

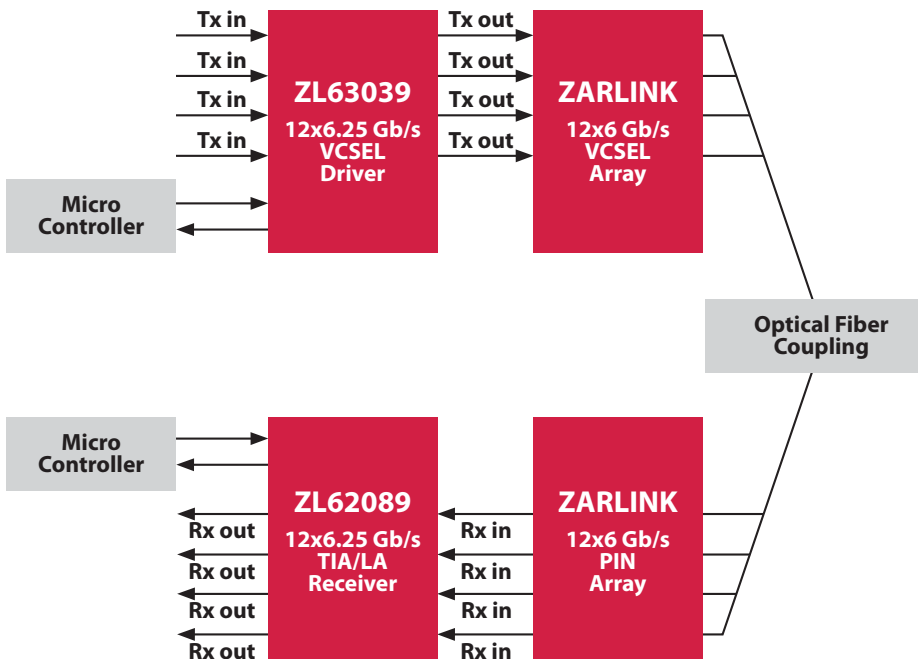
## PRODUCT PREVIEW

The growing use of the Internet has created increasingly higher demand for multi-Gb/s I/O performance. The demand for 40 Gb/s bandwidth and beyond fuels the growth of short-reach, high-bandwidth infrastructures within high-end telco and datacom routers, switches, servers and other proprietary chassis-to-chassis links.

The ZL62089 transimpedance amplifier achieves a nominal 5 GHz bandwidth over a wide range of photodiode input capacitance. Excellent channel-to-channel isolation ensures data integrity at the receiver sensitivity limits. An internal circuit provides the photodiode reverse bias voltage supply and senses average photocurrent supplied to the photodiode array.

The ZL62089 is AC-coupled internally to a high-gain, high-bandwidth, differential, limiting amplifier. The limiting amplifier provides a differential back-terminated CML output that can be used to drive 6.25 Gb/s per channel transceivers or other CML compatible clock and data recovery circuits. The CML output provides selectable pre-emphasis control to improve signal quality. The limiting amplifier features a circuit that senses optical modulation amplitude (OMA) to determine a loss of signal.

A selectable analog multiplexer provides junction temperature, supply voltage, and received signal strength for each channel to enable optical module diagnostic features. Data controlling the ZL62089 is loaded by a simple 2-wire serial interface, reducing the number of pins required of a microcontroller.



### Features

- ➔ 12-channel integrated transimpedance and limiting amplifier operates up to 6.25 Gb/s
- ➔ 12  $\mu\text{A}_{\text{pp}}$  receiver sensitivity for  $10^{-12}$  BER at 6.25 Gb/s
- ➔ Single +3.3V supply dissipating 140 mW per channel
- ➔ Selectable analog multiplexer provides junction temperature, supply voltage, and received signal strength for each channel
- ➔ Individual channel signal detect compares input signal strength with adjustable threshold
- ➔ Squelch automatically disables output when input signal strength falls below programmable threshold
- ➔ 2-wire interface provides access to internal registers
- ➔ CML output with selectable pre-emphasis and output amplitude control
- ➔ 250-micron channel pitch matches optical ribbon fiber and photodiode arrays
- ➔ IC dimensions 2245 x 3870  $\mu\text{m}$

### Applications

- ➔ Single data rate (SDR) and double data rate (DDR) XAUI
- ➔ Single data rate (SDR) and double data rate (DDR) InfiniBand
- ➔ 1x, 2x, 4x Fiber Channel
- ➔ Gigabit Ethernet
- ➔ PCI Express
- ➔ SNAP12 optical modules
- ➔ Proprietary and CWDM parallel optical modules

### Customer Support

The ZL62089 12x6.25 Gb/s TIA/LA receiver is supported by evaluation boards featuring integrated photonics coupled with Zarlink's driver/receiver ICs to help reduce time-to-market.