

TIA56A

43 Gb/s Limiting Transimpedance Amplifier with PLD



Applications

- 43 Gbps DPSK receivers
- TIA for photoreceiver
- Amplitude regeneration
- Active power/signal splitter
- 50 Ω line driver

Product Features

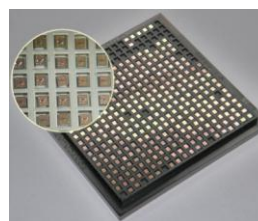
- Differential input and differential output
- Input or output can be used single-ended
- Limiting operation, 4.5k Ω differential transimpedance
- Low noise, 30 pA/ $\sqrt{\text{Hz}}$ typical
- Adjustable input offset
- Peak level detection
- Output sense for offset control
- Bandwidth of 30GHz that can be adjusted
- Output eye shape adjustment pin
- DC and AC coupled operation
- Single supply voltage of -5.2 V
- SiGe technology with f_T / f_{max} of 170 / 250 GHz

General Description

The TIA56A is a versatile high-speed transimpedance amplifier designed for the amplification and manipulation of signals with data rates to over 43Gb/s with >28GHz bandwidth. The TIA56A consists of a fully symmetrical differential input and output buffer and is optimized for 50 Ω line termination.

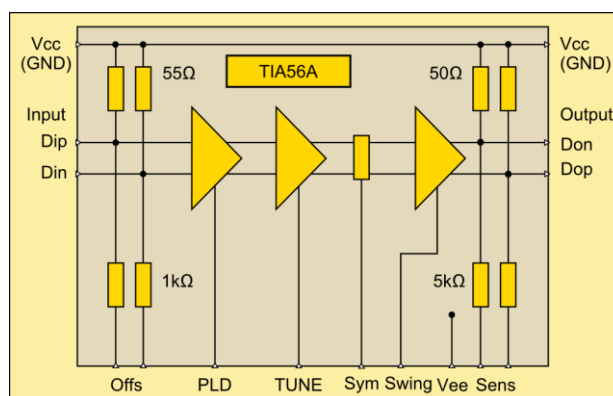
For applications which require adjustable input bias or compensation of DC input currents (e.g. photodiodes) the TIA56A allows adjusting the bias input current for each input independently. By using the output sensing pins, an offset cancellation loop can be established.

The output voltage swing can be set up to to 800 mVpp differential by using the SWING option. The symmetry of the output signal can be optimized using the SYM option. This feature can be used e.g. for optimizing the BER. The input signal swing can be monitored using the peak level detector (PLD) output.

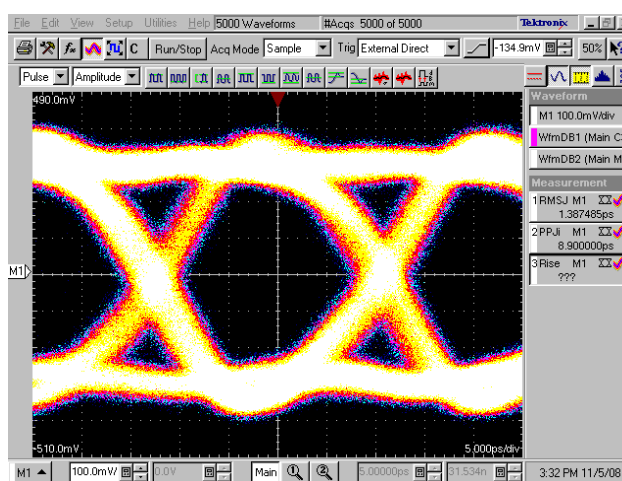


1.0 x 1.2 mm² die

Block Diagram



Output Characteristic



Differential output signal at 43Gbps

Ordering Information

Part No.	ECCN	Description
TIA56A	EAR99	43Gb/s Transimpedance Amplifier w/PLD