1.25G SMF GBIC Transceiver, 10km, 1310nm

GVT-0201

H/W Version: 1

The LevelOne GVT-0201 is a high performance and cost effective Gigabit Interface Converter (GBIC) transceiver. Intended for use with Gigabit Ethernet and Single-mode fiber channel, it provides up to 1.25Gbps bidirectional data transfer rates on a single-mode fiber core, it can reach a distance of up to 10km. The GVT-0201 GBIC Transceiver operates using a wavelength of 1550nm and provides a duplex SC connector with operating temperature from 0°C to 70°C.

Key Features

- Compliant with Gigabit Interface Converter Specification
- Compliance with specifications for IEEE-802.3z Gigabit Ethernet at 1.25Gbps
- Compliant with Fiber Channel standard
- SCA-2 Host connector
- Duplex SC connector
- Differential PECL inputs and outputs
- Single 3.3V and 5V power supply
- TTL signal detect indicator
- Hot Pluggable
- Eye Safety Designed to meet LASER Class 1 comply with EN60825-1

Absolute Maximum Ratings

PARAMETER	MIN	MAX	UNITS	NOTE
Storage Temperature	-40	85	°C	
Supply Voltage	-0.5	6.0	V	
Input Voltage	-0.5	Vcc	V	
Output Current	-	50	mA	
Operating Current	-	400	mA	

Recommended Operating Conditions

PARAMETER	MIN	MAX	UNITS	NOTE
Case Operating Temperature	0	70	°C	
Supply Voltage	3.1	5.25	V	
Supply Current	-	250	mA	

Transmitter Electro-optical Characteristics

PARAMETER	MIN	TYP.	MAX	UNITS	NOTE
Output Optical Power 9/125 µm fiber	-9.5	-5	-3	dBm	Average
Extinction Ratio	9	-	-	dB	
Center Wavelength	1270	1310	1355	nm	
Spectral Width (RMS)	-	-	2.5	nm	
Rise/Fall Time, (20–80%) Tr, f	-	-	260	ps	
Relative Intensity Noise RIN	-	-	-120	dB/Hz	
Total Jitter TJ	-	-	227	ps	
Output Eye		Compliant with IEEE802.3z			
Max. Pout TX-DISABLE Asserted	-	-	-35	dBm	
Differential Input Voltage VDIFF	0.65	-	2.0	V	
TX Disable Voltage-High	2.0	-	VCC	V	
TX Disable Voltage-Low VIL	0	-	0.8	V	

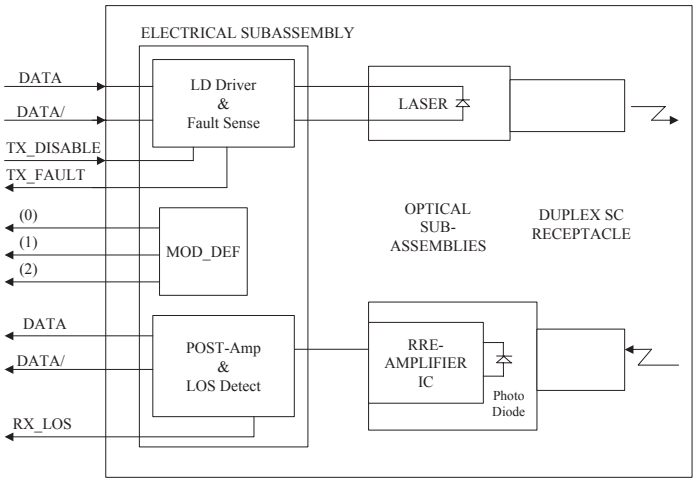
Receiver Electro-optical Characteristics

PARAMETER	MIN	TYP.	MAX	UNITS	NOTE
Optical Input Power-maximum	-3	-	-	dBm	BER < 10–12
Optical Input Power-minimum (Sensitivity) PIN	-	-25	-20	dBm	BER < 10–12
Operating Center Wavelength	1260	-	1610	nm	
Optical Return Loss	12	-	-	dB	
Signal Detect-Asserted	-	-	-20	dBm	
Signal Detect-Deasserted	-35	-	-	dBm	
Stressed Receiver Sensitivity	-	-	-14.4	dBm	Note 1, 2
Differential Output Voltage	0.37	-	2.0	V	
Data Output Rise, Fall Time (20–80%)	-	-	0.35	ns	
Receiver Loss of Signal Output Voltage-Low	0	-	0.5	V	
Receiver Loss of Signal Output Voltage-High	2.4	-	VCC	V	
Receiver Loss of Signal Assert Time (off to on)	-	-	100	µs	
Receiver Loss of Signal Assert Time (on to off)	-	-	100	µs	

Note 1: Measured with conformance test signal at TP3 for BER = 10–12 at the eye center.

Note 2: Measured with a transmit signal having a 9 dB extinction ratio. If another extinction ratio is used, the Stressed receiver sensitivity should be corrected for the extinction ratio penalty.

Block Diagram of Transceiver



TOP VIEW (Label side)

Transmitter Section

The transmitter section consists of a 1310 nm InGaAsP laser in an eye safe optical subassembly (OSA) which mates to the fiber cable. The laser OSA is driven by a LD driver IC which converts differential input LVPECL (3.3V) or PECL (5V) logic signals into an analog laser driving current.

TX_DISABLE

The TX_DISABLE signal is high (TTL logic "1") to turn off the laser output. The laser will turn on when TX_DISABLE is low (TTL logic "0").

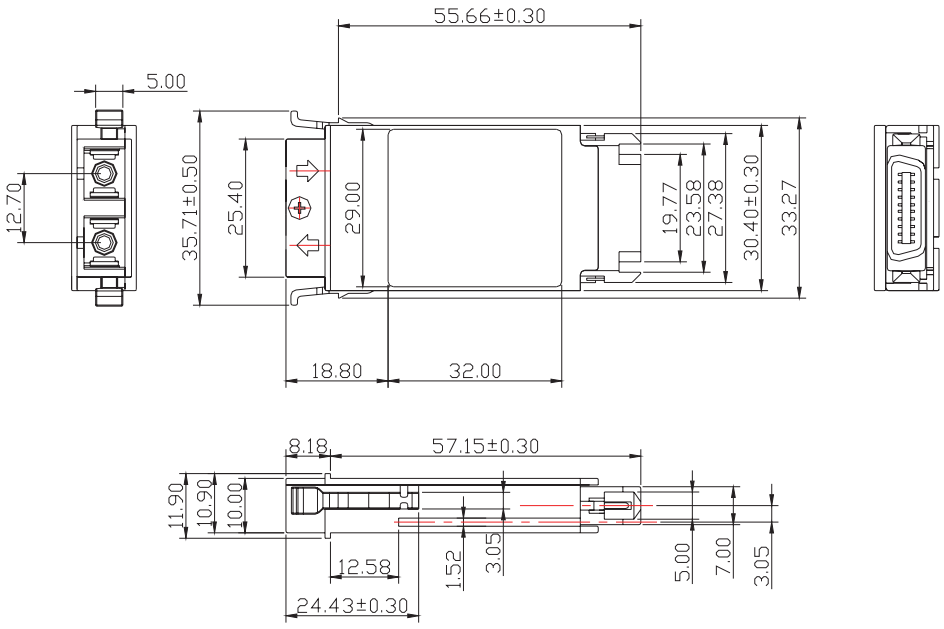
Receiver Section

The receiver utilizes an InGaAs PIN photodiode mounted together with a trans-impedance preamplifier IC in an OSA. This OSA is connected to a circuit providing post-amplification quantization, and optical signal detection.

Receive Loss (RX_LOS)

The RX_LOS is high (logic "1") when there is no incoming light from the companion transceiver. This signal is normally used by the system for the diagnostic purpose. The signal is operated in TTL level.

Dimensions

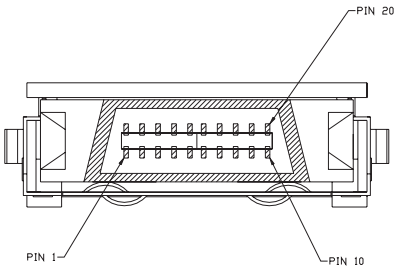


ALL DIMENSIONS ARE±0.20mm UNLESS OTHERWISE SPECIFIED

Unit: mm

Pin Assignment

Pin-Out



Pin	Signal Name	Description
1	RX_LOS	Receiver Loss of Signal, TTL High, open collector
2	RGND	Receiver Ground
3	RGND	Receiver Ground
4	MOD_DEF (0)	TTL Low
5	MOD_DEF (1)	SCL Serial Clock Signal
6	MOD_DEF (2)	SDA Serial Data Signal
7	TX_DISABLE	Transmit Disable
8	TGND T	ransmit Ground
9	TGND	Transmit Ground
10	TX_FAULT	Transmit Fault
11	RGND	Receiver Ground
12	RX–	Receive Data Bar, Differential PECL, ac coupled
13	RX+	Receive Data, Differential PECL, ac coupled
14	RGND	Receiver Ground
15	VCCR	Receiver Power Supply
16	VCCT	Transmitter Power Supply
17	TGND	Transmitter Ground
18	TX+	Transmit Data, Differential PCEL, ac coupled
19	TX–	Transmit Data Bar, Differential PCEL, ac coupled
20	TGND	Transmitter Ground

Eye Safety Mark

The LS3 series Single-mode transceiver is a class 1 laser product. It complies with EN 60825-1 and FDA 21 CFR 1040.10 and 1040.11. In order to meet laser safety requirements the transceiver shall be operated within the Absolute Maximum Ratings.

Caution
All adjustments have been done at the factory before the shipment of the devices. No maintenance and user serviceable part is required. Tampering with and modifying the performance

Note : All information contained in this document is subject to change without notice.

Order Information **GVT-0201:** 1.25G SMF GBIC Transceiver, 10km, 1310nm

Package Contents GVT-0201