

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.

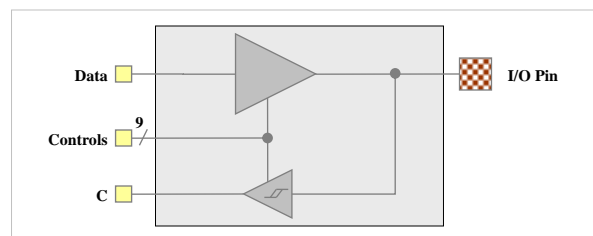
ESD Protection:

- 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 $\pm 100\text{mA}$ @ 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 $V_{PAD} \leq 3.63\text{V}$)
- 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	$^\circ\text{C}$
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	0.625 * V_{DVDD}	-	$V_{DVDD} + 0.3$	V
	3.3V	$V_{DVSS} - 0.3$	-	0.25 * V_{DVDD}
V_{IL} Input logic low				
$V_{HYS}^{[1]}$ Input hysteresis voltage	0.2	-	-	V
V_{DVDD} I/O supply voltage	1.7	1.8	1.95	V
V_{IH} Input logic high	1.27	-	2.00	V
V_{IL} Input logic low	1.8V	$V_{DVSS} - 0.3$	-	0.58
	0.1 * V_{DVDD}	-	-	V

[1] When SMT = 1.

Characterization Corners

Nominal VDD	Model	VDD	DVDD ^[1]	Temperature
1.0	FF	+10%	+10%	-40 $^\circ\text{C}$
	FF	+10%	+10%	125 $^\circ\text{C}$
	TT	nominal	nominal	25 $^\circ\text{C}$
	SS	-10%	-10%	-40 $^\circ\text{C}$
	SS	-10%	-10%	125 $^\circ\text{C}$
1.1	FF	+5%	+10%	-40 $^\circ\text{C}$
	FF	+5%	+10%	125 $^\circ\text{C}$
	TT	nominal	nominal	25 $^\circ\text{C}$
	SS	-10%	-10%	-40 $^\circ\text{C}$
	SS	-10%	-10%	125 $^\circ\text{C}$

[1] DVDD = 1.8 & 3.3V

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Aragio Solutions
2201 K Avenue
Section B Suite 200
Plano, TX 75074-5918
Phone: (972) 516-0999
Fax: (972) 516-0998
Web: <http://www.aragio.com/>

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