

LPE Libraries

Name	Form Factor	Silicon Proven
RGO_GF55_25V25_LPE_UC_LVDS	Staggered	Yes

Summary

The LVDS library provides an LVDS driver, receiver, and temperature stable voltage reference capable of supporting 16 drivers operating at data rates up to 1350 Mbps. The pad set includes a full complement of power, spacer, and adapter cells to assemble a complete pad ring by abutment. An included rail splitter allows isolated LVDS domains to be placed in the same pad ring with other power domains while maintaining continuous VDD/VSS in the pad ring for robust ESD protection.

- 675 MHz LVDS Driver
- 450 MHz LVDS Receiver
- LVDS Voltage Reference

LVDS Specification Compliant:

- TIA/EIA-644-A - Electrical Characteristics of Low Voltage Differential Signaling (LVDS) Interface Circuits
- IEEE Std 1596.3-1996

ESD Protection:

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

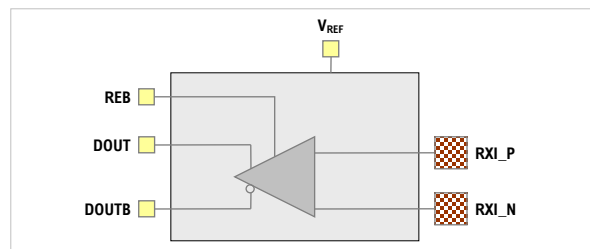
Latch-up Immunity:

- JEDEC compliant
 - Tested to I-Test criteria of $\pm 100\text{mA}$ @ 125°C

Recommended operating conditions

Symbol	Description	Min	Nom	Max	Units
V _{VDD}	Core supply voltage	0.9	1.0	1.1	V
V _{DVDD}	I/O supply voltage	1.08	1.2	1.32	V
T _J	Junction temperature	-40	25	125	°C
V _{PAD}	Voltage at PAD	-0.3V		V _{DVDD} +0.3V	V

LDP_IN_675_25V_DN: 450 MHz LVDS Receiver



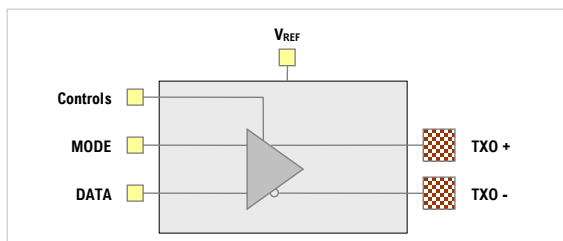
LVDS Receiver Features:

- Input receive sensitivity of 75mV peak differential (without hysteresis)
- Common mode range from 0V to 2.4V (limited by power supply)
- Power consumption: 10 mW max @ 450 MHz

AC Characteristics

Parameter	Typ	Max	Units	Conditions
Propagation delay	1.7	2.0	ns	The slew rate for propagation delays, duty cycle distortion and maximum operating frequency are 1V/ns
Maximum operating frequency	450		MHz	All noise, jitter, and t _{gcd} measured at 450 MHz
Maximum data rate	900		Mbps	

LDP_OU_675_25V_T: 675 MHz LVDS Driver



LVDS Driver Features:

- Operates up to 675 MHz (1350 Mbps)
- Common mode output range 1.2V \pm 100mV
- Differential Skew between TXO_P and TXO_N 80ps
- High and low current drive modes to support 50 Ω and 100 Ω differential terminations
- Power consumption: 20.5 mW max @ 675 MHz

AC Characteristics

Symbol	Description	Condition	Min	Typ	Max	Units
t _{PHL}	Differential high to low propagation delay	R _L = 100 Ω C _L = 2 pF		600	950	ps
t _{PLH}	Differential low to high propagation delay	R _L = 100 Ω C _L = 2 pF		600	950	ps
t _{rise}	V _{OD} differential rise time	20% to 80%	250		330	ps
t _{fall}	V _{OD} differential fall time	20% to 80%	250		300	ps

Characterization Corners

Nominal VDD	Model	VDD	DVDD ^[1]	Temperature
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] DVDD = 2.5V

© 2007-2017 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