

HLR2S50 2.5Gbps GPON Super TIA CMOS Transimpedance Amplifier

Main Features

- **Typical -31.0 dBm sensitivity @2.5 Gbps**, with 0.16 pF PIN PD (0.9 A/W, 10dB ER, BER 1E-10)
- Typical transimpedance: 75 kΩ
- Increased output swing at sensitivity means excellent signal quality into proceeding post amp & reduced x-talk for BOSA-on-board
- Internal regulated photodiode bias
- 30kHz typical LFC @ sensitivity
- No internal TO-Can VDD supply decoupling capacitor required for typical operation
- Photodiode current monitor output – can be programmed to Sink or Source
- Single +3.3V supply
- -40°C to +95°C Operating temperature range

Applications

- GPON Transceivers
- BOSA-on-Board GPON ONU
- Turbo EPON transceivers
- SFF, SFP, PON Transceivers

Product Overview

The HLR2S50 is a super high sensitivity CMOS transimpedance amplifier with automatic gain control. The AGC enables over 31 dB of dynamic operating range, resulting in a high performance TIA designed to replace avalanche photodiode (APD) based receivers in GPON applications with a cost effective PIN PD based solution.

The HLR2S50 is pad compatible with all popular industry TIAs whilst the small die size and optimal pad placement help to minimize cross-talk and provide superior performance by enabling orthogonal bonding of critical wire bonds. The HLR2S50 is designed to support photodiode capacitances ≤ 0.2pF for GPON applications. It is designed to be used with the internal photodiode (PK) bias only.

The HLR2S50 features a patented TIA transimpedance feedback resistor for lowest noise and improved sensitivity.

With a photodiode monitor function and designed to operate without the requirement for a VDD supply decoupling capacitor within the TO-can, the HLR2S50 offers the most flexible, high performance receiver solution up to 2.5 Gbps.

Block Diagram

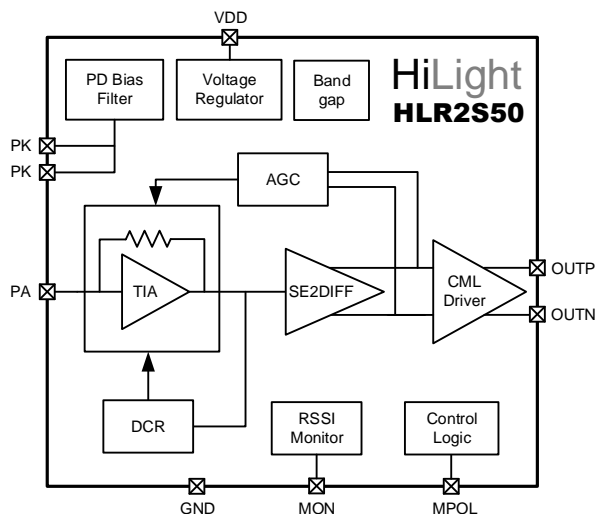


Figure 1 – HLR2S50 Functional Block Diagram

Pad Out

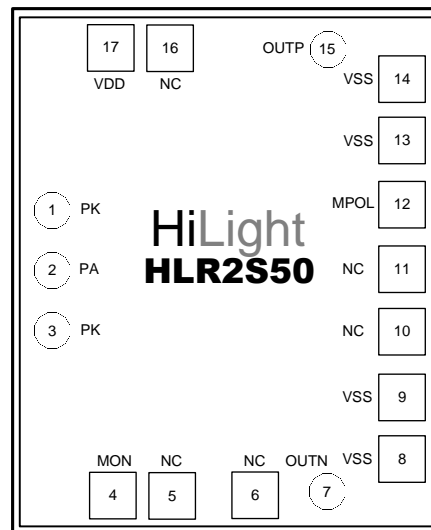


Figure 2 – HLR2S50 Package

Ordering Information

Part Number	Description	Package/Delivery	MOQ
HLR2S50-WP	2.5G GPON STIA	400 known good die in waffle tray packs	400
HLR2S50-WP-2K	2.5G GPON STIA	2,000 known good die in 5 stacked waffle tray packs (5 x 400)	2000
HLR2S50-GRP6-5K	2.5G GPON STIA	4" reconstructed wafer of 5,000 known good die on an 8" grip ring	5000
HLR2S50-GRP6-10K	2.5G GPON STIA	6" reconstructed wafer of 10,000 known good die on an 8" grip ring	10000

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