i7511N

1.25Gbps FTTX Laser Diode Driver/Limiting Amplifier

General Description

The i7511N is an integrated burst-mode/continuous mode laser driver and continuous mode Limiting amplifier that operates at data rates from 155Mbps up to 1.25Gbps. The laser driver accepts either positive-referenced emitter coupled logic (PECL) or current-mode logic (CML) data inputs and provides bias and modulation current for the laser diode. The device can switch the laser diode from a completely dark (off) condition to a full (on) condition (with proper bias and modulation currents) in less than 3ns. The i7511N incorporates DC-coupling between laser driver and laser diode.

A digital automatic power-control (APC) loop is provided to maintain the average optical power over the full temperature range.

The receiver also includes a programmable signal-level detector, allowing the user to set threshold at which the PECL outputs are enabled. Typically 2.5 dB (Optical) of hysteresis is provided to prevent chattering when signal level is close to the threshold.

LOS and JAM can be used to implement a squelch function, which gives fixed logic levels at data outputs when the input signal is below the programmed threshold. The i7511N has CMOS status outputs (pins LOS).

The i7511N is packaged in a small, 32-pin, 5mm *5mm thin QFN package and consumes only 330mW (typ), excluding bias and modulation currents.

Applications

APON and GEPON Upstream Transmitters

Passive Optical Network (PON) Transmitters

Fiber-to-the-Home(FTTH) and Fiber-to-the-Premises (FTTP)

Broadband Access Systems

Features

- **Integrate Laser diode driver and Limiting Amplifier**
- **Operation data rate 155Mbps and 1.25Gbps**
- **Programmable Modulation Current from 3mA to 80mA (DC-Coupled)**
- **Programmable modulation current with temperature compensation**
- **Programmable Bias Current from 1mA to 80mA**
- **Limiting Amplifier includes integrated DC offset cancellation circuit**
- **Polarity Control for limiting Amplifier Data path and Driver Disable input**
- **Programmable chatter-free signal level detector**
- **4 mV input sensitivity (differential).**