



Chipsmall Limited consists of a professional team with an average of over 10 year of expertise in the distribution of electronic components. Based in Hongkong, we have already established firm and mutual-benefit business relationships with customers from,Europe,America and south Asia,supplying obsolete and hard-to-find components to meet their specific needs.

With the principle of “Quality Parts,Customers Priority,Honest Operation,and Considerate Service”,our business mainly focus on the distribution of electronic components. Line cards we deal with include Microchip,ALPS,ROHM,Xilinx,Pulse,ON,Everlight and Freescale. Main products comprise IC,Modules,Potentiometer,IC Socket,Relay,Connector.Our parts cover such applications as commercial,industrial, and automotives areas.

We are looking forward to setting up business relationship with you and hope to provide you with the best service and solution. Let us make a better world for our industry!



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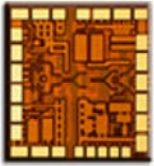
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HMC7590

43 Gbps Transimpedance Amplifier



Product Details

[Request Data Sheet](#)
ECCN: EAR99

Quality & Reliability

[Qualification Test Reports](#)
[Waffle-Pak & Gel-Pak](#)

Press & Media

[Product Press Release](#)

Life Cycle Status

[Production](#),
[Recommended for New Designs](#)

Data Rate (Gbps)	Function	Transimpedance (kOhm)	Input Overload (mAp-p)	Small Signal Bandwidth (GHz)	Noise (pA/√Hz)	Package
43	Transimpedance Amplifier	3.5	4.5	32	20	Chip

Features

- Supports data rates 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

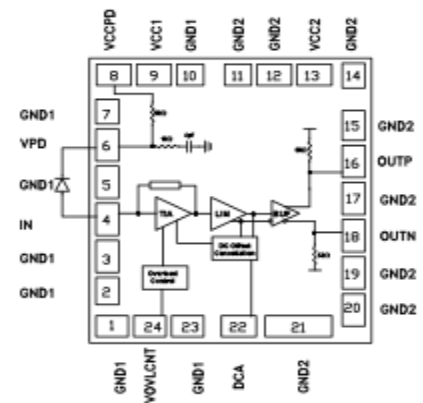
General Description

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.

Typical Applications

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

Functional Diagram



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