

3.3V Burst-Mode Laser Driver and Integrated Limiting Amplifier with Eye-Minder™ Technology for Fiber-to-the-Premises

M02090

2.5 Gbps laser driver and integrated limiting amplifier in a 5x5mm QFN package

The M02090 is a highly integrated, programmable burst-mode laser driver with a limiting amplifier intended for ONU/OLT applications up to 2.5 Gbps. The M02090 offers a single, flexible solution that addresses all PON applications of BPON, GEAPON and GPON.

Capable of independently driving 100 mA of modulation current and 80 mA of bias current, the laser driver in the M02090 can independently control bias and modulation currents via the Eye-Minder™, a dual closed-loop that maintains the target extinction ratio by compensating for laser aging, temperature, and voltage changes. Open-loop and average closed-loop configurations are also supported.

The limiting amplifier inputs in the M02090 have selectable bandwidth. The input sensitivity is less than 3 mV at 1.25 Gbps, and less than 6 mV at 2.5 Gbps. The positive emitter-coupled logic (PECL) differential outputs achieve full swing at the minimum specified input signal. Also included are features such as programmable loss of signal, received signal strength indication and JAM function, which can be used to squelch chatter on the outputs when no signal is present.

KEY FEATURES

- Integrated 2.5 Gbps burst-mode driver with limiting amplifier
- Up to 100mA of modulation current and 80mA of bias current
- Dual 2-wire interface enables operation independently or with an external microcontroller
- Dual digital closed-loop architecture, enables real time extinction ratio control
- 2.5 ns burst on/off time
- Extended temperature range of -40°C to +100°C

Many features of the M02090 can be accessed through a 2-wire interface by an external microcontroller or the device can operate independently with an external EEPROM.

The M02090 is offered in a compact 32 pin, 5mm X 5mm QFN package and is specified over an extended operating temperature range of -40°C to +100°C.



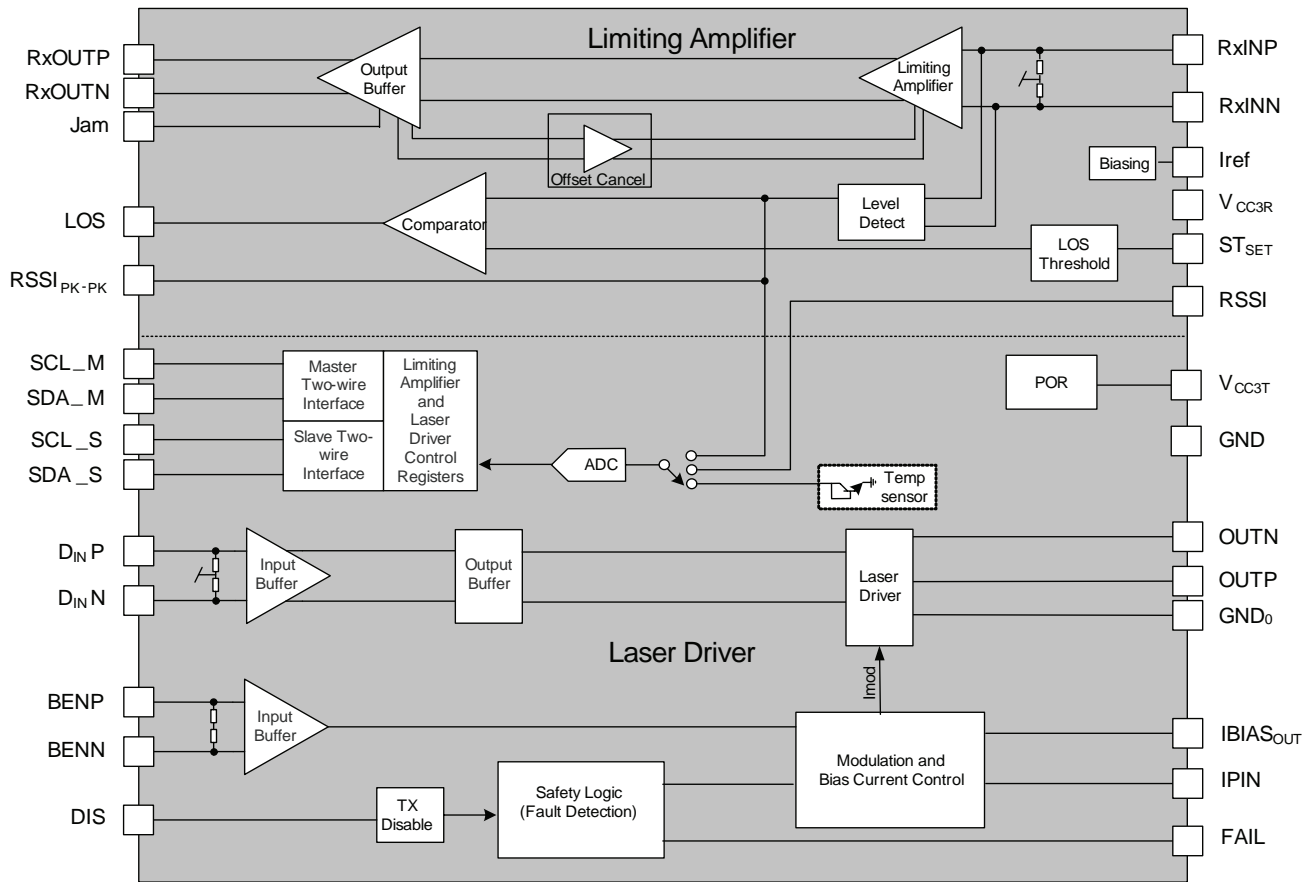


Figure 1: M02090 functional block diagram

Product Applications

- Fiber-to-the-Premises
- Passive Optical Networks
 - BPON, GEPON and GPON

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