

CSM65: USB11 Pad Set



Libraries

Name	Process	CUP	Form Factor
RG0_CSM65_25V33_G_UC_USB11	G	yes	staggered
RG0_CSM65_25V33_LP_UC_USB11	LP	yes	staggered

Summary

This library includes USC_BI_100_33V_SC cell is a dual mode (full-speed and low-speed) host capable Universal Serial Bus (USB 1.1 analog transceiver) bidirectional I/O cell as well as two adapter cells designed to align USC_BI_100_33V_SC bus structure with core-limited and pad-limited libraries.

This cell is a macro cell that contains its own isolated power supplies (DVDD and DVSS), but shares VDD and VSS with the rest of the padding.

Power bus architecture and physical dimensions of this library are fully compatible with Aragio's standard I/O libraries (RG0_CSM65_25V33_xx_30C and RG0_CSM65_25V33_xx_50C).

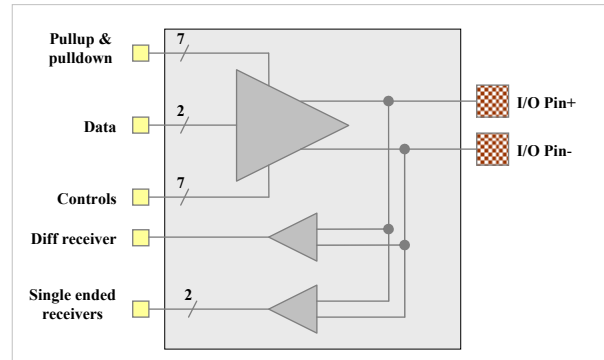
Absolute maximum ratings

Symbol	Description	Value	Units
V _{VDD}	Core supply voltage range	-0.5 to 1.6	V
V _{DVDD}	I/O supply voltage range	-0.5 to 3.8	V
V _{PAD}	Voltage range at PAD	-0.5 to (V _{DVDD} + 0.5)	V
T _J	Junction operating temperature range	-55 to 150	°C

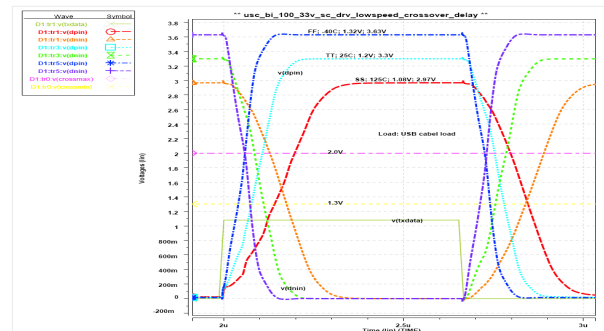
Recommended operating conditions

Symbol	Description	Min	Nom	Max	Units
V _{DVDD}	I/O supply voltage	2.97	3.30	3.63	V
T _A	Ambient operating temperature	0	25	100	°C
V _{VDD}	Core supply voltage	0.9	1.0 to 1.2	1.32	V
T _J	Junction temperature	-40	25	125	°C
V _{PAD}	Voltage at PAD	0	-	V _{DVDD}	V
V _{IH}	Input logic high	1.7	-	-	V
V _{IL}	Input logic low	-	-	0.9	V
V _{IL AC}	Input high voltage AC	1.9	-	-	V
V _{IH AC}	Input low voltage AC	-	-	0.7	V
V _{OH}	Output high	2.1	-	3.6	V
V _{OL}	Output low	0	-	0.5	V

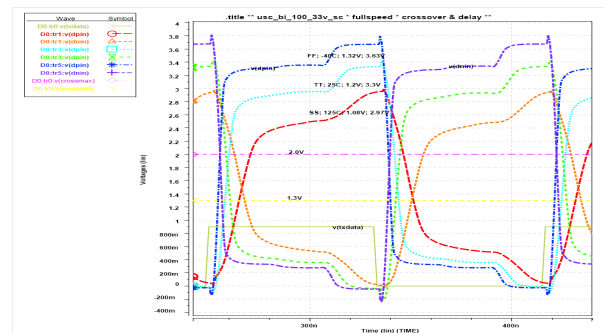
USC_BI_100_33V_SC – USB11 I/O Pad



Simulation Results (low speed)



Simulation Results (full speed)



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Characterization Corners

Nominal VDD	Model	VDD	DVDD = 3.3V	Temperature
1.2 ^[1]	FF	+10%	+10%	-40°C
	FF	+10%	+10%	125°C
	TT	nominal	nominal	25°C
	SS	-10%	-10%	-40°C
	SS	-10%	-10%	125°C
1.1 ^[2]	FF	+10%	+10%	-40°C
	FF	+10%	+10%	125°C
	TT	nominal	nominal	25°C
	SS	-10%	-10%	-40°C
	SS	-10%	-10%	125°C
1.0	FF	+10%	+10%	-40°C
	FF	+10%	+10%	125°C
	TT	nominal	nominal	25°C
	SS	-10%	-10%	-40°C
	SS	-10%	-10%	125°C

^[1] LP process only.

^[2] G process only

Cell summary

Name	Description
USC_BI_100_33V_SC	USB11 pad
SPC_SPP_AD_UN	Adapter to inline libraries

Physical size

Name	Width	Height	Units
USC_BI_100_33V_SC	190	188	µm
SPC_SPP_AD_UN	25	180	µm

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