

Features:

- 666 Mbps operation per channel
- 1.2V/2.5V power supply, CMOS design
- Low power dissipation
- No external components
- Integrated termination resistors in transmitter and receiver.
- Modular design to facilitate customization and process migration
- Can be easily integrated into multiple Channels

General Description:

The MXL666A is a LVDS transceiver implemented in digital CMOS technology. It supports up to 666 Mbps. It is compatible with IEEE Std 1596, EIA-644-A, and OIF-SFI4 specifications. Each transmitter accepts a CMOS level, single-ended input, and generates an LVDS differential output. The receiver, on the other hand, accepts an LVDS input signal at low voltage levels and converts it into a single-ended CMOS signal.

LVDS TX

Input & output PIN descriptions:

Pin Name	I/O/P/G	A/D	Description
VDDHA	PWR	D	Positive Voltage power supply used for analog circuits at 2.5 V
VDDA	PWR	D	Positive Voltage power supply used for circuits running at 1.2 V
VSSA	GND	D	Ground
GNDSUB	GND	D	Ground for substrate connection only
IN ⁽¹⁾	IN	D	Input data running at data rate up to 666 Mbps
PD ⁽¹⁾	IN	D	Power Down input. Active High
EN ⁽¹⁾	IN	D	Enable input. Active High. When low, the output drivers are disabled
I	IN	A	Input current. 100uA sourced current referenced to P+ non-salicide.
ESD	IN	D	Input used for ESD protection. When not used should be connected to VSSA
OUTP, OUTN	OUT	A	Output LVDS outputs
VBP, VBN	OUT	A	Internally generated bias voltages

(1) Digital Inputs (1.2 V CMOS), capable of driving 0.3PF of input loading with a rise/fall time of 100ps or less (20% to 80%)

The LVDS transmitter, accepts a single-ended 1.2V CMOS input running at up to 666 Mbps, and converts it into LVDS level, differential outputs. This block needs two Power supplies, VDDA, which is running at 1.2V, and VDDHA, which is running at 2.5V. The PD input, when active, powers down the whole transmitter including the bias block. The “EN” input when high activates the output driver. When “EN” is low the bias circuit is still powered up, but the driver is de-activated. The input current required at the “I” input is 100 uA sourcing current referenced to P+ non-salicide Poly. When 100uA is injected at that input, the voltage at that input is 1.3625 V. The “ESD” input should be connected to diodes, and the other side of the diodes should be connected to VDDHA used at the output pad. When an ESD event occurs the diodes become conductive and thus the ESD input goes high, which shuts down the current sources in the Driver as recommended by the foundry. If the ESD input is not used, then it should be connected to VSSA. The VBP and VBN output signals are the internally

