gf180_12T_TT_3P3_25C.ccs Library

Cell Groups
GF180MCU_OSU_SC_12T_AND2_1
GF180MCU_OSU_SC_12T_AOI21_1
GF180MCU_OSU_SC_12T_DFFN_1
GF180MCU_OSU_SC_12T_DFFSR_1
GF180MCU_OSU_SC_12T_DFF_1
GF180MCU_OSU_SC_12T_INV_1
GF180MCU_OSU_SC_12T_NAND2_1
GF180MCU_OSU_SC_12T_NOR2_1
GF180MCU_OSU_SC_12T_OAI21_1
GF180MCU_OSU_SC_12T_OR2_1
GF180MCU_OSU_SC_12T_XNOR2_1

GF180MCU_OSU_SC_12T_AND2_1

gf180_12T_TT_3P3_25C.ccs
Cell Library: Process ,
Voltage 3.30, Temp 25.00

Truth Table

INPUT		OUTPUT
A	B	Y
0	x	0
1	0	0
1	1	1

Footprint

Cell Name	Area
gf180mcu_osu_sc_12T_and2_1	0.00000

Pin Capacitance Information

Cell Name	Pin Cap(pf)		Max Cap(pf)
	A	B	Y
gf180mcu_osu_sc_12T_and2_1	0.00405	0.00402	1.55006

Leakage Information

Cell Name	Leakage(nW)		
	Min.	Avg	Max.
gf180mcu_osu_sc_12T_and2_1	0.00000	0.00146	0.00208

Delay Information

Delay(ns) to Y rising :

Cell Name	Timing Arc(Dir)	Delay(ns)		
		First	Mid	Last
gf180mcu_osu_sc_12T_and2_1	A->Y (RR)	0.12717	0.84954	7.61950
	B->Y (RR)	0.13774	0.80079	7.23150

Delay(ns) to Y falling :

Cell Name	Timing Arc(Dir)	Delay(ns)		
		First	Mid	Last
gf180mcu_osu_sc_12T_and2_1	A->Y (FF)	0.10163	0.79466	7.10645
	B->Y (FF)	0.11435	0.85068	7.55675

Power Information

Internal switching power(pJ) to Y rising :

Cell Name	Input	Power(pJ)		
		first	mid	last
gf180mcu_osu_sc_12T_and2_1	A	0.00000	0.00000	0.00000
	A	0.02731	0.07883	0.60466
	B	0.00000	0.00000	0.00000
	B	0.02679	0.08060	0.66143

Internal switching power(pJ) to Y falling :

Cell Name	Input	Power(pJ)		
		first	mid	last
gf180mcu_osu_sc_12T_and2_1	A	0.00000	0.00000	0.00000
	A	0.04382	0.09714	0.62118
	B	0.00000	0.00000	0.00000
	B	0.05553	0.11287	0.69500

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

Cell Name	When	Power(pJ)		
		first	mid	last
gf180mcu_osu_sc_12T_and2_1	(!B * !Y)	0.00000	0.00000	0.00000
	(!B * !Y)	-0.01403	-0.01405	-0.01413

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

Cell Name	When	Power(pJ)		
		first	mid	last
gf180mcu_osu_sc_12T_and2_1	(!B * !Y)	0.00000	0.00000	0.00000
	(!B * !Y)	0.01422	0.01423	0.01418

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

Cell Name	When	Power(pJ)		
		first	mid	last
gf180mcu_osu_sc_12T_and2_1	(!A * !Y)	0.00000	0.00000	0.00000
	(!A * !Y)	-0.01351	-0.01356	-0.01352

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

Cell Name	When	Power(pJ)		
		first	mid	last
gf180mcu_osu_sc_12T_and2_1	(!A * !Y)	0.00000	0.00000	0.00000
	(!A * !Y)	0.01372	0.01360	0.01355

GF180MCU_OSU_SC_12T_AOI21_1

gf180_12T_TT_3P3_25C.ccs
Cell Library: Process ,
Voltage 3.30, Temp 25.00

Truth Table

INPUT			OUTPUT
A0	A1	B	Y
0	x	0	1
x	x	1	0
1	0	0	1
1	1	x	0

Footprint

Cell Name	Area
gf180mcu_osu_sc_12T_aoi21_1	0.00000

Pin Capacitance Information

Cell Name	Pin Cap(pf)			Max Cap(pf)
	A0	A1	B	Y
gf180mcu_osu_sc_12T_aoi21_1	0.00395	0.00398	0.00404	0.78136

Leakage Information

Cell Name	Leakage(nW)		
	Min.	Avg	Max.
gf180mcu_osu_sc_12T_aoi21_1	0.00000	0.00095	0.00180

Delay Information

Delay(ns) to Y rising :

Cell Name	Timing Arc(Dir)	Delay(ns)		
		First	Mid	Last
gf180mcu_osu_sc_12T_aoi21_1	A0->Y (FR)	0.13809	1.05066	8.60765
	A1->Y (FR)	0.11540	1.02437	8.52949
	B->Y (FR)	0.10119	1.15050	9.87430

Delay(ns) to Y falling :

Cell Name	Timing Arc(Dir)	Delay(ns)		
		First	Mid	Last
gf180mcu_osu_sc_12T_aoi21_1	A0->Y (RF)	0.10987	0.77225	6.14949
	A1->Y (RF)	0.09846	0.88426	7.33063
	B->Y (RF)	0.04547	0.62203	5.35650

Power Information

Internal switching power(pJ) to Y rising :

Cell Name	Input	Power(pJ)		
		first	mid	last
gf180mcu_osu_sc_12T_aoi21_1	A0	0.00000	0.00000	0.00000
	A0	0.04875	0.06573	0.28719
	A1	0.00000	0.00000	0.00000
	A1	0.03712	0.05340	0.25783
	B	0.02558	0.05414	0.29872

Internal switching power(pJ) to Y falling :

Cell Name	Input	Power(pJ)		
		first	mid	last
gf180mcu_osu_sc_12T_aoi21_1	A0	0.00000	0.00000	0.00000
	A0	0.01629	0.03361	0.23655
	A1	0.00000	0.00000	0.00000
	A1	0.01647	0.03378	0.21205
	B	-0.00054	0.02453	0.25197

Passive power(pJ) for A0 rising (conditional):

Cell Name	When	Power(pJ)		
		first	mid	last
gf180mcu_osu_sc_12T_aoi21_1	(A1 * B * !Y)	0.00000	0.00000	0.00000
	(A1 * B * !Y)	-0.01279	-0.01336	-0.01331
	(!A1 * B * !Y)	0.00000	0.00000	0.00000
	(!A1 * B * !Y)	-0.01351	-0.01357	-0.01352
	(!A1 * !B * Y)	0.00000	0.00000	0.00000
	(!A1 * !B * Y)	-0.01350	-0.01355	-0.01352

Passive power(pJ) for A0 falling (conditional):

Cell Name	When	Power(pJ)		
		first	mid	last
gf180mcu_osu_sc_12T_aoi21_1	(A1 * B * !Y)	0.00000	0.00000	0.00000
	(A1 * B * !Y)	0.01347	0.01336	0.01331
	(!A1 * B * !Y)	0.00000	0.00000	0.00000
	(!A1 * B * !Y)	0.01369	0.01361	0.01355
	(!A1 * !B * Y)	0.00000	0.00000	0.00000
	(!A1 * !B * Y)	0.01373	0.01360	0.01355

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

Cell Name	When	Power(pJ)		
		first	mid	last
gf180mcu_osu_sc_12T_aoi21_1	(B * !Y)	0.00000	0.00000	0.00000
	(B * !Y)	-0.01280	-0.01338	-0.01333
	(!A0 * !B * Y)	0.00000	0.00000	0.00000
	(!A0 * !B * Y)	-0.01404	-0.01408	-0.01413

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

Cell Name	When	Power(pJ)		
		first	mid	last
gf180mcu_osu_sc_12T_aoi21_1	(B * !Y)	0.00000	0.00000	0.00000
	(B * !Y)	0.01346	0.01338	0.01333
	(!A0 * !B * Y)	0.00000	0.00000	0.00000
	(!A0 * !B * Y)	0.01432	0.01427	0.01418

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

Cell Name	When	Power(pJ)		
		first	mid	last
gf180mcu_osu_sc_12T_aoi21_1	(A0 * A1 * !Y)	0.00000	0.00000	0.00000
	(A0 * A1 * !Y)	-0.00454	-0.00453	-0.00451

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

Cell Name	When	Power(pJ)		
		first	mid	last
gf180mcu_osu_sc_12T_aoi21_1	(A0 * A1 * !Y)	0.00000	0.00000	0.00000
	(A0 * A1 * !Y)	0.00500	0.00498	0.00463

GF180MCU_OSU_SC_12T_DFFN_1

gf180_12T_TT_3P3_25C.ccs
Cell Library: Process ,
Voltage 3.30, Temp 25.00

Truth Table

INPUT		OUTPUT	
D	CLKN	Q	QN
x	x	-	-

Footprint

Cell Name	Area
gf180mcu_osu_sc_12T_dffn_1	0.00000

Pin Capacitance Information

Cell Name	Pin Cap(pf)		Max Cap(pf)	
	D	CLKN	Q	QN
gf180mcu_osu_sc_12T_dffn_1	0.00374	1.74760	1.55065	1.47933

Leakage Information

Cell Name	Leakage(nW)		
	Min.	Avg	Max.
gf180mcu_osu_sc_12T_dffn_1	0.00000	0.00611	0.00661

Delay Information

Delay(ns) to Q rising :

Cell Name	Timing Arc(Dir)	Delay(ns)		
		First	Mid	Last
gf180mcu_osu_sc_12T_dffn_1	CLKN->Q (RR)	0.10713	1.75573	18.95270
	QN->Q (FR)	0.04508	0.97122	10.20850

Delay(ns) to Q falling :

Cell Name	Timing Arc(Dir)	Delay(ns)		
		First	Mid	Last
gf180mcu_osu_sc_12T_dffn_1	CLKN->Q (FF)	0.11125	1.81590	19.45510
	QN->Q (RF)	0.04105	0.82302	8.69902

Delay(ns) to QN rising :

Cell Name	Timing Arc(Dir)	Delay(ns)		
		First	Mid	Last
gf180mcu_osu_sc_12T_dffn_1	CLKN->QN (FR)	0.06136	0.97156	9.92472

Delay(ns) to QN falling :

Cell Name	Timing Arc(Dir)	Delay(ns)		
		First	Mid	Last
gf180mcu_osu_sc_12T_dffn_1	CLKN->QN (RF)	0.05423	0.82165	8.44216

Constraint Information

Constraints(ns) for CLKN rising :

Cell Name	Timing Check	Ref Pin(trans)	Reference Slew Rate(ns)		
			first	mid	last
gf180mcu_osu_sc_12T_dffn_1	min_pulse_width	CLKN ()	0.08677	1.00220	16.50020

Constraints(ns) for CLKN falling :

Cell Name	Timing Check	Ref Pin(trans)	Reference Slew Rate(ns)		
			first	mid	last
gf180mcu_osu_sc_12T_dffn_1	min_pulse_width	CLKN ()	0.09412	1.00220	16.50020

Power Information

Internal switching power(pJ) to Q rising :

Cell Name	Input	Power(pJ)		
		first	mid	last
gf180mcu_osu_sc_12T_dffn_1	CLKN	0.00000	0.00000	0.00000
	CLKN	0.02757	0.16396	1.88566

Internal switching power(pJ) to Q falling :

Cell Name	Input	Power(pJ)		
		first	mid	last
gf180mcu_osu_sc_12T_dffn_1	CLKN	0.00000	0.00000	0.00000
	CLKN	21.55860	21.43430	20.36330

Internal switching power(pJ) to QN rising :

Cell Name	Input	Power(pJ)		
		first	mid	last
gf180mcu_osu_sc_12T_dffn_1	CLKN	0.00000	0.00000	0.00000
	CLKN	18.28510	18.16170	17.08960

Internal switching power(pJ) to QN falling :

Cell Name	Input	Power(pJ)		
		first	mid	last
gf180mcu_osu_sc_12T_dffn_1	CLKN	0.00000	0.00000	0.00000
	CLKN	0.02761	0.16348	1.88549

Passive power(pJ) for D rising :

Cell Name	Power(pJ)		
	first	mid	last
gf180mcu_osu_sc_12T_dffn_1	0.00000	0.00000	0.00000
	-0.01326	-0.01340	-0.01346

Passive power(pJ) for D falling :

Cell Name	Power(pJ)		
	first	mid	last
gf180mcu_osu_sc_12T_dffn_1	0.00000	0.00000	0.00000
	0.01409	0.01416	0.01408

GF180MCU_OSU_SC_12T_DFFSR_1

gf180_12T_TT_3P3_25C.ccs
Cell Library: Process ,
Voltage 3.30, Temp 25.00

Truth Table

INPUT				OUTPUT	
D	RN	SN	CLK	Q	QN
x	x	x	x	-	-

Footprint

Cell Name	Area
gf180mcu_osu_sc_12T_dffsr_1	0.00000

Pin Capacitance Information

Cell Name	Pin Cap(pf)				Max Cap(pf)	
	D	RN	SN	CLK	Q	QN
gf180mcu_osu_sc_12T_dffsr_1	0.00374	0.00405	0.00767	2.80220	1.54322	1.49480

Leakage Information

Cell Name	Leakage(nW)		
	Min.	Avg	Max.
gf180mcu_osu_sc_12T_dffsr_1	0.00000	434812.00000	1413140.00000

Delay Information

Delay(ns) to Q rising :

Cell Name	Timing Arc(Dir)	Delay(ns)		
		First	Mid	Last
gf180mcu_osu_sc_12T_dffsr_1	CLK->Q (RR)	0.10711	1.75056	18.87990
	QN->Q (FR)	0.04508	0.96975	10.17670

Delay(ns) to Q falling :

Cell Name	Timing Arc(Dir)	Delay(ns)		
		First	Mid	Last
gf180mcu_osu_sc_12T_dffsr_1	CLK->Q (FF)	0.11127	1.81139	19.37970
	QN->Q (RF)	0.04105	0.82154	8.67045

Delay(ns) to QN rising :

Cell Name	Timing Arc(Dir)	Delay(ns)		
		First	Mid	Last
gf180mcu_osu_sc_12T_dffsr_1	CLK->QN (FR)	0.06137	0.97502	9.99092

Delay(ns) to QN falling :

Cell Name	Timing Arc(Dir)	Delay(ns)		
		First	Mid	Last
gf180mcu_osu_sc_12T_dffsr_1	CLK->QN (RF)	0.05424	0.82500	8.50228

Constraint Information

Constraints(ns) for RN rising :

Cell Name	Timing Check	Ref Pin(trans)	Reference Slew Rate(ns)		
			first	mid	last
gf180mcu_osu_sc_12T_dffsr_1	recovery	CLK (F)	99999999999999996358962949652480.00000	99999999999999996358962949652480.00000	99999999999999996358962949652480.00000
	hold	SN (R)	-0.08852	-0.19761	-0.18870
	setup	SN (R)	0.24700	0.42663	7.37369

Constraints(ns) for RN rising (conditional):

Cell Name	Timing Check	Ref Pin(trans)	Reference Slew Rate(ns)		
			first	mid	last
gf180mcu_osu_sc_12T_dffsr_1	recovery	CLK (F)	99999999999999996358962949652480.00000	99999999999999996358962949652480.00000	99999999999999996358962949652480.00000
	recovery	CLK (F)	99999999999999996358962949652480.00000	99999999999999996358962949652480.00000	99999999999999996358962949652480.00000
	hold	SN (R)	-0.09256	-0.20382	-0.23143
	hold	SN (R)	-0.09023	-0.19510	-0.17894
	setup	SN (R)	0.24700	0.42663	7.37369
	setup	SN (R)	0.24353	0.42771	7.31359

Constraints(ns) for SN rising :

Cell Name	Timing Check	Ref Pin(trans)	Reference Slew Rate(ns)		
			first	mid	last
gf180mcu_osu_sc_12T_dffsr_1	hold	RN (R)	99999999999999996358962949652480.00000	99999999999999996358962949652480.00000	99999999999999996358962949652480.00000
	setup	RN (R)	99999999999999996358962949652480.00000	99999999999999996358962949652480.00000	99999999999999996358962949652480.00000

Constraints(ns) for SN rising (conditional):

Cell Name	Timing Check	Ref Pin(trans)	Reference Slew Rate(ns)		
			first	mid	last
gf180mcu_osu_sc_12T_dffsr_1	hold	RN (R)	99999999999999996358962949652480.00000	99999999999999996358962949652480.00000	99999999999999996358962949652480.00000
	hold	RN (R)	99999999999999996358962949652480.00000	99999999999999996358962949652480.00000	99999999999999996358962949652480.00000
	setup	RN (R)	99999999999999996358962949652480.00000	99999999999999996358962949652480.00000	99999999999999996358962949652480.00000
	setup	RN (R)	99999999999999996358962949652480.00000	99999999999999996358962949652480.00000	99999999999999996358962949652480.00000

Constraints(ns) for SN falling (conditional):

Cell Name	Timing Check	Ref Pin(trans)	Reference Slew Rate(ns)		
			first	mid	last
gf180mcu_osu_sc_12T_dffsr_1	recovery	CLK (F)	99999999999999996358962949652480.00000	99999999999999996358962949652480.00000	99999999999999996358962949652480.00000

Constraints(ns) for CLK rising :

Cell Name	Timing Check	Ref Pin(trans)	Reference Slew Rate(ns)		
			first	mid	last
gf180mcu_osu_sc_12T_dffsr_1	min_pulse_width	CLK ()	0.08677	1.00220	16.50020

Constraints(ns) for CLK falling :

Cell Name	Timing Check	Ref Pin(trans)	Reference Slew Rate(ns)		
			first	mid	last
gf180mcu_osu_sc_12T_dffsr_1	**min_pulse_width**	**CLK ()**	0.09412	1.00220	16.50020

Power Information

Internal switching power(pJ) to Q rising :

Cell Name	Input	Power(pJ)		
		first	mid	last
gf180mcu_osu_sc_12T_dffsr_1	CLK	0.01969	0.11780	1.27249

Internal switching power(pJ) to Q falling :

Cell Name	Input	Power(pJ)		
		first	mid	last
gf180mcu_osu_sc_12T_dffsr_1	CLK	14.82270	14.74580	14.07610

Internal switching power(pJ) to QN rising :

Cell Name	Input	Power(pJ)		
		first	mid	last
gf180mcu_osu_sc_12T_dffsr_1	CLK	12.71660	12.63950	11.96950

Internal switching power(pJ) to QN falling :

Cell Name	Input	Power(pJ)		
		first	mid	last
gf180mcu_osu_sc_12T_dffsr_1	CLK	0.01971	0.11778	1.27223

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

Cell Name	When	Power(pJ)		
		first	mid	last
gf180mcu_osu_sc_12T_dffsr_1	(CLK) + (!CLK * RN * SN) + (!CLK * !RN)	0.00000	0.00000	0.00000
	(CLK) + (!CLK * RN * SN) + (!CLK * !RN)	-0.01326	-0.01340	-0.01346

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

Cell Name	When	Power(pJ)		
		first	mid	last
gf180mcu_osu_sc_12T_dffsr_1	(CLK) + (!CLK * RN * SN) + (!CLK * !RN)	0.00000	0.00000	0.00000
	(CLK) + (!CLK * RN * SN) + (!CLK * !RN)	0.01409	0.01416	0.01408

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

Cell Name	When	Power(pJ)		
		first	mid	last
gf180mcu_osu_sc_12T_dffsr_1	(CLK * SN)	0.00000	0.00000	0.00000
	(CLK * SN)	0.00687	0.06593	0.67284
	(CLK * !SN)	0.00000	0.00000	0.00000
	(CLK * !SN)	0.45189	0.49927	1.00242
	(!CLK * SN)	0.00000	0.00000	0.00000
	(!CLK * SN)	0.00873	0.06833	0.67568
	(!CLK * !SN)	0.00000	0.00000	0.00000
	(!CLK * !SN)	8.21538	7.84291	5.01653

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

Cell Name	When	Power(pJ)		
		first	mid	last
gf180mcu_osu_sc_12T_dffsr_1	(CLK * SN)	0.00000	0.00000	0.00000
	(CLK * SN)	0.16131	0.22680	0.87274
	(CLK * !SN)	0.00000	0.00000	0.00000
	(CLK * !SN)	0.16028	0.22677	0.87382
	(!CLK * SN)	0.00000	0.00000	0.00000
	(!CLK * SN)	0.03651	0.10020	0.70814

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

Cell Name	When	Power(pJ)		
		first	mid	last
gf180mcu_osu_sc_12T_dffsr_1	(CLK * RN)	0.00000	0.00000	0.00000
	(CLK * RN)	-0.02098	-0.02120	-0.02136
	(CLK * !RN)	0.00000	0.00000	0.00000
	(CLK * !RN)	-0.02732	-0.02777	-0.02771
	(!CLK * !RN)	0.00000	0.00000	0.00000
	(!CLK * !RN)	-0.02646	-0.02704	-0.02696

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

Cell Name	When	Power(pJ)		
		first	mid	last
gf180mcu_osu_sc_12T_dffsr_1	(CLK * RN)	0.00000	0.00000	0.00000
	(CLK * RN)	0.47143	0.49411	0.70004
	(CLK * !RN)	0.00000	0.00000	0.00000
	(CLK * !RN)	0.02801	0.02778	0.02771
	(!CLK * RN)	0.00000	0.00000	0.00000
	(!CLK * RN)	8.24522	7.83219	4.54915
	(!CLK * !RN)	0.00000	0.00000	0.00000
	(!CLK * !RN)	0.02729	0.02705	0.02696

GF180MCU_OSU_SC_12T_DFF_1

gf180_12T_TT_3P3_25C.ccs
Cell Library: Process ,
Voltage 3.30, Temp 25.00

Truth Table

INPUT		OUTPUT	
D	CLK	Q	QN
x	x	-	-

Footprint

Cell Name	Area
gf180mcu_osu_sc_12T_dff_1	0.00000

Pin Capacitance Information

Cell Name	Pin Cap(pf)		Max Cap(pf)	
	D	CLK	Q	QN
gf180mcu_osu_sc_12T_dff_1	0.00374	1.74760	1.55065	1.47933

Leakage Information

Cell Name	Leakage(nW)		
	Min.	Avg	Max.
gf180mcu_osu_sc_12T_dff_1	0.00000	0.00611	0.00661

Delay Information

Delay(ns) to Q rising :

Cell Name	Timing Arc(Dir)	Delay(ns)		
		First	Mid	Last
gf180mcu_osu_sc_12T_dff_1	CLK->Q (RR)	0.10713	1.75573	18.95270
	QN->Q (FR)	0.04508	0.97122	10.20850

Delay(ns) to Q falling :

Cell Name	Timing Arc(Dir)	Delay(ns)		
		First	Mid	Last
gf180mcu_osu_sc_12T_dff_1	CLK->Q (FF)	0.11125	1.81590	19.45510
	QN->Q (RF)	0.04105	0.82302	8.69902

Delay(ns) to QN rising :

Cell Name	Timing Arc(Dir)	Delay(ns)		
		First	Mid	Last
gf180mcu_osu_sc_12T_dff_1	CLK->QN (FR)	0.06136	0.97156	9.92472

Delay(ns) to QN falling :

Cell Name	Timing Arc(Dir)	Delay(ns)		
		First	Mid	Last
gf180mcu_osu_sc_12T_dff_1	CLK->QN (RF)	0.05423	0.82165	8.44216

Constraint Information

Constraints(ns) for CLK rising :

Cell Name	Timing Check	Ref Pin(trans)	Reference Slew Rate(ns)		
			first	mid	last
gf180mcu_osu_sc_12T_dff_1	min_pulse_width	CLK ()	0.08677	1.00220	16.50020

Constraints(ns) for CLK falling :

Cell Name	Timing Check	Ref Pin(trans)	Reference Slew Rate(ns)		
			first	mid	last
gf180mcu_osu_sc_12T_dff_1	min_pulse_width	CLK ()	0.09412	1.00220	16.50020

Power Information

Internal switching power(pJ) to Q rising :

Cell Name	Input	Power(pJ)		
		first	mid	last
gf180mcu_osu_sc_12T_dff_1	CLK	0.00000	0.00000	0.00000
	CLK	0.02757	0.16396	1.88566

Internal switching power(pJ) to Q falling :

Cell Name	Input	Power(pJ)		
		first	mid	last
gf180mcu_osu_sc_12T_dff_1	CLK	0.00000	0.00000	0.00000
	CLK	21.55860	21.43430	20.36330

Internal switching power(pJ) to QN rising :

Cell Name	Input	Power(pJ)		
		first	mid	last
gf180mcu_osu_sc_12T_dff_1	CLK	0.00000	0.00000	0.00000
	CLK	18.28510	18.16170	17.08960

Internal switching power(pJ) to QN falling :

Cell Name	Input	Power(pJ)		
		first	mid	last
gf180mcu_osu_sc_12T_dff_1	CLK	0.00000	0.00000	0.00000
	CLK	0.02761	0.16348	1.88549

Passive power(pJ) for D rising :

Cell Name	Power(pJ)		
	first	mid	last
gf180mcu_osu_sc_12T_dff_1	0.00000	0.00000	0.00000
	-0.01326	-0.01340	-0.01346

Passive power(pJ) for D falling :

Cell Name	Power(pJ)		
	first	mid	last
gf180mcu_osu_sc_12T_dff_1	0.00000	0.00000	0.00000
	0.01409	0.01416	0.01408

GF180MCU_OSU_SC_12T_INV_1

gf180_12T_TT_3P3_25C.ccs
Cell Library: Process ,
Voltage 3.30, Temp 25.00

Truth Table

INPUT	OUTPUT
A	Y
0	1
1	0

Footprint

Cell Name	Area
gf180mcu_osu_sc_12T_inv_1	0.00000

Pin Capacitance Information

Cell Name	Pin Cap(pf)	Max Cap(pf)
	A	Y
gf180mcu_osu_sc_12T_inv_1	0.00404	1.50058

Leakage Information

Cell Name	Leakage(nW)		
	Min.	Avg	Max.
gf180mcu_osu_sc_12T_inv_1	0.00000	0.00075	0.00090

Delay Information

Delay(ns) to Y rising :

Cell Name	Timing Arc(Dir)	Delay(ns)		
		First	Mid	Last
gf180mcu_osu_sc_12T_inv_1	**A->Y (FR)**	0.04508	0.95977	9.99632

Delay(ns) to Y falling :

Cell Name	Timing Arc(Dir)	Delay(ns)		
		First	Mid	Last
gf180mcu_osu_sc_12T_inv_1	**A->Y (RF)**	0.04105	0.81224	8.50859

Power Information

Internal switching power(pJ) to Y rising :

Cell Name	Input	Power(pJ)		
		first	mid	last
gf180mcu_osu_sc_12T_inv_1	A	0.00000	0.00000	0.00000
	A	0.02093	0.04969	0.25439

Internal switching power(pJ) to Y falling :

Cell Name	Input	Power(pJ)		
		first	mid	last
gf180mcu_osu_sc_12T_inv_1	A	0.00000	0.00000	0.00000
	A	-0.00148	0.02354	0.21096

GF180MCU_OSU_SC_12T_NAND2_1

gf180_12T_TT_3P3_25C.ccs
Cell Library: Process ,
Voltage 3.30, Temp 25.00

Truth Table

INPUT		OUTPUT
A	B	Y
0	x	1
1	0	1
1	1	0

Footprint

Cell Name	Area
gf180mcu_osu_sc_12T_nand2_1	0.00000

Pin Capacitance Information

Cell Name	Pin Cap(pf)		Max Cap(pf)
	A	B	Y
gf180mcu_osu_sc_12T_nand2_1	0.00404	0.00402	1.04725

Leakage Information

Cell Name	Leakage(nW)		
	Min.	Avg	Max.
gf180mcu_osu_sc_12T_nand2_1	0.00000	0.00079	0.00118

Delay Information

Delay(ns) to Y rising :

Cell Name	Timing Arc(Dir)	Delay(ns)		
		First	Mid	Last
gf180mcu_osu_sc_12T_nand2_1	A->Y (FR)	0.05300	0.84603	7.95705
	B->Y (FR)	0.06375	0.86091	7.99778

Delay(ns) to Y falling :

Cell Name	Timing Arc(Dir)	Delay(ns)		
		First	Mid	Last
gf180mcu_osu_sc_12T_nand2_1	A->Y (RF)	0.06840	0.96230	9.03372
	B->Y (RF)	0.07913	0.85293	7.88183

Power Information

Internal switching power(pJ) to Y rising :

Cell Name	Input	Power(pJ)		
		first	mid	last
gf180mcu_osu_sc_12T_nand2_1	A	0.00000	0.00000	0.00000
	A	0.02332	0.04727	0.23835
	B	0.00000	0.00000	0.00000
	B	0.03475	0.05983	0.26647

Internal switching power(pJ) to Y falling :

Cell Name	Input	Power(pJ)		
		first	mid	last
gf180mcu_osu_sc_12T_nand2_1	A	0.00000	0.00000	0.00000
	A	0.00561	0.02747	0.21418
	B	0.00000	0.00000	0.00000
	B	0.00520	0.02767	0.23854

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

Cell Name	When	Power(pJ)		
		first	mid	last
gf180mcu_osu_sc_12T_nand2_1	(!B * Y)	0.00000	0.00000	0.00000
	(!B * Y)	-0.01409	-0.01409	-0.01414

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

Cell Name	When	Power(pJ)		
		first	mid	last
gf180mcu_osu_sc_12T_nand2_1	(!B * Y)	0.00000	0.00000	0.00000
	(!B * Y)	0.01423	0.01423	0.01418

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

Cell Name	When	Power(pJ)		
		first	mid	last
gf180mcu_osu_sc_12T_nand2_1	(!A * Y)	0.00000	0.00000	0.00000
	(!A * Y)	-0.01351	-0.01358	-0.01352

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

Cell Name	When	Power(pJ)		
		first	mid	last
gf180mcu_osu_sc_12T_nand2_1	(!A * Y)	0.00000	0.00000	0.00000
	(!A * Y)	0.01372	0.01361	0.01355

GF180MCU_OSU_SC_12T_NOR2_1

gf180_12T_TT_3P3_25C.ccs
Cell Library: Process ,
Voltage 3.30, Temp 25.00

Truth Table

INPUT		OUTPUT
A	B	Y
0	0	1
x	1	0
1	x	0

Footprint

Cell Name	Area
gf180mcu_osu_sc_12T_nor2_1	0.00000

Pin Capacitance Information

Cell Name	Pin Cap(pf)		Max Cap(pf)
	A	B	Y
gf180mcu_osu_sc_12T_nor2_1	0.00398	0.00404	0.77993

Leakage Information

Cell Name	Leakage(nW)		
	Min.	Avg	Max.
gf180mcu_osu_sc_12T_nor2_1	0.00000	0.00084	0.00180

Delay Information

Delay(ns) to Y rising :

Cell Name	Timing Arc(Dir)	Delay(ns)		
		First	Mid	Last
gf180mcu_osu_sc_12T_nor2_1	A->Y (FR)	0.10592	1.02896	8.70481
	B->Y (FR)	0.07799	1.12759	9.83696

Delay(ns) to Y falling :

Cell Name	Timing Arc(Dir)	Delay(ns)		
		First	Mid	Last
gf180mcu_osu_sc_12T_nor2_1	A->Y (RF)	0.06027	0.64311	5.36489
	B->Y (RF)	0.04631	0.61648	5.28751

Power Information

Internal switching power(pJ) to Y rising :

Cell Name	Input	Power(pJ)		
		first	mid	last
gf180mcu_osu_sc_12T_nor2_1	A	0.00000	0.00000	0.00000
	A	0.03530	0.05820	0.32303
	B	0.00000	0.00000	0.00000
	B	0.02546	0.05046	0.26773

Internal switching power(pJ) to Y falling :

Cell Name	Input	Power(pJ)		
		first	mid	last
gf180mcu_osu_sc_12T_nor2_1	A	0.00000	0.00000	0.00000
	A	0.01110	0.03380	0.25573
	B	0.00000	0.00000	0.00000
	B	0.00008	0.02222	0.21945

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

Cell Name	When	Power(pJ)		
		first	mid	last
gf180mcu_osu_sc_12T_nor2_1	(B * !Y)	0.00000	0.00000	0.00000
	(B * !Y)	-0.01258	-0.01344	-0.01336

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

Cell Name	When	Power(pJ)		
		first	mid	last
gf180mcu_osu_sc_12T_nor2_1	(B * !Y)	0.00000	0.00000	0.00000
	(B * !Y)	0.01350	0.01345	0.01336

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

Cell Name	When	Power(pJ)		
		first	mid	last
gf180mcu_osu_sc_12T_nor2_1	(A * !Y)	0.00000	0.00000	0.00000
	(A * !Y)	-0.00454	-0.00451	-0.00451

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

Cell Name	When	Power(pJ)		
		first	mid	last
gf180mcu_osu_sc_12T_nor2_1	(A * !Y)	0.00000	0.00000	0.00000
	(A * !Y)	0.00487	0.00485	0.00460

GF180MCU_OSU_SC_12T_OAI21_1

gf180_12T_TT_3P3_25C.ccs
Cell Library: Process ,
Voltage 3.30, Temp 25.00

Truth Table

INPUT			OUTPUT
A0	A1	B	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
gf180mcu_osu_sc_12T_oai21_1	0.00000

Pin Capacitance Information

Cell Name	Pin Cap(pf)			Max Cap(pf)
	A0	A1	B	Y
gf180mcu_osu_sc_12T_oai21_1	0.00395	0.00402	0.00404	0.77902

Leakage Information

Cell Name	Leakage(nW)		
	Min.	Avg	Max.
gf180mcu_osu_sc_12T_oai21_1	0.00000	0.00097	0.00152

Delay Information

Delay(ns) to Y rising :

Cell Name	Timing Arc(Dir)	Delay(ns)		
		First	Mid	Last
gf180mcu_osu_sc_12T_oai21_1	A0->Y (FR)	0.14218	1.05249	8.59381
	A1->Y (FR)	0.11453	1.14708	9.74633
	B->Y (FR)	0.05238	0.77197	6.75524

Delay(ns) to Y falling :

Cell Name	Timing Arc(Dir)	Delay(ns)		
		First	Mid	Last
gf180mcu_osu_sc_12T_oai21_1	A0->Y (RF)	0.11391	0.77163	6.13624
	A1->Y (RF)	0.08628	0.73741	6.04630
	B->Y (RF)	0.09880	0.88868	7.41954

Power Information

Internal switching power(pJ) to Y rising :

Cell Name	Input	Power(pJ)		
		first	mid	last
gf180mcu_osu_sc_12T_oai21_1	A0	0.00000	0.00000	0.00000
	A0	0.04819	0.06605	0.28834
	A1	0.00000	0.00000	0.00000
	A1	0.03846	0.05719	0.23966
	B	0.02291	0.05107	0.30431

Internal switching power(pJ) to Y falling :

Cell Name	Input	Power(pJ)		
		first	mid	last
gf180mcu_osu_sc_12T_oai21_1	A0	0.00000	0.00000	0.00000
	A0	0.01809	0.03526	0.23887
	A1	0.00000	0.00000	0.00000
	A1	0.00652	0.02399	0.20627
	B	0.00566	0.03195	0.27437

Passive power(pJ) for A0 rising (conditional):

Cell Name	When	Power(pJ)		
		first	mid	last
gf180mcu_osu_sc_12T_oai21_1	(A1 * B * !Y)	0.00000	0.00000	0.00000
	(A1 * B * !Y)	-0.01257	-0.01344	-0.01338
	(A1 * !B * Y)	0.00000	0.00000	0.00000
	(A1 * !B * Y)	-0.01310	-0.01344	-0.01336
	(!A1 * !B * Y)	0.00000	0.00000	0.00000
	(!A1 * !B * Y)	-0.01355	-0.01356	-0.01352

Passive power(pJ) for A0 falling (conditional):

Cell Name	When	Power(pJ)		
		first	mid	last
gf180mcu_osu_sc_12T_oai21_1	(A1 * B * !Y)	0.00000	0.00000	0.00000
	(A1 * B * !Y)	0.01354	0.01345	0.01338
	(A1 * !B * Y)	0.00000	0.00000	0.00000
	(A1 * !B * Y)	0.01351	0.01344	0.01336
	(!A1 * !B * Y)	0.00000	0.00000	0.00000
	(!A1 * !B * Y)	0.01369	0.01360	0.01355

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

Cell Name	When	Power(pJ)		
		first	mid	last
gf180mcu_osu_sc_12T_oai21_1	(A0 * B * !Y)	0.00000	0.00000	0.00000
	(A0 * B * !Y)	-0.00454	-0.00453	-0.00451
	(!B * Y)	0.00000	0.00000	0.00000
	(!B * Y)	-0.01321	-0.01336	-0.01331

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

Cell Name	When	Power(pJ)		
		first	mid	last
gf180mcu_osu_sc_12T_oai21_1	(A0 * B * !Y)	0.00000	0.00000	0.00000
	(A0 * B * !Y)	0.00483	0.00486	0.00460
	(!B * Y)	0.00000	0.00000	0.00000
	(!B * Y)	0.01339	0.01336	0.01331

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

Cell Name	When	Power(pJ)		
		first	mid	last
gf180mcu_osu_sc_12T_oai21_1	(!A0 * !A1 * Y)	0.00000	0.00000	0.00000
	(!A0 * !A1 * Y)	-0.01402	-0.01402	-0.01413

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

Cell Name	When	Power(pJ)		
		first	mid	last
gf180mcu_osu_sc_12T_oai21_1	(!A0 * !A1 * Y)	0.00000	0.00000	0.00000
	(!A0 * !A1 * Y)	0.01421	0.01424	0.01418

GF180MCU_OSU_SC_12T_OR2_1

gf180_12T_TT_3P3_25C.ccs
Cell Library: Process ,
Voltage 3.30, Temp 25.00

Truth Table

INPUT		OUTPUT
A	B	Y
0	0	0
x	1	1
1	x	1

Footprint

Cell Name	Area
gf180mcu_osu_sc_12T_or2_1	0.00000

Pin Capacitance Information

Cell Name	Pin Cap(pf)		Max Cap(pf)
	A	B	Y
gf180mcu_osu_sc_12T_or2_1	0.00404	0.00398	1.54015

Leakage Information

Cell Name	Leakage(nW)		
	Min.	Avg	Max.
gf180mcu_osu_sc_12T_or2_1	0.00000	0.00166	0.00239

Delay Information

Delay(ns) to Y rising :

Cell Name	Timing Arc(Dir)	Delay(ns)		
		First	Mid	Last
gf180mcu_osu_sc_12T_or2_1	A->Y (RR)	0.09406	0.68852	6.20224
	B->Y (RR)	0.11283	0.76657	6.80087

Delay(ns) to Y falling :

Cell Name	Timing Arc(Dir)	Delay(ns)		
		First	Mid	Last
gf180mcu_osu_sc_12T_or2_1	A->Y (FF)	0.13549	0.95051	8.38037
	B->Y (FF)	0.16345	0.89734	7.92028

Power Information

Internal switching power(pJ) to Y rising :

Cell Name	Input	Power(pJ)		
		first	mid	last
gf180mcu_osu_sc_12T_or2_1	A	0.00000	0.00000	0.00000
	A	0.02082	0.06902	0.55618
	B	0.00000	0.00000	0.00000
	B	0.03237	0.08536	0.66167

Internal switching power(pJ) to Y falling :

Cell Name	Input	Power(pJ)		
		first	mid	last
gf180mcu_osu_sc_12T_or2_1	A	0.00000	0.00000	0.00000
	A	0.04722	0.09565	0.57925
	B	0.00000	0.00000	0.00000
	B	0.05709	0.10619	0.68097

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

Cell Name	When	Power(pJ)		
		first	mid	last
gf180mcu_osu_sc_12T_or2_1	(B * Y)	0.00000	0.00000	0.00000
	(B * Y)	-0.00455	-0.00451	-0.00451

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

Cell Name	When	Power(pJ)		
		first	mid	last
gf180mcu_osu_sc_12T_or2_1	(B * Y)	0.00000	0.00000	0.00000
	(B * Y)	0.00486	0.00485	0.00460

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

Cell Name	When	Power(pJ)		
		first	mid	last
gf180mcu_osu_sc_12T_or2_1	(A * Y)	0.00000	0.00000	0.00000
	(A * Y)	-0.01262	-0.01344	-0.01338

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

Cell Name	When	Power(pJ)		
		first	mid	last
gf180mcu_osu_sc_12T_or2_1	(A * Y)	0.00000	0.00000	0.00000
	(A * Y)	0.01344	0.01346	0.01338

GF180MCU_OSU_SC_12T_XNOR2_1

gf180_12T_TT_3P3_25C.ccs
Cell Library: Process ,
Voltage 3.30, 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
gf180mcu_osu_sc_12T_xnor2_1	0.00000

Pin Capacitance Information

Cell Name	Pin Cap(pf)		Max Cap(pf)
	A	B	Y
gf180mcu_osu_sc_12T_xnor2_1	0.00806	0.00799	0.77792

Leakage Information

Cell Name	Leakage(nW)		
	Min.	Avg	Max.
gf180mcu_osu_sc_12T_xnor2_1	0.00000	0.00288	0.00353

Delay Information

Delay(ns) to Y rising (conditional):

Cell Name	Timing Arc(Dir)	When	Delay(ns)		
			First	Mid	Last
gf180mcu_osu_sc_12T_xnor2_1	A->Y (RR)	B	0.16379	0.92595	6.39663
	A->Y (FR)	!B	0.12239	1.15867	9.75512
	B->Y (RR)	A	0.13435	0.90732	6.56628
	B->Y (FR)	!A	0.14592	1.05699	8.59541

Delay(ns) to Y falling (conditional):

Cell Name	Timing Arc(Dir)	When	Delay(ns)		
			First	Mid	Last
gf180mcu_osu_sc_12T_xnor2_1	A->Y (FF)	B	0.16679	0.90702	6.35742
	A->Y (RF)	!B	0.08778	0.73633	6.04137
	B->Y (FF)	A	0.12753	0.86210	6.30809
	B->Y (RF)	!A	0.12013	0.78107	6.14452

Power Information

Internal switching power(pJ) to Y rising (conditional):

Cell Name	Input	When	Power(pJ)		
			first	mid	last
gf180mcu_osu_sc_12T_xnor2_1	A	B	0.00000	0.00000	0.00000
	A	B	0.03102	0.09334	0.70845
	A	!B	0.00000	0.00000	0.00000
	A	!B	0.06128	0.14382	0.94412
	B	A	0.00000	0.00000	0.00000
	B	A	0.01307	0.07636	0.69155
	B	!A	0.00000	0.00000	0.00000
	B	!A	0.07094	0.15423	0.99318

Internal switching power(pJ) to Y falling (conditional):

Cell Name	Input	When	Power(pJ)		
			first	mid	last
gf180mcu_osu_sc_12T_xnor2_1	A	B	0.00000	0.00000	0.00000
	A	B	0.07707	0.14098	0.75280
	A	!B	0.00000	0.00000	0.00000
	A	!B	0.02493	0.10562	0.90078
	B	A	0.00000	0.00000	0.00000
	B	A	0.06378	0.12880	0.74115
	B	!A	0.00000	0.00000	0.00000
	B	!A	0.03619	0.11753	0.93544