

TIA56

43 Gb/s Limiting Transimpedance Amplifier

Applications

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

Product Features

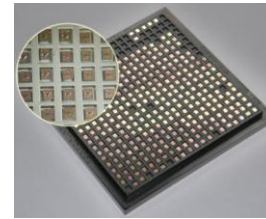
- Differential input and different output
- Input or output can be used single-ended
- Limiting operation, 4.5k Ω differential transimpedance
- Low noise, 30 pA/ $\sqrt{\text{Hz}}$ typical
- Adjustable input offset
- Output sense for offset control
- Bandwidth of 30GHz
- Tunable frequency response
- 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 TIA56 is a versatile high-speed transimpedance amplifier designed for the amplification and manipulation of signals with data rates to over 43Gb/s. The TIA56 consists of a fully symmetrical differential input and output buffer and is optimized for 50 Ω line termination.

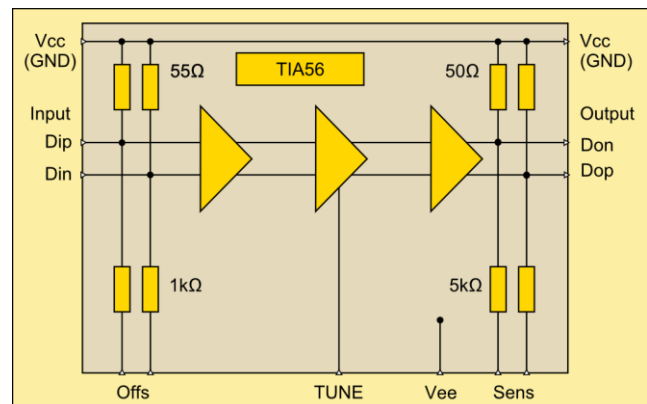
For applications which require adjustable input bias or compensation of DC input currents (e.g. photodiodes) the TIA56 allows adjusting the bias input current for each input independently. By using the output sensing pins, an offset cancellation loop can be established.

The TIA56 exhibits a fully symmetrical differential output buffer which provides either one differential output signal or two single ended output signals. The output voltage swing is fixed to 600 mVpp differential, or 300 mVpp single ended.

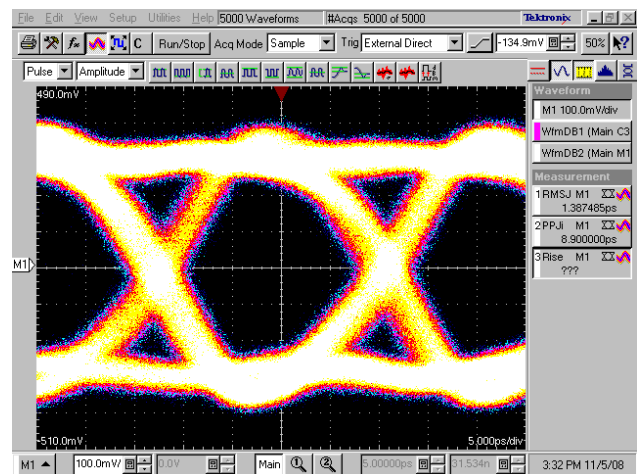


1.0 x 1.2 mm² die

Block Diagram



Eye Diagram



Differential output signal at 43Gbps

Ordering Information

Part No.	ECCN	Description
TIA56	EAR99	43Gb/s Transimpedance Amplifier