

GF28 (2.5V ZG): SD



Libraries

Name	Form Factor	Silicon proven
RGO_GF28_25V33_SLP_25C_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. This library uses thick oxide 2.5V ZG transistors.

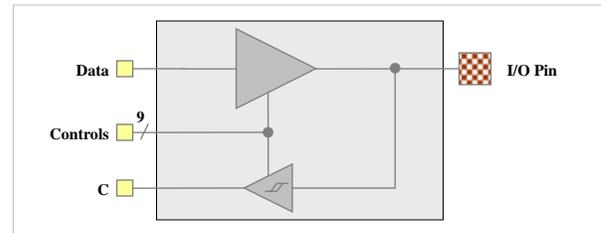
ESD Protection:

- 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

GF28 (2.5V ZG): SD



© 2012-2015 Aragio Solutions. All rights reserved.

Information in this document is subject to change without notice. Aragio Solutions may have patents, patent applications, trademarks, copyrights or other intellectual property rights covering subject matter in this document. Except as expressly provided in any written license agreement from Aragio, the furnishing of this document does not give you any license to the patents, trademarks, copyrights, or other intellectual property.

Published by:

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/>

While every precaution has been taken in the preparation of this book, the publisher assumes no responsibility for errors or omissions, or for damages resulting from the use of the information contained herein. This document may be reproduced and distributed in whole, in any medium, physical or electronic, under the terms of a license or nondisclosure agreement with Aragio.

Printed in the United States of America