

# GTR-201X

## Bi-Directional 1X9 Transceiver

### Features

- ◆ Transmitter and receiver in one device
- ◆ SC/FC/ST receptacle bi-directional single fiber
- ◆ 0~1Mbps data rate
- ◆ 1310nm FP/1550nmFP laser transmitter
- ◆ Class I laser product compiles with IEC 60825-1
- ◆ Single 5V power supply
- ◆ TTL signal input and output
- ◆ Operating Case Temperature  
Standard: 0°C~+70°C,  
Industrial:-40°C~+85°C



### Applications

- ◆ Fiber control system
- ◆ RS232/RS485/RS422 interface remote transmission

### Product Description

The GTR-201X optical transceiver is designed for use in 0~1Mbps data links. It provide the SC/FC/ST optical receptacle that is compatible with the industry standard connector. Both the transmitter and the receiver are packaged together with a top plastic cover and bottom shield. The transceiver operates with 5V DC power supply.

## Regulatory Compliance

Feature	Standard	Performance
Electrostatic Discharge (ESD) to the Electrical Pins	MIL-STD-883E Method 3015.7	Class 1(>500 V)
Electromagnetic Interference (EMI)	FCC Part 15 Class B	Compatible with standards
Laser Eye Safety	FDA 21CFR 1040.10 and 1040.11 EN60950, EN (IEC) 60825-1,2	Compatible with Class I laser product. Compatible with TÜV standards
Component Recognition	UL and CUL	UL file E317337
Green Products	RoHS	RoHS6

\*Note: Products compliant with UL file E317337 use EOL9 series Part NO.

## Absolute Maximum Ratings

Parameter	Symbol	Min.	Max.	Unit
Storage Temperature	TS	-40	+85	°C
Supply Voltage	VCC	-0.5	6.0	V
Operating Relative Humidity	-		95	%
Soldering Conditions Temp/Time			260/10	°C/s

## Recommended Operating Conditions

Parameter	Symbol	Min.	Typical	Max.	Unit
Operating Case Temperature	TA	0		+70	°C
		-40		+85	
Power Supply Voltage	VCC	4.75	5	5.25	V
Power Supply Current	ICC		60	100	mA
Data Rate		DC	0.5	1	Mbps

## Optical and Electrical Characteristic

Parameter	Symbol	Min.	Typical	Max.	Unit
<b>Transmitter</b>					
Centre Wavelength	$\lambda_C$	1260	1310	1360	nm
		1480	1550	1580	
Spectral Width	$\sigma$			4	nm



# 1X9 Series

0~1Mbps transmission

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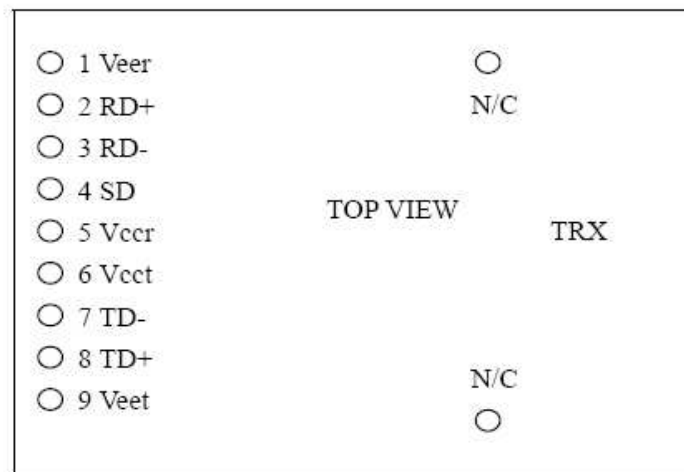
Average Output Power	20Km	P0ut	-8		-3	dBm
Extinction Ratio		EX	10			dB
Rise/Fall Time (20%---80%)		tr/tf			0.5	ns
Data Input Swing Differential		Vin	500		1600	mV
Input Differential Impedance		Zin	90	100	110	$\Omega$
Input High Voltage		VH	VCC-116 5		VCC-8 80	mV
Input Low Voltage		VL	VCC-181 0		VCC-1 475	mV
Eye Diagram	Compliant with ITU-T G.957					
Data Input	TTL					
<b>Receiver</b>						
Receiver Sensitivity		Pmin		-22	-20	dBm
Receiver Overload		Pmax	-3			dBm
SD Assert		SDA			-23	dBm
SD De-Assert		SDD	-40			dBm
SD Hysteresis			0.5			dB
Output High Voltage		VH	VCC-1165		VCC-8 80	mV
Output Low Voltage		VL	VCC-1810		VCC-1 475	mV
Data Output	TTL					

## Pin Description

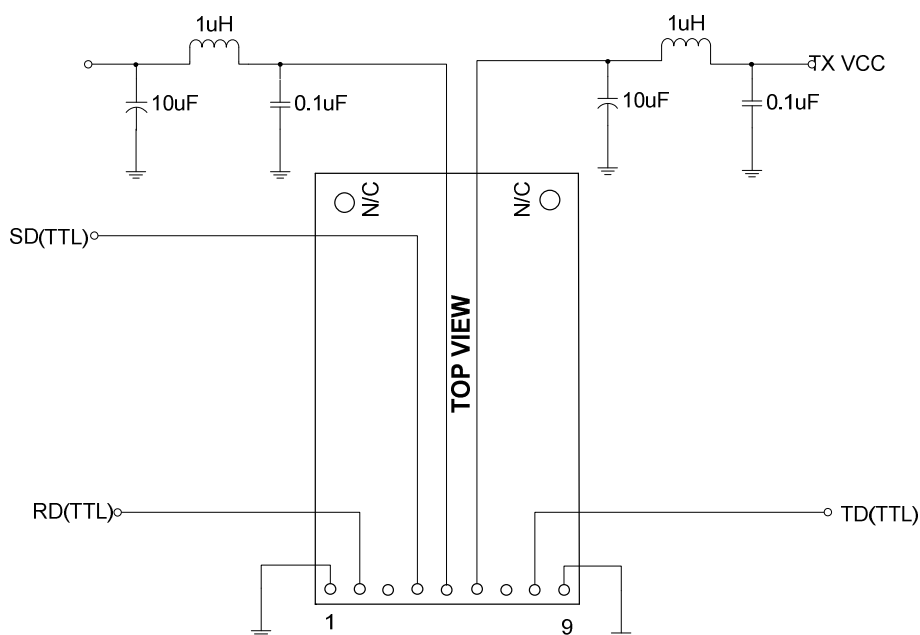
Pin	Name	Level	Description
1	VEER		Receiver Signal Ground, connect to receiver signal ground plane directly
2	RD+	TTL	Receiver Data Out, Terminate this pin with standard TTL techniques
3	RD-	N/C	
4	SD	TTL	Signal Detect, TTL ( Load resistor > 4.7K $\Omega$ ) output, Normal optical input levels to the receiver result in a logic "1" output, asserted. Low input levels to the receiver result in a fault condition indicated by a logic "0" output, deasserted.
5	VccR		Receiver Power Supply ,provide +5V a the recommended

			receiver power supply filter circuit. Locate the power filter circuit as close as possible to the VCCT pin
6	VccR		Transmitter Power Supply, provide +5V DC(+3.3V) via the recommended transmitter power supply filter circuit. Locate the power filter circuit as close as possible to the VCCT pin
7	TD-	N/C	
8	TD+	TTL	Transmitter Data in
9	VEET		Transmitter Signal Ground, connect to the transmitter signal ground planed directly

## Pin Definitions

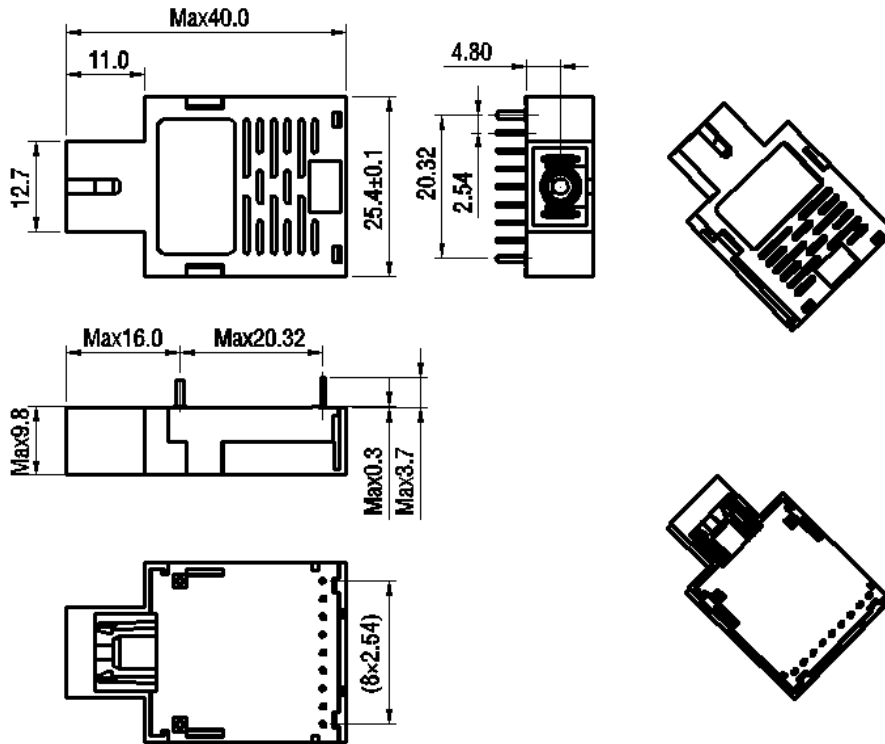


## Recommended Circuit

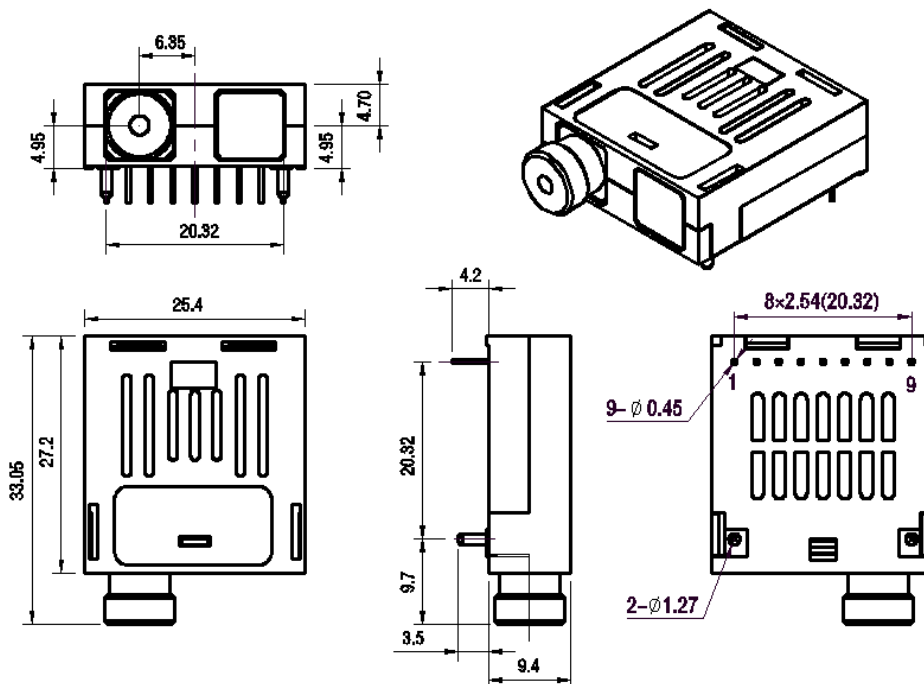


## Package outline ( unit: mm)

### SC receptacle



### FC receptacle



**Ordering information**

Part No.	Data Rate	Laser	Fiber Type	Distance	Optical Interface
GTR-2012(A)(B)(C)	0~1M	1310FP	SMF	20Km	SC/FC
GTR-2013(A)(B)(C)		1550FP		20Km	

**\*A may be F, E, blank (F--FC, E--ST, blank--SC)**

**\*B may be I (I--- Industrial operating temperature)**

**\*C may be V, H, blank (V--3.3v, H--5V, blank--3.3v/5v)**

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