HMC7590

43 Gbps Transimpedance Amplifier

Features and Benefits

- Supports datarates up to 43 Gbps
- Internal DCA feedback with external adjustment option
- 4 Kohm differential transimpedance gain
- Low-power dissipation < 300 mW
- -10.5 dBm optical input sensitivity
- +5 dBm optical overload
- Small die size: 1.25 mm x 1.15 mm x 0.15 mm

To request data sheet and for additional information, please contact RFMG-fo@analog.com

Product Details

The HMC7590 is a high-speed, high gain, low-power limiting transimpedance amplifier (TIA) used in optical receivers with data rates up to 43 Gbps. It features low input referred noise, 36 GHz bandwidth, 4 kΩ differential small signal transimpedance and output cross point adjustment. HMC7590 exhibits an optical input dynamic range between -10 dBm and +5 dBm while maintaining 10e-12 BER at 43 Gbps operation.

The HMC7590 is available in die form, includes an on-chip VCC bypass capacitor. It requires only supply decoupling capacitor as external component.

The HMC7590 requires a single 3.3V ±5 % supply and it typically dissipates less than 300 mW. The device is characterized for operation from –5 °C to +85 °C case (IC back side) temperature.

Applications

- 40 GBase-FR4
- 40 GBps VSR / SFF
- Short, intermediate, and long-haul optical receivers

Comparable Parts Click to see all in Parametric Search

Product Lifecycle

Recommended for New Designs

This product has been released to the market. The data sheet contains all final specifications and operating conditions. For new designs, ADI recommends utilization of these products.

- *Quality Documentation*

  Semiconductor Qualification Test Report: BiCMOS-D (QTR: 2014-00061)

Design Resources

ADI has always placed the highest emphasis on delivering products that meet the maximum levels of quality and reliability. We achieve this by incorporating quality and reliability checks in every scope of product and process design, and in the manufacturing process as well. "Zero defects" for shipped products is always our goal.

HMC7590 Material Declaration

PCN-PDN InformationQuality And ReliabilitySymbols and Footprints

Discussions

HMC7590 Discussions

- For the HMC7590, what is the voltage range and current consumption for the VOVCTL pin and DCA pin? Also, does the VOVCTL voltage influence the analog bandwidth of the HMC7590?
- Re: LTspice simulation of HMC7590
- LTspice simulation of HMC7590

All HMC7590 Discussions

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Model	Package	Pins	Temp Range	Packing Qty	RoHS
HMC7590 Request PCN/PDN Notification Production	CHIPS OR DIE	0		Tray, 50	Y Info
HMC7590-SX Request PCN/PDN Notification Production	CHIPS OR DIE	0		Tray, 2	Y Info