

1.25 Gbps LVDS IPs library

OVERVIEW

040TSMC_LVDS_01 is a library including:

- Transmitter LVDS driver (LVDS_TX);
- Receiver LVDS driver (LVDS_RX);
- Reference current/voltage source (LVDS_RS);
- Reference current/voltage buffer (LVDS_BIAS).

The LVDS_RS block is intended to output reference currents and voltage for all types of drivers, as well as for BIAS block. LVDS_BIAS is used to buffer and split reference currents and voltages between the receiver and transmitter channels.

IP technology: TSMS 40nm LP technology.

IP status: pre-silicon verification.

Area: LVDS_TX – 0.016 mm²;
 LVDS_RX – 0.015 mm²;
 LVDS_RS – 0.053 mm²;
 LVDS_BIAS – 0.005 mm².

Features:

- TIA/EIA-644 LVDS standards without hysteresis
- CMOS Output data rate: up to 100Mbps
- Data transfer rate: up to 1.25Gbps
- 2.5V IO voltage supply
- 1.1V core voltage supply
- 1.1V CMOS input/output logic control signals
- Embedded 1.1V/2.5V level shifters

Applications:

- Point-to-point data transmission
- Multidrop buses
- Clock distribution
- Backplane receiver
- Backplane data transmission
- Cable data transmission

BLOCK DIAGRAM

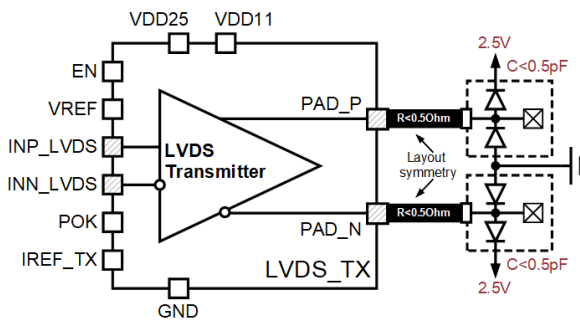


Figure 1: LVDS_TX driver block diagram

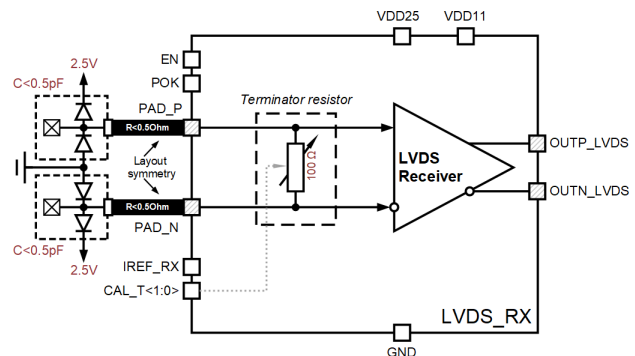


Figure 2: LVDS_RX driver block diagram

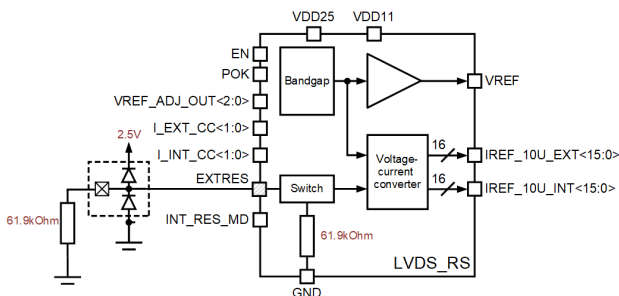


Figure 3: LVDS_RS block diagram

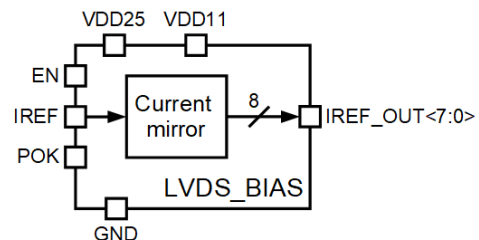


Figure 4: LVDS_BIAS block diagram