

**Features**

- Single +3.3 V supply dissipating 70 mW per channel
- 12-channel VCSEL driver operates from DC to 6.25Gb/s
- Individual channel control for enable, drive currents, and VCSEL fault control
- Selectable analog multiplexer provides junction temperature, supply voltage, and VCSEL bias current for each channel
- Adjustable temperature compensation for threshold and modulation drive currents
- Programmable VCSEL fault detection with autonomous fault handling and interrupt
- Squelch automatically disables channel when input amplitude falls below programmable threshold
- Adjustable VCSEL peaking control
- 2-wire interface provides access to internal registers
- IC dimensions 2245 x 3870  $\mu\text{m}$
- 250-micron channel pitch matches optical ribbon fiber and VCSEL arrays
- Differential CML compatible inputs with on-chip termination

**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

**Description**

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 10 Gb/s infrastructures within high-end telco and datacom routers, switches, servers and other proprietary chassis-to-chassis links.

The Zarlink® ZL63039 12x6.25Gb/s VCSEL Driver is a 12-channel VCSEL driver designed for various parallel optics and CWDM PMD applications. It consists of a DC-coupled amplifier with selectable threshold and modulation currents optimized for driving commercially available, common cathode VCSELs from a single +3.3 V supply.

Individual channel settings are used to control the threshold and modulation drive current and their temperature coefficients, allowing the optical output power and extinction ratio to be optimized. A selectable analog multiplexer provides junction temperature, supply voltage, and VCSEL bias current for each channel to enable optical module diagnostic features.

Data controlling the Zarlink ZL63039 VCSEL driver settings is loaded by a simple 2-wire serial interface reducing the number of pins required of a microcontroller.

Figure 1: Pad layout diagram

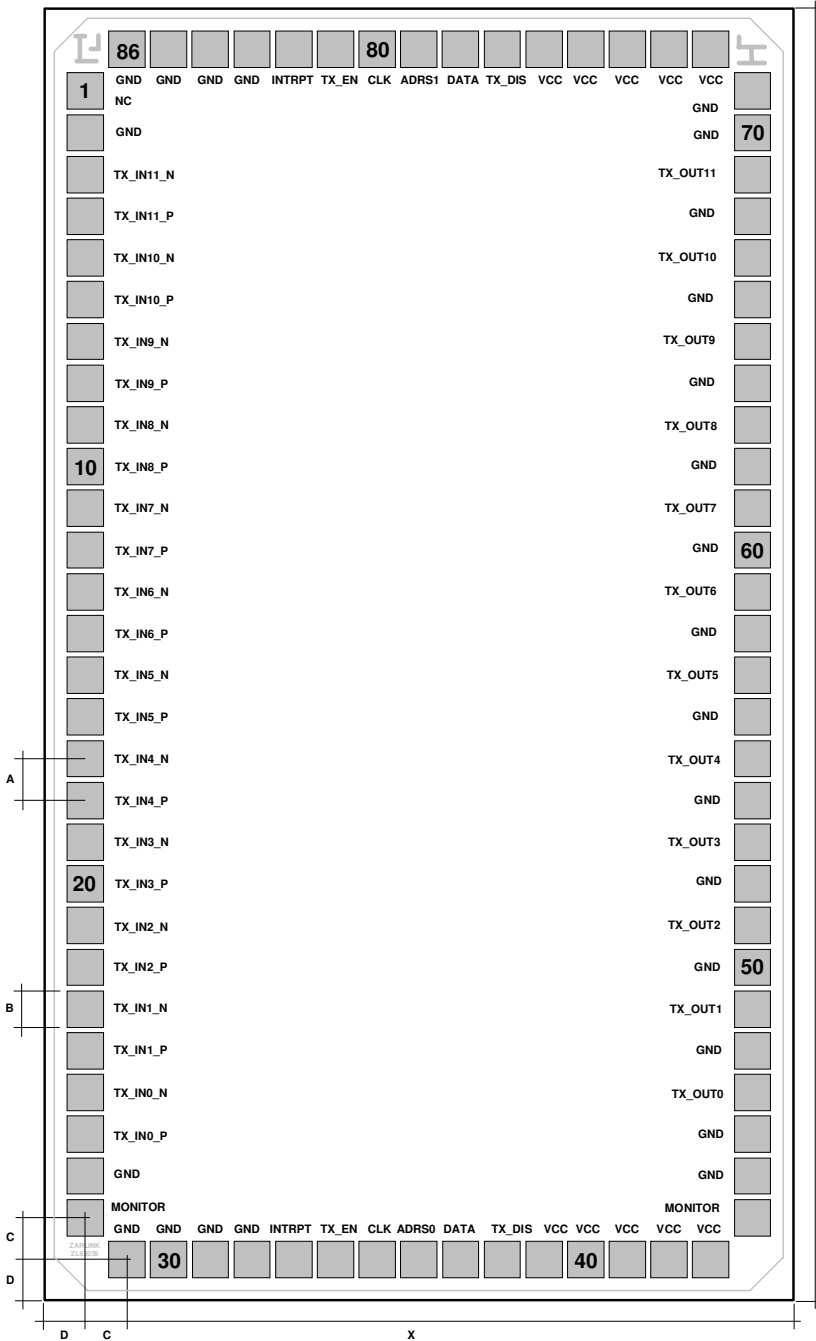


Table 1: Critical dimensions

Symbol	Description	Length	Unit
A	Pad to pad pitch	125	um
B	Bond pad length/width	114	um
C	Corner pad to corner pad pitch	125	um
D	Pad center to edge of die	122.5	um
X	Overall IC dimensions	2245 +/-25	um
Y	Overall IC dimensions	3870 +/-25	um
Z	Standard die thickness	17	mils



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