GF28: SD

Libraries

Name	Form Factor	Silicon proven
RGO_GF28_18V33_SLP_20C_SD	staggered	yes

Summary

The SD library provides a bidirectional SD signaling cell. It is compatible with revision 3.01 of the SD Specifications, Part 1, Physical Layer Specification. This library is provided as a supplement to the 28nm GPIO libraries provided by Aragio Solutions.

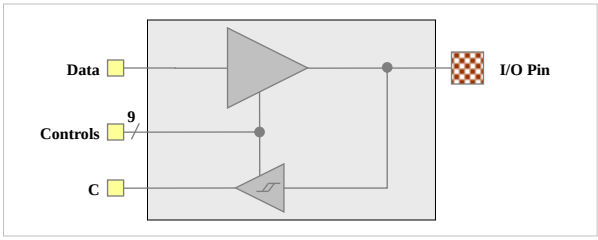
ESD Protection:

- JEDEC compliant
  - 2KV ESD Human Body Model (HBM)
  - 200 V ESD Machine Model (MM)
  - 500 V ESD Charge Device Model (CDM)

Latch-up Immunity:

- JEDEC compliant
  - Tested to I-Test criteria of ± 100mA @ 125°C

STP_BI_016_1833V_SD3



Bidirectional SD 3.0 Driver Features

- Dual voltage operation (1.8V & 3.3V)
- Fault-tolerant operation (no current flow when DVDD = 0V at VPAD ≤ 3.63V)
- Programmable drive strength
- Selectable output slew-rate (slow / fast)
- Selectable schmitt trigger input
- Programmable input options (pull-up, pull-down, or plain input)
- Fully compatible with Aragio Solutions 3.3V I/O library offerings
- Power-up sequencing independent design with Power-on Control

Recommended operating conditions

	Description		Min	Nom	Max	Units
V_{VDD}	Core supply voltage		0.90	1.0	1.1	V
			0.99	1.1	1.155	V
T_J	Junction temperature		-40	25	+125	°C
V_{PAD}	Voltage at IO		-0.3		V_{DVDD} + 0.3	V
V_{DVDD}	I/O supply voltage		2.7	3.3	3.63	V
V_{IH}	Input logic high	3.3V	0.625 * V_{DVDD}	-	V_{DVDD} + 0.3	V
V_{IL}	Input logic low	3.3V	V_{DVSS} - 0.3	-	0.25 * V_{DVDD}	V
V_{HYS}[1]	Input hysteresis voltage	3.3V	0.2	-	-	V
V_{DVDD}	I/O supply voltage		1.7	1.8	1.95	V
V_{IH}	Input logic high	1.8V	1.27	-	2.00	V
V_{IL}	Input logic low	1.8V	V_{DVSS} - 0.3	-	0.58	V
V_{HYS}[1]	Input hysteresis voltage	1.8V	0.1 * V_{DVDD}	-	-	V

[1] When SMT = 1.

Characterization Corners

Nominal VDD	Model	VDD	DVDD[1]	Temperature
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
1.1	FF	+5%	+10%	-40°C
	FF	+5%	+10%	125°C
	TT	nominal	nominal	25°C
	SS	-10%	-10%	-40°C
	SS	-10%	-10%	125°C

[1] DVDD = 1.8 & 3.3V

Published by:

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Web: http://www.aragio.com/

Printed in the United States of America