0.00127	-0.00136	-0.00135
	(!A2 * !A3 * A4 * B1 * X)	0.00103	0.00104	0.00103
	(!A2 * !A3 * A4 * B1 * X)	-0.00125	-0.00133	-0.00133
	(!A2 * !A3 * A4 * !B1 * !X)	0.00102	0.00104	0.00103
	(!A2 * !A3 * A4 * !B1 * !X)	-0.00125	-0.00133	-0.00133
	(!A2 * !A3 * !A4 * !B1 * !X)	0.00096	0.00097	0.00096
	(!A2 * !A3 * !A4 * !B1 * !X)	-0.00142	-0.00142	-0.00142

sky130_fd_sc_hs__o41a_2	**(A2 * A4 * B1 * X)**	0.00117	0.00117	0.00117
	(A2 * A4 * B1 * X)	-0.00134	-0.00137	-0.00137
	(A2 * A3 * !A4 * B1 * X)	0.00117	0.00117	0.00117
	(A2 * A3 * !A4 * B1 * X)	-0.00134	-0.00137	-0.00137
	(A2 * !B1 * !X)	0.00117	0.00117	0.00117
	(A2 * !B1 * !X)	-0.00134	-0.00137	-0.00137
	(A2 * !A3 * !A4 * B1 * X)	0.00117	0.00117	0.00117
	(A2 * !A3 * !A4 * B1 * X)	-0.00133	-0.00137	-0.00137
	(!A2 * A3 * A4 * B1 * X)	0.00117	0.00118	0.00117
	(!A2 * A3 * A4 * B1 * X)	-0.00124	-0.00133	-0.00132
	(!A2 * A3 * !B1 * !X)	0.00117	0.00118	0.00117
	(!A2 * A3 * !B1 * !X)	-0.00124	-0.00133	-0.00132
	(!A2 * A3 * !A4 * B1 * X)	0.00117	0.00118	0.00117
	(!A2 * A3 * !A4 * B1 * X)	-0.00124	-0.00133	-0.00132
	(!A2 * !A3 * A4 * B1 * X)	0.00117	0.00118	0.00117
	(!A2 * !A3 * A4 * B1 * X)	-0.00122	-0.00130	-0.00130
	(!A2 * !A3 * A4 * !B1 * !X)	0.00117	0.00118	0.00117
	(!A2 * !A3 * A4 * !B1 * !X)	-0.00123	-0.00130	-0.00130
	(!A2 * !A3 * !A4 * !B1 * !X)	0.00109	0.00110	0.00109
	(!A2 * !A3 * !A4 * !B1 * !X)	-0.00139	-0.00140	-0.00139

sky130_fd_sc_hs__o41a_4	**(A2 * A4 * B1 * X)**	0.00188	0.00190	0.00189
	(A2 * A4 * B1 * X)	-0.00263	-0.00273	-0.00273
	(A2 * A3 * !A4 * B1 * X)	0.00188	0.00190	0.00189
	(A2 * A3 * !A4 * B1 * X)	-0.00263	-0.00273	-0.00273
	(A2 * !B1 * !X)	0.00187	0.00189	0.00188
	(A2 * !B1 * !X)	-0.00264	-0.00273	-0.00273
	(A2 * !A3 * !A4 * B1 * X)	0.00189	0.00190	0.00189
	(A2 * !A3 * !A4 * B1 * X)	-0.00259	-0.00273	-0.00273
	(!A2 * A3 * A4 * B1 * X)	0.00190	0.00190	0.00189
	(!A2 * A3 * A4 * B1 * X)	-0.00244	-0.00263	-0.00261
	(!A2 * A3 * !B1 * !X)	0.00189	0.00189	0.00188
	(!A2 * A3 * !B1 * !X)	-0.00245	-0.00263	-0.00262
	(!A2 * A3 * !A4 * B1 * X)	0.00190	0.00190	0.00189
	(!A2 * A3 * !A4 * B1 * X)	-0.00244	-0.00263	-0.00261
	(!A2 * !A3 * A4 * B1 * X)	0.00191	0.00191	0.00189
	(!A2 * !A3 * A4 * B1 * X)	-0.00239	-0.00256	-0.00256
	(!A2 * !A3 * A4 * !B1 * !X)	0.00189	0.00191	0.00188
	(!A2 * !A3 * A4 * !B1 * !X)	-0.00241	-0.00256	-0.00256
	(!A2 * !A3 * !A4 * !B1 * !X)	0.00174	0.00176	0.00175
	(!A2 * !A3 * !A4 * !B1 * !X)	-0.00278	-0.00280	-0.00279

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)**	-0.00102	-0.00103	-0.00102
	(A2 * A4 * B1 * X)	0.00139	0.00141	0.00140
	(A2 * A3 * !A4 * B1 * X)	-0.00102	-0.00103	-0.00102
	(A2 * A3 * !A4 * B1 * X)	0.00139	0.00141	0.00140
	(A2 * !B1 * !X)	-0.00102	-0.00102	-0.00102
	(A2 * !B1 * !X)	0.00140	0.00140	0.00140
	(A2 * !A3 * !A4 * B1 * X)	-0.00102	-0.00103	-0.00102
	(A2 * !A3 * !A4 * B1 * X)	0.00140	0.00141	0.00140
	(!A2 * A3 * A4 * B1 * X)	-0.00102	-0.00103	-0.00102
	(!A2 * A3 * A4 * B1 * X)	0.00135	0.00136	0.00135
	(!A2 * A3 * !B1 * !X)	-0.00102	-0.00103	-0.00102
	(!A2 * A3 * !B1 * !X)	0.00135	0.00136	0.00135
	(!A2 * A3 * !A4 * B1 * X)	-0.00102	-0.00103	-0.00102
	(!A2 * A3 * !A4 * B1 * X)	0.00135	0.00136	0.00135
	(!A2 * !A3 * A4 * B1 * X)	-0.00102	-0.00102	-0.00102
	(!A2 * !A3 * A4 * B1 * X)	0.00133	0.00133	0.00133
	(!A2 * !A3 * A4 * !B1 * !X)	-0.00102	-0.00102	-0.00102
	(!A2 * !A3 * A4 * !B1 * !X)	0.00133	0.00133	0.00133
	(!A2 * !A3 * !A4 * !B1 * !X)	-0.00091	-0.00097	-0.00096
	(!A2 * !A3 * !A4 * !B1 * !X)	0.00142	0.00142	0.00142

sky130_fd_sc_hs__o41a_2	**(A2 * A4 * B1 * X)**	-0.00117	-0.00117	-0.00117
	(A2 * A4 * B1 * X)	0.00137	0.00138	0.00137
	(A2 * A3 * !A4 * B1 * X)	-0.00117	-0.00117	-0.00117
	(A2 * A3 * !A4 * B1 * X)	0.00137	0.00138	0.00137
	(A2 * !B1 * !X)	-0.00117	-0.00117	-0.00117
	(A2 * !B1 * !X)	0.00137	0.00139	0.00137
	(A2 * !A3 * !A4 * B1 * X)	-0.00117	-0.00117	-0.00117
	(A2 * !A3 * !A4 * B1 * X)	0.00137	0.00138	0.00137
	(!A2 * A3 * A4 * B1 * X)	-0.00117	-0.00117	-0.00117
	(!A2 * A3 * A4 * B1 * X)	0.00132	0.00133	0.00132
	(!A2 * A3 * !B1 * !X)	-0.00117	-0.00117	-0.00117
	(!A2 * A3 * !B1 * !X)	0.00132	0.00133	0.00132
	(!A2 * A3 * !A4 * B1 * X)	-0.00117	-0.00117	-0.00117
	(!A2 * A3 * !A4 * B1 * X)	0.00132	0.00133	0.00132
	(!A2 * !A3 * A4 * B1 * X)	-0.00117	-0.00117	-0.00117
	(!A2 * !A3 * A4 * B1 * X)	0.00130	0.00130	0.00130
	(!A2 * !A3 * A4 * !B1 * !X)	-0.00117	-0.00117	-0.00117
	(!A2 * !A3 * A4 * !B1 * !X)	0.00130	0.00130	0.00130
	(!A2 * !A3 * !A4 * !B1 * !X)	-0.00102	-0.00110	-0.00109
	(!A2 * !A3 * !A4 * !B1 * !X)	0.00140	0.00140	0.00140

sky130_fd_sc_hs__o41a_4	**(A2 * A4 * B1 * X)**	-0.00188	-0.00188	-0.00188
	(A2 * A4 * B1 * X)	0.00273	0.00273	0.00273
	(A2 * A3 * !A4 * B1 * X)	-0.00188	-0.00188	-0.00188
	(A2 * A3 * !A4 * B1 * X)	0.00273	0.00273	0.00273
	(A2 * !B1 * !X)	-0.00187	-0.00188	-0.00188
	(A2 * !B1 * !X)	0.00273	0.00273	0.00273
	(A2 * !A3 * !A4 * B1 * X)	-0.00188	-0.00189	-0.00188
	(A2 * !A3 * !A4 * B1 * X)	0.00273	0.00275	0.00273
	(!A2 * A3 * A4 * B1 * X)	-0.00189	-0.00189	-0.00188
	(!A2 * A3 * A4 * B1 * X)	0.00263	0.00263	0.00261
	(!A2 * A3 * !B1 * !X)	-0.00187	-0.00189	-0.00188
	(!A2 * A3 * !B1 * !X)	0.00261	0.00263	0.00262
	(!A2 * A3 * !A4 * B1 * X)	-0.00188	-0.00189	-0.00188
	(!A2 * A3 * !A4 * B1 * X)	0.00262	0.00263	0.00261
	(!A2 * !A3 * A4 * B1 * X)	-0.00188	-0.00188	-0.00188
	(!A2 * !A3 * A4 * B1 * X)	0.00255	0.00256	0.00256
	(!A2 * !A3 * A4 * !B1 * !X)	-0.00187	-0.00188	-0.00188
	(!A2 * !A3 * A4 * !B1 * !X)	0.00256	0.00256	0.00256
	(!A2 * !A3 * !A4 * !B1 * !X)	-0.00164	-0.00176	-0.00175
	(!A2 * !A3 * !A4 * !B1 * !X)	0.00282	0.00281	0.00280

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)**	0.00099	0.00100	0.00099
	(A1 * A3 * A4 * B1 * X)	-0.00100	-0.00100	-0.00100
	(A1 * A3 * !B1 * !X)	0.00099	0.00100	0.00099
	(A1 * A3 * !B1 * !X)	-0.00101	-0.00102	-0.00102
	(A1 * A3 * !A4 * B1 * X)	0.00099	0.00101	0.00099
	(A1 * A3 * !A4 * B1 * X)	-0.00096	-0.00096	-0.00096
	(A1 * !A3 * A4 * B1 * X)	0.00099	0.00100	0.00099
	(A1 * !A3 * A4 * B1 * X)	-0.00094	-0.00094	-0.00094
	(A1 * !A3 * A4 * !B1 * !X)	0.00099	0.00099	0.00099
	(A1 * !A3 * A4 * !B1 * !X)	-0.00099	-0.00100	-0.00099
	(A1 * !A3 * !A4 * B1 * X)	0.00098	0.00101	0.00099
	(A1 * !A3 * !A4 * B1 * X)	-0.00081	-0.00083	-0.00081
	(A1 * !A3 * !A4 * !B1 * !X)	0.00098	0.00099	0.00099
	(A1 * !A3 * !A4 * !B1 * !X)	-0.00133	-0.00135	-0.00136
	(!A1 * A3 * A4 * B1 * X)	0.00099	0.00099	0.00099
	(!A1 * A3 * A4 * B1 * X)	-0.00133	-0.00137	-0.00137
	(!A1 * A3 * !B1 * !X)	0.00099	0.00099	0.00099
	(!A1 * A3 * !B1 * !X)	-0.00133	-0.00137	-0.00136
	(!A1 * A3 * !A4 * B1 * X)	0.00102	0.00099	0.00099
	(!A1 * A3 * !A4 * B1 * X)	-0.00129	-0.00136	-0.00137
	(!A1 * !A3 * A4 * B1 * X)	0.00101	0.00099	0.00099
	(!A1 * !A3 * A4 * B1 * X)	-0.00119	-0.00131	-0.00130
	(!A1 * !A3 * A4 * !B1 * !X)	0.00099	0.00099	0.00099
	(!A1 * !A3 * A4 * !B1 * !X)	-0.00121	-0.00131	-0.00130
	(!A1 * !A3 * !A4 * !B1 * !X)	0.00092	0.00093	0.00093
	(!A1 * !A3 * !A4 * !B1 * !X)	-0.00138	-0.00139	-0.00139

sky130_fd_sc_hs__o41a_2	**(A1 * A3 * A4 * B1 * X)**	0.00112	0.00114	0.00112
	(A1 * A3 * A4 * B1 * X)	-0.00098	-0.00098	-0.00098
	(A1 * A3 * !B1 * !X)	0.00112	0.00114	0.00112
	(A1 * A3 * !B1 * !X)	-0.00100	-0.00100	-0.00100
	(A1 * A3 * !A4 * B1 * X)	0.00113	0.00115	0.00113
	(A1 * A3 * !A4 * B1 * X)	-0.00094	-0.00094	-0.00094
	(A1 * !A3 * A4 * B1 * X)	0.00112	0.00113	0.00112
	(A1 * !A3 * A4 * B1 * X)	-0.00093	-0.00093	-0.00093
	(A1 * !A3 * A4 * !B1 * !X)	0.00112	0.00113	0.00112
	(A1 * !A3 * A4 * !B1 * !X)	-0.00098	-0.00099	-0.00099
	(A1 * !A3 * !A4 * B1 * X)	0.00112	0.00114	0.00112
	(A1 * !A3 * !A4 * B1 * X)	-0.00081	-0.00082	-0.00081
	(A1 * !A3 * !A4 * !B1 * !X)	0.00112	0.00113	0.00112
	(A1 * !A3 * !A4 * !B1 * !X)	-0.00134	-0.00136	-0.00136
	(!A1 * A3 * A4 * B1 * X)	0.00113	0.00113	0.00112
	(!A1 * A3 * A4 * B1 * X)	-0.00133	-0.00136	-0.00136
	(!A1 * A3 * !B1 * !X)	0.00113	0.00113	0.00112
	(!A1 * A3 * !B1 * !X)	-0.00133	-0.00136	-0.00136
	(!A1 * A3 * !A4 * B1 * X)	0.00115	0.00113	0.00112
	(!A1 * A3 * !A4 * B1 * X)	-0.00129	-0.00137	-0.00136
	(!A1 * !A3 * A4 * B1 * X)	0.00114	0.00113	0.00112
	(!A1 * !A3 * A4 * B1 * X)	-0.00119	-0.00130	-0.00130
	(!A1 * !A3 * A4 * !B1 * !X)	0.00112	0.00113	0.00112
	(!A1 * !A3 * A4 * !B1 * !X)	-0.00120	-0.00130	-0.00129
	(!A1 * !A3 * !A4 * !B1 * !X)	0.00104	0.00105	0.00105
	(!A1 * !A3 * !A4 * !B1 * !X)	-0.00139	-0.00139	-0.00139

sky130_fd_sc_hs__o41a_4	**(A1 * A3 * A4 * B1 * X)**	0.00237	0.00242	0.00238
	(A1 * A3 * A4 * B1 * X)	-0.00194	-0.00196	-0.00194
	(A1 * A3 * !B1 * !X)	0.00237	0.00238	0.00236
	(A1 * A3 * !B1 * !X)	-0.00200	-0.00202	-0.00200
	(A1 * A3 * !A4 * B1 * X)	0.00237	0.00240	0.00238
	(A1 * A3 * !A4 * B1 * X)	-0.00184	-0.00187	-0.00185
	(A1 * !A3 * A4 * B1 * X)	0.00237	0.00241	0.00237
	(A1 * !A3 * A4 * B1 * X)	-0.00182	-0.00184	-0.00182
	(A1 * !A3 * A4 * !B1 * !X)	0.00235	0.00240	0.00235
	(A1 * !A3 * A4 * !B1 * !X)	-0.00195	-0.00196	-0.00195
	(A1 * !A3 * !A4 * B1 * X)	0.00235	0.00238	0.00236
	(A1 * !A3 * !A4 * B1 * X)	-0.00156	-0.00158	-0.00157
	(A1 * !A3 * !A4 * !B1 * !X)	0.00234	0.00236	0.00235
	(A1 * !A3 * !A4 * !B1 * !X)	-0.00263	-0.00268	-0.00268
	(!A1 * A3 * A4 * B1 * X)	0.00237	0.00237	0.00236
	(!A1 * A3 * A4 * B1 * X)	-0.00256	-0.00267	-0.00267
	(!A1 * A3 * !B1 * !X)	0.00235	0.00236	0.00235
	(!A1 * A3 * !B1 * !X)	-0.00258	-0.00268	-0.00268
	(!A1 * A3 * !A4 * B1 * X)	0.00238	0.00237	0.00236
	(!A1 * A3 * !A4 * B1 * X)	-0.00252	-0.00267	-0.00267
	(!A1 * !A3 * A4 * B1 * X)	0.00239	0.00238	0.00235
	(!A1 * !A3 * A4 * B1 * X)	-0.00234	-0.00255	-0.00254
	(!A1 * !A3 * A4 * !B1 * !X)	0.00235	0.00238	0.00235
	(!A1 * !A3 * A4 * !B1 * !X)	-0.00237	-0.00255	-0.00254
	(!A1 * !A3 * !A4 * !B1 * !X)	0.00222	0.00224	0.00222
	(!A1 * !A3 * !A4 * !B1 * !X)	-0.00274	-0.00276	-0.00274

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)**	-0.00098	-0.00099	-0.00098
	(A1 * A3 * A4 * B1 * X)	0.00100	0.00100	0.00100
	(A1 * A3 * !B1 * !X)	-0.00098	-0.00099	-0.00098
	(A1 * A3 * !B1 * !X)	0.00101	0.00102	0.00102
	(A1 * A3 * !A4 * B1 * X)	-0.00098	-0.00098	-0.00098
	(A1 * A3 * !A4 * B1 * X)	0.00096	0.00096	0.00096
	(A1 * !A3 * A4 * B1 * X)	-0.00098	-0.00099	-0.00098
	(A1 * !A3 * A4 * B1 * X)	0.00094	0.00094	0.00094
	(A1 * !A3 * A4 * !B1 * !X)	-0.00098	-0.00099	-0.00098
	(A1 * !A3 * A4 * !B1 * !X)	0.00099	0.00100	0.00099
	(A1 * !A3 * !A4 * B1 * X)	-0.00096	-0.00097	-0.00096
	(A1 * !A3 * !A4 * B1 * X)	0.00085	0.00085	0.00085
	(A1 * !A3 * !A4 * !B1 * !X)	-0.00098	-0.00098	-0.00099
	(A1 * !A3 * !A4 * !B1 * !X)	0.00135	0.00135	0.00136
	(!A1 * A3 * A4 * B1 * X)	-0.00099	-0.00098	-0.00098
	(!A1 * A3 * A4 * B1 * X)	0.00137	0.00137	0.00137
	(!A1 * A3 * !B1 * !X)	-0.00099	-0.00099	-0.00098
	(!A1 * A3 * !B1 * !X)	0.00137	0.00137	0.00136
	(!A1 * A3 * !A4 * B1 * X)	-0.00099	-0.00098	-0.00098
	(!A1 * A3 * !A4 * B1 * X)	0.00137	0.00136	0.00137
	(!A1 * !A3 * A4 * B1 * X)	-0.00098	-0.00099	-0.00098
	(!A1 * !A3 * A4 * B1 * X)	0.00130	0.00131	0.00130
	(!A1 * !A3 * A4 * !B1 * !X)	-0.00099	-0.00099	-0.00098
	(!A1 * !A3 * A4 * !B1 * !X)	0.00130	0.00131	0.00130
	(!A1 * !A3 * !A4 * !B1 * !X)	-0.00087	-0.00093	-0.00093
	(!A1 * !A3 * !A4 * !B1 * !X)	0.00139	0.00139	0.00139

sky130_fd_sc_hs__o41a_2	**(A1 * A3 * A4 * B1 * X)**	-0.00112	-0.00112	-0.00112
	(A1 * A3 * A4 * B1 * X)	0.00098	0.00098	0.00098
	(A1 * A3 * !B1 * !X)	-0.00112	-0.00112	-0.00112
	(A1 * A3 * !B1 * !X)	0.00100	0.00100	0.00100
	(A1 * A3 * !A4 * B1 * X)	-0.00112	-0.00112	-0.00112
	(A1 * A3 * !A4 * B1 * X)	0.00094	0.00094	0.00094
	(A1 * !A3 * A4 * B1 * X)	-0.00112	-0.00112	-0.00112
	(A1 * !A3 * A4 * B1 * X)	0.00093	0.00093	0.00093
	(A1 * !A3 * A4 * !B1 * !X)	-0.00112	-0.00112	-0.00112
	(A1 * !A3 * A4 * !B1 * !X)	0.00098	0.00099	0.00099
	(A1 * !A3 * !A4 * B1 * X)	-0.00112	-0.00112	-0.00111
	(A1 * !A3 * !A4 * B1 * X)	0.00083	0.00083	0.00083
	(A1 * !A3 * !A4 * !B1 * !X)	-0.00112	-0.00112	-0.00112
	(A1 * !A3 * !A4 * !B1 * !X)	0.00136	0.00136	0.00136
	(!A1 * A3 * A4 * B1 * X)	-0.00112	-0.00112	-0.00112
	(!A1 * A3 * A4 * B1 * X)	0.00137	0.00136	0.00136
	(!A1 * A3 * !B1 * !X)	-0.00111	-0.00112	-0.00112
	(!A1 * A3 * !B1 * !X)	0.00135	0.00136	0.00136
	(!A1 * A3 * !A4 * B1 * X)	-0.00112	-0.00113	-0.00112
	(!A1 * A3 * !A4 * B1 * X)	0.00135	0.00137	0.00136
	(!A1 * !A3 * A4 * B1 * X)	-0.00112	-0.00112	-0.00112
	(!A1 * !A3 * A4 * B1 * X)	0.00130	0.00130	0.00130
	(!A1 * !A3 * A4 * !B1 * !X)	-0.00112	-0.00112	-0.00112
	(!A1 * !A3 * A4 * !B1 * !X)	0.00130	0.00130	0.00129
	(!A1 * !A3 * !A4 * !B1 * !X)	-0.00098	-0.00105	-0.00105
	(!A1 * !A3 * !A4 * !B1 * !X)	0.00139	0.00139	0.00139

sky130_fd_sc_hs__o41a_4	**(A1 * A3 * A4 * B1 * X)**	-0.00237	-0.00238	-0.00236
	(A1 * A3 * A4 * B1 * X)	0.00194	0.00196	0.00194
	(A1 * A3 * !B1 * !X)	-0.00235	-0.00237	-0.00235
	(A1 * A3 * !B1 * !X)	0.00200	0.00202	0.00200
	(A1 * A3 * !A4 * B1 * X)	-0.00236	-0.00238	-0.00236
	(A1 * A3 * !A4 * B1 * X)	0.00184	0.00187	0.00185
	(A1 * !A3 * A4 * B1 * X)	-0.00236	-0.00238	-0.00235
	(A1 * !A3 * A4 * B1 * X)	0.00182	0.00184	0.00182
	(A1 * !A3 * A4 * !B1 * !X)	-0.00235	-0.00236	-0.00235
	(A1 * !A3 * A4 * !B1 * !X)	0.00195	0.00196	0.00195
	(A1 * !A3 * !A4 * B1 * X)	-0.00234	-0.00236	-0.00235
	(A1 * !A3 * !A4 * B1 * X)	0.00159	0.00161	0.00160
	(A1 * !A3 * !A4 * !B1 * !X)	-0.00234	-0.00235	-0.00235
	(A1 * !A3 * !A4 * !B1 * !X)	0.00267	0.00268	0.00268
	(!A1 * A3 * A4 * B1 * X)	-0.00235	-0.00236	-0.00235
	(!A1 * A3 * A4 * B1 * X)	0.00265	0.00267	0.00267
	(!A1 * A3 * !B1 * !X)	-0.00234	-0.00235	-0.00235
	(!A1 * A3 * !B1 * !X)	0.00266	0.00268	0.00268
	(!A1 * A3 * !A4 * B1 * X)	-0.00235	-0.00235	-0.00235
	(!A1 * A3 * !A4 * B1 * X)	0.00265	0.00267	0.00267
	(!A1 * !A3 * A4 * B1 * X)	-0.00234	-0.00235	-0.00234
	(!A1 * !A3 * A4 * B1 * X)	0.00253	0.00255	0.00254
	(!A1 * !A3 * A4 * !B1 * !X)	-0.00234	-0.00235	-0.00235
	(!A1 * !A3 * A4 * !B1 * !X)	0.00253	0.00255	0.00254
	(!A1 * !A3 * !A4 * !B1 * !X)	-0.00212	-0.00224	-0.00222
	(!A1 * !A3 * !A4 * !B1 * !X)	0.00275	0.00277	0.00275

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)**	0.00102	0.00103	0.00099
	(A2 * A4 * B1 * X)	-0.00089	-0.00090	-0.00090
	(A2 * A4 * !B1 * !X)	0.00098	0.00099	0.00098
	(A2 * A4 * !B1 * !X)	-0.00097	-0.00097	-0.00097
	(A2 * !A4 * B1 * X)	0.00099	0.00100	0.00098
	(A2 * !A4 * B1 * X)	-0.00078	-0.00079	-0.00078
	(A2 * !A4 * !B1 * !X)	0.00099	0.00099	0.00098
	(A2 * !A4 * !B1 * !X)	-0.00130	-0.00132	-0.00133
	(A1 * !A2 * A4 * B1 * X)	0.00107	0.00100	0.00098
	(A1 * !A2 * A4 * B1 * X)	-0.00092	-0.00093	-0.00093
	(A1 * !A2 * A4 * !B1 * !X)	0.00098	0.00099	0.00098
	(A1 * !A2 * A4 * !B1 * !X)	-0.00096	-0.00095	-0.00096
	(A1 * !A2 * !A4 * B1 * X)	0.00098	0.00101	0.00098
	(A1 * !A2 * !A4 * B1 * X)	-0.00076	-0.00078	-0.00077
	(A1 * !A2 * !A4 * !B1 * !X)	0.00098	0.00099	0.00098
	(A1 * !A2 * !A4 * !B1 * !X)	-0.00117	-0.00125	-0.00125
	(!A1 * !A2 * A4 * B1 * X)	0.00119	0.00100	0.00098
	(!A1 * !A2 * A4 * B1 * X)	-0.00110	-0.00132	-0.00134
	(!A1 * !A2 * A4 * !B1 * !X)	0.00098	0.00098	0.00098
	(!A1 * !A2 * A4 * !B1 * !X)	-0.00131	-0.00133	-0.00133
	(!A1 * !A2 * !A4 * !B1 * !X)	0.00092	0.00093	0.00092
	(!A1 * !A2 * !A4 * !B1 * !X)	-0.00135	-0.00135	-0.00135

sky130_fd_sc_hs__o41a_2	**(A2 * A4 * B1 * X)**	0.00121	0.00123	0.00119
	(A2 * A4 * B1 * X)	-0.00091	-0.00092	-0.00091
	(A2 * A4 * !B1 * !X)	0.00113	0.00115	0.00114
	(A2 * A4 * !B1 * !X)	-0.00104	-0.00104	-0.00104
	(A2 * !A4 * B1 * X)	0.00118	0.00121	0.00119
	(A2 * !A4 * B1 * X)	-0.00078	-0.00080	-0.00079
	(A2 * !A4 * !B1 * !X)	0.00114	0.00114	0.00114
	(A2 * !A4 * !B1 * !X)	-0.00136	-0.00140	-0.00139
	(A1 * !A2 * A4 * B1 * X)	0.00126	0.00120	0.00119
	(A1 * !A2 * A4 * B1 * X)	-0.00094	-0.00094	-0.00094
	(A1 * !A2 * A4 * !B1 * !X)	0.00113	0.00114	0.00114
	(A1 * !A2 * A4 * !B1 * !X)	-0.00102	-0.00103	-0.00102
	(A1 * !A2 * !A4 * B1 * X)	0.00119	0.00122	0.00119
	(A1 * !A2 * !A4 * B1 * X)	-0.00078	-0.00080	-0.00079
	(A1 * !A2 * !A4 * !B1 * !X)	0.00114	0.00114	0.00114
	(A1 * !A2 * !A4 * !B1 * !X)	-0.00123	-0.00132	-0.00131
	(!A1 * !A2 * A4 * B1 * X)	0.00139	0.00120	0.00119
	(!A1 * !A2 * A4 * B1 * X)	-0.00112	-0.00133	-0.00135
	(!A1 * !A2 * A4 * !B1 * !X)	0.00113	0.00114	0.00114
	(!A1 * !A2 * A4 * !B1 * !X)	-0.00136	-0.00139	-0.00139
	(!A1 * !A2 * !A4 * !B1 * !X)	0.00105	0.00106	0.00106
	(!A1 * !A2 * !A4 * !B1 * !X)	-0.00141	-0.00142	-0.00141

sky130_fd_sc_hs__o41a_4	**(A2 * A4 * B1 * X)**	0.00240	0.00242	0.00236
	(A2 * A4 * B1 * X)	-0.00182	-0.00184	-0.00182
	(A2 * A4 * !B1 * !X)	0.00230	0.00234	0.00232
	(A2 * A4 * !B1 * !X)	-0.00200	-0.00199	-0.00199
	(A2 * !A4 * B1 * X)	0.00234	0.00237	0.00234
	(A2 * !A4 * B1 * X)	-0.00153	-0.00155	-0.00154
	(A2 * !A4 * !B1 * !X)	0.00231	0.00232	0.00231
	(A2 * !A4 * !B1 * !X)	-0.00256	-0.00266	-0.00265
	(A1 * !A2 * A4 * B1 * X)	0.00248	0.00240	0.00235
	(A1 * !A2 * A4 * B1 * X)	-0.00185	-0.00186	-0.00185
	(A1 * !A2 * A4 * !B1 * !X)	0.00231	0.00236	0.00231
	(A1 * !A2 * A4 * !B1 * !X)	-0.00195	-0.00196	-0.00195
	(A1 * !A2 * !A4 * B1 * X)	0.00234	0.00237	0.00234
	(A1 * !A2 * !A4 * B1 * X)	-0.00152	-0.00154	-0.00154
	(A1 * !A2 * !A4 * !B1 * !X)	0.00231	0.00233	0.00231
	(A1 * !A2 * !A4 * !B1 * !X)	-0.00236	-0.00250	-0.00250
	(!A1 * !A2 * A4 * B1 * X)	0.00272	0.00236	0.00233
	(!A1 * !A2 * A4 * B1 * X)	-0.00224	-0.00266	-0.00268
	(!A1 * !A2 * A4 * !B1 * !X)	0.00231	0.00232	0.00231
	(!A1 * !A2 * A4 * !B1 * !X)	-0.00262	-0.00269	-0.00268
	(!A1 * !A2 * !A4 * !B1 * !X)	0.00218	0.00217	0.00217
	(!A1 * !A2 * !A4 * !B1 * !X)	-0.00273	-0.00273	-0.00273

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)**	-0.00097	-0.00098	-0.00098
	(A2 * A4 * B1 * X)	0.00089	0.00090	0.00090
	(A2 * A4 * !B1 * !X)	-0.00097	-0.00098	-0.00098
	(A2 * A4 * !B1 * !X)	0.00097	0.00097	0.00097
	(A2 * !A4 * B1 * X)	-0.00097	-0.00097	-0.00096
	(A2 * !A4 * B1 * X)	0.00080	0.00081	0.00080
	(A2 * !A4 * !B1 * !X)	-0.00098	-0.00098	-0.00098
	(A2 * !A4 * !B1 * !X)	0.00133	0.00132	0.00133
	(A1 * !A2 * A4 * B1 * X)	-0.00097	-0.00098	-0.00098
	(A1 * !A2 * A4 * B1 * X)	0.00092	0.00093	0.00093
	(A1 * !A2 * A4 * !B1 * !X)	-0.00098	-0.00097	-0.00098
	(A1 * !A2 * A4 * !B1 * !X)	0.00096	0.00095	0.00096
	(A1 * !A2 * !A4 * B1 * X)	-0.00091	-0.00091	-0.00096
	(A1 * !A2 * !A4 * B1 * X)	0.00082	0.00082	0.00079
	(A1 * !A2 * !A4 * !B1 * !X)	-0.00098	-0.00098	-0.00098
	(A1 * !A2 * !A4 * !B1 * !X)	0.00125	0.00125	0.00125
	(!A1 * !A2 * A4 * B1 * X)	-0.00098	-0.00097	-0.00097
	(!A1 * !A2 * A4 * B1 * X)	0.00134	0.00133	0.00134
	(!A1 * !A2 * A4 * !B1 * !X)	-0.00098	-0.00098	-0.00098
	(!A1 * !A2 * A4 * !B1 * !X)	0.00133	0.00133	0.00133
	(!A1 * !A2 * !A4 * !B1 * !X)	-0.00086	-0.00093	-0.00092
	(!A1 * !A2 * !A4 * !B1 * !X)	0.00135	0.00135	0.00135

sky130_fd_sc_hs__o41a_2	**(A2 * A4 * B1 * X)**	-0.00118	-0.00118	-0.00118
	(A2 * A4 * B1 * X)	0.00091	0.00092	0.00091
	(A2 * A4 * !B1 * !X)	-0.00113	-0.00114	-0.00113
	(A2 * A4 * !B1 * !X)	0.00104	0.00104	0.00104
	(A2 * !A4 * B1 * X)	-0.00117	-0.00118	-0.00116
	(A2 * !A4 * B1 * X)	0.00081	0.00082	0.00082
	(A2 * !A4 * !B1 * !X)	-0.00114	-0.00114	-0.00113
	(A2 * !A4 * !B1 * !X)	0.00139	0.00140	0.00139
	(A1 * !A2 * A4 * B1 * X)	-0.00118	-0.00119	-0.00118
	(A1 * !A2 * A4 * B1 * X)	0.00094	0.00094	0.00094
	(A1 * !A2 * A4 * !B1 * !X)	-0.00113	-0.00114	-0.00113
	(A1 * !A2 * A4 * !B1 * !X)	0.00102	0.00103	0.00102
	(A1 * !A2 * !A4 * B1 * X)	-0.00113	-0.00113	-0.00116
	(A1 * !A2 * !A4 * B1 * X)	0.00082	0.00082	0.00081
	(A1 * !A2 * !A4 * !B1 * !X)	-0.00114	-0.00114	-0.00113
	(A1 * !A2 * !A4 * !B1 * !X)	0.00132	0.00132	0.00131
	(!A1 * !A2 * A4 * B1 * X)	-0.00117	-0.00117	-0.00117
	(!A1 * !A2 * A4 * B1 * X)	0.00133	0.00134	0.00135
	(!A1 * !A2 * A4 * !B1 * !X)	-0.00113	-0.00113	-0.00113
	(!A1 * !A2 * A4 * !B1 * !X)	0.00139	0.00139	0.00139
	(!A1 * !A2 * !A4 * !B1 * !X)	-0.00099	-0.00106	-0.00106
	(!A1 * !A2 * !A4 * !B1 * !X)	0.00142	0.00142	0.00142

sky130_fd_sc_hs__o41a_4	**(A2 * A4 * B1 * X)**	-0.00234	-0.00236	-0.00234
	(A2 * A4 * B1 * X)	0.00182	0.00184	0.00182
	(A2 * A4 * !B1 * !X)	-0.00230	-0.00231	-0.00231
	(A2 * A4 * !B1 * !X)	0.00200	0.00199	0.00199
	(A2 * !A4 * B1 * X)	-0.00229	-0.00231	-0.00229
	(A2 * !A4 * B1 * X)	0.00159	0.00161	0.00160
	(A2 * !A4 * !B1 * !X)	-0.00230	-0.00232	-0.00231
	(A2 * !A4 * !B1 * !X)	0.00264	0.00266	0.00265
	(A1 * !A2 * A4 * B1 * X)	-0.00233	-0.00234	-0.00233
	(A1 * !A2 * A4 * B1 * X)	0.00185	0.00186	0.00185
	(A1 * !A2 * A4 * !B1 * !X)	-0.00231	-0.00232	-0.00231
	(A1 * !A2 * A4 * !B1 * !X)	0.00195	0.00196	0.00195
	(A1 * !A2 * !A4 * B1 * X)	-0.00217	-0.00220	-0.00228
	(A1 * !A2 * !A4 * B1 * X)	0.00164	0.00166	0.00158
	(A1 * !A2 * !A4 * !B1 * !X)	-0.00230	-0.00231	-0.00231
	(A1 * !A2 * !A4 * !B1 * !X)	0.00249	0.00250	0.00250
	(!A1 * !A2 * A4 * B1 * X)	-0.00231	-0.00232	-0.00231
	(!A1 * !A2 * A4 * B1 * X)	0.00265	0.00268	0.00268
	(!A1 * !A2 * A4 * !B1 * !X)	-0.00230	-0.00232	-0.00231
	(!A1 * !A2 * A4 * !B1 * !X)	0.00266	0.00269	0.00268
	(!A1 * !A2 * !A4 * !B1 * !X)	-0.00207	-0.00217	-0.00217
	(!A1 * !A2 * !A4 * !B1 * !X)	0.00274	0.00276	0.00274

Passive power(pJ) for A4 rising (conditional):

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

sky130_fd_sc_hs__o41a_1	**(A3 * B1 * X)**	0.00113	0.00115	0.00113
	(A3 * B1 * X)	-0.00070	-0.00071	-0.00069
	(A3 * !B1 * !X)	0.00100	0.00101	0.00100
	(A3 * !B1 * !X)	-0.00132	-0.00135	-0.00135
	(A2 * !A3 * B1 * X)	0.00113	0.00115	0.00113
	(A2 * !A3 * B1 * X)	-0.00070	-0.00070	-0.00069
	(A2 * !A3 * !B1 * !X)	0.00099	0.00100	0.00100
	(A2 * !A3 * !B1 * !X)	-0.00121	-0.00129	-0.00128
	(A1 * !A2 * !A3 * B1 * X)	0.00113	0.00115	0.00113
	(A1 * !A2 * !A3 * B1 * X)	-0.00070	-0.00070	-0.00069
	(A1 * !A2 * !A3 * !B1 * !X)	0.00099	0.00099	0.00100
	(A1 * !A2 * !A3 * !B1 * !X)	-0.00119	-0.00125	-0.00125
	(!A1 * !A2 * !A3 * !B1 * !X)	0.00094	0.00094	0.00093
	(!A1 * !A2 * !A3 * !B1 * !X)	-0.00138	-0.00138	-0.00137
sky130_fd_sc_hs__o41a_2	**(A3 * B1 * X)**	0.00126	0.00127	0.00125
	(A3 * B1 * X)	-0.00070	-0.00071	-0.00070
	(A3 * !B1 * !X)	0.00113	0.00114	0.00113
	(A3 * !B1 * !X)	-0.00131	-0.00134	-0.00135
	(A2 * !A3 * B1 * X)	0.00126	0.00127	0.00125
	(A2 * !A3 * B1 * X)	-0.00070	-0.00071	-0.00070
	(A2 * !A3 * !B1 * !X)	0.00113	0.00113	0.00113
	(A2 * !A3 * !B1 * !X)	-0.00121	-0.00129	-0.00128
	(A1 * !A2 * !A3 * B1 * X)	0.00125	0.00127	0.00125
	(A1 * !A2 * !A3 * B1 * X)	-0.00069	-0.00071	-0.00070
	(A1 * !A2 * !A3 * !B1 * !X)	0.00113	0.00115	0.00113
	(A1 * !A2 * !A3 * !B1 * !X)	-0.00119	-0.00125	-0.00125
	(!A1 * !A2 * !A3 * !B1 * !X)	0.00106	0.00106	0.00105
	(!A1 * !A2 * !A3 * !B1 * !X)	-0.00137	-0.00137	-0.00137

sky130_fd_sc_hs__o41a_4	**(A3 * B1 * X)**	0.00212	0.00216	0.00213
	(A3 * B1 * X)	-0.00141	-0.00143	-0.00141
	(A3 * !B1 * !X)	0.00190	0.00190	0.00189
	(A3 * !B1 * !X)	-0.00264	-0.00269	-0.00270
	(A2 * !A3 * B1 * X)	0.00212	0.00216	0.00213
	(A2 * !A3 * B1 * X)	-0.00140	-0.00143	-0.00140
	(A2 * !A3 * !B1 * !X)	0.00189	0.00190	0.00189
	(A2 * !A3 * !B1 * !X)	-0.00240	-0.00256	-0.00255
	(A1 * !A2 * !A3 * B1 * X)	0.00213	0.00216	0.00213
	(A1 * !A2 * !A3 * B1 * X)	-0.00140	-0.00143	-0.00140
	(A1 * !A2 * !A3 * !B1 * !X)	0.00189	0.00192	0.00189
	(A1 * !A2 * !A3 * !B1 * !X)	-0.00236	-0.00247	-0.00247
	(!A1 * !A2 * !A3 * !B1 * !X)	0.00177	0.00178	0.00176
	(!A1 * !A2 * !A3 * !B1 * !X)	-0.00277	-0.00277	-0.00276

Passive power(pJ) for A4 falling (conditional):

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

sky130_fd_sc_hs__o41a_1	**(A3 * B1 * X)**	-0.00107	-0.00108	-0.00112
	(A3 * B1 * X)	0.00074	0.00075	0.00071
	(A3 * !B1 * !X)	-0.00100	-0.00100	-0.00099
	(A3 * !B1 * !X)	0.00135	0.00135	0.00135
	(A2 * !A3 * B1 * X)	-0.00100	-0.00101	-0.00110
	(A2 * !A3 * B1 * X)	0.00078	0.00079	0.00071
	(A2 * !A3 * !B1 * !X)	-0.00099	-0.00100	-0.00099
	(A2 * !A3 * !B1 * !X)	0.00128	0.00129	0.00128
	(A1 * !A2 * !A3 * B1 * X)	-0.00090	-0.00091	-0.00108
	(A1 * !A2 * !A3 * B1 * X)	0.00085	0.00085	0.00073
	(A1 * !A2 * !A3 * !B1 * !X)	-0.00099	-0.00099	-0.00099
	(A1 * !A2 * !A3 * !B1 * !X)	0.00125	0.00125	0.00125
	(!A1 * !A2 * !A3 * !B1 * !X)	-0.00088	-0.00094	-0.00093
	(!A1 * !A2 * !A3 * !B1 * !X)	0.00138	0.00138	0.00138
sky130_fd_sc_hs__o41a_2	**(A3 * B1 * X)**	-0.00119	-0.00120	-0.00125
	(A3 * B1 * X)	0.00075	0.00076	0.00071
	(A3 * !B1 * !X)	-0.00113	-0.00113	-0.00113
	(A3 * !B1 * !X)	0.00135	0.00134	0.00135
	(A2 * !A3 * B1 * X)	-0.00112	-0.00113	-0.00123
	(A2 * !A3 * B1 * X)	0.00080	0.00080	0.00072
	(A2 * !A3 * !B1 * !X)	-0.00113	-0.00113	-0.00113
	(A2 * !A3 * !B1 * !X)	0.00128	0.00129	0.00128
	(A1 * !A2 * !A3 * B1 * X)	-0.00103	-0.00104	-0.00121
	(A1 * !A2 * !A3 * B1 * X)	0.00085	0.00085	0.00073
	(A1 * !A2 * !A3 * !B1 * !X)	-0.00113	-0.00113	-0.00113
	(A1 * !A2 * !A3 * !B1 * !X)	0.00125	0.00125	0.00125
	(!A1 * !A2 * !A3 * !B1 * !X)	-0.00099	-0.00106	-0.00105
	(!A1 * !A2 * !A3 * !B1 * !X)	0.00137	0.00137	0.00137

sky130_fd_sc_hs__o41a_4	**(A3 * B1 * X)**	-0.00200	-0.00202	-0.00211
	(A3 * B1 * X)	0.00152	0.00153	0.00145
	(A3 * !B1 * !X)	-0.00189	-0.00189	-0.00189
	(A3 * !B1 * !X)	0.00271	0.00269	0.00270
	(A2 * !A3 * B1 * X)	-0.00181	-0.00183	-0.00207
	(A2 * !A3 * B1 * X)	0.00163	0.00164	0.00146
	(A2 * !A3 * !B1 * !X)	-0.00189	-0.00190	-0.00189
	(A2 * !A3 * !B1 * !X)	0.00255	0.00256	0.00255
	(A1 * !A2 * !A3 * B1 * X)	-0.00161	-0.00164	-0.00201
	(A1 * !A2 * !A3 * B1 * X)	0.00175	0.00176	0.00149
	(A1 * !A2 * !A3 * !B1 * !X)	-0.00189	-0.00189	-0.00189
	(A1 * !A2 * !A3 * !B1 * !X)	0.00248	0.00247	0.00247
	(!A1 * !A2 * !A3 * !B1 * !X)	-0.00164	-0.00178	-0.00176
	(!A1 * !A2 * !A3 * !B1 * !X)	0.00277	0.00277	0.00277

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)**	0.00041	0.00041	0.00036
	(!A1 * !A2 * !A3 * !A4 * !X)	-0.00133	-0.00133	-0.00141
sky130_fd_sc_hs__o41a_2	**(!A1 * !A2 * !A3 * !A4 * !X)**	0.00045	0.00045	0.00041
	(!A1 * !A2 * !A3 * !A4 * !X)	-0.00152	-0.00153	-0.00161
sky130_fd_sc_hs__o41a_4	**(!A1 * !A2 * !A3 * !A4 * !X)**	0.00075	0.00076	0.00067
	(!A1 * !A2 * !A3 * !A4 * !X)	-0.00250	-0.00253	-0.00267

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)	-0.00035	-0.00035	-0.00035
	(!A1 * !A2 * !A3 * !A4 * !X)	0.00141	0.00142	0.00142
sky130_fd_sc_hs__o41a_2	(!A1 * !A2 * !A3 * !A4 * !X)	-0.00039	-0.00040	-0.00039
	(!A1 * !A2 * !A3 * !A4 * !X)	0.00162	0.00165	0.00162
sky130_fd_sc_hs__o41a_4	(!A1 * !A2 * !A3 * !A4 * !X)	-0.00065	-0.00066	-0.00064
	(!A1 * !A2 * !A3 * !A4 * !X)	0.00270	0.00273	0.00269

SKY130_FD_SC_HS__OR2Bx

sky130_fd_sc_hs_tt_1.50v_25C.ccs
Cell Library: Process , Voltage
1.50, 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	0.00245	0.00230	0.85858
sky130_fd_sc_hs__or2b_2	0.00255	0.00222	1.49004
sky130_fd_sc_hs__or2b_4	0.00484	0.00276	3.18008

Leakage Information

Cell Name	Leakage(nW)		
	Min.	Avg	Max.
sky130_fd_sc_hs__or2b_1	0.00000	0.11562	0.18626
sky130_fd_sc_hs__or2b_2	0.00000	0.12831	0.22308
sky130_fd_sc_hs__or2b_4	0.00000	0.14308	0.21822

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)	0.07770	0.70135	6.79705
	B_N->X (FR)	0.14641	0.90017	8.28712
sky130_fd_sc_hs__or2b_2	A->X (RR)	0.07599	0.60877	6.66803
	B_N->X (FR)	0.15789	0.82266	8.24130
sky130_fd_sc_hs__or2b_4	A->X (RR)	0.07004	0.50519	6.72365
	B_N->X (FR)	0.16777	0.77644	8.59026

Delay(ns) to X falling :

Cell Name	Timing Arc(Dir)	Delay(ns)		
		First	Mid	Last
sky130_fd_sc_hs__or2b_1	A->X (FF)	0.15998	0.67811	4.61920
	B_N->X (RF)	0.16516	0.47410	2.51622
sky130_fd_sc_hs__or2b_2	A->X (FF)	0.21474	0.72720	4.64720
	B_N->X (RF)	0.22792	0.51100	2.27554
sky130_fd_sc_hs__or2b_4	A->X (FF)	0.20904	0.69296	4.84282
	B_N->X (RF)	0.21432	0.49342	2.50107

Power Information

Internal switching power(pJ) to X rising :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__or2b_1	A	0.00568	0.00551	0.00807
	A	0.00295	0.00278	0.00534
	B_N	0.00513	0.00548	0.01301
	B_N	0.00747	0.00783	0.01537
sky130_fd_sc_hs__or2b_2	A	0.00790	0.00805	0.01106
	A	0.00498	0.00551	0.00821
	B_N	0.00730	0.00787	0.01499
	B_N	0.00962	0.01020	0.01735
sky130_fd_sc_hs__or2b_4	A	0.01502	0.01541	0.02247
	A	0.00962	0.01009	0.01708
	B_N	0.01371	0.01490	0.02196
	B_N	0.01631	0.01749	0.02465

Internal switching power(pJ) to X falling :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__or2b_1	A	0.00322	0.00321	0.00550
	A	0.00596	0.00595	0.00821
	B_N	0.00741	0.00744	0.01434
	B_N	0.00506	0.00506	0.01194
sky130_fd_sc_hs__or2b_2	A	0.00501	0.00505	0.00796
	A	0.00792	0.00805	0.01048
	B_N	0.00980	0.00980	0.01581
	B_N	0.00747	0.00743	0.01345
sky130_fd_sc_hs__or2b_4	A	0.00994	0.01060	0.01647
	A	0.01537	0.01604	0.02119
	B_N	0.01611	0.01698	0.02380
	B_N	0.01351	0.01430	0.02101

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__or2b_1	(!B_N * X)	0.00116	0.00102	0.00100
	(!B_N * X)	-0.00118	-0.00132	-0.00134
sky130_fd_sc_hs__or2b_2	(!B_N * X)	0.00124	0.00110	0.00108
	(!B_N * X)	-0.00124	-0.00140	-0.00141
sky130_fd_sc_hs__or2b_4	(!B_N * X)	0.00238	0.00211	0.00208
	(!B_N * X)	-0.00227	-0.00256	-0.00259

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__or2b_1	(!B_N * X)	-0.00099	-0.00100	-0.00099
	(!B_N * X)	0.00134	0.00135	0.00135
sky130_fd_sc_hs__or2b_2	(!B_N * X)	-0.00107	-0.00108	-0.00107
	(!B_N * X)	0.00141	0.00142	0.00142
sky130_fd_sc_hs__or2b_4	(!B_N * X)	-0.00208	-0.00208	-0.00207
	(!B_N * X)	0.00259	0.00260	0.00259

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__or2b_1	(A * X)	0.00324	0.00313	0.00992
	(A * X)	0.00053	0.00042	0.00721
sky130_fd_sc_hs__or2b_2	(A * X)	0.00343	0.00333	0.00996
	(A * X)	0.00073	0.00060	0.00725
sky130_fd_sc_hs__or2b_4	(A * X)	0.00441	0.00424	0.01039
	(A * X)	0.00125	0.00105	0.00721

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__or2b_1	(A * X)	0.00093	0.00122	0.00860
	(A * X)	0.00363	0.00393	0.01129
sky130_fd_sc_hs__or2b_2	(A * X)	0.00092	0.00120	0.00848
	(A * X)	0.00362	0.00391	0.01119
sky130_fd_sc_hs__or2b_4	(A * X)	0.00245	0.00256	0.00935
	(A * X)	0.00562	0.00572	0.01251

SKY130_FD_SC_HS__OR2x

sky130_fd_sc_hs_tt_1.50v_25C.ccs
Cell Library: Process , Voltage
1.50, 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	0.00223	0.00213	0.85728
sky130_fd_sc_hs__or2_2	0.00276	0.00242	1.49852
sky130_fd_sc_hs__or2_4	0.00439	0.00380	3.14025

Leakage Information

Cell Name	Leakage(nW)		
	Min.	Avg	Max.
sky130_fd_sc_hs__or2_1	0.00000	0.06328	0.15577
sky130_fd_sc_hs__or2_2	0.00000	0.05140	0.08361
sky130_fd_sc_hs__or2_4	0.00000	0.09889	0.16722

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)	0.07490	0.69332	6.76572
	B->X (RR)	0.07030	0.67265	6.76376
sky130_fd_sc_hs__or2_2	A->X (RR)	0.07718	0.61155	6.68178
	B->X (RR)	0.07155	0.59356	6.63444
sky130_fd_sc_hs__or2_4	A->X (RR)	0.09893	0.59106	7.16656
	B->X (RR)	0.08519	0.55516	7.09013

Delay(ns) to X falling :

Cell Name	Timing Arc(Dir)	Delay(ns)		
		First	Mid	Last
sky130_fd_sc_hs__or2_1	A->X (FF)	0.17141	0.69016	4.60403
	B->X (FF)	0.14985	0.64985	4.40152
sky130_fd_sc_hs__or2_2	A->X (FF)	0.21227	0.72421	4.64655
	B->X (FF)	0.18658	0.69198	4.44742
sky130_fd_sc_hs__or2_4	A->X (FF)	0.19376	0.67671	4.72890
	B->X (FF)	0.16790	0.63733	4.48210

Power Information

Internal switching power(pJ) to X rising :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__or2_1	A	0.00604	0.00592	0.00870
	A	0.00291	0.00279	0.00659
	B	0.00511	0.00512	0.01021
	B	0.00249	0.00251	0.00860
sky130_fd_sc_hs__or2_2	A	0.00866	0.00867	0.01158
	A	0.00490	0.00491	0.00787
	B	0.00737	0.00759	0.01173
	B	0.00434	0.00457	0.00876
sky130_fd_sc_hs__or2_4	A	0.01553	0.01563	0.02037
	A	0.00942	0.00954	0.01453
	B	0.01258	0.01299	0.02050
	B	0.00803	0.00848	0.01613

Internal switching power(pJ) to X falling :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__or2_1	A	0.00242	0.00244	0.00540
	A	0.00556	0.00557	0.00823
	B	0.00229	0.00267	0.00884
	B	0.00490	0.00528	0.01145
sky130_fd_sc_hs__or2_2	A	0.00394	0.00406	0.00686
	A	0.00772	0.00785	0.01020
	B	0.00387	0.00431	0.01006
	B	0.00689	0.00734	0.01273
sky130_fd_sc_hs__or2_4	A	0.00859	0.00933	0.01496
	A	0.01477	0.01548	0.01917
	B	0.00859	0.00960	0.01875
	B	0.01312	0.01411	0.02326

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__or2_1	(B * X)	0.00114	0.00101	0.00099
	(B * X)	-0.00085	-0.00099	-0.00101
sky130_fd_sc_hs__or2_2	(B * X)	0.00138	0.00123	0.00122
	(B * X)	-0.00102	-0.00118	-0.00120
sky130_fd_sc_hs__or2_4	(B * X)	0.00180	0.00149	0.00147
	(B * X)	-0.00210	-0.00243	-0.00246

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__or2_1	(B * X)	-0.00098	-0.00099	-0.00098
	(B * X)	0.00101	0.00102	0.00102
sky130_fd_sc_hs__or2_2	(B * X)	-0.00121	-0.00122	-0.00121
	(B * X)	0.00119	0.00121	0.00120
sky130_fd_sc_hs__or2_4	(B * X)	-0.00146	-0.00146	-0.00145
	(B * X)	0.00246	0.00247	0.00246

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__or2_1	(A * X)	0.00107	0.00108	0.00107
	(A * X)	-0.00052	-0.00052	-0.00052
sky130_fd_sc_hs__or2_2	(A * X)	0.00115	0.00116	0.00114
	(A * X)	-0.00064	-0.00065	-0.00063
sky130_fd_sc_hs__or2_4	(A * X)	0.00133	0.00136	0.00134
	(A * X)	-0.00127	-0.00130	-0.00127

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__or2_1	(A * X)	-0.00103	-0.00104	-0.00106
	(A * X)	0.00055	0.00055	0.00053
sky130_fd_sc_hs__or2_2	(A * X)	-0.00110	-0.00111	-0.00114
	(A * X)	0.00067	0.00068	0.00065
sky130_fd_sc_hs__or2_4	(A * X)	-0.00122	-0.00123	-0.00132
	(A * X)	0.00138	0.00137	0.00130

SKY130_FD_SC_HS__OR3Bx

sky130_fd_sc_hs_tt_1.50v_25C.ccs
Cell Library: Process , Voltage
1.50, 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	0.00240	0.00263	0.00223	0.85589
sky130_fd_sc_hs__or3b_2	0.00256	0.00248	0.00221	1.49601
sky130_fd_sc_hs__or3b_4	0.00451	0.00412	0.00258	3.15368

Leakage Information

Cell Name	Leakage(nW)		
	Min.	Avg	Max.
sky130_fd_sc_hs__or3b_1	0.00000	0.10268	0.18896
sky130_fd_sc_hs__or3b_2	0.00000	0.11180	0.22933
sky130_fd_sc_hs__or3b_4	0.00000	0.10711	0.20720

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)	0.08493	0.73177	6.90363
	B->X (RR)	0.08315	0.71823	6.83493
	C_N->X (FR)	0.15007	0.90449	8.29701
sky130_fd_sc_hs__or3b_2	A->X (RR)	0.08190	0.63387	6.76461
	B->X (RR)	0.07982	0.62147	6.70733
	C_N->X (FR)	0.15924	0.82461	8.24966
sky130_fd_sc_hs__or3b_4	A->X (RR)	0.10502	0.61346	7.23672
	B->X (RR)	0.09980	0.59466	7.15197
	C_N->X (FR)	0.18220	0.78711	8.58769

Delay(ns) to X falling :

Cell Name	Timing Arc(Dir)	Delay(ns)		
		First	Mid	Last
sky130_fd_sc_hs__or3b_1	A->X (FF)	0.27021	0.81446	4.88218
	B->X (FF)	0.25495	0.80896	4.93991
	C_N->X (RF)	0.24256	0.57257	2.59470
sky130_fd_sc_hs__or3b_2	A->X (FF)	0.34904	0.88138	4.96760
	B->X (FF)	0.32664	0.87407	5.06115
	C_N->X (RF)	0.31691	0.63532	2.47550
sky130_fd_sc_hs__or3b_4	A->X (FF)	0.30392	0.79823	4.93818
	B->X (FF)	0.28199	0.78814	5.00294
	C_N->X (RF)	0.26900	0.55613	2.54404

Power Information

Internal switching power(pJ) to X rising :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__or3b_1	A	0.00693	0.00678	0.00893
	A	0.00350	0.00334	0.00550
	B	0.00601	0.00595	0.00844
	B	0.00295	0.00289	0.00540
	C_N	0.00528	0.00568	0.01318
	C_N	0.00726	0.00767	0.01517
sky130_fd_sc_hs__or3b_2	A	0.00915	0.00919	0.01176
	A	0.00561	0.00566	0.00910
	B	0.00803	0.00829	0.01116
	B	0.00506	0.00532	0.00820
	C_N	0.00729	0.00793	0.01498
	C_N	0.00942	0.01008	0.01718
sky130_fd_sc_hs__or3b_4	A	0.01684	0.01695	0.02110
	A	0.01067	0.01079	0.01520
	B	0.01431	0.01472	0.01954
	B	0.00948	0.00992	0.01493
	C_N	0.01253	0.01367	0.02073
	C_N	0.01495	0.01611	0.02325

Internal switching power(pJ) to X falling :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__or3b_1	A	0.00379	0.00376	0.00540
	A	0.00726	0.00727	0.00887
	B	0.00368	0.00366	0.00622
	B	0.00676	0.00676	0.00895
	C_N	0.00798	0.00801	0.01492
	C_N	0.00598	0.00596	0.01279
sky130_fd_sc_hs__or3b_2	A	0.00541	0.00543	0.00714
	A	0.00898	0.00900	0.01065
	B	0.00530	0.00539	0.00798
	B	0.00828	0.00837	0.01061
	C_N	0.01009	0.01002	0.01617
	C_N	0.00795	0.00789	0.01396
sky130_fd_sc_hs__or3b_4	A	0.01011	0.01068	0.01336
	A	0.01637	0.01696	0.01953
	B	0.01013	0.01063	0.01656
	B	0.01496	0.01558	0.01935
	C_N	0.01593	0.01665	0.02369
	C_N	0.01350	0.01423	0.02097

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)	0.00100	0.00096	0.00096
	(B * C_N * X)	-0.00116	-0.00122	-0.00122
	(B * !C_N * X)	0.00096	0.00096	0.00096
	(B * !C_N * X)	-0.00120	-0.00122	-0.00122
	(!B * !C_N * X)	0.00098	0.00097	0.00096
	(!B * !C_N * X)	-0.00110	-0.00119	-0.00118
sky130_fd_sc_hs__or3b_2	(B * C_N * X)	0.00115	0.00112	0.00112
	(B * C_N * X)	-0.00117	-0.00123	-0.00123
	(B * !C_N * X)	0.00107	0.00107	0.00107
	(B * !C_N * X)	-0.00125	-0.00127	-0.00127
	(!B * !C_N * X)	0.00109	0.00109	0.00107
	(!B * !C_N * X)	-0.00115	-0.00124	-0.00124
sky130_fd_sc_hs__or3b_4	(B * C_N * X)	0.00170	0.00163	0.00163
	(B * C_N * X)	-0.00230	-0.00241	-0.00242
	(B * !C_N * X)	0.00147	0.00146	0.00146
	(B * !C_N * X)	-0.00253	-0.00259	-0.00259
	(!B * !C_N * X)	0.00150	0.00147	0.00145
	(!B * !C_N * X)	-0.00235	-0.00254	-0.00252

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)	-0.00095	-0.00096	-0.00095
	(B * C_N * X)	0.00122	0.00123	0.00122
	(B * !C_N * X)	-0.00095	-0.00096	-0.00095
	(B * !C_N * X)	0.00121	0.00123	0.00122
	(!B * !C_N * X)	-0.00095	-0.00096	-0.00095
	(!B * !C_N * X)	0.00118	0.00119	0.00118
sky130_fd_sc_hs__or3b_2	(B * C_N * X)	-0.00111	-0.00112	-0.00111
	(B * C_N * X)	0.00123	0.00124	0.00123
	(B * !C_N * X)	-0.00107	-0.00107	-0.00107
	(B * !C_N * X)	0.00127	0.00128	0.00127
	(!B * !C_N * X)	-0.00107	-0.00107	-0.00107
	(!B * !C_N * X)	0.00124	0.00124	0.00124
sky130_fd_sc_hs__or3b_4	(B * C_N * X)	-0.00163	-0.00163	-0.00163
	(B * C_N * X)	0.00241	0.00244	0.00242
	(B * !C_N * X)	-0.00145	-0.00146	-0.00146
	(B * !C_N * X)	0.00257	0.00261	0.00259
	(!B * !C_N * X)	-0.00145	-0.00145	-0.00145
	(!B * !C_N * X)	0.00252	0.00254	0.00252

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)	0.00116	0.00117	0.00114
	(A * C_N * X)	-0.00074	-0.00075	-0.00074
	(A * !C_N * X)	0.00110	0.00112	0.00105
	(A * !C_N * X)	-0.00098	-0.00098	-0.00098
	(!A * !C_N * X)	0.00123	0.00103	0.00101
	(!A * !C_N * X)	-0.00115	-0.00135	-0.00136
sky130_fd_sc_hs__or3b_2	(A * C_N * X)	0.00117	0.00120	0.00117
	(A * C_N * X)	-0.00068	-0.00070	-0.00069
	(A * !C_N * X)	0.00105	0.00106	0.00101
	(A * !C_N * X)	-0.00100	-0.00101	-0.00101
	(!A * !C_N * X)	0.00118	0.00099	0.00098
	(!A * !C_N * X)	-0.00117	-0.00137	-0.00137
sky130_fd_sc_hs__or3b_4	(A * C_N * X)	0.00147	0.00149	0.00146
	(A * C_N * X)	-0.00144	-0.00147	-0.00145
	(A * !C_N * X)	0.00138	0.00139	0.00129
	(A * !C_N * X)	-0.00194	-0.00195	-0.00194
	(!A * !C_N * X)	0.00160	0.00122	0.00120
	(!A * !C_N * X)	-0.00232	-0.00269	-0.00270

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)	-0.00113	-0.00113	-0.00112
	(A * C_N * X)	0.00076	0.00077	0.00077
	(A * !C_N * X)	-0.00101	-0.00101	-0.00101
	(A * !C_N * X)	0.00098	0.00098	0.00098
	(!A * !C_N * X)	-0.00101	-0.00101	-0.00100
	(!A * !C_N * X)	0.00137	0.00137	0.00137
sky130_fd_sc_hs__or3b_2	(A * C_N * X)	-0.00115	-0.00116	-0.00115
	(A * C_N * X)	0.00071	0.00072	0.00072
	(A * !C_N * X)	-0.00097	-0.00098	-0.00098
	(A * !C_N * X)	0.00100	0.00101	0.00101
	(!A * !C_N * X)	-0.00098	-0.00098	-0.00097
	(!A * !C_N * X)	0.00138	0.00139	0.00138
sky130_fd_sc_hs__or3b_4	(A * C_N * X)	-0.00143	-0.00144	-0.00143
	(A * C_N * X)	0.00149	0.00150	0.00150
	(A * !C_N * X)	-0.00121	-0.00122	-0.00122
	(A * !C_N * X)	0.00194	0.00195	0.00194
	(!A * !C_N * X)	-0.00118	-0.00118	-0.00118
	(!A * !C_N * X)	0.00270	0.00270	0.00272

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__or3b_1	(B * X)	0.00315	0.00308	0.00990
	(B * X)	0.00052	0.00044	0.00728
	(A * !B * X)	0.00321	0.00314	0.00994
	(A * !B * X)	0.00055	0.00047	0.00729
sky130_fd_sc_hs__or3b_2	(B * X)	0.00353	0.00343	0.01006
	(B * X)	0.00081	0.00069	0.00733
	(A * !B * X)	0.00359	0.00349	0.01010
	(A * !B * X)	0.00083	0.00071	0.00734
sky130_fd_sc_hs__or3b_4	(B * X)	0.00449	0.00438	0.01080
	(B * X)	0.00122	0.00110	0.00754
	(A * !B * X)	0.00462	0.00451	0.01090
	(A * !B * X)	0.00128	0.00115	0.00757

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__or3b_1	(B * X)	0.00076	0.00107	0.00849
	(B * X)	0.00339	0.00371	0.01111
	(A * !B * X)	0.00076	0.00107	0.00849
	(A * !B * X)	0.00339	0.00371	0.01112
sky130_fd_sc_hs__or3b_2	(B * X)	0.00082	0.00110	0.00838
	(B * X)	0.00353	0.00381	0.01110
	(A * !B * X)	0.00082	0.00110	0.00838
	(A * !B * X)	0.00354	0.00382	0.01111
sky130_fd_sc_hs__or3b_4	(B * X)	0.00107	0.00130	0.00818
	(B * X)	0.00433	0.00457	0.01144
	(A * !B * X)	0.00108	0.00130	0.00818
	(A * !B * X)	0.00434	0.00457	0.01144

SKY130_FD_SC_HS__OR3x

sky130_fd_sc_hs_tt_1.50v_25C.ccs
Cell Library: Process , Voltage
1.50, 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	0.00249	0.00246	0.00241	0.88081
sky130_fd_sc_hs__or3_2	0.00253	0.00256	0.00263	1.66924
sky130_fd_sc_hs__or3_4	0.00472	0.00419	0.00409	3.16245

Leakage Information

Cell Name	Leakage(nW)		
	Min.	**Avg**	**Max.**
sky130_fd_sc_hs__or3_1	0.00000	0.02577	0.07896
sky130_fd_sc_hs__or3_2	0.00000	0.03489	0.08361
sky130_fd_sc_hs__or3_4	0.00000	0.06683	0.16722

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)	0.08488	0.73413	6.99102
	B->X (RR)	0.08268	0.71922	6.91700
	C->X (RR)	0.07709	0.69642	6.86167
sky130_fd_sc_hs__or3_2	A->X (RR)	0.08083	0.62281	6.87214
	B->X (RR)	0.07853	0.60948	6.81380
	C->X (RR)	0.07437	0.59306	6.77652
sky130_fd_sc_hs__or3_4	A->X (RR)	0.10542	0.61523	7.25727
	B->X (RR)	0.10023	0.59588	7.17296
	C->X (RR)	0.09121	0.56900	7.11106

Delay(ns) to X falling :

Cell Name	Timing Arc(Dir)	Delay(ns)		
		First	Mid	Last
sky130_fd_sc_hs__or3_1	A->X (FF)	0.27675	0.82724	4.96522
	B->X (FF)	0.25577	0.81737	5.02093
	C->X (FF)	0.21421	0.76108	4.76877
sky130_fd_sc_hs__or3_2	A->X (FF)	0.33988	0.87835	5.18671
	B->X (FF)	0.31702	0.87080	5.26834
	C->X (FF)	0.27936	0.82082	5.04230
sky130_fd_sc_hs__or3_4	A->X (FF)	0.30424	0.80044	4.95116
	B->X (FF)	0.28170	0.78941	5.00902
	C->X (FF)	0.23571	0.72673	4.71466

Power Information

Internal switching power(pJ) to X rising :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__or3_1	A	0.00807	0.00787	0.01003
	A	0.00368	0.00349	0.00566
	B	0.00682	0.00679	0.00934
	B	0.00311	0.00307	0.00562
	C	0.00562	0.00558	0.00953
	C	0.00243	0.00240	0.00638
sky130_fd_sc_hs__or3_2	A	0.01004	0.01011	0.01287
	A	0.00563	0.00571	0.00855
	B	0.00873	0.00898	0.01212
	B	0.00494	0.00520	0.00837
	C	0.00762	0.00787	0.01227
	C	0.00434	0.00459	0.01095
sky130_fd_sc_hs__or3_4	A	0.01850	0.01859	0.02275
	A	0.01071	0.01083	0.01525
	B	0.01561	0.01601	0.02082
	B	0.00947	0.00991	0.01499
	C	0.01296	0.01345	0.02046
	C	0.00791	0.00843	0.01562

Internal switching power(pJ) to X falling :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__or3_1	A	0.00290	0.00287	0.00472
	A	0.00733	0.00733	0.00890
	B	0.00294	0.00292	0.00552
	B	0.00668	0.00670	0.00890
	C	0.00286	0.00310	0.00779
	C	0.00605	0.00630	0.01098
sky130_fd_sc_hs__or3_2	A	0.00472	0.00491	0.00740
	A	0.00918	0.00937	0.01116
	B	0.00478	0.00491	0.00791
	B	0.00858	0.00878	0.01117
	C	0.00468	0.00510	0.01023
	C	0.00796	0.00837	0.01336
sky130_fd_sc_hs__or3_4	A	0.00861	0.00917	0.01364
	A	0.01653	0.01706	0.01963
	B	0.00892	0.00937	0.01533
	B	0.01508	0.01571	0.01944
	C	0.00876	0.00962	0.01864
	C	0.01380	0.01467	0.02291

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__or3_1	(B * C * X)	0.00104	0.00105	0.00104
	(B * C * X)	-0.00118	-0.00122	-0.00121
	(B * !C * X)	0.00105	0.00105	0.00104
	(B * !C * X)	-0.00115	-0.00122	-0.00121
	(!B * C * X)	0.00105	0.00105	0.00104
	(!B * C * X)	-0.00108	-0.00118	-0.00117
sky130_fd_sc_hs__or3_2	(B * C * X)	0.00109	0.00108	0.00109
	(B * C * X)	-0.00120	-0.00122	-0.00123
	(B * !C * X)	0.00110	0.00108	0.00109
	(B * !C * X)	-0.00117	-0.00122	-0.00123
	(!B * C * X)	0.00110	0.00110	0.00109
	(!B * C * X)	-0.00109	-0.00119	-0.00118
sky130_fd_sc_hs__or3_4	(B * C * X)	0.00173	0.00172	0.00172
	(B * C * X)	-0.00235	-0.00241	-0.00242
	(B * !C * X)	0.00175	0.00172	0.00172
	(B * !C * X)	-0.00231	-0.00242	-0.00242
	(!B * C * X)	0.00176	0.00174	0.00172
	(!B * C * X)	-0.00216	-0.00236	-0.00234

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__or3_1	(B * C * X)	-0.00103	-0.00104	-0.00103
	(B * C * X)	0.00121	0.00122	0.00121
	(B * !C * X)	-0.00103	-0.00104	-0.00103
	(B * !C * X)	0.00121	0.00122	0.00121
	(!B * C * X)	-0.00104	-0.00104	-0.00103
	(!B * C * X)	0.00118	0.00118	0.00117
sky130_fd_sc_hs__or3_2	(B * C * X)	-0.00108	-0.00108	-0.00109
	(B * C * X)	0.00122	0.00124	0.00123
	(B * !C * X)	-0.00108	-0.00108	-0.00109
	(B * !C * X)	0.00122	0.00124	0.00123
	(!B * C * X)	-0.00108	-0.00109	-0.00108
	(!B * C * X)	0.00118	0.00119	0.00118
sky130_fd_sc_hs__or3_4	(B * C * X)	-0.00172	-0.00172	-0.00172
	(B * C * X)	0.00241	0.00241	0.00242
	(B * !C * X)	-0.00171	-0.00172	-0.00172
	(B * !C * X)	0.00240	0.00243	0.00242
	(!B * C * X)	-0.00171	-0.00172	-0.00171
	(!B * C * X)	0.00233	0.00236	0.00234

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__or3_1	(A * C * X)	0.00105	0.00106	0.00100
	(A * C * X)	-0.00082	-0.00082	-0.00082
	(A * !C * X)	0.00097	0.00098	0.00096
	(A * !C * X)	-0.00070	-0.00071	-0.00070
	(!A * C * X)	0.00116	0.00097	0.00096
	(!A * C * X)	-0.00098	-0.00118	-0.00119
sky130_fd_sc_hs__or3_2	(A * C * X)	0.00107	0.00108	0.00101
	(A * C * X)	-0.00090	-0.00090	-0.00090
	(A * !C * X)	0.00099	0.00100	0.00098
	(A * !C * X)	-0.00078	-0.00079	-0.00078
	(!A * C * X)	0.00119	0.00100	0.00098
	(!A * C * X)	-0.00107	-0.00127	-0.00128
sky130_fd_sc_hs__or3_4	(A * C * X)	0.00138	0.00140	0.00129
	(A * C * X)	-0.00169	-0.00170	-0.00169
	(A * !C * X)	0.00122	0.00124	0.00121
	(A * !C * X)	-0.00146	-0.00148	-0.00146
	(!A * C * X)	0.00160	0.00123	0.00120
	(!A * C * X)	-0.00207	-0.00246	-0.00248

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__or3_1	(A * C * X)	-0.00096	-0.00096	-0.00096
	(A * C * X)	0.00082	0.00082	0.00082
	(A * !C * X)	-0.00094	-0.00095	-0.00094
	(A * !C * X)	0.00072	0.00073	0.00072
	(!A * C * X)	-0.00095	-0.00095	-0.00094
	(!A * C * X)	0.00119	0.00120	0.00119
sky130_fd_sc_hs__or3_2	(A * C * X)	-0.00098	-0.00098	-0.00098
	(A * C * X)	0.00090	0.00090	0.00090
	(A * !C * X)	-0.00096	-0.00097	-0.00096
	(A * !C * X)	0.00080	0.00081	0.00080
	(!A * C * X)	-0.00097	-0.00098	-0.00097
	(!A * C * X)	0.00127	0.00128	0.00128
sky130_fd_sc_hs__or3_4	(A * C * X)	-0.00121	-0.00122	-0.00122
	(A * C * X)	0.00169	0.00170	0.00169
	(A * !C * X)	-0.00119	-0.00119	-0.00117
	(A * !C * X)	0.00150	0.00151	0.00152
	(!A * C * X)	-0.00119	-0.00119	-0.00118
	(!A * C * X)	0.00247	0.00249	0.00248

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__or3_1	(B * X)	0.00106	0.00108	0.00107
	(B * X)	-0.00064	-0.00066	-0.00065
	(A * !B * X)	0.00106	0.00108	0.00107
	(A * !B * X)	-0.00064	-0.00066	-0.00064
sky130_fd_sc_hs__or3_2	(B * X)	0.00121	0.00122	0.00120
	(B * X)	-0.00067	-0.00067	-0.00066
	(A * !B * X)	0.00120	0.00122	0.00120
	(A * !B * X)	-0.00065	-0.00067	-0.00065
sky130_fd_sc_hs__or3_4	(B * X)	0.00152	0.00154	0.00152
	(B * X)	-0.00130	-0.00132	-0.00130
	(A * !B * X)	0.00152	0.00151	0.00152
	(A * !B * X)	-0.00130	-0.00129	-0.00130

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__or3_1	(B * X)	-0.00102	-0.00103	-0.00106
	(B * X)	0.00069	0.00069	0.00066
	(A * !B * X)	-0.00096	-0.00097	-0.00105
	(A * !B * X)	0.00073	0.00073	0.00066
sky130_fd_sc_hs__or3_2	(B * X)	-0.00115	-0.00116	-0.00119
	(B * X)	0.00070	0.00070	0.00067
	(A * !B * X)	-0.00109	-0.00110	-0.00118
	(A * !B * X)	0.00074	0.00074	0.00067
sky130_fd_sc_hs__or3_4	(B * X)	-0.00141	-0.00142	-0.00151
	(B * X)	0.00141	0.00140	0.00133
	(A * !B * X)	-0.00128	-0.00128	-0.00148
	(A * !B * X)	0.00148	0.00147	0.00133

SKY130_FD_SC_HS__OR4BBx

sky130_fd_sc_hs_tt_1.50v_25C.ccs
Cell Library: Process , Voltage
1.50, 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	0.00244	0.00241	0.00228	0.00231	0.85313
sky130_fd_sc_hs__or4bb_2	0.00243	0.00257	0.00224	0.00222	1.48568
sky130_fd_sc_hs__or4bb_4	0.00383	0.00390	0.00248	0.00245	2.82001

Leakage Information

Cell Name	Leakage(nW)		
	Min.	**Avg**	**Max.**
sky130_fd_sc_hs__or4bb_1	0.00000	0.17116	0.34278
sky130_fd_sc_hs__or4bb_2	0.00000	0.17827	0.38670
sky130_fd_sc_hs__or4bb_4	0.00000	0.12749	0.28616

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)	0.08655	0.74640	6.96093
	B->X (RR)	0.08624	0.73738	6.89945
	C_N->X (FR)	0.17129	0.93780	8.35968
	D_N->X (FR)	0.15555	0.91027	8.29136
sky130_fd_sc_hs__or4bb_2	A->X (RR)	0.08292	0.64758	6.80202
	B->X (RR)	0.08404	0.64138	6.75168
	C_N->X (FR)	0.15640	0.81619	8.18568
	D_N->X (FR)	0.15874	0.82298	8.22995
sky130_fd_sc_hs__or4bb_4	A->X (RR)	0.11403	0.65497	7.31035
	B->X (RR)	0.11651	0.64699	7.24684
	C_N->X (FR)	0.21448	0.83801	8.65329
	D_N->X (FR)	0.21671	0.84768	8.68401

Delay(ns) to X falling :

Cell Name	Timing Arc(Dir)	Delay(ns)		
		First	Mid	Last
sky130_fd_sc_hs__or4bb_1	A->X (FF)	0.39567	0.96372	5.05856
	B->X (FF)	0.36994	0.94050	5.13530
	C_N->X (RF)	0.36817	0.74091	2.80254
	D_N->X (RF)	0.29349	0.65307	2.67740
sky130_fd_sc_hs__or4bb_2	A->X (FF)	0.48304	1.03874	5.10082
	B->X (FF)	0.46782	1.02431	5.23298
	C_N->X (RF)	0.45772	0.80716	2.61845
	D_N->X (RF)	0.40022	0.74360	2.56757
sky130_fd_sc_hs__or4bb_4	A->X (FF)	0.52022	1.04897	5.04864
	B->X (FF)	0.50105	1.02344	5.13094
	C_N->X (RF)	0.49431	0.81773	2.59236
	D_N->X (RF)	0.40066	0.72635	2.51982

Power Information

Internal switching power(pJ) to X rising :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__or4bb_1	A	0.00752	0.00735	0.00923
	A	0.00418	0.00403	0.00592
	B	0.00644	0.00645	0.00862
	B	0.00356	0.00358	0.00579
	C_N	0.00594	0.00634	0.01362
	C_N	0.00821	0.00862	0.01609
	D_N	0.00515	0.00558	0.01299
	D_N	0.00716	0.00759	0.01500
sky130_fd_sc_hs__or4bb_2	A	0.00935	0.00962	0.01259
	A	0.00599	0.00628	0.01124
	B	0.00847	0.00872	0.01173
	B	0.00546	0.00572	0.00872
	C_N	0.00758	0.00836	0.01590
	C_N	0.00977	0.01056	0.01816
	D_N	0.00734	0.00773	0.01475
	D_N	0.00934	0.00975	0.01681
sky130_fd_sc_hs__or4bb_4	A	0.01886	0.01921	0.02338
	A	0.01292	0.01330	0.01772
	B	0.01607	0.01644	0.02071
	B	0.01133	0.01172	0.01627
	C_N	0.01561	0.01680	0.02324
	C_N	0.01766	0.01885	0.02540
	D_N	0.01374	0.01478	0.02123
	D_N	0.01581	0.01688	0.02343

Internal switching power(pJ) to X falling :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__or4bb_1	A	0.00472	0.00458	0.00654
	A	0.00809	0.00804	0.00908
	B	0.00456	0.00453	0.00652
	B	0.00745	0.00747	0.00902
	C_N	0.00932	0.00918	0.01571
	C_N	0.00704	0.00697	0.01339
	D_N	0.00822	0.00823	0.01509
	D_N	0.00621	0.00621	0.01298
sky130_fd_sc_hs__or4bb_2	A	0.00639	0.00653	0.00802
	A	0.00979	0.00996	0.01132
	B	0.00618	0.00611	0.00836
	B	0.00920	0.00935	0.01110
	C_N	0.01080	0.01084	0.01750
	C_N	0.00860	0.00870	0.01528
	D_N	0.01028	0.01022	0.01642
	D_N	0.00826	0.00822	0.01441
sky130_fd_sc_hs__or4bb_4	A	0.01358	0.01383	0.01567
	A	0.01963	0.02003	0.02160
	B	0.01370	0.01373	0.01691
	B	0.01845	0.01878	0.02100
	C_N	0.01930	0.01936	0.02546
	C_N	0.01724	0.01732	0.02336
	D_N	0.01845	0.01846	0.02485
	D_N	0.01637	0.01644	0.02251

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)**	0.00101	0.00099	0.00099
	(B * C_N * D_N * X)	-0.00117	-0.00122	-0.00122
	(B * !D_N * X)	0.00100	0.00098	0.00098
	(B * !D_N * X)	-0.00118	-0.00122	-0.00122
	(B * !C_N * D_N * X)	0.00098	0.00098	0.00098
	(B * !C_N * D_N * X)	-0.00119	-0.00122	-0.00122
	(!B * C_N * !D_N * X)	0.00106	0.00102	0.00100
	(!B * C_N * !D_N * X)	-0.00109	-0.00117	-0.00116
	(!B * !C_N * D_N * X)	0.00098	0.00100	0.00098
	(!B * !C_N * D_N * X)	-0.00112	-0.00119	-0.00118
	(!B * !C_N * !D_N * X)	0.00098	0.00099	0.00098
	(!B * !C_N * !D_N * X)	-0.00111	-0.00119	-0.00118
sky130_fd_sc_hs__or4bb_2	**(B * C_N * D_N * X)**	0.00107	0.00105	0.00105
	(B * C_N * D_N * X)	-0.00117	-0.00121	-0.00121
	(B * !D_N * X)	0.00107	0.00105	0.00105
	(B * !D_N * X)	-0.00118	-0.00121	-0.00121
	(B * !C_N * D_N * X)	0.00094	0.00093	0.00093
	(B * !C_N * D_N * X)	-0.00130	-0.00132	-0.00132
	(!B * C_N * !D_N * X)	0.00112	0.00109	0.00106
	(!B * C_N * !D_N * X)	-0.00108	-0.00116	-0.00115
	(!B * !C_N * D_N * X)	0.00093	0.00094	0.00093
	(!B * !C_N * D_N * X)	-0.00122	-0.00129	-0.00129
	(!B * !C_N * !D_N * X)	0.00093	0.00094	0.00093
	(!B * !C_N * !D_N * X)	-0.00121	-0.00129	-0.00128

sky130_fd_sc_hs__or4bb_4	**(B * C_N * D_N * X)**	0.00133	0.00129	0.00128
	(B * C_N * D_N * X)	-0.00237	-0.00250	-0.00250
	(B * !D_N * X)	0.00132	0.00129	0.00128
	(B * !D_N * X)	-0.00240	-0.00250	-0.00250
	(B * !C_N * D_N * X)	0.00128	0.00128	0.00128
	(B * !C_N * D_N * X)	-0.00242	-0.00250	-0.00250
	(!B * C_N * !D_N * X)	0.00144	0.00136	0.00132
	(!B * C_N * !D_N * X)	-0.00222	-0.00237	-0.00237
	(!B * !C_N * D_N * X)	0.00129	0.00130	0.00128
	(!B * !C_N * D_N * X)	-0.00227	-0.00242	-0.00241
	(!B * !C_N * !D_N * X)	0.00128	0.00130	0.00128
	(!B * !C_N * !D_N * X)	-0.00226	-0.00242	-0.00240

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)**	-0.00098	-0.00098	-0.00098
	(B * C_N * D_N * X)	0.00122	0.00123	0.00122
	(B * !D_N * X)	-0.00098	-0.00098	-0.00098
	(B * !D_N * X)	0.00122	0.00123	0.00122
	(B * !C_N * D_N * X)	-0.00098	-0.00098	-0.00098
	(B * !C_N * D_N * X)	0.00122	0.00123	0.00122
	(!B * C_N * !D_N * X)	-0.00102	-0.00102	-0.00100
	(!B * C_N * !D_N * X)	0.00117	0.00117	0.00116
	(!B * !C_N * D_N * X)	-0.00098	-0.00098	-0.00098
	(!B * !C_N * D_N * X)	0.00119	0.00119	0.00118
	(!B * !C_N * !D_N * X)	-0.00098	-0.00099	-0.00098
	(!B * !C_N * !D_N * X)	0.00118	0.00119	0.00118

sky130_fd_sc_hs__or4bb_2	**(B * C_N * D_N * X)**	-0.00104	-0.00104	-0.00104
	(B * C_N * D_N * X)	0.00121	0.00123	0.00121
	(B * !D_N * X)	-0.00104	-0.00105	-0.00104
	(B * !D_N * X)	0.00121	0.00122	0.00121
	(B * !C_N * D_N * X)	-0.00093	-0.00093	-0.00093
	(B * !C_N * D_N * X)	0.00132	0.00134	0.00132
	(!B * C_N * !D_N * X)	-0.00108	-0.00108	-0.00106
	(!B * C_N * !D_N * X)	0.00115	0.00116	0.00115
	(!B * !C_N * D_N * X)	-0.00093	-0.00093	-0.00093
	(!B * !C_N * D_N * X)	0.00129	0.00129	0.00129
	(!B * !C_N * !D_N * X)	-0.00093	-0.00093	-0.00093
	(!B * !C_N * !D_N * X)	0.00129	0.00129	0.00128
sky130_fd_sc_hs__or4bb_4	**(B * C_N * D_N * X)**	-0.00128	-0.00128	-0.00128
	(B * C_N * D_N * X)	0.00251	0.00252	0.00250
	(B * !D_N * X)	-0.00128	-0.00129	-0.00128
	(B * !D_N * X)	0.00249	0.00251	0.00250
	(B * !C_N * D_N * X)	-0.00128	-0.00128	-0.00128
	(B * !C_N * D_N * X)	0.00250	0.00252	0.00250
	(!B * C_N * !D_N * X)	-0.00137	-0.00136	-0.00132
	(!B * C_N * !D_N * X)	0.00237	0.00237	0.00237
	(!B * !C_N * D_N * X)	-0.00128	-0.00128	-0.00128
	(!B * !C_N * D_N * X)	0.00241	0.00242	0.00241
	(!B * !C_N * !D_N * X)	-0.00128	-0.00128	-0.00128
	(!B * !C_N * !D_N * X)	0.00241	0.00242	0.00240

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)**	0.00106	0.00108	0.00106
	(A * C_N * D_N * X)	-0.00078	-0.00079	-0.00077
	(A * C_N * !D_N * X)	0.00119	0.00123	0.00123
	(A * C_N * !D_N * X)	-0.00089	-0.00090	-0.00089
	(A * !C_N * D_N * X)	0.00088	0.00088	0.00086
	(A * !C_N * D_N * X)	-0.00112	-0.00112	-0.00112
	(A * !C_N * !D_N * X)	0.00085	0.00085	0.00085
	(A * !C_N * !D_N * X)	-0.00115	-0.00115	-0.00115
	(!A * C_N * !D_N * X)	0.00121	0.00110	0.00107
	(!A * C_N * !D_N * X)	-0.00113	-0.00122	-0.00122
	(!A * !C_N * D_N * X)	0.00092	0.00086	0.00085
	(!A * !C_N * D_N * X)	-0.00141	-0.00148	-0.00147
	(!A * !C_N * !D_N * X)	0.00085	0.00085	0.00085
	(!A * !C_N * !D_N * X)	-0.00147	-0.00147	-0.00147
sky130_fd_sc_hs__or4bb_2	**(A * C_N * D_N * X)**	0.00129	0.00130	0.00129
	(A * C_N * D_N * X)	-0.00070	-0.00070	-0.00070
	(A * C_N * !D_N * X)	0.00142	0.00148	0.00146
	(A * C_N * !D_N * X)	-0.00082	-0.00082	-0.00081
	(A * !C_N * D_N * X)	0.00118	0.00120	0.00116
	(A * !C_N * D_N * X)	-0.00097	-0.00098	-0.00097
	(A * !C_N * !D_N * X)	0.00116	0.00116	0.00115
	(A * !C_N * !D_N * X)	-0.00100	-0.00101	-0.00100
	(!A * C_N * !D_N * X)	0.00144	0.00133	0.00130
	(!A * C_N * !D_N * X)	-0.00104	-0.00115	-0.00114
	(!A * !C_N * D_N * X)	0.00122	0.00116	0.00115
	(!A * !C_N * D_N * X)	-0.00125	-0.00133	-0.00133
	(!A * !C_N * !D_N * X)	0.00115	0.00116	0.00115
	(!A * !C_N * !D_N * X)	-0.00132	-0.00133	-0.00132

sky130_fd_sc_hs__or4bb_4	**(A * C_N * D_N * X)**	0.00131	0.00134	0.00131
	(A * C_N * D_N * X)	-0.00149	-0.00152	-0.00149
	(A * C_N * !D_N * X)	0.00153	0.00161	0.00161
	(A * C_N * !D_N * X)	-0.00176	-0.00177	-0.00176
	(A * !C_N * D_N * X)	0.00129	0.00130	0.00126
	(A * !C_N * D_N * X)	-0.00184	-0.00185	-0.00184
	(A * !C_N * !D_N * X)	0.00126	0.00127	0.00126
	(A * !C_N * !D_N * X)	-0.00190	-0.00191	-0.00190
	(!A * C_N * !D_N * X)	0.00156	0.00138	0.00132
	(!A * C_N * !D_N * X)	-0.00222	-0.00241	-0.00239
	(!A * !C_N * D_N * X)	0.00132	0.00125	0.00124
	(!A * !C_N * D_N * X)	-0.00243	-0.00256	-0.00255
	(!A * !C_N * !D_N * X)	0.00124	0.00125	0.00124
	(!A * !C_N * !D_N * X)	-0.00250	-0.00256	-0.00254

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)**	-0.00102	-0.00103	-0.00103
	(A * C_N * D_N * X)	0.00081	0.00082	0.00081
	(A * C_N * !D_N * X)	-0.00115	-0.00116	-0.00115
	(A * C_N * !D_N * X)	0.00089	0.00090	0.00089
	(A * !C_N * D_N * X)	-0.00084	-0.00085	-0.00084
	(A * !C_N * D_N * X)	0.00112	0.00112	0.00112
	(A * !C_N * !D_N * X)	-0.00084	-0.00085	-0.00085
	(A * !C_N * !D_N * X)	0.00115	0.00115	0.00115
	(!A * C_N * !D_N * X)	-0.00111	-0.00110	-0.00107
	(!A * C_N * !D_N * X)	0.00122	0.00122	0.00122
	(!A * !C_N * D_N * X)	-0.00085	-0.00085	-0.00084
	(!A * !C_N * D_N * X)	0.00148	0.00149	0.00148
	(!A * !C_N * !D_N * X)	-0.00085	-0.00085	-0.00085
	(!A * !C_N * !D_N * X)	0.00148	0.00147	0.00147
sky130_fd_sc_hs__or4bb_2	**(A * C_N * D_N * X)**	-0.00127	-0.00127	-0.00127
	(A * C_N * D_N * X)	0.00072	0.00073	0.00073
	(A * C_N * !D_N * X)	-0.00139	-0.00139	-0.00139
	(A * C_N * !D_N * X)	0.00082	0.00082	0.00081
	(A * !C_N * D_N * X)	-0.00115	-0.00115	-0.00115
	(A * !C_N * D_N * X)	0.00097	0.00098	0.00097
	(A * !C_N * !D_N * X)	-0.00115	-0.00116	-0.00115
	(A * !C_N * !D_N * X)	0.00100	0.00101	0.00100
	(!A * C_N * !D_N * X)	-0.00134	-0.00133	-0.00130
	(!A * C_N * !D_N * X)	0.00114	0.00115	0.00114
	(!A * !C_N * D_N * X)	-0.00114	-0.00115	-0.00114
	(!A * !C_N * D_N * X)	0.00132	0.00134	0.00133
	(!A * !C_N * !D_N * X)	-0.00114	-0.00115	-0.00115
	(!A * !C_N * !D_N * X)	0.00132	0.00133	0.00132

sky130_fd_sc_hs__or4bb_4	(A * C_N * D_N * X)	-0.00122	-0.00122	-0.00123
	(A * C_N * D_N * X)	0.00159	0.00159	0.00159
	(A * C_N * !D_N * X)	-0.00149	-0.00150	-0.00150
	(A * C_N * !D_N * X)	0.00176	0.00177	0.00176
	(A * !C_N * D_N * X)	-0.00125	-0.00125	-0.00125
	(A * !C_N * D_N * X)	0.00184	0.00185	0.00184
	(A * !C_N * !D_N * X)	-0.00125	-0.00125	-0.00125
	(A * !C_N * !D_N * X)	0.00190	0.00191	0.00190
	(!A * C_N * !D_N * X)	-0.00141	-0.00138	-0.00132
	(!A * C_N * !D_N * X)	0.00238	0.00241	0.00239
	(!A * !C_N * D_N * X)	-0.00124	-0.00124	-0.00124
	(!A * !C_N * D_N * X)	0.00254	0.00257	0.00255
	(!A * !C_N * !D_N * X)	-0.00124	-0.00124	-0.00124
	(!A * !C_N * !D_N * X)	0.00253	0.00256	0.00254

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__or4bb_1	(B * X)	0.00362	0.00351	0.01010
	(B * X)	0.00082	0.00070	0.00731
	(A * !B * X) + (!A * !B * !D_N * X)	0.00368	0.00357	0.01013
	(A * !B * X) + (!A * !B * !D_N * X)	0.00084	0.00071	0.00730
sky130_fd_sc_hs__or4bb_2	(B * X)	0.00330	0.00321	0.00999
	(B * X)	0.00060	0.00051	0.00730
	(A * !B * X) + (!A * !B * !D_N * X)	0.00336	0.00327	0.01002
	(A * !B * X) + (!A * !B * !D_N * X)	0.00061	0.00051	0.00728
sky130_fd_sc_hs__or4bb_4	(B * X)	0.00402	0.00392	0.01035
	(B * X)	0.00116	0.00105	0.00749
	(A * !B * X) + (!A * !B * !D_N * X)	0.00418	0.00407	0.01044
	(A * !B * X) + (!A * !B * !D_N * X)	0.00121	0.00110	0.00749

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__or4bb_1	(B * X)	0.00091	0.00116	0.00842
	(B * X)	0.00369	0.00395	0.01120
	(A * !B * X) + (!A * !B * !D_N * X)	0.00092	0.00117	0.00842
	(A * !B * X) + (!A * !B * !D_N * X)	0.00370	0.00396	0.01121
sky130_fd_sc_hs__or4bb_2	(B * X)	0.00080	0.00109	0.00847
	(B * X)	0.00349	0.00379	0.01116
	(A * !B * X) + (!A * !B * !D_N * X)	0.00081	0.00109	0.00847
	(A * !B * X) + (!A * !B * !D_N * X)	0.00350	0.00380	0.01116
sky130_fd_sc_hs__or4bb_4	(B * X)	0.00148	0.00168	0.00854
	(B * X)	0.00434	0.00451	0.01138
	(A * !B * X) + (!A * !B * !D_N * X)	0.00149	0.00168	0.00854
	(A * !B * X) + (!A * !B * !D_N * X)	0.00435	0.00453	0.01139

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)	0.00317	0.00308	0.00979
	(B * C_N * X)	0.00066	0.00055	0.00729
	(A * !B * C_N * X)	0.00326	0.00317	0.00986
	(A * !B * C_N * X)	0.00071	0.00061	0.00733
	(!C_N * X)	0.00324	0.00315	0.00988
	(!C_N * X)	0.00074	0.00063	0.00738
sky130_fd_sc_hs__or4bb_2	(B * C_N * X)	0.00322	0.00311	0.00977
	(B * C_N * X)	0.00073	0.00062	0.00727
	(A * !B * C_N * X)	0.00330	0.00319	0.00983
	(A * !B * C_N * X)	0.00077	0.00066	0.00730
	(!C_N * X)	0.00330	0.00320	0.00986
	(!C_N * X)	0.00081	0.00070	0.00737
sky130_fd_sc_hs__or4bb_4	(B * C_N * X)	0.00462	0.00449	0.01067
	(B * C_N * X)	0.00175	0.00163	0.00782
	(A * !B * C_N * X)	0.00483	0.00470	0.01083
	(A * !B * C_N * X)	0.00189	0.00176	0.00792
	(!C_N * X)	0.00488	0.00475	0.01096
	(!C_N * X)	0.00203	0.00190	0.00812

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)	0.00090	0.00120	0.00853
	(B * C_N * X)	0.00342	0.00372	0.01103
	(A * !B * C_N * X)	0.00090	0.00120	0.00853
	(A * !B * C_N * X)	0.00342	0.00372	0.01103
	(!C_N * X)	0.00079	0.00108	0.00842
	(!C_N * X)	0.00330	0.00360	0.01092
sky130_fd_sc_hs__or4bb_2	(B * C_N * X)	0.00109	0.00137	0.00867
	(B * C_N * X)	0.00358	0.00387	0.01116
	(A * !B * C_N * X)	0.00109	0.00137	0.00867
	(A * !B * C_N * X)	0.00358	0.00387	0.01116
	(!C_N * X)	0.00097	0.00125	0.00855
	(!C_N * X)	0.00346	0.00374	0.01104
sky130_fd_sc_hs__or4bb_4	(B * C_N * X)	0.00178	0.00195	0.00872
	(B * C_N * X)	0.00462	0.00478	0.01156
	(A * !B * C_N * X)	0.00178	0.00195	0.00872
	(A * !B * C_N * X)	0.00463	0.00479	0.01156
	(!C_N * X)	0.00145	0.00161	0.00839
	(!C_N * X)	0.00429	0.00445	0.01122

SKY130_FD_SC_HS__OR4Bx

sky130_fd_sc_hs_tt_1.50v_25C.ccs
Cell Library: Process , Voltage
1.50, 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	0.00249	0.00238	0.00246	0.00233	0.83083
sky130_fd_sc_hs__or4b_2	0.00258	0.00248	0.00249	0.00221	1.49860
sky130_fd_sc_hs__or4b_4	0.00378	0.00430	0.00433	0.00242	3.21821

Leakage Information

Cell Name	Leakage(nW)		
	Min.	Avg	Max.
sky130_fd_sc_hs__or4b_1	0.00000	0.09425	0.19166
sky130_fd_sc_hs__or4b_2	0.00000	0.10136	0.23557
sky130_fd_sc_hs__or4b_4	0.00000	0.08721	0.21185

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)	0.09073	0.76032	6.99628
	B->X (RR)	0.09021	0.75176	6.94185
	C->X (RR)	0.08719	0.73569	6.86396
	D_N->X (FR)	0.15622	0.91604	8.28687
sky130_fd_sc_hs__or4b_2	A->X (RR)	0.08405	0.65005	6.84820
	B->X (RR)	0.08426	0.64260	6.79752
	C->X (RR)	0.08189	0.62984	6.73521
	D_N->X (FR)	0.16565	0.83622	8.29278
sky130_fd_sc_hs__or4b_4	A->X (RR)	0.11504	0.64880	7.42399
	B->X (RR)	0.11535	0.63834	7.35428
	C->X (RR)	0.10729	0.61418	7.25979
	D_N->X (FR)	0.19287	0.80519	8.69076

Delay(ns) to X falling :

Cell Name	Timing Arc(Dir)	Delay(ns)		
		First	Mid	Last
sky130_fd_sc_hs__or4b_1	A->X (FF)	0.41446	0.98624	5.06811
	B->X (FF)	0.38867	0.96304	5.15685
	C->X (FF)	0.35202	0.93433	5.18742
	D_N->X (RF)	0.30612	0.67438	2.65037
sky130_fd_sc_hs__or4b_2	A->X (FF)	0.50842	1.06763	5.18402
	B->X (FF)	0.48350	1.04657	5.30955
	C->X (FF)	0.43852	1.01226	5.35881
	D_N->X (RF)	0.40944	0.76441	2.62798
sky130_fd_sc_hs__or4b_4	A->X (FF)	0.50135	1.03933	5.33050
	B->X (FF)	0.48462	1.01924	5.42044
	C->X (FF)	0.42273	0.96276	5.43347
	D_N->X (RF)	0.37693	0.70380	2.75438

Power Information

Internal switching power(pJ) to X rising :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__or4b_1	A	0.00856	0.00838	0.01019
	A	0.00430	0.00414	0.00597
	B	0.00732	0.00732	0.00941
	B	0.00378	0.00379	0.00591
	C	0.00627	0.00627	0.00855
	C	0.00314	0.00313	0.00545
	D_N	0.00556	0.00609	0.01339
	D_N	0.00740	0.00793	0.01524
sky130_fd_sc_hs__or4b_2	A	0.01063	0.01065	0.01291
	A	0.00633	0.00636	0.00866
	B	0.00942	0.00967	0.01223
	B	0.00580	0.00608	0.00865
	C	0.00832	0.00859	0.01123
	C	0.00509	0.00539	0.00835
	D_N	0.00770	0.00835	0.01536
	D_N	0.00966	0.01034	0.01735
sky130_fd_sc_hs__or4b_4	A	0.01965	0.02005	0.02426
	A	0.01233	0.01277	0.01711
	B	0.01762	0.01798	0.02223
	B	0.01112	0.01151	0.01595
	C	0.01480	0.01528	0.01986
	C	0.00932	0.00983	0.01467
	D_N	0.01333	0.01464	0.02121
	D_N	0.01512	0.01647	0.02304

Internal switching power(pJ) to X falling :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__or4b_1	A	0.00407	0.00374	0.00523
	A	0.00838	0.00825	0.00927
	B	0.00406	0.00404	0.00598
	B	0.00762	0.00760	0.00913
	C	0.00396	0.00390	0.00617
	C	0.00710	0.00711	0.00905
	D_N	0.00816	0.00820	0.01510
	D_N	0.00630	0.00635	0.01319
sky130_fd_sc_hs__or4b_2	A	0.00566	0.00538	0.00718
	A	0.01003	0.00987	0.01094
	B	0.00564	0.00558	0.00769
	B	0.00928	0.00923	0.01079
	C	0.00547	0.00548	0.00839
	C	0.00870	0.00869	0.01069
	D_N	0.01047	0.01023	0.01640
	D_N	0.00849	0.00830	0.01437
sky130_fd_sc_hs__or4b_4	A	0.01218	0.01253	0.01552
	A	0.01968	0.02009	0.02173
	B	0.01210	0.01234	0.01486
	B	0.01869	0.01899	0.02127
	C	0.01166	0.01197	0.01545
	C	0.01714	0.01744	0.02089
	D_N	0.01765	0.01795	0.02495
	D_N	0.01586	0.01617	0.02271

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)**	0.00103	0.00103	0.00103
	(B * C * D_N * X)	-0.00117	-0.00120	-0.00121
	(B * !D_N * X)	0.00103	0.00102	0.00102
	(B * !D_N * X)	-0.00118	-0.00121	-0.00121
	(B * !C * D_N * X)	0.00103	0.00103	0.00103
	(B * !C * D_N * X)	-0.00116	-0.00120	-0.00121
	(!B * C * D_N * X)	0.00103	0.00104	0.00103
	(!B * C * D_N * X)	-0.00109	-0.00117	-0.00116
	(!B * C * !D_N * X)	0.00102	0.00104	0.00102
	(!B * C * !D_N * X)	-0.00109	-0.00117	-0.00116
	(!B * !C * !D_N * X)	0.00103	0.00104	0.00102
	(!B * !C * !D_N * X)	-0.00107	-0.00115	-0.00115
sky130_fd_sc_hs__or4b_2	**(B * C * D_N * X)**	0.00112	0.00112	0.00112
	(B * C * D_N * X)	-0.00119	-0.00122	-0.00122
	(B * !D_N * X)	0.00108	0.00108	0.00108
	(B * !D_N * X)	-0.00123	-0.00126	-0.00126
	(B * !C * D_N * X)	0.00113	0.00112	0.00112
	(B * !C * D_N * X)	-0.00117	-0.00122	-0.00122
	(!B * C * D_N * X)	0.00112	0.00113	0.00112
	(!B * C * D_N * X)	-0.00110	-0.00118	-0.00118
	(!B * C * !D_N * X)	0.00108	0.00109	0.00108
	(!B * C * !D_N * X)	-0.00114	-0.00122	-0.00121
	(!B * !C * !D_N * X)	0.00108	0.00109	0.00108
	(!B * !C * !D_N * X)	-0.00113	-0.00120	-0.00120

sky130_fd_sc_hs__or4b_4	**(B * C * D_N * X)**	0.00111	0.00111	0.00111
	(B * C * D_N * X)	-0.00240	-0.00247	-0.00247
	(B * !D_N * X)	0.00110	0.00111	0.00110
	(B * !D_N * X)	-0.00241	-0.00247	-0.00248
	(B * !C * D_N * X)	0.00113	0.00111	0.00111
	(B * !C * D_N * X)	-0.00235	-0.00247	-0.00247
	(!B * C * D_N * X)	0.00112	0.00111	0.00111
	(!B * C * D_N * X)	-0.00221	-0.00238	-0.00237
	(!B * C * !D_N * X)	0.00110	0.00110	0.00110
	(!B * C * !D_N * X)	-0.00222	-0.00239	-0.00237
	(!B * !C * !D_N * X)	0.00111	0.00112	0.00110
	(!B * !C * !D_N * X)	-0.00219	-0.00235	-0.00234

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)**	-0.00102	-0.00103	-0.00102
	(B * C * D_N * X)	0.00120	0.00122	0.00121
	(B * !D_N * X)	-0.00102	-0.00102	-0.00102
	(B * !D_N * X)	0.00120	0.00122	0.00121
	(B * !C * D_N * X)	-0.00102	-0.00103	-0.00102
	(B * !C * D_N * X)	0.00121	0.00122	0.00121
	(!B * C * D_N * X)	-0.00102	-0.00103	-0.00102
	(!B * C * D_N * X)	0.00117	0.00117	0.00116
	(!B * C * !D_N * X)	-0.00102	-0.00103	-0.00102
	(!B * C * !D_N * X)	0.00116	0.00117	0.00116
	(!B * !C * !D_N * X)	-0.00102	-0.00102	-0.00102
	(!B * !C * !D_N * X)	0.00115	0.00115	0.00115

sky130_fd_sc_hs__or4b_2	**(B * C * D_N * X)**	-0.00111	-0.00112	-0.00112
	(B * C * D_N * X)	0.00122	0.00123	0.00122
	(B * !D_N * X)	-0.00108	-0.00108	-0.00108
	(B * !D_N * X)	0.00125	0.00127	0.00126
	(B * !C * D_N * X)	-0.00111	-0.00112	-0.00112
	(B * !C * D_N * X)	0.00122	0.00123	0.00122
	(!B * C * D_N * X)	-0.00112	-0.00112	-0.00112
	(!B * C * D_N * X)	0.00118	0.00118	0.00118
	(!B * C * !D_N * X)	-0.00108	-0.00108	-0.00108
	(!B * C * !D_N * X)	0.00122	0.00122	0.00121
	(!B * !C * !D_N * X)	-0.00108	-0.00108	-0.00108
	(!B * !C * !D_N * X)	0.00120	0.00120	0.00120
sky130_fd_sc_hs__or4b_4	**(B * C * D_N * X)**	-0.00110	-0.00110	-0.00110
	(B * C * D_N * X)	0.00247	0.00247	0.00247
	(B * !D_N * X)	-0.00110	-0.00110	-0.00110
	(B * !D_N * X)	0.00248	0.00247	0.00248
	(B * !C * D_N * X)	-0.00110	-0.00111	-0.00110
	(B * !C * D_N * X)	0.00247	0.00249	0.00247
	(!B * C * D_N * X)	-0.00111	-0.00111	-0.00111
	(!B * C * D_N * X)	0.00236	0.00238	0.00237
	(!B * C * !D_N * X)	-0.00110	-0.00110	-0.00110
	(!B * C * !D_N * X)	0.00237	0.00239	0.00237
	(!B * !C * !D_N * X)	-0.00110	-0.00110	-0.00110
	(!B * !C * !D_N * X)	0.00233	0.00235	0.00234

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)**	0.00094	0.00095	0.00091
	(A * C * D_N * X)	-0.00081	-0.00082	-0.00081
	(A * C * !D_N * X)	0.00090	0.00091	0.00090
	(A * C * !D_N * X)	-0.00084	-0.00084	-0.00084
	(A * !C * D_N * X)	0.00090	0.00091	0.00090
	(A * !C * D_N * X)	-0.00069	-0.00070	-0.00069
	(A * !C * !D_N * X)	0.00090	0.00091	0.00090
	(A * !C * !D_N * X)	-0.00080	-0.00081	-0.00080
	(!A * C * D_N * X)	0.00097	0.00090	0.00089
	(!A * C * D_N * X)	-0.00109	-0.00118	-0.00118
	(!A * C * !D_N * X)	0.00090	0.00090	0.00089
	(!A * C * !D_N * X)	-0.00116	-0.00118	-0.00117
	(!A * !C * !D_N * X)	0.00092	0.00090	0.00089
	(!A * !C * !D_N * X)	-0.00102	-0.00113	-0.00113
sky130_fd_sc_hs__or4b_2	**(A * C * D_N * X)**	0.00103	0.00106	0.00102
	(A * C * D_N * X)	-0.00082	-0.00083	-0.00082
	(A * C * !D_N * X)	0.00097	0.00098	0.00097
	(A * C * !D_N * X)	-0.00089	-0.00089	-0.00089
	(A * !C * D_N * X)	0.00101	0.00102	0.00101
	(A * !C * D_N * X)	-0.00071	-0.00071	-0.00070
	(A * !C * !D_N * X)	0.00097	0.00098	0.00097
	(A * !C * !D_N * X)	-0.00085	-0.00086	-0.00085
	(!A * C * D_N * X)	0.00106	0.00101	0.00100
	(!A * C * D_N * X)	-0.00111	-0.00119	-0.00119
	(!A * C * !D_N * X)	0.00097	0.00098	0.00097
	(!A * C * !D_N * X)	-0.00120	-0.00122	-0.00122
	(!A * !C * !D_N * X)	0.00100	0.00098	0.00097
	(!A * !C * !D_N * X)	-0.00107	-0.00118	-0.00117

sky130_fd_sc_hs__or4b_4	**(A * C * D_N * X)**	0.00145	0.00147	0.00143
	(A * C * D_N * X)	-0.00173	-0.00174	-0.00174
	(A * C * !D_N * X)	0.00139	0.00140	0.00139
	(A * C * !D_N * X)	-0.00183	-0.00185	-0.00184
	(A * !C * D_N * X)	0.00140	0.00142	0.00140
	(A * !C * D_N * X)	-0.00151	-0.00152	-0.00150
	(A * !C * !D_N * X)	0.00138	0.00139	0.00138
	(A * !C * !D_N * X)	-0.00174	-0.00176	-0.00175
	(!A * C * D_N * X)	0.00150	0.00140	0.00138
	(!A * C * D_N * X)	-0.00233	-0.00249	-0.00248
	(!A * C * !D_N * X)	0.00139	0.00139	0.00138
	(!A * C * !D_N * X)	-0.00243	-0.00250	-0.00249
	(!A * !C * !D_N * X)	0.00144	0.00139	0.00138
	(!A * !C * !D_N * X)	-0.00220	-0.00240	-0.00239

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)**	-0.00089	-0.00090	-0.00089
	(A * C * D_N * X)	0.00081	0.00082	0.00081
	(A * C * !D_N * X)	-0.00089	-0.00090	-0.00090
	(A * C * !D_N * X)	0.00084	0.00084	0.00084
	(A * !C * D_N * X)	-0.00086	-0.00087	-0.00086
	(A * !C * D_N * X)	0.00073	0.00073	0.00073
	(A * !C * !D_N * X)	-0.00089	-0.00090	-0.00089
	(A * !C * !D_N * X)	0.00080	0.00081	0.00080
	(!A * C * D_N * X)	-0.00089	-0.00089	-0.00089
	(!A * C * D_N * X)	0.00118	0.00118	0.00118
	(!A * C * !D_N * X)	-0.00089	-0.00089	-0.00089
	(!A * C * !D_N * X)	0.00117	0.00118	0.00117
	(!A * !C * !D_N * X)	-0.00089	-0.00089	-0.00089
	(!A * !C * !D_N * X)	0.00112	0.00113	0.00113
sky130_fd_sc_hs__or4b_2	**(A * C * D_N * X)**	-0.00100	-0.00101	-0.00100
	(A * C * D_N * X)	0.00082	0.00083	0.00082
	(A * C * !D_N * X)	-0.00097	-0.00097	-0.00097
	(A * C * !D_N * X)	0.00089	0.00089	0.00089
	(A * !C * D_N * X)	-0.00099	-0.00099	-0.00098
	(A * !C * D_N * X)	0.00072	0.00073	0.00072
	(A * !C * !D_N * X)	-0.00097	-0.00097	-0.00097
	(A * !C * !D_N * X)	0.00085	0.00086	0.00085
	(!A * C * D_N * X)	-0.00100	-0.00100	-0.00100
	(!A * C * D_N * X)	0.00119	0.00120	0.00119
	(!A * C * !D_N * X)	-0.00097	-0.00097	-0.00097
	(!A * C * !D_N * X)	0.00122	0.00122	0.00122
	(!A * !C * !D_N * X)	-0.00097	-0.00097	-0.00096
	(!A * !C * !D_N * X)	0.00117	0.00118	0.00117

sky130_fd_sc_hs__or4b_4	(A * C * D_N * X)	-0.00140	-0.00141	-0.00141
	(A * C * D_N * X)	0.00173	0.00174	0.00174
	(A * C * !D_N * X)	-0.00137	-0.00138	-0.00138
	(A * C * !D_N * X)	0.00183	0.00185	0.00184
	(A * !C * D_N * X)	-0.00137	-0.00139	-0.00138
	(A * !C * D_N * X)	0.00152	0.00154	0.00152
	(A * !C * !D_N * X)	-0.00137	-0.00138	-0.00137
	(A * !C * !D_N * X)	0.00174	0.00176	0.00175
	(!A * C * D_N * X)	-0.00139	-0.00139	-0.00138
	(!A * C * D_N * X)	0.00247	0.00249	0.00248
	(!A * C * !D_N * X)	-0.00138	-0.00138	-0.00138
	(!A * C * !D_N * X)	0.00248	0.00250	0.00249
	(!A * !C * !D_N * X)	-0.00137	-0.00137	-0.00136
	(!A * !C * !D_N * X)	0.00239	0.00240	0.00239

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)	0.00108	0.00109	0.00107
	(B * D_N * X)	-0.00069	-0.00069	-0.00068
	(B * !D_N * X)	0.00104	0.00106	0.00100
	(B * !D_N * X)	-0.00087	-0.00088	-0.00088
	(A * !B * D_N * X)	0.00107	0.00109	0.00107
	(A * !B * D_N * X)	-0.00067	-0.00069	-0.00068
	(A * !B * !D_N * X)	0.00108	0.00101	0.00098
	(A * !B * !D_N * X)	-0.00090	-0.00091	-0.00091
	(!A * !B * !D_N * X)	0.00119	0.00099	0.00098
	(!A * !B * !D_N * X)	-0.00104	-0.00125	-0.00126

sky130_fd_sc_hs__or4b_2	**(B * D_N * X)**	0.00117	0.00120	0.00118
	(B * D_N * X)	-0.00070	-0.00071	-0.00070
	(B * !D_N * X)	0.00100	0.00101	0.00097
	(B * !D_N * X)	-0.00103	-0.00104	-0.00104
	(A * !B * D_N * X)	0.00118	0.00120	0.00118
	(A * !B * D_N * X)	-0.00069	-0.00071	-0.00070
	(A * !B * !D_N * X)	0.00104	0.00098	0.00096
	(A * !B * !D_N * X)	-0.00106	-0.00106	-0.00106
	(!A * !B * !D_N * X)	0.00118	0.00097	0.00096
	(!A * !B * !D_N * X)	-0.00120	-0.00139	-0.00141
sky130_fd_sc_hs__or4b_4	**(B * D_N * X)**	0.00173	0.00176	0.00173
	(B * D_N * X)	-0.00144	-0.00147	-0.00145
	(B * !D_N * X)	0.00149	0.00146	0.00142
	(B * !D_N * X)	-0.00204	-0.00205	-0.00205
	(A * !B * D_N * X)	0.00174	0.00177	0.00174
	(A * !B * D_N * X)	-0.00143	-0.00146	-0.00144
	(A * !B * !D_N * X)	0.00155	0.00144	0.00140
	(A * !B * !D_N * X)	-0.00206	-0.00209	-0.00207
	(!A * !B * !D_N * X)	0.00179	0.00143	0.00140
	(!A * !B * !D_N * X)	-0.00235	-0.00275	-0.00278

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)**	-0.00105	-0.00106	-0.00105
	(B * D_N * X)	0.00070	0.00071	0.00071
	(B * !D_N * X)	-0.00097	-0.00098	-0.00098
	(B * !D_N * X)	0.00087	0.00088	0.00088
	(A * !B * D_N * X)	-0.00100	-0.00101	-0.00105
	(A * !B * D_N * X)	0.00072	0.00073	0.00070
	(A * !B * !D_N * X)	-0.00098	-0.00098	-0.00098
	(A * !B * !D_N * X)	0.00091	0.00091	0.00091
	(!A * !B * !D_N * X)	-0.00097	-0.00097	-0.00096
	(!A * !B * !D_N * X)	0.00127	0.00127	0.00127
sky130_fd_sc_hs__or4b_2	**(B * D_N * X)**	-0.00116	-0.00117	-0.00116
	(B * D_N * X)	0.00073	0.00073	0.00073
	(B * !D_N * X)	-0.00096	-0.00096	-0.00096
	(B * !D_N * X)	0.00103	0.00104	0.00104
	(A * !B * D_N * X)	-0.00111	-0.00111	-0.00116
	(A * !B * D_N * X)	0.00074	0.00073	0.00072
	(A * !B * !D_N * X)	-0.00096	-0.00096	-0.00096
	(A * !B * !D_N * X)	0.00106	0.00106	0.00106
	(!A * !B * !D_N * X)	-0.00096	-0.00096	-0.00095
	(!A * !B * !D_N * X)	0.00142	0.00142	0.00141
sky130_fd_sc_hs__or4b_4	**(B * D_N * X)**	-0.00168	-0.00170	-0.00170
	(B * D_N * X)	0.00149	0.00151	0.00150
	(B * !D_N * X)	-0.00140	-0.00141	-0.00140
	(B * !D_N * X)	0.00204	0.00205	0.00205
	(A * !B * D_N * X)	-0.00155	-0.00157	-0.00169
	(A * !B * D_N * X)	0.00155	0.00155	0.00148
	(A * !B * !D_N * X)	-0.00140	-0.00141	-0.00140
	(A * !B * !D_N * X)	0.00206	0.00209	0.00207
	(!A * !B * !D_N * X)	-0.00139	-0.00139	-0.00138
	(!A * !B * !D_N * X)	0.00279	0.00280	0.00279

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__or4b_1	(C * X)	0.00326	0.00315	0.00996
	(C * X)	0.00056	0.00044	0.00726
	(B * !C * X)	0.00332	0.00321	0.01000
	(B * !C * X)	0.00059	0.00047	0.00727
	(A * !B * !C * X)	0.00341	0.00330	0.01007
	(A * !B * !C * X)	0.00064	0.00052	0.00731
sky130_fd_sc_hs__or4b_2	(C * X)	0.00366	0.00355	0.01010
	(C * X)	0.00089	0.00076	0.00733
	(B * !C * X)	0.00372	0.00361	0.01015
	(B * !C * X)	0.00092	0.00079	0.00735
	(A * !B * !C * X)	0.00381	0.00369	0.01021
	(A * !B * !C * X)	0.00096	0.00083	0.00738
sky130_fd_sc_hs__or4b_4	(C * X)	0.00436	0.00427	0.01064
	(C * X)	0.00133	0.00122	0.00762
	(B * !C * X)	0.00454	0.00445	0.01077
	(B * !C * X)	0.00142	0.00131	0.00767
	(A * !B * !C * X)	0.00472	0.00462	0.01090
	(A * !B * !C * X)	0.00152	0.00141	0.00773

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__or4b_1	(C * X)	0.00078	0.00116	0.00845
	(C * X)	0.00347	0.00387	0.01115
	(B * !C * X)	0.00078	0.00116	0.00845
	(B * !C * X)	0.00347	0.00387	0.01115
	(A * !B * !C * X)	0.00078	0.00116	0.00845
	(A * !B * !C * X)	0.00347	0.00388	0.01115
sky130_fd_sc_hs__or4b_2	(C * X)	0.00092	0.00118	0.00844
	(C * X)	0.00368	0.00396	0.01121
	(B * !C * X)	0.00092	0.00119	0.00844
	(B * !C * X)	0.00369	0.00397	0.01121
	(A * !B * !C * X)	0.00092	0.00119	0.00844
	(A * !B * !C * X)	0.00369	0.00397	0.01121
sky130_fd_sc_hs__or4b_4	(C * X)	0.00140	0.00158	0.00848
	(C * X)	0.00442	0.00459	0.01150
	(B * !C * X)	0.00140	0.00158	0.00848
	(B * !C * X)	0.00443	0.00460	0.01151
	(A * !B * !C * X)	0.00140	0.00158	0.00848
	(A * !B * !C * X)	0.00443	0.00461	0.01151

SKY130_FD_SC_HS__OR4x

sky130_fd_sc_hs_tt_1.50v_25C.ccs
Cell Library: Process , Voltage
1.50, 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	0.00247	0.00235	0.00240	0.00234	0.82513
sky130_fd_sc_hs__or4_2	0.00257	0.00254	0.00265	0.00263	1.68731
sky130_fd_sc_hs__or4_4	0.00374	0.00433	0.00439	0.00413	3.20397

Leakage Information

Cell Name	Leakage(nW)		
	Min.	**Avg**	**Max.**
sky130_fd_sc_hs__or4_1	0.00000	0.01734	0.07896
sky130_fd_sc_hs__or4_2	0.00000	0.02445	0.08445
sky130_fd_sc_hs__or4_4	0.00000	0.04694	0.16722

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)	0.08727	0.75615	6.96556
	B->X (RR)	0.08761	0.74651	6.90599
	C->X (RR)	0.08460	0.72933	6.82841
	D->X (RR)	0.07809	0.70765	6.75555
sky130_fd_sc_hs__or4_2	A->X (RR)	0.08186	0.63820	6.99281
	B->X (RR)	0.08182	0.62947	6.93783
	C->X (RR)	0.07996	0.61648	6.87876
	D->X (RR)	0.07527	0.59992	6.83591
sky130_fd_sc_hs__or4_4	A->X (RR)	0.10550	0.62974	7.36349
	B->X (RR)	0.10984	0.62550	7.31547
	C->X (RR)	0.10147	0.59854	7.21190
	D->X (RR)	0.09374	0.57413	7.14907

Delay(ns) to X falling :

Cell Name	Timing Arc(Dir)	Delay(ns)		
		First	Mid	Last
sky130_fd_sc_hs__or4_1	A->X (FF)	0.39925	0.96460	4.98107
	B->X (FF)	0.37433	0.94155	5.06385
	C->X (FF)	0.33109	0.90563	5.08374
	D->X (FF)	0.26081	0.82507	4.79586
sky130_fd_sc_hs__or4_2	A->X (FF)	0.48977	1.05485	5.40922
	B->X (FF)	0.46455	1.03140	5.51666
	C->X (FF)	0.42744	1.00466	5.58215
	D->X (FF)	0.36210	0.92439	5.32277
sky130_fd_sc_hs__or4_4	A->X (FF)	0.47910	1.00860	5.26675
	B->X (FF)	0.46514	0.98987	5.32489
	C->X (FF)	0.40529	0.93457	5.34942
	D->X (FF)	0.31967	0.83888	5.03321

Power Information

Internal switching power(pJ) to X rising :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__or4_1	A	0.00943	0.00924	0.01108
	A	0.00436	0.00418	0.00603
	B	0.00819	0.00818	0.01035
	B	0.00380	0.00379	0.00597
	C	0.00693	0.00691	0.00914
	C	0.00308	0.00307	0.00531
	D	0.00571	0.00571	0.00902
	D	0.00239	0.00257	0.00671
sky130_fd_sc_hs__or4_2	A	0.01143	0.01144	0.01388
	A	0.00613	0.00615	0.00859
	B	0.01014	0.01037	0.01316
	B	0.00547	0.00572	0.00851
	C	0.00901	0.00927	0.01212
	C	0.00489	0.00516	0.00810
	D	0.00781	0.00806	0.01211
	D	0.00420	0.00446	0.00855
sky130_fd_sc_hs__or4_4	A	0.02151	0.02191	0.02612
	A	0.01272	0.01312	0.01751
	B	0.01949	0.01952	0.02329
	B	0.01144	0.01149	0.01550
	C	0.01645	0.01689	0.02146
	C	0.00965	0.01013	0.01496
	D	0.01371	0.01426	0.02128
	D	0.00811	0.00870	0.01589

Internal switching power(pJ) to X falling :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__or4_1	A	0.00279	0.00263	0.00369
	A	0.00794	0.00783	0.00884
	B	0.00280	0.00275	0.00479
	B	0.00723	0.00722	0.00873
	C	0.00280	0.00279	0.00523
	C	0.00667	0.00667	0.00867
	D	0.00272	0.00292	0.00720
	D	0.00604	0.00628	0.01046
sky130_fd_sc_hs__or4_2	A	0.00473	0.00474	0.00599
	A	0.01012	0.01017	0.01137
	B	0.00478	0.00460	0.00656
	B	0.00949	0.00956	0.01126
	C	0.00474	0.00476	0.00704
	C	0.00887	0.00896	0.01111
	D	0.00469	0.00495	0.01039
	D	0.00829	0.00866	0.01307
sky130_fd_sc_hs__or4_4	A	0.00941	0.00964	0.01237
	A	0.01845	0.01897	0.02065
	B	0.00933	0.00946	0.01197
	B	0.01752	0.01791	0.02015
	C	0.00933	0.00948	0.01495
	C	0.01615	0.01648	0.02003
	D	0.00905	0.00961	0.01925
	D	0.01464	0.01529	0.02304

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

Cell Name	When	Power(pJ)		
		first	mid	last

sky130_fd_sc_hs__or4_1	**(B * D * X)**	0.00101	0.00101	0.00101
	(B * D * X)	-0.00119	-0.00122	-0.00122
	(B * C * !D * X)	0.00101	0.00101	0.00101
	(B * C * !D * X)	-0.00119	-0.00122	-0.00122
	(B * !C * !D * X)	0.00101	0.00101	0.00101
	(B * !C * !D * X)	-0.00118	-0.00122	-0.00122
	(!B * C * D * X)	0.00101	0.00102	0.00101
	(!B * C * D * X)	-0.00110	-0.00118	-0.00117
	(!B * C * !D * X)	0.00101	0.00102	0.00101
	(!B * C * !D * X)	-0.00111	-0.00118	-0.00117
	(!B * !C * D * X)	0.00101	0.00102	0.00101
	(!B * !C * D * X)	-0.00108	-0.00116	-0.00116
sky130_fd_sc_hs__or4_2	**(B * D * X)**	0.00110	0.00110	0.00110
	(B * D * X)	-0.00121	-0.00124	-0.00124
	(B * C * !D * X)	0.00110	0.00110	0.00110
	(B * C * !D * X)	-0.00121	-0.00124	-0.00124
	(B * !C * !D * X)	0.00110	0.00110	0.00110
	(B * !C * !D * X)	-0.00119	-0.00123	-0.00124
	(!B * C * D * X)	0.00110	0.00112	0.00110
	(!B * C * D * X)	-0.00112	-0.00120	-0.00119
	(!B * C * !D * X)	0.00110	0.00112	0.00110
	(!B * C * !D * X)	-0.00112	-0.00120	-0.00119
	(!B * !C * D * X)	0.00111	0.00112	0.00110
	(!B * !C * D * X)	-0.00110	-0.00118	-0.00117

sky130_fd_sc_hs__or4_4	**(B * D * X)**	0.00111	0.00111	0.00111
	(B * D * X)	-0.00238	-0.00243	-0.00245
	(B * C * !D * X)	0.00112	0.00111	0.00111
	(B * C * !D * X)	-0.00238	-0.00243	-0.00245
	(B * !C * !D * X)	0.00112	0.00112	0.00111
	(B * !C * !D * X)	-0.00234	-0.00244	-0.00244
	(!B * C * D * X)	0.00112	0.00111	0.00111
	(!B * C * D * X)	-0.00219	-0.00236	-0.00234
	(!B * C * !D * X)	0.00112	0.00111	0.00111
	(!B * C * !D * X)	-0.00219	-0.00236	-0.00234
	(!B * !C * D * X)	0.00112	0.00113	0.00111
	(!B * !C * D * X)	-0.00215	-0.00231	-0.00231

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

Cell Name	**When**	**Power(pJ)**		
		first	**mid**	**last**
sky130_fd_sc_hs__or4_1	**(B * D * X)**	-0.00101	-0.00101	-0.00101
	(B * D * X)	0.00121	0.00123	0.00122
	(B * C * !D * X)	-0.00101	-0.00101	-0.00101
	(B * C * !D * X)	0.00121	0.00123	0.00122
	(B * !C * !D * X)	-0.00101	-0.00101	-0.00101
	(B * !C * !D * X)	0.00122	0.00123	0.00122
	(!B * C * D * X)	-0.00101	-0.00101	-0.00101
	(!B * C * D * X)	0.00118	0.00118	0.00117
	(!B * C * !D * X)	-0.00101	-0.00101	-0.00101
	(!B * C * !D * X)	0.00118	0.00118	0.00117
	(!B * !C * D * X)	-0.00101	-0.00101	-0.00101
	(!B * !C * D * X)	0.00116	0.00116	0.00116

sky130_fd_sc_hs__or4_2	**(B * D * X)**	-0.00110	-0.00110	-0.00110
	(B * D * X)	0.00123	0.00125	0.00124
	(B * C * !D * X)	-0.00110	-0.00110	-0.00110
	(B * C * !D * X)	0.00123	0.00125	0.00124
	(B * !C * !D * X)	-0.00110	-0.00110	-0.00110
	(B * !C * !D * X)	0.00124	0.00125	0.00124
	(!B * C * D * X)	-0.00110	-0.00111	-0.00110
	(!B * C * D * X)	0.00120	0.00120	0.00119
	(!B * C * !D * X)	-0.00110	-0.00111	-0.00110
	(!B * C * !D * X)	0.00120	0.00120	0.00119
	(!B * !C * D * X)	-0.00110	-0.00110	-0.00110
	(!B * !C * D * X)	0.00118	0.00118	0.00117
sky130_fd_sc_hs__or4_4	**(B * D * X)**	-0.00111	-0.00110	-0.00111
	(B * D * X)	0.00245	0.00243	0.00245
	(B * C * !D * X)	-0.00111	-0.00111	-0.00111
	(B * C * !D * X)	0.00245	0.00243	0.00245
	(B * !C * !D * X)	-0.00111	-0.00111	-0.00111
	(B * !C * !D * X)	0.00245	0.00244	0.00244
	(!B * C * D * X)	-0.00111	-0.00111	-0.00111
	(!B * C * D * X)	0.00233	0.00236	0.00234
	(!B * C * !D * X)	-0.00111	-0.00111	-0.00111
	(!B * C * !D * X)	0.00233	0.00236	0.00234
	(!B * !C * D * X)	-0.00110	-0.00111	-0.00111
	(!B * !C * D * X)	0.00229	0.00231	0.00231

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)**	0.00089	0.00091	0.00090
	(A * C * D * X)	-0.00088	-0.00088	-0.00088
	(A * C * !D * X)	0.00091	0.00092	0.00090
	(A * C * !D * X)	-0.00085	-0.00085	-0.00085
	(A * !C * D * X)	0.00089	0.00090	0.00089
	(A * !C * D * X)	-0.00083	-0.00084	-0.00083
	(A * !C * !D * X)	0.00090	0.00091	0.00089
	(A * !C * !D * X)	-0.00072	-0.00073	-0.00072
	(!A * C * D * X)	0.00090	0.00090	0.00089
	(!A * C * D * X)	-0.00117	-0.00120	-0.00120
	(!A * C * !D * X)	0.00093	0.00090	0.00089
	(!A * C * !D * X)	-0.00112	-0.00121	-0.00120
	(!A * !C * D * X)	0.00092	0.00090	0.00089
	(!A * !C * D * X)	-0.00104	-0.00115	-0.00115
sky130_fd_sc_hs__or4_2	**(A * C * D * X)**	0.00098	0.00100	0.00098
	(A * C * D * X)	-0.00093	-0.00093	-0.00093
	(A * C * !D * X)	0.00101	0.00103	0.00099
	(A * C * !D * X)	-0.00090	-0.00091	-0.00090
	(A * !C * D * X)	0.00098	0.00099	0.00098
	(A * !C * D * X)	-0.00088	-0.00089	-0.00088
	(A * !C * !D * X)	0.00099	0.00100	0.00098
	(A * !C * !D * X)	-0.00078	-0.00079	-0.00078
	(!A * C * D * X)	0.00099	0.00099	0.00098
	(!A * C * D * X)	-0.00124	-0.00126	-0.00126
	(!A * C * !D * X)	0.00104	0.00099	0.00098
	(!A * C * !D * X)	-0.00118	-0.00127	-0.00126
	(!A * !C * D * X)	0.00101	0.00099	0.00098
	(!A * !C * D * X)	-0.00110	-0.00121	-0.00121

sky130_fd_sc_hs__or4_4	**(A * C * D * X)**	0.00144	0.00145	0.00144
	(A * C * D * X)	-0.00183	-0.00183	-0.00182
	(A * C * !D * X)	0.00145	0.00147	0.00144
	(A * C * !D * X)	-0.00173	-0.00175	-0.00174
	(A * !C * D * X)	0.00142	0.00144	0.00143
	(A * !C * D * X)	-0.00170	-0.00173	-0.00172
	(A * !C * !D * X)	0.00143	0.00145	0.00142
	(A * !C * !D * X)	-0.00151	-0.00152	-0.00150
	(!A * C * D * X)	0.00144	0.00143	0.00142
	(!A * C * D * X)	-0.00239	-0.00248	-0.00247
	(!A * C * !D * X)	0.00148	0.00143	0.00142
	(!A * C * !D * X)	-0.00233	-0.00248	-0.00247
	(!A * !C * D * X)	0.00148	0.00143	0.00142
	(!A * !C * D * X)	-0.00216	-0.00237	-0.00236

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)**	-0.00089	-0.00089	-0.00089
	(A * C * D * X)	0.00088	0.00088	0.00088
	(A * C * !D * X)	-0.00089	-0.00089	-0.00089
	(A * C * !D * X)	0.00085	0.00085	0.00085
	(A * !C * D * X)	-0.00089	-0.00090	-0.00089
	(A * !C * D * X)	0.00083	0.00084	0.00083
	(A * !C * !D * X)	-0.00086	-0.00086	-0.00085
	(A * !C * !D * X)	0.00075	0.00076	0.00076
	(!A * C * D * X)	-0.00089	-0.00089	-0.00089
	(!A * C * D * X)	0.00120	0.00120	0.00120
	(!A * C * !D * X)	-0.00089	-0.00089	-0.00089
	(!A * C * !D * X)	0.00120	0.00121	0.00120
	(!A * !C * D * X)	-0.00089	-0.00089	-0.00088
	(!A * !C * D * X)	0.00115	0.00115	0.00115
sky130_fd_sc_hs__or4_2	**(A * C * D * X)**	-0.00098	-0.00098	-0.00098
	(A * C * D * X)	0.00093	0.00093	0.00093
	(A * C * !D * X)	-0.00098	-0.00098	-0.00098
	(A * C * !D * X)	0.00090	0.00091	0.00090
	(A * !C * D * X)	-0.00098	-0.00099	-0.00098
	(A * !C * D * X)	0.00088	0.00089	0.00088
	(A * !C * !D * X)	-0.00095	-0.00095	-0.00094
	(A * !C * !D * X)	0.00081	0.00082	0.00082
	(!A * C * D * X)	-0.00098	-0.00098	-0.00098
	(!A * C * D * X)	0.00127	0.00126	0.00126
	(!A * C * !D * X)	-0.00098	-0.00099	-0.00098
	(!A * C * !D * X)	0.00127	0.00127	0.00126
	(!A * !C * D * X)	-0.00098	-0.00098	-0.00098
	(!A * !C * D * X)	0.00121	0.00121	0.00121

sky130_fd_sc_hs__or4_4	(A * C * D * X)	-0.00143	-0.00143	-0.00143
	(A * C * D * X)	0.00183	0.00183	0.00182
	(A * C * !D * X)	-0.00142	-0.00143	-0.00143
	(A * C * !D * X)	0.00173	0.00175	0.00174
	(A * !C * D * X)	-0.00141	-0.00143	-0.00142
	(A * !C * D * X)	0.00170	0.00173	0.00172
	(A * !C * !D * X)	-0.00141	-0.00142	-0.00141
	(A * !C * !D * X)	0.00151	0.00153	0.00152
	(!A * C * D * X)	-0.00142	-0.00143	-0.00142
	(!A * C * D * X)	0.00247	0.00248	0.00247
	(!A * C * !D * X)	-0.00142	-0.00142	-0.00142
	(!A * C * !D * X)	0.00247	0.00248	0.00247
	(!A * !C * D * X)	-0.00141	-0.00142	-0.00141
	(!A * !C * D * X)	0.00236	0.00237	0.00236

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__or4_1	(B * D * X)	0.00097	0.00098	0.00093
	(B * D * X)	-0.00082	-0.00082	-0.00082
	(B * !D * X)	0.00092	0.00093	0.00091
	(B * !D * X)	-0.00071	-0.00072	-0.00071
	(A * !B * D * X)	0.00100	0.00094	0.00091
	(A * !B * D * X)	-0.00083	-0.00085	-0.00084
	(A * !B * !D * X)	0.00092	0.00093	0.00091
	(A * !B * !D * X)	-0.00071	-0.00071	-0.00071
	(!A * !B * D * X)	0.00113	0.00092	0.00091
	(!A * !B * D * X)	-0.00098	-0.00118	-0.00120

sky130_fd_sc_hs__or4_2	**(B * D * X)**	0.00111	0.00113	0.00107
	(B * D * X)	-0.00081	-0.00082	-0.00082
	(B * !D * X)	0.00106	0.00107	0.00105
	(B * !D * X)	-0.00072	-0.00073	-0.00072
	(A * !B * D * X)	0.00115	0.00108	0.00105
	(A * !B * D * X)	-0.00083	-0.00086	-0.00085
	(A * !B * !D * X)	0.00107	0.00108	0.00105
	(A * !B * !D * X)	-0.00072	-0.00072	-0.00072
	(!A * !B * D * X)	0.00127	0.00107	0.00105
	(!A * !B * D * X)	-0.00098	-0.00120	-0.00122
sky130_fd_sc_hs__or4_4	**(B * D * X)**	0.00155	0.00154	0.00148
	(B * D * X)	-0.00172	-0.00173	-0.00172
	(B * !D * X)	0.00146	0.00148	0.00145
	(B * !D * X)	-0.00147	-0.00150	-0.00147
	(A * !B * D * X)	0.00160	0.00149	0.00146
	(A * !B * D * X)	-0.00174	-0.00177	-0.00175
	(A * !B * !D * X)	0.00146	0.00149	0.00146
	(A * !B * !D * X)	-0.00146	-0.00149	-0.00147
	(!A * !B * D * X)	0.00186	0.00147	0.00145
	(!A * !B * D * X)	-0.00207	-0.00246	-0.00249

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

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

sky130_fd_sc_hs__or4_1	**(B * D * X)**	-0.00091	-0.00091	-0.00091
	(B * D * X)	0.00082	0.00082	0.00082
	(B * !D * X)	-0.00090	-0.00090	-0.00089
	(B * !D * X)	0.00073	0.00073	0.00073
	(A * !B * D * X)	-0.00091	-0.00091	-0.00091
	(A * !B * D * X)	0.00084	0.00085	0.00084
	(A * !B * !D * X)	-0.00085	-0.00086	-0.00089
	(A * !B * !D * X)	0.00075	0.00076	0.00072
	(!A * !B * D * X)	-0.00090	-0.00091	-0.00090
	(!A * !B * D * X)	0.00120	0.00121	0.00120
sky130_fd_sc_hs__or4_2	**(B * D * X)**	-0.00104	-0.00105	-0.00105
	(B * D * X)	0.00081	0.00082	0.00082
	(B * !D * X)	-0.00104	-0.00105	-0.00103
	(B * !D * X)	0.00074	0.00074	0.00074
	(A * !B * D * X)	-0.00104	-0.00105	-0.00105
	(A * !B * D * X)	0.00085	0.00086	0.00085
	(A * !B * !D * X)	-0.00100	-0.00101	-0.00103
	(A * !B * !D * X)	0.00075	0.00076	0.00073
	(!A * !B * D * X)	-0.00105	-0.00105	-0.00104
	(!A * !B * D * X)	0.00122	0.00122	0.00122
sky130_fd_sc_hs__or4_4	**(B * D * X)**	-0.00146	-0.00147	-0.00146
	(B * D * X)	0.00172	0.00173	0.00172
	(B * !D * X)	-0.00142	-0.00143	-0.00141
	(B * !D * X)	0.00153	0.00154	0.00153
	(A * !B * D * X)	-0.00145	-0.00146	-0.00145
	(A * !B * D * X)	0.00176	0.00177	0.00175
	(A * !B * !D * X)	-0.00130	-0.00131	-0.00141
	(A * !B * !D * X)	0.00158	0.00157	0.00151
	(!A * !B * D * X)	-0.00143	-0.00144	-0.00142
	(!A * !B * D * X)	0.00247	0.00250	0.00249

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__or4_1	(C * X)	0.00102	0.00103	0.00101
	(C * X)	-0.00067	-0.00068	-0.00067
	(B * !C * X)	0.00102	0.00103	0.00101
	(B * !C * X)	-0.00067	-0.00068	-0.00067
	(A * !B * !C * X)	0.00102	0.00103	0.00101
	(A * !B * !C * X)	-0.00067	-0.00068	-0.00067
sky130_fd_sc_hs__or4_2	(C * X)	0.00120	0.00122	0.00120
	(C * X)	-0.00066	-0.00067	-0.00066
	(B * !C * X)	0.00120	0.00122	0.00120
	(B * !C * X)	-0.00066	-0.00067	-0.00066
	(A * !B * !C * X)	0.00120	0.00122	0.00120
	(A * !B * !C * X)	-0.00066	-0.00067	-0.00066
sky130_fd_sc_hs__or4_4	(C * X)	0.00165	0.00166	0.00165
	(C * X)	-0.00130	-0.00131	-0.00130
	(B * !C * X)	0.00165	0.00167	0.00165
	(B * !C * X)	-0.00129	-0.00131	-0.00130
	(A * !B * !C * X)	0.00165	0.00167	0.00165
	(A * !B * !C * X)	-0.00129	-0.00130	-0.00130

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__or4_1	(C * X)	-0.00097	-0.00098	-0.00101
	(C * X)	0.00071	0.00071	0.00068
	(B * !C * X)	-0.00091	-0.00091	-0.00100
	(B * !C * X)	0.00075	0.00075	0.00068
	(A * !B * !C * X)	-0.00081	-0.00082	-0.00097
	(A * !B * !C * X)	0.00081	0.00081	0.00070
sky130_fd_sc_hs__or4_2	(C * X)	-0.00116	-0.00117	-0.00120
	(C * X)	0.00071	0.00071	0.00068
	(B * !C * X)	-0.00110	-0.00111	-0.00118
	(B * !C * X)	0.00074	0.00074	0.00068
	(A * !B * !C * X)	-0.00101	-0.00101	-0.00116
	(A * !B * !C * X)	0.00080	0.00079	0.00069
sky130_fd_sc_hs__or4_4	(C * X)	-0.00155	-0.00156	-0.00164
	(C * X)	0.00140	0.00140	0.00133
	(B * !C * X)	-0.00137	-0.00138	-0.00160
	(B * !C * X)	0.00150	0.00151	0.00134
	(A * !B * !C * X)	-0.00119	-0.00121	-0.00155
	(A * !B * !C * X)	0.00161	0.00161	0.00137

SKY130_FD_SC_HS__SDFBBNx

sky130_fd_sc_hs_tt_1.50v_25C.ccs
Cell Library: Process , Voltage
1.50, 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	0.00192	0.00172	0.00405	0.00177	0.00540	0.00290	0.84702	0.83928
sky130_fd_sc_hs__sdfbbn_2	0.00193	0.00173	0.00410	0.00164	0.00530	0.00286	1.69122	1.69971

Leakage Information

Cell Name	Leakage(nW)		
	Min.	**Avg**	**Max.**
sky130_fd_sc_hs__sdfbbn_1	0.00000	0.59480	1.07611
sky130_fd_sc_hs__sdfbbn_2	0.00000	0.58452	1.11404

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)	0.52538	1.34216	9.15572
	SET_B->Q (FR)	0.24621	1.09262	9.08290
sky130_fd_sc_hs__sdfbbn_2	CLK_N->Q (FR)	0.59945	1.29072	9.19174
	SET_B->Q (FR)	0.29243	1.03127	9.20282

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)	0.52224	1.03578	4.71264
	RESET_B->Q (FF)	0.32073	0.85536	4.57016
	SET_B->Q (RF)	0.18556	0.53371	2.68646
sky130_fd_sc_hs__sdfbbn_2	CLK_N->Q (FF)	0.56031	1.03895	4.76412
	RESET_B->Q (FF)	0.36425	0.86464	4.65161
	SET_B->Q (RF)	0.22867	0.55834	2.88980

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)	0.47656	1.30709	9.06234
	RESET_B->Q_N (FR)	0.27595	1.13311	8.94095
	SET_B->Q_N (RR)	0.14072	0.81599	7.19765
sky130_fd_sc_hs__sdfbbn_2	CLK_N->Q_N (FR)	0.47154	1.19582	9.03081
	RESET_B->Q_N (FR)	0.27734	1.02440	8.93285
	SET_B->Q_N (RR)	0.14216	0.72246	7.28119

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)	0.44497	1.04736	4.84538
	SET_B->Q_N (FF)	0.17518	0.78307	5.07438
sky130_fd_sc_hs__sdfbbn_2	CLK_N->Q_N (FF)	0.47653	1.06127	4.87414
	SET_B->Q_N (FF)	0.18843	0.77450	5.19058

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)	-0.02551	0.03648	1.42315
	setup	CLK_N (F)	0.20679	0.12034	-1.36691
sky130_fd_sc_hs__sdfbbn_2	hold	CLK_N (F)	-0.02908	0.03098	1.39373
	setup	CLK_N (F)	0.21368	0.12301	-1.34046

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)	-0.30838	-0.35173	-0.78549
	setup	CLK_N (F)	0.34954	0.38523	0.82624
sky130_fd_sc_hs__sdfbbn_2	hold	CLK_N (F)	-0.33238	-0.37732	-0.87140
	setup	CLK_N (F)	0.37590	0.40896	0.91520

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)	-0.02551	0.03648	1.42315
	setup	CLK_N (F)	0.20679	0.12034	-1.36691
sky130_fd_sc_hs__sdfbbn_2	hold	CLK_N (F)	-0.02908	0.03098	1.39373
	setup	CLK_N (F)	0.21368	0.12301	-1.34046

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)	-0.30838	-0.35173	-0.78549
	setup	CLK_N (F)	0.34954	0.38523	0.82624
sky130_fd_sc_hs__sdfbbn_2	hold	CLK_N (F)	-0.33238	-0.37732	-0.87140
	setup	CLK_N (F)	0.37590	0.40896	0.91520

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)	-0.04679	0.02194	1.28782
	setup	CLK_N (F)	0.23071	0.13855	-1.21648
sky130_fd_sc_hs__sdfbbn_2	hold	CLK_N (F)	-0.05148	0.01941	1.26301
	setup	CLK_N (F)	0.23546	0.14345	-1.19584

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)	-0.38373	-0.44147	-1.18313
	setup	CLK_N (F)	0.43461	0.48405	1.28329
sky130_fd_sc_hs__sdfbbn_2	hold	CLK_N (F)	-0.41319	-0.47028	-1.26631
	setup	CLK_N (F)	0.46474	0.51658	1.37852

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)	-0.04679	0.02194	1.28782
	hold	CLK_N (F)	-0.04840	0.01741	1.25934
	setup	CLK_N (F)	0.22750	0.13436	-1.24159
	setup	CLK_N (F)	0.23071	0.13855	-1.21648
sky130_fd_sc_hs__sdfbbn_2	hold	CLK_N (F)	-0.05246	0.01941	1.26301
	hold	CLK_N (F)	-0.05148	0.01158	1.23768
	setup	CLK_N (F)	0.23546	0.13963	-1.21745
	setup	CLK_N (F)	0.23462	0.14345	-1.19584

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)	-0.39271	-0.44854	-1.24957
	hold	CLK_N (F)	-0.38373	-0.44147	-1.18313
	setup	CLK_N (F)	0.43461	0.48405	1.28329
	setup	CLK_N (F)	0.43437	0.48097	1.21289
sky130_fd_sc_hs__sdfbbn_2	hold	CLK_N (F)	-0.41973	-0.47535	-1.33744
	hold	CLK_N (F)	-0.41319	-0.47028	-1.26631
	setup	CLK_N (F)	0.46474	0.51658	1.37852
	setup	CLK_N (F)	0.46225	0.51178	1.30894

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)	-0.03555	0.02158	1.32818
	setup	CLK_N (F)	0.42666	0.36314	-1.14460
sky130_fd_sc_hs__sdfbbn_2	hold	CLK_N (F)	-0.03954	0.01604	1.30606
	setup	CLK_N (F)	0.45381	0.39217	-1.10198

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)	-0.10460	-0.09535	0.15224
	setup	CLK_N (F)	0.35100	0.39377	1.04174
sky130_fd_sc_hs__sdfbbn_2	hold	CLK_N (F)	-0.10885	-0.09993	0.14075
	setup	CLK_N (F)	0.38311	0.42218	1.13889

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)	-0.38094	-0.32533	1.17325
	hold	CLK_N (F)	-0.03555	0.02158	1.32818
	setup	CLK_N (F)	0.42666	0.36314	-1.14460
	setup	CLK_N (F)	0.21630	0.13488	-1.27469
sky130_fd_sc_hs__sdfbbn_2	hold	CLK_N (F)	-0.40599	-0.35713	1.13010
	hold	CLK_N (F)	-0.03954	0.01604	1.30606
	setup	CLK_N (F)	0.45381	0.39217	-1.10198
	setup	CLK_N (F)	0.22103	0.14281	-1.25417

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)	-0.10460	-0.09535	0.15224
	hold	CLK_N (F)	-0.31337	-0.35797	-1.00866
	setup	CLK_N (F)	0.28544	0.24516	-0.13333
	setup	CLK_N (F)	0.35100	0.39377	1.04174
sky130_fd_sc_hs__sdfbbn_2	hold	CLK_N (F)	-0.10885	-0.09993	0.14075
	hold	CLK_N (F)	-0.33710	-0.38690	-1.09977
	setup	CLK_N (F)	0.29173	0.25231	-0.12188
	setup	CLK_N (F)	0.38311	0.42218	1.13889

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)	0.15135	0.05169	-1.65898
	removal	CLK_N (F)	0.03826	0.11750	1.74690
sky130_fd_sc_hs__sdfbbn_2	recovery	CLK_N (F)	0.14867	0.04827	-1.66896
	removal	CLK_N (F)	0.04116	0.11995	1.76158

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)	0.15119	0.05156	-1.65923
	recovery	CLK_N (F)	0.15135	0.05169	-1.65942
	recovery	CLK_N (F)	0.15119	0.05165	-1.65898
	removal	CLK_N (F)	0.03693	0.11750	1.74690
	removal	CLK_N (F)	0.03826	0.11750	1.74690
	removal	CLK_N (F)	0.03693	0.11750	1.74690
sky130_fd_sc_hs__sdfbbn_2	recovery	CLK_N (F)	0.14867	0.04764	-1.66896
	recovery	CLK_N (F)	0.14816	0.04826	-1.66964
	recovery	CLK_N (F)	0.14814	0.04827	-1.66964
	removal	CLK_N (F)	0.04116	0.11995	1.75758
	removal	CLK_N (F)	0.04116	0.11995	1.76158
	removal	CLK_N (F)	0.04116	0.11995	1.75758

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 ()	0.28075	0.74341	16.50020
	min_pulse_width	RESET_B ()	0.24473	0.74341	16.50020
sky130_fd_sc_hs__sdfbbn_2	min_pulse_width	RESET_B ()	0.28352	0.74341	16.50020
	min_pulse_width	RESET_B ()	0.25027	0.74341	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)	-0.04302	-0.15383	-1.31064
	removal	CLK_N (F)	0.06275	0.17640	1.96640
	hold	RESET_B (R)	-0.07257	-0.13101	-0.53861
	setup	RESET_B (R)	0.15191	0.19281	1.06686
sky130_fd_sc_hs__sdfbbn_2	recovery	CLK_N (F)	-0.03953	-0.14699	-1.06043
	removal	CLK_N (F)	0.05787	0.16907	1.93901
	hold	RESET_B (R)	-0.09249	-0.16406	-0.70191
	setup	RESET_B (R)	0.15114	0.20905	1.07865

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)	-0.04302	-0.15387	-1.31319
	recovery	CLK_N (F)	-0.04304	-0.15383	-1.31223
	recovery	CLK_N (F)	-0.04574	-0.15620	-1.31064
	removal	CLK_N (F)	0.06129	0.17640	1.96612
	removal	CLK_N (F)	0.06129	0.17640	1.96612
	removal	CLK_N (F)	0.06275	0.17566	1.96640
	hold	RESET_B (R)	-0.07257	-0.13101	-0.53861
	hold	RESET_B (R)	-0.07385	-0.13402	-0.54018
	setup	RESET_B (R)	0.15191	0.19281	1.06686
	setup	RESET_B (R)	0.11061	0.17007	1.05854
sky130_fd_sc_hs__sdfbbn_2	recovery	CLK_N (F)	-0.03953	-0.14709	-1.06542
	recovery	CLK_N (F)	-0.03953	-0.14706	-1.06227
	recovery	CLK_N (F)	-0.03967	-0.14699	-1.06043
	removal	CLK_N (F)	0.05787	0.16907	1.93797
	removal	CLK_N (F)	0.05787	0.16907	1.93797
	removal	CLK_N (F)	0.05787	0.16907	1.93901
	hold	RESET_B (R)	-0.09943	-0.17037	-0.71400
	hold	RESET_B (R)	-0.09249	-0.16406	-0.70191
	setup	RESET_B (R)	0.15114	0.20905	1.07865
	setup	RESET_B (R)	0.11815	0.20181	1.07438

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 ()	0.19764	0.74341	16.50020
	min_pulse_width	SET_B ()	0.17547	0.74341	16.50020
sky130_fd_sc_hs__sdfbbn_2	min_pulse_width	SET_B ()	0.22534	0.74341	16.50020
	min_pulse_width	SET_B ()	0.20595	0.74341	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 ()	0.26135	0.74341	16.50020
	min_pulse_width	CLK_N ()	0.18932	0.74341	16.50020
sky130_fd_sc_hs__sdfbbn_2	min_pulse_width	CLK_N ()	0.26689	0.74341	16.50020
	min_pulse_width	CLK_N ()	0.20040	0.74341	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 ()	0.24473	0.74341	16.50020
	min_pulse_width	CLK_N ()	0.28075	0.74341	16.50020
sky130_fd_sc_hs__sdfbbn_2	min_pulse_width	CLK_N ()	0.27521	0.74341	16.50020
	min_pulse_width	CLK_N ()	0.28352	0.74341	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	0.01010	0.01026	0.01386
	CLK_N	0.01173	0.01189	0.01493
	SET_B	0.01060	0.01066	0.01704
	SET_B	0.01364	0.01373	0.02005
sky130_fd_sc_hs__sdfbbn_2	CLK_N	0.01197	0.01233	0.01574
	CLK_N	0.01352	0.01389	0.01696
	SET_B	0.01252	0.01279	0.02052
	SET_B	0.01547	0.01575	0.02220

Internal switching power(pJ) to Q falling :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__sdfbbn_1	CLK_N	0.01079	0.01097	0.01373
	CLK_N	0.01220	0.01239	0.01513
	RESET_B	0.01306	0.01325	0.01519
	RESET_B	0.01394	0.01414	0.01592
	SET_B	0.01369	0.01356	0.01719
	SET_B	0.01063	0.01046	0.01410
sky130_fd_sc_hs__sdfbbn_2	CLK_N	0.01264	0.01309	0.01593
	CLK_N	0.01407	0.01454	0.01732
	RESET_B	0.01523	0.01557	0.01756
	RESET_B	0.01613	0.01661	0.01840
	SET_B	0.01580	0.01599	0.01945
	SET_B	0.01281	0.01291	0.01640

Internal switching power(pJ) to Q_N rising :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__sdfbbn_1	CLK_N	0.01081	0.01099	0.01426
	CLK_N	0.01222	0.01240	0.01535
	RESET_B	0.01307	0.01326	0.01550
	RESET_B	0.01395	0.01415	0.01610
	SET_B	0.01370	0.01354	0.01733
	SET_B	0.01064	0.01047	0.01425
sky130_fd_sc_hs__sdfbbn_2	CLK_N	0.01265	0.01311	0.01636
	CLK_N	0.01409	0.01455	0.01755
	RESET_B	0.01524	0.01571	0.01834
	RESET_B	0.01615	0.01662	0.01867
	SET_B	0.01581	0.01596	0.01962
	SET_B	0.01283	0.01292	0.01655

Internal switching power(pJ) to Q_N falling :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__sdfbbn_1	CLK_N	0.01009	0.01025	0.01310
	CLK_N	0.01172	0.01187	0.01471
	SET_B	0.01056	0.01063	0.01713
	SET_B	0.01360	0.01366	0.01981
sky130_fd_sc_hs__sdfbbn_2	CLK_N	0.01195	0.01231	0.01516
	CLK_N	0.01351	0.01387	0.01672
	SET_B	0.01248	0.01271	0.01924
	SET_B	0.01543	0.01573	0.02178

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)**	0.00089	0.00090	0.00089
	(CLK_N * SCD * SCE)	-0.00045	-0.00045	-0.00044
	(CLK_N * RESET_B * !SCE * SET_B * Q * !Q_N) + (CLK_N * RESET_B * !SCE * SET_B * !Q * Q_N)	0.00874	0.00856	0.01154
	(CLK_N * RESET_B * !SCE * SET_B * Q * !Q_N) + (CLK_N * RESET_B * !SCE * SET_B * !Q * Q_N)	0.00680	0.00662	0.00961
	(CLK_N * !SCE * !SET_B * Q * !Q_N)	0.00605	0.00591	0.00875
	(CLK_N * !SCE * !SET_B * Q * !Q_N)	0.00377	0.00363	0.00648
	(CLK_N * !SCD * SCE)	0.00038	0.00038	0.00037
	(CLK_N * !SCD * SCE)	-0.00105	-0.00106	-0.00108
	(CLK_N * !RESET_B * !SCE * SET_B * !Q * Q_N)	0.00514	0.00501	0.00781
	(CLK_N * !RESET_B * !SCE * SET_B * !Q * Q_N)	0.00288	0.00275	0.00556
	(!CLK_N * SCD * SCE)	0.00090	0.00091	0.00090
	(!CLK_N * SCD * SCE)	-0.00044	-0.00045	-0.00044
	(!CLK_N * !SCE)	0.00341	0.00327	0.00669
	(!CLK_N * !SCE)	0.00117	0.00101	0.00444
	(!CLK_N * !SCD * SCE)	0.00037	0.00038	0.00036
	(!CLK_N * !SCD * SCE)	-0.00104	-0.00107	-0.00108

sky130_fd_sc_hs__sdfbbn_2	**(CLK_N * SCD * SCE)**	0.00091	0.00092	0.00092
	(CLK_N * SCD * SCE)	-0.00045	-0.00045	-0.00045
	(CLK_N * RESET_B * !SCE * SET_B * Q * !Q_N) + (CLK_N * RESET_B * !SCE * SET_B * !Q * Q_N)	0.00884	0.00865	0.01173
	(CLK_N * RESET_B * !SCE * SET_B * Q * !Q_N) + (CLK_N * RESET_B * !SCE * SET_B * !Q * Q_N)	0.00683	0.00665	0.00972
	(CLK_N * !SCE * !SET_B * Q * !Q_N)	0.00616	0.00603	0.00881
	(CLK_N * !SCE * !SET_B * Q * !Q_N)	0.00385	0.00371	0.00650
	(CLK_N * !SCD * SCE)	0.00040	0.00040	0.00039
	(CLK_N * !SCD * SCE)	-0.00104	-0.00106	-0.00108
	(CLK_N * !RESET_B * !SCE * SET_B * !Q * Q_N)	0.00519	0.00506	0.00780
	(CLK_N * !RESET_B * !SCE * SET_B * !Q * Q_N)	0.00289	0.00276	0.00551
	(!CLK_N * SCD * SCE)	0.00092	0.00093	0.00092
	(!CLK_N * SCD * SCE)	-0.00045	-0.00045	-0.00044
	(!CLK_N * !SCE)	0.00338	0.00322	0.00661
	(!CLK_N * !SCE)	0.00108	0.00093	0.00432
	(!CLK_N * !SCD * SCE)	0.00039	0.00040	0.00039
	(!CLK_N * !SCD * SCE)	-0.00105	-0.00107	-0.00108

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)**	-0.00084	-0.00086	-0.00088
	(CLK_N * SCD * SCE)	0.00049	0.00049	0.00046
	(CLK_N * RESET_B * !SCE * SET_B * Q * !Q_N) + (CLK_N * RESET_B * !SCE * SET_B * !Q * Q_N)	0.00826	0.00817	0.01205
	(CLK_N * RESET_B * !SCE * SET_B * Q * !Q_N) + (CLK_N * RESET_B * !SCE * SET_B * !Q * Q_N)	0.01020	0.01010	0.01399
	(CLK_N * !SCE * !SET_B * Q * !Q_N)	0.00262	0.00257	0.00612
	(CLK_N * !SCE * !SET_B * Q * !Q_N)	0.00491	0.00486	0.00839
	(CLK_N * !SCD * SCE)	-0.00035	-0.00035	-0.00034
	(CLK_N * !SCD * SCE)	0.00109	0.00110	0.00109
	(CLK_N * !RESET_B * !SCE * SET_B * !Q * Q_N)	0.00341	0.00337	0.00698
	(CLK_N * !RESET_B * !SCE * SET_B * !Q * Q_N)	0.00567	0.00563	0.00924
	(!CLK_N * SCD * SCE)	-0.00084	-0.00086	-0.00088
	(!CLK_N * SCD * SCE)	0.00049	0.00049	0.00047
	(!CLK_N * !SCE)	0.00166	0.00166	0.00553
	(!CLK_N * !SCE)	0.00392	0.00391	0.00779
	(!CLK_N * !SCD * SCE)	-0.00035	-0.00035	-0.00034
	(!CLK_N * !SCD * SCE)	0.00109	0.00110	0.00109

sky130_fd_sc_hs__sdfbbn_2	**(CLK_N * SCD * SCE)**	-0.00087	-0.00088	-0.00091
	(CLK_N * SCD * SCE)	0.00049	0.00049	0.00046
	(CLK_N * RESET_B * !SCE * SET_B * Q * !Q_N) + (CLK_N * RESET_B * !SCE * SET_B * !Q * Q_N)	0.00892	0.00882	0.01266
	(CLK_N * RESET_B * !SCE * SET_B * Q * !Q_N) + (CLK_N * RESET_B * !SCE * SET_B * !Q * Q_N)	0.01092	0.01082	0.01467
	(CLK_N * !SCE * !SET_B * Q * !Q_N)	0.00285	0.00280	0.00630
	(CLK_N * !SCE * !SET_B * Q * !Q_N)	0.00518	0.00513	0.00862
	(CLK_N * !SCD * SCE)	-0.00036	-0.00037	-0.00036
	(CLK_N * !SCD * SCE)	0.00108	0.00110	0.00109
	(CLK_N * !RESET_B * !SCE * SET_B * !Q * Q_N)	0.00371	0.00367	0.00723
	(CLK_N * !RESET_B * !SCE * SET_B * !Q * Q_N)	0.00601	0.00596	0.00953
	(!CLK_N * SCD * SCE)	-0.00087	-0.00089	-0.00091
	(!CLK_N * SCD * SCE)	0.00049	0.00049	0.00046
	(!CLK_N * !SCE)	0.00185	0.00184	0.00568
	(!CLK_N * !SCE)	0.00415	0.00412	0.00797
	(!CLK_N * !SCD * SCE)	-0.00037	-0.00037	-0.00037
	(!CLK_N * !SCD * SCE)	0.00109	0.00109	0.00109

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)**	0.00730	0.00719	0.00863
	(CLK_N * D * SCE * !SET_B * Q * !Q_N)	0.00433	0.00422	0.00567
	(CLK_N * D * RESET_B * SCE * SET_B * Q * !Q_N) + (CLK_N * D * RESET_B * SCE * SET_B * !Q * Q_N)	0.00997	0.00983	0.01137
	(CLK_N * D * RESET_B * SCE * SET_B * Q * !Q_N) + (CLK_N * D * RESET_B * SCE * SET_B * !Q * Q_N)	0.00734	0.00719	0.00875
	(CLK_N * D * !RESET_B * SCE * SET_B * !Q * Q_N)	0.00639	0.00628	0.00769
	(CLK_N * D * !RESET_B * SCE * SET_B * !Q * Q_N)	0.00344	0.00333	0.00475
	(CLK_N * !D * SCE * !SET_B * Q * !Q_N)	0.00786	0.00775	0.00910
	(CLK_N * !D * SCE * !SET_B * Q * !Q_N)	0.00478	0.00467	0.00604
	(CLK_N * !D * RESET_B * SCE * SET_B * Q * !Q_N) + (CLK_N * !D * RESET_B * SCE * SET_B * !Q * Q_N)	0.01053	0.01040	0.01183
	(CLK_N * !D * RESET_B * SCE * SET_B * Q * !Q_N) + (CLK_N * !D * RESET_B * SCE * SET_B * !Q * Q_N)	0.00779	0.00766	0.00910
	(CLK_N * !D * !RESET_B * SCE * SET_B * !Q * Q_N)	0.00695	0.00684	0.00816
	(CLK_N * !D * !RESET_B * SCE * SET_B * !Q * Q_N)	0.00389	0.00378	0.00512
	(!CLK_N * D * SCE)	0.00468	0.00456	0.00620
	(!CLK_N * D * SCE)	0.00173	0.00160	0.00326
	(!CLK_N * !D * SCE)	0.00523	0.00512	0.00663
	(!CLK_N * !D * SCE)	0.00218	0.00206	0.00360
	!SCE	0.00077	0.00069	0.00067
	!SCE	-0.00080	-0.00090	-0.00091

sky130_fd_sc_hs__sdfbbn_2	**(CLK_N * D * SCE * !SET_B * Q * !Q_N)**	0.00738	0.00727	0.00870
	(CLK_N * D * SCE * !SET_B * Q * !Q_N)	0.00442	0.00431	0.00575
	(CLK_N * D * RESET_B * SCE * SET_B * Q * !Q_N) + (CLK_N * D * RESET_B * SCE * SET_B * !Q * Q_N)	0.01003	0.00988	0.01141
	(CLK_N * D * RESET_B * SCE * SET_B * Q * !Q_N) + (CLK_N * D * RESET_B * SCE * SET_B * !Q * Q_N)	0.00739	0.00723	0.00877
	(CLK_N * D * !RESET_B * SCE * SET_B * !Q * Q_N)	0.00640	0.00630	0.00769
	(CLK_N * D * !RESET_B * SCE * SET_B * !Q * Q_N)	0.00347	0.00335	0.00476
	(CLK_N * !D * SCE * !SET_B * Q * !Q_N)	0.00793	0.00782	0.00915
	(CLK_N * !D * SCE * !SET_B * Q * !Q_N)	0.00487	0.00476	0.00610
	(CLK_N * !D * RESET_B * SCE * SET_B * Q * !Q_N) + (CLK_N * !D * RESET_B * SCE * SET_B * !Q * Q_N)	0.01058	0.01045	0.01185
	(CLK_N * !D * RESET_B * SCE * SET_B * Q * !Q_N) + (CLK_N * !D * RESET_B * SCE * SET_B * !Q * Q_N)	0.00783	0.00769	0.00911
	(CLK_N * !D * !RESET_B * SCE * SET_B * !Q * Q_N)	0.00695	0.00685	0.00815
	(CLK_N * !D * !RESET_B * SCE * SET_B * !Q * Q_N)	0.00391	0.00380	0.00512
	(!CLK_N * D * SCE)	0.00460	0.00448	0.00611
	(!CLK_N * D * SCE)	0.00166	0.00154	0.00318
	(!CLK_N * !D * SCE)	0.00514	0.00503	0.00654
	(!CLK_N * !D * SCE)	0.00210	0.00198	0.00351
	!SCE	0.00076	0.00069	0.00067
	!SCE	-0.00081	-0.00091	-0.00092

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)**	0.00367	0.00359	0.00509
	(CLK_N * D * SCE * !SET_B * Q * !Q_N)	0.00664	0.00657	0.00805
	(CLK_N * D * RESET_B * SCE * SET_B * Q * !Q_N) + (CLK_N * D * RESET_B * SCE * SET_B * !Q * Q_N)	0.00927	0.00917	0.01086
	(CLK_N * D * RESET_B * SCE * SET_B * Q * !Q_N) + (CLK_N * D * RESET_B * SCE * SET_B * !Q * Q_N)	0.01190	0.01180	0.01348
	(CLK_N * D * !RESET_B * SCE * SET_B * !Q * Q_N)	0.00446	0.00438	0.00593
	(CLK_N * D * !RESET_B * SCE * SET_B * !Q * Q_N)	0.00741	0.00734	0.00887
	(CLK_N * !D * SCE * !SET_B * Q * !Q_N)	0.00336	0.00329	0.00485
	(CLK_N * !D * SCE * !SET_B * Q * !Q_N)	0.00644	0.00636	0.00791
	(CLK_N * !D * RESET_B * SCE * SET_B * Q * !Q_N) + (CLK_N * !D * RESET_B * SCE * SET_B * !Q * Q_N)	0.00899	0.00887	0.01070
	(CLK_N * !D * RESET_B * SCE * SET_B * Q * !Q_N) + (CLK_N * !D * RESET_B * SCE * SET_B * !Q * Q_N)	0.01172	0.01161	0.01342
	(CLK_N * !D * !RESET_B * SCE * SET_B * !Q * Q_N)	0.00416	0.00408	0.00570
	(CLK_N * !D * !RESET_B * SCE * SET_B * !Q * Q_N)	0.00721	0.00713	0.00873
	(!CLK_N * D * SCE)	0.00273	0.00265	0.00434
	(!CLK_N * D * SCE)	0.00568	0.00560	0.00727
	(!CLK_N * !D * SCE)	0.00243	0.00235	0.00412
	(!CLK_N * !D * SCE)	0.00547	0.00540	0.00715
	!SCE	-0.00065	-0.00067	-0.00067
	!SCE	0.00091	0.00092	0.00092

sky130_fd_sc_hs__sdfbbn_2	**(CLK_N * D * SCE * !SET_B * Q * !Q_N)**	0.00390	0.00382	0.00531
	(CLK_N * D * SCE * !SET_B * Q * !Q_N)	0.00687	0.00680	0.00826
	(CLK_N * D * RESET_B * SCE * SET_B * Q * !Q_N) + (CLK_N * D * RESET_B * SCE * SET_B * !Q * Q_N)	0.00996	0.00983	0.01152
	(CLK_N * D * RESET_B * SCE * SET_B * Q * !Q_N) + (CLK_N * D * RESET_B * SCE * SET_B * !Q * Q_N)	0.01261	0.01249	0.01415
	(CLK_N * D * !RESET_B * SCE * SET_B * !Q * Q_N)	0.00477	0.00468	0.00623
	(CLK_N * D * !RESET_B * SCE * SET_B * !Q * Q_N)	0.00770	0.00763	0.00915
	(CLK_N * !D * SCE * !SET_B * Q * !Q_N)	0.00360	0.00352	0.00507
	(CLK_N * !D * SCE * !SET_B * Q * !Q_N)	0.00666	0.00658	0.00812
	(CLK_N * !D * RESET_B * SCE * SET_B * Q * !Q_N) + (CLK_N * !D * RESET_B * SCE * SET_B * !Q * Q_N)	0.00967	0.00954	0.01134
	(CLK_N * !D * RESET_B * SCE * SET_B * Q * !Q_N) + (CLK_N * !D * RESET_B * SCE * SET_B * !Q * Q_N)	0.01242	0.01229	0.01407
	(CLK_N * !D * !RESET_B * SCE * SET_B * !Q * Q_N)	0.00446	0.00438	0.00599
	(CLK_N * !D * !RESET_B * SCE * SET_B * !Q * Q_N)	0.00750	0.00742	0.00901
	(!CLK_N * D * SCE)	0.00293	0.00285	0.00453
	(!CLK_N * D * SCE)	0.00586	0.00579	0.00745
	(!CLK_N * !D * SCE)	0.00262	0.00254	0.00430
	(!CLK_N * !D * SCE)	0.00565	0.00558	0.00733
	!SCE	-0.00064	-0.00066	-0.00066
	!SCE	0.00092	0.00093	0.00093

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

Cell Name	When	Power(pJ)		
		first	mid	last

sky130_fd_sc_hs__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)**	0.00374	0.00362	0.00798
	(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	-0.00046	0.00392
	(CLK_N * D * RESET_B * !SCD * SET_B * Q * !Q_N) + (CLK_N * D * RESET_B * !SCD * SET_B * !Q * Q_N)	0.01331	0.01323	0.01758
	(CLK_N * D * RESET_B * !SCD * SET_B * Q * !Q_N) + (CLK_N * D * RESET_B * !SCD * SET_B * !Q * Q_N)	0.01008	0.00999	0.01431
	(CLK_N * D * !SCD * !SET_B * Q * !Q_N)	0.00770	0.00762	0.01199
	(CLK_N * D * !SCD * !SET_B * Q * !Q_N)	0.00481	0.00470	0.00905
	(CLK_N * D * !RESET_B * !SCD * SET_B * !Q * Q_N)	0.00851	0.00842	0.01280
	(CLK_N * D * !RESET_B * !SCD * SET_B * !Q * Q_N)	0.00559	0.00548	0.00985
	(CLK_N * !D * SCD * !SET_B * Q * !Q_N)	0.00945	0.00932	0.01570
	(CLK_N * !D * SCD * !SET_B * Q * !Q_N)	0.00438	0.00426	0.01065
	(CLK_N * !D * RESET_B * SCD * SET_B * Q * !Q_N) + (CLK_N * !D * RESET_B * SCD * SET_B * !Q * Q_N)	0.01214	0.01196	0.01850
	(CLK_N * !D * RESET_B * SCD * SET_B * Q * !Q_N) + (CLK_N * !D * RESET_B * SCD * SET_B * !Q * Q_N)	0.00740	0.00723	0.01379
	(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)	0.00369	0.00366	0.00800
	(CLK_N * !D * RESET_B * !SCD * SET_B * Q * !Q_N) + (CLK_N * !D * RESET_B * !SCD * SET_B * !Q * Q_N) + (CLK_N * !D * RESET_B * !SCD * !SET_B * Q * !Q_N) + (CLK_N * !D * !RESET_B * !SCD * SET_B * !Q * Q_N) + (CLK_N * !D * !RESET_B * !SCD * !SET_B * Q * !Q_N)	-0.00010	-0.00015	0.00419
	(CLK_N * !D * !RESET_B * SCD * SET_B * !Q * Q_N)	0.00854	0.00841	0.01476
	(CLK_N * !D * !RESET_B * SCD * SET_B * !Q * Q_N)	0.00349	0.00338	0.00973
	(!CLK_N * D * SCD) + (!CLK_N * !D * !SCD)	0.00382	0.00368	0.00807
	(!CLK_N * D * SCD) + (!CLK_N * !D * !SCD)	-0.00023	-0.00036	0.00400
	(!CLK_N * D * !SCD)	0.00692	0.00677	0.01117
	(!CLK_N * D * !SCD)	0.00400	0.00382	0.00820
	(!CLK_N * !D * SCD)	0.00691	0.00675	0.01342
	(!CLK_N * !D * SCD)	0.00186	0.00169	0.00839

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)**	0.00379	0.00366	0.00805
	(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	-0.00046	0.00393
	(CLK_N * D * RESET_B * !SCD * SET_B * Q * !Q_N) + (CLK_N * D * RESET_B * !SCD * SET_B * !Q * Q_N)	0.01402	0.01396	0.01830
	(CLK_N * D * RESET_B * !SCD * SET_B * Q * !Q_N) + (CLK_N * D * RESET_B * !SCD * SET_B * !Q * Q_N)	0.01079	0.01070	0.01502
	(CLK_N * D * !SCD * !SET_B * Q * !Q_N)	0.00797	0.00790	0.01228
	(CLK_N * D * !SCD * !SET_B * Q * !Q_N)	0.00505	0.00496	0.00931
	(CLK_N * D * !RESET_B * !SCD * SET_B * !Q * Q_N)	0.00884	0.00878	0.01316
	(CLK_N * D * !RESET_B * !SCD * SET_B * !Q * Q_N)	0.00589	0.00580	0.01016
	(CLK_N * !D * SCD * !SET_B * Q * !Q_N)	0.00960	0.00947	0.01583
	(CLK_N * !D * SCD * !SET_B * Q * !Q_N)	0.00447	0.00433	0.01072
	(CLK_N * !D * RESET_B * SCD * SET_B * Q * !Q_N) + (CLK_N * !D * RESET_B * SCD * SET_B * !Q * Q_N)	0.01227	0.01207	0.01860
	(CLK_N * !D * RESET_B * SCD * SET_B * Q * !Q_N) + (CLK_N * !D * RESET_B * SCD * SET_B * !Q * Q_N)	0.00744	0.00725	0.01379
	(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)	0.00374	0.00370	0.00805
	(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)	-0.00012	-0.00017	0.00419
	(CLK_N * !D * !RESET_B * SCD * SET_B * !Q * Q_N)	0.00862	0.00848	0.01481
	(CLK_N * !D * !RESET_B * SCD * SET_B * !Q * Q_N)	0.00351	0.00338	0.00973
	(!CLK_N * D * SCD) + (!CLK_N * !D * !SCD)	0.00387	0.00375	0.00813
	(!CLK_N * D * SCD) + (!CLK_N * !D * !SCD)	-0.00023	-0.00038	0.00401
	(!CLK_N * D * !SCD)	0.00715	0.00701	0.01142
	(!CLK_N * D * !SCD)	0.00421	0.00404	0.00842
	(!CLK_N * !D * SCD)	0.00690	0.00674	0.01340
	(!CLK_N * !D * SCD)	0.00179	0.00162	0.00831

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)	-0.00038	-0.00015	0.00455
	(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)	0.00365	0.00391	0.00860
	(CLK_N * D * RESET_B * !SCD * SET_B * Q * !Q_N) + (CLK_N * D * RESET_B * !SCD * SET_B * !Q * Q_N)	0.00825	0.00842	0.01294
	(CLK_N * D * RESET_B * !SCD * SET_B * Q * !Q_N) + (CLK_N * D * RESET_B * !SCD * SET_B * !Q * Q_N)	0.01149	0.01167	0.01614
	(CLK_N * D * !SCD * !SET_B * Q * !Q_N)	0.00556	0.00573	0.01031
	(CLK_N * D * !SCD * !SET_B * Q * !Q_N)	0.00847	0.00866	0.01316
	(CLK_N * D * !RESET_B * !SCD * SET_B * !Q * Q_N)	0.00465	0.00482	0.00939
	(CLK_N * D * !RESET_B * !SCD * SET_B * !Q * Q_N)	0.00758	0.00778	0.01226
	(CLK_N * !D * SCD * !SET_B * Q * !Q_N)	0.00265	0.00262	0.00922
	(CLK_N * !D * SCD * !SET_B * Q * !Q_N)	0.00771	0.00767	0.01428
	(CLK_N * !D * RESET_B * SCD * SET_B * Q * !Q_N) + (CLK_N * !D * RESET_B * SCD * SET_B * !Q * Q_N)	0.00828	0.00819	0.01495
	(CLK_N * !D * RESET_B * SCD * SET_B * Q * !Q_N) + (CLK_N * !D * RESET_B * SCD * SET_B * !Q * Q_N)	0.01299	0.01291	0.01968
	(CLK_N * !D * RESET_B * !SCD * SET_B * Q * !Q_N) + (CLK_N * !D * RESET_B * !SCD * SET_B * !Q * Q_N) + (CLK_N * !D * RESET_B * !SCD * !SET_B * Q * !Q_N) + (CLK_N * !D * !RESET_B * !SCD * SET_B * !Q * Q_N) + (CLK_N * !D * !RESET_B * !SCD * !SET_B * Q * !Q_N)	-0.00019	-0.00004	0.00465
	(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)	0.00362	0.00378	0.00846
	(CLK_N * !D * !RESET_B * SCD * SET_B * !Q * Q_N)	0.00345	0.00342	0.01008
	(CLK_N * !D * !RESET_B * SCD * SET_B * !Q * Q_N)	0.00848	0.00845	0.01511
	(!CLK_N * D * SCD) + (!CLK_N * !D * !SCD)	-0.00046	-0.00022	0.00447
	(!CLK_N * D * SCD) + (!CLK_N * !D * !SCD)	0.00358	0.00383	0.00852
	(!CLK_N * D * !SCD)	0.00288	0.00299	0.00761
	(!CLK_N * D * !SCD)	0.00581	0.00595	0.01048
	(!CLK_N * !D * SCD)	0.00162	0.00160	0.00848
	(!CLK_N * !D * SCD)	0.00665	0.00664	0.01352

	(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)	-0.00044	-0.00021	0.00450
	(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)	0.00365	0.00391	0.00860
	(CLK_N * D * RESET_B * !SCD * SET_B * Q * !Q_N) + (CLK_N * D * RESET_B * !SCD * SET_B * !Q * Q_N)	0.00828	0.00845	0.01295
	(CLK_N * D * RESET_B * !SCD * SET_B * Q * !Q_N) + (CLK_N * D * RESET_B * !SCD * SET_B * !Q * Q_N)	0.01153	0.01172	0.01617
	(CLK_N * D * !SCD * !SET_B * Q * !Q_N)	0.00561	0.00579	0.01036
	(CLK_N * D * !SCD * !SET_B * Q * !Q_N)	0.00855	0.00875	0.01324
	(CLK_N * D * !RESET_B * !SCD * SET_B * !Q * Q_N)	0.00463	0.00481	0.00937
	(CLK_N * D * !RESET_B * !SCD * SET_B * !Q * Q_N)	0.00759	0.00780	0.01227
	(CLK_N * !D * SCD * !SET_B * Q * !Q_N)	0.00285	0.00281	0.00939
	(CLK_N * !D * SCD * !SET_B * Q * !Q_N)	0.00797	0.00794	0.01450
sky130_fd_sc_hs__sdfbbn_2	**(CLK_N * !D * RESET_B * SCD * SET_B * Q * !Q_N) + (CLK_N * !D * RESET_B * SCD * SET_B * !Q * Q_N)**	0.00892	0.00882	0.01557
	(CLK_N * !D * RESET_B * SCD * SET_B * Q * !Q_N) + (CLK_N * !D * RESET_B * SCD * SET_B * !Q * Q_N)	0.01371	0.01363	0.02038
	(CLK_N * !D * RESET_B * !SCD * SET_B * Q * !Q_N) + (CLK_N * !D * RESET_B * !SCD * SET_B * !Q * Q_N) + (CLK_N * !D * RESET_B * !SCD * !SET_B * Q * !Q_N) + (CLK_N * !D * !RESET_B * !SCD * SET_B * !Q * Q_N) + (CLK_N * !D * !RESET_B * !SCD * !SET_B * Q * !Q_N)	-0.00024	-0.00008	0.00462
	(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)	0.00362	0.00379	0.00846
	(CLK_N * !D * !RESET_B * SCD * SET_B * !Q * Q_N)	0.00371	0.00367	0.01031
	(CLK_N * !D * !RESET_B * SCD * SET_B * !Q * Q_N)	0.00880	0.00877	0.01541
	(!CLK_N * D * SCD) + (!CLK_N * !D * !SCD)	-0.00053	-0.00029	0.00441
	(!CLK_N * D * SCD) + (!CLK_N * !D * !SCD)	0.00357	0.00382	0.00852
	(!CLK_N * D * !SCD)	0.00277	0.00290	0.00750
	(!CLK_N * D * !SCD)	0.00573	0.00586	0.01041
	(!CLK_N * !D * SCD)	0.00177	0.00174	0.00861
	(!CLK_N * !D * SCD)	0.00687	0.00685	0.01371

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)	0.00888	0.00869	0.01214
	(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)	0.00690	0.00670	0.01015
	(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)	0.00524	0.00518	0.00869
	(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)	0.00294	0.00288	0.00640
	(!SET_B * Q * !Q_N)	0.00523	0.00515	0.00883
	(!SET_B * Q * !Q_N)	0.00289	0.00280	0.00648

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)**	0.00867	0.00846	0.01192
	(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)	0.00673	0.00653	0.00999
	(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)	0.00500	0.00494	0.00847
	(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)	0.00277	0.00270	0.00624
	(!SET_B * Q * !Q_N)	0.00512	0.00503	0.00873
	(!SET_B * Q * !Q_N)	0.00285	0.00275	0.00645

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)**	0.00775	0.00770	0.01198
	(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)	0.00973	0.00968	0.01396
	(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)	0.00252	0.00251	0.00669
	(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)	0.00481	0.00481	0.00898
	(!SET_B * Q * !Q_N)	0.00177	0.00180	0.00602
	(!SET_B * Q * !Q_N)	0.00412	0.00416	0.00838

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)**	0.00821	0.00815	0.01243
	(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)	0.01015	0.01009	0.01437
	(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)	0.00264	0.00263	0.00681
	(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)	0.00487	0.00486	0.00904
	(!SET_B * Q * !Q_N)	0.00178	0.00181	0.00604
	(!SET_B * Q * !Q_N)	0.00407	0.00410	0.00832

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)**	0.00235	0.00238	0.00236
	(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)	-0.00291	-0.00292	-0.00291
	(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)	0.00814	0.00792	0.01238
	(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)	0.00244	0.00218	0.00668

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)**	0.00243	0.00245	0.00243
	(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)	-0.00281	-0.00282	-0.00281
	(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)	0.00858	0.00837	0.01273
	(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)	0.00294	0.00269	0.00710

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)**	-0.00233	-0.00236	-0.00236
	(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)	0.00296	0.00295	0.00293
	(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)	0.00119	0.00124	0.00750
	(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)	0.00687	0.00694	0.01321

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)**	-0.00240	-0.00243	-0.00243
	(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)	0.00284	0.00285	0.00283
	(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)	0.00110	0.00115	0.00738
	(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)	0.00670	0.00682	0.01301

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)	0.01478	0.01460	0.02012
	(D * RESET_B * SCD * SCE * SET_B * !Q * Q_N)	0.01206	0.01187	0.01739
	(D * RESET_B * SCD * SCE * Q * !Q_N) + (D * !RESET_B * SCD * SCE * !SET_B * Q * !Q_N)	0.00916	0.00888	0.01407
	(D * RESET_B * SCD * SCE * Q * !Q_N) + (D * !RESET_B * SCD * SCE * !SET_B * Q * !Q_N)	0.00612	0.00583	0.01102
	(D * RESET_B * !SCE * SET_B * !Q * Q_N)	0.01485	0.01466	0.02021
	(D * RESET_B * !SCE * SET_B * !Q * Q_N)	0.01213	0.01194	0.01749
	(D * RESET_B * !SCE * Q * !Q_N) + (D * !RESET_B * !SCE * !SET_B * Q * !Q_N)	0.00922	0.00894	0.01413
	(D * RESET_B * !SCE * Q * !Q_N) + (D * !RESET_B * !SCE * !SET_B * Q * !Q_N)	0.00618	0.00589	0.01108
	(D * RESET_B * !SCD * SCE * SET_B * Q * !Q_N)	0.01583	0.01544	0.02074
	(D * RESET_B * !SCD * SCE * SET_B * Q * !Q_N)	0.01250	0.01210	0.01740
	(D * !SCD * SCE * SET_B * !Q * Q_N)	0.00899	0.00868	0.01373
	(D * !SCD * SCE * SET_B * !Q * Q_N)	0.00595	0.00563	0.01068
	(D * !SCD * SCE * !SET_B * Q * !Q_N)	0.00997	0.00958	0.01501
	(D * !SCD * SCE * !SET_B * Q * !Q_N)	0.00695	0.00655	0.01199
	(D * !RESET_B * SCD * SCE * SET_B * !Q * Q_N)	0.01121	0.01102	0.01652
	(D * !RESET_B * SCD * SCE * SET_B * !Q * Q_N)	0.00817	0.00797	0.01348
	(D * !RESET_B * !SCE * SET_B * !Q * Q_N)	0.01127	0.01108	0.01661
	(D * !RESET_B * !SCE * SET_B * !Q * Q_N)	0.00823	0.00803	0.01356
	(!D * RESET_B * SCD * SCE * SET_B * !Q * Q_N)	0.01478	0.01461	0.02016
	(!D * RESET_B * SCD * SCE * SET_B * !Q * Q_N)	0.01206	0.01187	0.01743
	(!D * RESET_B * SCD * SCE * Q * !Q_N) + (!D * !RESET_B * SCD * SCE * !SET_B * Q * !Q_N)	0.00916	0.00888	0.01407
	(!D * RESET_B * SCD * SCE * Q * !Q_N) + (!D * !RESET_B * SCD * SCE * !SET_B * Q * !Q_N)	0.00612	0.00583	0.01102
	(!D * RESET_B * !SCE * SET_B * Q * !Q_N)	0.01587	0.01548	0.02078
	(!D * RESET_B * !SCE * SET_B * Q * !Q_N)	0.01252	0.01212	0.01742
	(!D * RESET_B * !SCD * SCE * SET_B * Q * !Q_N)	0.01583	0.01544	0.02074
	(!D * RESET_B * !SCD * SCE * SET_B * Q * !Q_N)	0.01250	0.01209	0.01739
	(!D * !SCE * SET_B * !Q * Q_N)	0.00904	0.00874	0.01379
	(!D * !SCE * SET_B * !Q * Q_N)	0.00601	0.00569	0.01074
	(!D * !SCE * !SET_B * Q * !Q_N)	0.01003	0.00964	0.01507
	(!D * !SCE * !SET_B * Q * !Q_N)	0.00701	0.00661	0.01204
	(!D * !SCD * SCE * SET_B * !Q * Q_N)	0.00899	0.00868	0.01373
	(!D * !SCD * SCE * SET_B * !Q * Q_N)	0.00595	0.00563	0.01068
	(!D * !SCD * SCE * !SET_B * Q * !Q_N)	0.00997	0.00958	0.01501
	(!D * !SCD * SCE * !SET_B * Q * !Q_N)	0.00695	0.00656	0.01199
	(!D * !RESET_B * SCD * SCE * SET_B * !Q * Q_N)	0.01121	0.01102	0.01655
	(!D * !RESET_B * SCD * SCE * SET_B * !Q * Q_N)	0.00817	0.00797	0.01351

sky130_fd_sc_hs__sdfbbn_2	(D * RESET_B * SCD * SCE * SET_B * !Q * Q_N)	0.01496	0.01477	0.02028
	(D * RESET_B * SCD * SCE * SET_B * !Q * Q_N)	0.01226	0.01206	0.01757
	(D * RESET_B * SCD * SCE * Q * !Q_N) + (D * !RESET_B * SCD * SCE * !SET_B * Q * !Q_N)	0.00910	0.00881	0.01401
	(D * RESET_B * SCD * SCE * Q * !Q_N) + (D * !RESET_B * SCD * SCE * !SET_B * Q * !Q_N)	0.00610	0.00581	0.01102
	(D * RESET_B * !SCE * SET_B * !Q * Q_N)	0.01503	0.01482	0.02038
	(D * RESET_B * !SCE * SET_B * !Q * Q_N)	0.01232	0.01212	0.01766
	(D * RESET_B * !SCE * Q * !Q_N) + (D * !RESET_B * !SCE * !SET_B * Q * !Q_N)	0.00915	0.00887	0.01406
	(D * RESET_B * !SCE * Q * !Q_N) + (D * !RESET_B * !SCE * !SET_B * Q * !Q_N)	0.00616	0.00586	0.01106
	(D * RESET_B * !SCD * SCE * SET_B * Q * !Q_N)	0.01617	0.01577	0.02107
	(D * RESET_B * !SCD * SCE * SET_B * Q * !Q_N)	0.01291	0.01250	0.01780
	(D * !SCD * SCE * SET_B * !Q * Q_N)	0.00896	0.00865	0.01371
	(D * !SCD * SCE * SET_B * !Q * Q_N)	0.00597	0.00564	0.01071
	(D * !SCD * SCE * !SET_B * Q * !Q_N)	0.00989	0.00950	0.01468
	(D * !SCD * SCE * !SET_B * Q * !Q_N)	0.00691	0.00651	0.01169
	(D * !RESET_B * SCD * SCE * SET_B * !Q * Q_N)	0.01131	0.01110	0.01661
	(D * !RESET_B * SCD * SCE * SET_B * !Q * Q_N)	0.00831	0.00810	0.01361
	(D * !RESET_B * !SCE * SET_B * !Q * Q_N)	0.01136	0.01115	0.01668
	(D * !RESET_B * !SCE * SET_B * !Q * Q_N)	0.00836	0.00815	0.01368
	(!D * RESET_B * SCD * SCE * SET_B * !Q * Q_N)	0.01496	0.01477	0.02031
	(!D * RESET_B * SCD * SCE * SET_B * !Q * Q_N)	0.01226	0.01206	0.01760
	(!D * RESET_B * SCD * SCE * Q * !Q_N) + (!D * !RESET_B * SCD * SCE * !SET_B * Q * !Q_N)	0.00910	0.00881	0.01401
	(!D * RESET_B * SCD * SCE * Q * !Q_N) + (!D * !RESET_B * SCD * SCE * !SET_B * Q * !Q_N)	0.00610	0.00581	0.01101
	(!D * RESET_B * !SCE * SET_B * Q * !Q_N)	0.01621	0.01581	0.02111
	(!D * RESET_B * !SCE * SET_B * Q * !Q_N)	0.01292	0.01251	0.01782
	(!D * RESET_B * !SCD * SCE * SET_B * Q * !Q_N)	0.01617	0.01577	0.02107
	(!D * RESET_B * !SCD * SCE * SET_B * Q * !Q_N)	0.01290	0.01249	0.01779
	(!D * !SCE * SET_B * !Q * Q_N)	0.00902	0.00871	0.01376
	(!D * !SCE * SET_B * !Q * Q_N)	0.00602	0.00570	0.01076
	(!D * !SCE * !SET_B * Q * !Q_N)	0.00994	0.00955	0.01474
	(!D * !SCE * !SET_B * Q * !Q_N)	0.00696	0.00656	0.01176
	(!D * !SCD * SCE * SET_B * !Q * Q_N)	0.00896	0.00865	0.01371
	(!D * !SCD * SCE * SET_B * !Q * Q_N)	0.00597	0.00564	0.01071
	(!D * !SCD * SCE * !SET_B * Q * !Q_N)	0.00989	0.00950	0.01495
	(!D * !SCD * SCE * !SET_B * Q * !Q_N)	0.00691	0.00651	0.01196
	(!D * !RESET_B * SCD * SCE * SET_B * !Q * Q_N)	0.01131	0.01110	0.01663
	(!D * !RESET_B * SCD * SCE * SET_B * !Q * Q_N)	0.00831	0.00809	0.01363

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)**	0.00708	0.00705	0.01279
	(D * RESET_B * SCD * SCE * Q * !Q_N) + (D * !RESET_B * SCD * SCE * !SET_B * Q * !Q_N)	0.01012	0.01009	0.01583
	(D * RESET_B * !SCE * Q * !Q_N) + (D * !RESET_B * !SCE * !SET_B * Q * !Q_N)	0.00702	0.00699	0.01273
	(D * RESET_B * !SCE * Q * !Q_N) + (D * !RESET_B * !SCE * !SET_B * Q * !Q_N)	0.01006	0.01003	0.01577
	(D * !SCD * SCE * SET_B * !Q * Q_N)	0.00739	0.00733	0.01305
	(D * !SCD * SCE * SET_B * !Q * Q_N)	0.01043	0.01038	0.01609
	(D * !SCD * SCE * !SET_B * Q * !Q_N)	0.00972	0.00959	0.01549
	(D * !SCD * SCE * !SET_B * Q * !Q_N)	0.01274	0.01263	0.01852
	(D * !RESET_B * SCD * SCE * SET_B * !Q * Q_N)	0.00981	0.00975	0.01530
	(D * !RESET_B * SCD * SCE * SET_B * !Q * Q_N)	0.01285	0.01279	0.01835
	(D * !RESET_B * !SCE * SET_B * !Q * Q_N)	0.00976	0.00967	0.01524
	(D * !RESET_B * !SCE * SET_B * !Q * Q_N)	0.01279	0.01271	0.01829
	(!D * RESET_B * SCD * SCE * Q * !Q_N) + (!D * !RESET_B * SCD * SCE * !SET_B * Q * !Q_N)	0.00708	0.00705	0.01279
	(!D * RESET_B * SCD * SCE * Q * !Q_N) + (!D * !RESET_B * SCD * SCE * !SET_B * Q * !Q_N)	0.01012	0.01010	0.01583
	(!D * !SCE * SET_B * !Q * Q_N)	0.00733	0.00728	0.01299
	(!D * !SCE * SET_B * !Q * Q_N)	0.01037	0.01032	0.01603
	(!D * !SCE * !SET_B * Q * !Q_N)	0.00966	0.00953	0.01543
	(!D * !SCE * !SET_B * Q * !Q_N)	0.01268	0.01257	0.01846
	(!D * !SCD * SCE * SET_B * !Q * Q_N)	0.00739	0.00733	0.01305
	(!D * !SCD * SCE * SET_B * !Q * Q_N)	0.01043	0.01038	0.01609
	(!D * !SCD * SCE * !SET_B * Q * !Q_N)	0.00971	0.00959	0.01549
	(!D * !SCD * SCE * !SET_B * Q * !Q_N)	0.01273	0.01263	0.01852
	(!D * !RESET_B * SCD * SCE * SET_B * !Q * Q_N)	0.00982	0.00973	0.01530
	(!D * !RESET_B * SCD * SCE * SET_B * !Q * Q_N)	0.01285	0.01277	0.01835

sky130_fd_sc_hs__sdfbbn_2	**(D * RESET_B * SCD * SCE * Q * !Q_N) + (D * !RESET_B * SCD * SCE * !SET_B * Q * !Q_N)**	0.00707	0.00705	0.01278
	(D * RESET_B * SCD * SCE * Q * !Q_N) + (D * !RESET_B * SCD * SCE * !SET_B * Q * !Q_N)	0.01007	0.01006	0.01578
	(D * RESET_B * !SCE * Q * !Q_N) + (D * !RESET_B * !SCE * !SET_B * Q * !Q_N)	0.00701	0.00699	0.01273
	(D * RESET_B * !SCE * Q * !Q_N) + (D * !RESET_B * !SCE * !SET_B * Q * !Q_N)	0.01002	0.01000	0.01573
	(D * !SCD * SCE * SET_B * !Q * Q_N)	0.00734	0.00729	0.01300
	(D * !SCD * SCE * SET_B * !Q * Q_N)	0.01035	0.01029	0.01601
	(D * !SCD * SCE * !SET_B * Q * !Q_N)	0.00971	0.00959	0.01550
	(D * !SCD * SCE * !SET_B * Q * !Q_N)	0.01270	0.01258	0.01849
	(D * !RESET_B * SCD * SCE * SET_B * !Q * Q_N)	0.00994	0.00986	0.01541
	(D * !RESET_B * SCD * SCE * SET_B * !Q * Q_N)	0.01294	0.01285	0.01841
	(D * !RESET_B * !SCE * SET_B * !Q * Q_N)	0.00988	0.00981	0.01535
	(D * !RESET_B * !SCE * SET_B * !Q * Q_N)	0.01289	0.01281	0.01836
	(!D * RESET_B * SCD * SCE * Q * !Q_N) + (!D * !RESET_B * SCD * SCE * !SET_B * Q * !Q_N)	0.00707	0.00705	0.01278
	(!D * RESET_B * SCD * SCE * Q * !Q_N) + (!D * !RESET_B * SCD * SCE * !SET_B * Q * !Q_N)	0.01007	0.01005	0.01578
	(!D * !SCE * SET_B * !Q * Q_N)	0.00728	0.00723	0.01295
	(!D * !SCE * SET_B * !Q * Q_N)	0.01029	0.01024	0.01595
	(!D * !SCE * !SET_B * Q * !Q_N)	0.00965	0.00953	0.01544
	(!D * !SCE * !SET_B * Q * !Q_N)	0.01264	0.01253	0.01843
	(!D * !SCD * SCE * SET_B * !Q * Q_N)	0.00734	0.00729	0.01300
	(!D * !SCD * SCE * SET_B * !Q * Q_N)	0.01035	0.01029	0.01601
	(!D * !SCD * SCE * !SET_B * Q * !Q_N)	0.00970	0.00959	0.01551
	(!D * !SCD * SCE * !SET_B * Q * !Q_N)	0.01269	0.01258	0.01849
	(!D * !RESET_B * SCD * SCE * SET_B * !Q * Q_N)	0.00994	0.00987	0.01541
	(!D * !RESET_B * SCD * SCE * SET_B * !Q * Q_N)	0.01294	0.01287	0.01841

SKY130_FD_SC_HS__SDFBBP

sky130_fd_sc_hs_tt_1.50v_25C.ccs
Cell Library: Process , Voltage 1.50, 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	0.00191	0.00174	0.00396	0.00165	0.00617	0.00285	0.82645	0.78436

Leakage Information

Cell Name	Leakage(nW)		
	Min.	Avg	Max.
sky130_fd_sc_hs__sdfbbp_1	0.00000	0.59480	1.07611

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)	0.50803	1.13879	7.16273
	SET_B->Q (FR)	0.22830	1.07668	8.99217

Delay(ns) to Q falling :

Cell Name	Timing Arc(Dir)	Delay(ns)		
		First	Mid	Last
sky130_fd_sc_hs__sdfbbp_1	CLK->Q (RF)	0.38558	0.70022	2.59991
	RESET_B->Q (FF)	0.30934	0.83323	4.43637
	SET_B->Q (RF)	0.18930	0.52150	2.57685

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)	0.34064	0.98737	7.06177
	RESET_B->Q_N (FR)	0.26494	1.12901	8.92447
	SET_B->Q_N (RR)	0.14477	0.81985	7.19133

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)	0.42703	0.82565	2.70315
	SET_B->Q_N (FF)	0.15939	0.74646	4.83054

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)	-0.10647	-0.18908	-0.92436
	setup	CLK (R)	0.17216	0.22192	1.00304

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)	-0.28059	-0.37121	-2.62837
	setup	CLK (R)	0.37595	0.44631	2.90468

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)	-0.10647	-0.18908	-0.92436
	setup	CLK (R)	0.17216	0.22192	1.00304

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)	-0.28059	-0.37121	-2.62837
	setup	CLK (R)	0.37595	0.44631	2.90468

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)	-0.12633	-0.20596	-1.07828
	setup	CLK (R)	0.19601	0.24091	1.15849

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)	-0.36358	-0.47152	-3.02315
	setup	CLK (R)	0.47079	0.55475	3.31086

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)	-0.12633	-0.20596	-1.07828
	hold	CLK (R)	-0.12899	-0.20692	-1.08722
	setup	CLK (R)	0.19540	0.23716	1.14906
	setup	CLK (R)	0.19601	0.24091	1.15849

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)	-0.36869	-0.47440	-3.03863
	hold	CLK (R)	-0.36358	-0.47152	-3.02315
	setup	CLK (R)	0.47079	0.55475	3.31086
	setup	CLK (R)	0.46805	0.55155	3.28701

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)	-0.11529	-0.20639	-0.43251
	setup	CLK (R)	0.45582	0.43505	1.08595

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)	-0.18781	-0.32378	-2.22675
	setup	CLK (R)	0.38005	0.45688	3.07475

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)	-0.35896	-0.36027	-0.43251
	hold	CLK (R)	-0.11529	-0.20639	-1.01198
	setup	CLK (R)	0.45582	0.43505	0.76563
	setup	CLK (R)	0.18332	0.24276	1.08595

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)	-0.18781	-0.32378	-2.22675
	hold	CLK (R)	-0.28508	-0.38215	-2.76653
	setup	CLK (R)	0.25497	0.35423	2.29046
	setup	CLK (R)	0.38005	0.45688	3.07475

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)	0.11445	0.12254	0.38499
	removal	CLK (R)	-0.04483	-0.06385	-0.22864

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)	0.11445	0.12252	0.38481
	recovery	CLK (R)	0.11422	0.12253	0.38358
	recovery	CLK (R)	0.11430	0.12254	0.38499
	removal	CLK (R)	-0.04483	-0.06385	-0.22864
	removal	CLK (R)	-0.04483	-0.06385	-0.22864
	removal	CLK (R)	-0.04483	-0.06385	-0.22864

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 ()	0.24196	0.74341	16.50020
	min_pulse_width	RESET_B ()	0.25304	0.74341	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)	0.01442	0.00000	3.16990
	removal	CLK (R)	0.09271	0.11965	0.21973
	hold	RESET_B (R)	-0.07572	-0.14565	-0.59498
	setup	RESET_B (R)	0.13330	0.19326	1.14623

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)	0.01442	0.00000	3.16990
	recovery	CLK (R)	0.01277	0.00000	3.11586
	recovery	CLK (R)	0.01240	0.00000	3.16574
	removal	CLK (R)	0.09271	0.11965	0.21973
	removal	CLK (R)	0.09271	0.11965	0.21973
	removal	CLK (R)	0.09271	0.11965	0.21973
	hold	RESET_B (R)	-0.07733	-0.14566	-0.59588
	hold	RESET_B (R)	-0.07572	-0.14565	-0.59498
	setup	RESET_B (R)	0.12719	0.18531	1.13734
	setup	RESET_B (R)	0.13330	0.19326	1.14623

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 ()	0.15608	0.74341	16.50020
	min_pulse_width	SET_B ()	0.17270	0.74341	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 ()	0.13392	0.74341	16.50020
	min_pulse_width	CLK ()	0.17270	0.74341	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 ()	0.23919	0.74341	16.50020
	min_pulse_width	CLK ()	0.35555	0.74341	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	0.01179	0.01194	0.01468
	CLK	0.01025	0.01041	0.01312
	SET_B	0.01038	0.01048	0.01704
	SET_B	0.01365	0.01375	0.02017

Internal switching power(pJ) to Q falling :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__sdfbbp_1	CLK	0.01170	0.01171	0.01419
	CLK	0.01000	0.01001	0.01248
	RESET_B	0.01196	0.01209	0.01406
	RESET_B	0.01276	0.01290	0.01464
	SET_B	0.01295	0.01272	0.01644
	SET_B	0.00967	0.00942	0.01313

Internal switching power(pJ) to Q_N rising :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__sdfbbp_1	CLK	0.01172	0.01173	0.01436
	CLK	0.01002	0.01002	0.01267
	RESET_B	0.01198	0.01209	0.01414
	RESET_B	0.01278	0.01291	0.01486
	SET_B	0.01297	0.01272	0.01662
	SET_B	0.00969	0.00943	0.01333

Internal switching power(pJ) to Q_N falling :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__sdfbbp_1	CLK	0.01177	0.01192	0.01450
	CLK	0.01022	0.01038	0.01295
	SET_B	0.01034	0.01044	0.01676
	SET_B	0.01360	0.01369	0.01990

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__sdfbbp_1	(CLK * SCD * SCE)	0.00090	0.00090	0.00090
	(CLK * SCD * SCE)	-0.00044	-0.00044	-0.00044
	(CLK * !SCE)	0.00332	0.00318	0.00678
	(CLK * !SCE)	0.00105	0.00090	0.00451
	(CLK * !SCD * SCE)	0.00039	0.00038	0.00037
	(CLK * !SCD * SCE)	-0.00105	-0.00106	-0.00108
	(!CLK * SCD * SCE)	0.00090	0.00090	0.00090
	(!CLK * SCD * SCE)	-0.00044	-0.00044	-0.00044
	(!CLK * RESET_B * !SCE * SET_B * Q * !Q_N) + (!CLK * RESET_B * !SCE * SET_B * !Q * Q_N)	0.00872	0.00852	0.01155
	(!CLK * RESET_B * !SCE * SET_B * Q * !Q_N) + (!CLK * RESET_B * !SCE * SET_B * !Q * Q_N)	0.00659	0.00640	0.00944
	(!CLK * !SCE * !SET_B * Q * !Q_N)	0.00577	0.00564	0.00852
	(!CLK * !SCE * !SET_B * Q * !Q_N)	0.00330	0.00316	0.00606
	(!CLK * !SCD * SCE)	0.00039	0.00038	0.00037
	(!CLK * !SCD * SCE)	-0.00105	-0.00106	-0.00108
	(!CLK * !RESET_B * !SCE * SET_B * !Q * Q_N)	0.00497	0.00484	0.00769
	(!CLK * !RESET_B * !SCE * SET_B * !Q * Q_N)	0.00251	0.00238	0.00524

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__sdfbbp_1	(CLK * SCD * SCE)	-0.00085	-0.00086	-0.00089
	(CLK * SCD * SCE)	0.00049	0.00049	0.00046
	(CLK * !SCE)	0.00085	0.00087	0.00483
	(CLK * !SCE)	0.00313	0.00315	0.00711
	(CLK * !SCD * SCE)	-0.00035	-0.00035	-0.00035
	(CLK * !SCD * SCE)	0.00109	0.00109	0.00108
	(!CLK * SCD * SCE)	-0.00085	-0.00087	-0.00089
	(!CLK * SCD * SCE)	0.00048	0.00048	0.00046
	(!CLK * RESET_B * !SCE * SET_B * Q * !Q_N) + (!CLK * RESET_B * !SCE * SET_B * !Q * Q_N)	0.00661	0.00653	0.01054
	(!CLK * RESET_B * !SCE * SET_B * Q * !Q_N) + (!CLK * RESET_B * !SCE * SET_B * !Q * Q_N)	0.00874	0.00865	0.01266
	(!CLK * !SCE * !SET_B * Q * !Q_N)	0.00252	0.00247	0.00603
	(!CLK * !SCE * !SET_B * Q * !Q_N)	0.00499	0.00495	0.00850
	(!CLK * !SCD * SCE)	-0.00035	-0.00036	-0.00035
	(!CLK * !SCD * SCE)	0.00109	0.00110	0.00108
	(!CLK * !RESET_B * !SCE * SET_B * !Q * Q_N)	0.00318	0.00314	0.00676
	(!CLK * !RESET_B * !SCE * SET_B * !Q * Q_N)	0.00563	0.00559	0.00922

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

Cell Name	When	Power(pJ)		
		first	mid	last

sky130_fd_sc_hs__sdfbbp_1	**(CLK * D * SCE)**	0.00460	0.00447	0.00617
	(CLK * D * SCE)	0.00163	0.00150	0.00322
	(CLK * !D * SCE)	0.00515	0.00503	0.00661
	(CLK * !D * SCE)	0.00209	0.00196	0.00355
	(!CLK * D * SCE * !SET_B * Q * !Q_N)	0.00704	0.00693	0.00839
	(!CLK * D * SCE * !SET_B * Q * !Q_N)	0.00388	0.00377	0.00524
	(!CLK * D * RESET_B * SCE * SET_B * Q * !Q_N) + (!CLK * D * RESET_B * SCE * SET_B * !Q * Q_N)	0.00997	0.00981	0.01136
	(!CLK * D * RESET_B * SCE * SET_B * Q * !Q_N) + (!CLK * D * RESET_B * SCE * SET_B * !Q * Q_N)	0.00716	0.00700	0.00856
	(!CLK * D * !RESET_B * SCE * SET_B * !Q * Q_N)	0.00624	0.00613	0.00756
	(!CLK * D * !RESET_B * SCE * SET_B * !Q * Q_N)	0.00309	0.00298	0.00442
	(!CLK * !D * SCE * !SET_B * Q * !Q_N)	0.00760	0.00749	0.00884
	(!CLK * !D * SCE * !SET_B * Q * !Q_N)	0.00434	0.00422	0.00560
	(!CLK * !D * RESET_B * SCE * SET_B * Q * !Q_N) + (!CLK * !D * RESET_B * SCE * SET_B * !Q * Q_N)	0.01053	0.01038	0.01183
	(!CLK * !D * RESET_B * SCE * SET_B * Q * !Q_N) + (!CLK * !D * RESET_B * SCE * SET_B * !Q * Q_N)	0.00761	0.00747	0.00893
	(!CLK * !D * !RESET_B * SCE * SET_B * !Q * Q_N)	0.00680	0.00668	0.00802
	(!CLK * !D * !RESET_B * SCE * SET_B * !Q * Q_N)	0.00355	0.00344	0.00478
	!SCE	0.00078	0.00069	0.00068
	!SCE	-0.00080	-0.00090	-0.00091

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

Cell Name	When	Power(pJ)		
		first	mid	last

sky130_fd_sc_hs__sdfbbp_1	**(CLK * D * SCE)**	0.00192	0.00183	0.00358
	(CLK * D * SCE)	0.00488	0.00480	0.00652
	(CLK * !D * SCE)	0.00162	0.00154	0.00337
	(CLK * !D * SCE)	0.00468	0.00460	0.00642
	(!CLK * D * SCE * !SET_B * Q * !Q_N)	0.00355	0.00346	0.00498
	(!CLK * D * SCE * !SET_B * Q * !Q_N)	0.00671	0.00663	0.00812
	(!CLK * D * RESET_B * SCE * SET_B * Q * !Q_N) + (!CLK * D * RESET_B * SCE * SET_B * !Q * Q_N)	0.00762	0.00750	0.00930
	(!CLK * D * RESET_B * SCE * SET_B * Q * !Q_N) + (!CLK * D * RESET_B * SCE * SET_B * !Q * Q_N)	0.01043	0.01032	0.01209
	(!CLK * D * !RESET_B * SCE * SET_B * !Q * Q_N)	0.00421	0.00412	0.00569
	(!CLK * D * !RESET_B * SCE * SET_B * !Q * Q_N)	0.00736	0.00728	0.00883
	(!CLK * !D * SCE * !SET_B * Q * !Q_N)	0.00325	0.00317	0.00475
	(!CLK * !D * SCE * !SET_B * Q * !Q_N)	0.00652	0.00643	0.00799
	(!CLK * !D * RESET_B * SCE * SET_B * Q * !Q_N) + (!CLK * !D * RESET_B * SCE * SET_B * !Q * Q_N)	0.00734	0.00723	0.00918
	(!CLK * !D * RESET_B * SCE * SET_B * Q * !Q_N) + (!CLK * !D * RESET_B * SCE * SET_B * !Q * Q_N)	0.01025	0.01013	0.01206
	(!CLK * !D * !RESET_B * SCE * SET_B * !Q * Q_N)	0.00391	0.00383	0.00547
	(!CLK * !D * !RESET_B * SCE * SET_B * !Q * Q_N)	0.00716	0.00708	0.00870
	!SCE	-0.00065	-0.00067	-0.00067
	!SCE	0.00093	0.00093	0.00093

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)	0.00370	0.00355	0.00791
	(CLK * D * SCD) + (CLK * !D * !SCD)	-0.00028	-0.00045	0.00392
	(CLK * D * !SCD)	0.00602	0.00584	0.01021
	(CLK * D * !SCD)	0.00319	0.00299	0.00734
	(CLK * !D * SCD)	0.00671	0.00653	0.01326
	(CLK * !D * SCD)	0.00172	0.00153	0.00830
	(!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)	0.00384	0.00370	0.00806
	(!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)	-0.00013	-0.00031	0.00407
	(!CLK * D * RESET_B * !SCD * SET_B * Q * !Q_N) + (!CLK * D * RESET_B * !SCD * SET_B * !Q * Q_N)	0.01176	0.01170	0.01600
	(!CLK * D * RESET_B * !SCD * SET_B * Q * !Q_N) + (!CLK * D * RESET_B * !SCD * SET_B * !Q * Q_N)	0.00878	0.00870	0.01298
	(!CLK * D * !SCD * !SET_B * Q * !Q_N)	0.00769	0.00762	0.01195
	(!CLK * D * !SCD * !SET_B * Q * !Q_N)	0.00507	0.00496	0.00928
	(!CLK * D * !RESET_B * !SCD * SET_B * !Q * Q_N)	0.00836	0.00828	0.01263
	(!CLK * D * !RESET_B * !SCD * SET_B * !Q * Q_N)	0.00572	0.00561	0.00995
	(!CLK * !D * SCD * !SET_B * Q * !Q_N)	0.00930	0.00915	0.01555
	(!CLK * !D * SCD * !SET_B * Q * !Q_N)	0.00412	0.00395	0.01038
	(!CLK * !D * RESET_B * SCD * SET_B * Q * !Q_N) + (!CLK * !D * RESET_B * SCD * SET_B * !Q * Q_N)	0.01224	0.01202	0.01857
	(!CLK * !D * RESET_B * SCD * SET_B * Q * !Q_N) + (!CLK * !D * RESET_B * SCD * SET_B * !Q * Q_N)	0.00741	0.00718	0.01376
	(!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)	0.00381	0.00375	0.00808
	(!CLK * !D * RESET_B * !SCD * SET_B * Q * !Q_N) + (!CLK * !D * RESET_B * !SCD * SET_B * !Q * Q_N) + (!CLK * !D * RESET_B * !SCD * !SET_B * Q * !Q_N) + (!CLK * !D * !RESET_B * !SCD * SET_B * !Q * Q_N) + (!CLK * !D * !RESET_B * !SCD * !SET_B * Q * !Q_N)	0.00009	0.00001	0.00435
	(!CLK * !D * !RESET_B * SCD * SET_B * !Q * Q_N)	0.00850	0.00835	0.01471
	(!CLK * !D * !RESET_B * SCD * SET_B * !Q * Q_N)	0.00333	0.00316	0.00955

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)**	-0.00030	-0.00008	0.00459
	(CLK * D * SCD) + (CLK * !D * !SCD)	0.00366	0.00391	0.00858
	(CLK * D * !SCD)	0.00294	0.00303	0.00764
	(CLK * D * !SCD)	0.00578	0.00590	0.01042
	(CLK * !D * SCD)	0.00096	0.00095	0.00789
	(CLK * !D * SCD)	0.00593	0.00594	0.01287
	(!CLK * D * RESET_B * SCD * SET_B * Q * !Q_N) + (!CLK * D * RESET_B * SCD * SET_B * !Q * Q_N) + (!CLK * D * RESET_B * SCD * !SET_B * Q * !Q_N) + (!CLK * D * !RESET_B * SCD * SET_B * !Q * Q_N) + (!CLK * D * !RESET_B * SCD * !SET_B * Q * !Q_N)	-0.00045	-0.00023	0.00444
	(!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)	0.00351	0.00376	0.00842
	(!CLK * D * RESET_B * !SCD * SET_B * Q * !Q_N) + (!CLK * D * RESET_B * !SCD * SET_B * !Q * Q_N)	0.00814	0.00831	0.01279
	(!CLK * D * RESET_B * !SCD * SET_B * Q * !Q_N) + (!CLK * D * RESET_B * !SCD * SET_B * !Q * Q_N)	0.01114	0.01132	0.01574
	(!CLK * D * !SCD * !SET_B * Q * !Q_N)	0.00521	0.00538	0.00992
	(!CLK * D * !SCD * !SET_B * Q * !Q_N)	0.00785	0.00803	0.01252
	(!CLK * D * !RESET_B * !SCD * SET_B * !Q * Q_N)	0.00441	0.00458	0.00911
	(!CLK * D * !RESET_B * !SCD * SET_B * !Q * Q_N)	0.00706	0.00725	0.01172
	(!CLK * !D * SCD * !SET_B * Q * !Q_N)	0.00247	0.00244	0.00903
	(!CLK * !D * SCD * !SET_B * Q * !Q_N)	0.00764	0.00761	0.01420
	(!CLK * !D * RESET_B * SCD * SET_B * Q * !Q_N) + (!CLK * !D * RESET_B * SCD * SET_B * !Q * Q_N)	0.00656	0.00648	0.01335
	(!CLK * !D * RESET_B * SCD * SET_B * Q * !Q_N) + (!CLK * !D * RESET_B * SCD * SET_B * !Q * Q_N)	0.01137	0.01130	0.01817
	(!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)	-0.00027	-0.00012	0.00454
	(!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)	0.00346	0.00362	0.00828
	(!CLK * !D * !RESET_B * SCD * SET_B * !Q * Q_N)	0.00313	0.00310	0.00975
	(!CLK * !D * !RESET_B * SCD * SET_B * !Q * Q_N)	0.00828	0.00826	0.01491

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)	0.00441	0.00434	0.00802
	(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)	0.00250	0.00242	0.00612
	(!SET_B * Q * !Q_N)	0.00479	0.00469	0.00856
	(!SET_B * Q * !Q_N)	0.00284	0.00274	0.00661
	(!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)	0.00834	0.00809	0.01169
	(!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)	0.00677	0.00653	0.01013

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)	0.00237	0.00236	0.00660
	(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)	0.00428	0.00427	0.00851
	(!SET_B * Q * !Q_N)	0.00124	0.00129	0.00557
	(!SET_B * Q * !Q_N)	0.00321	0.00325	0.00753
	(!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)	0.00635	0.00625	0.01063
	(!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)	0.00791	0.00781	0.01219

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)	0.00248	0.00250	0.00247
	(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)	-0.00349	-0.00351	-0.00349
	(!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)	0.00653	0.00631	0.01112
	(!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)	0.00014	-0.00011	0.00472

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)	-0.00242	-0.00248	-0.00247
	(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)	0.00351	0.00354	0.00350
	(!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)	0.00157	0.00157	0.00802
	(!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)	0.00796	0.00799	0.01443

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)**	0.01053	0.01025	0.01537
	(D * RESET_B * SCD * SCE * Q * !Q_N) + (D * !RESET_B * SCD * SCE * !SET_B * Q * !Q_N)	0.00730	0.00699	0.01212
	(D * RESET_B * !SCE * Q * !Q_N) + (D * !RESET_B * !SCE * !SET_B * Q * !Q_N)	0.01070	0.01042	0.01553
	(D * RESET_B * !SCE * Q * !Q_N) + (D * !RESET_B * !SCE * !SET_B * Q * !Q_N)	0.00746	0.00716	0.01229
	(D * !SCD * SCE * SET_B * !Q * Q_N)	0.01047	0.01016	0.01514
	(D * !SCD * SCE * SET_B * !Q * Q_N)	0.00724	0.00691	0.01189
	(D * !SCD * SCE * !SET_B * Q * !Q_N)	0.01335	0.01308	0.01803
	(D * !SCD * SCE * !SET_B * Q * !Q_N)	0.00992	0.00963	0.01459
	(D * !RESET_B * SCD * SCE * SET_B * !Q * Q_N)	0.01267	0.01228	0.01727
	(D * !RESET_B * SCD * SCE * SET_B * !Q * Q_N)	0.00962	0.00921	0.01421
	(D * !RESET_B * !SCE * SET_B * !Q * Q_N)	0.01284	0.01245	0.01744
	(D * !RESET_B * !SCE * SET_B * !Q * Q_N)	0.00979	0.00938	0.01437
	(!D * RESET_B * SCD * SCE * Q * !Q_N) + (!D * !RESET_B * SCD * SCE * !SET_B * Q * !Q_N)	0.01053	0.01025	0.01537
	(!D * RESET_B * SCD * SCE * Q * !Q_N) + (!D * !RESET_B * SCD * SCE * !SET_B * Q * !Q_N)	0.00730	0.00699	0.01212
	(!D * !SCE * SET_B * !Q * Q_N)	0.01064	0.01033	0.01530
	(!D * !SCE * SET_B * !Q * Q_N)	0.00741	0.00707	0.01206
	(!D * !SCE * !SET_B * Q * !Q_N)	0.01352	0.01324	0.01819
	(!D * !SCE * !SET_B * Q * !Q_N)	0.01009	0.00980	0.01475
	(!D * !SCD * SCE * SET_B * !Q * Q_N)	0.01048	0.01016	0.01514
	(!D * !SCD * SCE * SET_B * !Q * Q_N)	0.00724	0.00691	0.01189
	(!D * !SCD * SCE * !SET_B * Q * !Q_N)	0.01336	0.01308	0.01802
	(!D * !SCD * SCE * !SET_B * Q * !Q_N)	0.00993	0.00963	0.01459
	(!D * !RESET_B * SCD * SCE * SET_B * !Q * Q_N)	0.01268	0.01228	0.01727
	(!D * !RESET_B * SCD * SCE * SET_B * !Q * Q_N)	0.00963	0.00921	0.01421

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)	0.01122	0.01114	0.01676
	(D * RESET_B * SCD * SCE * SET_B * !Q * Q_N)	0.01462	0.01453	0.02016
	(D * RESET_B * SCD * SCE * Q * !Q_N) + (D * !RESET_B * SCD * SCE * !SET_B * Q * !Q_N)	0.00570	0.00570	0.01141
	(D * RESET_B * SCD * SCE * Q * !Q_N) + (D * !RESET_B * SCD * SCE * !SET_B * Q * !Q_N)	0.00895	0.00895	0.01465
	(D * RESET_B * !SCE * SET_B * !Q * Q_N)	0.01107	0.01099	0.01660
	(D * RESET_B * !SCE * SET_B * !Q * Q_N)	0.01446	0.01438	0.02000
	(D * RESET_B * !SCE * Q * !Q_N) + (D * !RESET_B * !SCE * !SET_B * Q * !Q_N)	0.00553	0.00553	0.01124
	(D * RESET_B * !SCE * Q * !Q_N) + (D * !RESET_B * !SCE * !SET_B * Q * !Q_N)	0.00878	0.00879	0.01448
	(D * RESET_B * !SCD * SCE * SET_B * Q * !Q_N)	0.01221	0.01229	0.01829
	(D * RESET_B * !SCD * SCE * SET_B * Q * !Q_N)	0.01533	0.01541	0.02142
	(D * !SCD * SCE * SET_B * !Q * Q_N)	0.00588	0.00591	0.01151
	(D * !SCD * SCE * SET_B * !Q * Q_N)	0.00912	0.00916	0.01476
	(D * !SCD * SCE * !SET_B * Q * !Q_N)	0.00799	0.00802	0.01404
	(D * !SCD * SCE * !SET_B * Q * !Q_N)	0.01143	0.01147	0.01749
	(D * !RESET_B * SCD * SCE * SET_B * !Q * Q_N)	0.00722	0.00720	0.01287
	(D * !RESET_B * SCD * SCE * SET_B * !Q * Q_N)	0.01027	0.01026	0.01594
	(D * !RESET_B * !SCE * SET_B * !Q * Q_N)	0.00705	0.00703	0.01271
	(D * !RESET_B * !SCE * SET_B * !Q * Q_N)	0.01011	0.01010	0.01577
	(!D * RESET_B * SCD * SCE * SET_B * !Q * Q_N)	0.01122	0.01114	0.01676
	(!D * RESET_B * SCD * SCE * SET_B * !Q * Q_N)	0.01462	0.01453	0.02016
	(!D * RESET_B * SCD * SCE * Q * !Q_N) + (!D * !RESET_B * SCD * SCE * !SET_B * Q * !Q_N)	0.00570	0.00570	0.01141
	(!D * RESET_B * SCD * SCE * Q * !Q_N) + (!D * !RESET_B * SCD * SCE * !SET_B * Q * !Q_N)	0.00895	0.00895	0.01465
	(!D * RESET_B * !SCE * SET_B * Q * !Q_N)	0.01202	0.01203	0.01811
	(!D * RESET_B * !SCE * SET_B * Q * !Q_N)	0.01513	0.01513	0.02122
	(!D * RESET_B * !SCD * SCE * SET_B * Q * !Q_N)	0.01221	0.01225	0.01827
	(!D * RESET_B * !SCD * SCE * SET_B * Q * !Q_N)	0.01533	0.01537	0.02140
	(!D * !SCE * SET_B * !Q * Q_N)	0.00571	0.00574	0.01134
	(!D * !SCE * SET_B * !Q * Q_N)	0.00896	0.00899	0.01459
	(!D * !SCE * !SET_B * Q * !Q_N)	0.00782	0.00783	0.01387
	(!D * !SCE * !SET_B * Q * !Q_N)	0.01126	0.01128	0.01732
	(!D * !SCD * SCE * SET_B * !Q * Q_N)	0.00588	0.00591	0.01151
	(!D * !SCD * SCE * SET_B * !Q * Q_N)	0.00912	0.00916	0.01476
	(!D * !SCD * SCE * !SET_B * Q * !Q_N)	0.00799	0.00804	0.01401
	(!D * !SCD * SCE * !SET_B * Q * !Q_N)	0.01144	0.01149	0.01746
	(!D * !RESET_B * SCD * SCE * SET_B * !Q * Q_N)	0.00722	0.00720	0.01287
	(!D * !RESET_B * SCD * SCE * SET_B * !Q * Q_N)	0.01027	0.01026	0.01594

SKY130_FD_SC_HS__SDFRBPx

sky130_fd_sc_hs_tt_1.50v_25C.ccs
Cell Library: Process , Voltage
1.50, 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	0.00183	0.00188	0.00414	0.00562	0.00299	0.85616	0.85869
sky130_fd_sc_hs__sdfrbp_2	0.00185	0.00190	0.00425	0.00576	0.00293	1.70938	1.69724

Leakage Information

Cell Name	Leakage(nW)		
	Min.	**Avg**	**Max.**
sky130_fd_sc_hs__sdfrbp_1	0.00000	0.36214	0.65744
sky130_fd_sc_hs__sdfrbp_2	0.00000	0.37329	0.61919

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)	0.31849	0.93805	7.04977
sky130_fd_sc_hs__sdfrbp_2	CLK->Q (RR)	0.37962	0.89104	7.39489

Delay(ns) to Q falling :

Cell Name	Timing Arc(Dir)	Delay(ns)		
		First	Mid	Last
sky130_fd_sc_hs__sdfrbp_1	CLK->Q (RF)	0.27838	0.59860	2.53367
	RESET_B->Q (FF)	0.39542	0.97077	5.28048
sky130_fd_sc_hs__sdfrbp_2	CLK->Q (RF)	0.31897	0.60966	2.67250
	RESET_B->Q (FF)	0.44014	0.98737	5.43477

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)	0.23239	0.87031	6.90049
	RESET_B->Q_N (FR)	0.34931	1.23798	9.64511
sky130_fd_sc_hs__sdfrbp_2	CLK->Q_N (RR)	0.23416	0.76892	6.88112
	RESET_B->Q_N (FR)	0.35549	1.14256	9.64133

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)	0.23959	0.64850	2.78958
sky130_fd_sc_hs__sdfrbp_2	CLK->Q_N (RF)	0.26168	0.64862	2.74624

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)	-0.11412	-0.22453	-1.14203
	setup	CLK (R)	0.22818	0.29397	1.37000
sky130_fd_sc_hs__sdfrbp_2	hold	CLK (R)	-0.11576	-0.23151	-1.18019
	setup	CLK (R)	0.21919	0.29267	1.30235

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)	-0.11706	-0.25906	-1.61349
	setup	CLK (R)	0.35824	0.44346	2.96909
sky130_fd_sc_hs__sdfrbp_2	hold	CLK (R)	-0.14749	-0.29903	-2.44647
	setup	CLK (R)	0.37236	0.46033	2.99064

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)	-0.11412	-0.22453	-1.14326
	hold	CLK (R)	-0.11562	-0.22506	-1.14203
	setup	CLK (R)	0.22594	0.29397	1.36765
	setup	CLK (R)	0.22818	0.29200	1.37000
sky130_fd_sc_hs__sdfrbp_2	hold	CLK (R)	-0.11576	-0.23151	-1.18019
	hold	CLK (R)	-0.12014	-0.23151	-1.18030
	setup	CLK (R)	0.21885	0.29267	1.30226
	setup	CLK (R)	0.21919	0.29251	1.30235

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)	-0.11706	-0.25906	-1.61408
	hold	CLK (R)	-0.11878	-0.25933	-1.61349
	setup	CLK (R)	0.35824	0.44346	2.96909
	setup	CLK (R)	0.35498	0.44253	2.96733
sky130_fd_sc_hs__sdfrbp_2	hold	CLK (R)	-0.14749	-0.29950	-2.44828
	hold	CLK (R)	-0.14813	-0.29903	-2.44647
	setup	CLK (R)	0.37236	0.46031	2.99064
	setup	CLK (R)	0.37211	0.46033	2.98904

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)	-0.13820	-0.24217	-1.28243
	setup	CLK (R)	0.25477	0.31300	1.46396
sky130_fd_sc_hs__sdfrbp_2	hold	CLK (R)	-0.14066	-0.24760	-1.30654
	setup	CLK (R)	0.24297	0.31318	1.41391

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)	-0.15890	-0.32229	-2.11638
	setup	CLK (R)	0.43828	0.53274	3.34474
sky130_fd_sc_hs__sdfrbp_2	hold	CLK (R)	-0.18837	-0.35567	-2.87869
	setup	CLK (R)	0.45129	0.54633	3.35750

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)	-0.13820	-0.24217	-1.28243
	hold	CLK (R)	-0.14355	-0.24832	-1.29052
	setup	CLK (R)	0.25139	0.30756	1.46396
	setup	CLK (R)	0.25477	0.31300	1.46376
sky130_fd_sc_hs__sdfrbp_2	hold	CLK (R)	-0.14066	-0.24760	-1.30654
	hold	CLK (R)	-0.14678	-0.25316	-1.31781
	setup	CLK (R)	0.23911	0.30727	1.40097
	setup	CLK (R)	0.24297	0.31318	1.41391

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)	-0.17193	-0.33848	-2.19968
	hold	CLK (R)	-0.15890	-0.32229	-2.11638
	setup	CLK (R)	0.43828	0.53274	3.34474
	setup	CLK (R)	0.43436	0.52853	3.32981
sky130_fd_sc_hs__sdfrbp_2	hold	CLK (R)	-0.20545	-0.37294	-2.87922
	hold	CLK (R)	-0.18837	-0.35567	-2.87869
	setup	CLK (R)	0.45129	0.54633	3.35750
	setup	CLK (R)	0.45014	0.54112	3.35157

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)	-0.11734	-0.23069	-0.19204
	setup	CLK (R)	0.43513	0.43587	1.62490
sky130_fd_sc_hs__sdfrbp_2	hold	CLK (R)	-0.12147	-0.23628	-0.38483
	setup	CLK (R)	0.45062	0.44748	1.44019

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)	-0.13426	-0.28230	-1.97413
	setup	CLK (R)	0.37456	0.46717	3.15689
sky130_fd_sc_hs__sdfrbp_2	hold	CLK (R)	-0.16574	-0.31622	-2.40499
	setup	CLK (R)	0.38671	0.47724	3.17479

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)	-0.16647	-0.24033	-0.19204
	hold	CLK (R)	-0.11734	-0.23069	-1.16929
	setup	CLK (R)	0.43513	0.43587	1.62490
	setup	CLK (R)	0.22780	0.29617	1.38303
sky130_fd_sc_hs__sdfrbp_2	hold	CLK (R)	-0.20079	-0.27348	-0.38483
	hold	CLK (R)	-0.12147	-0.23628	-1.19259
	setup	CLK (R)	0.45062	0.44748	1.44019
	setup	CLK (R)	0.21636	0.29486	1.31014

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)	-0.20974	-0.37490	-2.42260
	hold	CLK (R)	-0.13426	-0.28230	-1.97413
	setup	CLK (R)	0.32096	0.43886	2.52378
	setup	CLK (R)	0.37456	0.46717	3.15689
sky130_fd_sc_hs__sdfrbp_2	hold	CLK (R)	-0.21014	-0.37561	-2.40499
	hold	CLK (R)	-0.16574	-0.31622	-2.63810
	setup	CLK (R)	0.31056	0.43139	2.46242
	setup	CLK (R)	0.38671	0.47724	3.17479

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)	0.27527	0.31583	1.49444
	removal	CLK (R)	-0.20150	-0.25865	-1.28106
sky130_fd_sc_hs__sdfrbp_2	recovery	CLK (R)	0.26634	0.31350	1.46229
	removal	CLK (R)	-0.21022	-0.26714	-1.31111

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)	0.27300	0.31262	1.49258
	recovery	CLK (R)	0.26516	0.30151	1.42297
	recovery	CLK (R)	0.26189	0.29183	1.38917
	recovery	CLK (R)	0.27527	0.31583	1.49444
	removal	CLK (R)	-0.21283	-0.27796	-1.38862
	removal	CLK (R)	-0.20691	-0.26977	-1.31267
	removal	CLK (R)	-0.20150	-0.25865	-1.28106
	removal	CLK (R)	-0.21607	-0.28515	-1.39087
sky130_fd_sc_hs__sdfrbp_2	recovery	CLK (R)	0.26278	0.30741	1.46000
	recovery	CLK (R)	0.25872	0.30070	1.39265
	recovery	CLK (R)	0.25482	0.29216	1.35805
	recovery	CLK (R)	0.26634	0.31350	1.46229
	removal	CLK (R)	-0.21760	-0.28617	-1.41248
	removal	CLK (R)	-0.21516	-0.27796	-1.34140
	removal	CLK (R)	-0.21022	-0.26714	-1.31111
	removal	CLK (R)	-0.22527	-0.29079	-1.42029

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 ()	0.20318	0.74341	16.50020
	min_pulse_width	RESET_B ()	0.17547	0.74341	16.50020
sky130_fd_sc_hs__sdfrbp_2	min_pulse_width	RESET_B ()	0.20595	0.74341	16.50020
	min_pulse_width	RESET_B ()	0.18932	0.74341	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 ()	0.18655	0.74341	16.50020
	min_pulse_width	CLK ()	0.10621	0.74341	16.50020
sky130_fd_sc_hs__sdfrbp_2	min_pulse_width	CLK ()	0.24196	0.74341	16.50020
	min_pulse_width	CLK ()	0.12283	0.74341	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 ()	0.25858	0.74341	16.50020
	min_pulse_width	CLK ()	0.32784	0.74341	16.50020
sky130_fd_sc_hs__sdfrbp_2	min_pulse_width	CLK ()	0.24196	0.74341	16.50020
	min_pulse_width	CLK ()	0.33061	0.74341	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	0.01070	0.01072	0.01335
	CLK	0.00905	0.00905	0.01166
sky130_fd_sc_hs__sdfrbp_2	CLK	0.01262	0.01294	0.01572
	CLK	0.01092	0.01123	0.01397

Internal switching power(pJ) to Q falling :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__sdfrbp_1	CLK	0.01092	0.01102	0.01378
	CLK	0.00928	0.00939	0.01213
	RESET_B	0.00924	0.00920	0.01295
	RESET_B	0.01310	0.01304	0.01643
sky130_fd_sc_hs__sdfrbp_2	CLK	0.01271	0.01320	0.01602
	CLK	0.01118	0.01159	0.01443
	RESET_B	0.01111	0.01140	0.01527
	RESET_B	0.01506	0.01533	0.01871

Internal switching power(pJ) to Q_N rising :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__sdfrbp_1	CLK	0.01093	0.01106	0.01391
	CLK	0.00929	0.00939	0.01228
	RESET_B	0.00927	0.00922	0.01314
	RESET_B	0.01313	0.01307	0.01662
sky130_fd_sc_hs__sdfrbp_2	CLK	0.01272	0.01323	0.01617
	CLK	0.01119	0.01160	0.01461
	RESET_B	0.01113	0.01142	0.01572
	RESET_B	0.01508	0.01536	0.01897

Internal switching power(pJ) to Q_N falling :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__sdfrbp_1	CLK	0.01069	0.01070	0.01322
	CLK	0.00903	0.00904	0.01152
sky130_fd_sc_hs__sdfrbp_2	CLK	0.01261	0.01293	0.01556
	CLK	0.01090	0.01122	0.01380

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

Cell Name	When	Power(pJ)		
		first	mid	last

sky130_fd_sc_hs__sdfrbp_1	**(CLK * RESET_B * SCD * SCE)**	0.00088	0.00088	0.00088
	(CLK * RESET_B * SCD * SCE)	-0.00043	-0.00043	-0.00043
	(CLK * RESET_B * SCD * !SCE)	0.00386	0.00373	0.00711
	(CLK * RESET_B * SCD * !SCE)	0.00134	0.00121	0.00459
	(CLK * RESET_B * !SCD * !SCE)	0.00386	0.00373	0.00711
	(CLK * RESET_B * !SCD * !SCE)	0.00134	0.00121	0.00460
	(CLK * !SCD * SCE)	0.00047	0.00047	0.00046
	(CLK * !SCD * SCE)	-0.00092	-0.00094	-0.00095
	(CLK * !RESET_B * SCD * SCE)	0.00045	0.00046	0.00045
	(CLK * !RESET_B * SCD * SCE)	-0.00093	-0.00095	-0.00096
	(CLK * !RESET_B * SCD * !SCE)	0.00033	0.00033	0.00028
	(CLK * !RESET_B * SCD * !SCE)	-0.00106	-0.00106	-0.00112
	(CLK * !RESET_B * !SCD * !SCE)	0.00032	0.00032	0.00029
	(CLK * !RESET_B * !SCD * !SCE)	-0.00109	-0.00110	-0.00114
	(!CLK * RESET_B * SCD * SCE)	0.00088	0.00088	0.00088
	(!CLK * RESET_B * SCD * SCE)	-0.00043	-0.00043	-0.00043
	(!CLK * RESET_B * SCD * !SCE * Q * !Q_N) + (!CLK * RESET_B * SCD * !SCE * !Q * Q_N)	0.00873	0.00861	0.01155
	(!CLK * RESET_B * SCD * !SCE * Q * !Q_N) + (!CLK * RESET_B * SCD * !SCE * !Q * Q_N)	0.00607	0.00597	0.00891
	(!CLK * RESET_B * !SCD * !SCE * Q * !Q_N) + (!CLK * RESET_B * !SCD * !SCE * !Q * Q_N)	0.00873	0.00861	0.01156
	(!CLK * RESET_B * !SCD * !SCE * Q * !Q_N) + (!CLK * RESET_B * !SCD * !SCE * !Q * Q_N)	0.00608	0.00597	0.00891
	(!CLK * !SCD * SCE)	0.00047	0.00047	0.00046
	(!CLK * !SCD * SCE)	-0.00092	-0.00093	-0.00095
	(!CLK * !RESET_B * SCD * SCE)	0.00045	0.00045	0.00045
	(!CLK * !RESET_B * SCD * SCE)	-0.00093	-0.00095	-0.00096
	(!CLK * !RESET_B * SCD * !SCE)	0.00033	0.00033	0.00028
	(!CLK * !RESET_B * SCD * !SCE)	-0.00106	-0.00106	-0.00112
	(!CLK * !RESET_B * !SCD * !SCE)	0.00032	0.00032	0.00029
	(!CLK * !RESET_B * !SCD * !SCE)	-0.00109	-0.00110	-0.00114

	(CLK * RESET_B * SCD * SCE)	0.00090	0.00091	0.00090
	(CLK * RESET_B * SCD * SCE)	-0.00043	-0.00043	-0.00043
	(CLK * RESET_B * SCD * !SCE)	0.00410	0.00396	0.00727
	(CLK * RESET_B * SCD * !SCE)	0.00153	0.00139	0.00471
	(CLK * RESET_B * !SCD * !SCE)	0.00410	0.00396	0.00727
	(CLK * RESET_B * !SCD * !SCE)	0.00153	0.00140	0.00471
	(CLK * !SCD * SCE)	0.00048	0.00048	0.00047
	(CLK * !SCD * SCE)	-0.00093	-0.00095	-0.00096
	(CLK * !RESET_B * SCD * SCE)	0.00046	0.00046	0.00045
	(CLK * !RESET_B * SCD * SCE)	-0.00095	-0.00097	-0.00097
	(CLK * !RESET_B * SCD * !SCE)	0.00032	0.00032	0.00027
	(CLK * !RESET_B * SCD * !SCE)	-0.00109	-0.00109	-0.00115
	(CLK * !RESET_B * !SCD * !SCE)	0.00031	0.00031	0.00028
	(CLK * !RESET_B * !SCD * !SCE)	-0.00112	-0.00113	-0.00117
	(!CLK * RESET_B * SCD * SCE)	0.00090	0.00091	0.00090
	(!CLK * RESET_B * SCD * SCE)	-0.00043	-0.00044	-0.00043
sky130_fd_sc_hs__sdfrbp_2	**(!CLK * RESET_B * SCD * !SCE * Q * !Q_N) + (!CLK * RESET_B * SCD * !SCE * !Q * Q_N)**	0.00899	0.00888	0.01176
	(!CLK * RESET_B * SCD * !SCE * Q * !Q_N) + (!CLK * RESET_B * SCD * !SCE * !Q * Q_N)	0.00629	0.00617	0.00905
	(!CLK * RESET_B * !SCD * !SCE * Q * !Q_N) + (!CLK * RESET_B * !SCD * !SCE * !Q * Q_N)	0.00899	0.00888	0.01176
	(!CLK * RESET_B * !SCD * !SCE * Q * !Q_N) + (!CLK * RESET_B * !SCD * !SCE * !Q * Q_N)	0.00629	0.00618	0.00905
	(!CLK * !SCD * SCE)	0.00048	0.00048	0.00047
	(!CLK * !SCD * SCE)	-0.00093	-0.00095	-0.00096
	(!CLK * !RESET_B * SCD * SCE)	0.00046	0.00046	0.00045
	(!CLK * !RESET_B * SCD * SCE)	-0.00095	-0.00097	-0.00097
	(!CLK * !RESET_B * SCD * !SCE)	0.00032	0.00032	0.00027
	(!CLK * !RESET_B * SCD * !SCE)	-0.00109	-0.00109	-0.00115
	(!CLK * !RESET_B * !SCD * !SCE)	0.00031	0.00031	0.00028
	(!CLK * !RESET_B * !SCD * !SCE)	-0.00112	-0.00113	-0.00117

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

Cell Name	When	Power(pJ)		
		first	mid	last

	(CLK * RESET_B * SCD * SCE)	-0.00083	-0.00085	-0.00087
	(CLK * RESET_B * SCD * SCE)	0.00047	0.00047	0.00045
	(CLK * RESET_B * SCD * !SCE)	0.00050	0.00051	0.00435
	(CLK * RESET_B * SCD * !SCE)	0.00302	0.00302	0.00687
	(CLK * RESET_B * !SCD * !SCE)	0.00050	0.00050	0.00435
	(CLK * RESET_B * !SCD * !SCE)	0.00302	0.00301	0.00687
	(CLK * !SCD * SCE)	-0.00045	-0.00045	-0.00045
	(CLK * !SCD * SCE)	0.00095	0.00096	0.00095
	(CLK * !RESET_B * SCD * SCE)	-0.00044	-0.00044	-0.00044
	(CLK * !RESET_B * SCD * SCE)	0.00095	0.00096	0.00096
	(CLK * !RESET_B * SCD * !SCE)	-0.00027	-0.00027	-0.00027
	(CLK * !RESET_B * SCD * !SCE)	0.00114	0.00114	0.00114
	(CLK * !RESET_B * !SCD * !SCE)	-0.00027	-0.00027	-0.00027
	(CLK * !RESET_B * !SCD * !SCE)	0.00114	0.00114	0.00114
	(!CLK * RESET_B * SCD * SCE)	-0.00083	-0.00085	-0.00087
	(!CLK * RESET_B * SCD * SCE)	0.00047	0.00047	0.00045
sky130_fd_sc_hs__sdfrbp_1	**(!CLK * RESET_B * SCD * !SCE * Q * !Q_N) + (!CLK * RESET_B * SCD * !SCE * !Q * Q_N)**	0.00506	0.00508	0.00941
	(!CLK * RESET_B * SCD * !SCE * Q * !Q_N) + (!CLK * RESET_B * SCD * !SCE * !Q * Q_N)	0.00770	0.00772	0.01206
	(!CLK * RESET_B * !SCD * !SCE * Q * !Q_N) + (!CLK * RESET_B * !SCD * !SCE * !Q * Q_N)	0.00506	0.00508	0.00941
	(!CLK * RESET_B * !SCD * !SCE * Q * !Q_N) + (!CLK * RESET_B * !SCD * !SCE * !Q * Q_N)	0.00771	0.00772	0.01206
	(!CLK * !SCD * SCE)	-0.00044	-0.00045	-0.00044
	(!CLK * !SCD * SCE)	0.00095	0.00096	0.00095
	(!CLK * !RESET_B * SCD * SCE)	-0.00044	-0.00044	-0.00044
	(!CLK * !RESET_B * SCD * SCE)	0.00095	0.00096	0.00096
	(!CLK * !RESET_B * SCD * !SCE)	-0.00027	-0.00027	-0.00027
	(!CLK * !RESET_B * SCD * !SCE)	0.00114	0.00116	0.00114
	(!CLK * !RESET_B * !SCD * !SCE)	-0.00027	-0.00027	-0.00027
	(!CLK * !RESET_B * !SCD * !SCE)	0.00114	0.00116	0.00114

	(CLK * RESET_B * SCD * SCE)	-0.00085	-0.00087	-0.00089
	(CLK * RESET_B * SCD * SCE)	0.00047	0.00047	0.00045
	(CLK * RESET_B * SCD * !SCE)	0.00058	0.00058	0.00439
	(CLK * RESET_B * SCD * !SCE)	0.00315	0.00314	0.00695
	(CLK * RESET_B * !SCD * !SCE)	0.00059	0.00057	0.00439
	(CLK * RESET_B * !SCD * !SCE)	0.00315	0.00313	0.00695
	(CLK * !SCD * SCE)	-0.00046	-0.00046	-0.00045
	(CLK * !SCD * SCE)	0.00097	0.00097	0.00096
	(CLK * !RESET_B * SCD * SCE)	-0.00044	-0.00045	-0.00044
	(CLK * !RESET_B * SCD * SCE)	0.00096	0.00097	0.00097
	(CLK * !RESET_B * SCD * !SCE)	-0.00026	-0.00026	-0.00025
	(CLK * !RESET_B * SCD * !SCE)	0.00117	0.00117	0.00117
	(CLK * !RESET_B * !SCD * !SCE)	-0.00026	-0.00026	-0.00025
	(CLK * !RESET_B * !SCD * !SCE)	0.00117	0.00118	0.00117
	(!CLK * RESET_B * SCD * SCE)	-0.00085	-0.00087	-0.00089
	(!CLK * RESET_B * SCD * SCE)	0.00047	0.00047	0.00045
sky130_fd_sc_hs__sdfrbp_2	**(!CLK * RESET_B * SCD * !SCE * Q * !Q_N) + (!CLK * RESET_B * SCD * !SCE * !Q * Q_N)**	0.00515	0.00515	0.00949
	(!CLK * RESET_B * SCD * !SCE * Q * !Q_N) + (!CLK * RESET_B * SCD * !SCE * !Q * Q_N)	0.00785	0.00785	0.01219
	(!CLK * RESET_B * !SCD * !SCE * Q * !Q_N) + (!CLK * RESET_B * !SCD * !SCE * !Q * Q_N)	0.00515	0.00515	0.00949
	(!CLK * RESET_B * !SCD * !SCE * Q * !Q_N) + (!CLK * RESET_B * !SCD * !SCE * !Q * Q_N)	0.00785	0.00785	0.01219
	(!CLK * !SCD * SCE)	-0.00045	-0.00046	-0.00045
	(!CLK * !SCD * SCE)	0.00096	0.00097	0.00096
	(!CLK * !RESET_B * SCD * SCE)	-0.00044	-0.00045	-0.00044
	(!CLK * !RESET_B * SCD * SCE)	0.00096	0.00097	0.00097
	(!CLK * !RESET_B * SCD * !SCE)	-0.00026	-0.00026	-0.00025
	(!CLK * !RESET_B * SCD * !SCE)	0.00117	0.00117	0.00117
	(!CLK * !RESET_B * !SCD * !SCE)	-0.00026	-0.00026	-0.00025
	(!CLK * !RESET_B * !SCD * !SCE)	0.00117	0.00117	0.00117

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

Cell Name	When	Power(pJ)		
		first	mid	last

	(CLK * D * RESET_B * SCE)	0.00498	0.00483	0.00654
	(CLK * D * RESET_B * SCE)	0.00178	0.00163	0.00334
	(CLK * D * RESET_B * !SCE)	0.00084	0.00074	0.00073
	(CLK * D * RESET_B * !SCE)	-0.00079	-0.00090	-0.00091
	(CLK * D * !RESET_B * SCE)	0.00041	0.00042	0.00040
	(CLK * D * !RESET_B * SCE)	-0.00099	-0.00100	-0.00099
	(CLK * D * !RESET_B * !SCE)	0.00030	0.00030	0.00030
	(CLK * D * !RESET_B * !SCE)	-0.00107	-0.00109	-0.00108
	(CLK * !D * RESET_B * SCE)	0.00554	0.00539	0.00697
	(CLK * !D * RESET_B * SCE)	0.00224	0.00209	0.00367
	(CLK * !D * !RESET_B * SCE)	0.00042	0.00042	0.00040
	(CLK * !D * !RESET_B * SCE)	-0.00099	-0.00100	-0.00099
	(!D * RESET_B * !SCE)	0.00058	0.00059	0.00058
	(!D * RESET_B * !SCE)	-0.00104	-0.00106	-0.00106
	(!D * !RESET_B * !SCE)	0.00035	0.00035	0.00035
	(!D * !RESET_B * !SCE)	-0.00111	-0.00113	-0.00113
sky130_fd_sc_hs__sdfrbp_1	**(!CLK * D * RESET_B * SCE * Q * !Q_N) + (!CLK * D * RESET_B * SCE * !Q * Q_N)**	0.00984	0.00971	0.01136
	(!CLK * D * RESET_B * SCE * Q * !Q_N) + (!CLK * D * RESET_B * SCE * !Q * Q_N)	0.00651	0.00637	0.00803
	(!CLK * D * RESET_B * !SCE)	0.00084	0.00074	0.00073
	(!CLK * D * RESET_B * !SCE)	-0.00079	-0.00090	-0.00091
	(!CLK * D * !RESET_B * SCE)	0.00042	0.00042	0.00040
	(!CLK * D * !RESET_B * SCE)	-0.00099	-0.00100	-0.00099
	(!CLK * D * !RESET_B * !SCE)	0.00030	0.00030	0.00030
	(!CLK * D * !RESET_B * !SCE)	-0.00107	-0.00109	-0.00108
	(!CLK * !D * RESET_B * SCE * Q * !Q_N) + (!CLK * !D * RESET_B * SCE * !Q * Q_N)	0.01040	0.01028	0.01181
	(!CLK * !D * RESET_B * SCE * Q * !Q_N) + (!CLK * !D * RESET_B * SCE * !Q * Q_N)	0.00697	0.00684	0.00838
	(!CLK * !D * !RESET_B * SCE)	0.00042	0.00042	0.00040
	(!CLK * !D * !RESET_B * SCE)	-0.00099	-0.00100	-0.00099

	(CLK * D * RESET_B * SCE)	0.00515	0.00500	0.00670
	(CLK * D * RESET_B * SCE)	0.00190	0.00175	0.00345
	(CLK * D * RESET_B * !SCE)	0.00086	0.00076	0.00075
	(CLK * D * RESET_B * !SCE)	-0.00079	-0.00090	-0.00091
	(CLK * D * !RESET_B * SCE)	0.00043	0.00044	0.00042
	(CLK * D * !RESET_B * SCE)	-0.00099	-0.00100	-0.00099
	(CLK * D * !RESET_B * !SCE)	0.00031	0.00031	0.00031
	(CLK * D * !RESET_B * !SCE)	-0.00108	-0.00108	-0.00109
	(CLK * !D * RESET_B * SCE)	0.00571	0.00557	0.00713
	(CLK * !D * RESET_B * SCE)	0.00236	0.00221	0.00378
	(CLK * !D * !RESET_B * SCE)	0.00043	0.00044	0.00042
	(CLK * !D * !RESET_B * SCE)	-0.00099	-0.00100	-0.00099
	(!D * RESET_B * !SCE)	0.00059	0.00060	0.00060
	(!D * RESET_B * !SCE)	-0.00105	-0.00107	-0.00106
	(!D * !RESET_B * !SCE)	0.00036	0.00035	0.00035
	(!D * !RESET_B * !SCE)	-0.00113	-0.00114	-0.00114
sky130_fd_sc_hs__sdfrbp_2	**(!CLK * D * RESET_B * SCE * Q * !Q_N) + (!CLK * D * RESET_B * SCE * !Q * Q_N)**	0.01003	0.00991	0.01155
	(!CLK * D * RESET_B * SCE * Q * !Q_N) + (!CLK * D * RESET_B * SCE * !Q * Q_N)	0.00665	0.00652	0.00816
	(!CLK * D * RESET_B * !SCE)	0.00086	0.00077	0.00075
	(!CLK * D * RESET_B * !SCE)	-0.00079	-0.00090	-0.00091
	(!CLK * D * !RESET_B * SCE)	0.00043	0.00044	0.00042
	(!CLK * D * !RESET_B * SCE)	-0.00099	-0.00100	-0.00099
	(!CLK * D * !RESET_B * !SCE)	0.00031	0.00031	0.00031
	(!CLK * D * !RESET_B * !SCE)	-0.00108	-0.00108	-0.00109
	(!CLK * !D * RESET_B * SCE * Q * !Q_N) + (!CLK * !D * RESET_B * SCE * !Q * Q_N)	0.01060	0.01048	0.01198
	(!CLK * !D * RESET_B * SCE * Q * !Q_N) + (!CLK * !D * RESET_B * SCE * !Q * Q_N)	0.00711	0.00699	0.00850
	(!CLK * !D * !RESET_B * SCE)	0.00043	0.00044	0.00042
	(!CLK * !D * !RESET_B * SCE)	-0.00099	-0.00100	-0.00099

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

Cell Name	When	Power(pJ)		
		first	mid	last

	(CLK * D * RESET_B * SCE)	0.00149	0.00132	0.00314
	(CLK * D * RESET_B * SCE)	0.00470	0.00453	0.00632
	(CLK * D * RESET_B * !SCE)	-0.00070	-0.00072	-0.00073
	(CLK * D * RESET_B * !SCE)	0.00092	0.00093	0.00092
	(CLK * D * !RESET_B * SCE)	-0.00037	-0.00037	-0.00038
	(CLK * D * !RESET_B * SCE)	0.00101	0.00101	0.00100
	(CLK * D * !RESET_B * !SCE)	-0.00029	-0.00030	-0.00029
	(CLK * D * !RESET_B * !SCE)	0.00108	0.00110	0.00108
	(CLK * !D * RESET_B * SCE)	0.00114	0.00097	0.00288
	(CLK * !D * RESET_B * SCE)	0.00444	0.00428	0.00617
	(CLK * !D * !RESET_B * SCE)	-0.00037	-0.00038	-0.00038
	(CLK * !D * !RESET_B * SCE)	0.00101	0.00103	0.00100
	(!D * RESET_B * !SCE)	-0.00054	-0.00058	-0.00058
	(!D * RESET_B * !SCE)	0.00107	0.00107	0.00106
	(!D * !RESET_B * !SCE)	-0.00035	-0.00035	-0.00035
	(!D * !RESET_B * !SCE)	0.00114	0.00116	0.00114
sky130_fd_sc_hs__sdfrbp_1	**(!CLK * D * RESET_B * SCE * Q * !Q_N) + (!CLK * D * RESET_B * SCE * !Q * Q_N)**	0.00604	0.00587	0.00818
	(!CLK * D * RESET_B * SCE * Q * !Q_N) + (!CLK * D * RESET_B * SCE * !Q * Q_N)	0.00938	0.00921	0.01150
	(!CLK * D * RESET_B * !SCE)	-0.00070	-0.00072	-0.00072
	(!CLK * D * RESET_B * !SCE)	0.00092	0.00093	0.00092
	(!CLK * D * !RESET_B * SCE)	-0.00037	-0.00038	-0.00038
	(!CLK * D * !RESET_B * SCE)	0.00101	0.00103	0.00100
	(!CLK * D * !RESET_B * !SCE)	-0.00029	-0.00030	-0.00029
	(!CLK * D * !RESET_B * !SCE)	0.00108	0.00110	0.00108
	(!CLK * !D * RESET_B * SCE * Q * !Q_N) + (!CLK * !D * RESET_B * SCE * !Q * Q_N)	0.00571	0.00555	0.00806
	(!CLK * !D * RESET_B * SCE * Q * !Q_N) + (!CLK * !D * RESET_B * SCE * !Q * Q_N)	0.00915	0.00898	0.01149
	(!CLK * !D * !RESET_B * SCE)	-0.00037	-0.00038	-0.00038
	(!CLK * !D * !RESET_B * SCE)	0.00101	0.00103	0.00100

	(CLK * D * RESET_B * SCE)	0.00155	0.00137	0.00318
	(CLK * D * RESET_B * SCE)	0.00480	0.00463	0.00642
	(CLK * D * RESET_B * !SCE)	-0.00072	-0.00074	-0.00074
	(CLK * D * RESET_B * !SCE)	0.00092	0.00093	0.00093
	(CLK * D * !RESET_B * SCE)	-0.00039	-0.00039	-0.00039
	(CLK * D * !RESET_B * SCE)	0.00101	0.00101	0.00100
	(CLK * D * !RESET_B * !SCE)	-0.00030	-0.00030	-0.00030
	(CLK * D * !RESET_B * !SCE)	0.00109	0.00110	0.00109
	(CLK * !D * RESET_B * SCE)	0.00124	0.00107	0.00296
	(CLK * !D * RESET_B * SCE)	0.00459	0.00442	0.00630
	(CLK * !D * !RESET_B * SCE)	-0.00039	-0.00039	-0.00039
	(CLK * !D * !RESET_B * SCE)	0.00102	0.00101	0.00100
	(!D * RESET_B * !SCE)	-0.00056	-0.00059	-0.00060
	(!D * RESET_B * !SCE)	0.00108	0.00107	0.00107
	(!D * !RESET_B * !SCE)	-0.00036	-0.00035	-0.00035
	(!D * !RESET_B * !SCE)	0.00115	0.00115	0.00116
sky130_fd_sc_hs__sdfrbp_2	**(!CLK * D * RESET_B * SCE * Q * !Q_N) + (!CLK * D * RESET_B * SCE * !Q * Q_N)**	0.00610	0.00594	0.00825
	(!CLK * D * RESET_B * SCE * Q * !Q_N) + (!CLK * D * RESET_B * SCE * !Q * Q_N)	0.00949	0.00934	0.01162
	(!CLK * D * RESET_B * !SCE)	-0.00072	-0.00074	-0.00074
	(!CLK * D * RESET_B * !SCE)	0.00092	0.00093	0.00093
	(!CLK * D * !RESET_B * SCE)	-0.00039	-0.00040	-0.00039
	(!CLK * D * !RESET_B * SCE)	0.00102	0.00103	0.00100
	(!CLK * D * !RESET_B * !SCE)	-0.00030	-0.00030	-0.00030
	(!CLK * D * !RESET_B * !SCE)	0.00109	0.00110	0.00109
	(!CLK * !D * RESET_B * SCE * Q * !Q_N) + (!CLK * !D * RESET_B * SCE * !Q * Q_N)	0.00581	0.00565	0.00816
	(!CLK * !D * RESET_B * SCE * Q * !Q_N) + (!CLK * !D * RESET_B * SCE * !Q * Q_N)	0.00931	0.00913	0.01163
	(!CLK * !D * !RESET_B * SCE)	-0.00039	-0.00040	-0.00039
	(!CLK * !D * !RESET_B * SCE)	0.00102	0.00103	0.00100

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)**	0.00447	0.00424	0.00840
	(CLK * D * RESET_B * SCD) + (CLK * D * !RESET_B) + (CLK * !D * RESET_B * !SCD) + (CLK * !D * !RESET_B)	0.00011	-0.00014	0.00402
	(CLK * D * RESET_B * !SCD)	0.00631	0.00607	0.01032
	(CLK * D * RESET_B * !SCD)	0.00338	0.00312	0.00735
	(CLK * !D * RESET_B * SCD)	0.00819	0.00790	0.01431
	(CLK * !D * RESET_B * SCD)	0.00256	0.00225	0.00869
	(!CLK * D * RESET_B * SCD * Q * !Q_N) + (!CLK * D * RESET_B * SCD * !Q * Q_N)	0.00447	0.00424	0.00840
	(!CLK * D * RESET_B * SCD * Q * !Q_N) + (!CLK * D * RESET_B * SCD * !Q * Q_N)	0.00011	-0.00014	0.00403
	(!CLK * D * RESET_B * !SCD * Q * !Q_N) + (!CLK * D * RESET_B * !SCD * !Q * Q_N)	0.01079	0.01059	0.01487
	(!CLK * D * RESET_B * !SCD * Q * !Q_N) + (!CLK * D * RESET_B * !SCD * !Q * Q_N)	0.00799	0.00779	0.01204
	(!CLK * D * !RESET_B) + (!CLK * !D * RESET_B * !SCD * Q * !Q_N) + (!CLK * !D * RESET_B * !SCD * !Q * Q_N) + (!CLK * !D * !RESET_B)	0.00440	0.00421	0.00847
	(!CLK * D * !RESET_B) + (!CLK * !D * RESET_B * !SCD * Q * !Q_N) + (!CLK * !D * RESET_B * !SCD * !Q * Q_N) + (!CLK * !D * !RESET_B)	0.00025	0.00007	0.00431
	(!CLK * !D * RESET_B * SCD * Q * !Q_N) + (!CLK * !D * RESET_B * SCD * !Q * Q_N)	0.01305	0.01278	0.01914
	(!CLK * !D * RESET_B * SCD * Q * !Q_N) + (!CLK * !D * RESET_B * SCD * !Q * Q_N)	0.00728	0.00700	0.01338

sky130_fd_sc_hs__sdfrbp_2	**(CLK * D * RESET_B * SCD) + (CLK * D * !RESET_B) + (CLK * !D * RESET_B * !SCD) + (CLK * !D * !RESET_B)**	0.00415	0.00394	0.00817
	(CLK * D * RESET_B * SCD) + (CLK * D * !RESET_B) + (CLK * !D * RESET_B * !SCD) + (CLK * !D * !RESET_B)	-0.00035	-0.00060	0.00365
	(CLK * D * RESET_B * !SCD)	0.00610	0.00584	0.01018
	(CLK * D * RESET_B * !SCD)	0.00306	0.00279	0.00710
	(CLK * !D * RESET_B * SCD)	0.00806	0.00777	0.01425
	(CLK * !D * RESET_B * SCD)	0.00227	0.00195	0.00846
	(!CLK * D * RESET_B * SCD * Q * !Q_N) + (!CLK * D * RESET_B * SCD * !Q * Q_N)	0.00415	0.00392	0.00817
	(!CLK * D * RESET_B * SCD * Q * !Q_N) + (!CLK * D * RESET_B * SCD * !Q * Q_N)	-0.00035	-0.00060	0.00365
	(!CLK * D * RESET_B * !SCD * Q * !Q_N) + (!CLK * D * RESET_B * !SCD * !Q * Q_N)	0.01058	0.01039	0.01474
	(!CLK * D * RESET_B * !SCD * Q * !Q_N) + (!CLK * D * RESET_B * !SCD * !Q * Q_N)	0.00768	0.00747	0.01179
	(!CLK * D * !RESET_B) + (!CLK * !D * RESET_B * !SCD * Q * !Q_N) + (!CLK * !D * RESET_B * !SCD * !Q * Q_N) + (!CLK * !D * !RESET_B)	0.00412	0.00395	0.00828
	(!CLK * D * !RESET_B) + (!CLK * !D * RESET_B * !SCD * Q * !Q_N) + (!CLK * !D * RESET_B * !SCD * !Q * Q_N) + (!CLK * !D * !RESET_B)	-0.00017	-0.00037	0.00397
	(!CLK * !D * RESET_B * SCD * Q * !Q_N) + (!CLK * !D * RESET_B * SCD * !Q * Q_N)	0.01294	0.01268	0.01912
	(!CLK * !D * RESET_B * SCD * Q * !Q_N) + (!CLK * !D * RESET_B * SCD * !Q * Q_N)	0.00702	0.00672	0.01319

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)**	-0.00022	-0.00015	0.00452
	(CLK * D * RESET_B * SCD) + (CLK * D * !RESET_B) + (CLK * !D * RESET_B * !SCD) + (CLK * !D * !RESET_B)	0.00415	0.00422	0.00888
	(CLK * D * RESET_B * !SCD)	0.00362	0.00357	0.00817
	(CLK * D * RESET_B * !SCD)	0.00657	0.00652	0.01105
	(CLK * !D * RESET_B * SCD)	0.00086	0.00075	0.00745
	(CLK * !D * RESET_B * SCD)	0.00649	0.00639	0.01309
	(!CLK * D * RESET_B * SCD * Q * !Q_N) + (!CLK * D * RESET_B * SCD * !Q * Q_N)	-0.00022	-0.00014	0.00452
	(!CLK * D * RESET_B * SCD * Q * !Q_N) + (!CLK * D * RESET_B * SCD * !Q * Q_N)	0.00415	0.00423	0.00888
	(!CLK * D * RESET_B * !SCD * Q * !Q_N) + (!CLK * D * RESET_B * !SCD * !Q * Q_N)	0.00847	0.00848	0.01303
	(!CLK * D * RESET_B * !SCD * Q * !Q_N) + (!CLK * D * RESET_B * !SCD * !Q * Q_N)	0.01128	0.01129	0.01579
	(!CLK * D * !RESET_B) + (!CLK * !D * RESET_B * !SCD * Q * !Q_N) + (!CLK * !D * RESET_B * !SCD * !Q * Q_N) + (!CLK * !D * !RESET_B)	-0.00021	-0.00014	0.00445
	(!CLK * D * !RESET_B) + (!CLK * !D * RESET_B * !SCD * Q * !Q_N) + (!CLK * !D * RESET_B * !SCD * !Q * Q_N) + (!CLK * !D * !RESET_B)	0.00394	0.00402	0.00860
	(!CLK * !D * RESET_B * SCD * Q * !Q_N) + (!CLK * !D * RESET_B * SCD * !Q * Q_N)	0.00541	0.00529	0.01234
	(!CLK * !D * RESET_B * SCD * Q * !Q_N) + (!CLK * !D * RESET_B * SCD * !Q * Q_N)	0.01117	0.01105	0.01811

sky130_fd_sc_hs__sdfrbp_2	**(CLK * D * RESET_B * SCD) + (CLK * D * !RESET_B) + (CLK * !D * RESET_B * !SCD) + (CLK * !D * !RESET_B)**	-0.00019	-0.00011	0.00459
	(CLK * D * RESET_B * SCD) + (CLK * D * !RESET_B) + (CLK * !D * RESET_B * !SCD) + (CLK * !D * !RESET_B)	0.00433	0.00441	0.00910
	(CLK * D * RESET_B * !SCD)	0.00389	0.00384	0.00846
	(CLK * D * RESET_B * !SCD)	0.00697	0.00691	0.01147
	(CLK * !D * RESET_B * SCD)	0.00093	0.00082	0.00755
	(CLK * !D * RESET_B * SCD)	0.00673	0.00663	0.01336
	(!CLK * D * RESET_B * SCD * Q * !Q_N) + (!CLK * D * RESET_B * SCD * !Q * Q_N)	-0.00018	-0.00011	0.00459
	(!CLK * D * RESET_B * SCD * Q * !Q_N) + (!CLK * D * RESET_B * SCD * !Q * Q_N)	0.00431	0.00442	0.00909
	(!CLK * D * RESET_B * !SCD * Q * !Q_N) + (!CLK * D * RESET_B * !SCD * !Q * Q_N)	0.00876	0.00878	0.01333
	(!CLK * D * RESET_B * !SCD * Q * !Q_N) + (!CLK * D * RESET_B * !SCD * !Q * Q_N)	0.01170	0.01171	0.01623
	(!CLK * D * !RESET_B) + (!CLK * !D * RESET_B * !SCD * Q * !Q_N) + (!CLK * !D * RESET_B * !SCD * !Q * Q_N) + (!CLK * !D * !RESET_B)	-0.00021	-0.00014	0.00449
	(!CLK * D * !RESET_B) + (!CLK * !D * RESET_B * !SCD * Q * !Q_N) + (!CLK * !D * RESET_B * !SCD * !Q * Q_N) + (!CLK * !D * !RESET_B)	0.00410	0.00418	0.00879
	(!CLK * !D * RESET_B * SCD * Q * !Q_N) + (!CLK * !D * RESET_B * SCD * !Q * Q_N)	0.00548	0.00538	0.01247
	(!CLK * !D * RESET_B * SCD * Q * !Q_N) + (!CLK * !D * RESET_B * SCD * !Q * Q_N)	0.01143	0.01131	0.01841

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)**	0.00722	0.00703	0.00975
	(CLK * D * SCD * SCE * !Q * Q_N)	-0.00023	-0.00044	0.00229
	(CLK * D * SCD * !SCE * !Q * Q_N)	0.00693	0.00674	0.00966
	(CLK * D * SCD * !SCE * !Q * Q_N)	-0.00024	-0.00048	0.00246
	(CLK * D * !SCD * SCE * !Q * Q_N)	0.00244	0.00247	0.00244
	(CLK * D * !SCD * SCE * !Q * Q_N)	-0.00311	-0.00313	-0.00311
	(CLK * D * !SCD * !SCE * !Q * Q_N)	0.00662	0.00643	0.00945
	(CLK * D * !SCD * !SCE * !Q * Q_N)	-0.00024	-0.00047	0.00258
	(CLK * !D * SCD * SCE * !Q * Q_N)	0.00778	0.00758	0.01014
	(CLK * !D * SCD * SCE * !Q * Q_N)	0.00024	0.00003	0.00259
	(CLK * !D * SCD * !SCE * !Q * Q_N)	0.00241	0.00244	0.00242
	(CLK * !D * SCD * !SCE * !Q * Q_N)	-0.00312	-0.00314	-0.00313
	(CLK * !D * !SCD * SCE * !Q * Q_N)	0.00245	0.00247	0.00244
	(CLK * !D * !SCD * SCE * !Q * Q_N)	-0.00312	-0.00313	-0.00311
	(CLK * !D * !SCD * !SCE * !Q * Q_N)	0.00241	0.00244	0.00242
	(CLK * !D * !SCD * !SCE * !Q * Q_N)	-0.00313	-0.00315	-0.00313
	(!CLK * D * SCD * SCE * !Q * Q_N)	0.01256	0.01212	0.01494
	(!CLK * D * SCD * SCE * !Q * Q_N)	0.00501	0.00454	0.00736
	(!CLK * D * SCD * !SCE * !Q * Q_N)	0.01228	0.01181	0.01477
	(!CLK * D * SCD * !SCE * !Q * Q_N)	0.00500	0.00452	0.00747
	(!CLK * D * !SCD * SCE * !Q * Q_N)	0.00244	0.00246	0.00245
	(!CLK * D * !SCD * SCE * !Q * Q_N)	-0.00311	-0.00312	-0.00311
	(!CLK * D * !SCD * !SCE * !Q * Q_N)	0.01198	0.01152	0.01458
	(!CLK * D * !SCD * !SCE * !Q * Q_N)	0.00499	0.00451	0.00758
	(!CLK * !D * SCD * SCE * !Q * Q_N)	0.01313	0.01269	0.01536
	(!CLK * !D * SCD * SCE * !Q * Q_N)	0.00547	0.00503	0.00769
	(!CLK * !D * SCD * !SCE * !Q * Q_N)	0.00243	0.00245	0.00242
	(!CLK * !D * SCD * !SCE * !Q * Q_N)	-0.00313	-0.00314	-0.00312
	(!CLK * !D * !SCD * SCE * !Q * Q_N)	0.00244	0.00247	0.00245
	(!CLK * !D * !SCD * SCE * !Q * Q_N)	-0.00310	-0.00313	-0.00311
	(!CLK * !D * !SCD * !SCE * !Q * Q_N)	0.00242	0.00245	0.00243
	(!CLK * !D * !SCD * !SCE * !Q * Q_N)	-0.00312	-0.00315	-0.00313

sky130_fd_sc_hs__sdfrbp_2	**(CLK * D * SCD * SCE * !Q * Q_N)**	0.00729	0.00710	0.00978
	(CLK * D * SCD * SCE * !Q * Q_N)	-0.00018	-0.00040	0.00230
	(CLK * D * SCD * !SCE * !Q * Q_N)	0.00709	0.00689	0.00975
	(CLK * D * SCD * !SCE * !Q * Q_N)	-0.00011	-0.00034	0.00253
	(CLK * D * !SCD * SCE * !Q * Q_N)	0.00235	0.00238	0.00236
	(CLK * D * !SCD * SCE * !Q * Q_N)	-0.00318	-0.00318	-0.00318
	(CLK * D * !SCD * !SCE * !Q * Q_N)	0.00677	0.00657	0.00955
	(CLK * D * !SCD * !SCE * !Q * Q_N)	-0.00010	-0.00033	0.00265
	(CLK * !D * SCD * SCE * !Q * Q_N)	0.00785	0.00766	0.01017
	(CLK * !D * SCD * SCE * !Q * Q_N)	0.00028	0.00008	0.00259
	(CLK * !D * SCD * !SCE * !Q * Q_N)	0.00233	0.00235	0.00233
	(CLK * !D * SCD * !SCE * !Q * Q_N)	-0.00320	-0.00320	-0.00320
	(CLK * !D * !SCD * SCE * !Q * Q_N)	0.00235	0.00238	0.00236
	(CLK * !D * !SCD * SCE * !Q * Q_N)	-0.00318	-0.00319	-0.00318
	(CLK * !D * !SCD * !SCE * !Q * Q_N)	0.00233	0.00236	0.00234
	(CLK * !D * !SCD * !SCE * !Q * Q_N)	-0.00320	-0.00320	-0.00320
	(!CLK * D * SCD * SCE * !Q * Q_N)	0.01264	0.01219	0.01499
	(!CLK * D * SCD * SCE * !Q * Q_N)	0.00505	0.00459	0.00738
	(!CLK * D * SCD * !SCE * !Q * Q_N)	0.01244	0.01199	0.01490
	(!CLK * D * SCD * !SCE * !Q * Q_N)	0.00512	0.00464	0.00757
	(!CLK * D * !SCD * SCE * !Q * Q_N)	0.00235	0.00237	0.00235
	(!CLK * D * !SCD * SCE * !Q * Q_N)	-0.00319	-0.00319	-0.00319
	(!CLK * D * !SCD * !SCE * !Q * Q_N)	0.01212	0.01168	0.01469
	(!CLK * D * !SCD * !SCE * !Q * Q_N)	0.00512	0.00464	0.00767
	(!CLK * !D * SCD * SCE * !Q * Q_N)	0.01320	0.01278	0.01541
	(!CLK * !D * SCD * SCE * !Q * Q_N)	0.00551	0.00506	0.00770
	(!CLK * !D * SCD * !SCE * !Q * Q_N)	0.00232	0.00235	0.00233
	(!CLK * !D * SCD * !SCE * !Q * Q_N)	-0.00320	-0.00321	-0.00320
	(!CLK * !D * !SCD * SCE * !Q * Q_N)	0.00235	0.00235	0.00235
	(!CLK * !D * !SCD * SCE * !Q * Q_N)	-0.00319	-0.00319	-0.00319
	(!CLK * !D * !SCD * !SCE * !Q * Q_N)	0.00233	0.00236	0.00233
	(!CLK * !D * !SCD * !SCE * !Q * Q_N)	-0.00321	-0.00321	-0.00321

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)**	0.00041	0.00033	0.00433
	(CLK * D * SCD * SCE * !Q * Q_N)	0.00786	0.00781	0.01179
	(CLK * D * SCD * !SCE * !Q * Q_N)	-0.00025	-0.00035	0.00365
	(CLK * D * SCD * !SCE * !Q * Q_N)	0.00694	0.00688	0.01084
	(CLK * D * !SCD * SCE * !Q * Q_N)	-0.00238	-0.00246	-0.00244
	(CLK * D * !SCD * SCE * !Q * Q_N)	0.00313	0.00315	0.00312
	(CLK * D * !SCD * !SCE * !Q * Q_N)	-0.00047	-0.00054	0.00353
	(CLK * D * !SCD * !SCE * !Q * Q_N)	0.00640	0.00634	0.01041
	(CLK * !D * SCD * SCE * !Q * Q_N)	0.00006	-0.00001	0.00409
	(CLK * !D * SCD * SCE * !Q * Q_N)	0.00761	0.00756	0.01165
	(CLK * !D * SCD * !SCE * !Q * Q_N)	-0.00234	-0.00244	-0.00242
	(CLK * !D * SCD * !SCE * !Q * Q_N)	0.00316	0.00316	0.00313
	(CLK * !D * !SCD * SCE * !Q * Q_N)	-0.00238	-0.00246	-0.00244
	(CLK * !D * !SCD * SCE * !Q * Q_N)	0.00313	0.00315	0.00312
	(CLK * !D * !SCD * !SCE * !Q * Q_N)	-0.00235	-0.00244	-0.00242
	(CLK * !D * !SCD * !SCE * !Q * Q_N)	0.00317	0.00317	0.00313
	(!CLK * D * SCD * SCE * !Q * Q_N)	0.00541	0.00497	0.00971
	(!CLK * D * SCD * SCE * !Q * Q_N)	0.01298	0.01256	0.01730
	(!CLK * D * SCD * !SCE * !Q * Q_N)	0.00475	0.00427	0.00899
	(!CLK * D * SCD * !SCE * !Q * Q_N)	0.01207	0.01160	0.01633
	(!CLK * D * !SCD * SCE * !Q * Q_N)	-0.00239	-0.00246	-0.00245
	(!CLK * D * !SCD * SCE * !Q * Q_N)	0.00313	0.00315	0.00312
	(!CLK * D * !SCD * !SCE * !Q * Q_N)	0.00454	0.00406	0.00873
	(!CLK * D * !SCD * !SCE * !Q * Q_N)	0.01152	0.01107	0.01574
	(!CLK * !D * SCD * SCE * !Q * Q_N)	0.00507	0.00460	0.00935
	(!CLK * !D * SCD * SCE * !Q * Q_N)	0.01273	0.01228	0.01703
	(!CLK * !D * SCD * !SCE * !Q * Q_N)	-0.00234	-0.00245	-0.00242
	(!CLK * !D * SCD * !SCE * !Q * Q_N)	0.00315	0.00316	0.00313
	(!CLK * !D * !SCD * SCE * !Q * Q_N)	-0.00239	-0.00247	-0.00245
	(!CLK * !D * !SCD * SCE * !Q * Q_N)	0.00313	0.00315	0.00312
	(!CLK * !D * !SCD * !SCE * !Q * Q_N)	-0.00236	-0.00245	-0.00243
	(!CLK * !D * !SCD * !SCE * !Q * Q_N)	0.00316	0.00316	0.00313

sky130_fd_sc_hs__sdfrbp_2	**(CLK * D * SCD * SCE * !Q * Q_N)**	0.00055	0.00045	0.00445
	(CLK * D * SCD * SCE * !Q * Q_N)	0.00802	0.00795	0.01192
	(CLK * D * SCD * !SCE * !Q * Q_N)	-0.00015	-0.00025	0.00374
	(CLK * D * SCD * !SCE * !Q * Q_N)	0.00707	0.00699	0.01095
	(CLK * D * !SCD * SCE * !Q * Q_N)	-0.00231	-0.00235	-0.00236
	(CLK * D * !SCD * SCE * !Q * Q_N)	0.00323	0.00318	0.00319
	(CLK * D * !SCD * !SCE * !Q * Q_N)	-0.00036	-0.00046	0.00361
	(CLK * D * !SCD * !SCE * !Q * Q_N)	0.00652	0.00645	0.01052
	(CLK * !D * SCD * SCE * !Q * Q_N)	0.00024	0.00015	0.00425
	(CLK * !D * SCD * SCE * !Q * Q_N)	0.00781	0.00775	0.01182
	(CLK * !D * SCD * !SCE * !Q * Q_N)	-0.00226	-0.00233	-0.00233
	(CLK * !D * SCD * !SCE * !Q * Q_N)	0.00325	0.00320	0.00320
	(CLK * !D * !SCD * SCE * !Q * Q_N)	-0.00231	-0.00235	-0.00236
	(CLK * !D * !SCD * SCE * !Q * Q_N)	0.00323	0.00319	0.00319
	(CLK * !D * !SCD * !SCE * !Q * Q_N)	-0.00227	-0.00234	-0.00234
	(CLK * !D * !SCD * !SCE * !Q * Q_N)	0.00326	0.00320	0.00321
	(!CLK * D * SCD * SCE * !Q * Q_N)	0.00557	0.00515	0.00984
	(!CLK * D * SCD * SCE * !Q * Q_N)	0.01316	0.01279	0.01746
	(!CLK * D * SCD * !SCE * !Q * Q_N)	0.00487	0.00439	0.00910
	(!CLK * D * SCD * !SCE * !Q * Q_N)	0.01221	0.01177	0.01646
	(!CLK * D * !SCD * SCE * !Q * Q_N)	-0.00231	-0.00235	-0.00235
	(!CLK * D * !SCD * SCE * !Q * Q_N)	0.00323	0.00319	0.00320
	(!CLK * D * !SCD * !SCE * !Q * Q_N)	0.00466	0.00419	0.00885
	(!CLK * D * !SCD * !SCE * !Q * Q_N)	0.01167	0.01123	0.01588
	(!CLK * !D * SCD * SCE * !Q * Q_N)	0.00527	0.00481	0.00954
	(!CLK * !D * SCD * SCE * !Q * Q_N)	0.01296	0.01254	0.01724
	(!CLK * !D * SCD * !SCE * !Q * Q_N)	-0.00226	-0.00233	-0.00233
	(!CLK * !D * SCD * !SCE * !Q * Q_N)	0.00325	0.00321	0.00321
	(!CLK * !D * !SCD * SCE * !Q * Q_N)	-0.00230	-0.00235	-0.00235
	(!CLK * !D * !SCD * SCE * !Q * Q_N)	0.00323	0.00323	0.00320
	(!CLK * !D * !SCD * !SCE * !Q * Q_N)	-0.00227	-0.00234	-0.00233
	(!CLK * !D * !SCD * !SCE * !Q * Q_N)	0.00326	0.00321	0.00321

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)**	0.01026	0.00995	0.01490
	(D * RESET_B * SCD * SCE * Q * !Q_N)	0.00697	0.00664	0.01161
	(D * RESET_B * SCD * !SCE * Q * !Q_N)	0.01026	0.00995	0.01490
	(D * RESET_B * SCD * !SCE * Q * !Q_N)	0.00697	0.00664	0.01161
	(D * RESET_B * !SCD * !SCE * Q * !Q_N)	0.01026	0.00995	0.01490
	(D * RESET_B * !SCD * !SCE * Q * !Q_N)	0.00697	0.00664	0.01161
	(D * !SCD * SCE * !Q * Q_N)	0.01056	0.01024	0.01520
	(D * !SCD * SCE * !Q * Q_N)	0.00727	0.00694	0.01190
	(D * !RESET_B * SCD * SCE * !Q * Q_N)	0.01056	0.01026	0.01520
	(D * !RESET_B * SCD * SCE * !Q * Q_N)	0.00727	0.00695	0.01189
	(D * !RESET_B * SCD * !SCE * !Q * Q_N)	0.01056	0.01025	0.01520
	(D * !RESET_B * SCD * !SCE * !Q * Q_N)	0.00726	0.00695	0.01190
	(D * !RESET_B * !SCD * !SCE * !Q * Q_N)	0.01056	0.01025	0.01520
	(D * !RESET_B * !SCD * !SCE * !Q * Q_N)	0.00726	0.00695	0.01190
	(!D * RESET_B * SCD * SCE * Q * !Q_N)	0.01026	0.00995	0.01490
	(!D * RESET_B * SCD * SCE * Q * !Q_N)	0.00697	0.00664	0.01161
	(!D * !SCE * !Q * Q_N)	0.01056	0.01025	0.01520
	(!D * !SCE * !Q * Q_N)	0.00726	0.00694	0.01190
	(!D * !SCD * SCE * !Q * Q_N)	0.01056	0.01025	0.01520
	(!D * !SCD * SCE * !Q * Q_N)	0.00727	0.00694	0.01189
	(!D * !RESET_B * SCD * SCE * !Q * Q_N)	0.01056	0.01026	0.01520
	(!D * !RESET_B * SCD * SCE * !Q * Q_N)	0.00727	0.00695	0.01189

sky130_fd_sc_hs__sdfrbp_2	**(D * RESET_B * SCD * SCE * Q * !Q_N)**	0.01032	0.00997	0.01494
	(D * RESET_B * SCD * SCE * Q * !Q_N)	0.00709	0.00672	0.01171
	(D * RESET_B * SCD * !SCE * Q * !Q_N)	0.01032	0.00997	0.01494
	(D * RESET_B * SCD * !SCE * Q * !Q_N)	0.00709	0.00672	0.01171
	(D * RESET_B * !SCD * !SCE * Q * !Q_N)	0.01032	0.00997	0.01495
	(D * RESET_B * !SCD * !SCE * Q * !Q_N)	0.00709	0.00672	0.01171
	(D * !SCD * SCE * !Q * Q_N)	0.01056	0.01021	0.01518
	(D * !SCD * SCE * !Q * Q_N)	0.00733	0.00696	0.01195
	(D * !RESET_B * SCD * SCE * !Q * Q_N)	0.01056	0.01021	0.01519
	(D * !RESET_B * SCD * SCE * !Q * Q_N)	0.00733	0.00697	0.01195
	(D * !RESET_B * SCD * !SCE * !Q * Q_N)	0.01056	0.01021	0.01518
	(D * !RESET_B * SCD * !SCE * !Q * Q_N)	0.00733	0.00697	0.01195
	(D * !RESET_B * !SCD * !SCE * !Q * Q_N)	0.01056	0.01021	0.01518
	(D * !RESET_B * !SCD * !SCE * !Q * Q_N)	0.00733	0.00697	0.01195
	(!D * RESET_B * SCD * SCE * Q * !Q_N)	0.01032	0.00997	0.01495
	(!D * RESET_B * SCD * SCE * Q * !Q_N)	0.00709	0.00673	0.01171
	(!D * !SCE * !Q * Q_N)	0.01056	0.01020	0.01518
	(!D * !SCE * !Q * Q_N)	0.00733	0.00696	0.01194
	(!D * !SCD * SCE * !Q * Q_N)	0.01056	0.01021	0.01518
	(!D * !SCD * SCE * !Q * Q_N)	0.00733	0.00696	0.01194
	(!D * !RESET_B * SCD * SCE * !Q * Q_N)	0.01056	0.01021	0.01519
	(!D * !RESET_B * SCD * SCE * !Q * Q_N)	0.00733	0.00697	0.01196

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)	0.00553	0.00562	0.01122
	(D * RESET_B * SCD * SCE * Q * !Q_N)	0.00884	0.00892	0.01452
	(D * RESET_B * SCD * SCE * !Q * Q_N)	0.01009	0.01007	0.01584
	(D * RESET_B * SCD * SCE * !Q * Q_N)	0.01326	0.01324	0.01900
	(D * RESET_B * SCD * !SCE * Q * !Q_N)	0.00553	0.00562	0.01122
	(D * RESET_B * SCD * !SCE * Q * !Q_N)	0.00884	0.00892	0.01452
	(D * RESET_B * SCD * !SCE * !Q * Q_N)	0.01005	0.01003	0.01580
	(D * RESET_B * SCD * !SCE * !Q * Q_N)	0.01322	0.01319	0.01896
	(D * RESET_B * !SCD * SCE * Q * !Q_N)	0.01067	0.01083	0.01676
	(D * RESET_B * !SCD * SCE * Q * !Q_N)	0.01413	0.01428	0.02022
	(D * RESET_B * !SCD * !SCE * Q * !Q_N)	0.00553	0.00562	0.01122
	(D * RESET_B * !SCD * !SCE * Q * !Q_N)	0.00884	0.00892	0.01452
	(D * RESET_B * !SCD * !SCE * !Q * Q_N)	0.01005	0.01004	0.01580
	(D * RESET_B * !SCD * !SCE * !Q * Q_N)	0.01322	0.01320	0.01896
	(D * !SCD * SCE * !Q * Q_N)	0.00514	0.00520	0.01086
	(D * !SCD * SCE * !Q * Q_N)	0.00845	0.00850	0.01416
	(D * !RESET_B * SCD * SCE * !Q * Q_N)	0.00514	0.00520	0.01086
	(D * !RESET_B * SCD * SCE * !Q * Q_N)	0.00845	0.00851	0.01416
	(D * !RESET_B * SCD * !SCE * !Q * Q_N)	0.00514	0.00520	0.01086
	(D * !RESET_B * SCD * !SCE * !Q * Q_N)	0.00845	0.00850	0.01416
	(D * !RESET_B * !SCD * !SCE * !Q * Q_N)	0.00514	0.00520	0.01086
	(D * !RESET_B * !SCD * !SCE * !Q * Q_N)	0.00845	0.00850	0.01416
	(!D * RESET_B * SCD * SCE * Q * !Q_N)	0.00553	0.00562	0.01122
	(!D * RESET_B * SCD * SCE * Q * !Q_N)	0.00884	0.00892	0.01452
	(!D * RESET_B * SCD * SCE * !Q * Q_N)	0.01012	0.01010	0.01587
	(!D * RESET_B * SCD * SCE * !Q * Q_N)	0.01328	0.01324	0.01902
	(!D * RESET_B * !SCE * Q * !Q_N)	0.01064	0.01081	0.01674
	(!D * RESET_B * !SCE * Q * !Q_N)	0.01409	0.01423	0.02017
	(!D * RESET_B * !SCD * SCE * Q * !Q_N)	0.01066	0.01083	0.01675
	(!D * RESET_B * !SCD * SCE * Q * !Q_N)	0.01411	0.01426	0.02020
	(!D * !SCE * !Q * Q_N)	0.00514	0.00519	0.01086
	(!D * !SCE * !Q * Q_N)	0.00845	0.00850	0.01416
	(!D * !SCD * SCE * !Q * Q_N)	0.00514	0.00520	0.01086
	(!D * !SCD * SCE * !Q * Q_N)	0.00845	0.00850	0.01416
	(!D * !RESET_B * SCD * SCE * !Q * Q_N)	0.00514	0.00520	0.01086
	(!D * !RESET_B * SCD * SCE * !Q * Q_N)	0.00845	0.00851	0.01416

sky130_fd_sc_hs__sdfrbp_2	(D * RESET_B * SCD * SCE * Q * !Q_N)	0.00550	0.00556	0.01121
	(D * RESET_B * SCD * SCE * Q * !Q_N)	0.00873	0.00880	0.01445
	(D * RESET_B * SCD * SCE * !Q * Q_N)	0.01012	0.01013	0.01587
	(D * RESET_B * SCD * SCE * !Q * Q_N)	0.01321	0.01321	0.01897
	(D * RESET_B * SCD * !SCE * Q * !Q_N)	0.00550	0.00556	0.01121
	(D * RESET_B * SCD * !SCE * Q * !Q_N)	0.00873	0.00880	0.01445
	(D * RESET_B * SCD * !SCE * !Q * Q_N)	0.01008	0.01010	0.01583
	(D * RESET_B * SCD * !SCE * !Q * Q_N)	0.01317	0.01319	0.01893
	(D * RESET_B * !SCD * SCE * Q * !Q_N)	0.01062	0.01078	0.01678
	(D * RESET_B * !SCD * SCE * Q * !Q_N)	0.01401	0.01416	0.02018
	(D * RESET_B * !SCD * !SCE * Q * !Q_N)	0.00550	0.00556	0.01121
	(D * RESET_B * !SCD * !SCE * Q * !Q_N)	0.00873	0.00880	0.01445
	(D * RESET_B * !SCD * !SCE * !Q * Q_N)	0.01008	0.01010	0.01583
	(D * RESET_B * !SCD * !SCE * !Q * Q_N)	0.01317	0.01319	0.01893
	(D * !SCD * SCE * !Q * Q_N)	0.00517	0.00526	0.01092
	(D * !SCD * SCE * !Q * Q_N)	0.00840	0.00849	0.01415
	(D * !RESET_B * SCD * SCE * !Q * Q_N)	0.00517	0.00527	0.01092
	(D * !RESET_B * SCD * SCE * !Q * Q_N)	0.00840	0.00850	0.01415
	(D * !RESET_B * SCD * !SCE * !Q * Q_N)	0.00517	0.00526	0.01092
	(D * !RESET_B * SCD * !SCE * !Q * Q_N)	0.00840	0.00850	0.01415
	(D * !RESET_B * !SCD * !SCE * !Q * Q_N)	0.00517	0.00526	0.01092
	(D * !RESET_B * !SCD * !SCE * !Q * Q_N)	0.00840	0.00850	0.01415
	(!D * RESET_B * SCD * SCE * Q * !Q_N)	0.00550	0.00556	0.01121
	(!D * RESET_B * SCD * SCE * Q * !Q_N)	0.00873	0.00880	0.01445
	(!D * RESET_B * SCD * SCE * !Q * Q_N)	0.01015	0.01016	0.01590
	(!D * RESET_B * SCD * SCE * !Q * Q_N)	0.01322	0.01324	0.01899
	(!D * RESET_B * !SCE * Q * !Q_N)	0.01060	0.01076	0.01676
	(!D * RESET_B * !SCE * Q * !Q_N)	0.01396	0.01412	0.02014
	(!D * RESET_B * !SCD * SCE * Q * !Q_N)	0.01062	0.01077	0.01677
	(!D * RESET_B * !SCD * SCE * Q * !Q_N)	0.01399	0.01415	0.02016
	(!D * !SCE * !Q * Q_N)	0.00517	0.00526	0.01091
	(!D * !SCE * !Q * Q_N)	0.00840	0.00849	0.01415
	(!D * !SCD * SCE * !Q * Q_N)	0.00517	0.00526	0.01091
	(!D * !SCD * SCE * !Q * Q_N)	0.00840	0.00849	0.01415
	(!D * !RESET_B * SCD * SCE * !Q * Q_N)	0.00517	0.00527	0.01092
	(!D * !RESET_B * SCD * SCE * !Q * Q_N)	0.00840	0.00850	0.01415

SKY130_FD_SC_HS__SDFRTN

sky130_fd_sc_hs_tt_1.50v_25C.ccs
Cell Library: Process , Voltage
1.50, 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	0.00193	0.00187	0.00407	0.00552	0.00279	0.85194

Leakage Information

Cell Name	Leakage(nW)		
	Min.	Avg	Max.
sky130_fd_sc_hs__sdfrtn_1	0.00000	0.34913	0.62770

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)	0.34792	1.17356	8.97753

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)	0.27834	0.80116	4.58121
	RESET_B->Q (FF)	0.37983	0.95343	5.23291

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)	-0.01105	0.03923	1.24667
	setup	CLK_N (F)	0.16714	0.09114	-1.12402

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)	-0.16690	-0.19653	-0.62386
	setup	CLK_N (F)	0.45394	0.46886	0.77550

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)	-0.01105	0.03923	1.24645
	hold	CLK_N (F)	-0.01172	0.03555	1.24667
	setup	CLK_N (F)	0.16486	0.09114	-1.12408
	setup	CLK_N (F)	0.16714	0.09104	-1.12402

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)	-0.16751	-0.19653	-0.62423
	hold	CLK_N (F)	-0.16690	-0.19668	-0.62386
	setup	CLK_N (F)	0.45349	0.46886	0.77103
	setup	CLK_N (F)	0.45394	0.46810	0.77550

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)	-0.03406	0.02374	1.14189
	setup	CLK_N (F)	0.19079	0.11100	-1.00970

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)	-0.21047	-0.25060	-1.01987
	setup	CLK_N (F)	0.53352	0.55710	1.23520

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)	-0.03406	0.02374	1.14189
	hold	CLK_N (F)	-0.03845	0.01508	1.10792
	setup	CLK_N (F)	0.18536	0.10298	-1.04078
	setup	CLK_N (F)	0.19079	0.11100	-1.00970

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)	-0.22928	-0.26934	-1.09139
	hold	CLK_N (F)	-0.21047	-0.25060	-1.01987
	setup	CLK_N (F)	0.53127	0.55300	1.23520
	setup	CLK_N (F)	0.53352	0.55710	1.16754

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)	-0.01520	0.02970	1.27537
	setup	CLK_N (F)	0.52923	0.45482	-1.09532

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)	-0.10289	-0.10771	0.06247
	setup	CLK_N (F)	0.47632	0.49817	1.05390

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)	-0.22851	-0.16929	1.27537
	hold	CLK_N (F)	-0.01520	0.02970	1.20450
	setup	CLK_N (F)	0.52923	0.45482	-1.18419
	setup	CLK_N (F)	0.16683	0.09492	-1.09532

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)	-0.10289	-0.10771	0.06247
	hold	CLK_N (F)	-0.18672	-0.22309	-0.91718
	setup	CLK_N (F)	0.25718	0.22843	-0.01447
	setup	CLK_N (F)	0.47632	0.49817	1.05390

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)	0.21153	0.10960	-1.02937
	removal	CLK_N (F)	-0.13667	-0.03952	1.18079

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)	0.20958	0.10536	-1.05375
	recovery	CLK_N (F)	0.20381	0.10019	-1.12723
	recovery	CLK_N (F)	0.19909	0.08695	-1.14943
	recovery	CLK_N (F)	0.21153	0.10960	-1.02937
	removal	CLK_N (F)	-0.14333	-0.05732	1.08109
	removal	CLK_N (F)	-0.14043	-0.04965	1.15979
	removal	CLK_N (F)	-0.13667	-0.03952	1.18079
	removal	CLK_N (F)	-0.14952	-0.06318	1.05784

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 ()	0.16716	0.74341	16.50020
	min_pulse_width	RESET_B ()	0.20318	0.74341	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 ()	0.19486	0.74341	16.50020
	min_pulse_width	CLK_N ()	0.30568	0.74341	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 ()	0.20318	0.74341	16.50020
	min_pulse_width	CLK_N ()	0.17824	0.74341	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	0.01699	0.01728	0.02389
	CLK_N	0.02034	0.02062	0.02734

Internal switching power(pJ) to Q falling :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__sdfrtn_1	CLK_N	0.01584	0.01584	0.02210
	CLK_N	0.01877	0.01878	0.02458
	RESET_B	0.01696	0.01661	0.02337
	RESET_B	0.02433	0.02395	0.03066

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)**	0.00091	0.00091	0.00091
	(CLK_N * RESET_B * SCD * SCE)	-0.00050	-0.00050	-0.00050
	(CLK_N * RESET_B * SCD * !SCE)	0.00924	0.00913	0.01189
	(CLK_N * RESET_B * SCD * !SCE)	0.00665	0.00654	0.00930
	(CLK_N * RESET_B * !SCD * !SCE)	0.00924	0.00913	0.01189
	(CLK_N * RESET_B * !SCD * !SCE)	0.00665	0.00654	0.00930
	(CLK_N * !SCD * SCE)	0.00053	0.00053	0.00052
	(CLK_N * !SCD * SCE)	-0.00097	-0.00098	-0.00099
	(CLK_N * !RESET_B * SCD * SCE)	0.00051	0.00051	0.00051
	(CLK_N * !RESET_B * SCD * SCE)	-0.00097	-0.00099	-0.00099
	(CLK_N * !RESET_B * SCD * !SCE)	0.00028	0.00028	0.00024
	(CLK_N * !RESET_B * SCD * !SCE)	-0.00120	-0.00121	-0.00127
	(CLK_N * !RESET_B * !SCD * !SCE)	0.00027	0.00027	0.00024
	(CLK_N * !RESET_B * !SCD * !SCE)	-0.00124	-0.00125	-0.00128
	(!CLK_N * RESET_B * SCD * SCE)	0.00091	0.00091	0.00091
	(!CLK_N * RESET_B * SCD * SCE)	-0.00050	-0.00050	-0.00050
	(!CLK_N * RESET_B * SCD * !SCE)	0.00405	0.00391	0.00715
	(!CLK_N * RESET_B * SCD * !SCE)	0.00143	0.00130	0.00454
	(!CLK_N * RESET_B * !SCD * !SCE)	0.00405	0.00391	0.00715
	(!CLK_N * RESET_B * !SCD * !SCE)	0.00143	0.00130	0.00454
	(!CLK_N * !SCD * SCE)	0.00053	0.00053	0.00052
	(!CLK_N * !SCD * SCE)	-0.00097	-0.00098	-0.00099
	(!CLK_N * !RESET_B * SCD * SCE)	0.00051	0.00051	0.00051
	(!CLK_N * !RESET_B * SCD * SCE)	-0.00097	-0.00100	-0.00099
	(!CLK_N * !RESET_B * SCD * !SCE)	0.00028	0.00028	0.00024
	(!CLK_N * !RESET_B * SCD * !SCE)	-0.00121	-0.00121	-0.00127
	(!CLK_N * !RESET_B * !SCD * !SCE)	0.00027	0.00027	0.00024
	(!CLK_N * !RESET_B * !SCD * !SCE)	-0.00124	-0.00125	-0.00128

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)**	-0.00086	-0.00087	-0.00090
	(CLK_N * RESET_B * SCD * SCE)	0.00054	0.00054	0.00052
	(CLK_N * RESET_B * SCD * !SCE)	0.00600	0.00600	0.01022
	(CLK_N * RESET_B * SCD * !SCE)	0.00859	0.00859	0.01281
	(CLK_N * RESET_B * !SCD * !SCE)	0.00600	0.00600	0.01022
	(CLK_N * RESET_B * !SCD * !SCE)	0.00859	0.00859	0.01281
	(CLK_N * !SCD * SCE)	-0.00050	-0.00051	-0.00050
	(CLK_N * !SCD * SCE)	0.00099	0.00100	0.00099
	(CLK_N * !RESET_B * SCD * SCE)	-0.00050	-0.00050	-0.00050
	(CLK_N * !RESET_B * SCD * SCE)	0.00099	0.00100	0.00099
	(CLK_N * !RESET_B * SCD * !SCE)	-0.00023	-0.00023	-0.00022
	(CLK_N * !RESET_B * SCD * !SCE)	0.00129	0.00129	0.00129
	(CLK_N * !RESET_B * !SCD * !SCE)	-0.00023	-0.00023	-0.00022
	(CLK_N * !RESET_B * !SCD * !SCE)	0.00129	0.00129	0.00129
	(!CLK_N * RESET_B * SCD * SCE)	-0.00086	-0.00088	-0.00090
	(!CLK_N * RESET_B * SCD * SCE)	0.00054	0.00054	0.00051
	(!CLK_N * RESET_B * SCD * !SCE)	0.00090	0.00089	0.00466
	(!CLK_N * RESET_B * SCD * !SCE)	0.00352	0.00351	0.00728
	(!CLK_N * RESET_B * !SCD * !SCE)	0.00090	0.00089	0.00466
	(!CLK_N * RESET_B * !SCD * !SCE)	0.00352	0.00351	0.00727
	(!CLK_N * !SCD * SCE)	-0.00050	-0.00051	-0.00050
	(!CLK_N * !SCD * SCE)	0.00099	0.00100	0.00099
	(!CLK_N * !RESET_B * SCD * SCE)	-0.00050	-0.00050	-0.00050
	(!CLK_N * !RESET_B * SCD * SCE)	0.00099	0.00100	0.00099
	(!CLK_N * !RESET_B * SCD * !SCE)	-0.00023	-0.00023	-0.00022
	(!CLK_N * !RESET_B * SCD * !SCE)	0.00129	0.00129	0.00129
	(!CLK_N * !RESET_B * !SCD * !SCE)	-0.00023	-0.00023	-0.00022
	(!CLK_N * !RESET_B * !SCD * !SCE)	0.00129	0.00129	0.00129

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)**	0.01034	0.01023	0.01182
	(CLK_N * D * RESET_B * SCE)	0.00715	0.00703	0.00863
	(CLK_N * D * RESET_B * !SCE)	0.00080	0.00070	0.00069
	(CLK_N * D * RESET_B * !SCE)	-0.00085	-0.00096	-0.00097
	(CLK_N * D * !RESET_B * SCE)	0.00047	0.00047	0.00046
	(CLK_N * D * !RESET_B * SCE)	-0.00095	-0.00095	-0.00094
	(CLK_N * D * !RESET_B * !SCE)	0.00030	0.00030	0.00030
	(CLK_N * D * !RESET_B * !SCE)	-0.00108	-0.00109	-0.00109
	(CLK_N * !D * RESET_B * SCE)	0.01089	0.01078	0.01230
	(CLK_N * !D * RESET_B * SCE)	0.00759	0.00749	0.00901
	(CLK_N * !D * !RESET_B * SCE)	0.00047	0.00048	0.00046
	(CLK_N * !D * !RESET_B * SCE)	-0.00095	-0.00095	-0.00094
	(!D * RESET_B * !SCE)	0.00060	0.00060	0.00060
	(!D * RESET_B * !SCE)	-0.00105	-0.00106	-0.00106
	(!D * !RESET_B * !SCE)	0.00035	0.00035	0.00034
	(!D * !RESET_B * !SCE)	-0.00114	-0.00114	-0.00114
	(!CLK_N * D * RESET_B * SCE)	0.00515	0.00503	0.00670
	(!CLK_N * D * RESET_B * SCE)	0.00194	0.00180	0.00348
	(!CLK_N * D * RESET_B * !SCE)	0.00080	0.00070	0.00069
	(!CLK_N * D * RESET_B * !SCE)	-0.00085	-0.00096	-0.00097
	(!CLK_N * D * !RESET_B * SCE)	0.00047	0.00048	0.00046
	(!CLK_N * D * !RESET_B * SCE)	-0.00095	-0.00095	-0.00094
	(!CLK_N * D * !RESET_B * !SCE)	0.00030	0.00030	0.00030
	(!CLK_N * D * !RESET_B * !SCE)	-0.00109	-0.00109	-0.00109
	(!CLK_N * !D * RESET_B * SCE)	0.00570	0.00558	0.00712
	(!CLK_N * !D * RESET_B * SCE)	0.00238	0.00226	0.00381
	(!CLK_N * !D * !RESET_B * SCE)	0.00047	0.00048	0.00046
	(!CLK_N * !D * !RESET_B * SCE)	-0.00095	-0.00095	-0.00094

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)**	0.00686	0.00671	0.00894
	(CLK_N * D * RESET_B * SCE)	0.01006	0.00991	0.01212
	(CLK_N * D * RESET_B * !SCE)	-0.00066	-0.00068	-0.00068
	(CLK_N * D * RESET_B * !SCE)	0.00098	0.00099	0.00099
	(CLK_N * D * !RESET_B * SCE)	-0.00044	-0.00044	-0.00044
	(CLK_N * D * !RESET_B * SCE)	0.00097	0.00098	0.00095
	(CLK_N * D * !RESET_B * !SCE)	-0.00029	-0.00030	-0.00029
	(CLK_N * D * !RESET_B * !SCE)	0.00109	0.00111	0.00110
	(CLK_N * !D * RESET_B * SCE)	0.00659	0.00644	0.00881
	(CLK_N * !D * RESET_B * SCE)	0.00988	0.00974	0.01209
	(CLK_N * !D * !RESET_B * SCE)	-0.00044	-0.00044	-0.00044
	(CLK_N * !D * !RESET_B * SCE)	0.00097	0.00098	0.00095
	(!D * RESET_B * !SCE)	-0.00055	-0.00059	-0.00060
	(!D * RESET_B * !SCE)	0.00108	0.00107	0.00107
	(!D * !RESET_B * !SCE)	-0.00035	-0.00035	-0.00034
	(!D * !RESET_B * !SCE)	0.00115	0.00116	0.00116
	(!CLK_N * D * RESET_B * SCE)	0.00176	0.00161	0.00341
	(!CLK_N * D * RESET_B * SCE)	0.00499	0.00484	0.00662
	(!CLK_N * D * RESET_B * !SCE)	-0.00066	-0.00068	-0.00068
	(!CLK_N * D * RESET_B * !SCE)	0.00098	0.00099	0.00099
	(!CLK_N * D * !RESET_B * SCE)	-0.00044	-0.00044	-0.00044
	(!CLK_N * D * !RESET_B * SCE)	0.00097	0.00098	0.00095
	(!CLK_N * D * !RESET_B * !SCE)	-0.00029	-0.00030	-0.00029
	(!CLK_N * D * !RESET_B * !SCE)	0.00109	0.00111	0.00110
	(!CLK_N * !D * RESET_B * SCE)	0.00147	0.00132	0.00319
	(!CLK_N * !D * RESET_B * SCE)	0.00479	0.00464	0.00651
	(!CLK_N * !D * !RESET_B * SCE)	-0.00044	-0.00044	-0.00044
	(!CLK_N * !D * !RESET_B * SCE)	0.00097	0.00098	0.00095

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)	0.00409	0.00381	0.00811
	(CLK_N * D * RESET_B * SCD)	-0.00031	-0.00058	0.00370
	(CLK_N * D * RESET_B * !SCD)	0.01127	0.01113	0.01538
	(CLK_N * D * RESET_B * !SCD)	0.00828	0.00813	0.01234
	(CLK_N * D * !RESET_B) + (CLK_N * !D * RESET_B * !SCD) + (CLK_N * !D * !RESET_B)	0.00403	0.00388	0.00820
	(CLK_N * D * !RESET_B) + (CLK_N * !D * RESET_B * !SCD) + (CLK_N * !D * !RESET_B)	-0.00016	-0.00034	0.00400
	(CLK_N * !D * RESET_B * SCD)	0.01320	0.01291	0.01928
	(CLK_N * !D * RESET_B * SCD)	0.00755	0.00728	0.01364
	(!CLK_N * D * RESET_B * SCD) + (!CLK_N * D * !RESET_B) + (!CLK_N * !D * RESET_B * !SCD) + (!CLK_N * !D * !RESET_B)	0.00409	0.00382	0.00811
	(!CLK_N * D * RESET_B * SCD) + (!CLK_N * D * !RESET_B) + (!CLK_N * !D * RESET_B * !SCD) + (!CLK_N * !D * !RESET_B)	-0.00031	-0.00060	0.00370
	(!CLK_N * D * RESET_B * !SCD)	0.00625	0.00605	0.01038
	(!CLK_N * D * RESET_B * !SCD)	0.00329	0.00306	0.00738
	(!CLK_N * !D * RESET_B * SCD)	0.00801	0.00772	0.01414
	(!CLK_N * !D * RESET_B * SCD)	0.00234	0.00204	0.00848

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)	-0.00020	-0.00010	0.00458
	(CLK_N * D * RESET_B * SCD)	0.00421	0.00431	0.00898
	(CLK_N * D * RESET_B * !SCD)	0.00908	0.00914	0.01368
	(CLK_N * D * RESET_B * !SCD)	0.01209	0.01214	0.01665
	(CLK_N * D * !RESET_B) + (CLK_N * !D * RESET_B * !SCD) + (CLK_N * !D * !RESET_B)	-0.00020	-0.00011	0.00450
	(CLK_N * D * !RESET_B) + (CLK_N * !D * RESET_B * !SCD) + (CLK_N * !D * !RESET_B)	0.00399	0.00410	0.00869
	(CLK_N * !D * RESET_B * SCD)	0.00633	0.00620	0.01315
	(CLK_N * !D * RESET_B * SCD)	0.01195	0.01184	0.01880
	(!CLK_N * D * RESET_B * SCD) + (!CLK_N * D * !RESET_B) + (!CLK_N * !D * RESET_B * !SCD) + (!CLK_N * !D * !RESET_B)	-0.00020	-0.00010	0.00458
	(!CLK_N * D * RESET_B * SCD) + (!CLK_N * D * !RESET_B) + (!CLK_N * !D * RESET_B * !SCD) + (!CLK_N * !D * !RESET_B)	0.00420	0.00431	0.00898
	(!CLK_N * D * RESET_B * !SCD)	0.00392	0.00391	0.00848
	(!CLK_N * D * RESET_B * !SCD)	0.00689	0.00690	0.01141
	(!CLK_N * !D * RESET_B * SCD)	0.00122	0.00111	0.00775
	(!CLK_N * !D * RESET_B * SCD)	0.00688	0.00679	0.01342

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

Cell Name	When	Power(pJ)		
		first	mid	last

	(CLK_N * D * SCD * SCE * !Q)	0.01338	0.01292	0.01562
	(CLK_N * D * SCD * SCE * !Q)	0.00593	0.00546	0.00816
	(CLK_N * D * SCD * !SCE * !Q)	0.01319	0.01272	0.01554
	(CLK_N * D * SCD * !SCE * !Q)	0.00602	0.00552	0.00834
	(CLK_N * D * !SCD * SCE * !Q)	0.00278	0.00281	0.00279
	(CLK_N * D * !SCD * SCE * !Q)	-0.00279	-0.00281	-0.00280
	(CLK_N * D * !SCD * !SCE * !Q)	0.01288	0.01241	0.01531
	(CLK_N * D * !SCD * !SCE * !Q)	0.00602	0.00553	0.00844
	(CLK_N * !D * SCD * SCE * !Q)	0.01393	0.01347	0.01604
	(CLK_N * !D * SCD * SCE * !Q)	0.00638	0.00594	0.00850
	(CLK_N * !D * SCD * !SCE * !Q)	0.00275	0.00278	0.00276
	(CLK_N * !D * SCD * !SCE * !Q)	-0.00281	-0.00282	-0.00281
	(CLK_N * !D * !SCD * SCE * !Q)	0.00278	0.00281	0.00279
	(CLK_N * !D * !SCD * SCE * !Q)	-0.00279	-0.00281	-0.00280
	(CLK_N * !D * !SCD * !SCE * !Q)	0.00276	0.00279	0.00277
	(CLK_N * !D * !SCD * !SCE * !Q)	-0.00281	-0.00283	-0.00282
sky130_fd_sc_hs__sdfrtn_1	**(!CLK_N * D * SCD * SCE * !Q)**	0.00767	0.00747	0.01012
	(!CLK_N * D * SCD * SCE * !Q)	0.00020	-0.00002	0.00262
	(!CLK_N * D * SCD * !SCE * !Q)	0.00749	0.00729	0.01010
	(!CLK_N * D * SCD * !SCE * !Q)	0.00027	0.00004	0.00286
	(!CLK_N * D * !SCD * SCE * !Q)	0.00271	0.00273	0.00271
	(!CLK_N * D * !SCD * SCE * !Q)	-0.00287	-0.00288	-0.00287
	(!CLK_N * D * !SCD * !SCE * !Q)	0.00717	0.00697	0.00989
	(!CLK_N * D * !SCD * !SCE * !Q)	0.00028	0.00005	0.00298
	(!CLK_N * !D * SCD * SCE * !Q)	0.00822	0.00804	0.01049
	(!CLK_N * !D * SCD * SCE * !Q)	0.00065	0.00043	0.00293
	(!CLK_N * !D * SCD * !SCE * !Q)	0.00268	0.00270	0.00268
	(!CLK_N * !D * SCD * !SCE * !Q)	-0.00288	-0.00290	-0.00288
	(!CLK_N * !D * !SCD * SCE * !Q)	0.00271	0.00273	0.00271
	(!CLK_N * !D * !SCD * SCE * !Q)	-0.00287	-0.00288	-0.00287
	(!CLK_N * !D * !SCD * !SCE * !Q)	0.00269	0.00271	0.00269
	(!CLK_N * !D * !SCD * !SCE * !Q)	-0.00289	-0.00290	-0.00289

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

Cell Name	When	Power(pJ)		
		first	mid	last

	(CLK_N * D * SCD * SCE * !Q)	0.00592	0.00551	0.01007
	(CLK_N * D * SCD * SCE * !Q)	0.01341	0.01297	0.01753
	(CLK_N * D * SCD * !SCE * !Q)	0.00522	0.00479	0.00932
	(CLK_N * D * SCD * !SCE * !Q)	0.01245	0.01201	0.01652
	(CLK_N * D * !SCD * SCE * !Q)	-0.00274	-0.00280	-0.00279
	(CLK_N * D * !SCD * SCE * !Q)	0.00284	0.00283	0.00281
	(CLK_N * D * !SCD * !SCE * !Q)	0.00500	0.00458	0.00922
	(CLK_N * D * !SCD * !SCE * !Q)	0.01191	0.01147	0.01610
	(CLK_N * !D * SCD * SCE * !Q)	0.00563	0.00520	0.00990
	(CLK_N * !D * SCD * SCE * !Q)	0.01323	0.01279	0.01747
	(CLK_N * !D * SCD * !SCE * !Q)	-0.00269	-0.00278	-0.00276
	(CLK_N * !D * SCD * !SCE * !Q)	0.00286	0.00285	0.00281
	(CLK_N * !D * !SCD * SCE * !Q)	-0.00274	-0.00280	-0.00279
	(CLK_N * !D * !SCD * SCE * !Q)	0.00284	0.00283	0.00281
	(CLK_N * !D * !SCD * !SCE * !Q)	-0.00270	-0.00278	-0.00277
	(CLK_N * !D * !SCD * !SCE * !Q)	0.00287	0.00285	0.00282
sky130_fd_sc_hs__sdfrtn_1	**(!CLK_N * D * SCD * SCE * !Q)**	0.00036	0.00026	0.00424
	(!CLK_N * D * SCD * SCE * !Q)	0.00784	0.00777	0.01171
	(!CLK_N * D * SCD * !SCE * !Q)	-0.00035	-0.00045	0.00352
	(!CLK_N * D * SCD * !SCE * !Q)	0.00688	0.00679	0.01074
	(!CLK_N * D * !SCD * SCE * !Q)	-0.00266	-0.00273	-0.00271
	(!CLK_N * D * !SCD * SCE * !Q)	0.00290	0.00291	0.00288
	(!CLK_N * D * !SCD * !SCE * !Q)	-0.00057	-0.00065	0.00339
	(!CLK_N * D * !SCD * !SCE * !Q)	0.00634	0.00627	0.01031
	(!CLK_N * !D * SCD * SCE * !Q)	0.00006	-0.00003	0.00404
	(!CLK_N * !D * SCD * SCE * !Q)	0.00765	0.00760	0.01163
	(!CLK_N * !D * SCD * !SCE * !Q)	-0.00261	-0.00270	-0.00268
	(!CLK_N * !D * SCD * !SCE * !Q)	0.00293	0.00292	0.00289
	(!CLK_N * !D * !SCD * SCE * !Q)	-0.00266	-0.00273	-0.00271
	(!CLK_N * !D * !SCD * SCE * !Q)	0.00290	0.00291	0.00288
	(!CLK_N * !D * !SCD * !SCE * !Q)	-0.00262	-0.00271	-0.00269
	(!CLK_N * !D * !SCD * !SCE * !Q)	0.00294	0.00293	0.00289

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)**	0.00948	0.00906	0.01411
	(D * RESET_B * SCD * SCE * Q)	0.00634	0.00591	0.01096
	(D * RESET_B * SCD * SCE * !Q)	0.01504	0.01466	0.01987
	(D * RESET_B * SCD * SCE * !Q)	0.01192	0.01153	0.01676
	(D * RESET_B * SCD * !SCE * Q)	0.00948	0.00906	0.01410
	(D * RESET_B * SCD * !SCE * Q)	0.00634	0.00591	0.01097
	(D * RESET_B * SCD * !SCE * !Q)	0.01501	0.01464	0.01985
	(D * RESET_B * SCD * !SCE * !Q)	0.01190	0.01151	0.01673
	(D * RESET_B * !SCD * SCE * Q)	0.01436	0.01381	0.01874
	(D * RESET_B * !SCD * SCE * Q)	0.01121	0.01065	0.01559
	(D * RESET_B * !SCD * !SCE * Q)	0.00948	0.00906	0.01411
	(D * RESET_B * !SCD * !SCE * Q)	0.00634	0.00591	0.01096
	(D * RESET_B * !SCD * !SCE * !Q)	0.01501	0.01463	0.01985
	(D * RESET_B * !SCD * !SCE * !Q)	0.01190	0.01151	0.01673
	(D * !SCD * SCE * !Q)	0.00934	0.00892	0.01396
	(D * !SCD * SCE * !Q)	0.00620	0.00577	0.01082
	(D * !RESET_B * SCD * SCE * !Q)	0.00934	0.00893	0.01398
	(D * !RESET_B * SCD * SCE * !Q)	0.00620	0.00578	0.01083
	(D * !RESET_B * SCD * !SCE * !Q)	0.00934	0.00893	0.01397
	(D * !RESET_B * SCD * !SCE * !Q)	0.00620	0.00578	0.01082
	(D * !RESET_B * !SCD * !SCE * !Q)	0.00934	0.00893	0.01397
	(D * !RESET_B * !SCD * !SCE * !Q)	0.00620	0.00578	0.01082
	(!D * RESET_B * SCD * SCE * Q)	0.00948	0.00906	0.01410
	(!D * RESET_B * SCD * SCE * Q)	0.00634	0.00591	0.01095
	(!D * RESET_B * SCD * SCE * !Q)	0.01507	0.01470	0.01991
	(!D * RESET_B * SCD * SCE * !Q)	0.01194	0.01155	0.01677
	(!D * RESET_B * !SCE * Q)	0.01434	0.01379	0.01871
	(!D * RESET_B * !SCE * Q)	0.01117	0.01061	0.01554
	(!D * RESET_B * !SCD * SCE * Q)	0.01437	0.01380	0.01873
	(!D * RESET_B * !SCD * SCE * Q)	0.01121	0.01064	0.01557
	(!D * !SCE * !Q)	0.00934	0.00892	0.01398
	(!D * !SCE * !Q)	0.00620	0.00577	0.01083
	(!D * !SCD * SCE * !Q)	0.00934	0.00892	0.01396
	(!D * !SCD * SCE * !Q)	0.00620	0.00577	0.01082
	(!D * !RESET_B * SCD * SCE * !Q)	0.00934	0.00893	0.01397
	(!D * !RESET_B * SCD * SCE * !Q)	0.00620	0.00579	0.01082

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)	0.00688	0.00690	0.01252
	(D * RESET_B * SCD * SCE * Q)	0.01003	0.01005	0.01567
	(D * RESET_B * SCD * !SCE * Q)	0.00688	0.00690	0.01252
	(D * RESET_B * SCD * !SCE * Q)	0.01003	0.01005	0.01567
	(D * RESET_B * !SCD * !SCE * Q)	0.00688	0.00690	0.01252
	(D * RESET_B * !SCD * !SCE * Q)	0.01003	0.01005	0.01567
	(D * !SCD * SCE * !Q)	0.00690	0.00691	0.01255
	(D * !SCD * SCE * !Q)	0.01005	0.01006	0.01569
	(D * !RESET_B * SCD * SCE * !Q)	0.00690	0.00686	0.01255
	(D * !RESET_B * SCD * SCE * !Q)	0.01005	0.01001	0.01569
	(D * !RESET_B * SCD * !SCE * !Q)	0.00690	0.00692	0.01254
	(D * !RESET_B * SCD * !SCE * !Q)	0.01005	0.01007	0.01569
	(D * !RESET_B * !SCD * !SCE * !Q)	0.00690	0.00692	0.01254
	(D * !RESET_B * !SCD * !SCE * !Q)	0.01005	0.01007	0.01569
	(!D * RESET_B * SCD * SCE * Q)	0.00688	0.00690	0.01252
	(!D * RESET_B * SCD * SCE * Q)	0.01003	0.01005	0.01567
	(!D * !SCE * !Q)	0.00690	0.00691	0.01255
	(!D * !SCE * !Q)	0.01005	0.01006	0.01569
	(!D * !SCD * SCE * !Q)	0.00690	0.00691	0.01255
	(!D * !SCD * SCE * !Q)	0.01005	0.01006	0.01569
	(!D * !RESET_B * SCD * SCE * !Q)	0.00690	0.00686	0.01255
	(!D * !RESET_B * SCD * SCE * !Q)	0.01005	0.01001	0.01569

SKY130_FD_SC_HS__SDFRTPx

sky130_fd_sc_hs_tt_1.50v_25C.ccs
Cell Library: Process , Voltage
1.50, 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	0.00185	0.00191	0.00408	0.00555	0.00300	0.85791
sky130_fd_sc_hs__sdfrtp_2	0.00179	0.00193	0.00416	0.00562	0.00300	1.71465
sky130_fd_sc_hs__sdfrtp_4	0.00179	0.00190	0.00419	0.00555	0.00299	3.20908

Leakage Information

Cell Name	Leakage(nW)		
	Min.	**Avg**	**Max.**
sky130_fd_sc_hs__sdfrtp_1	0.00000	0.34913	0.62770
sky130_fd_sc_hs__sdfrtp_2	0.00000	0.34646	0.60670
sky130_fd_sc_hs__sdfrtp_4	0.00000	0.46439	0.79119

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)	0.26160	0.88476	6.95273
sky130_fd_sc_hs__sdfrtp_2	CLK->Q (RR)	0.28028	0.79277	7.01833
sky130_fd_sc_hs__sdfrtp_4	CLK->Q (RR)	0.32442	0.75801	7.05049

Delay(ns) to Q falling :

Cell Name	Timing Arc(Dir)	Delay(ns)		
		First	Mid	Last
sky130_fd_sc_hs__sdfrtp_1	CLK->Q (RF)	0.26524	0.58381	2.51188
	RESET_B->Q (FF)	0.37829	0.95104	5.24926
sky130_fd_sc_hs__sdfrtp_2	CLK->Q (RF)	0.27737	0.56782	2.55222
	RESET_B->Q (FF)	0.39407	0.94001	5.31459
sky130_fd_sc_hs__sdfrtp_4	CLK->Q (RF)	0.28790	0.54909	2.47413
	RESET_B->Q (FF)	0.40247	0.91981	5.23379

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)	-0.12768	-0.24333	-1.23280
	setup	CLK (R)	0.26409	0.32528	1.47919
sky130_fd_sc_hs__sdfrtp_2	hold	CLK (R)	-0.12090	-0.23730	-1.17959
	setup	CLK (R)	0.26756	0.32131	1.44236
sky130_fd_sc_hs__sdfrtp_4	hold	CLK (R)	-0.12123	-0.23647	-1.18502
	setup	CLK (R)	0.24628	0.31107	1.42394

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)	-0.10531	-0.25160	-1.30850
	setup	CLK (R)	0.38030	0.46662	3.05752
sky130_fd_sc_hs__sdfrtp_2	hold	CLK (R)	-0.10040	-0.24527	-1.37001
	setup	CLK (R)	0.36130	0.44787	2.99827
sky130_fd_sc_hs__sdfrtp_4	hold	CLK (R)	-0.11209	-0.25640	-1.59030
	setup	CLK (R)	0.36058	0.44765	2.97909

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)	-0.12768	-0.24333	-1.23280
	hold	CLK (R)	-0.12874	-0.24488	-1.23308
	setup	CLK (R)	0.26374	0.32348	1.47919
	setup	CLK (R)	0.26409	0.32528	1.47890
sky130_fd_sc_hs__sdfrtp_2	hold	CLK (R)	-0.12333	-0.23730	-1.17959
	hold	CLK (R)	-0.12090	-0.23739	-1.17986
	setup	CLK (R)	0.26756	0.32116	1.44190
	setup	CLK (R)	0.26740	0.32131	1.44236
sky130_fd_sc_hs__sdfrtp_4	hold	CLK (R)	-0.12123	-0.23647	-1.18502
	hold	CLK (R)	-0.12289	-0.23746	-1.18532
	setup	CLK (R)	0.24628	0.30945	1.42209
	setup	CLK (R)	0.24558	0.31107	1.42394

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)	-0.10691	-0.25164	-1.30850
	hold	CLK (R)	-0.10531	-0.25160	-1.31017
	setup	CLK (R)	0.38030	0.46662	3.05578
	setup	CLK (R)	0.37934	0.46662	3.05752
sky130_fd_sc_hs__sdfrtp_2	hold	CLK (R)	-0.10040	-0.24527	-1.37001
	hold	CLK (R)	-0.10118	-0.24529	-1.37146
	setup	CLK (R)	0.36125	0.44786	2.99827
	setup	CLK (R)	0.36130	0.44787	2.99647
sky130_fd_sc_hs__sdfrtp_4	hold	CLK (R)	-0.11566	-0.25640	-1.59052
	hold	CLK (R)	-0.11209	-0.25712	-1.59030
	setup	CLK (R)	0.35991	0.44765	2.97909
	setup	CLK (R)	0.36058	0.44764	2.97755

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)	-0.15115	-0.26021	-1.35425
	setup	CLK (R)	0.28828	0.34096	1.56717
sky130_fd_sc_hs__sdfrtp_2	hold	CLK (R)	-0.14790	-0.25202	-1.31238
	setup	CLK (R)	0.29264	0.33820	1.53001
sky130_fd_sc_hs__sdfrtp_4	hold	CLK (R)	-0.14632	-0.25118	-1.31689
	setup	CLK (R)	0.27157	0.32670	1.51581

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)	-0.13963	-0.30599	-1.81859
	setup	CLK (R)	0.46089	0.55181	3.42578
sky130_fd_sc_hs__sdfrtp_2	hold	CLK (R)	-0.14025	-0.30397	-1.91494
	setup	CLK (R)	0.45127	0.54028	3.37734
sky130_fd_sc_hs__sdfrtp_4	hold	CLK (R)	-0.15331	-0.31670	-2.11257
	setup	CLK (R)	0.44586	0.53908	3.36346

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)	-0.15115	-0.26021	-1.35425
	hold	CLK (R)	-0.15625	-0.26682	-1.36454
	setup	CLK (R)	0.28681	0.33700	1.55594
	setup	CLK (R)	0.28828	0.34096	1.56717
sky130_fd_sc_hs__sdfrtp_2	hold	CLK (R)	-0.14790	-0.25202	-1.31238
	hold	CLK (R)	-0.15468	-0.25768	-1.32698
	setup	CLK (R)	0.29163	0.33430	1.52345
	setup	CLK (R)	0.29264	0.33820	1.53001
sky130_fd_sc_hs__sdfrtp_4	hold	CLK (R)	-0.14632	-0.25118	-1.31689
	hold	CLK (R)	-0.15209	-0.25887	-1.32482
	setup	CLK (R)	0.27137	0.32460	1.50909
	setup	CLK (R)	0.27157	0.32670	1.51581

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)	-0.15006	-0.31771	-1.90502
	hold	CLK (R)	-0.13963	-0.30599	-1.81859
	setup	CLK (R)	0.46089	0.55181	3.42578
	setup	CLK (R)	0.45685	0.55122	3.41969
sky130_fd_sc_hs__sdfrtp_2	hold	CLK (R)	-0.15394	-0.31590	-1.97542
	hold	CLK (R)	-0.14025	-0.30397	-1.91494
	setup	CLK (R)	0.45127	0.54028	3.37734
	setup	CLK (R)	0.44969	0.53869	3.36325
sky130_fd_sc_hs__sdfrtp_4	hold	CLK (R)	-0.16718	-0.33509	-2.17647
	hold	CLK (R)	-0.15331	-0.31670	-2.11257
	setup	CLK (R)	0.44586	0.53908	3.36346
	setup	CLK (R)	0.44260	0.53763	3.35468

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)	-0.13147	-0.21633	-0.09007
	setup	CLK (R)	0.45720	0.45607	1.68023
sky130_fd_sc_hs__sdfrtp_2	hold	CLK (R)	-0.12765	-0.20905	-0.07944
	setup	CLK (R)	0.44138	0.43638	1.57387
sky130_fd_sc_hs__sdfrtp_4	hold	CLK (R)	-0.12655	-0.22838	-0.15196
	setup	CLK (R)	0.43829	0.43549	1.53606

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)	-0.11906	-0.27030	-1.69973
	setup	CLK (R)	0.39566	0.48569	3.25852
sky130_fd_sc_hs__sdfrtp_2	hold	CLK (R)	-0.11658	-0.26305	-1.75982
	setup	CLK (R)	0.37728	0.46884	3.18326
sky130_fd_sc_hs__sdfrtp_4	hold	CLK (R)	-0.12723	-0.27548	-1.94236
	setup	CLK (R)	0.37276	0.46552	3.17300

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)	-0.14864	-0.21633	-0.09007
	hold	CLK (R)	-0.13147	-0.24706	-1.24615
	setup	CLK (R)	0.45720	0.45607	1.68023
	setup	CLK (R)	0.26334	0.32680	1.48678
sky130_fd_sc_hs__sdfrtp_2	hold	CLK (R)	-0.14641	-0.20905	-0.07944
	hold	CLK (R)	-0.12765	-0.23955	-1.20811
	setup	CLK (R)	0.44138	0.43638	1.57387
	setup	CLK (R)	0.26588	0.32332	1.45694
sky130_fd_sc_hs__sdfrtp_4	hold	CLK (R)	-0.15946	-0.22838	-0.15196
	hold	CLK (R)	-0.12655	-0.23782	-1.20640
	setup	CLK (R)	0.43829	0.43549	1.53606
	setup	CLK (R)	0.24587	0.31381	1.43612

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)	-0.21764	-0.38348	-2.42105
	hold	CLK (R)	-0.11906	-0.27030	-1.69973
	setup	CLK (R)	0.35478	0.45730	2.54430
	setup	CLK (R)	0.39566	0.48569	3.25852
sky130_fd_sc_hs__sdfrtp_2	hold	CLK (R)	-0.21012	-0.37057	-2.38724
	hold	CLK (R)	-0.11658	-0.26305	-1.75982
	setup	CLK (R)	0.35378	0.45136	2.51231
	setup	CLK (R)	0.37728	0.46884	3.18326
sky130_fd_sc_hs__sdfrtp_4	hold	CLK (R)	-0.21118	-0.37032	-2.39027
	hold	CLK (R)	-0.12723	-0.27548	-1.94236
	setup	CLK (R)	0.33313	0.43970	2.50545
	setup	CLK (R)	0.37276	0.46552	3.17300

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)	0.31133	0.34377	1.56789
	removal	CLK (R)	-0.20903	-0.27029	-1.32906
sky130_fd_sc_hs__sdfrtp_2	recovery	CLK (R)	0.31494	0.34327	1.54398
	removal	CLK (R)	-0.20792	-0.26500	-1.29662
sky130_fd_sc_hs__sdfrtp_4	recovery	CLK (R)	0.29395	0.32858	1.52993
	removal	CLK (R)	-0.20578	-0.26477	-1.29927

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)	0.30919	0.34179	1.56000
	recovery	CLK (R)	0.30497	0.33207	1.49476
	recovery	CLK (R)	0.29898	0.32220	1.46384
	recovery	CLK (R)	0.31133	0.34377	1.56789
	removal	CLK (R)	-0.21973	-0.28933	-1.43043
	removal	CLK (R)	-0.21296	-0.28112	-1.36337
	removal	CLK (R)	-0.20903	-0.27029	-1.32906
	removal	CLK (R)	-0.22459	-0.29441	-1.44130
sky130_fd_sc_hs__sdfrtp_2	recovery	CLK (R)	0.30924	0.33888	1.53643
	recovery	CLK (R)	0.30308	0.32846	1.46343
	recovery	CLK (R)	0.30177	0.31991	1.43546
	recovery	CLK (R)	0.31494	0.34327	1.54398
	removal	CLK (R)	-0.21834	-0.28417	-1.40535
	removal	CLK (R)	-0.21381	-0.27581	-1.33095
	removal	CLK (R)	-0.20792	-0.26500	-1.29662
	removal	CLK (R)	-0.22513	-0.29175	-1.41216
sky130_fd_sc_hs__sdfrtp_4	recovery	CLK (R)	0.29085	0.32773	1.52520
	recovery	CLK (R)	0.28526	0.31748	1.45751
	recovery	CLK (R)	0.28047	0.30844	1.42574
	recovery	CLK (R)	0.29395	0.32858	1.52993
	removal	CLK (R)	-0.21618	-0.28399	-1.40897
	removal	CLK (R)	-0.21211	-0.27315	-1.33361
	removal	CLK (R)	-0.20578	-0.26477	-1.29927
	removal	CLK (R)	-0.22317	-0.28851	-1.41234

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 ()	0.20040	0.74341	16.50020
	min_pulse_width	RESET_B ()	0.15885	0.74341	16.50020
sky130_fd_sc_hs__sdfrtp_2	min_pulse_width	RESET_B ()	0.20595	0.74341	16.50020
	min_pulse_width	RESET_B ()	0.16162	0.74341	16.50020
sky130_fd_sc_hs__sdfrtp_4	min_pulse_width	RESET_B ()	0.20318	0.74341	16.50020
	min_pulse_width	RESET_B ()	0.16439	0.74341	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 ()	0.13392	0.74341	16.50020
	min_pulse_width	CLK ()	0.09790	0.74341	16.50020
sky130_fd_sc_hs__sdfrtp_2	min_pulse_width	CLK ()	0.15331	0.74341	16.50020
	min_pulse_width	CLK ()	0.10067	0.74341	16.50020
sky130_fd_sc_hs__sdfrtp_4	min_pulse_width	CLK ()	0.18101	0.74341	16.50020
	min_pulse_width	CLK ()	0.10344	0.74341	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 ()	0.27798	0.74341	16.50020
	min_pulse_width	CLK ()	0.32507	0.74341	16.50020
sky130_fd_sc_hs__sdfrtp_2	min_pulse_width	CLK ()	0.29460	0.74341	16.50020
	min_pulse_width	CLK ()	0.33616	0.74341	16.50020
sky130_fd_sc_hs__sdfrtp_4	min_pulse_width	CLK ()	0.27521	0.74341	16.50020
	min_pulse_width	CLK ()	0.33061	0.74341	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	0.01920	0.01901	0.02426
	CLK	0.01587	0.01569	0.02096
sky130_fd_sc_hs__sdfrtp_2	CLK	0.02165	0.02175	0.02704
	CLK	0.01822	0.01833	0.02369
sky130_fd_sc_hs__sdfrtp_4	CLK	0.02604	0.02648	0.03185
	CLK	0.02269	0.02315	0.02867

Internal switching power(pJ) to Q falling :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__sdfrtp_1	CLK	0.01991	0.01996	0.02553
	CLK	0.01666	0.01665	0.02219
	RESET_B	0.01619	0.01579	0.02334
	RESET_B	0.02420	0.02383	0.03061
sky130_fd_sc_hs__sdfrtp_2	CLK	0.02191	0.02240	0.02805
	CLK	0.01871	0.01906	0.02461
	RESET_B	0.01883	0.01881	0.02665
	RESET_B	0.02658	0.02653	0.03333
sky130_fd_sc_hs__sdfrtp_4	CLK	0.02704	0.02827	0.03406
	CLK	0.02377	0.02474	0.03037
	RESET_B	0.02400	0.02461	0.03379
	RESET_B	0.03165	0.03224	0.03915

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)**	0.00090	0.00092	0.00090
	(CLK * RESET_B * SCD * SCE)	-0.00046	-0.00046	-0.00045
	(CLK * RESET_B * SCD * !SCE)	0.00451	0.00437	0.00759
	(CLK * RESET_B * SCD * !SCE)	0.00193	0.00178	0.00501
	(CLK * RESET_B * !SCD * !SCE)	0.00451	0.00437	0.00759
	(CLK * RESET_B * !SCD * !SCE)	0.00193	0.00178	0.00501
	(CLK * !SCD * SCE)	0.00048	0.00048	0.00047
	(CLK * !SCD * SCE)	-0.00096	-0.00098	-0.00099
	(CLK * !RESET_B * SCD * SCE)	0.00046	0.00046	0.00046
	(CLK * !RESET_B * SCD * SCE)	-0.00098	-0.00099	-0.00099
	(CLK * !RESET_B * SCD * !SCE)	0.00034	0.00034	0.00029
	(CLK * !RESET_B * SCD * !SCE)	-0.00110	-0.00110	-0.00116
	(CLK * !RESET_B * !SCD * !SCE)	0.00034	0.00033	0.00030
	(CLK * !RESET_B * !SCD * !SCE)	-0.00113	-0.00114	-0.00118
	(!CLK * RESET_B * SCD * SCE)	0.00090	0.00090	0.00090
	(!CLK * RESET_B * SCD * SCE)	-0.00045	-0.00045	-0.00045
	(!CLK * RESET_B * SCD * !SCE)	0.00942	0.00931	0.01210
	(!CLK * RESET_B * SCD * !SCE)	0.00670	0.00659	0.00938
	(!CLK * RESET_B * !SCD * !SCE)	0.00942	0.00931	0.01211
	(!CLK * RESET_B * !SCD * !SCE)	0.00670	0.00659	0.00938
	(!CLK * !SCD * SCE)	0.00048	0.00048	0.00047
	(!CLK * !SCD * SCE)	-0.00096	-0.00098	-0.00099
	(!CLK * !RESET_B * SCD * SCE)	0.00046	0.00046	0.00046
	(!CLK * !RESET_B * SCD * SCE)	-0.00098	-0.00099	-0.00099
	(!CLK * !RESET_B * SCD * !SCE)	0.00034	0.00034	0.00029
	(!CLK * !RESET_B * SCD * !SCE)	-0.00110	-0.00110	-0.00116
	(!CLK * !RESET_B * !SCD * !SCE)	0.00034	0.00033	0.00030
	(!CLK * !RESET_B * !SCD * !SCE)	-0.00113	-0.00114	-0.00118

sky130_fd_sc_hs__sdfrtp_2	**(CLK * RESET_B * SCD * SCE)**	0.00086	0.00087	0.00086
	(CLK * RESET_B * SCD * SCE)	-0.00043	-0.00044	-0.00043
	(CLK * RESET_B * SCD * !SCE)	0.00383	0.00371	0.00708
	(CLK * RESET_B * SCD * !SCE)	0.00136	0.00123	0.00461
	(CLK * RESET_B * !SCD * !SCE)	0.00384	0.00371	0.00709
	(CLK * RESET_B * !SCD * !SCE)	0.00136	0.00124	0.00461
	(CLK * !SCD * SCE)	0.00046	0.00047	0.00046
	(CLK * !SCD * SCE)	-0.00090	-0.00092	-0.00093
	(CLK * !RESET_B * SCD * SCE)	0.00044	0.00045	0.00044
	(CLK * !RESET_B * SCD * SCE)	-0.00092	-0.00094	-0.00094
	(CLK * !RESET_B * SCD * !SCE)	0.00033	0.00033	0.00028
	(CLK * !RESET_B * SCD * !SCE)	-0.00104	-0.00104	-0.00110
	(CLK * !RESET_B * !SCD * !SCE)	0.00032	0.00032	0.00029
	(CLK * !RESET_B * !SCD * !SCE)	-0.00107	-0.00108	-0.00112
	(!CLK * RESET_B * SCD * SCE)	0.00086	0.00087	0.00086
	(!CLK * RESET_B * SCD * SCE)	-0.00043	-0.00044	-0.00043
	(!CLK * RESET_B * SCD * !SCE)	0.00893	0.00883	0.01173
	(!CLK * RESET_B * SCD * !SCE)	0.00633	0.00623	0.00913
	(!CLK * RESET_B * !SCD * !SCE)	0.00894	0.00883	0.01173
	(!CLK * RESET_B * !SCD * !SCE)	0.00633	0.00624	0.00914
	(!CLK * !SCD * SCE)	0.00047	0.00047	0.00046
	(!CLK * !SCD * SCE)	-0.00090	-0.00092	-0.00093
	(!CLK * !RESET_B * SCD * SCE)	0.00044	0.00045	0.00044
	(!CLK * !RESET_B * SCD * SCE)	-0.00092	-0.00094	-0.00094
	(!CLK * !RESET_B * SCD * !SCE)	0.00033	0.00033	0.00028
	(!CLK * !RESET_B * SCD * !SCE)	-0.00104	-0.00104	-0.00110
	(!CLK * !RESET_B * !SCD * !SCE)	0.00032	0.00032	0.00029
	(!CLK * !RESET_B * !SCD * !SCE)	-0.00107	-0.00108	-0.00112

sky130_fd_sc_hs__sdfrtp_4	**(CLK * RESET_B * SCD * SCE)**	0.00086	0.00086	0.00086
	(CLK * RESET_B * SCD * SCE)	-0.00043	-0.00043	-0.00043
	(CLK * RESET_B * SCD * !SCE)	0.00389	0.00376	0.00713
	(CLK * RESET_B * SCD * !SCE)	0.00138	0.00125	0.00463
	(CLK * RESET_B * !SCD * !SCE)	0.00389	0.00376	0.00713
	(CLK * RESET_B * !SCD * !SCE)	0.00139	0.00126	0.00463
	(CLK * !SCD * SCE)	0.00046	0.00047	0.00045
	(CLK * !SCD * SCE)	-0.00091	-0.00093	-0.00094
	(CLK * !RESET_B * SCD * SCE)	0.00044	0.00045	0.00044
	(CLK * !RESET_B * SCD * SCE)	-0.00092	-0.00094	-0.00095
	(CLK * !RESET_B * SCD * !SCE)	0.00033	0.00033	0.00029
	(CLK * !RESET_B * SCD * !SCE)	-0.00103	-0.00104	-0.00110
	(CLK * !RESET_B * !SCD * !SCE)	0.00033	0.00033	0.00029
	(CLK * !RESET_B * !SCD * !SCE)	-0.00106	-0.00107	-0.00111
	(!CLK * RESET_B * SCD * SCE)	0.00086	0.00086	0.00086
	(!CLK * RESET_B * SCD * SCE)	-0.00043	-0.00043	-0.00043
	(!CLK * RESET_B * SCD * !SCE)	0.00900	0.00890	0.01181
	(!CLK * RESET_B * SCD * !SCE)	0.00636	0.00626	0.00918
	(!CLK * RESET_B * !SCD * !SCE)	0.00900	0.00890	0.01181
	(!CLK * RESET_B * !SCD * !SCE)	0.00637	0.00627	0.00917
	(!CLK * !SCD * SCE)	0.00046	0.00047	0.00045
	(!CLK * !SCD * SCE)	-0.00091	-0.00092	-0.00094
	(!CLK * !RESET_B * SCD * SCE)	0.00044	0.00045	0.00044
	(!CLK * !RESET_B * SCD * SCE)	-0.00092	-0.00094	-0.00095
	(!CLK * !RESET_B * SCD * !SCE)	0.00033	0.00033	0.00029
	(!CLK * !RESET_B * SCD * !SCE)	-0.00103	-0.00104	-0.00110
	(!CLK * !RESET_B * !SCD * !SCE)	0.00033	0.00033	0.00029
	(!CLK * !RESET_B * !SCD * !SCE)	-0.00106	-0.00107	-0.00111

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)**	-0.00086	-0.00087	-0.00090
	(CLK * RESET_B * SCD * SCE)	0.00049	0.00050	0.00047
	(CLK * RESET_B * SCD * !SCE)	0.00056	0.00054	0.00431
	(CLK * RESET_B * SCD * !SCE)	0.00314	0.00312	0.00690
	(CLK * RESET_B * !SCD * !SCE)	0.00056	0.00054	0.00431
	(CLK * RESET_B * !SCD * !SCE)	0.00314	0.00312	0.00690
	(CLK * !SCD * SCE)	-0.00046	-0.00046	-0.00046
	(CLK * !SCD * SCE)	0.00099	0.00100	0.00099
	(CLK * !RESET_B * SCD * SCE)	-0.00045	-0.00045	-0.00045
	(CLK * !RESET_B * SCD * SCE)	0.00100	0.00100	0.00099
	(CLK * !RESET_B * SCD * !SCE)	-0.00028	-0.00028	-0.00027
	(CLK * !RESET_B * SCD * !SCE)	0.00118	0.00118	0.00118
	(CLK * !RESET_B * !SCD * !SCE)	-0.00028	-0.00028	-0.00027
	(CLK * !RESET_B * !SCD * !SCE)	0.00118	0.00118	0.00119
	(!CLK * RESET_B * SCD * SCE)	-0.00086	-0.00087	-0.00090
	(!CLK * RESET_B * SCD * SCE)	0.00050	0.00049	0.00047
	(!CLK * RESET_B * SCD * !SCE)	0.00517	0.00518	0.00953
	(!CLK * RESET_B * SCD * !SCE)	0.00789	0.00790	0.01225
	(!CLK * RESET_B * !SCD * !SCE)	0.00517	0.00516	0.00953
	(!CLK * RESET_B * !SCD * !SCE)	0.00789	0.00788	0.01225
	(!CLK * !SCD * SCE)	-0.00045	-0.00046	-0.00046
	(!CLK * !SCD * SCE)	0.00099	0.00100	0.00099
	(!CLK * !RESET_B * SCD * SCE)	-0.00045	-0.00045	-0.00045
	(!CLK * !RESET_B * SCD * SCE)	0.00100	0.00100	0.00099
	(!CLK * !RESET_B * SCD * !SCE)	-0.00028	-0.00028	-0.00027
	(!CLK * !RESET_B * SCD * !SCE)	0.00118	0.00120	0.00118
	(!CLK * !RESET_B * !SCD * !SCE)	-0.00028	-0.00028	-0.00027
	(!CLK * !RESET_B * !SCD * !SCE)	0.00118	0.00120	0.00119

sky130_fd_sc_hs__sdfrtp_2	**(CLK * RESET_B * SCD * SCE)**	-0.00081	-0.00083	-0.00085
	(CLK * RESET_B * SCD * SCE)	0.00047	0.00047	0.00045
	(CLK * RESET_B * SCD * !SCE)	0.00059	0.00060	0.00445
	(CLK * RESET_B * SCD * !SCE)	0.00307	0.00307	0.00692
	(CLK * RESET_B * !SCD * !SCE)	0.00060	0.00060	0.00445
	(CLK * RESET_B * !SCD * !SCE)	0.00306	0.00307	0.00692
	(CLK * !SCD * SCE)	-0.00044	-0.00045	-0.00044
	(CLK * !SCD * SCE)	0.00093	0.00094	0.00093
	(CLK * !RESET_B * SCD * SCE)	-0.00043	-0.00044	-0.00043
	(CLK * !RESET_B * SCD * SCE)	0.00093	0.00094	0.00094
	(CLK * !RESET_B * SCD * !SCE)	-0.00027	-0.00027	-0.00026
	(CLK * !RESET_B * SCD * !SCE)	0.00112	0.00112	0.00112
	(CLK * !RESET_B * !SCD * !SCE)	-0.00027	-0.00027	-0.00026
	(CLK * !RESET_B * !SCD * !SCE)	0.00112	0.00112	0.00112
	(!CLK * RESET_B * SCD * SCE)	-0.00081	-0.00083	-0.00085
	(!CLK * RESET_B * SCD * SCE)	0.00047	0.00047	0.00045
	(!CLK * RESET_B * SCD * !SCE)	0.00564	0.00566	0.01001
	(!CLK * RESET_B * SCD * !SCE)	0.00824	0.00826	0.01261
	(!CLK * RESET_B * !SCD * !SCE)	0.00564	0.00564	0.01001
	(!CLK * RESET_B * !SCD * !SCE)	0.00824	0.00824	0.01261
	(!CLK * !SCD * SCE)	-0.00044	-0.00045	-0.00044
	(!CLK * !SCD * SCE)	0.00093	0.00094	0.00093
	(!CLK * !RESET_B * SCD * SCE)	-0.00043	-0.00044	-0.00043
	(!CLK * !RESET_B * SCD * SCE)	0.00093	0.00094	0.00094
	(!CLK * !RESET_B * SCD * !SCE)	-0.00027	-0.00027	-0.00026
	(!CLK * !RESET_B * SCD * !SCE)	0.00112	0.00114	0.00112
	(!CLK * !RESET_B * !SCD * !SCE)	-0.00027	-0.00027	-0.00026
	(!CLK * !RESET_B * !SCD * !SCE)	0.00112	0.00114	0.00112

sky130_fd_sc_hs__sdfrtp_4	**(CLK * RESET_B * SCD * SCE)**	-0.00081	-0.00083	-0.00085
	(CLK * RESET_B * SCD * SCE)	0.00047	0.00047	0.00045
	(CLK * RESET_B * SCD * !SCE)	0.00055	0.00055	0.00440
	(CLK * RESET_B * SCD * !SCE)	0.00305	0.00305	0.00690
	(CLK * RESET_B * !SCD * !SCE)	0.00056	0.00055	0.00440
	(CLK * RESET_B * !SCD * !SCE)	0.00305	0.00305	0.00690
	(CLK * !SCD * SCE)	-0.00044	-0.00044	-0.00044
	(CLK * !SCD * SCE)	0.00095	0.00095	0.00094
	(CLK * !RESET_B * SCD * SCE)	-0.00042	-0.00043	-0.00042
	(CLK * !RESET_B * SCD * SCE)	0.00094	0.00095	0.00095
	(CLK * !RESET_B * SCD * !SCE)	-0.00028	-0.00027	-0.00027
	(CLK * !RESET_B * SCD * !SCE)	0.00112	0.00111	0.00112
	(CLK * !RESET_B * !SCD * !SCE)	-0.00028	-0.00028	-0.00027
	(CLK * !RESET_B * !SCD * !SCE)	0.00112	0.00111	0.00112
	(!CLK * RESET_B * SCD * SCE)	-0.00081	-0.00082	-0.00085
	(!CLK * RESET_B * SCD * SCE)	0.00047	0.00047	0.00045
	(!CLK * RESET_B * SCD * !SCE)	0.00536	0.00538	0.00975
	(!CLK * RESET_B * SCD * !SCE)	0.00799	0.00801	0.01239
	(!CLK * RESET_B * !SCD * !SCE)	0.00536	0.00536	0.00976
	(!CLK * RESET_B * !SCD * !SCE)	0.00799	0.00799	0.01240
	(!CLK * !SCD * SCE)	-0.00043	-0.00044	-0.00043
	(!CLK * !SCD * SCE)	0.00094	0.00095	0.00095
	(!CLK * !RESET_B * SCD * SCE)	-0.00042	-0.00043	-0.00042
	(!CLK * !RESET_B * SCD * SCE)	0.00094	0.00095	0.00095
	(!CLK * !RESET_B * SCD * !SCE)	-0.00028	-0.00028	-0.00027
	(!CLK * !RESET_B * SCD * !SCE)	0.00112	0.00113	0.00112
	(!CLK * !RESET_B * !SCD * !SCE)	-0.00028	-0.00028	-0.00027
	(!CLK * !RESET_B * !SCD * !SCE)	0.00112	0.00113	0.00112

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)**	0.00553	0.00539	0.00705
	(CLK * D * RESET_B * SCE)	0.00228	0.00213	0.00379
	(CLK * D * RESET_B * !SCE)	0.00086	0.00077	0.00076
	(CLK * D * RESET_B * !SCE)	-0.00080	-0.00091	-0.00092
	(CLK * D * !RESET_B * SCE)	0.00044	0.00045	0.00043
	(CLK * D * !RESET_B * SCE)	-0.00100	-0.00100	-0.00099
	(CLK * D * !RESET_B * !SCE)	0.00031	0.00031	0.00031
	(CLK * D * !RESET_B * !SCE)	-0.00109	-0.00110	-0.00110
	(CLK * !D * RESET_B * SCE)	0.00609	0.00595	0.00748
	(CLK * !D * RESET_B * SCE)	0.00273	0.00259	0.00413
	(CLK * !D * !RESET_B * SCE)	0.00044	0.00045	0.00043
	(CLK * !D * !RESET_B * SCE)	-0.00100	-0.00100	-0.00099
	(!D * RESET_B * !SCE)	0.00060	0.00061	0.00060
	(!D * RESET_B * !SCE)	-0.00106	-0.00108	-0.00108
	(!D * !RESET_B * !SCE)	0.00036	0.00036	0.00036
	(!D * !RESET_B * !SCE)	-0.00114	-0.00115	-0.00115
	(!CLK * D * RESET_B * SCE)	0.01044	0.01031	0.01193
	(!CLK * D * RESET_B * SCE)	0.00704	0.00691	0.00853
	(!CLK * D * RESET_B * !SCE)	0.00086	0.00077	0.00076
	(!CLK * D * RESET_B * !SCE)	-0.00080	-0.00091	-0.00092
	(!CLK * D * !RESET_B * SCE)	0.00044	0.00045	0.00043
	(!CLK * D * !RESET_B * SCE)	-0.00100	-0.00100	-0.00099
	(!CLK * D * !RESET_B * !SCE)	0.00031	0.00031	0.00031
	(!CLK * D * !RESET_B * !SCE)	-0.00109	-0.00110	-0.00110
	(!CLK * !D * RESET_B * SCE)	0.01100	0.01088	0.01236
	(!CLK * !D * RESET_B * SCE)	0.00750	0.00738	0.00888
	(!CLK * !D * !RESET_B * SCE)	0.00044	0.00045	0.00043
	(!CLK * !D * !RESET_B * SCE)	-0.00100	-0.00100	-0.00099

sky130_fd_sc_hs__sdfrtp_2	**(CLK * D * RESET_B * SCE)**	0.00500	0.00484	0.00654
	(CLK * D * RESET_B * SCE)	0.00179	0.00163	0.00334
	(CLK * D * RESET_B * !SCE)	0.00087	0.00078	0.00077
	(CLK * D * RESET_B * !SCE)	-0.00079	-0.00090	-0.00091
	(CLK * D * !RESET_B * SCE)	0.00041	0.00042	0.00040
	(CLK * D * !RESET_B * SCE)	-0.00102	-0.00103	-0.00101
	(CLK * D * !RESET_B * !SCE)	0.00030	0.00030	0.00030
	(CLK * D * !RESET_B * !SCE)	-0.00110	-0.00110	-0.00111
	(CLK * !D * RESET_B * SCE)	0.00556	0.00541	0.00697
	(CLK * !D * RESET_B * SCE)	0.00225	0.00210	0.00367
	(CLK * !D * !RESET_B * SCE)	0.00042	0.00042	0.00040
	(CLK * !D * !RESET_B * SCE)	-0.00102	-0.00103	-0.00101
	(!D * RESET_B * !SCE)	0.00059	0.00060	0.00059
	(!D * RESET_B * !SCE)	-0.00107	-0.00108	-0.00108
	(!D * !RESET_B * !SCE)	0.00034	0.00035	0.00035
	(!D * !RESET_B * !SCE)	-0.00114	-0.00115	-0.00116
	(!CLK * D * RESET_B * SCE)	0.01010	0.00996	0.01160
	(!CLK * D * RESET_B * SCE)	0.00676	0.00662	0.00826
	(!CLK * D * RESET_B * !SCE)	0.00087	0.00078	0.00077
	(!CLK * D * RESET_B * !SCE)	-0.00079	-0.00090	-0.00091
	(!CLK * D * !RESET_B * SCE)	0.00042	0.00042	0.00040
	(!CLK * D * !RESET_B * SCE)	-0.00102	-0.00103	-0.00101
	(!CLK * D * !RESET_B * !SCE)	0.00030	0.00030	0.00030
	(!CLK * D * !RESET_B * !SCE)	-0.00110	-0.00110	-0.00111
	(!CLK * !D * RESET_B * SCE)	0.01066	0.01053	0.01206
	(!CLK * !D * RESET_B * SCE)	0.00722	0.00709	0.00863
	(!CLK * !D * !RESET_B * SCE)	0.00042	0.00042	0.00040
	(!CLK * !D * !RESET_B * SCE)	-0.00102	-0.00103	-0.00101

sky130_fd_sc_hs__sdfrtp_4	**(CLK * D * RESET_B * SCE)**	0.00502	0.00487	0.00658
	(CLK * D * RESET_B * SCE)	0.00180	0.00165	0.00336
	(CLK * D * RESET_B * !SCE)	0.00085	0.00076	0.00075
	(CLK * D * RESET_B * !SCE)	-0.00079	-0.00090	-0.00091
	(CLK * D * !RESET_B * SCE)	0.00041	0.00042	0.00040
	(CLK * D * !RESET_B * SCE)	-0.00100	-0.00101	-0.00099
	(CLK * D * !RESET_B * !SCE)	0.00030	0.00030	0.00030
	(CLK * D * !RESET_B * !SCE)	-0.00107	-0.00108	-0.00109
	(CLK * !D * RESET_B * SCE)	0.00558	0.00543	0.00700
	(CLK * !D * RESET_B * SCE)	0.00226	0.00212	0.00369
	(CLK * !D * !RESET_B * SCE)	0.00041	0.00042	0.00040
	(CLK * !D * !RESET_B * SCE)	-0.00100	-0.00101	-0.00099
	(!D * RESET_B * !SCE)	0.00059	0.00060	0.00059
	(!D * RESET_B * !SCE)	-0.00105	-0.00106	-0.00106
	(!D * !RESET_B * !SCE)	0.00035	0.00035	0.00035
	(!D * !RESET_B * !SCE)	-0.00112	-0.00113	-0.00113
	(!CLK * D * RESET_B * SCE)	0.01013	0.01000	0.01165
	(!CLK * D * RESET_B * SCE)	0.00678	0.00665	0.00830
	(!CLK * D * RESET_B * !SCE)	0.00085	0.00076	0.00075
	(!CLK * D * RESET_B * !SCE)	-0.00079	-0.00090	-0.00090
	(!CLK * D * !RESET_B * SCE)	0.00041	0.00042	0.00040
	(!CLK * D * !RESET_B * SCE)	-0.00100	-0.00100	-0.00099
	(!CLK * D * !RESET_B * !SCE)	0.00030	0.00030	0.00030
	(!CLK * D * !RESET_B * !SCE)	-0.00107	-0.00108	-0.00109
	(!CLK * !D * RESET_B * SCE)	0.01069	0.01057	0.01211
	(!CLK * !D * RESET_B * SCE)	0.00724	0.00711	0.00866
	(!CLK * !D * !RESET_B * SCE)	0.00041	0.00042	0.00040
	(!CLK * !D * !RESET_B * SCE)	-0.00100	-0.00100	-0.00099

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)	0.00154	0.00137	0.00316
	(CLK * D * RESET_B * SCE)	0.00481	0.00463	0.00640
	(CLK * D * RESET_B * !SCE)	-0.00073	-0.00075	-0.00075
	(CLK * D * RESET_B * !SCE)	0.00093	0.00094	0.00094
	(CLK * D * !RESET_B * SCE)	-0.00040	-0.00040	-0.00041
	(CLK * D * !RESET_B * SCE)	0.00102	0.00102	0.00100
	(CLK * D * !RESET_B * !SCE)	-0.00030	-0.00031	-0.00030
	(CLK * D * !RESET_B * !SCE)	0.00111	0.00112	0.00111
	(CLK * !D * RESET_B * SCE)	0.00124	0.00106	0.00293
	(CLK * !D * RESET_B * SCE)	0.00459	0.00442	0.00628
	(CLK * !D * !RESET_B * SCE)	-0.00040	-0.00041	-0.00041
	(CLK * !D * !RESET_B * SCE)	0.00102	0.00103	0.00100
	(!D * RESET_B * !SCE)	-0.00056	-0.00060	-0.00060
	(!D * RESET_B * !SCE)	0.00110	0.00108	0.00108
	(!D * !RESET_B * !SCE)	-0.00036	-0.00036	-0.00036
	(!D * !RESET_B * !SCE)	0.00116	0.00116	0.00117
	(!CLK * D * RESET_B * SCE)	0.00615	0.00599	0.00829
	(!CLK * D * RESET_B * SCE)	0.00955	0.00939	0.01168
	(!CLK * D * RESET_B * !SCE)	-0.00073	-0.00075	-0.00075
	(!CLK * D * RESET_B * !SCE)	0.00093	0.00094	0.00094
	(!CLK * D * !RESET_B * SCE)	-0.00040	-0.00041	-0.00041
	(!CLK * D * !RESET_B * SCE)	0.00102	0.00103	0.00100
	(!CLK * D * !RESET_B * !SCE)	-0.00030	-0.00031	-0.00030
	(!CLK * D * !RESET_B * !SCE)	0.00111	0.00112	0.00111
	(!CLK * !D * RESET_B * SCE)	0.00586	0.00572	0.00818
	(!CLK * !D * RESET_B * SCE)	0.00936	0.00922	0.01167
	(!CLK * !D * !RESET_B * SCE)	-0.00040	-0.00041	-0.00041
	(!CLK * !D * !RESET_B * SCE)	0.00102	0.00103	0.00100

sky130_fd_sc_hs__sdfrtp_2	**(CLK * D * RESET_B * SCE)**	0.00153	0.00135	0.00316
	(CLK * D * RESET_B * SCE)	0.00475	0.00456	0.00635
	(CLK * D * RESET_B * !SCE)	-0.00073	-0.00076	-0.00076
	(CLK * D * RESET_B * !SCE)	0.00092	0.00092	0.00092
	(CLK * D * !RESET_B * SCE)	-0.00037	-0.00038	-0.00038
	(CLK * D * !RESET_B * SCE)	0.00104	0.00104	0.00103
	(CLK * D * !RESET_B * !SCE)	-0.00029	-0.00030	-0.00030
	(CLK * D * !RESET_B * !SCE)	0.00111	0.00113	0.00111
	(CLK * !D * RESET_B * SCE)	0.00122	0.00104	0.00294
	(CLK * !D * RESET_B * SCE)	0.00453	0.00434	0.00623
	(CLK * !D * !RESET_B * SCE)	-0.00037	-0.00037	-0.00038
	(CLK * !D * !RESET_B * SCE)	0.00104	0.00104	0.00103
	(!D * RESET_B * !SCE)	-0.00055	-0.00059	-0.00059
	(!D * RESET_B * !SCE)	0.00110	0.00109	0.00108
	(!D * !RESET_B * !SCE)	-0.00034	-0.00035	-0.00035
	(!D * !RESET_B * !SCE)	0.00117	0.00117	0.00117
	(!CLK * D * RESET_B * SCE)	0.00659	0.00639	0.00867
	(!CLK * D * RESET_B * SCE)	0.00994	0.00973	0.01200
	(!CLK * D * RESET_B * !SCE)	-0.00074	-0.00076	-0.00076
	(!CLK * D * RESET_B * !SCE)	0.00092	0.00093	0.00092
	(!CLK * D * !RESET_B * SCE)	-0.00037	-0.00038	-0.00038
	(!CLK * D * !RESET_B * SCE)	0.00104	0.00106	0.00103
	(!CLK * D * !RESET_B * !SCE)	-0.00029	-0.00030	-0.00030
	(!CLK * D * !RESET_B * !SCE)	0.00111	0.00113	0.00111
	(!CLK * !D * RESET_B * SCE)	0.00628	0.00611	0.00858
	(!CLK * !D * RESET_B * SCE)	0.00973	0.00955	0.01201
	(!CLK * !D * !RESET_B * SCE)	-0.00037	-0.00038	-0.00038
	(!CLK * !D * !RESET_B * SCE)	0.00104	0.00106	0.00103

sky130_fd_sc_hs__sdfrtp_4	**(CLK * D * RESET_B * SCE)**	0.00155	0.00137	0.00318
	(CLK * D * RESET_B * SCE)	0.00477	0.00460	0.00639
	(CLK * D * RESET_B * !SCE)	-0.00071	-0.00074	-0.00074
	(CLK * D * RESET_B * !SCE)	0.00092	0.00093	0.00092
	(CLK * D * !RESET_B * SCE)	-0.00037	-0.00037	-0.00038
	(CLK * D * !RESET_B * SCE)	0.00102	0.00102	0.00101
	(CLK * D * !RESET_B * !SCE)	-0.00029	-0.00030	-0.00029
	(CLK * D * !RESET_B * !SCE)	0.00109	0.00111	0.00109
	(CLK * !D * RESET_B * SCE)	0.00119	0.00102	0.00292
	(CLK * !D * RESET_B * SCE)	0.00451	0.00434	0.00622
	(CLK * !D * !RESET_B * SCE)	-0.00037	-0.00037	-0.00038
	(CLK * !D * !RESET_B * SCE)	0.00102	0.00102	0.00101
	(!D * RESET_B * !SCE)	-0.00055	-0.00059	-0.00059
	(!D * RESET_B * !SCE)	0.00108	0.00107	0.00106
	(!D * !RESET_B * !SCE)	-0.00035	-0.00035	-0.00035
	(!D * !RESET_B * !SCE)	0.00114	0.00115	0.00115
	(!CLK * D * RESET_B * SCE)	0.00635	0.00617	0.00848
	(!CLK * D * RESET_B * SCE)	0.00971	0.00953	0.01182
	(!CLK * D * RESET_B * !SCE)	-0.00071	-0.00074	-0.00074
	(!CLK * D * RESET_B * !SCE)	0.00092	0.00093	0.00092
	(!CLK * D * !RESET_B * SCE)	-0.00037	-0.00038	-0.00038
	(!CLK * D * !RESET_B * SCE)	0.00102	0.00104	0.00101
	(!CLK * D * !RESET_B * !SCE)	-0.00029	-0.00030	-0.00029
	(!CLK * D * !RESET_B * !SCE)	0.00109	0.00111	0.00109
	(!CLK * !D * RESET_B * SCE)	0.00601	0.00584	0.00836
	(!CLK * !D * RESET_B * SCE)	0.00947	0.00930	0.01180
	(!CLK * !D * !RESET_B * SCE)	-0.00037	-0.00038	-0.00038
	(!CLK * !D * !RESET_B * SCE)	0.00102	0.00104	0.00101

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)	0.00406	0.00378	0.00810
	(CLK * D * RESET_B * SCD) + (CLK * D * !RESET_B) + (CLK * !D * RESET_B * !SCD) + (CLK * !D * !RESET_B)	-0.00029	-0.00058	0.00374
	(CLK * D * RESET_B * !SCD)	0.00601	0.00579	0.01014
	(CLK * D * RESET_B * !SCD)	0.00312	0.00287	0.00721
	(CLK * !D * RESET_B * SCD)	0.00833	0.00806	0.01452
	(CLK * !D * RESET_B * SCD)	0.00270	0.00241	0.00889
	(!CLK * D * RESET_B * SCD)	0.00406	0.00378	0.00809
	(!CLK * D * RESET_B * SCD)	-0.00029	-0.00058	0.00374
	(!CLK * D * RESET_B * !SCD)	0.01055	0.01038	0.01476
	(!CLK * D * RESET_B * !SCD)	0.00780	0.00761	0.01196
	(!CLK * D * !RESET_B) + (!CLK * !D * RESET_B * !SCD) + (!CLK * !D * !RESET_B)	0.00404	0.00388	0.00823
	(!CLK * D * !RESET_B) + (!CLK * !D * RESET_B * !SCD) + (!CLK * !D * !RESET_B)	-0.00008	-0.00027	0.00409
	(!CLK * !D * RESET_B * SCD)	0.01324	0.01299	0.01941
	(!CLK * !D * RESET_B * SCD)	0.00746	0.00721	0.01365

sky130_fd_sc_hs__sdfrtp_2	**(CLK * D * RESET_B * SCD) + (CLK * D * !RESET_B) + (CLK * !D * RESET_B * !SCD) + (CLK * !D * !RESET_B)**	0.00407	0.00381	0.00815
	(CLK * D * RESET_B * SCD) + (CLK * D * !RESET_B) + (CLK * !D * RESET_B * !SCD) + (CLK * !D * !RESET_B)	-0.00033	-0.00061	0.00374
	(CLK * D * RESET_B * !SCD)	0.00595	0.00573	0.01015
	(CLK * D * RESET_B * !SCD)	0.00297	0.00273	0.00712
	(CLK * !D * RESET_B * SCD)	0.00778	0.00752	0.01407
	(CLK * !D * RESET_B * SCD)	0.00213	0.00186	0.00843
	(!CLK * D * RESET_B * SCD)	0.00407	0.00381	0.00815
	(!CLK * D * RESET_B * SCD)	-0.00033	-0.00061	0.00374
	(!CLK * D * RESET_B * !SCD)	0.01091	0.01076	0.01509
	(!CLK * D * RESET_B * !SCD)	0.00805	0.00789	0.01219
	(!CLK * D * !RESET_B) + (!CLK * !D * RESET_B * !SCD) + (!CLK * !D * !RESET_B)	0.00401	0.00385	0.00824
	(!CLK * D * !RESET_B) + (!CLK * !D * RESET_B * !SCD) + (!CLK * !D * !RESET_B)	-0.00017	-0.00035	0.00403
	(!CLK * !D * RESET_B * SCD)	0.01288	0.01264	0.01914
	(!CLK * !D * RESET_B * SCD)	0.00710	0.00685	0.01337

sky130_fd_sc_hs__sdfrtp_4	(CLK * D * RESET_B * SCD) + (CLK * D * !RESET_B) + (CLK * !D * RESET_B * !SCD) + (CLK * !D * !RESET_B)	0.00408	0.00382	0.00815
	(CLK * D * RESET_B * SCD) + (CLK * D * !RESET_B) + (CLK * !D * RESET_B * !SCD) + (CLK * !D * !RESET_B)	-0.00033	-0.00061	0.00375
	(CLK * D * RESET_B * !SCD)	0.00597	0.00576	0.01017
	(CLK * D * RESET_B * !SCD)	0.00300	0.00276	0.00715
	(CLK * !D * RESET_B * SCD)	0.00783	0.00756	0.01411
	(CLK * !D * RESET_B * SCD)	0.00214	0.00186	0.00844
	(!CLK * D * RESET_B * SCD)	0.00408	0.00382	0.00816
	(!CLK * D * RESET_B * SCD)	-0.00032	-0.00061	0.00375
	(!CLK * D * RESET_B * !SCD)	0.01068	0.01054	0.01496
	(!CLK * D * RESET_B * !SCD)	0.00785	0.00769	0.01208
	(!CLK * D * !RESET_B) + (!CLK * !D * RESET_B * !SCD) + (!CLK * !D * !RESET_B)	0.00401	0.00387	0.00824
	(!CLK * D * !RESET_B) + (!CLK * !D * RESET_B * !SCD) + (!CLK * !D * !RESET_B)	-0.00018	-0.00033	0.00402
	(!CLK * !D * RESET_B * SCD)	0.01294	0.01270	0.01920
	(!CLK * !D * RESET_B * SCD)	0.00712	0.00687	0.01340

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)**	-0.00017	-0.00007	0.00464
	(CLK * D * RESET_B * SCD) + (CLK * D * !RESET_B) + (CLK * !D * RESET_B * !SCD) + (CLK * !D * !RESET_B)	0.00419	0.00428	0.00898
	(CLK * D * RESET_B * !SCD)	0.00430	0.00426	0.00887
	(CLK * D * RESET_B * !SCD)	0.00721	0.00720	0.01173
	(CLK * !D * RESET_B * SCD)	0.00092	0.00082	0.00753
	(CLK * !D * RESET_B * SCD)	0.00655	0.00646	0.01316
	(!CLK * D * RESET_B * SCD)	-0.00016	-0.00006	0.00464
	(!CLK * D * RESET_B * SCD)	0.00419	0.00427	0.00898
	(!CLK * D * RESET_B * !SCD)	0.00919	0.00922	0.01378
	(!CLK * D * RESET_B * !SCD)	0.01197	0.01200	0.01652
	(!CLK * D * !RESET_B) + (!CLK * !D * RESET_B * !SCD) + (!CLK * !D * !RESET_B)	-0.00021	-0.00013	0.00451
	(!CLK * D * !RESET_B) + (!CLK * !D * RESET_B * !SCD) + (!CLK * !D * !RESET_B)	0.00392	0.00402	0.00864
	(!CLK * !D * RESET_B * SCD)	0.00552	0.00543	0.01255
	(!CLK * !D * RESET_B * SCD)	0.01130	0.01120	0.01833

sky130_fd_sc_hs__sdfrtp_2	**(CLK * D * RESET_B * SCD) + (CLK * D * !RESET_B) + (CLK * !D * RESET_B * !SCD) + (CLK * !D * !RESET_B)**	-0.00024	-0.00015	0.00458
	(CLK * D * RESET_B * SCD) + (CLK * D * !RESET_B) + (CLK * !D * RESET_B * !SCD) + (CLK * !D * !RESET_B)	0.00414	0.00425	0.00898
	(CLK * D * RESET_B * !SCD)	0.00357	0.00355	0.00821
	(CLK * D * RESET_B * !SCD)	0.00660	0.00657	0.01115
	(CLK * !D * RESET_B * SCD)	0.00091	0.00082	0.00761
	(CLK * !D * RESET_B * SCD)	0.00655	0.00648	0.01326
	(!CLK * D * RESET_B * SCD)	-0.00024	-0.00014	0.00458
	(!CLK * D * RESET_B * SCD)	0.00414	0.00424	0.00898
	(!CLK * D * RESET_B * !SCD)	0.00866	0.00869	0.01329
	(!CLK * D * RESET_B * !SCD)	0.01155	0.01156	0.01612
	(!CLK * D * !RESET_B) + (!CLK * !D * RESET_B * !SCD) + (!CLK * !D * !RESET_B)	-0.00025	-0.00016	0.00450
	(!CLK * D * !RESET_B) + (!CLK * !D * RESET_B * !SCD) + (!CLK * !D * !RESET_B)	0.00395	0.00404	0.00869
	(!CLK * !D * RESET_B * SCD)	0.00595	0.00586	0.01301
	(!CLK * !D * RESET_B * SCD)	0.01173	0.01162	0.01879

sky130_fd_sc_hs__sdfrtp_4	**(CLK * D * RESET_B * SCD) + (CLK * D * !RESET_B) + (CLK * !D * RESET_B * !SCD) + (CLK * !D * !RESET_B)**	-0.00027	-0.00017	0.00456
	(CLK * D * RESET_B * SCD) + (CLK * D * !RESET_B) + (CLK * !D * RESET_B * !SCD) + (CLK * !D * !RESET_B)	0.00412	0.00423	0.00897
	(CLK * D * RESET_B * !SCD)	0.00359	0.00357	0.00824
	(CLK * D * RESET_B * !SCD)	0.00660	0.00657	0.01115
	(CLK * !D * RESET_B * SCD)	0.00087	0.00078	0.00757
	(CLK * !D * RESET_B * SCD)	0.00655	0.00646	0.01325
	(!CLK * D * RESET_B * SCD)	-0.00026	-0.00017	0.00456
	(!CLK * D * RESET_B * SCD)	0.00413	0.00424	0.00897
	(!CLK * D * RESET_B * !SCD)	0.00869	0.00874	0.01332
	(!CLK * D * RESET_B * !SCD)	0.01156	0.01159	0.01614
	(!CLK * D * !RESET_B) + (!CLK * !D * RESET_B * !SCD) + (!CLK * !D * !RESET_B)	-0.00026	-0.00016	0.00450
	(!CLK * D * !RESET_B) + (!CLK * !D * RESET_B * !SCD) + (!CLK * !D * !RESET_B)	0.00395	0.00405	0.00869
	(!CLK * !D * RESET_B * SCD)	0.00566	0.00557	0.01274
	(!CLK * !D * RESET_B * SCD)	0.01148	0.01138	0.01856

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)**	0.00769	0.00750	0.01010
	(CLK * D * SCD * SCE * !Q)	0.00029	0.00006	0.00268
	(CLK * D * SCD * !SCE * !Q)	0.00750	0.00731	0.01008
	(CLK * D * SCD * !SCE * !Q)	0.00038	0.00014	0.00292
	(CLK * D * !SCD * SCE * !Q)	0.00237	0.00240	0.00238
	(CLK * D * !SCD * SCE * !Q)	-0.00310	-0.00312	-0.00310
	(CLK * D * !SCD * !SCE * !Q)	0.00718	0.00697	0.00987
	(CLK * D * !SCD * !SCE * !Q)	0.00039	0.00016	0.00304
	(CLK * !D * SCD * SCE * !Q)	0.00825	0.00807	0.01049
	(CLK * !D * SCD * SCE * !Q)	0.00074	0.00053	0.00300
	(CLK * !D * SCD * !SCE * !Q)	0.00235	0.00237	0.00235
	(CLK * !D * SCD * !SCE * !Q)	-0.00312	-0.00313	-0.00312
	(CLK * !D * !SCD * SCE * !Q)	0.00237	0.00240	0.00238
	(CLK * !D * !SCD * SCE * !Q)	-0.00310	-0.00312	-0.00310
	(CLK * !D * !SCD * !SCE * !Q)	0.00235	0.00238	0.00236
	(CLK * !D * !SCD * !SCE * !Q)	-0.00312	-0.00314	-0.00312
	(!CLK * D * SCD * SCE * !Q)	0.01308	0.01263	0.01535
	(!CLK * D * SCD * SCE * !Q)	0.00556	0.00508	0.00780
	(!CLK * D * SCD * !SCE * !Q)	0.01291	0.01244	0.01529
	(!CLK * D * SCD * !SCE * !Q)	0.00565	0.00515	0.00802
	(!CLK * D * !SCD * SCE * !Q)	0.00239	0.00242	0.00239
	(!CLK * D * !SCD * SCE * !Q)	-0.00309	-0.00311	-0.00309
	(!CLK * D * !SCD * !SCE * !Q)	0.01258	0.01213	0.01506
	(!CLK * D * !SCD * !SCE * !Q)	0.00565	0.00516	0.00809
	(!CLK * !D * SCD * SCE * !Q)	0.01365	0.01321	0.01581
	(!CLK * !D * SCD * SCE * !Q)	0.00602	0.00557	0.00816
	(!CLK * !D * SCD * !SCE * !Q)	0.00236	0.00238	0.00236
	(!CLK * !D * SCD * !SCE * !Q)	-0.00310	-0.00312	-0.00311
	(!CLK * !D * !SCD * SCE * !Q)	0.00239	0.00242	0.00239
	(!CLK * !D * !SCD * SCE * !Q)	-0.00309	-0.00311	-0.00309
	(!CLK * !D * !SCD * !SCE * !Q)	0.00237	0.00240	0.00237
	(!CLK * !D * !SCD * !SCE * !Q)	-0.00311	-0.00313	-0.00311

sky130_fd_sc_hs__sdfrtp_2	**(CLK * D * SCD * SCE * !Q)**	0.00714	0.00696	0.00967
	(CLK * D * SCD * SCE * !Q)	-0.00023	-0.00045	0.00228
	(CLK * D * SCD * !SCE * !Q)	0.00685	0.00666	0.00958
	(CLK * D * SCD * !SCE * !Q)	-0.00026	-0.00049	0.00244
	(CLK * D * !SCD * SCE * !Q)	0.00238	0.00241	0.00238
	(CLK * D * !SCD * SCE * !Q)	-0.00312	-0.00314	-0.00312
	(CLK * D * !SCD * !SCE * !Q)	0.00654	0.00634	0.00938
	(CLK * D * !SCD * !SCE * !Q)	-0.00027	-0.00048	0.00256
	(CLK * !D * SCD * SCE * !Q)	0.00771	0.00752	0.01006
	(CLK * !D * SCD * SCE * !Q)	0.00022	0.00002	0.00258
	(CLK * !D * SCD * !SCE * !Q)	0.00235	0.00238	0.00236
	(CLK * !D * SCD * !SCE * !Q)	-0.00314	-0.00315	-0.00314
	(CLK * !D * !SCD * SCE * !Q)	0.00238	0.00241	0.00238
	(CLK * !D * !SCD * SCE * !Q)	-0.00312	-0.00314	-0.00312
	(CLK * !D * !SCD * !SCE * !Q)	0.00236	0.00239	0.00236
	(CLK * !D * !SCD * !SCE * !Q)	-0.00314	-0.00316	-0.00314
	(!CLK * D * SCD * SCE * !Q)	0.01277	0.01230	0.01509
	(!CLK * D * SCD * SCE * !Q)	0.00527	0.00481	0.00758
	(!CLK * D * SCD * !SCE * !Q)	0.01248	0.01202	0.01492
	(!CLK * D * SCD * !SCE * !Q)	0.00525	0.00475	0.00768
	(!CLK * D * !SCD * SCE * !Q)	0.00237	0.00239	0.00238
	(!CLK * D * !SCD * SCE * !Q)	-0.00312	-0.00314	-0.00313
	(!CLK * D * !SCD * !SCE * !Q)	0.01216	0.01171	0.01472
	(!CLK * D * !SCD * !SCE * !Q)	0.00526	0.00476	0.00778
	(!CLK * !D * SCD * SCE * !Q)	0.01334	0.01290	0.01551
	(!CLK * !D * SCD * SCE * !Q)	0.00573	0.00528	0.00789
	(!CLK * !D * SCD * !SCE * !Q)	0.00235	0.00238	0.00235
	(!CLK * !D * SCD * !SCE * !Q)	-0.00314	-0.00316	-0.00314
	(!CLK * !D * !SCD * SCE * !Q)	0.00238	0.00240	0.00238
	(!CLK * !D * !SCD * SCE * !Q)	-0.00313	-0.00315	-0.00313
	(!CLK * !D * !SCD * !SCE * !Q)	0.00236	0.00239	0.00236
	(!CLK * !D * !SCD * !SCE * !Q)	-0.00315	-0.00317	-0.00315

sky130_fd_sc_hs__sdfrtp_4	**(CLK * D * SCD * SCE * !Q)**	0.00717	0.00698	0.00970
	(CLK * D * SCD * SCE * !Q)	-0.00019	-0.00041	0.00232
	(CLK * D * SCD * !SCE * !Q)	0.00688	0.00668	0.00959
	(CLK * D * SCD * !SCE * !Q)	-0.00021	-0.00045	0.00248
	(CLK * D * !SCD * SCE * !Q)	0.00234	0.00237	0.00235
	(CLK * D * !SCD * SCE * !Q)	-0.00310	-0.00312	-0.00310
	(CLK * D * !SCD * !SCE * !Q)	0.00657	0.00637	0.00939
	(CLK * D * !SCD * !SCE * !Q)	-0.00022	-0.00044	0.00260
	(CLK * !D * SCD * SCE * !Q)	0.00774	0.00754	0.01009
	(CLK * !D * SCD * SCE * !Q)	0.00027	0.00006	0.00262
	(CLK * !D * SCD * !SCE * !Q)	0.00232	0.00234	0.00232
	(CLK * !D * SCD * !SCE * !Q)	-0.00312	-0.00313	-0.00312
	(CLK * !D * !SCD * SCE * !Q)	0.00234	0.00237	0.00235
	(CLK * !D * !SCD * SCE * !Q)	-0.00310	-0.00312	-0.00310
	(CLK * !D * !SCD * !SCE * !Q)	0.00232	0.00235	0.00233
	(CLK * !D * !SCD * !SCE * !Q)	-0.00312	-0.00314	-0.00312
	(!CLK * D * SCD * SCE * !Q)	0.01274	0.01228	0.01511
	(!CLK * D * SCD * SCE * !Q)	0.00526	0.00480	0.00760
	(!CLK * D * SCD * !SCE * !Q)	0.01246	0.01199	0.01495
	(!CLK * D * SCD * !SCE * !Q)	0.00523	0.00475	0.00773
	(!CLK * D * !SCD * SCE * !Q)	0.00233	0.00236	0.00234
	(!CLK * D * !SCD * SCE * !Q)	-0.00311	-0.00313	-0.00311
	(!CLK * D * !SCD * !SCE * !Q)	0.01214	0.01169	0.01470
	(!CLK * D * !SCD * !SCE * !Q)	0.00524	0.00476	0.00779
	(!CLK * !D * SCD * SCE * !Q)	0.01331	0.01287	0.01550
	(!CLK * !D * SCD * SCE * !Q)	0.00572	0.00526	0.00792
	(!CLK * !D * SCD * !SCE * !Q)	0.00230	0.00234	0.00231
	(!CLK * !D * SCD * !SCE * !Q)	-0.00312	-0.00315	-0.00313
	(!CLK * !D * !SCD * SCE * !Q)	0.00233	0.00236	0.00234
	(!CLK * !D * !SCD * SCE * !Q)	-0.00311	-0.00313	-0.00311
	(!CLK * !D * !SCD * !SCE * !Q)	0.00231	0.00234	0.00232
	(!CLK * !D * !SCD * !SCE * !Q)	-0.00313	-0.00315	-0.00313

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)**	0.00055	0.00046	0.00442
	(CLK * D * SCD * SCE * !Q)	0.00796	0.00789	0.01183
	(CLK * D * SCD * !SCE * !Q)	-0.00016	-0.00026	0.00369
	(CLK * D * SCD * !SCE * !Q)	0.00699	0.00689	0.01084
	(CLK * D * !SCD * SCE * !Q)	-0.00233	-0.00240	-0.00238
	(CLK * D * !SCD * SCE * !Q)	0.00315	0.00315	0.00311
	(CLK * D * !SCD * !SCE * !Q)	-0.00038	-0.00047	0.00357
	(CLK * D * !SCD * !SCE * !Q)	0.00644	0.00639	0.01040
	(CLK * !D * SCD * SCE * !Q)	0.00025	0.00017	0.00421
	(CLK * !D * SCD * SCE * !Q)	0.00775	0.00769	0.01173
	(CLK * !D * SCD * !SCE * !Q)	-0.00228	-0.00237	-0.00235
	(CLK * !D * SCD * !SCE * !Q)	0.00317	0.00316	0.00312
	(CLK * !D * !SCD * SCE * !Q)	-0.00233	-0.00240	-0.00238
	(CLK * !D * !SCD * SCE * !Q)	0.00315	0.00315	0.00311
	(CLK * !D * !SCD * !SCE * !Q)	-0.00230	-0.00238	-0.00236
	(CLK * !D * !SCD * !SCE * !Q)	0.00318	0.00316	0.00313
	(!CLK * D * SCD * SCE * !Q)	0.00563	0.00518	0.00987
	(!CLK * D * SCD * SCE * !Q)	0.01317	0.01275	0.01740
	(!CLK * D * SCD * !SCE * !Q)	0.00492	0.00445	0.00909
	(!CLK * D * SCD * !SCE * !Q)	0.01220	0.01176	0.01639
	(!CLK * D * !SCD * SCE * !Q)	-0.00235	-0.00241	-0.00239
	(!CLK * D * !SCD * SCE * !Q)	0.00313	0.00313	0.00310
	(!CLK * D * !SCD * !SCE * !Q)	0.00471	0.00423	0.00900
	(!CLK * D * !SCD * !SCE * !Q)	0.01166	0.01121	0.01597
	(!CLK * !D * SCD * SCE * !Q)	0.00533	0.00486	0.00969
	(!CLK * !D * SCD * SCE * !Q)	0.01297	0.01252	0.01735
	(!CLK * !D * SCD * !SCE * !Q)	-0.00230	-0.00238	-0.00236
	(!CLK * !D * SCD * !SCE * !Q)	0.00316	0.00314	0.00311
	(!CLK * !D * !SCD * SCE * !Q)	-0.00235	-0.00241	-0.00239
	(!CLK * !D * !SCD * SCE * !Q)	0.00313	0.00313	0.00310
	(!CLK * !D * !SCD * !SCE * !Q)	-0.00231	-0.00239	-0.00237
	(!CLK * !D * !SCD * !SCE * !Q)	0.00317	0.00315	0.00311

sky130_fd_sc_hs__sdfrtp_2	**(CLK * D * SCD * SCE * !Q)**	0.00047	0.00039	0.00440
	(CLK * D * SCD * SCE * !Q)	0.00786	0.00781	0.01179
	(CLK * D * SCD * !SCE * !Q)	-0.00018	-0.00027	0.00373
	(CLK * D * SCD * !SCE * !Q)	0.00695	0.00688	0.01086
	(CLK * D * !SCD * SCE * !Q)	-0.00234	-0.00240	-0.00238
	(CLK * D * !SCD * SCE * !Q)	0.00317	0.00316	0.00313
	(CLK * D * !SCD * !SCE * !Q)	-0.00040	-0.00047	0.00361
	(CLK * D * !SCD * !SCE * !Q)	0.00641	0.00637	0.01043
	(CLK * !D * SCD * SCE * !Q)	0.00016	0.00010	0.00420
	(CLK * !D * SCD * SCE * !Q)	0.00765	0.00762	0.01169
	(CLK * !D * SCD * !SCE * !Q)	-0.00229	-0.00238	-0.00236
	(CLK * !D * SCD * !SCE * !Q)	0.00319	0.00317	0.00314
	(CLK * !D * !SCD * SCE * !Q)	-0.00234	-0.00240	-0.00238
	(CLK * !D * !SCD * SCE * !Q)	0.00317	0.00316	0.00313
	(CLK * !D * !SCD * !SCE * !Q)	-0.00230	-0.00239	-0.00236
	(CLK * !D * !SCD * !SCE * !Q)	0.00320	0.00318	0.00315
	(!CLK * D * SCD * SCE * !Q)	0.00600	0.00556	0.01023
	(!CLK * D * SCD * SCE * !Q)	0.01350	0.01310	0.01775
	(!CLK * D * SCD * !SCE * !Q)	0.00535	0.00489	0.00953
	(!CLK * D * SCD * !SCE * !Q)	0.01260	0.01217	0.01677
	(!CLK * D * !SCD * SCE * !Q)	-0.00233	-0.00239	-0.00238
	(!CLK * D * !SCD * SCE * !Q)	0.00317	0.00317	0.00314
	(!CLK * D * !SCD * !SCE * !Q)	0.00514	0.00463	0.00928
	(!CLK * D * !SCD * !SCE * !Q)	0.01206	0.01159	0.01622
	(!CLK * !D * SCD * SCE * !Q)	0.00570	0.00520	0.00994
	(!CLK * !D * SCD * SCE * !Q)	0.01330	0.01282	0.01754
	(!CLK * !D * SCD * !SCE * !Q)	-0.00229	-0.00238	-0.00235
	(!CLK * !D * SCD * !SCE * !Q)	0.00319	0.00318	0.00315
	(!CLK * !D * !SCD * SCE * !Q)	-0.00233	-0.00240	-0.00238
	(!CLK * !D * !SCD * SCE * !Q)	0.00317	0.00317	0.00314
	(!CLK * !D * !SCD * !SCE * !Q)	-0.00230	-0.00239	-0.00236
	(!CLK * !D * !SCD * !SCE * !Q)	0.00320	0.00318	0.00315

sky130_fd_sc_hs__sdfrtp_4	**(CLK * D * SCD * SCE * !Q)**	0.00049	0.00040	0.00440
	(CLK * D * SCD * SCE * !Q)	0.00785	0.00778	0.01178
	(CLK * D * SCD * !SCE * !Q)	-0.00017	-0.00027	0.00373
	(CLK * D * SCD * !SCE * !Q)	0.00694	0.00687	0.01084
	(CLK * D * !SCD * SCE * !Q)	-0.00230	-0.00236	-0.00235
	(CLK * D * !SCD * SCE * !Q)	0.00315	0.00315	0.00312
	(CLK * D * !SCD * !SCE * !Q)	-0.00038	-0.00046	0.00361
	(CLK * D * !SCD * !SCE * !Q)	0.00639	0.00635	0.01041
	(CLK * !D * SCD * SCE * !Q)	0.00013	0.00006	0.00416
	(CLK * !D * SCD * SCE * !Q)	0.00759	0.00756	0.01163
	(CLK * !D * SCD * !SCE * !Q)	-0.00225	-0.00234	-0.00232
	(CLK * !D * SCD * !SCE * !Q)	0.00317	0.00316	0.00312
	(CLK * !D * !SCD * SCE * !Q)	-0.00230	-0.00236	-0.00235
	(CLK * !D * !SCD * SCE * !Q)	0.00315	0.00315	0.00312
	(CLK * !D * !SCD * !SCE * !Q)	-0.00227	-0.00235	-0.00233
	(CLK * !D * !SCD * !SCE * !Q)	0.00318	0.00316	0.00313
	(!CLK * D * SCD * SCE * !Q)	0.00578	0.00532	0.01006
	(!CLK * D * SCD * SCE * !Q)	0.01328	0.01282	0.01757
	(!CLK * D * SCD * !SCE * !Q)	0.00513	0.00465	0.00935
	(!CLK * D * SCD * !SCE * !Q)	0.01237	0.01190	0.01661
	(!CLK * D * !SCD * SCE * !Q)	-0.00229	-0.00236	-0.00234
	(!CLK * D * !SCD * SCE * !Q)	0.00316	0.00316	0.00313
	(!CLK * D * !SCD * !SCE * !Q)	0.00492	0.00443	0.00911
	(!CLK * D * !SCD * !SCE * !Q)	0.01182	0.01135	0.01603
	(!CLK * !D * SCD * SCE * !Q)	0.00543	0.00496	0.00973
	(!CLK * !D * SCD * SCE * !Q)	0.01302	0.01258	0.01732
	(!CLK * !D * SCD * !SCE * !Q)	-0.00225	-0.00233	-0.00231
	(!CLK * !D * SCD * !SCE * !Q)	0.00318	0.00317	0.00313
	(!CLK * !D * !SCD * SCE * !Q)	-0.00229	-0.00235	-0.00234
	(!CLK * !D * !SCD * SCE * !Q)	0.00316	0.00316	0.00313
	(!CLK * !D * !SCD * !SCE * !Q)	-0.00226	-0.00234	-0.00232
	(!CLK * !D * !SCD * !SCE * !Q)	0.00319	0.00317	0.00314

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)	0.01041	0.01010	0.01509
	(D * RESET_B * SCD * SCE * Q)	0.00713	0.00681	0.01180
	(D * RESET_B * SCD * !SCE * Q)	0.01041	0.01009	0.01509
	(D * RESET_B * SCD * !SCE * Q)	0.00713	0.00681	0.01180
	(D * RESET_B * !SCD * !SCE * Q)	0.01041	0.01010	0.01510
	(D * RESET_B * !SCD * !SCE * Q)	0.00713	0.00681	0.01180
	(D * !SCD * SCE * !Q)	0.01070	0.01040	0.01538
	(D * !SCD * SCE * !Q)	0.00741	0.00709	0.01209
	(D * !RESET_B * SCD * SCE * !Q)	0.01070	0.01040	0.01538
	(D * !RESET_B * SCD * SCE * !Q)	0.00741	0.00710	0.01209
	(D * !RESET_B * SCD * !SCE * !Q)	0.01070	0.01040	0.01538
	(D * !RESET_B * SCD * !SCE * !Q)	0.00741	0.00710	0.01209
	(D * !RESET_B * !SCD * !SCE * !Q)	0.01070	0.01040	0.01538
	(D * !RESET_B * !SCD * !SCE * !Q)	0.00741	0.00710	0.01209
	(!D * RESET_B * SCD * SCE * Q)	0.01041	0.01010	0.01510
	(!D * RESET_B * SCD * SCE * Q)	0.00713	0.00681	0.01180
	(!D * !SCE * !Q)	0.01070	0.01039	0.01538
	(!D * !SCE * !Q)	0.00741	0.00709	0.01209
	(!D * !SCD * SCE * !Q)	0.01070	0.01040	0.01534
	(!D * !SCD * SCE * !Q)	0.00741	0.00709	0.01205
	(!D * !RESET_B * SCD * SCE * !Q)	0.01070	0.01040	0.01534
	(!D * !RESET_B * SCD * SCE * !Q)	0.00742	0.00710	0.01206

sky130_fd_sc_hs__sdfrtp_2	**(D * RESET_B * SCD * SCE * Q)**	0.01039	0.01007	0.01506
	(D * RESET_B * SCD * SCE * Q)	0.00709	0.00676	0.01174
	(D * RESET_B * SCD * !SCE * Q)	0.01039	0.01007	0.01506
	(D * RESET_B * SCD * !SCE * Q)	0.00708	0.00676	0.01174
	(D * RESET_B * !SCD * !SCE * Q)	0.01039	0.01007	0.01506
	(D * RESET_B * !SCD * !SCE * Q)	0.00709	0.00676	0.01174
	(D * !SCD * SCE * !Q)	0.01073	0.01042	0.01536
	(D * !SCD * SCE * !Q)	0.00742	0.00710	0.01204
	(D * !RESET_B * SCD * SCE * !Q)	0.01073	0.01043	0.01536
	(D * !RESET_B * SCD * SCE * !Q)	0.00742	0.00710	0.01204
	(D * !RESET_B * SCD * !SCE * !Q)	0.01073	0.01043	0.01540
	(D * !RESET_B * SCD * !SCE * !Q)	0.00742	0.00710	0.01209
	(D * !RESET_B * !SCD * !SCE * !Q)	0.01073	0.01043	0.01540
	(D * !RESET_B * !SCD * !SCE * !Q)	0.00742	0.00710	0.01209
	(!D * RESET_B * SCD * SCE * Q)	0.01039	0.01007	0.01506
	(!D * RESET_B * SCD * SCE * Q)	0.00709	0.00676	0.01174
	(!D * !SCE * !Q)	0.01073	0.01042	0.01536
	(!D * !SCE * !Q)	0.00742	0.00709	0.01204
	(!D * !SCD * SCE * !Q)	0.01073	0.01043	0.01536
	(!D * !SCD * SCE * !Q)	0.00742	0.00711	0.01204
	(!D * !RESET_B * SCD * SCE * !Q)	0.01073	0.01043	0.01536
	(!D * !RESET_B * SCD * SCE * !Q)	0.00742	0.00711	0.01205

sky130_fd_sc_hs__sdfrtp_4	**(D * RESET_B * SCD * SCE * Q)**	0.01025	0.00994	0.01490
	(D * RESET_B * SCD * SCE * Q)	0.00695	0.00662	0.01159
	(D * RESET_B * SCD * !SCE * Q)	0.01025	0.00994	0.01490
	(D * RESET_B * SCD * !SCE * Q)	0.00695	0.00662	0.01159
	(D * RESET_B * !SCD * !SCE * Q)	0.01025	0.00994	0.01490
	(D * RESET_B * !SCD * !SCE * Q)	0.00695	0.00662	0.01159
	(D * !SCD * SCE * !Q)	0.01056	0.01026	0.01521
	(D * !SCD * SCE * !Q)	0.00726	0.00694	0.01191
	(D * !RESET_B * SCD * SCE * !Q)	0.01056	0.01027	0.01522
	(D * !RESET_B * SCD * SCE * !Q)	0.00726	0.00694	0.01190
	(D * !RESET_B * SCD * !SCE * !Q)	0.01056	0.01026	0.01521
	(D * !RESET_B * SCD * !SCE * !Q)	0.00725	0.00694	0.01190
	(D * !RESET_B * !SCD * !SCE * !Q)	0.01056	0.01026	0.01521
	(D * !RESET_B * !SCD * !SCE * !Q)	0.00725	0.00694	0.01190
	(!D * RESET_B * SCD * SCE * Q)	0.01025	0.00994	0.01490
	(!D * RESET_B * SCD * SCE * Q)	0.00695	0.00662	0.01160
	(!D * !SCE * !Q)	0.01056	0.01026	0.01521
	(!D * !SCE * !Q)	0.00725	0.00694	0.01190
	(!D * !SCD * SCE * !Q)	0.01056	0.01026	0.01522
	(!D * !SCD * SCE * !Q)	0.00726	0.00694	0.01190
	(!D * !RESET_B * SCD * SCE * !Q)	0.01056	0.01027	0.01522
	(!D * !RESET_B * SCD * SCE * !Q)	0.00726	0.00695	0.01190

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)**	0.00552	0.00559	0.01120
	(D * RESET_B * SCD * SCE * Q)	0.00882	0.00888	0.01450
	(D * RESET_B * SCD * SCE * !Q)	0.01013	0.01010	0.01586
	(D * RESET_B * SCD * SCE * !Q)	0.01328	0.01324	0.01901
	(D * RESET_B * SCD * !SCE * Q)	0.00552	0.00559	0.01120
	(D * RESET_B * SCD * !SCE * Q)	0.00882	0.00888	0.01450
	(D * RESET_B * SCD * !SCE * !Q)	0.01009	0.01007	0.01582
	(D * RESET_B * SCD * !SCE * !Q)	0.01325	0.01322	0.01897
	(D * RESET_B * !SCD * SCE * Q)	0.01073	0.01087	0.01682
	(D * RESET_B * !SCD * SCE * Q)	0.01419	0.01431	0.02028
	(D * RESET_B * !SCD * !SCE * Q)	0.00552	0.00559	0.01121
	(D * RESET_B * !SCD * !SCE * Q)	0.00882	0.00889	0.01450
	(D * RESET_B * !SCD * !SCE * !Q)	0.01009	0.01007	0.01582
	(D * RESET_B * !SCD * !SCE * !Q)	0.01325	0.01322	0.01897
	(D * !SCD * SCE * !Q)	0.00515	0.00521	0.01086
	(D * !SCD * SCE * !Q)	0.00845	0.00850	0.01416
	(D * !RESET_B * SCD * SCE * !Q)	0.00515	0.00521	0.01086
	(D * !RESET_B * SCD * SCE * !Q)	0.00845	0.00851	0.01415
	(D * !RESET_B * SCD * !SCE * !Q)	0.00515	0.00521	0.01086
	(D * !RESET_B * SCD * !SCE * !Q)	0.00845	0.00851	0.01415
	(D * !RESET_B * !SCD * !SCE * !Q)	0.00515	0.00521	0.01086
	(D * !RESET_B * !SCD * !SCE * !Q)	0.00845	0.00851	0.01415
	(!D * RESET_B * SCD * SCE * Q)	0.00552	0.00559	0.01121
	(!D * RESET_B * SCD * SCE * Q)	0.00882	0.00889	0.01450
	(!D * RESET_B * SCD * SCE * !Q)	0.01016	0.01014	0.01588
	(!D * RESET_B * SCD * SCE * !Q)	0.01330	0.01327	0.01903
	(!D * RESET_B * !SCE * Q)	0.01070	0.01084	0.01680
	(!D * RESET_B * !SCE * Q)	0.01414	0.01426	0.02024
	(!D * RESET_B * !SCD * SCE * Q)	0.01072	0.01087	0.01683
	(!D * RESET_B * !SCD * SCE * Q)	0.01417	0.01430	0.02026
	(!D * !SCE * !Q)	0.00515	0.00520	0.01086
	(!D * !SCE * !Q)	0.00845	0.00850	0.01416
	(!D * !SCD * SCE * !Q)	0.00515	0.00521	0.01086
	(!D * !SCD * SCE * !Q)	0.00845	0.00850	0.01416
	(!D * !RESET_B * SCD * SCE * !Q)	0.00515	0.00521	0.01086
	(!D * !RESET_B * SCD * SCE * !Q)	0.00845	0.00851	0.01415

sky130_fd_sc_hs__sdfrtp_2	**(D * RESET_B * SCD * SCE * Q)**	0.00554	0.00560	0.01122
	(D * RESET_B * SCD * SCE * Q)	0.00886	0.00892	0.01453
	(D * RESET_B * SCD * SCE * !Q)	0.01037	0.01035	0.01608
	(D * RESET_B * SCD * SCE * !Q)	0.01356	0.01353	0.01927
	(D * RESET_B * SCD * !SCE * Q)	0.00553	0.00560	0.01122
	(D * RESET_B * SCD * !SCE * Q)	0.00886	0.00892	0.01453
	(D * RESET_B * SCD * !SCE * !Q)	0.01033	0.01031	0.01604
	(D * RESET_B * SCD * !SCE * !Q)	0.01352	0.01350	0.01923
	(D * RESET_B * !SCD * SCE * Q)	0.01117	0.01130	0.01727
	(D * RESET_B * !SCD * SCE * Q)	0.01464	0.01476	0.02074
	(D * RESET_B * !SCD * !SCE * Q)	0.00554	0.00560	0.01122
	(D * RESET_B * !SCD * !SCE * Q)	0.00886	0.00892	0.01454
	(D * RESET_B * !SCD * !SCE * !Q)	0.01033	0.01032	0.01604
	(D * RESET_B * !SCD * !SCE * !Q)	0.01352	0.01350	0.01923
	(D * !SCD * SCE * !Q)	0.00517	0.00523	0.01088
	(D * !SCD * SCE * !Q)	0.00849	0.00855	0.01420
	(D * !RESET_B * SCD * SCE * !Q)	0.00517	0.00523	0.01088
	(D * !RESET_B * SCD * SCE * !Q)	0.00849	0.00855	0.01419
	(D * !RESET_B * SCD * !SCE * !Q)	0.00517	0.00523	0.01088
	(D * !RESET_B * SCD * !SCE * !Q)	0.00849	0.00855	0.01419
	(D * !RESET_B * !SCD * !SCE * !Q)	0.00517	0.00523	0.01088
	(D * !RESET_B * !SCD * !SCE * !Q)	0.00849	0.00855	0.01419
	(!D * RESET_B * SCD * SCE * Q)	0.00554	0.00560	0.01122
	(!D * RESET_B * SCD * SCE * Q)	0.00886	0.00892	0.01454
	(!D * RESET_B * SCD * SCE * !Q)	0.01040	0.01038	0.01612
	(!D * RESET_B * SCD * SCE * !Q)	0.01357	0.01354	0.01929
	(!D * RESET_B * !SCE * Q)	0.01115	0.01128	0.01725
	(!D * RESET_B * !SCE * Q)	0.01460	0.01472	0.02070
	(!D * RESET_B * !SCD * SCE * Q)	0.01117	0.01130	0.01726
	(!D * RESET_B * !SCD * SCE * Q)	0.01463	0.01475	0.02072
	(!D * !SCE * !Q)	0.00517	0.00523	0.01088
	(!D * !SCE * !Q)	0.00849	0.00855	0.01420
	(!D * !SCD * SCE * !Q)	0.00517	0.00523	0.01088
	(!D * !SCD * SCE * !Q)	0.00849	0.00855	0.01420
	(!D * !RESET_B * SCD * SCE * !Q)	0.00517	0.00523	0.01088
	(!D * !RESET_B * SCD * SCE * !Q)	0.00849	0.00855	0.01419

sky130_fd_sc_hs__sdfrtp_4	**(D * RESET_B * SCD * SCE * Q)**	0.00551	0.00557	0.01120
	(D * RESET_B * SCD * SCE * Q)	0.00882	0.00889	0.01451
	(D * RESET_B * SCD * SCE * !Q)	0.01026	0.01025	0.01599
	(D * RESET_B * SCD * SCE * !Q)	0.01344	0.01341	0.01917
	(D * RESET_B * SCD * !SCE * Q)	0.00551	0.00557	0.01120
	(D * RESET_B * SCD * !SCE * Q)	0.00882	0.00889	0.01451
	(D * RESET_B * SCD * !SCE * !Q)	0.01022	0.01021	0.01596
	(D * RESET_B * SCD * !SCE * !Q)	0.01340	0.01338	0.01912
	(D * RESET_B * !SCD * SCE * Q)	0.01089	0.01102	0.01700
	(D * RESET_B * !SCD * SCE * Q)	0.01437	0.01448	0.02046
	(D * RESET_B * !SCD * !SCE * Q)	0.00551	0.00557	0.01120
	(D * RESET_B * !SCD * !SCE * Q)	0.00882	0.00889	0.01451
	(D * RESET_B * !SCD * !SCE * !Q)	0.01022	0.01021	0.01596
	(D * RESET_B * !SCD * !SCE * !Q)	0.01340	0.01338	0.01913
	(D * !SCD * SCE * !Q)	0.00511	0.00516	0.01083
	(D * !SCD * SCE * !Q)	0.00842	0.00848	0.01414
	(D * !RESET_B * SCD * SCE * !Q)	0.00511	0.00517	0.01083
	(D * !RESET_B * SCD * SCE * !Q)	0.00843	0.00847	0.01414
	(D * !RESET_B * SCD * !SCE * !Q)	0.00511	0.00517	0.01083
	(D * !RESET_B * SCD * !SCE * !Q)	0.00842	0.00847	0.01414
	(D * !RESET_B * !SCD * !SCE * !Q)	0.00511	0.00517	0.01083
	(D * !RESET_B * !SCD * !SCE * !Q)	0.00842	0.00847	0.01414
	(!D * RESET_B * SCD * SCE * Q)	0.00551	0.00557	0.01120
	(!D * RESET_B * SCD * SCE * Q)	0.00882	0.00889	0.01451
	(!D * RESET_B * SCD * SCE * !Q)	0.01029	0.01028	0.01603
	(!D * RESET_B * SCD * SCE * !Q)	0.01346	0.01343	0.01919
	(!D * RESET_B * !SCE * Q)	0.01086	0.01100	0.01697
	(!D * RESET_B * !SCE * Q)	0.01432	0.01444	0.02042
	(!D * RESET_B * !SCD * SCE * Q)	0.01088	0.01103	0.01699
	(!D * RESET_B * !SCD * SCE * Q)	0.01435	0.01448	0.02044
	(!D * !SCE * !Q)	0.00510	0.00516	0.01083
	(!D * !SCE * !Q)	0.00842	0.00848	0.01414
	(!D * !SCD * SCE * !Q)	0.00511	0.00516	0.01083
	(!D * !SCD * SCE * !Q)	0.00843	0.00848	0.01414
	(!D * !RESET_B * SCD * SCE * !Q)	0.00511	0.00517	0.01083
	(!D * !RESET_B * SCD * SCE * !Q)	0.00843	0.00847	0.01414

SKY130_FD_SC_HS__SDFSBPx

sky130_fd_sc_hs_tt_1.50v_25C.ccs
Cell Library: Process , Voltage
1.50, 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	0.00186	0.00204	0.00393	0.00337	0.00289	0.83454	0.78294
sky130_fd_sc_hs__sdfsbp_2	0.00192	0.00198	0.00413	0.00349	0.00292	1.68498	1.70038

Leakage Information

Cell Name	Leakage(nW)		
	Min.	**Avg**	**Max.**
sky130_fd_sc_hs__sdfsbp_1	0.00000	0.34607	0.51057
sky130_fd_sc_hs__sdfsbp_2	0.00000	0.36340	0.69898

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)	0.37671	0.99772	7.10961
	SET_B->Q (FR)	0.35807	1.25684	10.00800
sky130_fd_sc_hs__sdfsbp_2	CLK->Q (RR)	0.40175	0.91060	7.14032
	SET_B->Q (FR)	0.48892	1.25730	10.34600

Delay(ns) to Q falling :

Cell Name	Timing Arc(Dir)	Delay(ns)		
		First	Mid	Last
sky130_fd_sc_hs__sdfsbp_1	CLK->Q (RF)	0.30417	0.62165	2.51213
sky130_fd_sc_hs__sdfsbp_2	CLK->Q (RF)	0.34293	0.64568	2.70882

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)	0.25914	0.91885	6.96588
sky130_fd_sc_hs__sdfsbp_2	CLK->Q_N (RR)	0.25967	0.80776	7.08503

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)	0.29788	0.70152	2.51827
	SET_B->Q_N (FF)	0.27743	0.95770	5.53922
sky130_fd_sc_hs__sdfsbp_2	CLK->Q_N (RF)	0.29054	0.66699	2.85152
	SET_B->Q_N (FF)	0.34488	1.03467	6.18110

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)	-0.10245	-0.20276	-1.08497
	setup	CLK (R)	0.17223	0.24644	1.22133
sky130_fd_sc_hs__sdfsbp_2	hold	CLK (R)	-0.12746	-0.23028	-1.15179
	setup	CLK (R)	0.21448	0.28536	1.32028

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)	-0.11515	-0.25111	-1.64638
	setup	CLK (R)	0.39079	0.46968	3.19434
sky130_fd_sc_hs__sdfsbp_2	hold	CLK (R)	-0.13924	-0.27377	-1.75814
	setup	CLK (R)	0.46520	0.53304	3.21013

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)	-0.10245	-0.20276	-1.08497
	setup	CLK (R)	0.17223	0.24644	1.22133
sky130_fd_sc_hs__sdfsbp_2	hold	CLK (R)	-0.12746	-0.23028	-1.15179
	setup	CLK (R)	0.21448	0.28536	1.32028

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)	-0.11515	-0.25111	-1.64638
	setup	CLK (R)	0.39079	0.46968	3.19434
sky130_fd_sc_hs__sdfsbp_2	hold	CLK (R)	-0.13924	-0.27377	-1.75814
	setup	CLK (R)	0.46520	0.53304	3.21013

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)	-0.12060	-0.21853	-1.19615
	setup	CLK (R)	0.19440	0.26185	1.30735
sky130_fd_sc_hs__sdfsbp_2	hold	CLK (R)	-0.14473	-0.23721	-1.24272
	setup	CLK (R)	0.23661	0.29747	1.38279

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)	-0.14587	-0.30936	-2.15954
	setup	CLK (R)	0.46689	0.55404	4.07670
sky130_fd_sc_hs__sdfsbp_2	hold	CLK (R)	-0.17513	-0.32743	-2.28865
	setup	CLK (R)	0.54735	0.62332	3.56050

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)	-0.12060	-0.21853	-1.19615
	hold	CLK (R)	-0.12604	-0.22021	-1.20944
	setup	CLK (R)	0.19440	0.25717	1.30735
	setup	CLK (R)	0.19411	0.26185	1.30700
sky130_fd_sc_hs__sdfsbp_2	hold	CLK (R)	-0.14473	-0.23721	-1.24272
	hold	CLK (R)	-0.14808	-0.24433	-1.25347
	setup	CLK (R)	0.23661	0.29400	1.37223
	setup	CLK (R)	0.23598	0.29747	1.38279

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)	-0.16069	-0.32365	-2.22195
	hold	CLK (R)	-0.14587	-0.30936	-2.15954
	setup	CLK (R)	0.46689	0.55404	4.07670
	setup	CLK (R)	0.46674	0.55122	3.55534
sky130_fd_sc_hs__sdfsbp_2	hold	CLK (R)	-0.18819	-0.34144	-2.33470
	hold	CLK (R)	-0.17513	-0.32743	-2.28865
	setup	CLK (R)	0.54735	0.62252	3.55004
	setup	CLK (R)	0.54547	0.62332	3.56050

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)	-0.10973	-0.21552	-0.09454
	setup	CLK (R)	0.45744	0.44674	1.62537
sky130_fd_sc_hs__sdfsbp_2	hold	CLK (R)	-0.13622	-0.23198	-0.13923
	setup	CLK (R)	0.53450	0.51583	1.39151

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)	-0.13231	-0.27873	-1.97181
	setup	CLK (R)	0.41155	0.49518	3.53082
sky130_fd_sc_hs__sdfsbp_2	hold	CLK (R)	-0.15699	-0.29523	-2.11091
	setup	CLK (R)	0.48400	0.55598	3.40674

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)	-0.15224	-0.21552	-0.09454
	hold	CLK (R)	-0.10973	-0.21797	-1.11596
	setup	CLK (R)	0.45744	0.44674	1.62537
	setup	CLK (R)	0.17836	0.25856	1.25263
sky130_fd_sc_hs__sdfsbp_2	hold	CLK (R)	-0.17778	-0.23198	-0.13923
	hold	CLK (R)	-0.13622	-0.24028	-1.18602
	setup	CLK (R)	0.53450	0.51583	1.39151
	setup	CLK (R)	0.22146	0.29891	1.34744

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)	-0.18650	-0.34380	-2.37208
	hold	CLK (R)	-0.13231	-0.27873	-1.97181
	setup	CLK (R)	0.25566	0.38279	2.40931
	setup	CLK (R)	0.41155	0.49518	3.53082
sky130_fd_sc_hs__sdfsbp_2	hold	CLK (R)	-0.20906	-0.36385	-2.33700
	hold	CLK (R)	-0.15699	-0.29523	-2.11091
	setup	CLK (R)	0.29900	0.41114	2.39386
	setup	CLK (R)	0.48400	0.55598	3.40674

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)	-0.11522	-0.16424	-0.43611
	removal	CLK (R)	0.14410	0.18666	0.53261
sky130_fd_sc_hs__sdfsbp_2	recovery	CLK (R)	-0.16066	-0.22414	-0.68433
	removal	CLK (R)	0.18329	0.24271	0.86665

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)	-0.11522	-0.16429	-0.43846
	recovery	CLK (R)	-0.11524	-0.16425	-0.43805
	recovery	CLK (R)	-0.11554	-0.16424	-0.43611
	removal	CLK (R)	0.14304	0.18666	0.53261
	removal	CLK (R)	0.14304	0.18666	0.53261
	removal	CLK (R)	0.14410	0.18666	0.53261
sky130_fd_sc_hs__sdfsbp_2	recovery	CLK (R)	-0.16066	-0.22617	-0.68635
	recovery	CLK (R)	-0.16290	-0.22414	-0.68433
	recovery	CLK (R)	-0.16103	-0.22617	-0.68714
	removal	CLK (R)	0.18329	0.24271	0.86459
	removal	CLK (R)	0.18052	0.24133	0.86665
	removal	CLK (R)	0.18324	0.24271	0.86459

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 ()	0.28629	0.74341	16.50020
	min_pulse_width	SET_B ()	0.28075	0.74341	16.50020
sky130_fd_sc_hs__sdfsbp_2	min_pulse_width	SET_B ()	0.32784	0.74341	16.50020
	min_pulse_width	SET_B ()	0.38586	0.84525	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 ()	0.23642	0.74341	16.50020
	min_pulse_width	CLK ()	0.11729	0.74341	16.50020
sky130_fd_sc_hs__sdfsbp_2	min_pulse_width	CLK ()	0.24473	0.74341	16.50020
	min_pulse_width	CLK ()	0.13669	0.74341	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 ()	0.23365	0.74341	16.50020
	min_pulse_width	CLK ()	0.39988	0.74341	16.50020
sky130_fd_sc_hs__sdfsbp_2	min_pulse_width	CLK ()	0.29460	0.74341	16.50020
	min_pulse_width	CLK ()	0.49961	0.74341	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	0.01092	0.01092	0.01356
	CLK	0.00936	0.00937	0.01200
	SET_B	0.01038	0.01037	0.01181
	SET_B	0.01209	0.01207	0.01329
sky130_fd_sc_hs__sdfsbp_2	CLK	0.01527	0.01552	0.01807
	CLK	0.01365	0.01388	0.01640
	SET_B	0.01449	0.01463	0.01661
	SET_B	0.01625	0.01640	0.01758

Internal switching power(pJ) to Q falling :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__sdfsbp_1	CLK	0.01152	0.01167	0.01413
	CLK	0.00987	0.00992	0.01247
sky130_fd_sc_hs__sdfsbp_2	CLK	0.01536	0.01570	0.01827
	CLK	0.01373	0.01408	0.01662

Internal switching power(pJ) to Q_N rising :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__sdfsbp_1	CLK	0.01155	0.01161	0.01426
	CLK	0.00989	0.00994	0.01260
sky130_fd_sc_hs__sdfsbp_2	CLK	0.01539	0.01578	0.01853
	CLK	0.01376	0.01411	0.01688

Internal switching power(pJ) to Q_N falling :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__sdfsbp_1	CLK	0.01090	0.01090	0.01338
	CLK	0.00934	0.00935	0.01184
	SET_B	0.01036	0.01034	0.01156
	SET_B	0.01206	0.01205	0.01315
sky130_fd_sc_hs__sdfsbp_2	CLK	0.01524	0.01546	0.01794
	CLK	0.01362	0.01384	0.01625
	SET_B	0.01446	0.01460	0.01607
	SET_B	0.01623	0.01637	0.01734

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

Cell Name	When	Power(pJ)		
		first	mid	last

sky130_fd_sc_hs__sdfsbp_1	**(CLK * SCD * SCE)**	0.00088	0.00089	0.00089
	(CLK * SCD * SCE)	-0.00045	-0.00045	-0.00045
	(CLK * !SCE)	0.00306	0.00296	0.00667
	(CLK * !SCE)	0.00076	0.00066	0.00437
	(CLK * !SCD * SCE)	0.00049	0.00049	0.00047
	(CLK * !SCD * SCE)	-0.00094	-0.00095	-0.00097
	(!CLK * SCD * SCE)	0.00088	0.00089	0.00089
	(!CLK * SCD * SCE)	-0.00045	-0.00045	-0.00045
	(!CLK * !SCE * SET_B * Q * !Q_N) + (!CLK * !SCE * SET_B * !Q * Q_N)	0.00814	0.00802	0.01073
	(!CLK * !SCE * SET_B * Q * !Q_N) + (!CLK * !SCE * SET_B * !Q * Q_N)	0.00559	0.00546	0.00818
	(!CLK * !SCE * !SET_B * Q * !Q_N)	0.00651	0.00641	0.00914
	(!CLK * !SCE * !SET_B * Q * !Q_N)	0.00387	0.00377	0.00650
	(!CLK * !SCD * SCE)	0.00049	0.00048	0.00047
	(!CLK * !SCD * SCE)	-0.00094	-0.00095	-0.00097

	(CLK * SCD * SCE)	0.00095	0.00095	0.00095
	(CLK * SCD * SCE)	-0.00043	-0.00043	-0.00043
	(CLK * !SCE)	0.00320	0.00309	0.00676
	(CLK * !SCE)	0.00086	0.00074	0.00442
	(CLK * !SCD * SCE)	0.00051	0.00051	0.00050
	(CLK * !SCD * SCE)	-0.00095	-0.00097	-0.00098
	(!CLK * SCD * SCE)	0.00094	0.00095	0.00095
	(!CLK * SCD * SCE)	-0.00043	-0.00043	-0.00043
sky130_fd_sc_hs__sdfsbp_2	**(!CLK * !SCE * SET_B * Q * !Q_N) + (!CLK * !SCE * SET_B * !Q * Q_N)**	0.00913	0.00902	0.01153
	(!CLK * !SCE * SET_B * Q * !Q_N) + (!CLK * !SCE * SET_B * !Q * Q_N)	0.00664	0.00653	0.00905
	(!CLK * !SCE * !SET_B * Q * !Q_N)	0.00755	0.00745	0.00996
	(!CLK * !SCE * !SET_B * Q * !Q_N)	0.00497	0.00487	0.00738
	(!CLK * !SCD * SCE)	0.00051	0.00051	0.00050
	(!CLK * !SCD * SCE)	-0.00095	-0.00097	-0.00098

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

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

sky130_fd_sc_hs__sdfsbp_1	**(CLK * SCD * SCE)**	-0.00084	-0.00086	-0.00088
	(CLK * SCD * SCE)	0.00049	0.00049	0.00046
	(CLK * !SCE)	0.00062	0.00068	0.00469
	(CLK * !SCE)	0.00291	0.00298	0.00699
	(CLK * !SCD * SCE)	-0.00046	-0.00046	-0.00046
	(CLK * !SCD * SCE)	0.00097	0.00097	0.00097
	(!CLK * SCD * SCE)	-0.00084	-0.00085	-0.00088
	(!CLK * SCD * SCE)	0.00049	0.00048	0.00046
	(!CLK * !SCE * SET_B * Q * !Q_N) + (!CLK * !SCE * SET_B * !Q * Q_N)	0.00537	0.00533	0.00907
	(!CLK * !SCE * SET_B * Q * !Q_N) + (!CLK * !SCE * SET_B * !Q * Q_N)	0.00793	0.00788	0.01163
	(!CLK * !SCE * !SET_B * Q * !Q_N)	0.00321	0.00322	0.00667
	(!CLK * !SCE * !SET_B * Q * !Q_N)	0.00585	0.00586	0.00931
	(!CLK * !SCD * SCE)	-0.00046	-0.00047	-0.00046
	(!CLK * !SCD * SCE)	0.00096	0.00098	0.00097

sky130_fd_sc_hs__sdfsbp_2	**(CLK * SCD * SCE)**	-0.00090	-0.00092	-0.00094
	(CLK * SCD * SCE)	0.00047	0.00047	0.00045
	(CLK * !SCE)	0.00073	0.00078	0.00477
	(CLK * !SCE)	0.00308	0.00312	0.00712
	(CLK * !SCD * SCE)	-0.00049	-0.00049	-0.00048
	(CLK * !SCD * SCE)	0.00098	0.00099	0.00098
	(!CLK * SCD * SCE)	-0.00090	-0.00091	-0.00094
	(!CLK * SCD * SCE)	0.00047	0.00047	0.00045
	(!CLK * !SCE * SET_B * Q * !Q_N) + (!CLK * !SCE * SET_B * !Q * Q_N)	0.00691	0.00687	0.01048
	(!CLK * !SCE * SET_B * Q * !Q_N) + (!CLK * !SCE * SET_B * !Q * Q_N)	0.00941	0.00936	0.01296
	(!CLK * !SCE * !SET_B * Q * !Q_N)	0.00463	0.00465	0.00794
	(!CLK * !SCE * !SET_B * Q * !Q_N)	0.00722	0.00724	0.01052
	(!CLK * !SCD * SCE)	-0.00049	-0.00050	-0.00049
	(!CLK * !SCD * SCE)	0.00098	0.00099	0.00098

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

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

sky130_fd_sc_hs__sdfsbp_1	**(CLK * D * SCE)**	0.00434	0.00419	0.00603
	(CLK * D * SCE)	0.00116	0.00099	0.00284
	(CLK * !D * SCE)	0.00491	0.00476	0.00645
	(CLK * !D * SCE)	0.00162	0.00145	0.00316
	(!CLK * D * SCE * SET_B * Q * !Q_N) + (!CLK * D * SCE * SET_B * !Q * Q_N)	0.00931	0.00916	0.01062
	(!CLK * D * SCE * SET_B * Q * !Q_N) + (!CLK * D * SCE * SET_B * !Q * Q_N)	0.00586	0.00570	0.00717
	(!CLK * D * SCE * !SET_B * Q * !Q_N)	0.00768	0.00755	0.00902
	(!CLK * D * SCE * !SET_B * Q * !Q_N)	0.00415	0.00401	0.00549
	(!CLK * !D * SCE * SET_B * Q * !Q_N) + (!CLK * !D * SCE * SET_B * !Q * Q_N)	0.00987	0.00973	0.01109
	(!CLK * !D * SCE * SET_B * Q * !Q_N) + (!CLK * !D * SCE * SET_B * !Q * Q_N)	0.00632	0.00617	0.00754
	(!CLK * !D * SCE * !SET_B * Q * !Q_N)	0.00824	0.00811	0.00949
	(!CLK * !D * SCE * !SET_B * Q * !Q_N)	0.00461	0.00447	0.00586
	!SCE	0.00108	0.00099	0.00097
	!SCE	-0.00079	-0.00090	-0.00091

sky130_fd_sc_hs__sdfsbp_2	**(CLK * D * SCE)**	0.00437	0.00423	0.00606
	(CLK * D * SCE)	0.00123	0.00108	0.00292
	(CLK * !D * SCE)	0.00493	0.00480	0.00648
	(CLK * !D * SCE)	0.00169	0.00155	0.00324
	(!CLK * D * SCE * SET_B * Q * !Q_N) + (!CLK * D * SCE * SET_B * !Q * Q_N)	0.01020	0.01008	0.01148
	(!CLK * D * SCE * SET_B * Q * !Q_N) + (!CLK * D * SCE * SET_B * !Q * Q_N)	0.00692	0.00679	0.00820
	(!CLK * D * SCE * !SET_B * Q * !Q_N)	0.00862	0.00852	0.00991
	(!CLK * D * SCE * !SET_B * Q * !Q_N)	0.00525	0.00513	0.00654
	(!CLK * !D * SCE * SET_B * Q * !Q_N) + (!CLK * !D * SCE * SET_B * !Q * Q_N)	0.01077	0.01065	0.01195
	(!CLK * !D * SCE * SET_B * Q * !Q_N) + (!CLK * !D * SCE * SET_B * !Q * Q_N)	0.00738	0.00726	0.00857
	(!CLK * !D * SCE * !SET_B * Q * !Q_N)	0.00918	0.00908	0.01039
	(!CLK * !D * SCE * !SET_B * Q * !Q_N)	0.00571	0.00559	0.00691
	!SCE	0.00102	0.00093	0.00091
	!SCE	-0.00080	-0.00091	-0.00092

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

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

sky130_fd_sc_hs__sdfsbp_1	**(CLK * D * SCE)**	0.00139	0.00124	0.00316
	(CLK * D * SCE)	0.00459	0.00444	0.00633
	(CLK * !D * SCE)	0.00109	0.00094	0.00294
	(CLK * !D * SCE)	0.00438	0.00424	0.00623
	(!CLK * D * SCE * SET_B * Q * !Q_N) + (!CLK * D * SCE * SET_B * !Q * Q_N)	0.00624	0.00608	0.00785
	(!CLK * D * SCE * SET_B * Q * !Q_N) + (!CLK * D * SCE * SET_B * !Q * Q_N)	0.00970	0.00954	0.01129
	(!CLK * D * SCE * !SET_B * Q * !Q_N)	0.00407	0.00393	0.00553
	(!CLK * D * SCE * !SET_B * Q * !Q_N)	0.00762	0.00748	0.00905
	(!CLK * !D * SCE * SET_B * Q * !Q_N) + (!CLK * !D * SCE * SET_B * !Q * Q_N)	0.00594	0.00579	0.00764
	(!CLK * !D * SCE * SET_B * Q * !Q_N) + (!CLK * !D * SCE * SET_B * !Q * Q_N)	0.00950	0.00935	0.01118
	(!CLK * !D * SCE * !SET_B * Q * !Q_N)	0.00377	0.00363	0.00529
	(!CLK * !D * SCE * !SET_B * Q * !Q_N)	0.00741	0.00727	0.00892
	!SCE	-0.00095	-0.00096	-0.00096
	!SCE	0.00093	0.00092	0.00092

sky130_fd_sc_hs__sdfsbp_2	**(CLK * D * SCE)**	0.00156	0.00142	0.00332
	(CLK * D * SCE)	0.00471	0.00458	0.00645
	(CLK * !D * SCE)	0.00125	0.00112	0.00310
	(CLK * !D * SCE)	0.00449	0.00437	0.00633
	(!CLK * D * SCE * SET_B * Q * !Q_N) + (!CLK * D * SCE * SET_B * !Q * Q_N)	0.00781	0.00767	0.00941
	(!CLK * D * SCE * SET_B * Q * !Q_N) + (!CLK * D * SCE * SET_B * !Q * Q_N)	0.01110	0.01097	0.01269
	(!CLK * D * SCE * !SET_B * Q * !Q_N)	0.00552	0.00539	0.00691
	(!CLK * D * SCE * !SET_B * Q * !Q_N)	0.00890	0.00878	0.01028
	(!CLK * !D * SCE * SET_B * Q * !Q_N) + (!CLK * !D * SCE * SET_B * !Q * Q_N)	0.00751	0.00738	0.00915
	(!CLK * !D * SCE * SET_B * Q * !Q_N) + (!CLK * !D * SCE * SET_B * !Q * Q_N)	0.01090	0.01077	0.01253
	(!CLK * !D * SCE * !SET_B * Q * !Q_N)	0.00521	0.00509	0.00667
	(!CLK * !D * SCE * !SET_B * Q * !Q_N)	0.00870	0.00858	0.01013
	!SCE	-0.00088	-0.00090	-0.00090
	!SCE	0.00093	0.00094	0.00093

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)**	0.00383	0.00359	0.00793
	(CLK * D * SCD) + (CLK * !D * !SCD)	-0.00032	-0.00058	0.00378
	(CLK * D * !SCD)	0.00583	0.00559	0.00993
	(CLK * D * !SCD)	0.00288	0.00261	0.00693
	(CLK * !D * SCD)	0.00674	0.00646	0.01316
	(CLK * !D * SCD)	0.00156	0.00127	0.00799
	(!CLK * D * SCD * SET_B * Q * !Q_N) + (!CLK * D * SCD * SET_B * !Q * Q_N) + (!CLK * D * SCD * !SET_B * Q * !Q_N)	0.00383	0.00358	0.00793
	(!CLK * D * SCD * SET_B * Q * !Q_N) + (!CLK * D * SCD * SET_B * !Q * Q_N) + (!CLK * D * SCD * !SET_B * Q * !Q_N)	-0.00032	-0.00059	0.00378
	(!CLK * D * !SCD * SET_B * Q * !Q_N) + (!CLK * D * !SCD * SET_B * !Q * Q_N)	0.01042	0.01029	0.01463
	(!CLK * D * !SCD * SET_B * Q * !Q_N) + (!CLK * D * !SCD * SET_B * !Q * Q_N)	0.00772	0.00758	0.01189
	(!CLK * D * !SCD * !SET_B * Q * !Q_N)	0.00826	0.00813	0.01247
	(!CLK * D * !SCD * !SET_B * Q * !Q_N)	0.00565	0.00551	0.00982
	(!CLK * !D * SCD * SET_B * Q * !Q_N) + (!CLK * !D * SCD * SET_B * !Q * Q_N)	0.01182	0.01152	0.01779
	(!CLK * !D * SCD * SET_B * Q * !Q_N) + (!CLK * !D * SCD * SET_B * !Q * Q_N)	0.00637	0.00608	0.01236
	(!CLK * !D * SCD * !SET_B * Q * !Q_N)	0.01019	0.00991	0.01617
	(!CLK * !D * SCD * !SET_B * Q * !Q_N)	0.00465	0.00439	0.01067
	(!CLK * !D * !SCD * SET_B * Q * !Q_N) + (!CLK * !D * !SCD * SET_B * !Q * Q_N) + (!CLK * !D * !SCD * !SET_B * Q * !Q_N)	0.00376	0.00363	0.00791
	(!CLK * !D * !SCD * SET_B * Q * !Q_N) + (!CLK * !D * !SCD * SET_B * !Q * Q_N) + (!CLK * !D * !SCD * !SET_B * Q * !Q_N)	-0.00014	-0.00029	0.00400

sky130_fd_sc_hs__sdfsbp_2	**(CLK * D * SCD) + (CLK * !D * !SCD)**	0.00401	0.00376	0.00811
	(CLK * D * SCD) + (CLK * !D * !SCD)	-0.00030	-0.00056	0.00381
	(CLK * D * !SCD)	0.00611	0.00587	0.01023
	(CLK * D * !SCD)	0.00301	0.00274	0.00708
	(CLK * !D * SCD)	0.00700	0.00672	0.01341
	(CLK * !D * SCD)	0.00165	0.00137	0.00809
	(!CLK * D * SCD * SET_B * Q * !Q_N) + (!CLK * D * SCD * SET_B * !Q * Q_N) + (!CLK * D * SCD * !SET_B * Q * !Q_N)	0.00401	0.00376	0.00811
	(!CLK * D * SCD * SET_B * Q * !Q_N) + (!CLK * D * SCD * SET_B * !Q * Q_N) + (!CLK * D * SCD * !SET_B * Q * !Q_N)	-0.00030	-0.00056	0.00381
	(!CLK * D * !SCD * SET_B * Q * !Q_N) + (!CLK * D * !SCD * SET_B * !Q * Q_N)	0.01213	0.01198	0.01636
	(!CLK * D * !SCD * SET_B * Q * !Q_N) + (!CLK * D * !SCD * SET_B * !Q * Q_N)	0.00917	0.00901	0.01336
	(!CLK * D * !SCD * !SET_B * Q * !Q_N)	0.00983	0.00970	0.01407
	(!CLK * D * !SCD * !SET_B * Q * !Q_N)	0.00697	0.00683	0.01117
	(!CLK * !D * SCD * SET_B * Q * !Q_N) + (!CLK * !D * SCD * SET_B * !Q * Q_N)	0.01291	0.01263	0.01883
	(!CLK * !D * SCD * SET_B * Q * !Q_N) + (!CLK * !D * SCD * SET_B * !Q * Q_N)	0.00743	0.00715	0.01337
	(!CLK * !D * SCD * !SET_B * Q * !Q_N)	0.01133	0.01107	0.01724
	(!CLK * !D * SCD * !SET_B * Q * !Q_N)	0.00576	0.00548	0.01169
	(!CLK * !D * !SCD * SET_B * Q * !Q_N) + (!CLK * !D * !SCD * SET_B * !Q * Q_N) + (!CLK * !D * !SCD * !SET_B * Q * !Q_N)	0.00389	0.00374	0.00803
	(!CLK * !D * !SCD * SET_B * Q * !Q_N) + (!CLK * !D * !SCD * SET_B * !Q * Q_N) + (!CLK * !D * !SCD * !SET_B * Q * !Q_N)	-0.00017	-0.00032	0.00397

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)**	-0.00019	-0.00006	0.00464
	(CLK * D * SCD) + (CLK * !D * !SCD)	0.00395	0.00409	0.00879
	(CLK * D * !SCD)	0.00293	0.00291	0.00757
	(CLK * D * !SCD)	0.00590	0.00590	0.01047
	(CLK * !D * SCD)	0.00091	0.00086	0.00773
	(CLK * !D * SCD)	0.00608	0.00604	0.01290
	(!CLK * D * SCD * SET_B * Q * !Q_N) + (!CLK * D * SCD * SET_B * !Q * Q_N) + (!CLK * D * SCD * !SET_B * Q * !Q_N)	-0.00019	-0.00005	0.00464
	(!CLK * D * SCD * SET_B * Q * !Q_N) + (!CLK * D * SCD * SET_B * !Q * Q_N) + (!CLK * D * SCD * !SET_B * Q * !Q_N)	0.00395	0.00410	0.00878
	(!CLK * D * !SCD * SET_B * Q * !Q_N) + (!CLK * D * !SCD * SET_B * !Q * Q_N)	0.00798	0.00805	0.01255
	(!CLK * D * !SCD * SET_B * Q * !Q_N) + (!CLK * D * !SCD * SET_B * !Q * Q_N)	0.01069	0.01077	0.01522
	(!CLK * D * !SCD * !SET_B * Q * !Q_N)	0.00635	0.00641	0.01096
	(!CLK * D * !SCD * !SET_B * Q * !Q_N)	0.00898	0.00906	0.01354
	(!CLK * !D * SCD * SET_B * Q * !Q_N) + (!CLK * !D * SCD * SET_B * !Q * Q_N)	0.00567	0.00558	0.01216
	(!CLK * !D * SCD * SET_B * Q * !Q_N) + (!CLK * !D * SCD * SET_B * !Q * Q_N)	0.01109	0.01102	0.01760
	(!CLK * !D * SCD * !SET_B * Q * !Q_N)	0.00350	0.00344	0.00985
	(!CLK * !D * SCD * !SET_B * Q * !Q_N)	0.00902	0.00896	0.01538
	(!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	0.00023	0.00481
	(!CLK * !D * !SCD * SET_B * Q * !Q_N) + (!CLK * !D * !SCD * SET_B * !Q * Q_N) + (!CLK * !D * !SCD * !SET_B * Q * !Q_N)	0.00398	0.00414	0.00872

sky130_fd_sc_hs__sdfsbp_2	**(CLK * D * SCD) + (CLK * !D * !SCD)**	-0.00032	-0.00021	0.00452
	(CLK * D * SCD) + (CLK * !D * !SCD)	0.00397	0.00410	0.00882
	(CLK * D * !SCD)	0.00286	0.00283	0.00751
	(CLK * D * !SCD)	0.00598	0.00597	0.01056
	(CLK * !D * SCD)	0.00102	0.00095	0.00784
	(CLK * !D * SCD)	0.00635	0.00628	0.01317
	(!CLK * D * SCD * SET_B * Q * !Q_N) + (!CLK * D * SCD * SET_B * !Q * Q_N) + (!CLK * D * SCD * !SET_B * Q * !Q_N)	-0.00032	-0.00019	0.00452
	(!CLK * D * SCD * SET_B * Q * !Q_N) + (!CLK * D * SCD * SET_B * !Q * Q_N) + (!CLK * D * SCD * !SET_B * Q * !Q_N)	0.00397	0.00411	0.00882
	(!CLK * D * !SCD * SET_B * Q * !Q_N) + (!CLK * D * !SCD * SET_B * !Q * Q_N)	0.00875	0.00881	0.01336
	(!CLK * D * !SCD * SET_B * Q * !Q_N) + (!CLK * D * !SCD * SET_B * !Q * Q_N)	0.01172	0.01179	0.01629
	(!CLK * D * !SCD * !SET_B * Q * !Q_N)	0.00716	0.00723	0.01180
	(!CLK * D * !SCD * !SET_B * Q * !Q_N)	0.01005	0.01011	0.01464
	(!CLK * !D * SCD * SET_B * Q * !Q_N) + (!CLK * !D * SCD * SET_B * !Q * Q_N)	0.00720	0.00712	0.01365
	(!CLK * !D * SCD * SET_B * Q * !Q_N) + (!CLK * !D * SCD * SET_B * !Q * Q_N)	0.01267	0.01260	0.01913
	(!CLK * !D * SCD * !SET_B * Q * !Q_N)	0.00492	0.00484	0.01119
	(!CLK * !D * SCD * !SET_B * Q * !Q_N)	0.01049	0.01040	0.01677
	(!CLK * !D * !SCD * SET_B * Q * !Q_N) + (!CLK * !D * !SCD * SET_B * !Q * Q_N) + (!CLK * !D * !SCD * !SET_B * Q * !Q_N)	0.00001	0.00012	0.00475
	(!CLK * !D * !SCD * SET_B * Q * !Q_N) + (!CLK * !D * !SCD * SET_B * !Q * Q_N) + (!CLK * !D * !SCD * !SET_B * Q * !Q_N)	0.00405	0.00419	0.00879

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)	0.00190	0.00191	0.00191
	(CLK * Q * !Q_N)	-0.00163	-0.00163	-0.00163
	(!CLK * D * SCD * Q * !Q_N) + (!CLK * D * !SCD * !SCE * Q * !Q_N) + (!CLK * !D * SCD * SCE * Q * !Q_N)	0.00204	0.00205	0.00203
	(!CLK * D * SCD * Q * !Q_N) + (!CLK * D * !SCD * !SCE * Q * !Q_N) + (!CLK * !D * SCD * SCE * Q * !Q_N)	-0.00151	-0.00152	-0.00151
	(!CLK * D * !SCD * SCE * Q * !Q_N) + (!CLK * !D * SCD * !SCE * Q * !Q_N) + (!CLK * !D * !SCD * Q * !Q_N)	0.00375	0.00369	0.00513
	(!CLK * D * !SCD * SCE * Q * !Q_N) + (!CLK * !D * SCD * !SCE * Q * !Q_N) + (!CLK * !D * !SCD * Q * !Q_N)	0.00009	-0.00001	0.00145
sky130_fd_sc_hs__sdfsbp_2	(CLK * Q * !Q_N)	0.00195	0.00196	0.00194
	(CLK * Q * !Q_N)	-0.00170	-0.00170	-0.00169
	(!CLK * D * SCD * Q * !Q_N) + (!CLK * D * !SCD * !SCE * Q * !Q_N) + (!CLK * !D * SCD * SCE * Q * !Q_N)	0.00203	0.00204	0.00203
	(!CLK * D * SCD * Q * !Q_N) + (!CLK * D * !SCD * !SCE * Q * !Q_N) + (!CLK * !D * SCD * SCE * Q * !Q_N)	-0.00161	-0.00161	-0.00161
	(!CLK * D * !SCD * SCE * Q * !Q_N) + (!CLK * !D * SCD * !SCE * Q * !Q_N) + (!CLK * !D * !SCD * Q * !Q_N)	0.00396	0.00388	0.00533
	(!CLK * D * !SCD * SCE * Q * !Q_N) + (!CLK * !D * SCD * !SCE * Q * !Q_N) + (!CLK * !D * !SCD * Q * !Q_N)	0.00018	0.00009	0.00154

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)	-0.00188	-0.00191	-0.00190
	(CLK * Q * !Q_N)	0.00167	0.00167	0.00164
	(!CLK * D * SCD * Q * !Q_N) + (!CLK * D * !SCD * !SCE * Q * !Q_N) + (!CLK * !D * SCD * SCE * Q * !Q_N)	-0.00200	-0.00205	-0.00203
	(!CLK * D * SCD * Q * !Q_N) + (!CLK * D * !SCD * !SCE * Q * !Q_N) + (!CLK * !D * SCD * SCE * Q * !Q_N)	0.00155	0.00154	0.00152
	(!CLK * D * !SCD * SCE * Q * !Q_N) + (!CLK * !D * SCD * !SCE * Q * !Q_N) + (!CLK * !D * !SCD * Q * !Q_N)	-0.00002	-0.00002	0.00161
	(!CLK * D * !SCD * SCE * Q * !Q_N) + (!CLK * !D * SCD * !SCE * Q * !Q_N) + (!CLK * !D * !SCD * Q * !Q_N)	0.00365	0.00366	0.00530
sky130_fd_sc_hs__sdfsbp_2	(CLK * Q * !Q_N)	-0.00191	-0.00196	-0.00194
	(CLK * Q * !Q_N)	0.00173	0.00173	0.00170
	(!CLK * D * SCD * Q * !Q_N) + (!CLK * D * !SCD * !SCE * Q * !Q_N) + (!CLK * !D * SCD * SCE * Q * !Q_N)	-0.00200	-0.00204	-0.00202
	(!CLK * D * SCD * Q * !Q_N) + (!CLK * D * !SCD * !SCE * Q * !Q_N) + (!CLK * !D * SCD * SCE * Q * !Q_N)	0.00165	0.00165	0.00162
	(!CLK * D * !SCD * SCE * Q * !Q_N) + (!CLK * !D * SCD * !SCE * Q * !Q_N) + (!CLK * !D * !SCD * Q * !Q_N)	-0.00017	-0.00019	0.00144
	(!CLK * D * !SCD * SCE * Q * !Q_N) + (!CLK * !D * SCD * !SCE * Q * !Q_N) + (!CLK * !D * !SCD * Q * !Q_N)	0.00360	0.00361	0.00523

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)	0.01052	0.01018	0.01508
	(D * SCD * SCE * Q * !Q_N)	0.00730	0.00695	0.01187
	(D * !SCE * Q * !Q_N)	0.01052	0.01017	0.01508
	(D * !SCE * Q * !Q_N)	0.00730	0.00695	0.01187
	(D * !SCD * SCE * SET_B * !Q * Q_N)	0.01046	0.01012	0.01501
	(D * !SCD * SCE * SET_B * !Q * Q_N)	0.00724	0.00690	0.01179
	(D * !SCD * SCE * !SET_B * Q * !Q_N)	0.01861	0.01838	0.02373
	(D * !SCD * SCE * !SET_B * Q * !Q_N)	0.01507	0.01482	0.02018
	(!D * SCD * SCE * Q * !Q_N)	0.01052	0.01018	0.01508
	(!D * SCD * SCE * Q * !Q_N)	0.00730	0.00695	0.01187
	(!D * !SCE * SET_B * !Q * Q_N)	0.01046	0.01012	0.01501
	(!D * !SCE * SET_B * !Q * Q_N)	0.00724	0.00689	0.01178
	(!D * !SCE * !SET_B * Q * !Q_N)	0.01861	0.01838	0.02373
	(!D * !SCE * !SET_B * Q * !Q_N)	0.01506	0.01482	0.02017
	(!D * !SCD * SCE * SET_B * !Q * Q_N)	0.01046	0.01013	0.01504
	(!D * !SCD * SCE * SET_B * !Q * Q_N)	0.00724	0.00690	0.01182
	(!D * !SCD * SCE * !SET_B * Q * !Q_N)	0.01866	0.01840	0.02372
	(!D * !SCD * SCE * !SET_B * Q * !Q_N)	0.01511	0.01484	0.02017

sky130_fd_sc_hs__sdfsbp_2	**(D * SCD * SCE * Q * !Q_N)**	0.01372	0.01328	0.01809
	(D * SCD * SCE * Q * !Q_N)	0.01047	0.01003	0.01483
	(D * !SCE * Q * !Q_N)	0.01371	0.01328	0.01809
	(D * !SCE * Q * !Q_N)	0.01047	0.01003	0.01483
	(D * !SCD * SCE * SET_B * !Q * Q_N)	0.01355	0.01313	0.01793
	(D * !SCD * SCE * SET_B * !Q * Q_N)	0.01031	0.00986	0.01468
	(D * !SCD * SCE * !SET_B * Q * !Q_N)	0.02912	0.02900	0.03464
	(D * !SCD * SCE * !SET_B * Q * !Q_N)	0.02564	0.02551	0.03115
	(!D * SCD * SCE * Q * !Q_N)	0.01372	0.01328	0.01809
	(!D * SCD * SCE * Q * !Q_N)	0.01047	0.01003	0.01483
	(!D * !SCE * SET_B * !Q * Q_N)	0.01355	0.01313	0.01793
	(!D * !SCE * SET_B * !Q * Q_N)	0.01031	0.00986	0.01468
	(!D * !SCE * !SET_B * Q * !Q_N)	0.02912	0.02901	0.03463
	(!D * !SCE * !SET_B * Q * !Q_N)	0.02564	0.02551	0.03114
	(!D * !SCD * SCE * SET_B * !Q * Q_N)	0.01356	0.01313	0.01794
	(!D * !SCD * SCE * SET_B * !Q * Q_N)	0.01031	0.00987	0.01469
	(!D * !SCD * SCE * !SET_B * Q * !Q_N)	0.02919	0.02903	0.03462
	(!D * !SCD * SCE * !SET_B * Q * !Q_N)	0.02571	0.02554	0.03113

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)**	0.01088	0.01091	0.01651
	(D * SCD * SCE * SET_B * !Q * Q_N)	0.01385	0.01386	0.01947
	(D * SCD * SCE * Q * !Q_N)	0.00597	0.00605	0.01166
	(D * SCD * SCE * Q * !Q_N)	0.00920	0.00927	0.01488
	(D * !SCE * SET_B * !Q * Q_N)	0.01085	0.01088	0.01648
	(D * !SCE * SET_B * !Q * Q_N)	0.01382	0.01384	0.01945
	(D * !SCE * Q * !Q_N)	0.00597	0.00605	0.01166
	(D * !SCE * Q * !Q_N)	0.00920	0.00927	0.01487
	(D * !SCD * SCE * SET_B * Q * !Q_N)	0.01191	0.01206	0.01797
	(D * !SCD * SCE * SET_B * Q * !Q_N)	0.01541	0.01554	0.02147
	(D * !SCD * SCE * SET_B * !Q * Q_N)	0.00608	0.00617	0.01177
	(D * !SCD * SCE * SET_B * !Q * Q_N)	0.00930	0.00939	0.01499
	(D * !SCD * SCE * !SET_B * Q * !Q_N)	0.00970	0.00984	0.01577
	(D * !SCD * SCE * !SET_B * Q * !Q_N)	0.01326	0.01339	0.01933
	(!D * SCD * SCE * SET_B * !Q * Q_N)	0.01091	0.01094	0.01654
	(!D * SCD * SCE * SET_B * !Q * Q_N)	0.01387	0.01388	0.01950
	(!D * SCD * SCE * Q * !Q_N)	0.00597	0.00605	0.01166
	(!D * SCD * SCE * Q * !Q_N)	0.00920	0.00927	0.01488
	(!D * !SCE * SET_B * Q * !Q_N)	0.01189	0.01204	0.01795
	(!D * !SCE * SET_B * Q * !Q_N)	0.01537	0.01550	0.02143
	(!D * !SCE * SET_B * !Q * Q_N)	0.00607	0.00617	0.01177
	(!D * !SCE * SET_B * !Q * Q_N)	0.00930	0.00939	0.01499
	(!D * !SCE * !SET_B * Q * !Q_N)	0.00971	0.00984	0.01577
	(!D * !SCE * !SET_B * Q * !Q_N)	0.01328	0.01339	0.01933
	(!D * !SCD * SCE * SET_B * Q * !Q_N)	0.01191	0.01201	0.01797
	(!D * !SCD * SCE * SET_B * Q * !Q_N)	0.01540	0.01549	0.02147
	(!D * !SCD * SCE * SET_B * !Q * Q_N)	0.00608	0.00617	0.01177
	(!D * !SCD * SCE * SET_B * !Q * Q_N)	0.00930	0.00939	0.01499
	(!D * !SCD * SCE * !SET_B * Q * !Q_N)	0.00972	0.00982	0.01578
	(!D * !SCD * SCE * !SET_B * Q * !Q_N)	0.01328	0.01338	0.01934

	(D * SCD * SCE * SET_B * !Q * Q_N)	0.01304	0.01296	0.01838
	(D * SCD * SCE * SET_B * !Q * Q_N)	0.01616	0.01606	0.02150
	(D * SCD * SCE * Q * !Q_N)	0.00717	0.00722	0.01257
	(D * SCD * SCE * Q * !Q_N)	0.01043	0.01047	0.01583
	(D * !SCE * SET_B * !Q * Q_N)	0.01301	0.01293	0.01835
	(D * !SCE * SET_B * !Q * Q_N)	0.01613	0.01603	0.02147
	(D * !SCE * Q * !Q_N)	0.00717	0.00722	0.01257
	(D * !SCE * Q * !Q_N)	0.01043	0.01047	0.01583
	(D * !SCD * SCE * SET_B * Q * !Q_N)	0.01498	0.01508	0.02075
	(D * !SCD * SCE * SET_B * Q * !Q_N)	0.01840	0.01850	0.02416
	(D * !SCD * SCE * SET_B * !Q * Q_N)	0.00739	0.00738	0.01280
	(D * !SCD * SCE * SET_B * !Q * Q_N)	0.01065	0.01064	0.01606
	(D * !SCD * SCE * !SET_B * Q * !Q_N)	0.01258	0.01270	0.01840
	(D * !SCD * SCE * !SET_B * Q * !Q_N)	0.01606	0.01619	0.02189
sky130_fd_sc_hs__sdfsbp_2	**(!D * SCD * SCE * SET_B * !Q * Q_N)**	0.01307	0.01299	0.01841
	(!D * SCD * SCE * SET_B * !Q * Q_N)	0.01618	0.01608	0.02152
	(!D * SCD * SCE * Q * !Q_N)	0.00717	0.00722	0.01257
	(!D * SCD * SCE * Q * !Q_N)	0.01043	0.01047	0.01583
	(!D * !SCE * SET_B * Q * !Q_N)	0.01496	0.01506	0.02073
	(!D * !SCE * SET_B * Q * !Q_N)	0.01837	0.01845	0.02412
	(!D * !SCE * SET_B * !Q * Q_N)	0.00739	0.00738	0.01280
	(!D * !SCE * SET_B * !Q * Q_N)	0.01065	0.01064	0.01605
	(!D * !SCE * !SET_B * Q * !Q_N)	0.01260	0.01268	0.01839
	(!D * !SCE * !SET_B * Q * !Q_N)	0.01610	0.01617	0.02189
	(!D * !SCD * SCE * SET_B * Q * !Q_N)	0.01498	0.01508	0.02075
	(!D * !SCD * SCE * SET_B * Q * !Q_N)	0.01840	0.01848	0.02416
	(!D * !SCD * SCE * SET_B * !Q * Q_N)	0.00739	0.00738	0.01280
	(!D * !SCD * SCE * SET_B * !Q * Q_N)	0.01065	0.01064	0.01605
	(!D * !SCD * SCE * !SET_B * Q * !Q_N)	0.01260	0.01271	0.01841
	(!D * !SCD * SCE * !SET_B * Q * !Q_N)	0.01610	0.01620	0.02191

SKY130_FD_SC_HS__SDFSTPx

sky130_fd_sc_hs_tt_1.50v_25C.ccs
Cell Library: Process , Voltage
1.50, 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	0.00184	0.00205	0.00392	0.00328	0.00288	0.82839
sky130_fd_sc_hs__sdfstp_2	0.00184	0.00201	0.00392	0.00338	0.00288	1.68806
sky130_fd_sc_hs__sdfstp_4	0.00185	0.00205	0.00397	0.00339	0.00287	3.21034

Leakage Information

Cell Name	Leakage(nW)		
	Min.	Avg	Max.
sky130_fd_sc_hs__sdfstp_1	0.00000	0.32469	0.48084
sky130_fd_sc_hs__sdfstp_2	0.00000	0.32065	0.68968
sky130_fd_sc_hs__sdfstp_4	0.00000	0.49810	0.74755

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)	0.30727	0.93147	6.96255
	SET_B->Q (FR)	0.30589	1.20225	9.73390
sky130_fd_sc_hs__sdfstp_2	CLK->Q (RR)	0.27304	0.79016	6.98535
	SET_B->Q (FR)	0.35037	1.13875	9.95365
sky130_fd_sc_hs__sdfstp_4	CLK->Q (RR)	0.31426	0.75167	7.03356
	SET_B->Q (FR)	0.40441	1.11305	10.08860

Delay(ns) to Q falling :

Cell Name	Timing Arc(Dir)	Delay(ns)		
		First	Mid	Last
sky130_fd_sc_hs__sdfstp_1	CLK->Q (RF)	0.29003	0.60663	2.48658
sky130_fd_sc_hs__sdfstp_2	CLK->Q (RF)	0.31011	0.60717	2.62753
sky130_fd_sc_hs__sdfstp_4	CLK->Q (RF)	0.31620	0.59150	2.68445

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)	-0.10212	-0.20628	-1.08929
	setup	CLK (R)	0.17583	0.25050	1.26127
sky130_fd_sc_hs__sdfstp_2	hold	CLK (R)	-0.12256	-0.22759	-1.15576
	setup	CLK (R)	0.21671	0.28583	1.39202
sky130_fd_sc_hs__sdfstp_4	hold	CLK (R)	-0.12583	-0.22885	-1.17312
	setup	CLK (R)	0.21108	0.28253	1.38679

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)	-0.09381	-0.23247	-1.25794
	setup	CLK (R)	0.37627	0.45952	3.18943
sky130_fd_sc_hs__sdfstp_2	hold	CLK (R)	-0.10159	-0.23532	-1.20765
	setup	CLK (R)	0.43646	0.50851	3.24400
sky130_fd_sc_hs__sdfstp_4	hold	CLK (R)	-0.11107	-0.24985	-1.33343
	setup	CLK (R)	0.43587	0.51437	3.26488

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)	-0.10212	-0.20628	-1.08929
	setup	CLK (R)	0.17583	0.25050	1.26127
sky130_fd_sc_hs__sdfstp_2	hold	CLK (R)	-0.12256	-0.22759	-1.15576
	setup	CLK (R)	0.21671	0.28583	1.39202
sky130_fd_sc_hs__sdfstp_4	hold	CLK (R)	-0.12583	-0.22885	-1.17312
	setup	CLK (R)	0.21108	0.28253	1.38679

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)	-0.09381	-0.23247	-1.25794
	setup	CLK (R)	0.37627	0.45952	3.18943
sky130_fd_sc_hs__sdfstp_2	hold	CLK (R)	-0.10159	-0.23532	-1.20765
	setup	CLK (R)	0.43646	0.50851	3.24400
sky130_fd_sc_hs__sdfstp_4	hold	CLK (R)	-0.11107	-0.24985	-1.33343
	setup	CLK (R)	0.43587	0.51437	3.26488

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)	-0.12215	-0.21990	-1.20207
	setup	CLK (R)	0.20048	0.26660	1.33884
sky130_fd_sc_hs__sdfstp_2	hold	CLK (R)	-0.14657	-0.23799	-1.25792
	setup	CLK (R)	0.24492	0.30034	1.45352
sky130_fd_sc_hs__sdfstp_4	hold	CLK (R)	-0.14339	-0.23869	-1.26675
	setup	CLK (R)	0.23745	0.29715	1.44269

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)	-0.12621	-0.27979	-1.79658
	setup	CLK (R)	0.45348	0.54393	4.10110
sky130_fd_sc_hs__sdfstp_2	hold	CLK (R)	-0.13336	-0.28779	-1.73889
	setup	CLK (R)	0.51113	0.59425	3.61453
sky130_fd_sc_hs__sdfstp_4	hold	CLK (R)	-0.14171	-0.30106	-1.91556
	setup	CLK (R)	0.51398	0.59801	3.63261

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)	-0.12215	-0.21990	-1.20207
	hold	CLK (R)	-0.12739	-0.22353	-1.21509
	setup	CLK (R)	0.20048	0.25979	1.33459
	setup	CLK (R)	0.20045	0.26660	1.33884
sky130_fd_sc_hs__sdfstp_2	hold	CLK (R)	-0.14707	-0.23799	-1.25792
	hold	CLK (R)	-0.14657	-0.24318	-1.26714
	setup	CLK (R)	0.24382	0.29778	1.44656
	setup	CLK (R)	0.24492	0.30034	1.45352
sky130_fd_sc_hs__sdfstp_4	hold	CLK (R)	-0.14339	-0.23869	-1.26675
	hold	CLK (R)	-0.14974	-0.24290	-1.27999
	setup	CLK (R)	0.23501	0.29378	1.43751
	setup	CLK (R)	0.23745	0.29715	1.44269

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)	-0.13679	-0.29844	-1.86041
	hold	CLK (R)	-0.12621	-0.27979	-1.79658
	setup	CLK (R)	0.45204	0.54393	4.10110
	setup	CLK (R)	0.45348	0.53847	3.57974
sky130_fd_sc_hs__sdfstp_2	hold	CLK (R)	-0.14060	-0.30038	-1.80737
	hold	CLK (R)	-0.13336	-0.28779	-1.73889
	setup	CLK (R)	0.51099	0.59279	3.61453
	setup	CLK (R)	0.51113	0.59425	3.59747
sky130_fd_sc_hs__sdfstp_4	hold	CLK (R)	-0.15443	-0.31107	-1.95045
	hold	CLK (R)	-0.14171	-0.30106	-1.91556
	setup	CLK (R)	0.51214	0.59768	3.63261
	setup	CLK (R)	0.51398	0.59801	3.61634

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)	-0.11120	-0.18975	0.01645
	setup	CLK (R)	0.44482	0.43680	1.71344
sky130_fd_sc_hs__sdfstp_2	hold	CLK (R)	-0.13199	-0.19368	0.02517
	setup	CLK (R)	0.50136	0.48532	1.54598
sky130_fd_sc_hs__sdfstp_4	hold	CLK (R)	-0.13208	-0.20365	-0.00480
	setup	CLK (R)	0.50308	0.48884	1.52699

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)	-0.11501	-0.25647	-1.64210
	setup	CLK (R)	0.39776	0.48240	4.04952
sky130_fd_sc_hs__sdfstp_2	hold	CLK (R)	-0.12072	-0.25930	-1.60023
	setup	CLK (R)	0.45340	0.53467	3.46457
sky130_fd_sc_hs__sdfstp_4	hold	CLK (R)	-0.13057	-0.27377	-1.71261
	setup	CLK (R)	0.45539	0.54046	3.50496

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)	-0.12665	-0.18975	0.01645
	hold	CLK (R)	-0.11120	-0.21953	-1.12356
	setup	CLK (R)	0.44482	0.43680	1.71344
	setup	CLK (R)	0.18612	0.26260	1.28583
sky130_fd_sc_hs__sdfstp_2	hold	CLK (R)	-0.13199	-0.19368	0.02517
	hold	CLK (R)	-0.13324	-0.23704	-1.19135
	setup	CLK (R)	0.50136	0.48532	1.54598
	setup	CLK (R)	0.22705	0.29907	1.41946
sky130_fd_sc_hs__sdfstp_4	hold	CLK (R)	-0.14613	-0.20365	-0.00480
	hold	CLK (R)	-0.13208	-0.24213	-1.20209
	setup	CLK (R)	0.50308	0.48884	1.52699
	setup	CLK (R)	0.22005	0.29378	1.41030

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)	-0.18759	-0.34711	-2.38271
	hold	CLK (R)	-0.11501	-0.25647	-1.64210
	setup	CLK (R)	0.26122	0.38523	2.43095
	setup	CLK (R)	0.39776	0.48240	4.04952
sky130_fd_sc_hs__sdfstp_2	hold	CLK (R)	-0.21040	-0.36429	-2.38200
	hold	CLK (R)	-0.12072	-0.25930	-1.60023
	setup	CLK (R)	0.30182	0.41371	2.46671
	setup	CLK (R)	0.45340	0.53467	3.46457
sky130_fd_sc_hs__sdfstp_4	hold	CLK (R)	-0.20833	-0.36534	-2.38735
	hold	CLK (R)	-0.13057	-0.27377	-1.71261
	setup	CLK (R)	0.29511	0.41190	2.46157
	setup	CLK (R)	0.45539	0.54046	3.50496

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)	-0.11959	-0.17430	-0.48007
	removal	CLK (R)	0.14527	0.19145	0.61046
sky130_fd_sc_hs__sdfstp_2	recovery	CLK (R)	-0.17046	-0.22333	-0.58598
	removal	CLK (R)	0.18898	0.39289	3.53343
sky130_fd_sc_hs__sdfstp_4	recovery	CLK (R)	-0.16160	-0.22017	-0.59986
	removal	CLK (R)	0.17763	0.23931	1.81848

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)	-0.11960	-0.17430	-0.48007
	recovery	CLK (R)	-0.11959	-0.17430	-0.48677
	recovery	CLK (R)	-0.12047	-0.17430	-0.48300
	removal	CLK (R)	0.14527	0.19145	0.61046
	removal	CLK (R)	0.14527	0.19145	0.61046
	removal	CLK (R)	0.14527	0.19145	0.61046
sky130_fd_sc_hs__sdfstp_2	recovery	CLK (R)	-0.17053	-0.22333	-0.58625
	recovery	CLK (R)	-0.17053	-0.22333	-0.58598
	recovery	CLK (R)	-0.17046	-0.22333	-0.58633
	removal	CLK (R)	0.18747	0.39047	3.53343
	removal	CLK (R)	0.18747	0.39047	3.53315
	removal	CLK (R)	0.18898	0.39289	3.50964
sky130_fd_sc_hs__sdfstp_4	recovery	CLK (R)	-0.16160	-0.22017	-0.59986
	recovery	CLK (R)	-0.16160	-0.22017	-0.59986
	recovery	CLK (R)	-0.16160	-0.22017	-0.59986
	removal	CLK (R)	0.17763	0.23931	1.81848
	removal	CLK (R)	0.17763	0.23931	1.81848
	removal	CLK (R)	0.17763	0.23931	1.81797

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 ()	0.25581	0.74341	16.50020
	min_pulse_width	SET_B ()	0.23088	0.74341	16.50020
sky130_fd_sc_hs__sdfstp_2	min_pulse_width	SET_B ()	0.27244	0.74341	16.50020
	min_pulse_width	SET_B ()	0.26412	0.74341	16.50020
sky130_fd_sc_hs__sdfstp_4	min_pulse_width	SET_B ()	0.27798	0.74341	16.50020
	min_pulse_width	SET_B ()	0.29429	0.75796	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 ()	0.17547	0.74341	16.50020
	min_pulse_width	CLK ()	0.10898	0.74341	16.50020
sky130_fd_sc_hs__sdfstp_2	min_pulse_width	CLK ()	0.13946	0.74341	16.50020
	min_pulse_width	CLK ()	0.12283	0.74341	16.50020
sky130_fd_sc_hs__sdfstp_4	min_pulse_width	CLK ()	0.16439	0.74341	16.50020
	min_pulse_width	CLK ()	0.12283	0.74341	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 ()	0.23642	0.74341	16.50020
	min_pulse_width	CLK ()	0.38879	0.74341	16.50020
sky130_fd_sc_hs__sdfstp_2	min_pulse_width	CLK ()	0.30014	0.74341	16.50020
	min_pulse_width	CLK ()	0.46914	0.74341	16.50020
sky130_fd_sc_hs__sdfstp_4	min_pulse_width	CLK ()	0.28906	0.74341	16.50020
	min_pulse_width	CLK ()	0.46082	0.74341	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	0.01949	0.01917	0.02427
	CLK	0.01646	0.01615	0.02126
	SET_B	0.01826	0.01781	0.02024
	SET_B	0.02162	0.02114	0.02371
sky130_fd_sc_hs__sdfstp_2	CLK	0.02413	0.02399	0.02910
	CLK	0.02113	0.02098	0.02610
	SET_B	0.02382	0.02354	0.02569
	SET_B	0.02726	0.02696	0.02929
sky130_fd_sc_hs__sdfstp_4	CLK	0.02859	0.02896	0.03420
	CLK	0.02564	0.02602	0.03140
	SET_B	0.02830	0.02852	0.03085
	SET_B	0.03179	0.03200	0.03459

Internal switching power(pJ) to Q falling :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__sdfstp_1	CLK	0.02105	0.02091	0.02611
	CLK	0.01775	0.01756	0.02276
sky130_fd_sc_hs__sdfstp_2	CLK	0.02575	0.02593	0.03110
	CLK	0.02251	0.02263	0.02763
sky130_fd_sc_hs__sdfstp_4	CLK	0.03060	0.03159	0.03710
	CLK	0.02729	0.02809	0.03326

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

Cell Name	When	Power(pJ)		
		first	mid	last

sky130_fd_sc_hs__sdfstp_1	**(CLK * SCD * SCE)**	0.00088	0.00089	0.00088
	(CLK * SCD * SCE)	-0.00044	-0.00045	-0.00044
	(CLK * !SCE)	0.00310	0.00300	0.00672
	(CLK * !SCE)	0.00081	0.00071	0.00443
	(CLK * !SCD * SCE)	0.00048	0.00048	0.00047
	(CLK * !SCD * SCE)	-0.00094	-0.00095	-0.00096
	(!CLK * SCD * SCE)	0.00088	0.00089	0.00088
	(!CLK * SCD * SCE)	-0.00044	-0.00045	-0.00044
	(!CLK * !SCE * SET_B)	0.00790	0.00778	0.01051
	(!CLK * !SCE * SET_B)	0.00541	0.00528	0.00801
	(!CLK * !SCE * !SET_B * Q)	0.00636	0.00627	0.00900
	(!CLK * !SCE * !SET_B * Q)	0.00380	0.00370	0.00644
	(!CLK * !SCD * SCE)	0.00048	0.00048	0.00047
	(!CLK * !SCD * SCE)	-0.00094	-0.00095	-0.00096
sky130_fd_sc_hs__sdfstp_2	**(CLK * SCD * SCE)**	0.00088	0.00089	0.00088
	(CLK * SCD * SCE)	-0.00045	-0.00045	-0.00045
	(CLK * !SCE)	0.00306	0.00296	0.00668
	(CLK * !SCE)	0.00078	0.00067	0.00440
	(CLK * !SCD * SCE)	0.00048	0.00048	0.00047
	(CLK * !SCD * SCE)	-0.00094	-0.00095	-0.00096
	(!CLK * SCD * SCE)	0.00088	0.00088	0.00088
	(!CLK * SCD * SCE)	-0.00045	-0.00045	-0.00045
	(!CLK * !SCE * SET_B)	0.00902	0.00891	0.01147
	(!CLK * !SCE * SET_B)	0.00643	0.00632	0.00888
	(!CLK * !SCE * !SET_B * Q)	0.00739	0.00730	0.00985
	(!CLK * !SCE * !SET_B * Q)	0.00473	0.00464	0.00719
	(!CLK * !SCD * SCE)	0.00048	0.00048	0.00047
	(!CLK * !SCD * SCE)	-0.00094	-0.00095	-0.00096

sky130_fd_sc_hs__sdfstp_4	**(CLK * SCD * SCE)**	0.00088	0.00088	0.00088
	(CLK * SCD * SCE)	-0.00044	-0.00045	-0.00044
	(CLK * !SCE)	0.00318	0.00306	0.00674
	(CLK * !SCE)	0.00089	0.00077	0.00446
	(CLK * !SCD * SCE)	0.00048	0.00048	0.00047
	(CLK * !SCD * SCE)	-0.00093	-0.00094	-0.00096
	(!CLK * SCD * SCE)	0.00088	0.00088	0.00088
	(!CLK * SCD * SCE)	-0.00044	-0.00045	-0.00044
	(!CLK * !SCE * SET_B)	0.00894	0.00884	0.01140
	(!CLK * !SCE * SET_B)	0.00642	0.00631	0.00887
	(!CLK * !SCE * !SET_B * Q)	0.00734	0.00726	0.00980
	(!CLK * !SCE * !SET_B * Q)	0.00475	0.00466	0.00720
	(!CLK * !SCD * SCE)	0.00049	0.00048	0.00047
	(!CLK * !SCD * SCE)	-0.00093	-0.00094	-0.00096

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

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

sky130_fd_sc_hs__sdfstp_1	**(CLK * SCD * SCE)**	-0.00084	-0.00085	-0.00087
	(CLK * SCD * SCE)	0.00048	0.00048	0.00046
	(CLK * !SCE)	0.00053	0.00060	0.00462
	(CLK * !SCE)	0.00281	0.00289	0.00691
	(CLK * !SCD * SCE)	-0.00046	-0.00046	-0.00045
	(CLK * !SCD * SCE)	0.00096	0.00097	0.00096
	(!CLK * SCD * SCE)	-0.00084	-0.00085	-0.00087
	(!CLK * SCD * SCE)	0.00048	0.00048	0.00046
	(!CLK * !SCE * SET_B)	0.00532	0.00529	0.00903
	(!CLK * !SCE * SET_B)	0.00782	0.00778	0.01153
	(!CLK * !SCE * !SET_B * Q)	0.00329	0.00330	0.00675
	(!CLK * !SCE * !SET_B * Q)	0.00585	0.00587	0.00932
	(!CLK * !SCD * SCE)	-0.00045	-0.00047	-0.00046
	(!CLK * !SCD * SCE)	0.00096	0.00097	0.00096
sky130_fd_sc_hs__sdfstp_2	**(CLK * SCD * SCE)**	-0.00084	-0.00085	-0.00087
	(CLK * SCD * SCE)	0.00048	0.00048	0.00046
	(CLK * !SCE)	0.00057	0.00064	0.00466
	(CLK * !SCE)	0.00285	0.00293	0.00694
	(CLK * !SCD * SCE)	-0.00046	-0.00046	-0.00045
	(CLK * !SCD * SCE)	0.00096	0.00097	0.00096
	(!CLK * SCD * SCE)	-0.00084	-0.00085	-0.00087
	(!CLK * SCD * SCE)	0.00048	0.00048	0.00046
	(!CLK * !SCE * SET_B)	0.00620	0.00617	0.00980
	(!CLK * !SCE * SET_B)	0.00880	0.00876	0.01240
	(!CLK * !SCE * !SET_B * Q)	0.00408	0.00410	0.00744
	(!CLK * !SCE * !SET_B * Q)	0.00674	0.00676	0.01010
	(!CLK * !SCD * SCE)	-0.00045	-0.00047	-0.00046
	(!CLK * !SCD * SCE)	0.00096	0.00097	0.00096

sky130_fd_sc_hs__sdfstp_4	(CLK * SCD * SCE)	-0.00083	-0.00085	-0.00087
	(CLK * SCD * SCE)	0.00048	0.00048	0.00046
	(CLK * !SCE)	0.00067	0.00073	0.00471
	(CLK * !SCE)	0.00294	0.00301	0.00700
	(CLK * !SCD * SCE)	-0.00046	-0.00046	-0.00046
	(CLK * !SCD * SCE)	0.00096	0.00096	0.00096
	(!CLK * SCD * SCE)	-0.00083	-0.00084	-0.00087
	(!CLK * SCD * SCE)	0.00049	0.00048	0.00046
	(!CLK * !SCE * SET_B)	0.00628	0.00625	0.00988
	(!CLK * !SCE * SET_B)	0.00881	0.00877	0.01241
	(!CLK * !SCE * !SET_B * Q)	0.00419	0.00421	0.00754
	(!CLK * !SCE * !SET_B * Q)	0.00678	0.00681	0.01013
	(!CLK * !SCD * SCE)	-0.00045	-0.00047	-0.00046
	(!CLK * !SCD * SCE)	0.00095	0.00097	0.00096

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

Cell Name	When	Power(pJ)		
		first	mid	last

sky130_fd_sc_hs__sdfstp_1	**(CLK * D * SCE)**	0.00437	0.00422	0.00606
	(CLK * D * SCE)	0.00118	0.00102	0.00286
	(CLK * !D * SCE)	0.00494	0.00478	0.00648
	(CLK * !D * SCE)	0.00164	0.00148	0.00319
	(!CLK * D * SCE * SET_B)	0.00907	0.00892	0.01038
	(!CLK * D * SCE * SET_B)	0.00567	0.00551	0.00699
	(!CLK * D * SCE * !SET_B * Q)	0.00753	0.00740	0.00888
	(!CLK * D * SCE * !SET_B * Q)	0.00407	0.00393	0.00541
	(!CLK * !D * SCE * SET_B)	0.00963	0.00948	0.01085
	(!CLK * !D * SCE * SET_B)	0.00612	0.00598	0.00735
	(!CLK * !D * SCE * !SET_B * Q)	0.00810	0.00797	0.00934
	(!CLK * !D * SCE * !SET_B * Q)	0.00452	0.00439	0.00577
	!SCE	0.00107	0.00098	0.00096
	!SCE	-0.00080	-0.00091	-0.00092
sky130_fd_sc_hs__sdfstp_2	**(CLK * D * SCE)**	0.00431	0.00416	0.00599
	(CLK * D * SCE)	0.00116	0.00099	0.00284
	(CLK * !D * SCE)	0.00487	0.00473	0.00642
	(CLK * !D * SCE)	0.00161	0.00145	0.00316
	(!CLK * D * SCE * SET_B)	0.01016	0.01002	0.01143
	(!CLK * D * SCE * SET_B)	0.00669	0.00655	0.00796
	(!CLK * D * SCE * !SET_B * Q)	0.00853	0.00841	0.00981
	(!CLK * D * SCE * !SET_B * Q)	0.00500	0.00487	0.00628
	(!CLK * !D * SCE * SET_B)	0.01072	0.01059	0.01190
	(!CLK * !D * SCE * SET_B)	0.00715	0.00701	0.00833
	(!CLK * !D * SCE * !SET_B * Q)	0.00910	0.00898	0.01029
	(!CLK * !D * SCE * !SET_B * Q)	0.00546	0.00533	0.00665
	!SCE	0.00105	0.00095	0.00094
	!SCE	-0.00080	-0.00090	-0.00092

sky130_fd_sc_hs__sdfstp_4	**(CLK * D * SCE)**	0.00445	0.00429	0.00612
	(CLK * D * SCE)	0.00127	0.00110	0.00293
	(CLK * !D * SCE)	0.00501	0.00486	0.00654
	(CLK * !D * SCE)	0.00172	0.00156	0.00325
	(!CLK * D * SCE * SET_B)	0.01011	0.00996	0.01138
	(!CLK * D * SCE * SET_B)	0.00667	0.00653	0.00794
	(!CLK * D * SCE * !SET_B * Q)	0.00850	0.00838	0.00978
	(!CLK * D * SCE * !SET_B * Q)	0.00501	0.00487	0.00628
	(!CLK * !D * SCE * SET_B)	0.01067	0.01053	0.01185
	(!CLK * !D * SCE * SET_B)	0.00713	0.00699	0.00831
	(!CLK * !D * SCE * !SET_B * Q)	0.00907	0.00895	0.01025
	(!CLK * !D * SCE * !SET_B * Q)	0.00546	0.00534	0.00665
	!SCE	0.00107	0.00098	0.00096
	!SCE	-0.00081	-0.00091	-0.00092

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

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

sky130_fd_sc_hs__sdfstp_1	**(CLK * D * SCE)**	0.00132	0.00117	0.00309
	(CLK * D * SCE)	0.00452	0.00437	0.00627
	(CLK * !D * SCE)	0.00101	0.00087	0.00288
	(CLK * !D * SCE)	0.00431	0.00417	0.00616
	(!CLK * D * SCE * SET_B)	0.00619	0.00604	0.00781
	(!CLK * D * SCE * SET_B)	0.00960	0.00945	0.01121
	(!CLK * D * SCE * !SET_B * Q)	0.00416	0.00401	0.00562
	(!CLK * D * SCE * !SET_B * Q)	0.00764	0.00750	0.00908
	(!CLK * !D * SCE * SET_B)	0.00590	0.00575	0.00761
	(!CLK * !D * SCE * SET_B)	0.00941	0.00925	0.01110
	(!CLK * !D * SCE * !SET_B * Q)	0.00386	0.00371	0.00538
	(!CLK * !D * SCE * !SET_B * Q)	0.00743	0.00729	0.00894
	!SCE	-0.00094	-0.00095	-0.00096
	!SCE	0.00094	0.00094	0.00093
sky130_fd_sc_hs__sdfstp_2	**(CLK * D * SCE)**	0.00141	0.00126	0.00317
	(CLK * D * SCE)	0.00458	0.00443	0.00632
	(CLK * !D * SCE)	0.00110	0.00096	0.00296
	(CLK * !D * SCE)	0.00437	0.00423	0.00622
	(!CLK * D * SCE * SET_B)	0.00711	0.00697	0.00874
	(!CLK * D * SCE * SET_B)	0.01059	0.01045	0.01220
	(!CLK * D * SCE * !SET_B * Q)	0.00499	0.00485	0.00639
	(!CLK * D * SCE * !SET_B * Q)	0.00854	0.00840	0.00992
	(!CLK * !D * SCE * SET_B)	0.00682	0.00668	0.00847
	(!CLK * !D * SCE * SET_B)	0.01039	0.01025	0.01203
	(!CLK * !D * SCE * !SET_B * Q)	0.00469	0.00455	0.00615
	(!CLK * !D * SCE * !SET_B * Q)	0.00834	0.00820	0.00978
	!SCE	-0.00091	-0.00093	-0.00093
	!SCE	0.00092	0.00093	0.00093

sky130_fd_sc_hs__sdfstp_4	**(CLK * D * SCE)**	0.00145	0.00130	0.00320
	(CLK * D * SCE)	0.00465	0.00450	0.00638
	(CLK * !D * SCE)	0.00115	0.00100	0.00299
	(CLK * !D * SCE)	0.00444	0.00430	0.00627
	(!CLK * D * SCE * SET_B)	0.00715	0.00700	0.00878
	(!CLK * D * SCE * SET_B)	0.01060	0.01045	0.01221
	(!CLK * D * SCE * !SET_B * Q)	0.00505	0.00491	0.00645
	(!CLK * D * SCE * !SET_B * Q)	0.00857	0.00843	0.00995
	(!CLK * !D * SCE * SET_B)	0.00687	0.00672	0.00850
	(!CLK * !D * SCE * SET_B)	0.01041	0.01025	0.01203
	(!CLK * !D * SCE * !SET_B * Q)	0.00475	0.00462	0.00621
	(!CLK * !D * SCE * !SET_B * Q)	0.00837	0.00823	0.00981
	!SCE	-0.00093	-0.00095	-0.00095
	!SCE	0.00093	0.00094	0.00094

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)**	0.00383	0.00360	0.00793
	(CLK * D * SCD) + (CLK * !D * !SCD)	-0.00031	-0.00056	0.00379
	(CLK * D * !SCD)	0.00577	0.00552	0.00986
	(CLK * D * !SCD)	0.00282	0.00255	0.00687
	(CLK * !D * SCD)	0.00678	0.00651	0.01320
	(CLK * !D * SCD)	0.00163	0.00133	0.00805
	(!CLK * D * SCD * SET_B) + (!CLK * D * SCD * !SET_B * Q)	0.00384	0.00359	0.00793
	(!CLK * D * SCD * SET_B) + (!CLK * D * SCD * !SET_B * Q)	-0.00030	-0.00057	0.00379
	(!CLK * D * !SCD * SET_B)	0.01039	0.01025	0.01461
	(!CLK * D * !SCD * SET_B)	0.00765	0.00751	0.01182
	(!CLK * D * !SCD * !SET_B * Q)	0.00836	0.00823	0.01257
	(!CLK * D * !SCD * !SET_B * Q)	0.00569	0.00555	0.00986
	(!CLK * !D * SCD * SET_B)	0.01158	0.01129	0.01755
	(!CLK * !D * SCD * SET_B)	0.00620	0.00591	0.01220
	(!CLK * !D * SCD * !SET_B * Q)	0.01004	0.00978	0.01603
	(!CLK * !D * SCD * !SET_B * Q)	0.00460	0.00432	0.01061
	(!CLK * !D * !SCD * SET_B) + (!CLK * !D * !SCD * !SET_B * Q)	0.00378	0.00364	0.00792
	(!CLK * !D * !SCD * SET_B) + (!CLK * !D * !SCD * !SET_B * Q)	-0.00011	-0.00025	0.00402

sky130_fd_sc_hs__sdfstp_2	**(CLK * D * SCD) + (CLK * !D * !SCD)**	0.00385	0.00359	0.00793
	(CLK * D * SCD) + (CLK * !D * !SCD)	-0.00031	-0.00057	0.00379
	(CLK * D * !SCD)	0.00584	0.00561	0.00995
	(CLK * D * !SCD)	0.00288	0.00262	0.00695
	(CLK * !D * SCD)	0.00675	0.00648	0.01316
	(CLK * !D * SCD)	0.00158	0.00131	0.00801
	(!CLK * D * SCD * SET_B) + (!CLK * D * SCD * !SET_B * Q)	0.00384	0.00359	0.00793
	(!CLK * D * SCD * SET_B) + (!CLK * D * SCD * !SET_B * Q)	-0.00030	-0.00057	0.00379
	(!CLK * D * !SCD * SET_B)	0.01129	0.01117	0.01554
	(!CLK * D * !SCD * SET_B)	0.00865	0.00850	0.01286
	(!CLK * D * !SCD * !SET_B * Q)	0.00917	0.00906	0.01341
	(!CLK * D * !SCD * !SET_B * Q)	0.00660	0.00646	0.01079
	(!CLK * !D * SCD * SET_B)	0.01270	0.01242	0.01860
	(!CLK * !D * SCD * SET_B)	0.00722	0.00694	0.01315
	(!CLK * !D * SCD * !SET_B * Q)	0.01107	0.01081	0.01697
	(!CLK * !D * SCD * !SET_B * Q)	0.00552	0.00525	0.01144
	(!CLK * !D * !SCD * SET_B) + (!CLK * !D * !SCD * !SET_B * Q)	0.00380	0.00366	0.00793
	(!CLK * !D * !SCD * SET_B) + (!CLK * !D * !SCD * !SET_B * Q)	-0.00011	-0.00026	0.00402

	(CLK * D * SCD) + (CLK * !D * !SCD)	0.00388	0.00363	0.00797
	(CLK * D * SCD) + (CLK * !D * !SCD)	-0.00031	-0.00058	0.00378
	(CLK * D * !SCD)	0.00593	0.00569	0.01003
	(CLK * D * !SCD)	0.00294	0.00267	0.00699
	(CLK * !D * SCD)	0.00690	0.00662	0.01328
	(CLK * !D * SCD)	0.00168	0.00140	0.00810
	(!CLK * D * SCD * SET_B) + (!CLK * D * SCD * !SET_B * Q)	0.00388	0.00362	0.00797
	(!CLK * D * SCD * SET_B) + (!CLK * D * SCD * !SET_B * Q)	-0.00031	-0.00057	0.00378
sky130_fd_sc_hs__sdfstp_4	**(!CLK * D * !SCD * SET_B)**	0.01138	0.01124	0.01561
	(!CLK * D * !SCD * SET_B)	0.00863	0.00848	0.01281
	(!CLK * D * !SCD * !SET_B * Q)	0.00929	0.00916	0.01351
	(!CLK * D * !SCD * !SET_B * Q)	0.00661	0.00647	0.01079
	(!CLK * !D * SCD * SET_B)	0.01266	0.01237	0.01856
	(!CLK * !D * SCD * SET_B)	0.00720	0.00692	0.01312
	(!CLK * !D * SCD * !SET_B * Q)	0.01106	0.01080	0.01696
	(!CLK * !D * SCD * !SET_B * Q)	0.00554	0.00526	0.01145
	(!CLK * !D * !SCD * SET_B) + (!CLK * !D * !SCD * !SET_B * Q)	0.00382	0.00368	0.00795
	(!CLK * !D * !SCD * SET_B) + (!CLK * !D * !SCD * !SET_B * Q)	-0.00012	-0.00027	0.00401

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)**	-0.00018	-0.00004	0.00465
	(CLK * D * SCD) + (CLK * !D * !SCD)	0.00396	0.00410	0.00879
	(CLK * D * !SCD)	0.00298	0.00297	0.00762
	(CLK * D * !SCD)	0.00595	0.00595	0.01051
	(CLK * !D * SCD)	0.00083	0.00078	0.00766
	(CLK * !D * SCD)	0.00599	0.00595	0.01282
	(!CLK * D * SCD * SET_B) + (!CLK * D * SCD * !SET_B * Q)	-0.00018	-0.00003	0.00465
	(!CLK * D * SCD * SET_B) + (!CLK * D * SCD * !SET_B * Q)	0.00397	0.00412	0.00878
	(!CLK * D * !SCD * SET_B)	0.00775	0.00782	0.01233
	(!CLK * D * !SCD * SET_B)	0.01051	0.01058	0.01503
	(!CLK * D * !SCD * !SET_B * Q)	0.00621	0.00629	0.01083
	(!CLK * D * !SCD * !SET_B * Q)	0.00890	0.00897	0.01346
	(!CLK * !D * SCD * SET_B)	0.00563	0.00554	0.01213
	(!CLK * !D * SCD * SET_B)	0.01098	0.01091	0.01749
	(!CLK * !D * SCD * !SET_B * Q)	0.00359	0.00352	0.00994
	(!CLK * !D * SCD * !SET_B * Q)	0.00903	0.00897	0.01539
	(!CLK * !D * !SCD * SET_B) + (!CLK * !D * !SCD * !SET_B * Q)	0.00008	0.00024	0.00481
	(!CLK * !D * !SCD * SET_B) + (!CLK * !D * !SCD * !SET_B * Q)	0.00398	0.00413	0.00871

sky130_fd_sc_hs__sdfstp_2	**(CLK * D * SCD) + (CLK * !D * !SCD)**	-0.00018	-0.00005	0.00464
	(CLK * D * SCD) + (CLK * !D * !SCD)	0.00397	0.00410	0.00879
	(CLK * D * !SCD)	0.00293	0.00292	0.00757
	(CLK * D * !SCD)	0.00592	0.00592	0.01048
	(CLK * !D * SCD)	0.00087	0.00082	0.00769
	(CLK * !D * SCD)	0.00603	0.00599	0.01286
	(!CLK * D * SCD * SET_B) + (!CLK * D * SCD * !SET_B * Q)	-0.00018	-0.00004	0.00465
	(!CLK * D * SCD * SET_B) + (!CLK * D * SCD * !SET_B * Q)	0.00397	0.00412	0.00879
	(!CLK * D * !SCD * SET_B)	0.00885	0.00893	0.01342
	(!CLK * D * !SCD * SET_B)	0.01153	0.01161	0.01606
	(!CLK * D * !SCD * !SET_B * Q)	0.00723	0.00730	0.01183
	(!CLK * D * !SCD * !SET_B * Q)	0.00983	0.00991	0.01439
	(!CLK * !D * SCD * SET_B)	0.00651	0.00643	0.01294
	(!CLK * !D * SCD * SET_B)	0.01196	0.01191	0.01842
	(!CLK * !D * SCD * !SET_B * Q)	0.00438	0.00431	0.01066
	(!CLK * !D * SCD * !SET_B * Q)	0.00992	0.00986	0.01619
	(!CLK * !D * !SCD * SET_B) + (!CLK * !D * !SCD * !SET_B * Q)	0.00007	0.00022	0.00480
	(!CLK * !D * !SCD * SET_B) + (!CLK * !D * !SCD * !SET_B * Q)	0.00398	0.00413	0.00870

sky130_fd_sc_hs__sdfstp_4	**(CLK * D * SCD) + (CLK * !D * !SCD)**	-0.00022	-0.00009	0.00461
	(CLK * D * SCD) + (CLK * !D * !SCD)	0.00397	0.00410	0.00880
	(CLK * D * !SCD)	0.00302	0.00300	0.00765
	(CLK * D * !SCD)	0.00603	0.00603	0.01059
	(CLK * !D * SCD)	0.00093	0.00088	0.00772
	(CLK * !D * SCD)	0.00614	0.00610	0.01294
	(!CLK * D * SCD * SET_B) + (!CLK * D * SCD * !SET_B * Q)	-0.00021	-0.00007	0.00461
	(!CLK * D * SCD * SET_B) + (!CLK * D * SCD * !SET_B * Q)	0.00398	0.00413	0.00880
	(!CLK * D * !SCD * SET_B)	0.00875	0.00883	0.01332
	(!CLK * D * !SCD * SET_B)	0.01152	0.01159	0.01605
	(!CLK * D * !SCD * !SET_B * Q)	0.00715	0.00722	0.01176
	(!CLK * D * !SCD * !SET_B * Q)	0.00985	0.00994	0.01441
	(!CLK * !D * SCD * SET_B)	0.00655	0.00648	0.01299
	(!CLK * !D * SCD * SET_B)	0.01199	0.01193	0.01845
	(!CLK * !D * SCD * !SET_B * Q)	0.00445	0.00439	0.01072
	(!CLK * !D * SCD * !SET_B * Q)	0.00997	0.00992	0.01625
	(!CLK * !D * !SCD * SET_B) + (!CLK * !D * !SCD * !SET_B * Q)	0.00005	0.00019	0.00478
	(!CLK * !D * !SCD * SET_B) + (!CLK * !D * !SCD * !SET_B * Q)	0.00400	0.00414	0.00872

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

Cell Name	When	Power(pJ)		
		first	mid	last

sky130_fd_sc_hs__sdfstp_1	**(CLK * Q)**	0.00176	0.00178	0.00176
	(CLK * Q)	-0.00164	-0.00166	-0.00165
	(!CLK * D * SCD * Q) + (!CLK * D * !SCD * !SCE * Q) + (!CLK * !D * SCD * SCE * Q)	0.00192	0.00194	0.00192
	(!CLK * D * SCD * Q) + (!CLK * D * !SCD * !SCE * Q) + (!CLK * !D * SCD * SCE * Q)	-0.00150	-0.00150	-0.00149
	(!CLK * D * !SCD * SCE * Q) + (!CLK * !D * SCD * !SCE * Q) + (!CLK * !D * !SCD * Q)	0.00360	0.00353	0.00500
	(!CLK * D * !SCD * SCE * Q) + (!CLK * !D * SCD * !SCE * Q) + (!CLK * !D * !SCD * Q)	0.00006	-0.00002	0.00146
sky130_fd_sc_hs__sdfstp_2	**(CLK * Q)**	0.00196	0.00197	0.00196
	(CLK * Q)	-0.00160	-0.00161	-0.00160
	(!CLK * D * SCD * Q) + (!CLK * D * !SCD * !SCE * Q) + (!CLK * !D * SCD * SCE * Q)	0.00215	0.00216	0.00214
	(!CLK * D * SCD * Q) + (!CLK * D * !SCD * !SCE * Q) + (!CLK * !D * SCD * SCE * Q)	-0.00143	-0.00143	-0.00142
	(!CLK * D * !SCD * SCE * Q) + (!CLK * !D * SCD * !SCE * Q) + (!CLK * !D * !SCD * Q)	0.00378	0.00372	0.00517
	(!CLK * D * !SCD * SCE * Q) + (!CLK * !D * SCD * !SCE * Q) + (!CLK * !D * !SCD * Q)	0.00010	0.00001	0.00148

sky130_fd_sc_hs__sdfstp_4	**(CLK * Q)**	0.00181	0.00183	0.00182
	(CLK * Q)	-0.00168	-0.00168	-0.00168
	(!CLK * D * SCD * Q) + (!CLK * D * !SCD * !SCE * Q) + (!CLK * !D * SCD * SCE * Q)	0.00199	0.00201	0.00200
	(!CLK * D * SCD * Q) + (!CLK * D * !SCD * !SCE * Q) + (!CLK * !D * SCD * SCE * Q)	-0.00150	-0.00151	-0.00150
	(!CLK * D * !SCD * SCE * Q) + (!CLK * !D * SCD * !SCE * Q) + (!CLK * !D * !SCD * Q)	0.00367	0.00362	0.00507
	(!CLK * D * !SCD * SCE * Q) + (!CLK * !D * SCD * !SCE * Q) + (!CLK * !D * !SCD * Q)	0.00007	-0.00003	0.00144

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

Cell Name	**When**	**Power(pJ)**		
		first	**mid**	**last**
sky130_fd_sc_hs__sdfstp_1	**(CLK * Q)**	-0.00173	-0.00176	-0.00176
	(CLK * Q)	0.00168	0.00166	0.00166
	(!CLK * D * SCD * Q) + (!CLK * D * !SCD * !SCE * Q) + (!CLK * !D * SCD * SCE * Q)	-0.00189	-0.00193	-0.00192
	(!CLK * D * SCD * Q) + (!CLK * D * !SCD * !SCE * Q) + (!CLK * !D * SCD * SCE * Q)	0.00152	0.00153	0.00150
	(!CLK * D * !SCD * SCE * Q) + (!CLK * !D * SCD * !SCE * Q) + (!CLK * !D * !SCD * Q)	-0.00004	-0.00005	0.00161
	(!CLK * D * !SCD * SCE * Q) + (!CLK * !D * SCD * !SCE * Q) + (!CLK * !D * !SCD * Q)	0.00348	0.00350	0.00514

sky130_fd_sc_hs__sdfstp_2	**(CLK * Q)**	-0.00193	-0.00195	-0.00196
	(CLK * Q)	0.00163	0.00161	0.00161
	(!CLK * D * SCD * Q) + (!CLK * D * !SCD * !SCE * Q) + (!CLK * !D * SCD * SCE * Q)	-0.00211	-0.00212	-0.00214
	(!CLK * D * SCD * Q) + (!CLK * D * !SCD * !SCE * Q) + (!CLK * !D * SCD * SCE * Q)	0.00145	0.00143	0.00143
	(!CLK * D * !SCD * SCE * Q) + (!CLK * !D * SCD * !SCE * Q) + (!CLK * !D * !SCD * Q)	-0.00009	-0.00008	0.00155
	(!CLK * D * !SCD * SCE * Q) + (!CLK * !D * SCD * !SCE * Q) + (!CLK * !D * !SCD * Q)	0.00359	0.00361	0.00523
sky130_fd_sc_hs__sdfstp_4	**(CLK * Q)**	-0.00178	-0.00183	-0.00181
	(CLK * Q)	0.00172	0.00172	0.00170
	(!CLK * D * SCD * Q) + (!CLK * D * !SCD * !SCE * Q) + (!CLK * !D * SCD * SCE * Q)	-0.00196	-0.00201	-0.00199
	(!CLK * D * SCD * Q) + (!CLK * D * !SCD * !SCE * Q) + (!CLK * !D * SCD * SCE * Q)	0.00154	0.00154	0.00152
	(!CLK * D * !SCD * SCE * Q) + (!CLK * !D * SCD * !SCE * Q) + (!CLK * !D * !SCD * Q)	-0.00002	-0.00003	0.00161
	(!CLK * D * !SCD * SCE * Q) + (!CLK * !D * SCD * !SCE * Q) + (!CLK * !D * !SCD * Q)	0.00359	0.00361	0.00524

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)**	0.01058	0.01025	0.01516
	(D * SCD * SCE * Q)	0.00743	0.00707	0.01200
	(D * !SCE * Q)	0.01058	0.01025	0.01516
	(D * !SCE * Q)	0.00742	0.00707	0.01200
	(D * !SCD * SCE * SET_B * !Q)	0.01044	0.01010	0.01503
	(D * !SCD * SCE * SET_B * !Q)	0.00728	0.00694	0.01186
	(D * !SCD * SCE * !SET_B * Q)	0.01863	0.01839	0.02371
	(D * !SCD * SCE * !SET_B * Q)	0.01519	0.01495	0.02026
	(!D * SCD * SCE * Q)	0.01058	0.01025	0.01516
	(!D * SCD * SCE * Q)	0.00742	0.00707	0.01200
	(!D * !SCE * SET_B * !Q)	0.01044	0.01010	0.01503
	(!D * !SCE * SET_B * !Q)	0.00728	0.00694	0.01186
	(!D * !SCE * !SET_B * Q)	0.01862	0.01839	0.02371
	(!D * !SCE * !SET_B * Q)	0.01519	0.01494	0.02027
	(!D * !SCD * SCE * SET_B * !Q)	0.01044	0.01011	0.01503
	(!D * !SCD * SCE * SET_B * !Q)	0.00728	0.00694	0.01186
	(!D * !SCD * SCE * !SET_B * Q)	0.01867	0.01841	0.02369
	(!D * !SCD * SCE * !SET_B * Q)	0.01524	0.01496	0.02025

sky130_fd_sc_hs__sdfstp_2	**(D * SCD * SCE * Q)**	0.01218	0.01179	0.01654
	(D * SCD * SCE * Q)	0.00906	0.00865	0.01340
	(D * !SCE * Q)	0.01218	0.01179	0.01654
	(D * !SCE * Q)	0.00905	0.00865	0.01340
	(D * !SCD * SCE * SET_B * !Q)	0.01237	0.01200	0.01670
	(D * !SCD * SCE * SET_B * !Q)	0.00923	0.00884	0.01355
	(D * !SCD * SCE * !SET_B * Q)	0.02670	0.02655	0.03222
	(D * !SCD * SCE * !SET_B * Q)	0.02323	0.02307	0.02874
	(!D * SCD * SCE * Q)	0.01218	0.01179	0.01671
	(!D * SCD * SCE * Q)	0.00905	0.00865	0.01357
	(!D * !SCE * SET_B * !Q)	0.01237	0.01200	0.01670
	(!D * !SCE * SET_B * !Q)	0.00923	0.00883	0.01354
	(!D * !SCE * !SET_B * Q)	0.02669	0.02655	0.03222
	(!D * !SCE * !SET_B * Q)	0.02322	0.02306	0.02874
	(!D * !SCD * SCE * SET_B * !Q)	0.01238	0.01200	0.01672
	(!D * !SCD * SCE * SET_B * !Q)	0.00923	0.00884	0.01357
	(!D * !SCD * SCE * !SET_B * Q)	0.02676	0.02657	0.03222
	(!D * !SCD * SCE * !SET_B * Q)	0.02329	0.02309	0.02874

sky130_fd_sc_hs__sdfstp_4	**(D * SCD * SCE * Q)**	0.01203	0.01165	0.01641
	(D * SCD * SCE * Q)	0.00890	0.00850	0.01327
	(D * !SCE * Q)	0.01203	0.01165	0.01642
	(D * !SCE * Q)	0.00889	0.00850	0.01327
	(D * !SCD * SCE * SET_B * !Q)	0.01227	0.01190	0.01662
	(D * !SCD * SCE * SET_B * !Q)	0.00912	0.00874	0.01346
	(D * !SCD * SCE * !SET_B * Q)	0.02625	0.02615	0.03195
	(D * !SCD * SCE * !SET_B * Q)	0.02283	0.02272	0.02852
	(!D * SCD * SCE * Q)	0.01203	0.01165	0.01641
	(!D * SCD * SCE * Q)	0.00890	0.00850	0.01327
	(!D * !SCE * SET_B * !Q)	0.01226	0.01190	0.01661
	(!D * !SCE * SET_B * !Q)	0.00912	0.00874	0.01346
	(!D * !SCE * !SET_B * Q)	0.02625	0.02615	0.03195
	(!D * !SCE * !SET_B * Q)	0.02283	0.02272	0.02852
	(!D * !SCD * SCE * SET_B * !Q)	0.01227	0.01190	0.01662
	(!D * !SCD * SCE * SET_B * !Q)	0.00912	0.00874	0.01347
	(!D * !SCD * SCE * !SET_B * Q)	0.02634	0.02618	0.03193
	(!D * !SCD * SCE * !SET_B * Q)	0.02292	0.02274	0.02850

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)**	0.01065	0.01067	0.01629
	(D * SCD * SCE * SET_B * !Q)	0.01363	0.01364	0.01926
	(D * SCD * SCE * Q)	0.00594	0.00601	0.01162
	(D * SCD * SCE * Q)	0.00911	0.00918	0.01479
	(D * !SCE * SET_B * !Q)	0.01062	0.01064	0.01626
	(D * !SCE * SET_B * !Q)	0.01360	0.01361	0.01923
	(D * !SCE * Q)	0.00594	0.00601	0.01162
	(D * !SCE * Q)	0.00911	0.00918	0.01479
	(D * !SCD * SCE * SET_B * Q)	0.01198	0.01212	0.01803
	(D * !SCD * SCE * SET_B * Q)	0.01537	0.01550	0.02142
	(D * !SCD * SCE * SET_B * !Q)	0.00613	0.00621	0.01182
	(D * !SCD * SCE * SET_B * !Q)	0.00930	0.00938	0.01499
	(D * !SCD * SCE * !SET_B * Q)	0.00988	0.01000	0.01595
	(D * !SCD * SCE * !SET_B * Q)	0.01332	0.01344	0.01940
	(!D * SCD * SCE * SET_B * !Q)	0.01068	0.01070	0.01632
	(!D * SCD * SCE * SET_B * !Q)	0.01364	0.01365	0.01928
	(!D * SCD * SCE * Q)	0.00594	0.00601	0.01162
	(!D * SCD * SCE * Q)	0.00911	0.00918	0.01479
	(!D * !SCE * SET_B * Q)	0.01196	0.01210	0.01800
	(!D * !SCE * SET_B * Q)	0.01533	0.01546	0.02138
	(!D * !SCE * SET_B * !Q)	0.00613	0.00621	0.01182
	(!D * !SCE * SET_B * !Q)	0.00930	0.00938	0.01499
	(!D * !SCE * !SET_B * Q)	0.00989	0.01000	0.01595
	(!D * !SCE * !SET_B * Q)	0.01334	0.01344	0.01939
	(!D * !SCD * SCE * SET_B * Q)	0.01197	0.01211	0.01802
	(!D * !SCD * SCE * SET_B * Q)	0.01536	0.01549	0.02141
	(!D * !SCD * SCE * SET_B * !Q)	0.00613	0.00621	0.01182
	(!D * !SCD * SCE * SET_B * !Q)	0.00930	0.00938	0.01499
	(!D * !SCD * SCE * !SET_B * Q)	0.00990	0.01001	0.01596
	(!D * !SCD * SCE * !SET_B * Q)	0.01335	0.01345	0.01940

sky130_fd_sc_hs__sdfstp_2	**(D * SCD * SCE * SET_B * !Q)**	0.01254	0.01252	0.01803
	(D * SCD * SCE * SET_B * !Q)	0.01537	0.01534	0.02087
	(D * SCD * SCE * Q)	0.00689	0.00698	0.01240
	(D * SCD * SCE * Q)	0.01003	0.01012	0.01553
	(D * !SCE * SET_B * !Q)	0.01251	0.01249	0.01800
	(D * !SCE * SET_B * !Q)	0.01535	0.01532	0.02085
	(D * !SCE * Q)	0.00689	0.00697	0.01240
	(D * !SCE * Q)	0.01003	0.01012	0.01553
	(D * !SCD * SCE * SET_B * Q)	0.01408	0.01423	0.02002
	(D * !SCD * SCE * SET_B * Q)	0.01751	0.01765	0.02344
	(D * !SCD * SCE * SET_B * !Q)	0.00675	0.00680	0.01231
	(D * !SCD * SCE * SET_B * !Q)	0.00990	0.00995	0.01546
	(D * !SCD * SCE * !SET_B * Q)	0.01185	0.01202	0.01782
	(D * !SCD * SCE * !SET_B * Q)	0.01533	0.01550	0.02131
	(!D * SCD * SCE * SET_B * !Q)	0.01257	0.01255	0.01806
	(!D * SCD * SCE * SET_B * !Q)	0.01539	0.01536	0.02089
	(!D * SCD * SCE * Q)	0.00689	0.00698	0.01240
	(!D * SCD * SCE * Q)	0.01003	0.01012	0.01553
	(!D * !SCE * SET_B * Q)	0.01406	0.01421	0.02000
	(!D * !SCE * SET_B * Q)	0.01747	0.01761	0.02340
	(!D * !SCE * SET_B * !Q)	0.00675	0.00680	0.01231
	(!D * !SCE * SET_B * !Q)	0.00990	0.00995	0.01546
	(!D * !SCE * !SET_B * Q)	0.01186	0.01201	0.01782
	(!D * !SCE * !SET_B * Q)	0.01535	0.01549	0.02130
	(!D * !SCD * SCE * SET_B * Q)	0.01408	0.01422	0.02002
	(!D * !SCD * SCE * SET_B * Q)	0.01750	0.01763	0.02344
	(!D * !SCD * SCE * SET_B * !Q)	0.00675	0.00680	0.01231
	(!D * !SCD * SCE * SET_B * !Q)	0.00990	0.00995	0.01546
	(!D * !SCD * SCE * !SET_B * Q)	0.01187	0.01202	0.01783
	(!D * !SCD * SCE * !SET_B * Q)	0.01535	0.01550	0.02132

sky130_fd_sc_hs__sdfstp_4	**(D * SCD * SCE * SET_B * !Q)**	0.01222	0.01226	0.01772
	(D * SCD * SCE * SET_B * !Q)	0.01512	0.01516	0.02063
	(D * SCD * SCE * Q)	0.00675	0.00684	0.01228
	(D * SCD * SCE * Q)	0.00990	0.00997	0.01541
	(D * !SCE * SET_B * !Q)	0.01219	0.01224	0.01770
	(D * !SCE * SET_B * !Q)	0.01509	0.01513	0.02061
	(D * !SCE * Q)	0.00675	0.00684	0.01228
	(D * !SCE * Q)	0.00990	0.00997	0.01541
	(D * !SCD * SCE * SET_B * Q)	0.01380	0.01395	0.01975
	(D * !SCD * SCE * SET_B * Q)	0.01718	0.01732	0.02313
	(D * !SCD * SCE * SET_B * !Q)	0.00657	0.00666	0.01214
	(D * !SCD * SCE * SET_B * !Q)	0.00972	0.00981	0.01529
	(D * !SCD * SCE * !SET_B * Q)	0.01158	0.01175	0.01758
	(D * !SCD * SCE * !SET_B * Q)	0.01500	0.01518	0.02101
	(!D * SCD * SCE * SET_B * !Q)	0.01225	0.01230	0.01776
	(!D * SCD * SCE * SET_B * !Q)	0.01514	0.01518	0.02066
	(!D * SCD * SCE * Q)	0.00675	0.00684	0.01228
	(!D * SCD * SCE * Q)	0.00990	0.00997	0.01541
	(!D * !SCE * SET_B * Q)	0.01378	0.01393	0.01973
	(!D * !SCE * SET_B * Q)	0.01714	0.01728	0.02309
	(!D * !SCE * SET_B * !Q)	0.00657	0.00666	0.01214
	(!D * !SCE * SET_B * !Q)	0.00971	0.00981	0.01529
	(!D * !SCE * !SET_B * Q)	0.01160	0.01175	0.01758
	(!D * !SCE * !SET_B * Q)	0.01504	0.01518	0.02100
	(!D * !SCD * SCE * SET_B * Q)	0.01379	0.01393	0.01975
	(!D * !SCD * SCE * SET_B * Q)	0.01717	0.01730	0.02313
	(!D * !SCD * SCE * SET_B * !Q)	0.00657	0.00666	0.01214
	(!D * !SCD * SCE * SET_B * !Q)	0.00972	0.00981	0.01529
	(!D * !SCD * SCE * !SET_B * Q)	0.01160	0.01176	0.01759
	(!D * !SCD * SCE * !SET_B * Q)	0.01504	0.01519	0.02103

SKY130_FD_SC_HS__SDFXBPx

sky130_fd_sc_hs_tt_1.50v_25C.ccs
Cell Library: Process , Voltage 1.50, 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	0.00185	0.00187	0.00398	0.00288	0.86799	0.83617
sky130_fd_sc_hs__sdfxbp_2	0.00183	0.00183	0.00403	0.00288	1.69814	1.67440

Leakage Information

Cell Name	Leakage(nW)		
	Min.	Avg	Max.
sky130_fd_sc_hs__sdfxbp_1	0.00000	0.45252	0.65897
sky130_fd_sc_hs__sdfxbp_2	0.00000	0.44948	0.62912

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)	0.27343	0.89705	6.99562
sky130_fd_sc_hs__sdfxbp_2	CLK->Q (RR)	0.26559	0.77868	6.94047

Delay(ns) to Q falling :

Cell Name	Timing Arc(Dir)	Delay(ns)		
		First	Mid	Last
sky130_fd_sc_hs__sdfxbp_1	CLK->Q (RF)	0.29559	0.63196	2.58670
sky130_fd_sc_hs__sdfxbp_2	CLK->Q (RF)	0.31753	0.63179	2.59083

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)	0.35055	0.97628	7.03809
sky130_fd_sc_hs__sdfxbp_2	CLK->Q_N (RR)	0.40502	0.90576	7.01714

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)	0.31835	0.62953	2.51273
sky130_fd_sc_hs__sdfxbp_2	CLK->Q_N (RF)	0.34316	0.62505	2.63328

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)	-0.07658	-0.16958	-0.94527
	setup	CLK (R)	0.17687	0.22774	1.14505
sky130_fd_sc_hs__sdfxbp_2	hold	CLK (R)	-0.07545	-0.16966	-0.94222
	setup	CLK (R)	0.17829	0.22974	1.13987

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)	-0.09433	-0.23843	-1.12174
	setup	CLK (R)	0.31882	0.41302	2.84537
sky130_fd_sc_hs__sdfxbp_2	hold	CLK (R)	-0.09352	-0.23807	-1.12578
	setup	CLK (R)	0.32376	0.41747	2.85172

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)	-0.07658	-0.16958	-0.94527
	setup	CLK (R)	0.17687	0.22774	1.14505
sky130_fd_sc_hs__sdfxbp_2	hold	CLK (R)	-0.07545	-0.16966	-0.94222
	setup	CLK (R)	0.17829	0.22974	1.13987

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)	-0.09433	-0.23843	-1.12174
	setup	CLK (R)	0.31882	0.41302	2.84537
sky130_fd_sc_hs__sdfxbp_2	hold	CLK (R)	-0.09352	-0.23807	-1.12578
	setup	CLK (R)	0.32376	0.41747	2.85172

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)	-0.09856	-0.18304	-1.07235
	setup	CLK (R)	0.20631	0.24860	1.26929
sky130_fd_sc_hs__sdfxbp_2	hold	CLK (R)	-0.09786	-0.18327	-1.07007
	setup	CLK (R)	0.20212	0.24763	1.24875

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)	-0.13490	-0.29452	-1.73019
	setup	CLK (R)	0.40349	0.49811	3.21616
sky130_fd_sc_hs__sdfxbp_2	hold	CLK (R)	-0.13370	-0.29124	-1.76863
	setup	CLK (R)	0.40830	0.50147	3.21370

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)	-0.09856	-0.18304	-1.07235
	hold	CLK (R)	-0.09958	-0.18719	-1.08049
	setup	CLK (R)	0.20497	0.24755	1.26226
	setup	CLK (R)	0.20631	0.24860	1.26929
sky130_fd_sc_hs__sdfxbp_2	hold	CLK (R)	-0.09786	-0.18327	-1.07007
	hold	CLK (R)	-0.10217	-0.18729	-1.07976
	setup	CLK (R)	0.19935	0.24355	1.24177
	setup	CLK (R)	0.20212	0.24763	1.24875

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)	-0.14925	-0.31484	-1.81021
	hold	CLK (R)	-0.13490	-0.29452	-1.73019
	setup	CLK (R)	0.40262	0.49811	3.21616
	setup	CLK (R)	0.40349	0.49528	3.20939
sky130_fd_sc_hs__sdfxbp_2	hold	CLK (R)	-0.14536	-0.31116	-1.84584
	hold	CLK (R)	-0.13370	-0.29124	-1.76863
	setup	CLK (R)	0.40830	0.50147	3.21370
	setup	CLK (R)	0.40602	0.49953	3.20574

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)	-0.08863	-0.18247	-0.03436
	setup	CLK (R)	0.39193	0.38820	1.39726
sky130_fd_sc_hs__sdfxbp_2	hold	CLK (R)	-0.08506	-0.18177	-0.03659
	setup	CLK (R)	0.39892	0.39654	1.35495

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)	-0.12132	-0.26152	-1.42620
	setup	CLK (R)	0.34322	0.43555	4.05691
sky130_fd_sc_hs__sdfxbp_2	hold	CLK (R)	-0.11980	-0.26235	-1.48068
	setup	CLK (R)	0.34898	0.44209	3.03901

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)	-0.13708	-0.20207	-0.03436
	hold	CLK (R)	-0.08863	-0.18247	-0.98775
	setup	CLK (R)	0.39193	0.38820	1.39726
	setup	CLK (R)	0.19123	0.24549	1.21320
sky130_fd_sc_hs__sdfxbp_2	hold	CLK (R)	-0.13502	-0.20373	-0.03659
	hold	CLK (R)	-0.08506	-0.18177	-0.98669
	setup	CLK (R)	0.39892	0.39654	1.35495
	setup	CLK (R)	0.18792	0.24411	1.19183

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)	-0.16283	-0.31412	-2.30297
	hold	CLK (R)	-0.12132	-0.26152	-1.42620
	setup	CLK (R)	0.26006	0.36707	2.39403
	setup	CLK (R)	0.34322	0.43555	4.05691
sky130_fd_sc_hs__sdfxbp_2	hold	CLK (R)	-0.16221	-0.31829	-2.31140
	hold	CLK (R)	-0.11980	-0.26235	-1.48068
	setup	CLK (R)	0.26339	0.37107	2.40258
	setup	CLK (R)	0.34898	0.44209	3.03901

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 ()	0.13115	0.74341	16.50020
	min_pulse_width	CLK ()	0.09790	0.74341	16.50020
sky130_fd_sc_hs__sdfxbp_2	min_pulse_width	CLK ()	0.13115	0.74341	16.50020
	min_pulse_width	CLK ()	0.10067	0.74341	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 ()	0.23919	0.74341	16.50020
	min_pulse_width	CLK ()	0.31953	0.74341	16.50020
sky130_fd_sc_hs__sdfxbp_2	min_pulse_width	CLK ()	0.24196	0.74341	16.50020
	min_pulse_width	CLK ()	0.32784	0.74341	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	0.01075	0.01074	0.01345
	CLK	0.00917	0.00913	0.01186
sky130_fd_sc_hs__sdfxbp_2	CLK	0.01290	0.01320	0.01593
	CLK	0.01132	0.01159	0.01435

Internal switching power(pJ) to Q falling :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__sdfxbp_1	CLK	0.01102	0.01110	0.01398
	CLK	0.00943	0.00951	0.01239
sky130_fd_sc_hs__sdfxbp_2	CLK	0.01309	0.01348	0.01640
	CLK	0.01150	0.01188	0.01479

Internal switching power(pJ) to Q_N rising :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__sdfxbp_1	CLK	0.01103	0.01117	0.01415
	CLK	0.00944	0.00952	0.01256
sky130_fd_sc_hs__sdfxbp_2	CLK	0.01310	0.01357	0.01650
	CLK	0.01151	0.01190	0.01492

Internal switching power(pJ) to Q_N falling :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__sdfxbp_1	CLK	0.01074	0.01070	0.01331
	CLK	0.00915	0.00911	0.01172
sky130_fd_sc_hs__sdfxbp_2	CLK	0.01289	0.01320	0.01588
	CLK	0.01131	0.01158	0.01424

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__sdfxbp_1	(CLK * SCD * SCE)	0.00095	0.00095	0.00095
	(CLK * SCD * SCE)	-0.00044	-0.00044	-0.00044
	(CLK * !SCE)	0.00315	0.00304	0.00674
	(CLK * !SCE)	0.00076	0.00064	0.00435
	(CLK * !SCD * SCE)	0.00056	0.00056	0.00055
	(CLK * !SCD * SCE)	-0.00092	-0.00093	-0.00095
	(!CLK * SCD * SCE)	0.00094	0.00095	0.00095
	(!CLK * SCD * SCE)	-0.00044	-0.00045	-0.00044
	(!CLK * !SCE * Q * !Q_N) + (!CLK * !SCE * !Q * Q_N)	0.00731	0.00720	0.01048
	(!CLK * !SCE * Q * !Q_N) + (!CLK * !SCE * !Q * Q_N)	0.00491	0.00480	0.00809
	(!CLK * !SCD * SCE)	0.00056	0.00056	0.00055
	(!CLK * !SCD * SCE)	-0.00092	-0.00093	-0.00095
sky130_fd_sc_hs__sdfxbp_2	(CLK * SCD * SCE)	0.00096	0.00096	0.00096
	(CLK * SCD * SCE)	-0.00043	-0.00043	-0.00043
	(CLK * !SCE)	0.00309	0.00298	0.00667
	(CLK * !SCE)	0.00072	0.00060	0.00430
	(CLK * !SCD * SCE)	0.00058	0.00058	0.00057
	(CLK * !SCD * SCE)	-0.00090	-0.00092	-0.00093
	(!CLK * SCD * SCE)	0.00096	0.00096	0.00096
	(!CLK * SCD * SCE)	-0.00043	-0.00044	-0.00043
	(!CLK * !SCE * Q * !Q_N) + (!CLK * !SCE * !Q * Q_N)	0.00735	0.00724	0.01052
	(!CLK * !SCE * Q * !Q_N) + (!CLK * !SCE * !Q * Q_N)	0.00498	0.00487	0.00815
	(!CLK * !SCD * SCE)	0.00058	0.00058	0.00057
	(!CLK * !SCD * SCE)	-0.00090	-0.00091	-0.00093

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__sdfxbp_1	(CLK * SCD * SCE)	-0.00090	-0.00092	-0.00094
	(CLK * SCD * SCE)	0.00048	0.00048	0.00046
	(CLK * !SCE)	0.00070	0.00077	0.00477
	(CLK * !SCE)	0.00310	0.00317	0.00716
	(CLK * !SCD * SCE)	-0.00052	-0.00053	-0.00053
	(CLK * !SCD * SCE)	0.00094	0.00095	0.00095
	(!CLK * SCD * SCE)	-0.00090	-0.00092	-0.00094
	(!CLK * SCD * SCE)	0.00048	0.00048	0.00046
	(!CLK * !SCE * Q * !Q_N) + (!CLK * !SCE * !Q * Q_N)	0.00524	0.00530	0.00961
	(!CLK * !SCE * Q * !Q_N) + (!CLK * !SCE * !Q * Q_N)	0.00764	0.00769	0.01201
	(!CLK * !SCD * SCE)	-0.00053	-0.00054	-0.00053
	(!CLK * !SCD * SCE)	0.00095	0.00095	0.00095
sky130_fd_sc_hs__sdfxbp_2	(CLK * SCD * SCE)	-0.00091	-0.00093	-0.00095
	(CLK * SCD * SCE)	0.00047	0.00047	0.00045
	(CLK * !SCE)	0.00079	0.00086	0.00485
	(CLK * !SCE)	0.00316	0.00323	0.00722
	(CLK * !SCD * SCE)	-0.00055	-0.00056	-0.00055
	(CLK * !SCD * SCE)	0.00092	0.00093	0.00093
	(!CLK * SCD * SCE)	-0.00091	-0.00093	-0.00095
	(!CLK * SCD * SCE)	0.00047	0.00047	0.00045
	(!CLK * !SCE * Q * !Q_N) + (!CLK * !SCE * !Q * Q_N)	0.00525	0.00531	0.00962
	(!CLK * !SCE * Q * !Q_N) + (!CLK * !SCE * !Q * Q_N)	0.00762	0.00767	0.01199
	(!CLK * !SCD * SCE)	-0.00055	-0.00056	-0.00055
	(!CLK * !SCD * SCE)	0.00093	0.00094	0.00093

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__sdfxbp_1	(CLK * D * SCE)	0.00436	0.00421	0.00603
	(CLK * D * SCE)	0.00132	0.00116	0.00299
	(CLK * !D * SCE)	0.00492	0.00478	0.00646
	(CLK * !D * SCE)	0.00178	0.00162	0.00331
	(!CLK * D * SCE * Q * !Q_N) + (!CLK * D * SCE * !Q * Q_N)	0.00850	0.00836	0.01013
	(!CLK * D * SCE * Q * !Q_N) + (!CLK * D * SCE * !Q * Q_N)	0.00547	0.00532	0.00709
	(!CLK * !D * SCE * Q * !Q_N) + (!CLK * !D * SCE * !Q * Q_N)	0.00906	0.00894	0.01056
	(!CLK * !D * SCE * Q * !Q_N) + (!CLK * !D * SCE * !Q * Q_N)	0.00592	0.00578	0.00741
	!SCE	0.00088	0.00079	0.00077
	!SCE	-0.00081	-0.00091	-0.00092
sky130_fd_sc_hs__sdfxbp_2	(CLK * D * SCE)	0.00427	0.00413	0.00596
	(CLK * D * SCE)	0.00128	0.00113	0.00296
	(CLK * !D * SCE)	0.00484	0.00470	0.00638
	(CLK * !D * SCE)	0.00173	0.00159	0.00328
	(!CLK * D * SCE * Q * !Q_N) + (!CLK * D * SCE * !Q * Q_N)	0.00852	0.00839	0.01015
	(!CLK * D * SCE * Q * !Q_N) + (!CLK * D * SCE * !Q * Q_N)	0.00553	0.00539	0.00716
	(!CLK * !D * SCE * Q * !Q_N) + (!CLK * !D * SCE * !Q * Q_N)	0.00909	0.00896	0.01059
	(!CLK * !D * SCE * Q * !Q_N) + (!CLK * !D * SCE * !Q * Q_N)	0.00598	0.00585	0.00748
	!SCE	0.00085	0.00076	0.00074
	!SCE	-0.00082	-0.00092	-0.00093

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__sdfxbp_1	(CLK * D * SCE)	0.00157	0.00143	0.00332
	(CLK * D * SCE)	0.00462	0.00449	0.00636
	(CLK * !D * SCE)	0.00126	0.00113	0.00310
	(CLK * !D * SCE)	0.00441	0.00429	0.00624
	(!CLK * D * SCE * Q * !Q_N) + (!CLK * D * SCE * !Q * Q_N)	0.00611	0.00595	0.00821
	(!CLK * D * SCE * Q * !Q_N) + (!CLK * D * SCE * !Q * Q_N)	0.00915	0.00900	0.01124
	(!CLK * !D * SCE * Q * !Q_N) + (!CLK * !D * SCE * !Q * Q_N)	0.00580	0.00567	0.00804
	(!CLK * !D * SCE * Q * !Q_N) + (!CLK * !D * SCE * !Q * Q_N)	0.00895	0.00882	0.01117
	!SCE	-0.00074	-0.00076	-0.00076
	!SCE	0.00093	0.00094	0.00094
sky130_fd_sc_hs__sdfxbp_2	(CLK * D * SCE)	0.00165	0.00151	0.00341
	(CLK * D * SCE)	0.00465	0.00452	0.00640
	(CLK * !D * SCE)	0.00134	0.00121	0.00319
	(CLK * !D * SCE)	0.00444	0.00432	0.00628
	(!CLK * D * SCE * Q * !Q_N) + (!CLK * D * SCE * !Q * Q_N)	0.00608	0.00595	0.00820
	(!CLK * D * SCE * Q * !Q_N) + (!CLK * D * SCE * !Q * Q_N)	0.00909	0.00896	0.01120
	(!CLK * !D * SCE * Q * !Q_N) + (!CLK * !D * SCE * !Q * Q_N)	0.00580	0.00566	0.00804
	(!CLK * !D * SCE * Q * !Q_N) + (!CLK * !D * SCE * !Q * Q_N)	0.00890	0.00877	0.01114
	!SCE	-0.00071	-0.00073	-0.00074
	!SCE	0.00094	0.00094	0.00095

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)**	0.00404	0.00384	0.00815
	(CLK * D * SCD) + (CLK * !D * !SCD)	-0.00027	-0.00051	0.00383
	(CLK * D * !SCD)	0.00600	0.00578	0.01015
	(CLK * D * !SCD)	0.00291	0.00267	0.00701
	(CLK * !D * SCD)	0.00711	0.00688	0.01353
	(CLK * !D * SCD)	0.00171	0.00149	0.00815
	(!CLK * D * SCD * Q * !Q_N) + (!CLK * D * SCD * !Q * Q_N)	0.00404	0.00384	0.00815
	(!CLK * D * SCD * Q * !Q_N) + (!CLK * D * SCD * !Q * Q_N)	-0.00027	-0.00051	0.00383
	(!CLK * D * !SCD * Q * !Q_N) + (!CLK * D * !SCD * !Q * Q_N)	0.01040	0.01028	0.01463
	(!CLK * D * !SCD * Q * !Q_N) + (!CLK * D * !SCD * !Q * Q_N)	0.00731	0.00717	0.01150
	(!CLK * !D * SCD * Q * !Q_N) + (!CLK * !D * SCD * !Q * Q_N)	0.01125	0.01098	0.01764
	(!CLK * !D * SCD * Q * !Q_N) + (!CLK * !D * SCD * !Q * Q_N)	0.00586	0.00559	0.01226
	(!CLK * !D * !SCD * Q * !Q_N) + (!CLK * !D * !SCD * !Q * Q_N)	0.00389	0.00374	0.00805
	(!CLK * !D * !SCD * Q * !Q_N) + (!CLK * !D * !SCD * !Q * Q_N)	-0.00018	-0.00035	0.00397

sky130_fd_sc_hs__sdfxbp_2	**(CLK * D * SCD) + (CLK * !D * !SCD)**	0.00421	0.00398	0.00828
	(CLK * D * SCD) + (CLK * !D * !SCD)	-0.00021	-0.00046	0.00385
	(CLK * D * !SCD)	0.00623	0.00600	0.01034
	(CLK * D * !SCD)	0.00302	0.00276	0.00709
	(CLK * !D * SCD)	0.00722	0.00699	0.01359
	(CLK * !D * SCD)	0.00176	0.00151	0.00814
	(!CLK * D * SCD * Q * !Q_N) + (!CLK * D * SCD * !Q * Q_N)	0.00421	0.00398	0.00828
	(!CLK * D * SCD * Q * !Q_N) + (!CLK * D * SCD * !Q * Q_N)	-0.00021	-0.00046	0.00385
	(!CLK * D * !SCD * Q * !Q_N) + (!CLK * D * !SCD * !Q * Q_N)	0.01055	0.01042	0.01476
	(!CLK * D * !SCD * Q * !Q_N) + (!CLK * D * !SCD * !Q * Q_N)	0.00735	0.00720	0.01150
	(!CLK * !D * SCD * Q * !Q_N) + (!CLK * !D * SCD * !Q * Q_N)	0.01147	0.01120	0.01781
	(!CLK * !D * SCD * Q * !Q_N) + (!CLK * !D * SCD * !Q * Q_N)	0.00601	0.00573	0.01236
	(!CLK * !D * !SCD * Q * !Q_N) + (!CLK * !D * !SCD * !Q * Q_N)	0.00404	0.00388	0.00815
	(!CLK * !D * !SCD * Q * !Q_N) + (!CLK * !D * !SCD * !Q * Q_N)	-0.00012	-0.00030	0.00398

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)**	-0.00033	-0.00022	0.00450
	(CLK * D * SCD) + (CLK * !D * !SCD)	0.00398	0.00411	0.00883
	(CLK * D * !SCD)	0.00289	0.00284	0.00754
	(CLK * D * !SCD)	0.00599	0.00597	0.01057
	(CLK * !D * SCD)	0.00097	0.00089	0.00775
	(CLK * !D * SCD)	0.00634	0.00629	0.01314
	(!CLK * D * SCD * Q * !Q_N) + (!CLK * D * SCD * !Q * Q_N)	-0.00033	-0.00022	0.00450
	(!CLK * D * SCD * Q * !Q_N) + (!CLK * D * SCD * !Q * Q_N)	0.00398	0.00410	0.00882
	(!CLK * D * !SCD * Q * !Q_N) + (!CLK * D * !SCD * !Q * Q_N)	0.00701	0.00705	0.01165
	(!CLK * D * !SCD * Q * !Q_N) + (!CLK * D * !SCD * !Q * Q_N)	0.01011	0.01016	0.01471
	(!CLK * !D * SCD * Q * !Q_N) + (!CLK * !D * SCD * !Q * Q_N)	0.00550	0.00539	0.01247
	(!CLK * !D * SCD * Q * !Q_N) + (!CLK * !D * SCD * !Q * Q_N)	0.01088	0.01078	0.01786
	(!CLK * !D * !SCD * Q * !Q_N) + (!CLK * !D * !SCD * !Q * Q_N)	0.00003	0.00010	0.00476
	(!CLK * !D * !SCD * Q * !Q_N) + (!CLK * !D * !SCD * !Q * Q_N)	0.00409	0.00418	0.00883

sky130_fd_sc_hs__sdfxbp_2	**(CLK * D * SCD) + (CLK * !D * !SCD)**	-0.00036	-0.00026	0.00444
	(CLK * D * SCD) + (CLK * !D * !SCD)	0.00405	0.00415	0.00886
	(CLK * D * !SCD)	0.00281	0.00275	0.00743
	(CLK * D * !SCD)	0.00603	0.00599	0.01058
	(CLK * !D * SCD)	0.00104	0.00094	0.00778
	(CLK * !D * SCD)	0.00648	0.00641	0.01324
	(!CLK * D * SCD * Q * !Q_N) + (!CLK * D * SCD * !Q * Q_N)	-0.00036	-0.00026	0.00444
	(!CLK * D * SCD * Q * !Q_N) + (!CLK * D * SCD * !Q * Q_N)	0.00405	0.00414	0.00886
	(!CLK * D * !SCD * Q * !Q_N) + (!CLK * D * !SCD * !Q * Q_N)	0.00703	0.00706	0.01165
	(!CLK * D * !SCD * Q * !Q_N) + (!CLK * D * !SCD * !Q * Q_N)	0.01026	0.01029	0.01482
	(!CLK * !D * SCD * Q * !Q_N) + (!CLK * !D * SCD * !Q * Q_N)	0.00548	0.00537	0.01242
	(!CLK * !D * SCD * Q * !Q_N) + (!CLK * !D * SCD * !Q * Q_N)	0.01093	0.01083	0.01788
	(!CLK * !D * !SCD * Q * !Q_N) + (!CLK * !D * !SCD * !Q * Q_N)	0.00001	0.00007	0.00471
	(!CLK * !D * !SCD * Q * !Q_N) + (!CLK * !D * !SCD * !Q * Q_N)	0.00418	0.00425	0.00889

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)	0.00991	0.00953	0.01471
	(D * SCD * SCE * Q * !Q_N)	0.00674	0.00634	0.01153
	(D * !SCE * Q * !Q_N)	0.00990	0.00953	0.01470
	(D * !SCE * Q * !Q_N)	0.00673	0.00634	0.01152
	(D * !SCD * SCE * !Q * Q_N)	0.00979	0.00940	0.01458
	(D * !SCD * SCE * !Q * Q_N)	0.00661	0.00621	0.01140
	(!D * SCD * SCE * Q * !Q_N)	0.00991	0.00953	0.01471
	(!D * SCD * SCE * Q * !Q_N)	0.00674	0.00634	0.01153
	(!D * !SCE * !Q * Q_N)	0.00978	0.00940	0.01458
	(!D * !SCE * !Q * Q_N)	0.00661	0.00621	0.01140
	(!D * !SCD * SCE * !Q * Q_N)	0.00979	0.00940	0.01458
	(!D * !SCD * SCE * !Q * Q_N)	0.00661	0.00621	0.01140
sky130_fd_sc_hs__sdfxbp_2	(D * SCD * SCE * Q * !Q_N)	0.01013	0.00974	0.01489
	(D * SCD * SCE * Q * !Q_N)	0.00696	0.00656	0.01171
	(D * !SCE * Q * !Q_N)	0.01012	0.00974	0.01488
	(D * !SCE * Q * !Q_N)	0.00695	0.00655	0.01171
	(D * !SCD * SCE * !Q * Q_N)	0.01001	0.00962	0.01474
	(D * !SCD * SCE * !Q * Q_N)	0.00684	0.00644	0.01156
	(!D * SCD * SCE * Q * !Q_N)	0.01013	0.00974	0.01489
	(!D * SCD * SCE * Q * !Q_N)	0.00696	0.00656	0.01171
	(!D * !SCE * !Q * Q_N)	0.01001	0.00962	0.01477
	(!D * !SCE * !Q * Q_N)	0.00684	0.00644	0.01159
	(!D * !SCD * SCE * !Q * Q_N)	0.01001	0.00962	0.01477
	(!D * !SCD * SCE * !Q * Q_N)	0.00684	0.00644	0.01160

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)**	0.00561	0.00561	0.01129
	(D * SCD * SCE * Q * !Q_N)	0.00880	0.00879	0.01447
	(D * SCD * SCE * !Q * Q_N)	0.00960	0.00944	0.01530
	(D * SCD * SCE * !Q * Q_N)	0.01278	0.01261	0.01847
	(D * !SCE * Q * !Q_N)	0.00561	0.00561	0.01129
	(D * !SCE * Q * !Q_N)	0.00880	0.00879	0.01447
	(D * !SCE * !Q * Q_N)	0.00956	0.00941	0.01529
	(D * !SCE * !Q * Q_N)	0.01274	0.01259	0.01847
	(D * !SCD * SCE * Q * !Q_N)	0.01106	0.01108	0.01709
	(D * !SCD * SCE * Q * !Q_N)	0.01426	0.01427	0.02030
	(D * !SCD * SCE * !Q * Q_N)	0.00566	0.00563	0.01136
	(D * !SCD * SCE * !Q * Q_N)	0.00885	0.00882	0.01455
	(!D * SCD * SCE * Q * !Q_N)	0.00561	0.00561	0.01129
	(!D * SCD * SCE * Q * !Q_N)	0.00880	0.00879	0.01447
	(!D * SCD * SCE * !Q * Q_N)	0.00962	0.00947	0.01533
	(!D * SCD * SCE * !Q * Q_N)	0.01279	0.01264	0.01850
	(!D * !SCE * Q * !Q_N)	0.01104	0.01104	0.01706
	(!D * !SCE * Q * !Q_N)	0.01422	0.01421	0.02024
	(!D * !SCE * !Q * Q_N)	0.00566	0.00563	0.01136
	(!D * !SCE * !Q * Q_N)	0.00884	0.00881	0.01453
	(!D * !SCD * SCE * Q * !Q_N)	0.01105	0.01106	0.01708
	(!D * !SCD * SCE * Q * !Q_N)	0.01425	0.01424	0.02027
	(!D * !SCD * SCE * !Q * Q_N)	0.00566	0.00565	0.01136
	(!D * !SCD * SCE * !Q * Q_N)	0.00885	0.00883	0.01454

sky130_fd_sc_hs__sdfxbp_2	**(D * SCD * SCE * Q * !Q_N)**	0.00570	0.00573	0.01136
	(D * SCD * SCE * Q * !Q_N)	0.00888	0.00891	0.01454
	(D * SCD * SCE * !Q * Q_N)	0.00977	0.00967	0.01547
	(D * SCD * SCE * !Q * Q_N)	0.01295	0.01284	0.01864
	(D * !SCE * Q * !Q_N)	0.00570	0.00573	0.01136
	(D * !SCE * Q * !Q_N)	0.00888	0.00891	0.01454
	(D * !SCE * !Q * Q_N)	0.00973	0.00964	0.01545
	(D * !SCE * !Q * Q_N)	0.01291	0.01281	0.01863
	(D * !SCD * SCE * Q * !Q_N)	0.01105	0.01113	0.01711
	(D * !SCD * SCE * Q * !Q_N)	0.01425	0.01431	0.02029
	(D * !SCD * SCE * !Q * Q_N)	0.00572	0.00574	0.01142
	(D * !SCD * SCE * !Q * Q_N)	0.00891	0.00892	0.01460
	(!D * SCD * SCE * Q * !Q_N)	0.00570	0.00573	0.01136
	(!D * SCD * SCE * Q * !Q_N)	0.00888	0.00891	0.01454
	(!D * SCD * SCE * !Q * Q_N)	0.00979	0.00970	0.01550
	(!D * SCD * SCE * !Q * Q_N)	0.01296	0.01286	0.01866
	(!D * !SCE * Q * !Q_N)	0.01103	0.01110	0.01707
	(!D * !SCE * Q * !Q_N)	0.01421	0.01427	0.02024
	(!D * !SCE * !Q * Q_N)	0.00572	0.00573	0.01141
	(!D * !SCE * !Q * Q_N)	0.00890	0.00891	0.01459
	(!D * !SCD * SCE * Q * !Q_N)	0.01105	0.01109	0.01710
	(!D * !SCD * SCE * Q * !Q_N)	0.01424	0.01427	0.02029
	(!D * !SCD * SCE * !Q * Q_N)	0.00572	0.00575	0.01142
	(!D * !SCD * SCE * !Q * Q_N)	0.00891	0.00893	0.01459

SKY130_FD_SC_HS__SDFXTPx

sky130_fd_sc_hs_tt_1.50v_25C.ccs
Cell Library: Process , Voltage
1.50, 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	0.00187	0.00196	0.00413	0.00285	0.85867
sky130_fd_sc_hs__sdfxtp_2	0.00190	0.00192	0.00399	0.00288	1.66180
sky130_fd_sc_hs__sdfxtp_4	0.00188	0.00190	0.00412	0.00286	3.19585

Leakage Information

Cell Name	Leakage(nW)		
	Min.	Avg	Max.
sky130_fd_sc_hs__sdfxtp_1	0.00000	0.39505	0.63558
sky130_fd_sc_hs__sdfxtp_2	0.00000	0.37482	0.56341
sky130_fd_sc_hs__sdfxtp_4	0.00000	0.52317	0.80067

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)**	0.25319	0.87704	6.95586
sky130_fd_sc_hs__sdfxtp_2	**CLK->Q (RR)**	0.25718	0.76804	6.84120
sky130_fd_sc_hs__sdfxtp_4	**CLK->Q (RR)**	0.30781	0.74016	7.03639

Delay(ns) to Q falling :

Cell Name	Timing Arc(Dir)	Delay(ns)		
		First	Mid	Last
sky130_fd_sc_hs__sdfxtp_1	**CLK->Q (RF)**	0.28003	0.60500	2.52720
sky130_fd_sc_hs__sdfxtp_2	**CLK->Q (RF)**	0.29263	0.59156	2.52380
sky130_fd_sc_hs__sdfxtp_4	**CLK->Q (RF)**	0.29302	0.56060	2.57060

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)	-0.07639	-0.17030	-0.95705
	setup	CLK (R)	0.17929	0.23374	1.15323
sky130_fd_sc_hs__sdfxtp_2	hold	CLK (R)	-0.08002	-0.17161	-0.97088
	setup	CLK (R)	0.18938	0.23873	1.16112
sky130_fd_sc_hs__sdfxtp_4	hold	CLK (R)	-0.07854	-0.16987	-0.94668
	setup	CLK (R)	0.17829	0.22974	1.13858

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)	-0.09700	-0.24000	-1.10568
	setup	CLK (R)	0.32858	0.41975	4.19522
sky130_fd_sc_hs__sdfxtp_2	hold	CLK (R)	-0.10348	-0.24563	-1.16612
	setup	CLK (R)	0.34696	0.43583	4.18797
sky130_fd_sc_hs__sdfxtp_4	hold	CLK (R)	-0.10122	-0.24271	-1.31596
	setup	CLK (R)	0.32739	0.41673	2.86190

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)	-0.07639	-0.17030	-0.95705
	setup	CLK (R)	0.17929	0.23374	1.15323
sky130_fd_sc_hs__sdfxtp_2	hold	CLK (R)	-0.08002	-0.17161	-0.97088
	setup	CLK (R)	0.18938	0.23873	1.16112
sky130_fd_sc_hs__sdfxtp_4	hold	CLK (R)	-0.07854	-0.16987	-0.94668
	setup	CLK (R)	0.17829	0.22974	1.13858

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)	-0.09700	-0.24000	-1.10568
	setup	CLK (R)	0.32858	0.41975	4.19522
sky130_fd_sc_hs__sdfxtp_2	hold	CLK (R)	-0.10348	-0.24563	-1.16612
	setup	CLK (R)	0.34696	0.43583	4.18797
sky130_fd_sc_hs__sdfxtp_4	hold	CLK (R)	-0.10122	-0.24271	-1.31596
	setup	CLK (R)	0.32739	0.41673	2.86190

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)	-0.09913	-0.18591	-1.08668
	setup	CLK (R)	0.20448	0.25277	1.27779
sky130_fd_sc_hs__sdfxtp_2	hold	CLK (R)	-0.10043	-0.18860	-1.09218
	setup	CLK (R)	0.21673	0.25749	1.28238
sky130_fd_sc_hs__sdfxtp_4	hold	CLK (R)	-0.09664	-0.18282	-1.07610
	setup	CLK (R)	0.20591	0.25155	1.26390

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)	-0.13969	-0.30067	-1.67292
	setup	CLK (R)	0.41319	0.50826	3.25271
sky130_fd_sc_hs__sdfxtp_2	hold	CLK (R)	-0.14141	-0.30261	-1.72940
	setup	CLK (R)	0.43047	0.52222	3.27341
sky130_fd_sc_hs__sdfxtp_4	hold	CLK (R)	-0.14210	-0.30263	-1.93185
	setup	CLK (R)	0.41230	0.50404	3.22697

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)	-0.09913	-0.18591	-1.08668
	hold	CLK (R)	-0.10135	-0.18936	-1.09380
	setup	CLK (R)	0.20411	0.24755	1.27442
	setup	CLK (R)	0.20448	0.25277	1.27779
sky130_fd_sc_hs__sdfxtp_2	hold	CLK (R)	-0.10043	-0.18860	-1.09218
	hold	CLK (R)	-0.10539	-0.19061	-1.10314
	setup	CLK (R)	0.21444	0.25543	1.27341
	setup	CLK (R)	0.21673	0.25749	1.28238
sky130_fd_sc_hs__sdfxtp_4	hold	CLK (R)	-0.09664	-0.18282	-1.07610
	hold	CLK (R)	-0.10150	-0.18827	-1.08129
	setup	CLK (R)	0.20527	0.24530	1.25679
	setup	CLK (R)	0.20591	0.25155	1.26390

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)	-0.15155	-0.31763	-1.72923
	hold	CLK (R)	-0.13969	-0.30067	-1.67292
	setup	CLK (R)	0.41319	0.50826	3.25271
	setup	CLK (R)	0.41173	0.50678	3.23624
sky130_fd_sc_hs__sdfxtp_2	hold	CLK (R)	-0.15592	-0.32110	-1.79698
	hold	CLK (R)	-0.14141	-0.30261	-1.72940
	setup	CLK (R)	0.43022	0.52222	3.27341
	setup	CLK (R)	0.43047	0.51942	3.26468
sky130_fd_sc_hs__sdfxtp_4	hold	CLK (R)	-0.15546	-0.31760	-1.99279
	hold	CLK (R)	-0.14210	-0.30263	-1.93185
	setup	CLK (R)	0.41230	0.50364	3.22697
	setup	CLK (R)	0.40921	0.50404	3.21762

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)	-0.08991	-0.18455	-0.03064
	setup	CLK (R)	0.40446	0.40244	1.54827
sky130_fd_sc_hs__sdfxtp_2	hold	CLK (R)	-0.09006	-0.18609	-0.01346
	setup	CLK (R)	0.42218	0.41561	1.49226
sky130_fd_sc_hs__sdfxtp_4	hold	CLK (R)	-0.08627	-0.18104	-0.08587
	setup	CLK (R)	0.40143	0.40084	1.38283

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)	-0.12143	-0.26854	-1.34323
	setup	CLK (R)	0.35355	0.44609	4.24053
sky130_fd_sc_hs__sdfxtp_2	hold	CLK (R)	-0.12365	-0.26803	-1.45469
	setup	CLK (R)	0.36953	0.45795	4.07117
sky130_fd_sc_hs__sdfxtp_4	hold	CLK (R)	-0.12591	-0.26859	-1.62897
	setup	CLK (R)	0.34984	0.44164	3.04794

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)	-0.13895	-0.20904	-0.03064
	hold	CLK (R)	-0.08991	-0.18455	-0.99958
	setup	CLK (R)	0.40446	0.40244	1.54827
	setup	CLK (R)	0.19311	0.24755	1.22550
sky130_fd_sc_hs__sdfxtp_2	hold	CLK (R)	-0.14429	-0.21509	-0.01346
	hold	CLK (R)	-0.09006	-0.18609	-1.00645
	setup	CLK (R)	0.42218	0.41561	1.49226
	setup	CLK (R)	0.20204	0.25749	1.22724
sky130_fd_sc_hs__sdfxtp_4	hold	CLK (R)	-0.14506	-0.21306	-0.08587
	hold	CLK (R)	-0.08627	-0.18104	-0.98895
	setup	CLK (R)	0.40143	0.40084	1.38283
	setup	CLK (R)	0.18911	0.24755	1.20801

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)	-0.16834	-0.32358	-2.33383
	hold	CLK (R)	-0.12143	-0.26854	-1.34323
	setup	CLK (R)	0.26425	0.37643	2.42607
	setup	CLK (R)	0.35355	0.44609	4.24053
sky130_fd_sc_hs__sdfxtp_2	hold	CLK (R)	-0.16472	-0.32000	-2.31417
	hold	CLK (R)	-0.12365	-0.26803	-1.45469
	setup	CLK (R)	0.27415	0.37675	2.40810
	setup	CLK (R)	0.36953	0.45795	4.07117
sky130_fd_sc_hs__sdfxtp_4	hold	CLK (R)	-0.16433	-0.32026	-2.32162
	hold	CLK (R)	-0.12591	-0.26859	-1.62897
	setup	CLK (R)	0.26748	0.37431	2.41765
	setup	CLK (R)	0.34984	0.44164	3.04794

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 ()	0.12283	0.74341	16.50020
	min_pulse_width	CLK ()	0.09790	0.74341	16.50020
sky130_fd_sc_hs__sdfxtp_2	min_pulse_width	CLK ()	0.13115	0.74341	16.50020
	min_pulse_width	CLK ()	0.10067	0.74341	16.50020
sky130_fd_sc_hs__sdfxtp_4	min_pulse_width	CLK ()	0.16439	0.74341	16.50020
	min_pulse_width	CLK ()	0.10344	0.74341	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 ()	0.23919	0.74341	16.50020
	min_pulse_width	CLK ()	0.32230	0.74341	16.50020
sky130_fd_sc_hs__sdfxtp_2	min_pulse_width	CLK ()	0.25304	0.74341	16.50020
	min_pulse_width	CLK ()	0.33338	0.74341	16.50020
sky130_fd_sc_hs__sdfxtp_4	min_pulse_width	CLK ()	0.23919	0.74341	16.50020
	min_pulse_width	CLK ()	0.32507	0.74341	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	0.01665	0.01644	0.02191
	CLK	0.01352	0.01330	0.01878
sky130_fd_sc_hs__sdfxtp_2	CLK	0.01905	0.01911	0.02453
	CLK	0.01588	0.01594	0.02141
sky130_fd_sc_hs__sdfxtp_4	CLK	0.02374	0.02414	0.02975
	CLK	0.02060	0.02101	0.02676

Internal switching power(pJ) to Q falling :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__sdfxtp_1	CLK	0.01745	0.01747	0.02333
	CLK	0.01431	0.01428	0.02011
sky130_fd_sc_hs__sdfxtp_2	CLK	0.01969	0.02002	0.02599
	CLK	0.01652	0.01681	0.02258
sky130_fd_sc_hs__sdfxtp_4	CLK	0.02451	0.02555	0.03198
	CLK	0.02136	0.02221	0.02841

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

Cell Name	When	Power(pJ)		
		first	mid	last

sky130_fd_sc_hs__sdfxtp_1	**(CLK * SCD * SCE)**	0.00097	0.00098	0.00097
	(CLK * SCD * SCE)	-0.00044	-0.00044	-0.00044
	(CLK * !SCE)	0.00317	0.00305	0.00673
	(CLK * !SCE)	0.00071	0.00059	0.00427
	(CLK * !SCD * SCE)	0.00058	0.00058	0.00057
	(CLK * !SCD * SCE)	-0.00092	-0.00093	-0.00095
	(!CLK * SCD * SCE)	0.00097	0.00097	0.00097
	(!CLK * SCD * SCE)	-0.00044	-0.00044	-0.00044
	(!CLK * !SCE)	0.00747	0.00736	0.01063
	(!CLK * !SCE)	0.00501	0.00490	0.00817
	(!CLK * !SCD * SCE)	0.00058	0.00058	0.00057
	(!CLK * !SCD * SCE)	-0.00092	-0.00093	-0.00095
sky130_fd_sc_hs__sdfxtp_2	**(CLK * SCD * SCE)**	0.00101	0.00101	0.00101
	(CLK * SCD * SCE)	-0.00044	-0.00044	-0.00044
	(CLK * !SCE)	0.00342	0.00330	0.00691
	(CLK * !SCE)	0.00092	0.00079	0.00441
	(CLK * !SCD * SCE)	0.00060	0.00060	0.00059
	(CLK * !SCD * SCE)	-0.00093	-0.00094	-0.00096
	(!CLK * SCD * SCE)	0.00100	0.00101	0.00100
	(!CLK * SCD * SCE)	-0.00044	-0.00044	-0.00044
	(!CLK * !SCE)	0.00809	0.00797	0.01138
	(!CLK * !SCE)	0.00559	0.00547	0.00887
	(!CLK * !SCD * SCE)	0.00061	0.00060	0.00059
	(!CLK * !SCD * SCE)	-0.00093	-0.00094	-0.00096

sky130_fd_sc_hs__sdfxtp_4	**(CLK * SCD * SCE)**	0.00099	0.00099	0.00099
	(CLK * SCD * SCE)	-0.00043	-0.00043	-0.00043
	(CLK * !SCE)	0.00317	0.00305	0.00674
	(CLK * !SCE)	0.00072	0.00060	0.00429
	(CLK * !SCD * SCE)	0.00060	0.00060	0.00059
	(CLK * !SCD * SCE)	-0.00092	-0.00093	-0.00094
	(!CLK * SCD * SCE)	0.00099	0.00100	0.00099
	(!CLK * SCD * SCE)	-0.00044	-0.00044	-0.00043
	(!CLK * !SCE)	0.00750	0.00738	0.01066
	(!CLK * !SCE)	0.00505	0.00493	0.00821
	(!CLK * !SCD * SCE)	0.00061	0.00060	0.00059
	(!CLK * !SCD * SCE)	-0.00091	-0.00092	-0.00094

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

Cell Name	**When**	**Power(pJ)**		
		first	**mid**	**last**
sky130_fd_sc_hs__sdfxtp_1	**(CLK * SCD * SCE)**	-0.00093	-0.00094	-0.00097
	(CLK * SCD * SCE)	0.00048	0.00047	0.00045
	(CLK * !SCE)	0.00076	0.00083	0.00482
	(CLK * !SCE)	0.00323	0.00329	0.00727
	(CLK * !SCD * SCE)	-0.00055	-0.00056	-0.00055
	(CLK * !SCD * SCE)	0.00094	0.00095	0.00095
	(!CLK * SCD * SCE)	-0.00093	-0.00094	-0.00097
	(!CLK * SCD * SCE)	0.00048	0.00047	0.00045
	(!CLK * !SCE)	0.00509	0.00514	0.00948
	(!CLK * !SCE)	0.00755	0.00759	0.01194
	(!CLK * !SCD * SCE)	-0.00055	-0.00056	-0.00055
	(!CLK * !SCD * SCE)	0.00095	0.00095	0.00095

sky130_fd_sc_hs__sdfxtp_2	**(CLK * SCD * SCE)**	-0.00096	-0.00098	-0.00100
	(CLK * SCD * SCE)	0.00048	0.00048	0.00045
	(CLK * !SCE)	0.00081	0.00087	0.00482
	(CLK * !SCE)	0.00332	0.00337	0.00732
	(CLK * !SCD * SCE)	-0.00057	-0.00058	-0.00058
	(CLK * !SCD * SCE)	0.00095	0.00096	0.00096
	(!CLK * SCD * SCE)	-0.00096	-0.00097	-0.00100
	(!CLK * SCD * SCE)	0.00048	0.00047	0.00045
	(!CLK * !SCE)	0.00523	0.00526	0.00955
	(!CLK * !SCE)	0.00773	0.00776	0.01205
	(!CLK * !SCD * SCE)	-0.00057	-0.00058	-0.00057
	(!CLK * !SCD * SCE)	0.00095	0.00096	0.00096
sky130_fd_sc_hs__sdfxtp_4	**(CLK * SCD * SCE)**	-0.00094	-0.00096	-0.00098
	(CLK * SCD * SCE)	0.00047	0.00047	0.00045
	(CLK * !SCE)	0.00074	0.00081	0.00480
	(CLK * !SCE)	0.00319	0.00325	0.00724
	(CLK * !SCD * SCE)	-0.00057	-0.00058	-0.00057
	(CLK * !SCD * SCE)	0.00093	0.00095	0.00094
	(!CLK * SCD * SCE)	-0.00094	-0.00096	-0.00098
	(!CLK * SCD * SCE)	0.00048	0.00047	0.00045
	(!CLK * !SCE)	0.00539	0.00542	0.00972
	(!CLK * !SCE)	0.00784	0.00786	0.01216
	(!CLK * !SCD * SCE)	-0.00057	-0.00058	-0.00057
	(!CLK * !SCD * SCE)	0.00094	0.00095	0.00094

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

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

sky130_fd_sc_hs__sdfxtp_1	**(CLK * D * SCE)**	0.00445	0.00429	0.00610
	(CLK * D * SCE)	0.00129	0.00113	0.00295
	(CLK * !D * SCE)	0.00500	0.00486	0.00652
	(CLK * !D * SCE)	0.00176	0.00160	0.00327
	(!CLK * D * SCE)	0.00874	0.00859	0.01035
	(!CLK * D * SCE)	0.00559	0.00544	0.00719
	(!CLK * !D * SCE)	0.00930	0.00917	0.01077
	(!CLK * !D * SCE)	0.00604	0.00591	0.00753
	!SCE	0.00090	0.00081	0.00079
	!SCE	-0.00086	-0.00096	-0.00097
sky130_fd_sc_hs__sdfxtp_2	**(CLK * D * SCE)**	0.00457	0.00442	0.00621
	(CLK * D * SCE)	0.00145	0.00128	0.00308
	(CLK * !D * SCE)	0.00513	0.00499	0.00664
	(CLK * !D * SCE)	0.00191	0.00175	0.00341
	(!CLK * D * SCE)	0.00923	0.00908	0.01082
	(!CLK * D * SCE)	0.00610	0.00596	0.00769
	(!CLK * !D * SCE)	0.00979	0.00966	0.01125
	(!CLK * !D * SCE)	0.00657	0.00642	0.00803
	!SCE	0.00091	0.00081	0.00080
	!SCE	-0.00081	-0.00091	-0.00092
sky130_fd_sc_hs__sdfxtp_4	**(CLK * D * SCE)**	0.00441	0.00426	0.00608
	(CLK * D * SCE)	0.00133	0.00117	0.00299
	(CLK * !D * SCE)	0.00497	0.00483	0.00650
	(CLK * !D * SCE)	0.00179	0.00163	0.00332
	(!CLK * D * SCE)	0.00873	0.00859	0.01034
	(!CLK * D * SCE)	0.00565	0.00550	0.00725
	(!CLK * !D * SCE)	0.00929	0.00916	0.01077
	(!CLK * !D * SCE)	0.00611	0.00597	0.00758
	!SCE	0.00088	0.00078	0.00077
	!SCE	-0.00084	-0.00094	-0.00095

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__sdfxtp_1	(CLK * D * SCE)	0.00159	0.00144	0.00332
	(CLK * D * SCE)	0.00475	0.00460	0.00646
	(CLK * !D * SCE)	0.00128	0.00113	0.00310
	(CLK * !D * SCE)	0.00453	0.00439	0.00634
	(!CLK * D * SCE)	0.00589	0.00574	0.00801
	(!CLK * D * SCE)	0.00905	0.00889	0.01115
	(!CLK * !D * SCE)	0.00561	0.00546	0.00795
	(!CLK * !D * SCE)	0.00886	0.00871	0.01119
	!SCE	-0.00076	-0.00078	-0.00078
	!SCE	0.00098	0.00099	0.00098
sky130_fd_sc_hs__sdfxtp_2	(CLK * D * SCE)	0.00170	0.00155	0.00342
	(CLK * D * SCE)	0.00483	0.00468	0.00654
	(CLK * !D * SCE)	0.00139	0.00124	0.00320
	(CLK * !D * SCE)	0.00462	0.00448	0.00642
	(!CLK * D * SCE)	0.00611	0.00595	0.00816
	(!CLK * D * SCE)	0.00924	0.00908	0.01127
	(!CLK * !D * SCE)	0.00582	0.00567	0.00807
	(!CLK * !D * SCE)	0.00905	0.00890	0.01129
	!SCE	-0.00077	-0.00079	-0.00079
	!SCE	0.00093	0.00094	0.00094

sky130_fd_sc_hs__sdfxtp_4	**(CLK * D * SCE)**	0.00158	0.00143	0.00332
	(CLK * D * SCE)	0.00467	0.00453	0.00640
	(CLK * !D * SCE)	0.00127	0.00113	0.00310
	(CLK * !D * SCE)	0.00446	0.00433	0.00628
	(!CLK * D * SCE)	0.00622	0.00606	0.00827
	(!CLK * D * SCE)	0.00931	0.00915	0.01135
	(!CLK * !D * SCE)	0.00592	0.00578	0.00822
	(!CLK * !D * SCE)	0.00910	0.00897	0.01140
	!SCE	-0.00074	-0.00076	-0.00076
	!SCE	0.00096	0.00096	0.00096

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)**	0.00428	0.00404	0.00833
	(CLK * D * SCD) + (CLK * !D * !SCD)	-0.00028	-0.00055	0.00375
	(CLK * D * !SCD)	0.00629	0.00605	0.01036
	(CLK * D * !SCD)	0.00302	0.00274	0.00704
	(CLK * !D * SCD)	0.00735	0.00709	0.01369
	(CLK * !D * SCD)	0.00168	0.00141	0.00803
	(!CLK * D * SCD)	0.00428	0.00404	0.00832
	(!CLK * D * SCD)	-0.00028	-0.00055	0.00375
	(!CLK * D * !SCD)	0.01047	0.01034	0.01465
	(!CLK * D * !SCD)	0.00719	0.00704	0.01132
	(!CLK * !D * SCD)	0.01164	0.01143	0.01796
	(!CLK * !D * SCD)	0.00598	0.00576	0.01230
	(!CLK * !D * !SCD)	0.00412	0.00400	0.00820
	(!CLK * !D * !SCD)	-0.00019	-0.00032	0.00389

sky130_fd_sc_hs__sdfxtp_2	**(CLK * D * SCD) + (CLK * !D * !SCD)**	0.00411	0.00388	0.00819
	(CLK * D * SCD) + (CLK * !D * !SCD)	-0.00028	-0.00051	0.00381
	(CLK * D * !SCD)	0.00621	0.00599	0.01034
	(CLK * D * !SCD)	0.00311	0.00288	0.00720
	(CLK * !D * SCD)	0.00739	0.00717	0.01376
	(CLK * !D * SCD)	0.00187	0.00164	0.00825
	(!CLK * D * SCD)	0.00411	0.00390	0.00819
	(!CLK * D * SCD)	-0.00028	-0.00052	0.00381
	(!CLK * D * !SCD)	0.01050	0.01038	0.01471
	(!CLK * D * !SCD)	0.00740	0.00727	0.01156
	(!CLK * !D * SCD)	0.01205	0.01176	0.01839
	(!CLK * !D * SCD)	0.00653	0.00626	0.01289
	(!CLK * !D * !SCD)	0.00398	0.00383	0.00812
	(!CLK * !D * !SCD)	-0.00015	-0.00033	0.00397
sky130_fd_sc_hs__sdfxtp_4	**(CLK * D * SCD) + (CLK * !D * !SCD)**	0.00427	0.00403	0.00831
	(CLK * D * SCD) + (CLK * !D * !SCD)	-0.00027	-0.00054	0.00375
	(CLK * D * !SCD)	0.00625	0.00601	0.01042
	(CLK * D * !SCD)	0.00296	0.00268	0.00707
	(CLK * !D * SCD)	0.00736	0.00710	0.01369
	(CLK * !D * SCD)	0.00172	0.00146	0.00806
	(!CLK * D * SCD)	0.00427	0.00403	0.00831
	(!CLK * D * SCD)	-0.00027	-0.00054	0.00375
	(!CLK * D * !SCD)	0.01077	0.01062	0.01491
	(!CLK * D * !SCD)	0.00748	0.00731	0.01158
	(!CLK * !D * SCD)	0.01168	0.01147	0.01798
	(!CLK * !D * SCD)	0.00604	0.00582	0.01235
	(!CLK * !D * !SCD)	0.00411	0.00399	0.00819
	(!CLK * !D * !SCD)	-0.00019	-0.00031	0.00388

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)	-0.00035	-0.00026	0.00444
	(CLK * D * SCD) + (CLK * !D * !SCD)	0.00421	0.00430	0.00899
	(CLK * D * !SCD)	0.00291	0.00284	0.00750
	(CLK * D * !SCD)	0.00621	0.00615	0.01073
	(CLK * !D * SCD)	0.00101	0.00091	0.00772
	(CLK * !D * SCD)	0.00666	0.00656	0.01340
	(!CLK * D * SCD)	-0.00034	-0.00026	0.00444
	(!CLK * D * SCD)	0.00421	0.00430	0.00899
	(!CLK * D * !SCD)	0.00717	0.00719	0.01173
	(!CLK * D * !SCD)	0.01047	0.01049	0.01499
	(!CLK * !D * SCD)	0.00533	0.00521	0.01225
	(!CLK * !D * SCD)	0.01098	0.01088	0.01792
	(!CLK * !D * !SCD)	0.00002	0.00006	0.00470
	(!CLK * !D * !SCD)	0.00433	0.00439	0.00902

sky130_fd_sc_hs__sdfxtp_2	**(CLK * D * SCD) + (CLK * !D * !SCD)**	-0.00033	-0.00023	0.00448
	(CLK * D * SCD) + (CLK * !D * !SCD)	0.00405	0.00416	0.00887
	(CLK * D * !SCD)	0.00313	0.00309	0.00775
	(CLK * D * !SCD)	0.00625	0.00621	0.01079
	(CLK * !D * SCD)	0.00107	0.00098	0.00779
	(CLK * !D * SCD)	0.00656	0.00649	0.01331
	(!CLK * D * SCD)	-0.00033	-0.00023	0.00448
	(!CLK * D * SCD)	0.00405	0.00415	0.00887
	(!CLK * D * !SCD)	0.00776	0.00780	0.01236
	(!CLK * D * !SCD)	0.01088	0.01091	0.01543
	(!CLK * !D * SCD)	0.00547	0.00536	0.01239
	(!CLK * !D * SCD)	0.01097	0.01087	0.01791
	(!CLK * !D * !SCD)	0.00000	0.00007	0.00471
	(!CLK * !D * !SCD)	0.00414	0.00421	0.00886
sky130_fd_sc_hs__sdfxtp_4	**(CLK * D * SCD) + (CLK * !D * !SCD)**	-0.00032	-0.00024	0.00445
	(CLK * D * SCD) + (CLK * !D * !SCD)	0.00421	0.00430	0.00900
	(CLK * D * !SCD)	0.00293	0.00286	0.00752
	(CLK * D * !SCD)	0.00624	0.00618	0.01076
	(CLK * !D * SCD)	0.00101	0.00090	0.00773
	(CLK * !D * SCD)	0.00663	0.00654	0.01335
	(!CLK * D * SCD)	-0.00032	-0.00024	0.00446
	(!CLK * D * SCD)	0.00421	0.00430	0.00899
	(!CLK * D * !SCD)	0.00722	0.00724	0.01178
	(!CLK * D * !SCD)	0.01053	0.01056	0.01505
	(!CLK * !D * SCD)	0.00565	0.00554	0.01252
	(!CLK * !D * SCD)	0.01128	0.01116	0.01815
	(!CLK * !D * !SCD)	0.00005	0.00009	0.00472
	(!CLK * !D * !SCD)	0.00434	0.00439	0.00903

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)	0.00981	0.00943	0.01460
	(D * SCD * SCE * Q)	0.00667	0.00628	0.01146
	(D * !SCE * Q)	0.00979	0.00943	0.01460
	(D * !SCE * Q)	0.00666	0.00627	0.01145
	(D * !SCD * SCE * !Q)	0.00978	0.00939	0.01457
	(D * !SCD * SCE * !Q)	0.00664	0.00624	0.01143
	(!D * SCD * SCE * Q)	0.00981	0.00943	0.01461
	(!D * SCD * SCE * Q)	0.00667	0.00628	0.01146
	(!D * !SCE * !Q)	0.00977	0.00939	0.01457
	(!D * !SCE * !Q)	0.00664	0.00624	0.01143
	(!D * !SCD * SCE * !Q)	0.00978	0.00940	0.01457
	(!D * !SCD * SCE * !Q)	0.00664	0.00624	0.01143
sky130_fd_sc_hs__sdfxtp_2	(D * SCD * SCE * Q)	0.00999	0.00961	0.01467
	(D * SCD * SCE * Q)	0.00682	0.00642	0.01149
	(D * !SCE * Q)	0.00998	0.00960	0.01470
	(D * !SCE * Q)	0.00681	0.00642	0.01153
	(D * !SCD * SCE * !Q)	0.01006	0.00967	0.01474
	(D * !SCD * SCE * !Q)	0.00689	0.00648	0.01156
	(!D * SCD * SCE * Q)	0.00999	0.00961	0.01471
	(!D * SCD * SCE * Q)	0.00682	0.00642	0.01153
	(!D * !SCE * !Q)	0.01005	0.00967	0.01474
	(!D * !SCE * !Q)	0.00688	0.00648	0.01157
	(!D * !SCD * SCE * !Q)	0.01006	0.00967	0.01474
	(!D * !SCD * SCE * !Q)	0.00689	0.00648	0.01156

sky130_fd_sc_hs__sdfxtp_4	**(D * SCD * SCE * Q)**	0.00993	0.00954	0.01470
	(D * SCD * SCE * Q)	0.00677	0.00638	0.01155
	(D * !SCE * Q)	0.00991	0.00954	0.01470
	(D * !SCE * Q)	0.00676	0.00637	0.01154
	(D * !SCD * SCE * !Q)	0.00985	0.00947	0.01464
	(D * !SCD * SCE * !Q)	0.00670	0.00630	0.01148
	(!D * SCD * SCE * Q)	0.00993	0.00954	0.01471
	(!D * SCD * SCE * Q)	0.00677	0.00638	0.01155
	(!D * !SCE * !Q)	0.00985	0.00946	0.01464
	(!D * !SCE * !Q)	0.00670	0.00630	0.01148
	(!D * !SCD * SCE * !Q)	0.00985	0.00947	0.01463
	(!D * !SCD * SCE * !Q)	0.00670	0.00630	0.01147

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)**	0.00571	0.00571	0.01140
	(D * SCD * SCE * Q)	0.00886	0.00886	0.01454
	(D * SCD * SCE * !Q)	0.00974	0.00958	0.01545
	(D * SCD * SCE * !Q)	0.01289	0.01273	0.01859
	(D * !SCE * Q)	0.00571	0.00571	0.01140
	(D * !SCE * Q)	0.00886	0.00886	0.01454
	(D * !SCE * !Q)	0.00970	0.00955	0.01544
	(D * !SCE * !Q)	0.01286	0.01270	0.01859
	(D * !SCD * SCE * Q)	0.01091	0.01092	0.01694
	(D * !SCD * SCE * Q)	0.01408	0.01407	0.02011
	(D * !SCD * SCE * !Q)	0.00565	0.00563	0.01136
	(D * !SCD * SCE * !Q)	0.00880	0.00878	0.01451
	(!D * SCD * SCE * Q)	0.00571	0.00571	0.01140
	(!D * SCD * SCE * Q)	0.00886	0.00886	0.01454
	(!D * SCD * SCE * !Q)	0.00977	0.00961	0.01548
	(!D * SCD * SCE * !Q)	0.01291	0.01273	0.01861
	(!D * !SCE * Q)	0.01089	0.01093	0.01690
	(!D * !SCE * Q)	0.01404	0.01407	0.02005
	(!D * !SCE * !Q)	0.00565	0.00562	0.01135
	(!D * !SCE * !Q)	0.00880	0.00877	0.01450
	(!D * !SCD * SCE * Q)	0.01091	0.01092	0.01692
	(!D * !SCD * SCE * Q)	0.01407	0.01406	0.02008
	(!D * !SCD * SCE * !Q)	0.00565	0.00563	0.01136
	(!D * !SCD * SCE * !Q)	0.00881	0.00878	0.01451

sky130_fd_sc_hs__sdfxtp_2	**(D * SCD * SCE * Q)**	0.00596	0.00593	0.01159
	(D * SCD * SCE * Q)	0.00914	0.00911	0.01477
	(D * SCD * SCE * !Q)	0.01031	0.01020	0.01595
	(D * SCD * SCE * !Q)	0.01350	0.01337	0.01913
	(D * !SCE * Q)	0.00596	0.00593	0.01159
	(D * !SCE * Q)	0.00914	0.00911	0.01476
	(D * !SCE * !Q)	0.01028	0.01017	0.01594
	(D * !SCE * !Q)	0.01347	0.01335	0.01912
	(D * !SCD * SCE * Q)	0.01124	0.01133	0.01725
	(D * !SCD * SCE * Q)	0.01444	0.01452	0.02045
	(D * !SCD * SCE * !Q)	0.00580	0.00580	0.01146
	(D * !SCD * SCE * !Q)	0.00899	0.00898	0.01464
	(!D * SCD * SCE * Q)	0.00596	0.00593	0.01159
	(!D * SCD * SCE * Q)	0.00914	0.00911	0.01477
	(!D * SCD * SCE * !Q)	0.01034	0.01023	0.01599
	(!D * SCD * SCE * !Q)	0.01351	0.01338	0.01915
	(!D * !SCE * Q)	0.01121	0.01121	0.01722
	(!D * !SCE * Q)	0.01440	0.01437	0.02040
	(!D * !SCE * !Q)	0.00580	0.00579	0.01145
	(!D * !SCE * !Q)	0.00898	0.00898	0.01463
	(!D * !SCD * SCE * Q)	0.01123	0.01125	0.01725
	(!D * !SCD * SCE * Q)	0.01443	0.01443	0.02044
	(!D * !SCD * SCE * !Q)	0.00581	0.00580	0.01146
	(!D * !SCD * SCE * !Q)	0.00899	0.00898	0.01463

sky130_fd_sc_hs__sdfxtp_4	**(D * SCD * SCE * Q)**	0.00568	0.00566	0.01135
	(D * SCD * SCE * Q)	0.00884	0.00881	0.01450
	(D * SCD * SCE * !Q)	0.00978	0.00962	0.01546
	(D * SCD * SCE * !Q)	0.01294	0.01278	0.01861
	(D * !SCE * Q)	0.00568	0.00566	0.01135
	(D * !SCE * Q)	0.00884	0.00881	0.01450
	(D * !SCE * !Q)	0.00974	0.00959	0.01545
	(D * !SCE * !Q)	0.01291	0.01275	0.01861
	(D * !SCD * SCE * Q)	0.01122	0.01126	0.01725
	(D * !SCD * SCE * Q)	0.01440	0.01443	0.02043
	(D * !SCD * SCE * !Q)	0.00566	0.00563	0.01135
	(D * !SCD * SCE * !Q)	0.00882	0.00879	0.01451
	(!D * SCD * SCE * Q)	0.00568	0.00566	0.01135
	(!D * SCD * SCE * Q)	0.00884	0.00881	0.01450
	(!D * SCD * SCE * !Q)	0.00981	0.00965	0.01550
	(!D * SCD * SCE * !Q)	0.01296	0.01279	0.01864
	(!D * !SCE * Q)	0.01120	0.01123	0.01722
	(!D * !SCE * Q)	0.01436	0.01437	0.02038
	(!D * !SCE * !Q)	0.00565	0.00562	0.01135
	(!D * !SCE * !Q)	0.00881	0.00878	0.01450
	(!D * !SCD * SCE * Q)	0.01122	0.01127	0.01725
	(!D * !SCD * SCE * Q)	0.01439	0.01443	0.02043
	(!D * !SCD * SCE * !Q)	0.00566	0.00563	0.01135
	(!D * !SCD * SCE * !Q)	0.00882	0.00879	0.01451

SKY130_FD_SC_HS__SDLCLKPx

sky130_fd_sc_hs_tt_1.50v_25C.ccs
Cell Library: Process , Voltage 1.50, 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	0.00231	0.00211	0.00454	0.82978
sky130_fd_sc_hs__sdlclkp_2	0.00230	0.00210	0.00481	1.64679
sky130_fd_sc_hs__sdlclkp_4	0.00218	0.00199	0.00490	3.19303

Leakage Information

Cell Name	Leakage(nW)		
	Min.	Avg	Max.
sky130_fd_sc_hs__sdlclkp_1	0.00000	0.40196	0.63029
sky130_fd_sc_hs__sdlclkp_2	0.00000	0.37129	0.55566
sky130_fd_sc_hs__sdlclkp_4	0.00000	0.38433	0.61512

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)**	0.09102	0.69910	6.82264
sky130_fd_sc_hs__sdlclkp_2	**CLK->GCLK (RR)**	0.09395	0.61026	6.84627
sky130_fd_sc_hs__sdlclkp_4	**CLK->GCLK (RR)**	0.12216	0.59857	7.16419

Delay(ns) to GCLK falling :

Cell Name	Timing Arc(Dir)	Delay(ns)		
		First	Mid	Last
sky130_fd_sc_hs__sdlclkp_1	**CLK->GCLK (FF)**	0.11404	0.60345	4.20484
sky130_fd_sc_hs__sdlclkp_2	**CLK->GCLK (FF)**	0.13135	0.63417	4.54132
sky130_fd_sc_hs__sdlclkp_4	**CLK->GCLK (FF)**	0.17287	0.69805	5.00484

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)	-0.05412	-0.13641	-0.83114
	setup	CLK (R)	0.18454	0.25331	1.67167
sky130_fd_sc_hs__sdlclkp_2	hold	CLK (R)	-0.05271	-0.13641	-0.82733
	setup	CLK (R)	0.17652	0.23158	1.93727
sky130_fd_sc_hs__sdlclkp_4	hold	CLK (R)	-0.05505	-0.13880	-0.83760
	setup	CLK (R)	0.17511	0.21362	1.72575

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)	-0.19436	-0.31113	-2.49202
	setup	CLK (R)	0.25106	0.37423	2.98222
sky130_fd_sc_hs__sdlclkp_2	hold	CLK (R)	-0.19287	-0.30789	-2.47868
	setup	CLK (R)	0.24268	0.35805	2.97184
sky130_fd_sc_hs__sdlclkp_4	hold	CLK (R)	-0.20143	-0.31581	-2.50538
	setup	CLK (R)	0.24870	0.35355	2.98906

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)	-0.05412	-0.13641	-0.83114
	setup	CLK (R)	0.18454	0.25331	1.67167
sky130_fd_sc_hs__sdlclkp_2	hold	CLK (R)	-0.05271	-0.13641	-0.82733
	setup	CLK (R)	0.17652	0.23158	1.93727
sky130_fd_sc_hs__sdlclkp_4	hold	CLK (R)	-0.05505	-0.13880	-0.83760
	setup	CLK (R)	0.17511	0.21362	1.72575

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)	-0.19436	-0.31113	-2.49202
	setup	CLK (R)	0.25106	0.37423	2.98222
sky130_fd_sc_hs__sdlclkp_2	hold	CLK (R)	-0.19287	-0.30789	-2.47868
	setup	CLK (R)	0.24268	0.35805	2.97184
sky130_fd_sc_hs__sdlclkp_4	hold	CLK (R)	-0.20143	-0.31581	-2.50538
	setup	CLK (R)	0.24870	0.35355	2.98906

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)	-0.05641	-0.14837	-0.83803
	setup	CLK (R)	0.18502	0.26330	1.70666
sky130_fd_sc_hs__sdlclkp_2	hold	CLK (R)	-0.05808	-0.14598	-0.83452
	setup	CLK (R)	0.18029	0.23997	1.97356
sky130_fd_sc_hs__sdlclkp_4	hold	CLK (R)	-0.05901	-0.14837	-0.84688
	setup	CLK (R)	0.18056	0.22253	1.77787

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)	-0.20865	-0.33651	-2.75728
	setup	CLK (R)	0.26587	0.40000	2.91304
sky130_fd_sc_hs__sdlclkp_2	hold	CLK (R)	-0.20596	-0.33321	-2.74712
	setup	CLK (R)	0.25737	0.38369	2.85935
sky130_fd_sc_hs__sdlclkp_4	hold	CLK (R)	-0.21663	-0.34120	-2.76371
	setup	CLK (R)	0.26131	0.37461	2.88365

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)	-0.05641	-0.14837	-0.83803
	setup	CLK (R)	0.18502	0.26330	1.70666
sky130_fd_sc_hs__sdlclkp_2	hold	CLK (R)	-0.05808	-0.14598	-0.83452
	setup	CLK (R)	0.18029	0.23997	1.97356
sky130_fd_sc_hs__sdlclkp_4	hold	CLK (R)	-0.05901	-0.14837	-0.84688
	setup	CLK (R)	0.18056	0.22253	1.77787

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)	-0.20865	-0.33651	-2.75728
	setup	CLK (R)	0.26587	0.40000	2.91304
sky130_fd_sc_hs__sdlclkp_2	hold	CLK (R)	-0.20596	-0.33321	-2.74712
	setup	CLK (R)	0.25737	0.38369	2.85935
sky130_fd_sc_hs__sdlclkp_4	hold	CLK (R)	-0.21663	-0.34120	-2.76371
	setup	CLK (R)	0.26131	0.37461	2.88365

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 ()	0.06465	0.74341	16.50020
sky130_fd_sc_hs__sdlclkp_2	min_pulse_width	CLK ()	0.07297	0.74341	16.50020
sky130_fd_sc_hs__sdlclkp_4	min_pulse_width	CLK ()	0.09790	0.74341	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 ()	0.26967	0.74341	16.50020
	min_pulse_width	CLK ()	0.25027	0.74341	16.50020
sky130_fd_sc_hs__sdlclkp_2	min_pulse_width	CLK ()	0.26135	0.74341	16.50020
	min_pulse_width	CLK ()	0.24473	0.74341	16.50020
sky130_fd_sc_hs__sdlclkp_4	min_pulse_width	CLK ()	0.26135	0.74341	16.50020
	min_pulse_width	CLK ()	0.24750	0.74341	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	0.01233	0.01220	0.02602
	CLK	0.00732	0.00720	0.02103
sky130_fd_sc_hs__sdlclkp_2	CLK	0.01472	0.01478	0.02702
	CLK	0.00941	0.00949	0.02177
sky130_fd_sc_hs__sdlclkp_4	CLK	0.01906	0.01951	0.03059
	CLK	0.01364	0.01412	0.02544

Internal switching power(pJ) to GCLK falling :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__sdlclkp_1	CLK	0.01436	0.01522	0.03053
	CLK	0.01904	0.01986	0.03499
sky130_fd_sc_hs__sdlclkp_2	CLK	0.01596	0.01705	0.03115
	CLK	0.02091	0.02198	0.03600
sky130_fd_sc_hs__sdlclkp_4	CLK	0.02070	0.02215	0.03532
	CLK	0.02579	0.02722	0.04026

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__sdlclkp_1	(CLK * SCE)	0.00106	0.00108	0.00107
	(CLK * SCE)	-0.00055	-0.00056	-0.00055
	(CLK * !SCE)	0.00342	0.00329	0.00931
	(CLK * !SCE)	0.00081	0.00067	0.00670
	(!CLK * SCE * !GCLK)	0.00103	0.00105	0.00104
	(!CLK * SCE * !GCLK)	-0.00058	-0.00059	-0.00058
	(!CLK * !SCE * !GCLK)	0.00866	0.00843	0.01329
	(!CLK * !SCE * !GCLK)	0.00635	0.00610	0.01097
sky130_fd_sc_hs__sdlclkp_2	(CLK * SCE)	0.00106	0.00108	0.00106
	(CLK * SCE)	-0.00055	-0.00056	-0.00055
	(CLK * !SCE)	0.00338	0.00325	0.00928
	(CLK * !SCE)	0.00079	0.00066	0.00668
	(!CLK * SCE * !GCLK)	0.00103	0.00105	0.00103
	(!CLK * SCE * !GCLK)	-0.00058	-0.00059	-0.00058
	(!CLK * !SCE * !GCLK)	0.00853	0.00829	0.01319
	(!CLK * !SCE * !GCLK)	0.00625	0.00601	0.01090
sky130_fd_sc_hs__sdlclkp_4	(CLK * SCE)	0.00103	0.00104	0.00102
	(CLK * SCE)	-0.00054	-0.00054	-0.00053
	(CLK * !SCE)	0.00329	0.00316	0.00915
	(CLK * !SCE)	0.00081	0.00067	0.00667
	(!CLK * SCE * !GCLK)	0.00100	0.00102	0.00100
	(!CLK * SCE * !GCLK)	-0.00055	-0.00056	-0.00055
	(!CLK * !SCE * !GCLK)	0.00857	0.00834	0.01319
	(!CLK * !SCE * !GCLK)	0.00639	0.00615	0.01101

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__sdlclkp_1	(CLK * SCE)	-0.00102	-0.00103	-0.00105
	(CLK * SCE)	0.00060	0.00060	0.00057
	(CLK * !SCE)	0.00062	0.00082	0.00724
	(CLK * !SCE)	0.00323	0.00343	0.00985
	(!CLK * SCE * !GCLK)	-0.00100	-0.00101	-0.00103
	(!CLK * SCE * !GCLK)	0.00062	0.00062	0.00060
	(!CLK * !SCE * !GCLK)	0.00740	0.00750	0.01389
	(!CLK * !SCE * !GCLK)	0.00972	0.00982	0.01622
sky130_fd_sc_hs__sdlclkp_2	(CLK * SCE)	-0.00102	-0.00103	-0.00105
	(CLK * SCE)	0.00060	0.00060	0.00057
	(CLK * !SCE)	0.00065	0.00084	0.00727
	(CLK * !SCE)	0.00324	0.00345	0.00987
	(!CLK * SCE * !GCLK)	-0.00099	-0.00100	-0.00102
	(!CLK * SCE * !GCLK)	0.00062	0.00062	0.00060
	(!CLK * !SCE * !GCLK)	0.00744	0.00754	0.01394
	(!CLK * !SCE * !GCLK)	0.00972	0.00982	0.01623
sky130_fd_sc_hs__sdlclkp_4	(CLK * SCE)	-0.00097	-0.00098	-0.00101
	(CLK * SCE)	0.00058	0.00058	0.00055
	(CLK * !SCE)	0.00085	0.00105	0.00745
	(CLK * !SCE)	0.00333	0.00353	0.00993
	(!CLK * SCE * !GCLK)	-0.00096	-0.00097	-0.00099
	(!CLK * SCE * !GCLK)	0.00059	0.00059	0.00057
	(!CLK * !SCE * !GCLK)	0.00767	0.00777	0.01414
	(!CLK * !SCE * !GCLK)	0.00987	0.00996	0.01633

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__sdlclkp_1	(CLK * GATE)	0.00105	0.00091	0.00089
	(CLK * GATE)	-0.00094	-0.00108	-0.00110
	(CLK * !GATE)	0.00433	0.00421	0.00743
	(CLK * !GATE)	0.00127	0.00115	0.00438
	(!CLK * GATE * !GCLK)	0.00105	0.00091	0.00089
	(!CLK * GATE * !GCLK)	-0.00094	-0.00108	-0.00110
	(!CLK * !GATE * !GCLK)	0.00957	0.00945	0.01223
	(!CLK * !GATE * !GCLK)	0.00681	0.00668	0.00948
sky130_fd_sc_hs__sdlclkp_2	(CLK * GATE)	0.00104	0.00091	0.00089
	(CLK * GATE)	-0.00093	-0.00108	-0.00110
	(CLK * !GATE)	0.00429	0.00418	0.00740
	(CLK * !GATE)	0.00126	0.00113	0.00437
	(!CLK * GATE * !GCLK)	0.00104	0.00090	0.00089
	(!CLK * GATE * !GCLK)	-0.00094	-0.00108	-0.00110
	(!CLK * !GATE * !GCLK)	0.00944	0.00931	0.01210
	(!CLK * !GATE * !GCLK)	0.00671	0.00658	0.00938
sky130_fd_sc_hs__sdlclkp_4	(CLK * GATE)	0.00100	0.00086	0.00085
	(CLK * GATE)	-0.00091	-0.00105	-0.00108
	(CLK * !GATE)	0.00420	0.00410	0.00730
	(CLK * !GATE)	0.00129	0.00117	0.00439
	(!CLK * GATE * !GCLK)	0.00100	0.00086	0.00084
	(!CLK * GATE * !GCLK)	-0.00091	-0.00106	-0.00108
	(!CLK * !GATE * !GCLK)	0.00948	0.00936	0.01214
	(!CLK * !GATE * !GCLK)	0.00685	0.00672	0.00952

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__sdlclkp_1	(CLK * GATE)	-0.00088	-0.00088	-0.00087
	(CLK * GATE)	0.00110	0.00111	0.00111
	(CLK * !GATE)	0.00066	0.00055	0.00365
	(CLK * !GATE)	0.00372	0.00361	0.00670
	(!CLK * GATE * !GCLK)	-0.00088	-0.00088	-0.00088
	(!CLK * GATE * !GCLK)	0.00110	0.00111	0.00111
	(!CLK * !GATE * !GCLK)	0.00739	0.00726	0.01025
	(!CLK * !GATE * !GCLK)	0.01017	0.01002	0.01302
sky130_fd_sc_hs__sdlclkp_2	(CLK * GATE)	-0.00087	-0.00087	-0.00087
	(CLK * GATE)	0.00110	0.00111	0.00111
	(CLK * !GATE)	0.00069	0.00058	0.00368
	(CLK * !GATE)	0.00372	0.00362	0.00672
	(!CLK * GATE * !GCLK)	-0.00087	-0.00088	-0.00087
	(!CLK * GATE * !GCLK)	0.00110	0.00111	0.00111
	(!CLK * !GATE * !GCLK)	0.00744	0.00730	0.01030
	(!CLK * !GATE * !GCLK)	0.01017	0.01002	0.01303
sky130_fd_sc_hs__sdlclkp_4	(CLK * GATE)	-0.00083	-0.00083	-0.00082
	(CLK * GATE)	0.00108	0.00109	0.00109
	(CLK * !GATE)	0.00089	0.00079	0.00387
	(CLK * !GATE)	0.00381	0.00371	0.00678
	(!CLK * GATE * !GCLK)	-0.00083	-0.00083	-0.00083
	(!CLK * GATE * !GCLK)	0.00108	0.00109	0.00109
	(!CLK * !GATE * !GCLK)	0.00768	0.00756	0.01052
	(!CLK * !GATE * !GCLK)	0.01031	0.01019	0.01316

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__sdlclkp_1	(!GATE * !SCE * !GCLK)	0.00766	0.00750	0.01514
	(!GATE * !SCE * !GCLK)	0.00292	0.00271	0.01038
sky130_fd_sc_hs__sdlclkp_2	(!GATE * !SCE * !GCLK)	0.00776	0.00759	0.01527
	(!GATE * !SCE * !GCLK)	0.00275	0.00254	0.01024
sky130_fd_sc_hs__sdlclkp_4	(!GATE * !SCE * !GCLK)	0.00788	0.00769	0.01534
	(!GATE * !SCE * !GCLK)	0.00276	0.00254	0.01019

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__sdlclkp_1	(GATE * SCE * !GCLK)	0.00857	0.00869	0.01768
	(GATE * SCE * !GCLK)	0.01371	0.01384	0.02282
	(GATE * !SCE * !GCLK)	0.00855	0.00868	0.01765
	(GATE * !SCE * !GCLK)	0.01369	0.01383	0.02277
	(!GATE * SCE * !GCLK)	0.00860	0.00872	0.01770
	(!GATE * SCE * !GCLK)	0.01372	0.01386	0.02284
	(!GATE * !SCE * !GCLK)	0.00340	0.00362	0.01197
	(!GATE * !SCE * !GCLK)	0.00815	0.00840	0.01675
sky130_fd_sc_hs__sdlclkp_2	(GATE * SCE * !GCLK)	0.00830	0.00845	0.01743
	(GATE * SCE * !GCLK)	0.01375	0.01390	0.02286
	(GATE * !SCE * !GCLK)	0.00829	0.00844	0.01739
	(GATE * !SCE * !GCLK)	0.01374	0.01389	0.02284
	(!GATE * SCE * !GCLK)	0.00833	0.00848	0.01745
	(!GATE * SCE * !GCLK)	0.01376	0.01392	0.02289
	(!GATE * !SCE * !GCLK)	0.00322	0.00346	0.01181
	(!GATE * !SCE * !GCLK)	0.00824	0.00851	0.01685
sky130_fd_sc_hs__sdlclkp_4	(GATE * SCE * !GCLK)	0.00863	0.00872	0.01769
	(GATE * SCE * !GCLK)	0.01416	0.01426	0.02322
	(GATE * !SCE * !GCLK)	0.00861	0.00873	0.01765
	(GATE * !SCE * !GCLK)	0.01415	0.01428	0.02320
	(!GATE * SCE * !GCLK)	0.00865	0.00875	0.01771
	(!GATE * SCE * !GCLK)	0.01418	0.01428	0.02324
	(!GATE * !SCE * !GCLK)	0.00340	0.00361	0.01194
	(!GATE * !SCE * !GCLK)	0.00852	0.00876	0.01710

SKY130_FD_SC_HS__SEDFXBPx

sky130_fd_sc_hs_tt_1.50v_25C.ccs
Cell Library: Process , Voltage 1.50, 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	0.00195	0.00373	0.00172	0.00376	0.00273	0.84993	0.85208
sky130_fd_sc_hs__sedfxbp_2	0.00204	0.00378	0.00174	0.00384	0.00273	1.49681	1.55074

Leakage Information

Cell Name	Leakage(nW)		
	Min.	**Avg**	**Max.**
sky130_fd_sc_hs__sedfxbp_1	0.00000	0.50212	0.91526
sky130_fd_sc_hs__sedfxbp_2	0.00000	0.51343	0.90508

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)	0.24951	0.88364	6.89764
sky130_fd_sc_hs__sedfxbp_2	CLK->Q (RR)	0.25550	0.79621	6.83438

Delay(ns) to Q falling :

Cell Name	Timing Arc(Dir)	Delay(ns)		
		First	Mid	Last
sky130_fd_sc_hs__sedfxbp_1	CLK->Q (RF)	0.24106	0.62954	2.66879
sky130_fd_sc_hs__sedfxbp_2	CLK->Q (RF)	0.27868	0.63909	2.42111

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)	0.35947	0.97244	7.04318
sky130_fd_sc_hs__sedfxbp_2	CLK->Q_N (RR)	0.43377	0.93301	7.03891

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)	0.35446	0.70070	2.65384
sky130_fd_sc_hs__sedfxbp_2	CLK->Q_N (RF)	0.39031	0.69616	2.52592

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)	-0.19680	-0.30544	-1.47689
	setup	CLK (R)	0.24935	0.33774	1.54399
sky130_fd_sc_hs__sedfxbp_2	hold	CLK (R)	-0.19689	-0.30852	-1.49080
	setup	CLK (R)	0.25020	0.33907	1.54445

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)	-0.51339	-0.64087	-3.34795
	setup	CLK (R)	0.65072	0.73592	4.85116
sky130_fd_sc_hs__sedfxbp_2	hold	CLK (R)	-0.50749	-0.63621	-3.36164
	setup	CLK (R)	0.64531	0.73159	4.50266

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)	-0.19680	-0.30544	-1.47689
	setup	CLK (R)	0.24935	0.33774	1.54399
sky130_fd_sc_hs__sedfxbp_2	hold	CLK (R)	-0.19689	-0.30852	-1.49080
	setup	CLK (R)	0.25020	0.33907	1.54445

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)	-0.51339	-0.64087	-3.34795
	setup	CLK (R)	0.65072	0.73592	4.85116
sky130_fd_sc_hs__sedfxbp_2	hold	CLK (R)	-0.50749	-0.63621	-3.36164
	setup	CLK (R)	0.64531	0.73159	4.50266

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)	-0.05097	-0.06472	-0.24478
	setup	CLK (R)	0.69684	0.69871	2.13751
sky130_fd_sc_hs__sedfxbp_2	hold	CLK (R)	-0.05142	-0.06747	-0.25098
	setup	CLK (R)	0.69228	0.69345	1.80478

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)	-0.28424	-0.43782	-2.48645
	setup	CLK (R)	0.56886	0.68499	3.59935
sky130_fd_sc_hs__sedfxbp_2	hold	CLK (R)	-0.28495	-0.43733	-2.49059
	setup	CLK (R)	0.56639	0.68466	3.60533

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)	-0.05097	-0.06472	-0.24478
	hold	CLK (R)	-0.21060	-0.25780	-0.58998
	setup	CLK (R)	0.24590	0.31691	1.49043
	setup	CLK (R)	0.69684	0.69871	2.13751
sky130_fd_sc_hs__sedfxbp_2	hold	CLK (R)	-0.05142	-0.06747	-0.25098
	hold	CLK (R)	-0.21187	-0.25794	-0.59410
	setup	CLK (R)	0.24933	0.31864	1.49429
	setup	CLK (R)	0.69228	0.69345	1.80478

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)	-0.52711	-0.65980	-3.45939
	hold	CLK (R)	-0.28424	-0.43782	-2.48645
	setup	CLK (R)	0.56886	0.68499	3.59935
	setup	CLK (R)	0.30964	0.45321	2.50608
sky130_fd_sc_hs__sedfxbp_2	hold	CLK (R)	-0.52263	-0.65783	-3.39572
	hold	CLK (R)	-0.28495	-0.43733	-2.49059
	setup	CLK (R)	0.56639	0.68466	3.60533
	setup	CLK (R)	0.31115	0.45177	2.51031

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)	-0.11281	-0.20207	-1.11222
	setup	CLK (R)	0.14802	0.22407	1.17662
sky130_fd_sc_hs__sedfxbp_2	hold	CLK (R)	-0.11609	-0.20596	-1.12414
	setup	CLK (R)	0.14992	0.22792	1.18034

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)	-0.33570	-0.45538	-2.64218
	setup	CLK (R)	0.44821	0.54075	4.56167
sky130_fd_sc_hs__sedfxbp_2	hold	CLK (R)	-0.33604	-0.45504	-2.64850
	setup	CLK (R)	0.44529	0.53923	4.04247

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)	-0.11281	-0.20207	-1.11222
	setup	CLK (R)	0.14802	0.22407	1.17662
sky130_fd_sc_hs__sedfxbp_2	hold	CLK (R)	-0.11609	-0.20596	-1.12414
	setup	CLK (R)	0.14992	0.22792	1.18034

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)	-0.33570	-0.45538	-2.64218
	setup	CLK (R)	0.44821	0.54075	4.56167
sky130_fd_sc_hs__sedfxbp_2	hold	CLK (R)	-0.33604	-0.45504	-2.64850
	setup	CLK (R)	0.44529	0.53923	4.04247

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)	0.00413	0.02425	0.27835
	setup	CLK (R)	0.46527	0.45780	1.81910
sky130_fd_sc_hs__sedfxbp_2	hold	CLK (R)	0.00415	0.02425	0.26947
	setup	CLK (R)	0.46469	0.45849	1.62138

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)	-0.19894	-0.36258	-2.15464
	setup	CLK (R)	0.45336	0.53391	4.41483
sky130_fd_sc_hs__sedfxbp_2	hold	CLK (R)	-0.20612	-0.36918	-2.11226
	setup	CLK (R)	0.44943	0.53178	3.90019

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)	-0.35125	-0.37280	-0.17530
	hold	CLK (R)	0.00413	0.02425	0.27835
	hold	CLK (R)	-0.09945	-0.19412	-1.00335
	hold	CLK (R)	-0.14744	-0.19086	-0.37665
	setup	CLK (R)	0.46527	0.45780	1.81910
	setup	CLK (R)	0.13468	0.21546	1.08035
	setup	CLK (R)	0.13463	0.21546	1.08038
	setup	CLK (R)	0.46521	0.45711	1.81663
sky130_fd_sc_hs__sedfxbp_2	hold	CLK (R)	-0.35519	-0.37885	-0.17505
	hold	CLK (R)	0.00415	0.02425	0.26947
	hold	CLK (R)	-0.10253	-0.19650	-1.01285
	hold	CLK (R)	-0.15027	-0.19086	-0.40081
	setup	CLK (R)	0.46469	0.45711	1.62138
	setup	CLK (R)	0.13573	0.21793	1.08226
	setup	CLK (R)	0.13569	0.21793	1.08243
	setup	CLK (R)	0.46177	0.45849	1.62137

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)	-0.20694	-0.37027	-2.46462
	hold	CLK (R)	-0.31507	-0.43476	-2.15464
	hold	CLK (R)	-0.31123	-0.42972	-2.15485
	hold	CLK (R)	-0.19894	-0.36258	-2.44197
	setup	CLK (R)	0.25533	0.39611	2.51045
	setup	CLK (R)	0.35837	0.45534	2.90239
	setup	CLK (R)	0.45336	0.53391	4.41483
	setup	CLK (R)	0.22523	0.37751	2.46739
sky130_fd_sc_hs__sedfxbp_2	hold	CLK (R)	-0.21461	-0.37965	-2.49302
	hold	CLK (R)	-0.31284	-0.43581	-2.29150
	hold	CLK (R)	-0.30731	-0.43177	-2.11226
	hold	CLK (R)	-0.20612	-0.36918	-2.47286
	setup	CLK (R)	0.26070	0.40462	2.53789
	setup	CLK (R)	0.35608	0.45807	2.91607
	setup	CLK (R)	0.44943	0.53178	3.90019
	setup	CLK (R)	0.23003	0.38544	2.49615

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 ()	0.11175	0.74341	16.50020
	min_pulse_width	CLK ()	0.11175	0.74341	16.50020
	min_pulse_width	CLK ()	0.19486	0.74341	16.50020
	min_pulse_width	CLK ()	0.11175	0.74341	16.50020
	min_pulse_width	CLK ()	0.19486	0.74341	16.50020
	min_pulse_width	CLK ()	0.11175	0.74341	16.50020
	min_pulse_width	CLK ()	0.19209	0.74341	16.50020
	min_pulse_width	CLK ()	0.19209	0.74341	16.50020
	min_pulse_width	CLK ()	0.11175	0.74341	16.50020
	min_pulse_width	CLK ()	0.19486	0.74341	16.50020
sky130_fd_sc_hs__sedfxbp_2	min_pulse_width	CLK ()	0.12560	0.74341	16.50020
	min_pulse_width	CLK ()	0.12560	0.74341	16.50020
	min_pulse_width	CLK ()	0.26412	0.74341	16.50020
	min_pulse_width	CLK ()	0.12560	0.74341	16.50020
	min_pulse_width	CLK ()	0.26412	0.74341	16.50020
	min_pulse_width	CLK ()	0.12560	0.74341	16.50020
	min_pulse_width	CLK ()	0.26135	0.74341	16.50020
	min_pulse_width	CLK ()	0.26135	0.74341	16.50020
	min_pulse_width	CLK ()	0.12560	0.74341	16.50020
	min_pulse_width	CLK ()	0.26412	0.74341	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 ()	0.19764	0.74341	16.50020
	min_pulse_width	CLK ()	0.21149	0.74341	16.50020
	min_pulse_width	CLK ()	0.35278	0.74341	16.50020
	min_pulse_width	CLK ()	0.19764	0.74341	16.50020
	min_pulse_width	CLK ()	0.35278	0.74341	16.50020
	min_pulse_width	CLK ()	0.19764	0.74341	16.50020
	min_pulse_width	CLK ()	0.38879	0.74341	16.50020
	min_pulse_width	CLK ()	0.35278	0.74341	16.50020
	min_pulse_width	CLK ()	0.19764	0.74341	16.50020
	min_pulse_width	CLK ()	0.35278	0.74341	16.50020
sky130_fd_sc_hs__sedfxbp_2	min_pulse_width	CLK ()	0.19764	0.74341	16.50020
	min_pulse_width	CLK ()	0.21426	0.74341	16.50020
	min_pulse_width	CLK ()	0.34447	0.74341	16.50020
	min_pulse_width	CLK ()	0.19764	0.74341	16.50020
	min_pulse_width	CLK ()	0.34447	0.74341	16.50020
	min_pulse_width	CLK ()	0.19764	0.74341	16.50020
	min_pulse_width	CLK ()	0.37771	0.74341	16.50020
	min_pulse_width	CLK ()	0.34447	0.74341	16.50020
	min_pulse_width	CLK ()	0.19764	0.74341	16.50020
	min_pulse_width	CLK ()	0.34447	0.74341	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	0.01325	0.01326	0.01601
	CLK	0.01135	0.01136	0.01412
sky130_fd_sc_hs__sedfxbp_2	CLK	0.01510	0.01529	0.01811
	CLK	0.01323	0.01341	0.01625

Internal switching power(pJ) to Q falling :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__sedfxbp_1	CLK	0.01201	0.01191	0.01439
	CLK	0.01086	0.01074	0.01322
sky130_fd_sc_hs__sedfxbp_2	CLK	0.01389	0.01403	0.01648
	CLK	0.01272	0.01286	0.01531

Internal switching power(pJ) to Q_N rising :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__sedfxbp_1	CLK	0.01203	0.01194	0.01455
	CLK	0.01088	0.01077	0.01339
sky130_fd_sc_hs__sedfxbp_2	CLK	0.01390	0.01408	0.01674
	CLK	0.01274	0.01290	0.01559

Internal switching power(pJ) to Q_N falling :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__sedfxbp_1	CLK	0.01322	0.01322	0.01580
	CLK	0.01132	0.01133	0.01390
sky130_fd_sc_hs__sedfxbp_2	CLK	0.01507	0.01524	0.01778
	CLK	0.01320	0.01338	0.01591

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__sedfxbp_1	(DE * SCE)	0.00366	0.00350	0.00708
	(DE * SCE)	0.00138	0.00122	0.00481
	(CLK * DE * !SCE)	0.00751	0.00737	0.01012
	(CLK * DE * !SCE)	0.00454	0.00441	0.00717
	(CLK * !DE * !SCE)	0.00084	0.00084	0.00084
	(CLK * !DE * !SCE)	-0.00061	-0.00061	-0.00061
	(!DE * SCE)	0.00084	0.00084	0.00084
	(!DE * SCE)	-0.00061	-0.00060	-0.00061
	(!CLK * DE * !SCE * Q * !Q_N)	0.01293	0.01280	0.01540
	(!CLK * DE * !SCE * Q * !Q_N)	0.00996	0.00985	0.01243
	(!CLK * DE * !SCE * !Q * Q_N)	0.01263	0.01252	0.01499
	(!CLK * DE * !SCE * !Q * Q_N)	0.00963	0.00952	0.01200
	(!CLK * !DE * !SCE)	0.00084	0.00084	0.00084
	(!CLK * !DE * !SCE)	-0.00061	-0.00061	-0.00061
sky130_fd_sc_hs__sedfxbp_2	(DE * SCE)	0.00371	0.00355	0.00715
	(DE * SCE)	0.00135	0.00118	0.00478
	(CLK * DE * !SCE)	0.00765	0.00750	0.01025
	(CLK * DE * !SCE)	0.00456	0.00443	0.00717
	(CLK * !DE * !SCE)	0.00088	0.00088	0.00088
	(CLK * !DE * !SCE)	-0.00064	-0.00064	-0.00064
	(!DE * SCE)	0.00088	0.00088	0.00088
	(!DE * SCE)	-0.00064	-0.00064	-0.00064
	(!CLK * DE * !SCE * Q * !Q_N)	0.01301	0.01288	0.01546
	(!CLK * DE * !SCE * Q * !Q_N)	0.00992	0.00980	0.01239
	(!CLK * DE * !SCE * !Q * Q_N)	0.01267	0.01256	0.01503
	(!CLK * DE * !SCE * !Q * Q_N)	0.00957	0.00945	0.01192
	(!CLK * !DE * !SCE)	0.00087	0.00088	0.00088
	(!CLK * !DE * !SCE)	-0.00064	-0.00064	-0.00064

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__sedfxbp_1	(DE * SCE)	0.00134	0.00136	0.00533
	(DE * SCE)	0.00366	0.00368	0.00764
	(CLK * DE * !SCE)	0.00246	0.00242	0.00598
	(CLK * DE * !SCE)	0.00546	0.00541	0.00898
	(CLK * !DE * !SCE)	-0.00027	-0.00026	-0.00026
	(CLK * !DE * !SCE)	0.00127	0.00127	0.00127
	(!DE * SCE)	-0.00026	-0.00026	-0.00026
	(!DE * SCE)	0.00127	0.00128	0.00127
	(!CLK * DE * !SCE * Q * !Q_N)	0.00750	0.00743	0.01199
	(!CLK * DE * !SCE * Q * !Q_N)	0.01046	0.01040	0.01495
	(!CLK * DE * !SCE * !Q * Q_N)	0.00806	0.00800	0.01275
	(!CLK * DE * !SCE * !Q * Q_N)	0.01107	0.01099	0.01575
	(!CLK * !DE * !SCE)	-0.00027	-0.00026	-0.00026
	(!CLK * !DE * !SCE)	0.00127	0.00126	0.00127
sky130_fd_sc_hs__sedfxbp_2	(DE * SCE)	0.00117	0.00118	0.00517
	(DE * SCE)	0.00357	0.00359	0.00757
	(CLK * DE * !SCE)	0.00235	0.00230	0.00586
	(CLK * DE * !SCE)	0.00547	0.00541	0.00897
	(CLK * !DE * !SCE)	-0.00027	-0.00027	-0.00027
	(CLK * !DE * !SCE)	0.00133	0.00133	0.00133
	(!DE * SCE)	-0.00027	-0.00027	-0.00027
	(!DE * SCE)	0.00134	0.00133	0.00133
	(!CLK * DE * !SCE * Q * !Q_N)	0.00736	0.00728	0.01183
	(!CLK * DE * !SCE * Q * !Q_N)	0.01044	0.01036	0.01491
	(!CLK * DE * !SCE * !Q * Q_N)	0.00793	0.00786	0.01261
	(!CLK * DE * !SCE * !Q * Q_N)	0.01104	0.01096	0.01571
	(!CLK * !DE * !SCE)	-0.00027	-0.00028	-0.00027
	(!CLK * !DE * !SCE)	0.00133	0.00133	0.00133

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__sedfxbp_1	SCE	0.00682	0.00653	0.01267
	SCE	0.00184	0.00153	0.00768
	(CLK * !SCE)	0.01053	0.01026	0.01604
	(CLK * !SCE)	0.00486	0.00458	0.01036
	(!CLK * D * !SCE * Q * !Q_N)	0.00420	0.00399	0.00820
	(!CLK * D * !SCE * Q * !Q_N)	0.00006	-0.00015	0.00407
	(!CLK * D * !SCE * !Q * Q_N)	0.01593	0.01567	0.02146
	(!CLK * D * !SCE * !Q * Q_N)	0.01027	0.01000	0.01578
	(!CLK * !D * !SCE * Q * !Q_N)	0.01245	0.01226	0.01647
	(!CLK * !D * !SCE * Q * !Q_N)	0.00989	0.00967	0.01388
	(!CLK * !D * !SCE * !Q * Q_N)	0.00413	0.00397	0.00823
	(!CLK * !D * !SCE * !Q * Q_N)	0.00005	-0.00014	0.00414
sky130_fd_sc_hs__sedfxbp_2	SCE	0.00684	0.00655	0.01271
	SCE	0.00177	0.00146	0.00764
	(CLK * !SCE)	0.01064	0.01038	0.01616
	(CLK * !SCE)	0.00486	0.00457	0.01038
	(!CLK * D * !SCE * Q * !Q_N)	0.00417	0.00397	0.00820
	(!CLK * D * !SCE * Q * !Q_N)	-0.00001	-0.00024	0.00400
	(!CLK * D * !SCE * !Q * Q_N)	0.01593	0.01567	0.02147
	(!CLK * D * !SCE * !Q * Q_N)	0.01015	0.00989	0.01570
	(!CLK * !D * !SCE * Q * !Q_N)	0.01232	0.01219	0.01636
	(!CLK * !D * !SCE * Q * !Q_N)	0.00974	0.00958	0.01375
	(!CLK * !D * !SCE * !Q * Q_N)	0.00413	0.00402	0.00825
	(!CLK * !D * !SCE * !Q * Q_N)	-0.00001	-0.00014	0.00410

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__sedfxbp_1	SCE	0.00197	0.00191	0.00851
	SCE	0.00695	0.00689	0.01349
	(CLK * !SCE)	0.00756	0.00757	0.01203
	(CLK * !SCE)	0.01012	0.01015	0.01463
	(!CLK * D * !SCE * Q * !Q_N)	-0.00002	0.00003	0.00459
	(!CLK * D * !SCE * Q * !Q_N)	0.00410	0.00417	0.00872
	(!CLK * D * !SCE * !Q * Q_N)	0.00861	0.00856	0.01553
	(!CLK * D * !SCE * !Q * Q_N)	0.01428	0.01423	0.02119
	(!CLK * !D * !SCE * Q * !Q_N)	0.01298	0.01300	0.01743
	(!CLK * !D * !SCE * Q * !Q_N)	0.01554	0.01557	0.02002
	(!CLK * !D * !SCE * !Q * Q_N)	-0.00012	-0.00007	0.00452
	(!CLK * !D * !SCE * !Q * Q_N)	0.00395	0.00402	0.00862
sky130_fd_sc_hs__sedfxbp_2	SCE	0.00179	0.00173	0.00835
	SCE	0.00685	0.00681	0.01341
	(CLK * !SCE)	0.00762	0.00763	0.01210
	(CLK * !SCE)	0.01019	0.01022	0.01469
	(!CLK * D * !SCE * Q * !Q_N)	-0.00004	0.00000	0.00457
	(!CLK * D * !SCE * Q * !Q_N)	0.00414	0.00420	0.00876
	(!CLK * D * !SCE * !Q * Q_N)	0.00847	0.00842	0.01540
	(!CLK * D * !SCE * !Q * Q_N)	0.01425	0.01421	0.02117
	(!CLK * !D * !SCE * Q * !Q_N)	0.01298	0.01300	0.01743
	(!CLK * !D * !SCE * Q * !Q_N)	0.01555	0.01559	0.02004
	(!CLK * !D * !SCE * !Q * Q_N)	-0.00017	-0.00012	0.00447
	(!CLK * !D * !SCE * !Q * Q_N)	0.00396	0.00404	0.00864

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__sedfxbp_1	(CLK * SCE)	0.00415	0.00405	0.00579
	(CLK * SCE)	0.00176	0.00165	0.00340
	(!CLK * SCE * Q * !Q_N) + (!CLK * SCE * !Q * Q_N)	0.00957	0.00946	0.01114
	(!CLK * SCE * Q * !Q_N) + (!CLK * SCE * !Q * Q_N)	0.00718	0.00707	0.00876
	!SCE	0.00079	0.00070	0.00068
	!SCE	-0.00082	-0.00092	-0.00093
sky130_fd_sc_hs__sedfxbp_2	(CLK * SCE)	0.00424	0.00414	0.00588
	(CLK * SCE)	0.00180	0.00169	0.00344
	(!CLK * SCE * Q * !Q_N) + (!CLK * SCE * !Q * Q_N)	0.00955	0.00944	0.01113
	(!CLK * SCE * Q * !Q_N) + (!CLK * SCE * !Q * Q_N)	0.00711	0.00699	0.00869
	!SCE	0.00078	0.00069	0.00067
	!SCE	-0.00085	-0.00096	-0.00097

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__sedfxbp_1	(CLK * SCE)	0.00213	0.00203	0.00394
	(CLK * SCE)	0.00452	0.00444	0.00632
	(!CLK * SCE * Q * !Q_N) + (!CLK * SCE * !Q * Q_N)	0.00761	0.00750	0.00981
	(!CLK * SCE * Q * !Q_N) + (!CLK * SCE * !Q * Q_N)	0.01000	0.00989	0.01219
	!SCE	-0.00064	-0.00066	-0.00066
	!SCE	0.00094	0.00095	0.00095
sky130_fd_sc_hs__sedfxbp_2	(CLK * SCE)	0.00210	0.00201	0.00391
	(CLK * SCE)	0.00455	0.00446	0.00634
	(!CLK * SCE * Q * !Q_N) + (!CLK * SCE * !Q * Q_N)	0.00756	0.00746	0.00976
	(!CLK * SCE * Q * !Q_N) + (!CLK * SCE * !Q * Q_N)	0.01001	0.00991	0.01220
	!SCE	-0.00064	-0.00066	-0.00066
	!SCE	0.00098	0.00099	0.00099

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

Cell Name	When	Power(pJ)		
		first	mid	last

sky130_fd_sc_hs__sedfxbp_1	**(CLK * D)**	0.00624	0.00611	0.01378
	(CLK * D)	0.00192	0.00176	0.00943
	(CLK * !D)	0.00651	0.00638	0.01402
	(CLK * !D)	0.00219	0.00203	0.00967
	(!CLK * D * SCD * Q * !Q_N)	0.00367	0.00359	0.00786
	(!CLK * D * SCD * Q * !Q_N)	0.00002	-0.00008	0.00420
	(!CLK * D * DE * SCD * !Q * Q_N)	0.00354	0.00345	0.00773
	(!CLK * D * DE * SCD * !Q * Q_N)	-0.00011	-0.00021	0.00407
	(!CLK * D * DE * !SCD * !Q * Q_N)	0.01194	0.01181	0.01667
	(!CLK * D * DE * !SCD * !Q * Q_N)	0.00894	0.00880	0.01366
	(!CLK * D * !SCD * Q * !Q_N)	0.01196	0.01182	0.01670
	(!CLK * D * !SCD * Q * !Q_N)	0.00895	0.00881	0.01367
	(!CLK * D * !DE * SCD * !Q * Q_N)	0.01167	0.01149	0.01883
	(!CLK * D * !DE * SCD * !Q * Q_N)	0.00735	0.00713	0.01448
	(!CLK * D * !DE * !SCD * !Q * Q_N)	0.00402	0.00391	0.00822
	(!CLK * D * !DE * !SCD * !Q * Q_N)	0.00032	0.00020	0.00451
	(!CLK * !D * SCD * !Q * Q_N)	0.01167	0.01149	0.01881
	(!CLK * !D * SCD * !Q * Q_N)	0.00735	0.00714	0.01446
	(!CLK * !D * DE * SCD * Q * !Q_N)	0.01197	0.01177	0.01906
	(!CLK * !D * DE * SCD * Q * !Q_N)	0.00764	0.00742	0.01472
	(!CLK * !D * DE * !SCD * Q * !Q_N)	0.00416	0.00405	0.00835
	(!CLK * !D * DE * !SCD * Q * !Q_N)	0.00045	0.00034	0.00465
	(!CLK * !D * !SCD * !Q * Q_N)	0.00402	0.00391	0.00822
	(!CLK * !D * !SCD * !Q * Q_N)	0.00032	0.00020	0.00451
	(!CLK * !D * !DE * SCD * Q * !Q_N)	0.00367	0.00359	0.00786
	(!CLK * !D * !DE * SCD * Q * !Q_N)	0.00002	-0.00008	0.00420
	(!CLK * !D * !DE * !SCD * Q * !Q_N)	0.01196	0.01182	0.01670
	(!CLK * !D * !DE * !SCD * Q * !Q_N)	0.00896	0.00881	0.01367

sky130_fd_sc_hs__sedfxbp_2	**(CLK * D)**	0.00634	0.00619	0.01384
	(CLK * D)	0.00188	0.00171	0.00937
	(CLK * !D)	0.00659	0.00644	0.01405
	(CLK * !D)	0.00213	0.00196	0.00958
	(!CLK * D * SCD * Q * !Q_N)	0.00374	0.00364	0.00789
	(!CLK * D * SCD * Q * !Q_N)	-0.00001	-0.00013	0.00413
	(!CLK * D * DE * SCD * !Q * Q_N)	0.00361	0.00352	0.00777
	(!CLK * D * DE * SCD * !Q * Q_N)	-0.00013	-0.00025	0.00400
	(!CLK * D * DE * !SCD * !Q * Q_N)	0.01205	0.01189	0.01670
	(!CLK * D * DE * !SCD * !Q * Q_N)	0.00897	0.00880	0.01358
	(!CLK * D * !SCD * Q * !Q_N)	0.01201	0.01186	0.01668
	(!CLK * D * !SCD * Q * !Q_N)	0.00893	0.00876	0.01356
	(!CLK * D * !DE * SCD * !Q * Q_N)	0.01165	0.01146	0.01880
	(!CLK * D * !DE * SCD * !Q * Q_N)	0.00720	0.00698	0.01432
	(!CLK * D * !DE * !SCD * !Q * Q_N)	0.00413	0.00403	0.00829
	(!CLK * D * !DE * !SCD * !Q * Q_N)	0.00034	0.00021	0.00448
	(!CLK * !D * SCD * !Q * Q_N)	0.01165	0.01147	0.01877
	(!CLK * !D * SCD * !Q * Q_N)	0.00720	0.00699	0.01430
	(!CLK * !D * DE * SCD * Q * !Q_N)	0.01198	0.01177	0.01905
	(!CLK * !D * DE * SCD * Q * !Q_N)	0.00752	0.00730	0.01459
	(!CLK * !D * DE * !SCD * Q * !Q_N)	0.00426	0.00416	0.00842
	(!CLK * !D * DE * !SCD * Q * !Q_N)	0.00047	0.00034	0.00461
	(!CLK * !D * !SCD * !Q * Q_N)	0.00413	0.00403	0.00829
	(!CLK * !D * !SCD * !Q * Q_N)	0.00034	0.00021	0.00449
	(!CLK * !D * !DE * SCD * Q * !Q_N)	0.00374	0.00364	0.00789
	(!CLK * !D * !DE * SCD * Q * !Q_N)	-0.00001	-0.00013	0.00412
	(!CLK * !D * !DE * !SCD * Q * !Q_N)	0.01202	0.01185	0.01668
	(!CLK * !D * !DE * !SCD * Q * !Q_N)	0.00894	0.00876	0.01357

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

Cell Name	When	Power(pJ)		
		first	mid	last

sky130_fd_sc_hs__sedfxbp_1	**(CLK * D)**	0.00396	0.00453	0.01222
	(CLK * D)	0.00696	0.00755	0.01517
	(CLK * !D)	0.00395	0.00453	0.01223
	(CLK * !D)	0.00695	0.00754	0.01519
	(!CLK * D * SCD * Q * !Q_N)	0.00005	0.00017	0.00485
	(!CLK * D * SCD * Q * !Q_N)	0.00369	0.00383	0.00849
	(!CLK * D * DE * SCD * !Q * Q_N)	0.00019	0.00031	0.00499
	(!CLK * D * DE * SCD * !Q * Q_N)	0.00383	0.00397	0.00863
	(!CLK * D * DE * !SCD * !Q * Q_N)	0.00931	0.00986	0.01746
	(!CLK * D * DE * !SCD * !Q * Q_N)	0.01231	0.01287	0.02044
	(!CLK * D * !SCD * Q * !Q_N)	0.00932	0.00987	0.01744
	(!CLK * D * !SCD * Q * !Q_N)	0.01232	0.01287	0.02042
	(!CLK * D * !DE * SCD * !Q * Q_N)	0.00651	0.00656	0.01553
	(!CLK * D * !DE * SCD * !Q * Q_N)	0.01085	0.01090	0.01987
	(!CLK * D * !DE * !SCD * !Q * Q_N)	-0.00020	-0.00009	0.00452
	(!CLK * D * !DE * !SCD * !Q * Q_N)	0.00349	0.00363	0.00823
	(!CLK * !D * SCD * !Q * Q_N)	0.00652	0.00657	0.01553
	(!CLK * !D * SCD * !Q * Q_N)	0.01087	0.01091	0.01987
	(!CLK * !D * DE * SCD * Q * !Q_N)	0.00625	0.00631	0.01528
	(!CLK * !D * DE * SCD * Q * !Q_N)	0.01060	0.01065	0.01961
	(!CLK * !D * DE * !SCD * Q * !Q_N)	-0.00034	-0.00022	0.00439
	(!CLK * !D * DE * !SCD * Q * !Q_N)	0.00335	0.00349	0.00809
	(!CLK * !D * !SCD * !Q * Q_N)	-0.00020	-0.00009	0.00453
	(!CLK * !D * !SCD * !Q * Q_N)	0.00349	0.00363	0.00823
	(!CLK * !D * !DE * SCD * Q * !Q_N)	0.00005	0.00017	0.00484
	(!CLK * !D * !DE * SCD * Q * !Q_N)	0.00369	0.00383	0.00850
	(!CLK * !D * !DE * !SCD * Q * !Q_N)	0.00932	0.00987	0.01744
	(!CLK * !D * !DE * !SCD * Q * !Q_N)	0.01233	0.01287	0.02041

sky130_fd_sc_hs__sedfxbp_2	**(CLK * D)**	0.00413	0.00469	0.01237
	(CLK * D)	0.00722	0.00780	0.01542
	(CLK * !D)	0.00412	0.00469	0.01238
	(CLK * !D)	0.00721	0.00779	0.01542
	(!CLK * D * SCD * Q * !Q_N)	0.00013	0.00023	0.00489
	(!CLK * D * SCD * Q * !Q_N)	0.00387	0.00400	0.00864
	(!CLK * D * DE * SCD * !Q * Q_N)	0.00025	0.00036	0.00501
	(!CLK * D * DE * SCD * !Q * Q_N)	0.00400	0.00412	0.00877
	(!CLK * D * DE * !SCD * !Q * Q_N)	0.00936	0.00990	0.01749
	(!CLK * D * DE * !SCD * !Q * Q_N)	0.01246	0.01299	0.02055
	(!CLK * D * !SCD * Q * !Q_N)	0.00943	0.00996	0.01753
	(!CLK * D * !SCD * Q * !Q_N)	0.01252	0.01305	0.02060
	(!CLK * D * !DE * SCD * !Q * Q_N)	0.00652	0.00656	0.01550
	(!CLK * D * !DE * SCD * !Q * Q_N)	0.01099	0.01103	0.01996
	(!CLK * D * !DE * !SCD * !Q * Q_N)	-0.00018	-0.00009	0.00451
	(!CLK * D * !DE * !SCD * !Q * Q_N)	0.00362	0.00373	0.00832
	(!CLK * !D * SCD * !Q * Q_N)	0.00654	0.00657	0.01550
	(!CLK * !D * SCD * !Q * Q_N)	0.01101	0.01104	0.01997
	(!CLK * !D * DE * SCD * Q * !Q_N)	0.00624	0.00628	0.01522
	(!CLK * !D * DE * SCD * Q * !Q_N)	0.01071	0.01075	0.01970
	(!CLK * !D * DE * !SCD * Q * !Q_N)	-0.00030	-0.00021	0.00439
	(!CLK * !D * DE * !SCD * Q * !Q_N)	0.00349	0.00361	0.00820
	(!CLK * !D * !SCD * !Q * Q_N)	-0.00018	-0.00008	0.00451
	(!CLK * !D * !SCD * !Q * Q_N)	0.00362	0.00373	0.00832
	(!CLK * !D * !DE * SCD * Q * !Q_N)	0.00013	0.00023	0.00489
	(!CLK * !D * !DE * SCD * Q * !Q_N)	0.00387	0.00399	0.00864
	(!CLK * !D * !DE * !SCD * Q * !Q_N)	0.00943	0.00996	0.01752
	(!CLK * !D * !DE * !SCD * Q * !Q_N)	0.01252	0.01305	0.02059

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)	0.01070	0.01033	0.01538
	(SCD * SCE * Q * !Q_N)	0.00765	0.00727	0.01232
	(D * !SCE * Q * !Q_N)	0.01069	0.01032	0.01537
	(D * !SCE * Q * !Q_N)	0.00764	0.00726	0.01231
	(D * !DE * !SCE * !Q * Q_N)	0.01069	0.01028	0.01537
	(D * !DE * !SCE * !Q * Q_N)	0.00764	0.00722	0.01231
	(!SCD * SCE * !Q * Q_N)	0.01070	0.01029	0.01538
	(!SCD * SCE * !Q * Q_N)	0.00765	0.00723	0.01232
	(!D * !SCE * !Q * Q_N)	0.01069	0.01027	0.01537
	(!D * !SCE * !Q * Q_N)	0.00764	0.00723	0.01231
	(!D * !DE * !SCE * Q * !Q_N)	0.01069	0.01032	0.01537
	(!D * !DE * !SCE * Q * !Q_N)	0.00764	0.00726	0.01231
sky130_fd_sc_hs__sedfxbp_2	(SCD * SCE * Q * !Q_N)	0.01064	0.01027	0.01534
	(SCD * SCE * Q * !Q_N)	0.00759	0.00721	0.01229
	(D * !SCE * Q * !Q_N)	0.01062	0.01025	0.01532
	(D * !SCE * Q * !Q_N)	0.00758	0.00719	0.01228
	(D * !DE * !SCE * !Q * Q_N)	0.01072	0.01030	0.01541
	(D * !DE * !SCE * !Q * Q_N)	0.00768	0.00725	0.01236
	(!SCD * SCE * !Q * Q_N)	0.01074	0.01032	0.01543
	(!SCD * SCE * !Q * Q_N)	0.00769	0.00727	0.01238
	(!D * !SCE * !Q * Q_N)	0.01072	0.01030	0.01541
	(!D * !SCE * !Q * Q_N)	0.00768	0.00725	0.01236
	(!D * !DE * !SCE * Q * !Q_N)	0.01062	0.01025	0.01532
	(!D * !DE * !SCE * Q * !Q_N)	0.00758	0.00719	0.01228

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)	0.00585	0.00582	0.01151
	(SCD * SCE * Q * !Q_N)	0.00891	0.00887	0.01456
	(SCD * SCE * !Q * Q_N)	0.01125	0.01115	0.01681
	(SCD * SCE * !Q * Q_N)	0.01431	0.01421	0.01987
	(D * DE * !SCE * !Q * Q_N)	0.01121	0.01111	0.01677
	(D * DE * !SCE * !Q * Q_N)	0.01427	0.01416	0.01983
	(D * !SCE * Q * !Q_N)	0.00585	0.00583	0.01151
	(D * !SCE * Q * !Q_N)	0.00891	0.00888	0.01457
	(D * !DE * !SCE * !Q * Q_N)	0.00584	0.00585	0.01143
	(D * !DE * !SCE * !Q * Q_N)	0.00890	0.00891	0.01448
	(!SCD * SCE * Q * !Q_N)	0.01225	0.01231	0.01839
	(!SCD * SCE * Q * !Q_N)	0.01532	0.01537	0.02146
	(!SCD * SCE * !Q * Q_N)	0.00584	0.00585	0.01143
	(!SCD * SCE * !Q * Q_N)	0.00890	0.00891	0.01448
	(!D * DE * !SCE * Q * !Q_N)	0.01228	0.01234	0.01841
	(!D * DE * !SCE * Q * !Q_N)	0.01534	0.01539	0.02145
	(!D * !SCE * !Q * Q_N)	0.00584	0.00585	0.01143
	(!D * !SCE * !Q * Q_N)	0.00890	0.00891	0.01448
	(!D * !DE * !SCE * Q * !Q_N)	0.00585	0.00583	0.01151
	(!D * !DE * !SCE * Q * !Q_N)	0.00891	0.00888	0.01457

sky130_fd_sc_hs__sedfxbp_2	**(SCD * SCE * Q * !Q_N)**	0.00595	0.00595	0.01162
	(SCD * SCE * Q * !Q_N)	0.00899	0.00900	0.01467
	(SCD * SCE * !Q * Q_N)	0.01116	0.01110	0.01674
	(SCD * SCE * !Q * Q_N)	0.01420	0.01414	0.01978
	(D * DE * !SCE * !Q * Q_N)	0.01113	0.01106	0.01671
	(D * DE * !SCE * !Q * Q_N)	0.01417	0.01410	0.01976
	(D * !SCE * Q * !Q_N)	0.00596	0.00596	0.01164
	(D * !SCE * Q * !Q_N)	0.00900	0.00901	0.01468
	(D * !DE * !SCE * !Q * Q_N)	0.00586	0.00590	0.01146
	(D * !DE * !SCE * !Q * Q_N)	0.00890	0.00895	0.01451
	(!SCD * SCE * Q * !Q_N)	0.01229	0.01239	0.01837
	(!SCD * SCE * Q * !Q_N)	0.01535	0.01544	0.02143
	(!SCD * SCE * !Q * Q_N)	0.00585	0.00590	0.01146
	(!SCD * SCE * !Q * Q_N)	0.00890	0.00894	0.01451
	(!D * DE * !SCE * Q * !Q_N)	0.01233	0.01242	0.01839
	(!D * DE * !SCE * Q * !Q_N)	0.01538	0.01547	0.02144
	(!D * !SCE * !Q * Q_N)	0.00586	0.00590	0.01146
	(!D * !SCE * !Q * Q_N)	0.00890	0.00895	0.01451
	(!D * !DE * !SCE * Q * !Q_N)	0.00596	0.00596	0.01163
	(!D * !DE * !SCE * Q * !Q_N)	0.00900	0.00901	0.01468

SKY130_FD_SC_HS__SEDFXTPx

sky130_fd_sc_hs_tt_1.50v_25C.ccs
Cell Library: Process , Voltage
1.50, 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	0.00196	0.00380	0.00176	0.00372	0.00271	0.85571
sky130_fd_sc_hs__sedfxtp_2	0.00206	0.00383	0.00178	0.00377	0.00273	1.68606
sky130_fd_sc_hs__sedfxtp_4	0.00206	0.00381	0.00178	0.00374	0.00283	3.21426

Leakage Information

Cell Name	Leakage(nW)		
	Min.	**Avg**	**Max.**
sky130_fd_sc_hs__sedfxtp_1	0.00000	0.51374	0.97322
sky130_fd_sc_hs__sedfxtp_2	0.00000	0.53093	1.00295
sky130_fd_sc_hs__sedfxtp_4	0.00000	0.56532	1.06242

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)**	0.24384	0.87645	6.93400
sky130_fd_sc_hs__sedfxtp_2	**CLK->Q (RR)**	0.24978	0.78131	6.94499
sky130_fd_sc_hs__sedfxtp_4	**CLK->Q (RR)**	0.28031	0.73871	6.97724

Delay(ns) to Q falling :

Cell Name	Timing Arc(Dir)	Delay(ns)		
		First	Mid	Last
sky130_fd_sc_hs__sedfxtp_1	**CLK->Q (RF)**	0.22593	0.59661	2.58252
sky130_fd_sc_hs__sedfxtp_2	**CLK->Q (RF)**	0.26416	0.62684	2.67169
sky130_fd_sc_hs__sedfxtp_4	**CLK->Q (RF)**	0.35415	0.71918	2.87199

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)	-0.19505	-0.30447	-1.47630
	setup	CLK (R)	0.24861	0.33925	1.54320
sky130_fd_sc_hs__sedfxtp_2	hold	CLK (R)	-0.19752	-0.30788	-1.48689
	setup	CLK (R)	0.24799	0.33649	1.54190
sky130_fd_sc_hs__sedfxtp_4	hold	CLK (R)	-0.20100	-0.30901	-1.50076
	setup	CLK (R)	0.24655	0.33649	1.55099

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)	-0.51197	-0.64015	-3.34086
	setup	CLK (R)	0.64878	0.73590	5.13493
sky130_fd_sc_hs__sedfxtp_2	hold	CLK (R)	-0.50876	-0.63807	-3.33667
	setup	CLK (R)	0.64814	0.73429	4.67222
sky130_fd_sc_hs__sedfxtp_4	hold	CLK (R)	-0.51076	-0.64163	-3.41133
	setup	CLK (R)	0.63816	0.73019	3.74172

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)	-0.04690	-0.06560	-0.24962
	setup	CLK (R)	0.69761	0.69830	2.22873
sky130_fd_sc_hs__sedfxtp_2	hold	CLK (R)	-0.05109	-0.06560	-0.24553
	setup	CLK (R)	0.69149	0.69710	1.93646
sky130_fd_sc_hs__sedfxtp_4	hold	CLK (R)	-0.04899	-0.06560	-0.25443
	setup	CLK (R)	0.68257	0.69019	1.56928

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)	-0.28411	-0.44258	-2.49502
	setup	CLK (R)	0.56994	0.68669	3.60361
sky130_fd_sc_hs__sedfxtp_2	hold	CLK (R)	-0.28785	-0.44260	-2.49686
	setup	CLK (R)	0.56939	0.68629	3.60115
sky130_fd_sc_hs__sedfxtp_4	hold	CLK (R)	-0.28872	-0.44385	-2.49913
	setup	CLK (R)	0.56943	0.68948	3.61904

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)	-0.04690	-0.06560	-0.24962
	hold	CLK (R)	-0.20798	-0.26121	-0.59955
	setup	CLK (R)	0.24911	0.32121	1.49182
	setup	CLK (R)	0.69761	0.69830	2.22873
sky130_fd_sc_hs__sedfxtp_2	hold	CLK (R)	-0.05109	-0.06560	-0.24553
	hold	CLK (R)	-0.21170	-0.25025	-0.58858
	setup	CLK (R)	0.24996	0.32121	1.49346
	setup	CLK (R)	0.69149	0.69710	1.93646
sky130_fd_sc_hs__sedfxtp_4	hold	CLK (R)	-0.04899	-0.06560	-0.25443
	hold	CLK (R)	-0.21020	-0.25899	-0.59777
	setup	CLK (R)	0.24782	0.32121	1.49955
	setup	CLK (R)	0.68257	0.69019	1.56928

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)	-0.52709	-0.66160	-3.19417
	hold	CLK (R)	-0.28411	-0.44258	-2.49502
	setup	CLK (R)	0.56994	0.68669	3.60361
	setup	CLK (R)	0.31086	0.45813	2.51751
sky130_fd_sc_hs__sedfxtp_2	hold	CLK (R)	-0.52457	-0.65835	-3.18761
	hold	CLK (R)	-0.28785	-0.44260	-2.49686
	setup	CLK (R)	0.56939	0.68629	3.60115
	setup	CLK (R)	0.31190	0.45844	2.51656
sky130_fd_sc_hs__sedfxtp_4	hold	CLK (R)	-0.52662	-0.66553	-3.51385
	hold	CLK (R)	-0.28872	-0.44385	-2.49913
	setup	CLK (R)	0.56943	0.68948	3.61904
	setup	CLK (R)	0.30983	0.45849	2.51425

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)	-0.11477	-0.20422	-1.11928
	setup	CLK (R)	0.14924	0.22792	1.18471
sky130_fd_sc_hs__sedfxtp_2	hold	CLK (R)	-0.11559	-0.20313	-1.12302
	setup	CLK (R)	0.14951	0.22614	1.17711
sky130_fd_sc_hs__sedfxtp_4	hold	CLK (R)	-0.11696	-0.20524	-1.14472
	setup	CLK (R)	0.14989	0.22792	1.19248

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)	-0.33740	-0.45863	-2.40284
	setup	CLK (R)	0.45002	0.54279	4.64652
sky130_fd_sc_hs__sedfxtp_2	hold	CLK (R)	-0.33514	-0.45615	-2.40025
	setup	CLK (R)	0.44511	0.53721	4.27581
sky130_fd_sc_hs__sedfxtp_4	hold	CLK (R)	-0.33980	-0.46107	-2.94763
	setup	CLK (R)	0.44031	0.53447	3.54324

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)	0.00417	0.02672	0.27689
	setup	CLK (R)	0.47088	0.46231	1.96569
sky130_fd_sc_hs__sedfxtp_2	hold	CLK (R)	0.00228	0.02654	0.28237
	setup	CLK (R)	0.46457	0.45711	1.71267
sky130_fd_sc_hs__sedfxtp_4	hold	CLK (R)	0.00698	0.02425	0.27242
	setup	CLK (R)	0.45928	0.45711	1.43844

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)	-0.20232	-0.36859	-1.88624
	setup	CLK (R)	0.45419	0.53414	4.57450
sky130_fd_sc_hs__sedfxtp_2	hold	CLK (R)	-0.20436	-0.36961	-1.99023
	setup	CLK (R)	0.44830	0.53005	4.10468
sky130_fd_sc_hs__sedfxtp_4	hold	CLK (R)	-0.20571	-0.36977	-2.48145
	setup	CLK (R)	0.44362	0.52678	3.20376

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)	-0.35818	-0.38038	-0.15517
	hold	CLK (R)	0.00417	0.02672	0.27689
	hold	CLK (R)	-0.09819	-0.19295	-1.00243
	hold	CLK (R)	-0.14880	-0.19737	-0.39932
	setup	CLK (R)	0.47063	0.46231	1.96569
	setup	CLK (R)	0.13477	0.21793	1.08385
	setup	CLK (R)	0.13482	0.21793	1.07993
	setup	CLK (R)	0.47088	0.46207	1.91922
sky130_fd_sc_hs__sedfxtp_2	hold	CLK (R)	-0.35376	-0.37545	-0.12973
	hold	CLK (R)	0.00228	0.02654	0.28237
	hold	CLK (R)	-0.10047	-0.19551	-1.00974
	hold	CLK (R)	-0.15031	-0.19086	-0.38964
	setup	CLK (R)	0.46443	0.45711	1.71267
	setup	CLK (R)	0.13206	0.21775	1.07780
	setup	CLK (R)	0.13214	0.21764	1.07803
	setup	CLK (R)	0.46457	0.45711	1.70689
sky130_fd_sc_hs__sedfxtp_4	hold	CLK (R)	-0.35767	-0.38202	-0.21291
	hold	CLK (R)	0.00698	0.02425	0.27242
	hold	CLK (R)	-0.10141	-0.19692	-1.03357
	hold	CLK (R)	-0.14918	-0.19388	-0.40904
	setup	CLK (R)	0.45928	0.45711	1.38679
	setup	CLK (R)	0.13083	0.21793	1.09278
	setup	CLK (R)	0.13083	0.21793	1.09273
	setup	CLK (R)	0.45911	0.45711	1.43844

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)	-0.20812	-0.37723	-2.49001
	hold	CLK (R)	-0.31917	-0.43511	-1.88624
	hold	CLK (R)	-0.31130	-0.42941	-1.89571
	hold	CLK (R)	-0.20232	-0.36859	-2.46940
	setup	CLK (R)	0.25910	0.40148	2.54284
	setup	CLK (R)	0.35931	0.45777	2.91716
	setup	CLK (R)	0.45419	0.53414	4.57450
	setup	CLK (R)	0.22966	0.38305	2.49682
sky130_fd_sc_hs__sedfxtp_2	hold	CLK (R)	-0.21087	-0.37689	-2.49327
	hold	CLK (R)	-0.31087	-0.43395	-1.99023
	hold	CLK (R)	-0.30473	-0.42713	-1.99608
	hold	CLK (R)	-0.20436	-0.36961	-2.47472
	setup	CLK (R)	0.25932	0.40062	2.53884
	setup	CLK (R)	0.35397	0.45521	2.90769
	setup	CLK (R)	0.44830	0.53005	4.10468
	setup	CLK (R)	0.22903	0.38293	2.49227
sky130_fd_sc_hs__sedfxtp_4	hold	CLK (R)	-0.21529	-0.37812	-2.50046
	hold	CLK (R)	-0.31836	-0.43715	-2.79634
	hold	CLK (R)	-0.31281	-0.43165	-2.82308
	hold	CLK (R)	-0.20571	-0.36977	-2.48145
	setup	CLK (R)	0.25816	0.40062	2.54339
	setup	CLK (R)	0.35868	0.45951	2.92525
	setup	CLK (R)	0.44362	0.52678	3.20376
	setup	CLK (R)	0.22866	0.38508	2.49487

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 ()**	0.10898	0.74341	16.50020
	min_pulse_width	**CLK ()**	0.10898	0.74341	16.50020
	min_pulse_width	**CLK ()**	0.18378	0.74341	16.50020
	min_pulse_width	**CLK ()**	0.10898	0.74341	16.50020
	min_pulse_width	**CLK ()**	0.18378	0.74341	16.50020
	min_pulse_width	**CLK ()**	0.10898	0.74341	16.50020
	min_pulse_width	**CLK ()**	0.18101	0.74341	16.50020
	min_pulse_width	**CLK ()**	0.18101	0.74341	16.50020
	min_pulse_width	**CLK ()**	0.10898	0.74341	16.50020
	min_pulse_width	**CLK ()**	0.18378	0.74341	16.50020
sky130_fd_sc_hs__sedfxtp_2	**min_pulse_width**	**CLK ()**	0.12006	0.74341	16.50020
	min_pulse_width	**CLK ()**	0.12006	0.74341	16.50020
	min_pulse_width	**CLK ()**	0.24750	0.74341	16.50020
	min_pulse_width	**CLK ()**	0.12006	0.74341	16.50020
	min_pulse_width	**CLK ()**	0.24750	0.74341	16.50020
	min_pulse_width	**CLK ()**	0.12006	0.74341	16.50020
	min_pulse_width	**CLK ()**	0.24473	0.74341	16.50020
	min_pulse_width	**CLK ()**	0.24473	0.74341	16.50020
	min_pulse_width	**CLK ()**	0.12006	0.74341	16.50020
	min_pulse_width	**CLK ()**	0.24750	0.74341	16.50020
sky130_fd_sc_hs__sedfxtp_4	**min_pulse_width**	**CLK ()**	0.14500	0.74341	16.50020
	min_pulse_width	**CLK ()**	0.14500	0.74341	16.50020
	min_pulse_width	**CLK ()**	0.36386	0.74341	16.50020
	min_pulse_width	**CLK ()**	0.14777	0.74341	16.50020
	min_pulse_width	**CLK ()**	0.36386	0.74341	16.50020
	min_pulse_width	**CLK ()**	0.14500	0.74341	16.50020
	min_pulse_width	**CLK ()**	0.36109	0.74341	16.50020
	min_pulse_width	**CLK ()**	0.36109	0.74341	16.50020
	min_pulse_width	**CLK ()**	0.14777	0.74341	16.50020
	min_pulse_width	**CLK ()**	0.36386	0.74341	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 ()	0.19764	0.74341	16.50020
	min_pulse_width	CLK ()	0.21149	0.74341	16.50020
	min_pulse_width	CLK ()	0.34724	0.74341	16.50020
	min_pulse_width	CLK ()	0.19764	0.74341	16.50020
	min_pulse_width	CLK ()	0.34724	0.74341	16.50020
	min_pulse_width	CLK ()	0.19764	0.74341	16.50020
	min_pulse_width	CLK ()	0.38325	0.74341	16.50020
	min_pulse_width	CLK ()	0.34724	0.74341	16.50020
	min_pulse_width	CLK ()	0.19486	0.74341	16.50020
	min_pulse_width	CLK ()	0.34724	0.74341	16.50020
sky130_fd_sc_hs__sedfxtp_2	min_pulse_width	CLK ()	0.19486	0.74341	16.50020
	min_pulse_width	CLK ()	0.21149	0.74341	16.50020
	min_pulse_width	CLK ()	0.34447	0.74341	16.50020
	min_pulse_width	CLK ()	0.19486	0.74341	16.50020
	min_pulse_width	CLK ()	0.34447	0.74341	16.50020
	min_pulse_width	CLK ()	0.19486	0.74341	16.50020
	min_pulse_width	CLK ()	0.37771	0.74341	16.50020
	min_pulse_width	CLK ()	0.34447	0.74341	16.50020
	min_pulse_width	CLK ()	0.19486	0.74341	16.50020
	min_pulse_width	CLK ()	0.34447	0.74341	16.50020

sky130_fd_sc_hs__sedfxtp_4	**min_pulse_width**	**CLK ()**	0.19209	0.74341	16.50020
	min_pulse_width	**CLK ()**	0.20872	0.74341	16.50020
	min_pulse_width	**CLK ()**	0.33061	0.74341	16.50020
	min_pulse_width	**CLK ()**	0.19209	0.74341	16.50020
	min_pulse_width	**CLK ()**	0.33061	0.74341	16.50020
	min_pulse_width	**CLK ()**	0.19209	0.74341	16.50020
	min_pulse_width	**CLK ()**	0.36386	0.74341	16.50020
	min_pulse_width	**CLK ()**	0.33061	0.74341	16.50020
	min_pulse_width	**CLK ()**	0.19209	0.74341	16.50020
	min_pulse_width	**CLK ()**	0.33061	0.74341	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	0.02301	0.02294	0.02828
	CLK	0.01935	0.01927	0.02469
sky130_fd_sc_hs__sedfxtp_2	CLK	0.02519	0.02537	0.03085
	CLK	0.02149	0.02167	0.02715
sky130_fd_sc_hs__sedfxtp_4	CLK	0.02930	0.02991	0.03574
	CLK	0.02551	0.02612	0.03205

Internal switching power(pJ) to Q falling :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__sedfxtp_1	CLK	0.02078	0.02061	0.02581
	CLK	0.01842	0.01819	0.02337
sky130_fd_sc_hs__sedfxtp_2	CLK	0.02291	0.02297	0.02836
	CLK	0.02056	0.02062	0.02578
sky130_fd_sc_hs__sedfxtp_4	CLK	0.02663	0.02681	0.03290
	CLK	0.02416	0.02438	0.02982

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

Cell Name	When	Power(pJ)		
		first	mid	last

sky130_fd_sc_hs__sedfxtp_1	**(DE * SCE)**	0.00361	0.00346	0.00706
	(DE * SCE)	0.00133	0.00117	0.00478
	(CLK * DE * !SCE)	0.00750	0.00736	0.01013
	(CLK * DE * !SCE)	0.00451	0.00438	0.00715
	(CLK * !DE * !SCE)	0.00085	0.00086	0.00085
	(CLK * !DE * !SCE)	-0.00062	-0.00063	-0.00061
	(!DE * SCE)	0.00084	0.00085	0.00085
	(!DE * SCE)	-0.00061	-0.00062	-0.00061
	(!CLK * DE * !SCE * Q)	0.01294	0.01282	0.01542
	(!CLK * DE * !SCE * Q)	0.00996	0.00984	0.01244
	(!CLK * DE * !SCE * !Q)	0.01262	0.01250	0.01499
	(!CLK * DE * !SCE * !Q)	0.00960	0.00949	0.01198
	(!CLK * !DE * !SCE)	0.00084	0.00084	0.00084
	(!CLK * !DE * !SCE)	-0.00062	-0.00062	-0.00062
sky130_fd_sc_hs__sedfxtp_2	**(DE * SCE)**	0.00373	0.00357	0.00715
	(DE * SCE)	0.00134	0.00117	0.00476
	(CLK * DE * !SCE)	0.00762	0.00747	0.01022
	(CLK * DE * !SCE)	0.00451	0.00437	0.00712
	(CLK * !DE * !SCE)	0.00088	0.00088	0.00088
	(CLK * !DE * !SCE)	-0.00065	-0.00065	-0.00065
	(!DE * SCE)	0.00088	0.00089	0.00088
	(!DE * SCE)	-0.00065	-0.00065	-0.00065
	(!CLK * DE * !SCE * Q)	0.01304	0.01291	0.01549
	(!CLK * DE * !SCE * Q)	0.00993	0.00981	0.01238
	(!CLK * DE * !SCE * !Q)	0.01275	0.01264	0.01510
	(!CLK * DE * !SCE * !Q)	0.00962	0.00950	0.01197
	(!CLK * !DE * !SCE)	0.00088	0.00088	0.00088
	(!CLK * !DE * !SCE)	-0.00065	-0.00065	-0.00065

sky130_fd_sc_hs__sedfxtp_4	**(DE * SCE)**	0.00374	0.00358	0.00717
	(DE * SCE)	0.00135	0.00117	0.00478
	(CLK * DE * !SCE)	0.00767	0.00753	0.01026
	(CLK * DE * !SCE)	0.00456	0.00442	0.00715
	(CLK * !DE * !SCE)	0.00088	0.00089	0.00088
	(CLK * !DE * !SCE)	-0.00065	-0.00065	-0.00065
	(!DE * SCE)	0.00089	0.00089	0.00089
	(!DE * SCE)	-0.00065	-0.00065	-0.00065
	(!CLK * DE * !SCE * Q)	0.01295	0.01283	0.01541
	(!CLK * DE * !SCE * Q)	0.00984	0.00972	0.01231
	(!CLK * DE * !SCE * !Q)	0.01263	0.01251	0.01499
	(!CLK * DE * !SCE * !Q)	0.00949	0.00938	0.01185
	(!CLK * !DE * !SCE)	0.00088	0.00089	0.00088
	(!CLK * !DE * !SCE)	-0.00065	-0.00065	-0.00065

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

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

sky130_fd_sc_hs__sedfxtp_1	**(DE * SCE)**	0.00126	0.00129	0.00527
	(DE * SCE)	0.00358	0.00361	0.00758
	(CLK * DE * !SCE)	0.00240	0.00236	0.00592
	(CLK * DE * !SCE)	0.00541	0.00537	0.00894
	(CLK * !DE * !SCE)	-0.00027	-0.00027	-0.00027
	(CLK * !DE * !SCE)	0.00128	0.00127	0.00127
	(!DE * SCE)	-0.00027	-0.00027	-0.00026
	(!DE * SCE)	0.00128	0.00128	0.00128
	(!CLK * DE * !SCE * Q)	0.00736	0.00730	0.01185
	(!CLK * DE * !SCE * Q)	0.01036	0.01028	0.01484
	(!CLK * DE * !SCE * !Q)	0.00794	0.00787	0.01263
	(!CLK * DE * !SCE * !Q)	0.01096	0.01088	0.01564
	(!CLK * !DE * !SCE)	-0.00027	-0.00027	-0.00027
	(!CLK * !DE * !SCE)	0.00128	0.00127	0.00127
sky130_fd_sc_hs__sedfxtp_2	**(DE * SCE)**	0.00122	0.00123	0.00521
	(DE * SCE)	0.00366	0.00366	0.00764
	(CLK * DE * !SCE)	0.00234	0.00229	0.00585
	(CLK * DE * !SCE)	0.00548	0.00542	0.00898
	(CLK * !DE * !SCE)	-0.00027	-0.00027	-0.00027
	(CLK * !DE * !SCE)	0.00135	0.00135	0.00134
	(!DE * SCE)	-0.00027	-0.00027	-0.00026
	(!DE * SCE)	0.00136	0.00135	0.00135
	(!CLK * DE * !SCE * Q)	0.00732	0.00730	0.01179
	(!CLK * DE * !SCE * Q)	0.01042	0.01040	0.01489
	(!CLK * DE * !SCE * !Q)	0.00784	0.00783	0.01252
	(!CLK * DE * !SCE * !Q)	0.01098	0.01096	0.01566
	(!CLK * !DE * !SCE)	-0.00027	-0.00027	-0.00027
	(!CLK * !DE * !SCE)	0.00135	0.00135	0.00134

sky130_fd_sc_hs__sedfxtp_4	**(DE * SCE)**	0.00117	0.00119	0.00517
	(DE * SCE)	0.00361	0.00362	0.00760
	(CLK * DE * !SCE)	0.00250	0.00243	0.00598
	(CLK * DE * !SCE)	0.00562	0.00557	0.00911
	(CLK * !DE * !SCE)	-0.00027	-0.00027	-0.00027
	(CLK * !DE * !SCE)	0.00135	0.00135	0.00135
	(!DE * SCE)	-0.00027	-0.00027	-0.00026
	(!DE * SCE)	0.00136	0.00135	0.00135
	(!CLK * DE * !SCE * Q)	0.00738	0.00731	0.01186
	(!CLK * DE * !SCE * Q)	0.01049	0.01041	0.01496
	(!CLK * DE * !SCE * !Q)	0.00795	0.00794	0.01263
	(!CLK * DE * !SCE * !Q)	0.01109	0.01107	0.01577
	(!CLK * !DE * !SCE)	-0.00027	-0.00027	-0.00027
	(!CLK * !DE * !SCE)	0.00135	0.00135	0.00135

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

Cell Name	When	Power(pJ)		
		first	**mid**	**last**
sky130_fd_sc_hs__sedfxtp_1	**SCE**	0.00681	0.00653	0.01268
	SCE	0.00178	0.00146	0.00762
	(CLK * !SCE)	0.01056	0.01029	0.01609
	(CLK * !SCE)	0.00482	0.00453	0.01033
	(!CLK * D * !SCE * Q)	0.00422	0.00400	0.00824
	(!CLK * D * !SCE * Q)	0.00004	-0.00021	0.00403
	(!CLK * D * !SCE * !Q)	0.01596	0.01570	0.02150
	(!CLK * D * !SCE * !Q)	0.01022	0.00994	0.01575
	(!CLK * !D * !SCE * Q)	0.01234	0.01221	0.01637
	(!CLK * !D * !SCE * Q)	0.00971	0.00956	0.01372
	(!CLK * !D * !SCE * !Q)	0.00416	0.00404	0.00827
	(!CLK * !D * !SCE * !Q)	0.00001	-0.00014	0.00411

sky130_fd_sc_hs__sedfxtp_2	**SCE**	0.00691	0.00663	0.01276
	SCE	0.00178	0.00146	0.00761
	(CLK * !SCE)	0.01070	0.01042	0.01621
	(CLK * !SCE)	0.00486	0.00457	0.01036
	(!CLK * D * !SCE * Q)	0.00425	0.00402	0.00826
	(!CLK * D * !SCE * Q)	0.00000	-0.00025	0.00399
	(!CLK * D * !SCE * !Q)	0.01607	0.01581	0.02160
	(!CLK * D * !SCE * !Q)	0.01022	0.00994	0.01574
	(!CLK * !D * !SCE * Q)	0.01235	0.01219	0.01637
	(!CLK * !D * !SCE * Q)	0.00970	0.00953	0.01370
	(!CLK * !D * !SCE * !Q)	0.00419	0.00405	0.00829
	(!CLK * !D * !SCE * !Q)	-0.00003	-0.00017	0.00407
sky130_fd_sc_hs__sedfxtp_4	**SCE**	0.00690	0.00662	0.01276
	SCE	0.00178	0.00147	0.00762
	(CLK * !SCE)	0.01072	0.01046	0.01622
	(CLK * !SCE)	0.00490	0.00460	0.01039
	(!CLK * D * !SCE * Q)	0.00423	0.00401	0.00825
	(!CLK * D * !SCE * Q)	0.00001	-0.00024	0.00400
	(!CLK * D * !SCE * !Q)	0.01592	0.01566	0.02146
	(!CLK * D * !SCE * !Q)	0.01010	0.00983	0.01563
	(!CLK * !D * !SCE * Q)	0.01241	0.01227	0.01643
	(!CLK * !D * !SCE * Q)	0.00978	0.00963	0.01381
	(!CLK * !D * !SCE * !Q)	0.00418	0.00406	0.00828
	(!CLK * !D * !SCE * !Q)	-0.00002	-0.00016	0.00408

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

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

sky130_fd_sc_hs__sedfxtp_1	**SCE**	0.00189	0.00183	0.00844
	SCE	0.00694	0.00689	0.01348
	(CLK * !SCE)	0.00752	0.00751	0.01199
	(CLK * !SCE)	0.01013	0.01015	0.01464
	(!CLK * D * !SCE * Q)	-0.00004	-0.00000	0.00457
	(!CLK * D * !SCE * Q)	0.00415	0.00421	0.00876
	(!CLK * D * !SCE * !Q)	0.00849	0.00843	0.01540
	(!CLK * D * !SCE * !Q)	0.01425	0.01419	0.02114
	(!CLK * !D * !SCE * Q)	0.01296	0.01297	0.01740
	(!CLK * !D * !SCE * Q)	0.01558	0.01560	0.02005
	(!CLK * !D * !SCE * !Q)	-0.00014	-0.00011	0.00449
	(!CLK * !D * !SCE * !Q)	0.00400	0.00407	0.00867
sky130_fd_sc_hs__sedfxtp_2	**SCE**	0.00189	0.00182	0.00842
	SCE	0.00704	0.00698	0.01356
	(CLK * !SCE)	0.00755	0.00755	0.01202
	(CLK * !SCE)	0.01018	0.01019	0.01469
	(!CLK * D * !SCE * Q)	-0.00005	-0.00002	0.00455
	(!CLK * D * !SCE * Q)	0.00419	0.00425	0.00880
	(!CLK * D * !SCE * !Q)	0.00843	0.00837	0.01534
	(!CLK * D * !SCE * !Q)	0.01430	0.01424	0.02119
	(!CLK * !D * !SCE * Q)	0.01297	0.01297	0.01740
	(!CLK * !D * !SCE * Q)	0.01560	0.01561	0.02008
	(!CLK * !D * !SCE * !Q)	-0.00016	-0.00013	0.00447
	(!CLK * !D * !SCE * !Q)	0.00405	0.00411	0.00871

sky130_fd_sc_hs__sedfxtp_4	**SCE**	0.00184	0.00178	0.00838
	SCE	0.00697	0.00692	0.01351
	(CLK * !SCE)	0.00760	0.00760	0.01207
	(CLK * !SCE)	0.01021	0.01024	0.01472
	(!CLK * D * !SCE * Q)	-0.00005	-0.00002	0.00455
	(!CLK * D * !SCE * Q)	0.00418	0.00423	0.00879
	(!CLK * D * !SCE * !Q)	0.00854	0.00848	0.01546
	(!CLK * D * !SCE * !Q)	0.01439	0.01433	0.02128
	(!CLK * !D * !SCE * Q)	0.01289	0.01288	0.01732
	(!CLK * !D * !SCE * Q)	0.01550	0.01551	0.01996
	(!CLK * !D * !SCE * !Q)	-0.00015	-0.00012	0.00448
	(!CLK * !D * !SCE * !Q)	0.00403	0.00410	0.00869

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__sedfxtp_1	(CLK * SCE)	0.00415	0.00406	0.00580
	(CLK * SCE)	0.00171	0.00160	0.00335
	(!CLK * SCE)	0.00957	0.00947	0.01116
	(!CLK * SCE)	0.00713	0.00701	0.00870
	!SCE	0.00077	0.00068	0.00066
	!SCE	-0.00087	-0.00098	-0.00099
sky130_fd_sc_hs__sedfxtp_2	(CLK * SCE)	0.00425	0.00415	0.00589
	(CLK * SCE)	0.00176	0.00166	0.00341
	(!CLK * SCE)	0.00963	0.00952	0.01121
	(!CLK * SCE)	0.00715	0.00703	0.00873
	!SCE	0.00079	0.00070	0.00068
	!SCE	-0.00088	-0.00098	-0.00100
sky130_fd_sc_hs__sedfxtp_4	(CLK * SCE)	0.00425	0.00415	0.00588
	(CLK * SCE)	0.00179	0.00168	0.00341
	(!CLK * SCE)	0.00947	0.00937	0.01105
	(!CLK * SCE)	0.00701	0.00689	0.00859
	!SCE	0.00079	0.00069	0.00068
	!SCE	-0.00088	-0.00098	-0.00099

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__sedfxtp_1	(CLK * SCE)	0.00215	0.00206	0.00396
	(CLK * SCE)	0.00460	0.00452	0.00640
	(!CLK * SCE)	0.00756	0.00746	0.00978
	(!CLK * SCE)	0.01002	0.00992	0.01222
	!SCE	-0.00063	-0.00065	-0.00065
	!SCE	0.00100	0.00101	0.00101
sky130_fd_sc_hs__sedfxtp_2	(CLK * SCE)	0.00208	0.00199	0.00389
	(CLK * SCE)	0.00457	0.00448	0.00636
	(!CLK * SCE)	0.00746	0.00737	0.00967
	(!CLK * SCE)	0.00995	0.00986	0.01215
	!SCE	-0.00065	-0.00067	-0.00067
	!SCE	0.00101	0.00102	0.00102
sky130_fd_sc_hs__sedfxtp_4	(CLK * SCE)	0.00231	0.00222	0.00410
	(CLK * SCE)	0.00479	0.00470	0.00657
	(!CLK * SCE)	0.00766	0.00755	0.00987
	(!CLK * SCE)	0.01014	0.01003	0.01233
	!SCE	-0.00064	-0.00066	-0.00066
	!SCE	0.00101	0.00102	0.00102

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

Cell Name	When	Power(pJ)		
		first	mid	last

sky130_fd_sc_hs__sedfxtp_1	**(CLK * D)**	0.00614	0.00602	0.01369
	(CLK * D)	0.00182	0.00167	0.00936
	(CLK * !D)	0.00639	0.00626	0.01390
	(CLK * !D)	0.00207	0.00192	0.00957
	(!CLK * D * SCD * Q)	0.00357	0.00350	0.00775
	(!CLK * D * SCD * Q)	-0.00005	-0.00015	0.00412
	(!CLK * D * DE * SCD * !Q)	0.00346	0.00339	0.00765
	(!CLK * D * DE * SCD * !Q)	-0.00016	-0.00026	0.00402
	(!CLK * D * DE * !SCD * !Q)	0.01194	0.01180	0.01664
	(!CLK * D * DE * !SCD * !Q)	0.00899	0.00884	0.01366
	(!CLK * D * !SCD * Q)	0.01189	0.01175	0.01660
	(!CLK * D * !SCD * Q)	0.00894	0.00878	0.01362
	(!CLK * D * !DE * SCD * !Q)	0.01156	0.01138	0.01874
	(!CLK * D * !DE * SCD * !Q)	0.00725	0.00704	0.01440
	(!CLK * D * !DE * !SCD * !Q)	0.00400	0.00391	0.00820
	(!CLK * D * !DE * !SCD * !Q)	0.00034	0.00023	0.00452
	(!CLK * !D * SCD * !Q)	0.01156	0.01139	0.01872
	(!CLK * !D * SCD * !Q)	0.00725	0.00705	0.01438
	(!CLK * !D * DE * SCD * Q)	0.01186	0.01168	0.01897
	(!CLK * !D * DE * SCD * Q)	0.00755	0.00734	0.01464
	(!CLK * !D * DE * !SCD * Q)	0.00411	0.00402	0.00831
	(!CLK * !D * DE * !SCD * Q)	0.00045	0.00034	0.00463
	(!CLK * !D * !SCD * !Q)	0.00400	0.00390	0.00820
	(!CLK * !D * !SCD * !Q)	0.00034	0.00023	0.00452
	(!CLK * !D * !DE * SCD * Q)	0.00357	0.00350	0.00775
	(!CLK * !D * !DE * SCD * Q)	-0.00005	-0.00015	0.00412
	(!CLK * !D * !DE * !SCD * Q)	0.01190	0.01175	0.01661
	(!CLK * !D * !DE * !SCD * Q)	0.00895	0.00878	0.01364

sky130_fd_sc_hs__sedfxtp_2	**(CLK * D)**	0.00625	0.00612	0.01378
	(CLK * D)	0.00187	0.00171	0.00938
	(CLK * !D)	0.00625	0.00616	0.01375
	(CLK * !D)	0.00186	0.00176	0.00935
	(!CLK * D * SCD * Q)	0.00362	0.00354	0.00779
	(!CLK * D * SCD * Q)	-0.00006	-0.00017	0.00410
	(!CLK * D * DE * SCD * !Q)	0.00352	0.00344	0.00769
	(!CLK * D * DE * SCD * !Q)	-0.00016	-0.00027	0.00400
	(!CLK * D * DE * !SCD * !Q)	0.01191	0.01175	0.01661
	(!CLK * D * DE * !SCD * !Q)	0.00891	0.00874	0.01357
	(!CLK * D * !SCD * Q)	0.01189	0.01173	0.01660
	(!CLK * D * !SCD * Q)	0.00889	0.00871	0.01356
	(!CLK * D * !DE * SCD * !Q)	0.01164	0.01145	0.01880
	(!CLK * D * !DE * SCD * !Q)	0.00726	0.00705	0.01440
	(!CLK * D * !DE * !SCD * !Q)	0.00404	0.00394	0.00823
	(!CLK * D * !DE * !SCD * !Q)	0.00033	0.00021	0.00450
	(!CLK * !D * SCD * !Q)	0.01164	0.01146	0.01878
	(!CLK * !D * SCD * !Q)	0.00726	0.00705	0.01438
	(!CLK * !D * DE * SCD * Q)	0.01189	0.01170	0.01899
	(!CLK * !D * DE * SCD * Q)	0.00751	0.00729	0.01459
	(!CLK * !D * DE * !SCD * Q)	0.00414	0.00405	0.00833
	(!CLK * !D * DE * !SCD * Q)	0.00043	0.00031	0.00460
	(!CLK * !D * !SCD * !Q)	0.00404	0.00395	0.00823
	(!CLK * !D * !SCD * !Q)	0.00033	0.00021	0.00450
	(!CLK * !D * !DE * SCD * Q)	0.00362	0.00354	0.00779
	(!CLK * !D * !DE * SCD * Q)	-0.00006	-0.00017	0.00410
	(!CLK * !D * !DE * !SCD * Q)	0.01189	0.01172	0.01659
	(!CLK * !D * !DE * !SCD * Q)	0.00890	0.00871	0.01355

sky130_fd_sc_hs__sedfxtp_4	**(CLK * D)**	0.00626	0.00613	0.01375
	(CLK * D)	0.00191	0.00176	0.00938
	(CLK * !D)	0.00626	0.00618	0.01372
	(CLK * !D)	0.00191	0.00181	0.00935
	(!CLK * D * SCD * Q)	0.00359	0.00351	0.00777
	(!CLK * D * SCD * Q)	-0.00006	-0.00016	0.00411
	(!CLK * D * DE * SCD * !Q)	0.00349	0.00341	0.00767
	(!CLK * D * DE * SCD * !Q)	-0.00016	-0.00026	0.00401
	(!CLK * D * DE * !SCD * !Q)	0.01207	0.01190	0.01675
	(!CLK * D * DE * !SCD * !Q)	0.00910	0.00892	0.01374
	(!CLK * D * !SCD * Q)	0.01201	0.01185	0.01672
	(!CLK * D * !SCD * Q)	0.00903	0.00887	0.01371
	(!CLK * D * !DE * SCD * !Q)	0.01149	0.01131	0.01864
	(!CLK * D * !DE * SCD * !Q)	0.00714	0.00693	0.01428
	(!CLK * D * !DE * !SCD * !Q)	0.00402	0.00393	0.00822
	(!CLK * D * !DE * !SCD * !Q)	0.00034	0.00022	0.00451
	(!CLK * !D * SCD * !Q)	0.01149	0.01131	0.01862
	(!CLK * !D * SCD * !Q)	0.00714	0.00694	0.01426
	(!CLK * !D * DE * SCD * Q)	0.01178	0.01158	0.01886
	(!CLK * !D * DE * SCD * Q)	0.00743	0.00721	0.01450
	(!CLK * !D * DE * !SCD * Q)	0.00412	0.00403	0.00832
	(!CLK * !D * DE * !SCD * Q)	0.00044	0.00032	0.00462
	(!CLK * !D * !SCD * !Q)	0.00402	0.00393	0.00822
	(!CLK * !D * !SCD * !Q)	0.00034	0.00022	0.00451
	(!CLK * !D * !DE * SCD * Q)	0.00359	0.00351	0.00777
	(!CLK * !D * !DE * SCD * Q)	-0.00006	-0.00016	0.00411
	(!CLK * !D * !DE * !SCD * Q)	0.01202	0.01186	0.01674
	(!CLK * !D * !DE * !SCD * Q)	0.00904	0.00887	0.01373

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__sedfxtp_1	(CLK * D)	0.00413	0.00471	0.01239
	(CLK * D)	0.00709	0.00768	0.01531
	(CLK * !D)	0.00415	0.00473	0.01242
	(CLK * !D)	0.00711	0.00771	0.01533
	(!CLK * D * SCD * Q)	0.00020	0.00033	0.00499
	(!CLK * D * SCD * Q)	0.00382	0.00396	0.00862
	(!CLK * D * DE * SCD * !Q)	0.00032	0.00044	0.00510
	(!CLK * D * DE * SCD * !Q)	0.00393	0.00407	0.00873
	(!CLK * D * DE * !SCD * !Q)	0.00947	0.01002	0.01761
	(!CLK * D * DE * !SCD * !Q)	0.01243	0.01299	0.02055
	(!CLK * D * !SCD * Q)	0.00954	0.01009	0.01765
	(!CLK * D * !SCD * Q)	0.01250	0.01305	0.02059
	(!CLK * D * !DE * SCD * !Q)	0.00654	0.00657	0.01553
	(!CLK * D * !DE * SCD * !Q)	0.01085	0.01090	0.01986
	(!CLK * D * !DE * !SCD * !Q)	-0.00014	-0.00003	0.00458
	(!CLK * D * !DE * !SCD * !Q)	0.00352	0.00366	0.00826
	(!CLK * !D * SCD * !Q)	0.00655	0.00658	0.01553
	(!CLK * !D * SCD * !Q)	0.01087	0.01091	0.01986
	(!CLK * !D * DE * SCD * Q)	0.00627	0.00631	0.01528
	(!CLK * !D * DE * SCD * Q)	0.01059	0.01064	0.01961
	(!CLK * !D * DE * !SCD * Q)	-0.00025	-0.00014	0.00447
	(!CLK * !D * DE * !SCD * Q)	0.00341	0.00355	0.00815
	(!CLK * !D * !SCD * !Q)	-0.00014	-0.00003	0.00458
	(!CLK * !D * !SCD * !Q)	0.00353	0.00366	0.00826
	(!CLK * !D * !DE * SCD * Q)	0.00020	0.00033	0.00499
	(!CLK * !D * !DE * SCD * Q)	0.00382	0.00396	0.00861
	(!CLK * !D * !DE * !SCD * Q)	0.00954	0.01009	0.01766
	(!CLK * !D * !DE * !SCD * Q)	0.01250	0.01305	0.02059

sky130_fd_sc_hs__sedfxtp_2	**(CLK * D)**	0.00414	0.00471	0.01240
	(CLK * D)	0.00715	0.00774	0.01537
	(CLK * !D)	0.00412	0.00470	0.01238
	(CLK * !D)	0.00714	0.00773	0.01535
	(!CLK * D * SCD * Q)	0.00018	0.00030	0.00496
	(!CLK * D * SCD * Q)	0.00385	0.00399	0.00864
	(!CLK * D * DE * SCD * !Q)	0.00029	0.00040	0.00506
	(!CLK * D * DE * SCD * !Q)	0.00396	0.00409	0.00875
	(!CLK * D * DE * !SCD * !Q)	0.00945	0.00999	0.01758
	(!CLK * D * DE * !SCD * !Q)	0.01247	0.01301	0.02057
	(!CLK * D * !SCD * Q)	0.00949	0.01003	0.01759
	(!CLK * D * !SCD * Q)	0.01250	0.01305	0.02058
	(!CLK * D * !DE * SCD * !Q)	0.00646	0.00649	0.01544
	(!CLK * D * !DE * SCD * !Q)	0.01084	0.01089	0.01983
	(!CLK * D * !DE * !SCD * !Q)	-0.00016	-0.00005	0.00455
	(!CLK * D * !DE * !SCD * !Q)	0.00356	0.00369	0.00829
	(!CLK * !D * SCD * !Q)	0.00647	0.00650	0.01544
	(!CLK * !D * SCD * !Q)	0.01085	0.01089	0.01984
	(!CLK * !D * DE * SCD * Q)	0.00624	0.00627	0.01524
	(!CLK * !D * DE * SCD * Q)	0.01062	0.01067	0.01963
	(!CLK * !D * DE * !SCD * Q)	-0.00026	-0.00016	0.00445
	(!CLK * !D * DE * !SCD * Q)	0.00346	0.00359	0.00818
	(!CLK * !D * !SCD * !Q)	-0.00016	-0.00005	0.00455
	(!CLK * !D * !SCD * !Q)	0.00357	0.00369	0.00829
	(!CLK * !D * !DE * SCD * Q)	0.00018	0.00030	0.00496
	(!CLK * !D * !DE * SCD * Q)	0.00385	0.00399	0.00864
	(!CLK * !D * !DE * !SCD * Q)	0.00949	0.01003	0.01760
	(!CLK * !D * !DE * !SCD * Q)	0.01250	0.01305	0.02058

sky130_fd_sc_hs__sedfxtp_4	**(CLK * D)**	0.00417	0.00476	0.01243
	(CLK * D)	0.00716	0.00776	0.01538
	(CLK * !D)	0.00416	0.00475	0.01244
	(CLK * !D)	0.00716	0.00775	0.01538
	(!CLK * D * SCD * Q)	0.00020	0.00032	0.00498
	(!CLK * D * SCD * Q)	0.00385	0.00398	0.00863
	(!CLK * D * DE * SCD * !Q)	0.00030	0.00043	0.00509
	(!CLK * D * DE * SCD * !Q)	0.00395	0.00409	0.00874
	(!CLK * D * DE * !SCD * !Q)	0.00932	0.00988	0.01747
	(!CLK * D * DE * !SCD * !Q)	0.01232	0.01287	0.02044
	(!CLK * D * !SCD * Q)	0.00939	0.00994	0.01751
	(!CLK * D * !SCD * Q)	0.01238	0.01293	0.02047
	(!CLK * D * !DE * SCD * !Q)	0.00665	0.00669	0.01563
	(!CLK * D * !DE * SCD * !Q)	0.01100	0.01104	0.01999
	(!CLK * D * !DE * !SCD * !Q)	-0.00014	-0.00003	0.00457
	(!CLK * D * !DE * !SCD * !Q)	0.00355	0.00368	0.00828
	(!CLK * !D * SCD * !Q)	0.00666	0.00669	0.01563
	(!CLK * !D * SCD * !Q)	0.01101	0.01105	0.02000
	(!CLK * !D * DE * SCD * Q)	0.00640	0.00644	0.01540
	(!CLK * !D * DE * SCD * Q)	0.01075	0.01080	0.01976
	(!CLK * !D * DE * !SCD * Q)	-0.00025	-0.00014	0.00447
	(!CLK * !D * DE * !SCD * Q)	0.00345	0.00358	0.00817
	(!CLK * !D * !SCD * !Q)	-0.00014	-0.00003	0.00457
	(!CLK * !D * !SCD * !Q)	0.00355	0.00368	0.00828
	(!CLK * !D * !DE * SCD * Q)	0.00020	0.00032	0.00498
	(!CLK * !D * !DE * SCD * Q)	0.00384	0.00398	0.00863
	(!CLK * !D * !DE * !SCD * Q)	0.00939	0.00994	0.01752
	(!CLK * !D * !DE * !SCD * Q)	0.01238	0.01294	0.02047

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__sedfxtp_1	(SCD * SCE * Q)	0.01043	0.01006	0.01514
	(SCD * SCE * Q)	0.00741	0.00703	0.01212
	(D * !SCE * Q)	0.01042	0.01005	0.01513
	(D * !SCE * Q)	0.00740	0.00702	0.01211
	(D * !DE * !SCE * !Q)	0.01061	0.01019	0.01531
	(D * !DE * !SCE * !Q)	0.00759	0.00718	0.01229
	(!SCD * SCE * !Q)	0.01063	0.01021	0.01533
	(!SCD * SCE * !Q)	0.00761	0.00720	0.01230
	(!D * !SCE * !Q)	0.01061	0.01019	0.01531
	(!D * !SCE * !Q)	0.00760	0.00718	0.01229
	(!D * !DE * !SCE * Q)	0.01041	0.01005	0.01513
	(!D * !DE * !SCE * Q)	0.00740	0.00702	0.01211
sky130_fd_sc_hs__sedfxtp_2	(SCD * SCE * Q)	0.01055	0.01019	0.01523
	(SCD * SCE * Q)	0.00751	0.00715	0.01219
	(D * !SCE * Q)	0.01054	0.01018	0.01525
	(D * !SCE * Q)	0.00750	0.00714	0.01220
	(D * !DE * !SCE * !Q)	0.01074	0.01033	0.01544
	(D * !DE * !SCE * !Q)	0.00770	0.00729	0.01239
	(!SCD * SCE * !Q)	0.01075	0.01034	0.01545
	(!SCD * SCE * !Q)	0.00771	0.00731	0.01240
	(!D * !SCE * !Q)	0.01074	0.01033	0.01544
	(!D * !SCE * !Q)	0.00770	0.00729	0.01239
	(!D * !DE * !SCE * Q)	0.01054	0.01018	0.01525
	(!D * !DE * !SCE * Q)	0.00750	0.00714	0.01221

sky130_fd_sc_hs__sedfxtp_4	**(SCD * SCE * Q)**	0.01055	0.01017	0.01524
	(SCD * SCE * Q)	0.00742	0.00702	0.01211
	(D * !SCE * Q)	0.01054	0.01016	0.01523
	(D * !SCE * Q)	0.00741	0.00701	0.01210
	(D * !DE * !SCE * !Q)	0.01064	0.01023	0.01532
	(D * !DE * !SCE * !Q)	0.00751	0.00707	0.01218
	(!SCD * SCE * !Q)	0.01065	0.01024	0.01534
	(!SCD * SCE * !Q)	0.00752	0.00708	0.01220
	(!D * !SCE * !Q)	0.01064	0.01022	0.01533
	(!D * !SCE * !Q)	0.00751	0.00707	0.01218
	(!D * !DE * !SCE * Q)	0.01054	0.01016	0.01523
	(!D * !DE * !SCE * Q)	0.00740	0.00701	0.01210

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

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

sky130_fd_sc_hs__sedfxtp_1	**(SCD * SCE * Q)**	0.00590	0.00591	0.01159
	(SCD * SCE * Q)	0.00893	0.00893	0.01462
	(SCD * SCE * !Q)	0.01112	0.01104	0.01671
	(SCD * SCE * !Q)	0.01414	0.01406	0.01973
	(D * DE * !SCE * !Q)	0.01108	0.01100	0.01668
	(D * DE * !SCE * !Q)	0.01411	0.01402	0.01970
	(D * !SCE * Q)	0.00591	0.00592	0.01160
	(D * !SCE * Q)	0.00894	0.00894	0.01463
	(D * !DE * !SCE * !Q)	0.00571	0.00575	0.01133
	(D * !DE * !SCE * !Q)	0.00874	0.00877	0.01436
	(!SCD * SCE * Q)	0.01221	0.01227	0.01837
	(!SCD * SCE * Q)	0.01525	0.01529	0.02141
	(!SCD * SCE * !Q)	0.00571	0.00574	0.01133
	(!SCD * SCE * !Q)	0.00874	0.00877	0.01435
	(!D * DE * !SCE * Q)	0.01224	0.01230	0.01839
	(!D * DE * !SCE * Q)	0.01527	0.01531	0.02142
	(!D * !SCE * !Q)	0.00571	0.00575	0.01133
	(!D * !SCE * !Q)	0.00874	0.00877	0.01436
	(!D * !DE * !SCE * Q)	0.00591	0.00592	0.01160
	(!D * !DE * !SCE * Q)	0.00894	0.00894	0.01463

sky130_fd_sc_hs__sedfxtp_2	**(SCD * SCE * Q)**	0.00596	0.00593	0.01163
	(SCD * SCE * Q)	0.00900	0.00897	0.01467
	(SCD * SCE * !Q)	0.01113	0.01102	0.01671
	(SCD * SCE * !Q)	0.01416	0.01406	0.01975
	(D * DE * !SCE * !Q)	0.01109	0.01098	0.01667
	(D * DE * !SCE * !Q)	0.01413	0.01401	0.01971
	(D * !SCE * Q)	0.00596	0.00594	0.01163
	(D * !SCE * Q)	0.00900	0.00897	0.01467
	(D * !DE * !SCE * !Q)	0.00577	0.00578	0.01136
	(D * !DE * !SCE * !Q)	0.00880	0.00881	0.01440
	(!SCD * SCE * Q)	0.01226	0.01232	0.01840
	(!SCD * SCE * Q)	0.01531	0.01536	0.02145
	(!SCD * SCE * !Q)	0.00577	0.00578	0.01136
	(!SCD * SCE * !Q)	0.00880	0.00883	0.01440
	(!D * DE * !SCE * Q)	0.01229	0.01234	0.01841
	(!D * DE * !SCE * Q)	0.01533	0.01538	0.02146
	(!D * !SCE * !Q)	0.00577	0.00579	0.01136
	(!D * !SCE * !Q)	0.00880	0.00883	0.01440
	(!D * !DE * !SCE * Q)	0.00596	0.00593	0.01163
	(!D * !DE * !SCE * Q)	0.00900	0.00897	0.01467

sky130_fd_sc_hs__sedfxtp_4	**(SCD * SCE * Q)**	0.00579	0.00576	0.01146
	(SCD * SCE * Q)	0.00893	0.00889	0.01461
	(SCD * SCE * !Q)	0.01092	0.01083	0.01650
	(SCD * SCE * !Q)	0.01407	0.01396	0.01964
	(D * DE * !SCE * !Q)	0.01090	0.01080	0.01648
	(D * DE * !SCE * !Q)	0.01404	0.01393	0.01962
	(D * !SCE * Q)	0.00580	0.00576	0.01147
	(D * !SCE * Q)	0.00894	0.00890	0.01462
	(D * !DE * !SCE * !Q)	0.00569	0.00571	0.01129
	(D * !DE * !SCE * !Q)	0.00884	0.00884	0.01444
	(!SCD * SCE * Q)	0.01202	0.01208	0.01816
	(!SCD * SCE * Q)	0.01518	0.01522	0.02132
	(!SCD * SCE * !Q)	0.00569	0.00570	0.01129
	(!SCD * SCE * !Q)	0.00884	0.00885	0.01443
	(!D * DE * !SCE * Q)	0.01206	0.01210	0.01818
	(!D * DE * !SCE * Q)	0.01520	0.01524	0.02133
	(!D * !SCE * !Q)	0.00569	0.00571	0.01129
	(!D * !SCE * !Q)	0.00884	0.00884	0.01444
	(!D * !DE * !SCE * Q)	0.00579	0.00576	0.01147
	(!D * !DE * !SCE * Q)	0.00894	0.00890	0.01462

SKY130_FD_SC_HS__XNOR2x

sky130_fd_sc_hs_tt_1.50v_25C.ccs
Cell Library: Process , Voltage
1.50, 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	0.00487	0.00504	0.41286
sky130_fd_sc_hs__xnor2_2	0.00812	0.00806	0.78720
sky130_fd_sc_hs__xnor2_4	0.01445	0.01473	1.33416

Leakage Information

Cell Name	Leakage(nW)		
	Min.	**Avg**	**Max.**
sky130_fd_sc_hs__xnor2_1	0.00000	0.10728	0.30690
sky130_fd_sc_hs__xnor2_2	0.00000	0.09690	0.15791
sky130_fd_sc_hs__xnor2_4	0.00000	0.24228	0.62310

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	0.09410	0.53198	3.40504
	A->Y (FR)	!B	0.12982	1.16108	11.56910
	B->Y (RR)	A	0.08738	0.51609	3.34634
	B->Y (FR)	!A	0.11141	1.13356	11.52140
sky130_fd_sc_hs__xnor2_2	A->Y (RR)	B	0.10311	0.49218	3.45316
	A->Y (FR)	!B	0.12765	1.00496	11.44060
	B->Y (RR)	A	0.09914	0.48878	3.37315
	B->Y (FR)	!A	0.10526	0.97170	11.39190
sky130_fd_sc_hs__xnor2_4	A->Y (RR)	B	0.12204	0.63174	6.28288
	A->Y (FR)	!B	0.12900	0.90083	11.35120
	B->Y (RR)	A	0.11591	0.61894	6.19081
	B->Y (FR)	!A	0.10433	0.87647	11.41880

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	0.12016	0.60209	3.68340
	A->Y (RF)	!B	0.04585	0.46725	4.67952
	B->Y (FF)	A	0.11523	0.59171	3.81462
	B->Y (RF)	!A	0.03663	0.45028	4.61814
sky130_fd_sc_hs__xnor2_2	A->Y (FF)	B	0.14547	0.64952	4.20858
	A->Y (RF)	!B	0.04398	0.40505	4.57124
	B->Y (FF)	A	0.13237	0.60454	3.94545
	B->Y (RF)	!A	0.03857	0.39734	4.60379
sky130_fd_sc_hs__xnor2_4	A->Y (FF)	B	0.13412	0.59133	4.07558
	A->Y (RF)	!B	0.04541	0.35323	4.36586
	B->Y (FF)	A	0.12313	0.54628	3.81184
	B->Y (RF)	!A	0.03927	0.34321	4.41309

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	0.00726	0.00731	0.01372
	A	B	0.00133	0.00136	0.00792
	A	!B	-0.00058	-0.00073	-0.00047
	A	!B	0.00529	0.00509	0.00542
	B	A	0.00672	0.00667	0.01426
	B	A	0.00189	0.00186	0.00962
	B	!A	0.00013	0.00012	0.00118
	B	!A	0.00494	0.00494	0.00601
sky130_fd_sc_hs__xnor2_2	A	B	0.01147	0.01157	0.01622
	A	B	0.00284	0.00291	0.00773
	A	!B	0.00002	-0.00027	0.00026
	A	!B	0.01034	0.01010	0.01061
	B	A	0.01102	0.01088	0.01567
	B	A	0.00392	0.00382	0.00891
	B	!A	0.00051	0.00047	0.00244
	B	!A	0.00921	0.00915	0.01109
sky130_fd_sc_hs__xnor2_4	A	B	0.01847	0.01860	0.03037
	A	B	0.00300	0.00310	0.01514
	A	!B	-0.00058	-0.00118	0.00005
	A	!B	0.01907	0.01837	0.01948
	B	A	0.01789	0.01757	0.02989
	B	A	0.00539	0.00514	0.01776
	B	!A	0.00017	0.00007	0.00408
	B	!A	0.01682	0.01672	0.02065

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	0.00185	0.00236	0.00983
	A	B	0.00778	0.00828	0.01573
	A	!B	0.00673	0.00664	0.00690
	A	!B	0.00076	0.00066	0.00093
	B	A	0.00293	0.00272	0.01058
	B	A	0.00764	0.00743	0.01530
	B	!A	0.00463	0.00459	0.00496
	B	!A	-0.00013	-0.00016	0.00009
sky130_fd_sc_hs__xnor2_2	A	B	0.00377	0.00407	0.01036
	A	B	0.01243	0.01272	0.01900
	A	!B	0.01280	0.01252	0.01325
	A	!B	0.00234	0.00206	0.00260
	B	A	0.00593	0.00528	0.01139
	B	A	0.01282	0.01209	0.01815
	B	!A	0.00914	0.00908	0.01013
	B	!A	0.00049	0.00038	0.00098
sky130_fd_sc_hs__xnor2_4	A	B	0.00618	0.00679	0.02160
	A	B	0.02172	0.02228	0.03679
	A	!B	0.02356	0.02298	0.02450
	A	!B	0.00366	0.00302	0.00432
	B	A	0.00885	0.00793	0.02235
	B	A	0.02091	0.01998	0.03446
	B	!A	0.01699	0.01682	0.01884
	B	!A	0.00051	0.00031	0.00180

SKY130_FD_SC_HS__XNOR3x

sky130_fd_sc_hs_tt_1.50v_25C.ccs
Cell Library: Process , Voltage
1.50, 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	0.00256	0.00682	0.00414	0.83398
sky130_fd_sc_hs__xnor3_2	0.00261	0.00684	0.00418	1.66050
sky130_fd_sc_hs__xnor3_4	0.00260	0.00682	0.00410	3.26122

Leakage Information

Cell Name	Leakage(nW)		
	Min.	**Avg**	**Max.**
sky130_fd_sc_hs__xnor3_1	0.00000	0.63953	0.72994
sky130_fd_sc_hs__xnor3_2	0.00000	0.65673	0.75967
sky130_fd_sc_hs__xnor3_4	0.00000	0.69112	0.81915

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)	0.34876	1.20680	9.12814
	B->X (-R)	0.24726	1.05221	8.74277
	C->X (-R)	0.18562	0.98432	8.47187
sky130_fd_sc_hs__xnor3_2	A->X (-R)	0.37009	1.12658	9.13605
	B->X (-R)	0.26117	0.96388	8.73839
	C->X (-R)	0.19578	0.89460	8.47145
sky130_fd_sc_hs__xnor3_4	A->X (-R)	0.41922	1.11687	9.20352
	B->X (-R)	0.31673	0.96130	8.83079
	C->X (-R)	0.24414	0.88677	8.56570

Delay(ns) to X falling :

Cell Name	Timing Arc(Dir)	Delay(ns)		
		First	Mid	Last
sky130_fd_sc_hs__xnor3_1	A->X (-F)	0.35979	1.02998	5.57258
	B->X (-F)	0.32517	0.97616	5.49002
	C->X (-F)	0.18766	0.76492	4.74857
sky130_fd_sc_hs__xnor3_2	A->X (-F)	0.39293	1.04753	5.63042
	B->X (-F)	0.35544	0.98923	5.56711
	C->X (-F)	0.23429	0.81312	4.93548
sky130_fd_sc_hs__xnor3_4	A->X (-F)	0.46107	1.12123	5.95796
	B->X (-F)	0.43872	1.07756	5.92723
	C->X (-F)	0.34416	0.92363	5.35209

Power Information

Internal switching power(pJ) to X rising :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__xnor3_1	A	0.01755	0.01754	0.02227
	A	0.01735	0.01769	0.02387
	B	0.01654	0.01707	0.03155
	B	0.01612	0.01721	0.03348
	C	0.00809	0.00799	0.01720
	C	0.00842	0.00953	0.01940
sky130_fd_sc_hs__xnor3_2	A	0.01939	0.01958	0.02426
	A	0.01901	0.01955	0.02589
	B	0.01830	0.01899	0.03341
	B	0.01778	0.01906	0.03527
	C	0.01000	0.01012	0.01904
	C	0.01010	0.01141	0.02140
sky130_fd_sc_hs__xnor3_4	A	0.02392	0.02431	0.02901
	A	0.02332	0.02403	0.03076
	B	0.02250	0.02348	0.03785
	B	0.02205	0.02338	0.04007
	C	0.01427	0.01466	0.02358
	C	0.01433	0.01584	0.02601

Internal switching power(pJ) to X falling :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__xnor3_1	A	0.01631	0.01630	0.02162
	A	0.01770	0.01790	0.02360
	B	0.01430	0.01484	0.02968
	B	0.01671	0.01749	0.03313
	C	0.00868	0.00946	0.01884
	C	0.00736	0.00772	0.01800
sky130_fd_sc_hs__xnor3_2	A	0.01574	0.01589	0.02287
	A	0.01956	0.01972	0.02541
	B	0.01623	0.01676	0.03124
	B	0.01853	0.01931	0.03480
	C	0.01053	0.01127	0.02061
	C	0.00933	0.00981	0.01985
sky130_fd_sc_hs__xnor3_4	A	0.02078	0.02034	0.03062
	A	0.02454	0.02410	0.03013
	B	0.01504	0.01534	0.03199
	B	0.02300	0.02340	0.03882
	C	0.01555	0.01576	0.02554
	C	0.01463	0.01438	0.02434

SKY130_FD_SC_HS__XOR2x

sky130_fd_sc_hs_tt_1.50v_25C.ccs
Cell Library: Process , Voltage
1.50, 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	0.00497	0.00516	0.37735
sky130_fd_sc_hs__xor2_2	0.00762	0.00756	0.71229
sky130_fd_sc_hs__xor2_4	0.01543	0.01514	1.26510

Leakage Information

Cell Name	Leakage(nW)		
	Min.	**Avg**	**Max.**
sky130_fd_sc_hs__xor2_1	0.00000	0.04608	0.08281
sky130_fd_sc_hs__xor2_2	0.00000	0.06382	0.08667
sky130_fd_sc_hs__xor2_4	0.00000	0.12605	0.17333

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	0.11818	0.91611	6.77158
	A->X (FR)	B	0.14945	1.19886	11.48010
	B->X (RR)	!A	0.14462	0.94034	7.08929
	B->X (FR)	A	0.11675	1.13750	11.17880
sky130_fd_sc_hs__xor2_2	A->X (RR)	!B	0.09814	0.77144	6.96942
	A->X (FR)	B	0.13160	1.02733	11.42910
	B->X (RR)	!A	0.11739	0.75491	6.93239
	B->X (FR)	A	0.10375	0.99859	11.41080
sky130_fd_sc_hs__xor2_4	A->X (RR)	!B	0.09283	0.63992	6.87079
	A->X (FR)	B	0.13221	0.89289	11.05280
	B->X (RR)	!A	0.10455	0.60982	6.60096
	B->X (FR)	A	0.10540	0.87636	11.19530

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	0.16937	0.62072	3.28912
	A->X (RF)	B	0.04130	0.44158	4.32782
	B->X (FF)	!A	0.15570	0.58922	3.07577
	B->X (RF)	A	0.03337	0.46383	4.67243
sky130_fd_sc_hs__xor2_2	A->X (FF)	!B	0.22113	0.74662	4.54634
	A->X (RF)	B	0.03852	0.39343	4.38158
	B->X (FF)	!A	0.19581	0.71278	4.33866
	B->X (RF)	A	0.03395	0.45414	5.21448
sky130_fd_sc_hs__xor2_4	A->X (FF)	!B	0.22020	0.70476	4.44922
	A->X (RF)	B	0.03966	0.34472	4.21981
	B->X (FF)	!A	0.18872	0.65849	4.21664
	B->X (RF)	A	0.03502	0.38755	4.88117

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	0.00023	0.00015	0.00039
	A	B	0.00634	0.00625	0.00650
	A	!B	0.00850	0.00845	0.01137
	A	!B	0.00236	0.00228	0.00523
	B	A	0.00023	0.00013	0.00036
	B	A	0.00500	0.00488	0.00503
	B	!A	0.00765	0.00691	0.01174
	B	!A	0.00283	0.00208	0.00693
sky130_fd_sc_hs__xor2_2	A	B	0.00096	0.00078	0.00132
	A	B	0.01095	0.01080	0.01129
	A	!B	0.01137	0.01128	0.01490
	A	!B	0.00288	0.00274	0.00641
	B	A	0.00013	-0.00005	0.00051
	B	A	0.00821	0.00805	0.00859
	B	!A	0.01120	0.01008	0.01564
	B	!A	0.00460	0.00346	0.00905
sky130_fd_sc_hs__xor2_4	A	B	0.00133	0.00082	0.00202
	A	B	0.02239	0.02179	0.02313
	A	!B	0.02280	0.02231	0.02913
	A	!B	0.00614	0.00560	0.01249
	B	A	0.00048	0.00012	0.00137
	B	A	0.01743	0.01710	0.01835
	B	!A	0.02017	0.01841	0.02949
	B	!A	0.00762	0.00587	0.01699

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	0.00615	0.00593	0.00626
	A	B	0.00007	-0.00021	0.00004
	A	!B	0.00153	0.00159	0.00411
	A	!B	0.00762	0.00766	0.01026
	B	A	0.00527	0.00516	0.00566
	B	A	0.00047	0.00035	0.00076
	B	!A	0.00239	0.00262	0.00789
	B	!A	0.00738	0.00755	0.01288
sky130_fd_sc_hs__xor2_2	A	B	0.01051	0.01008	0.01081
	A	B	0.00052	0.00008	0.00062
	A	!B	0.00141	0.00144	0.00440
	A	!B	0.00973	0.00983	0.01277
	B	A	0.00893	0.00866	0.00981
	B	A	0.00088	0.00060	0.00140
	B	!A	0.00255	0.00273	0.00872
	B	!A	0.00956	0.00978	0.01559
sky130_fd_sc_hs__xor2_4	A	B	0.02159	0.02070	0.02241
	A	B	0.00060	-0.00047	0.00078
	A	!B	0.00300	0.00310	0.00929
	A	!B	0.01937	0.01951	0.02528
	B	A	0.01830	0.01760	0.01985
	B	A	0.00125	0.00056	0.00243
	B	!A	0.00568	0.00597	0.01774
	B	!A	0.01898	0.01923	0.03082

SKY130_FD_SC_HS__XOR3x

sky130_fd_sc_hs_tt_1.50v_25C.ccs
Cell Library: Process , Voltage
1.50, 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	0.00255	0.00700	0.00413	0.84834
sky130_fd_sc_hs__xor3_2	0.00257	0.00710	0.00413	1.66540
sky130_fd_sc_hs__xor3_4	0.00255	0.00719	0.00409	3.24372

Leakage Information

Cell Name	Leakage(nW)		
	Min.	Avg	Max.
sky130_fd_sc_hs__xor3_1	0.00000	0.63953	0.72995
sky130_fd_sc_hs__xor3_2	0.00000	0.65673	0.75968
sky130_fd_sc_hs__xor3_4	0.00000	0.69112	0.81916

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)	0.33850	1.19093	9.09239
	B->X (-R)	0.23719	1.03395	8.66999
	C->X (-R)	0.18383	0.98672	8.47653
sky130_fd_sc_hs__xor3_2	A->X (-R)	0.35249	1.10468	9.07931
	B->X (-R)	0.25380	0.95412	8.67002
	C->X (-R)	0.19639	0.90574	8.49297
sky130_fd_sc_hs__xor3_4	A->X (-R)	0.39901	1.09070	9.20420
	B->X (-R)	0.30488	0.94576	8.79032
	C->X (-R)	0.23474	0.88648	8.61111

Delay(ns) to X falling :

Cell Name	Timing Arc(Dir)	Delay(ns)		
		First	Mid	Last
sky130_fd_sc_hs__xor3_1	A->X (-F)	0.35967	1.02338	5.48145
	B->X (-F)	0.32702	0.96564	5.40249
	C->X (-F)	0.17386	0.73212	4.61660
sky130_fd_sc_hs__xor3_2	A->X (-F)	0.38864	1.04560	5.63430
	B->X (-F)	0.35974	0.99053	5.59305
	C->X (-F)	0.22869	0.81382	4.96493
sky130_fd_sc_hs__xor3_4	A->X (-F)	0.46968	1.13402	5.98070
	B->X (-F)	0.44929	1.08569	5.94726
	C->X (-F)	0.33580	0.93196	5.39841

Power Information

Internal switching power(pJ) to X rising :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__xor3_1	A	0.01867	0.01858	0.02317
	A	0.01729	0.01759	0.02378
	B	0.01721	0.01778	0.03242
	B	0.01593	0.01723	0.03279
	C	0.00818	0.00809	0.01749
	C	0.00835	0.00945	0.01939
sky130_fd_sc_hs__xor3_2	A	0.02058	0.02072	0.02528
	A	0.01905	0.01962	0.02593
	B	0.01959	0.02035	0.03436
	B	0.01764	0.01921	0.03476
	C	0.01011	0.01023	0.01939
	C	0.01038	0.01171	0.02162
sky130_fd_sc_hs__xor3_4	A	0.02494	0.02535	0.02996
	A	0.02353	0.02428	0.03091
	B	0.02401	0.02499	0.03898
	B	0.02171	0.02315	0.03965
	C	0.01423	0.01456	0.02328
	C	0.01437	0.01603	0.02607

Internal switching power(pJ) to X falling :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__xor3_1	A	0.01761	0.01751	0.02254
	A	0.01774	0.01789	0.02356
	B	0.01589	0.01641	0.03105
	B	0.01656	0.01755	0.03281
	C	0.00923	0.01001	0.01947
	C	0.00731	0.00780	0.01802
sky130_fd_sc_hs__xor3_2	A	0.01591	0.01603	0.02271
	A	0.01961	0.01974	0.02536
	B	0.01791	0.01841	0.03282
	B	0.01835	0.01935	0.03454
	C	0.01120	0.01210	0.02140
	C	0.00919	0.00972	0.01984
sky130_fd_sc_hs__xor3_4	A	0.02142	0.02086	0.02906
	A	0.02517	0.02461	0.03048
	B	0.02392	0.02346	0.03705
	B	0.02376	0.02410	0.03936
	C	0.01592	0.01636	0.02578
	C	0.01467	0.01440	0.02433