



## Semtech GN1157

1.0 to 11.3Gb/s Multi-Rate LR Transceiver Chip

The GN1157 is a multi-rate transceiver IC designed specifically for datacom and telecom applications. The transmit DFB/FP laser driver is an advanced design that is focused on delivering excellent optical performance while still achieving low power. Programmable equalisation is available to optimise jitter. The Tx output has programmable rise/fall times to allow optimization for different bit rates. The GN1157 features an integrated automatic power control loop that adjusts bias current to compensate for laser aging and environment change. The GN1157 is compatible with an external microcontroller look-up table to control modulation current and extinction ratio over temperature and life.

[Contact your local Sales Representative for full product specifications.](#)

### Features

Power Dissipation 185mW typical (IBIAS = 0 mA, IMOD = 0mAppd)

DFB/FP Laser Driver:

- Maximum bias current = 120mA
- Maximum modulation current into 15? differential TOSA = 92mApp
- Tx DJ = 5pspp; Tx RJ = 0.5psrms
- Integrated closed-loop Automatic Power Control (APC)
- Compatible with microcontroller-based modulation current/temperature look-up table
- Programmable Tx eye shaping features and input equalization
- Programmable rise/fall times
- Laser safety features
- Switchable Tx polarity invert

Limiting Amplifier Receiver:

- Rx sensitivity at 11.317Gb/s = 5mVppd
- Rx DJ = 4pspp, Rx RJ = 0.7psrms
- Programmable bandwidth
- Rx output pre-emphasis and squelch
- Programmable Rx output swing
- Programmable rise/fall times
- Adjustable loss of signal detect threshold
- Switchable Rx polarity invert

Measurement of digital diagnostic and monitoring parameters

2-wire serial interface for host communication

Software-selectable power-down modes

3.3V or 2.5V CMOS inputs and open-drain outputs for control and status lines

### Applications

This specification defines a multi-rate transceiver IC for use in a wide range of LR Ethernet and Fibre Channel applications from 1.0Gb/s to 11.3Gb/s. This includes 1Gb/s and 10Gb/s Ethernet data rates as defined by IEEE 802.3 and 1,2,4,8 and 10Gb/s Fibre Channel data rates.

### Order Codes

GN1157-INE3

GN1157-INTE3Z - Tape and Reel, 2500/reel

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### Key Specifications

Part No.	Max Data Rate	Max Mod / Bias Current	Supply	Package Type
	(Gb/s)	(mA)	(V)	
GN1157	11.3	92 / 120	3.3	28 QFN

### Block Diagram

