

## Description

The HXR45100 is a low-power, single-ended input, single channel linear Trans-Impedance Amplifier (TIA), and a member of IDT’s Optical Receiver Transmitter Array (ORTA) product family. Together with a PIN detector, the HXR45100 can be used to design a compact linear ROSA for the next generation 200G/400G optical transceivers with advanced modulation schemes.

The TIA operates from a 3.3V supply, providing exceptionally low input referred noise density, wide input optical power range, excellent linearity up to 3mA overload, and a high bandwidth – while consuming as low power with the patented adaptive biasing scheme.

## Typical Applications

- New generation Ethernet optical receiver modules: 100G QSFP28 DR/LR, 400G QSFP-DD and OSFP and 400G OBO
- 100G/200G/400G Linear LR ROSA

## Features

- High receiver sensitivity for up to 112Gbps PAM4 Ethernet
- Up to 5kΩ typical differential gain
- From 150mVppd to 500mVppd adjustable output voltage swing
- Linear operation with internal AGC
- 190mW per channel power consumption
- 13pA/VHz typical input referred current noise density
- 40GHz typical bandwidth
- High overload input current: 3mAppSE
- Accurate channel RSSI
- 100G Lambda MSA and IEEE 802.3bs and 802.3cd compliance
- Optimized for isolated and common cathode photo-detector arrays from multiple vendors

## Block Diagram

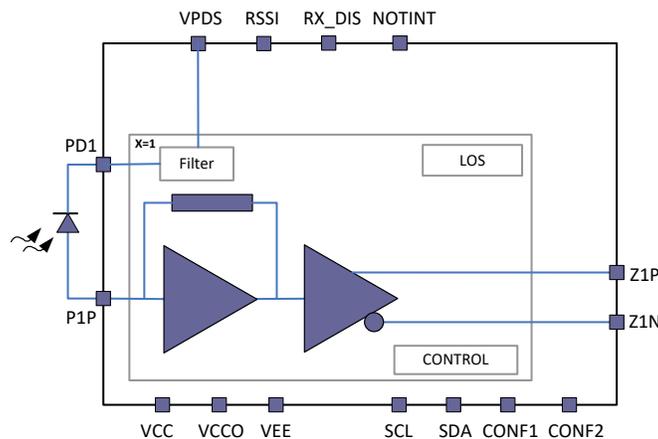


Figure 1: Block Diagram

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