

Libraries

Name	Process	Form Factor
RGO_TSMC16_18V25_FFC_UC_LVDS	FFC	Staggered CUP

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 2.4 Gbps. 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.

- 1.0 GHz LVDS Driver
- 1.2 GHz 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)
 - 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

Recommended operating conditions

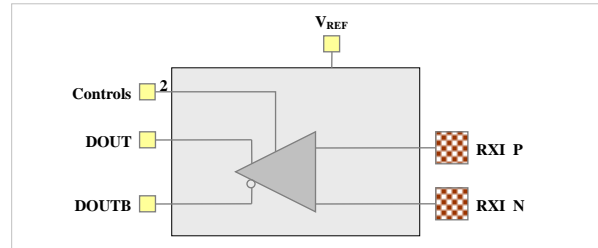
Symbol	Description	Min	Nom	Max	Units
V_{VDD}	Core supply voltage	0.72	0.80	0.88	V
V_{DVDD}	I/O supply voltage	1.62	1.8	1.98	V
T_{J}	Junction temperature	-40	25	125	$^\circ\text{C}$
V_{PAD}	Voltage at PAD	-0.3V		$V_{\text{DVDD}}+0.3\text{V}$	V

Characterization Corners

Model	LPE Type	VDD=0.8V	DVDD [1]	Temp
FFGNP	Cbest_CCbest_T	+10%	+10%	-40 $^\circ\text{C}$
FFGNP	Cbest_CCbest_T	+10%	+10%	0 $^\circ\text{C}$
FFGNP	Cbest_CCbest_T	+10%	+10%	125 $^\circ\text{C}$
FFG	Ctypical	+10%	+10%	125 $^\circ\text{C}$
TT	Ctypical	nominal	nominal	25 $^\circ\text{C}$
TT	Ctypical	nominal	nominal	85 $^\circ\text{C}$
SSGNP	Cworst_CCworst_T	-10%	-10%	-40 $^\circ\text{C}$
SSGNP	Cworst_CCworst_T	-10%	-10%	0 $^\circ\text{C}$
SSGNP	Cworst_CCworst_T	-10%	-10%	125 $^\circ\text{C}$

[1] DVDD = 1.8V

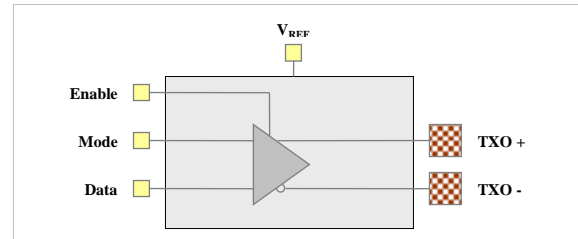
LDP_IN_800_25V_DN: 1.2GHz LVDS Receiver



LVDS Receiver Features:

- Operates up to 1.2 GHz (2.4 Gbps)
- Input receive sensitivity of 75mV peak differential (without hysteresis)
- Common mode range from 0V to 2.4V (limited by power supply)
- Powered by 1.8V I/O and 0.8V core supplies
- Low power consumption

LDP_OU_800_18V_T: 1.0GHz LVDS Driver



LVDS Driver Features:

- Operates up to 1.0GHz (2.0Gbps) with external 1 pF load
- Common mode output range 1.1V $\pm 100\text{mV}$
- High and low current drive modes to support 50 Ω and 100 Ω differential terminations
- Powered by 1.8V I/O and 0.8V core supplies
- Low power consumption

Cell Summary & Physical Sizes

Name	Description
LDP_IN_800_25V_DN *	1GHz LVDS input cell
LDP_OU_800_18V_T *	1GHz LVDS output cell
LDP_RE_000_18V *	LVDS Voltage Reference cell
FVP_VD_RCD_10V	Core power (VDD)
FVP_VS_RCD_10V	Core ground (VSS)
FVP_VD_PDO_18V *	I/O power (DVDD) with POC control
FVP_VD_RDO_18V	I/O power (DVDD)
FVP_VS_RDO_18V	I/O ground (VSS)
SVP_SP_000_18V	0.1 μm spacer
SVP_SP_001_18V	1 μm spacer
SVP_SP_005_18V	5 μm spacer
SVP_SP_010_18V	10 μm spacer
SPP_RS_005_18V	Rail splitter

*Supplied in vertical-only and horizontal-only orientations

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