



GZ10GPSXXL-XXX

10Gbps SFP+ 1310nm 1.4/10/20/40km

Transceivers

Features

- LC duplex optical interface
- Optional 1.4/10/20/40km transmission distance on 9/125 SMF
- 10.3125Gb/s data links
- +3.3 V power supply
- Low DC power consumption
- Optional operating temperature range: 0~+70°C/-40~85°C
- ROHS compliance



Applications

- 10G BASE-LR/LW/ER Ethernet
- 4G Wireless

Standards

- IEEE 802.3ae
- SFF-8431/8432
- SFF-8472

Description

The transceivers are intended for 1.4/10/20/40km reach service up to 10.3125Gb/s high-speed communications equipment where low-cost, extraordinary performance and reliability are essential. The receiver is PINTIA for 10/20km/ 40km. The device is Class I laser safety compliant.

Absolute Maximum Ratings

Parameter	Symbol	Min	Max	Units
Storage Temperature	T _{stg}	-40	+85	°C
Relative Humidity - Storage	RH _s	0	95	%
Relative Humidity - Operating	RH _o	0	85	%
DC Supply Voltage	V _{cc}	-0.5	3.6	V

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Recommended Operating Conditions

Parameter	Symbol	Min	Typ	Max	Units	Notes
Case Operating Temperature	T _{CASE}	0		70	°C	C-Temp
		-40		85	°C	I-Temp
DC Supply Voltage	V _{CC}	3.135	3.3	3.465	V	
Module Supply Current	I _{CC}			300	mA	

Specifications(Tc=25°C, BOL, unless otherwise noted)

Parameter	Symbol	Unit	Min	Typ	Max	Note
Transmitter						
Center Wavelength	λ _C	nm	1260	1310	1355	
Spectral Width(RMS)	Δλ	nm			4	FP 1.4km
Side Mode Suppression Ratio	SMSR	dB	30			DFB LD
Spectral Width(20dB)	Δλ	nm			1	DFB LD
Optical Output Power	P _{AV}	dBm	-8.2		0.5	1.4/10km
			-5.2		+3	20km
			0		5	40km
Extinction Ratio	ER	dB	3.5			
Average launch power of OFF transmitter	P _{OFF}	dBm			-40	
Receiver						
Center Wavelength	λ _C	nm	1260		1610	
Average Receiver Sensitivity 1	P _{AVG}	dBm			-14.4	1.4/10km
					-15.0	20km
					-18.0	40km
Receiver Reflectance	R _{REFL}	dB			-12	
Assert LOS	LoSA	dBm	-30			
De-Assert LOS	LoSD	dBm			-18	
LOS Hysteresis		dB	0.5			

Notes

- Sensitivity for 10.31G PRBS 2³¹-1 and BER better than or equal to 10E-12.

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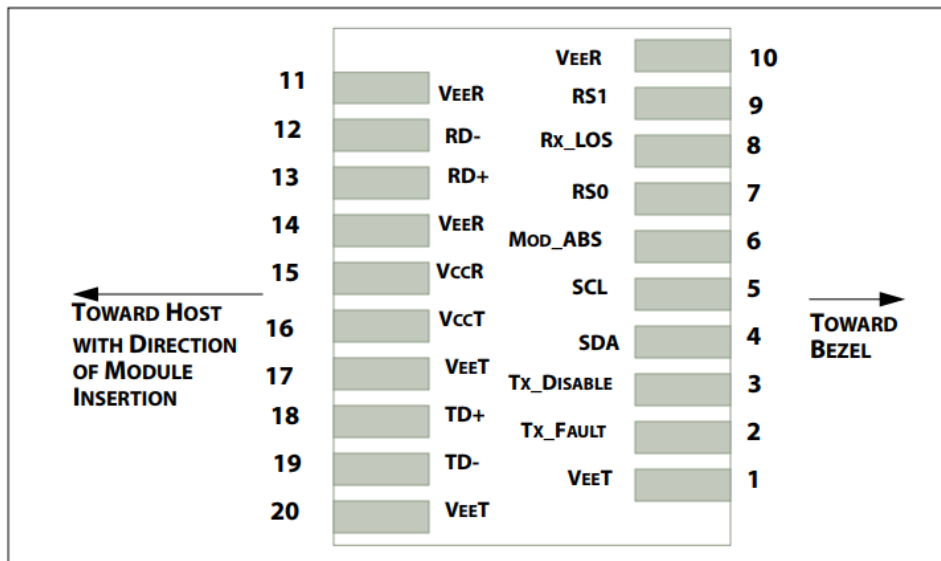
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Monitoring Interface

Parameter	Symbol	Spec	Units	Conditions / Notes
Temperature		+/-3℃	℃	
Voltage		+/-5%	V	
IBias		+/-10%	mA	
Rx power		+/-3	dBm	@25℃
Tx power		+/-3	dBm	@25℃

Pin Assignment



SFP+ pad assignment top view

Pin Description

Pin	Name	Function/Description	Notes
1	VEET	Transmitter Ground	1
2	TX_Fault	Transmitter Fault (LVTTTL-O) - High indicates a fault condition	2
3	TX_Disable	Transmitter Disable (LVTTTL-I) – High or open disables the transmitter	3
4	SDA	Two wire serial interface Data Line (LVCMOS-I/O) (MOD-DEF2)	4
5	SCL	Two wire serial interface Clock Line (LVCMOS-I/O) (MOD-DEF1)	4
6	MOD_ABS	Module Absent (Output), connected to VeeT or VeeR in the module	5
7	RS0	Rate Select 0 – Not used, Presents high input impedance	6

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8	RX_LOS	Receiver Loss of Signal (LVTTTL-O)	2
9	RS1	Rate Select 1 – Not used, Presents high input impedance	6
10	VEER	Receiver Ground	1
11	VEER	Receiver Ground	
12	RD-	Inverse Received Data out (CML-O), AC Coupled	
13	RD+	Received Data out (CML-O), AC Coupled	
14	VEER	Receiver Ground	
15	VccR	Receiver Power - +3.3V	
16	VccT	Transmitter Power - +3.3 V	
17	VEET	Transmitter Ground	1
18	TD+	Transmitter Data In (CML-I), AC Coupled	
19	TD-	Inverse Transmitter Data In (CML-I), AC Coupled	
20	VEET	Transmitter Ground	1

Notes:

1. The module signal grounds are isolated from the module case.
2. This is an open collector/drain output that on the host board requires a 4.7K Ω to 10K Ω pull-up resistor to VccHost.
3. This input is internally biased high with a 4.7K Ω to 10K Ω pull-up resistor to VccT.
4. Two-Wire Serial interface clock and data lines require an external pull-up resistor dependent on the capacitance load.
5. This is a ground return that on the host board requires a 4.7K Ω to 10K Ω pull-up resistor to VccHost.
6. Rate select can also be set through the 2-wire bus in accordance with SFF-8472 v. 10.2.
Rx Rate Select is set at Bit 3, Byte 110, Address A2h. Tx Rate Select is set at Bit 3, Byte 118, Address A2h.
Writing a "1" selects maximum bandwidth operation. Rate select is the logic OR of the input state of Rate Select Pin and 2-wire bus.

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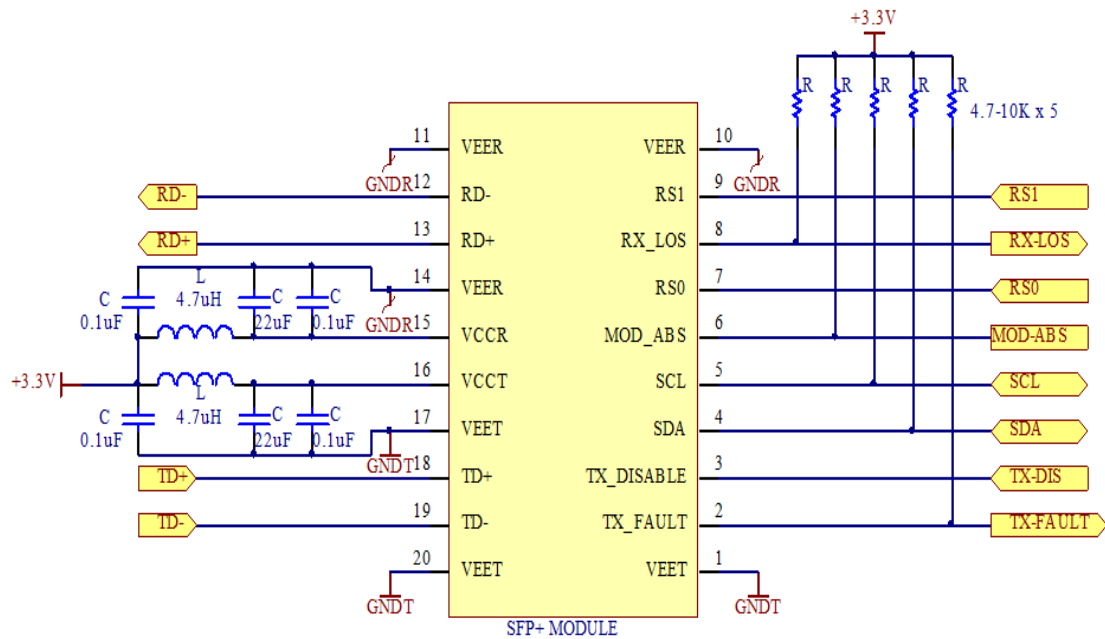
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Typical Application Circuit



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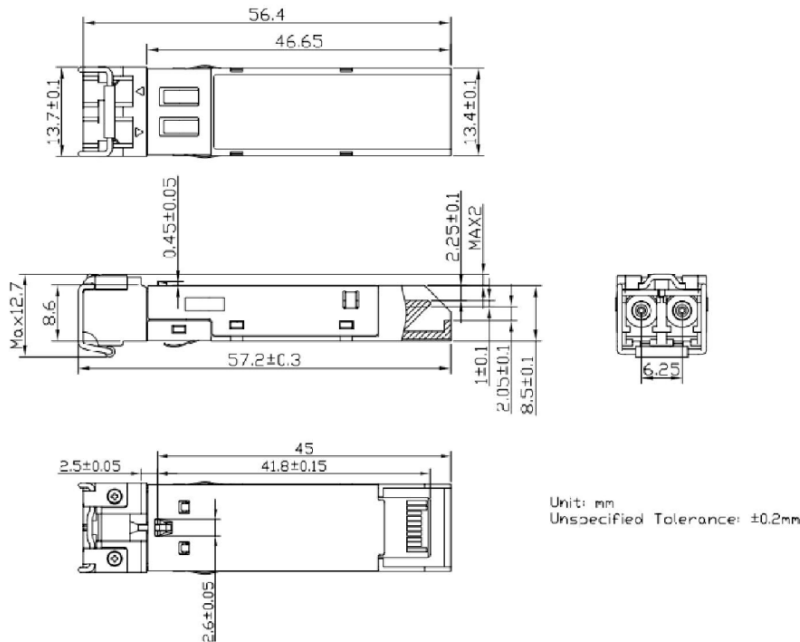
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Mechanical Dimensions



Notes:

1. Tolerance: +/-0.1mm.
2. Others are according with SFF-8074i/SFF-8432 MSA or customer SPEC.
3. Light port according with fiber connector SPEC.

Ordering Information

Part. No	Specifications								
	Rate Gb/s	Tx	Tx WL nm	Po dBm	Rx	Sen. dBm	Temp °C	Reach km	Other
GZ10GPS31L-1	10.3125	FP LD	1310	-8.2 ~ 0.5	PIN/TIA	<-14.4	0~70	1.4	RoHS
GZ10GPS31L-10	10.3125	DFB LD	1310	-8.2 ~ 0.5	PIN/TIA	<-14.4	0~70	10	RoHS
GZ10GPS31L-20	10.3125	DFB LD	1310	-5.2 ~ +3	PIN/TIA	<-15.0	0~70	20	RoHS
GZ10GPS31L-40	10.3125	DFB LD	1310	0 ~ +5	APD/TIA	<-18.0	0~70	40	RoHS
GZ10GPS31L-10I	10.3125	DFB LD	1310	-8.2 ~ 0.5	PIN/TIA	<-14.4	-40~85	10	RoHS

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GZ10GPS31L-20I	10.3125	DFB LD	1310	-5.2 ~ +3	PIN/TIA	<-15.0	-40~85	20	RoHS
GZ10GPS31L-40I	10.3125	DFB LD	1310	0 ~ +5	APD/TIA	<-18.0	-40~85	40	RoHS

Warnings

Handing Precautions:

This device is susceptible to damage as a result of electrostatic discharge (ESD). A static free environment is highly recommended. Please follow guidelines according to proper ESD procedures.

Laser Safety:

Radiation emitted by laser devices can be dangerous to human eyes. Avoid eye exposure to direct or indirect radiation.

Notice:

The information provided on this page contains the product target specifications which are subject to change without notice.

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