深圳市光智通信技术有限公司
Shenzhen Optical Smart Communication Technology Co., Ltd.

GZ10GPS55L-80X

10Gbps SFP+ 1550nm 80km Transceivers

Features

- Electrical interface specifications per SFF-8431
- Management interface specifications per SFF-8431 and SFF-8472
- SFP+ MSA package with duplex LC connector
- Cooled EML Transmitter
- Up to 11.3Gb/s data links
- Single +3.3V power supply
- Class 1 laser safety certified
- Commercial operating temperature: 0℃ to 70℃ or -40℃ to 85℃
- Up to 80km on 9/125μm SMF
- ROHS Compliant

Applications

- 10G Ethernet 10GBASE-ZR/ZW, 10GBASE-ER/EW
- 80km 10G Network

Absolute Maximum Ratings

Parameter	Symbol	Minimum	Maximum	Unit
Storage Temperature	TS	-40	85	℃
Relative Humidity	RH	5	95	%
Supply Voltage	VCC	-0.5	4.0	V

Recommended Operating Conditions

Parameter	Symbol	Min	Typ	Max	Unit
Operating Case Temperature	Tc	0		70	℃
		-40		85	

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Supply Voltage	VCC	3.135	3.3	3.465	V
Data Rate	-	-	10.3125	-	Gb/s

Specifications(Tc=25℃, BOL, unless otherwise noted)

Parameter	Symbol	Unit	Min	Typ	Max	Notes
Electrical Characteristics						
Supply Current	Icc	mA	-	-	600	
Single Ended Data Input Swing	-	mV	180	-	700	
Single Ended Data Output Swing	-	mV	180	-	700	
TX_fault /LOS output (TTL)	VOH	V	2.0		Vcc	
	VOL		0		0.8	
TX_disable input (TTL)	VOH	V	2.0		Vcc	
	VOL		0		0.8	
Optical transmitter Characteristics						
Launch Optical Power	Po	dBm	0		4	80km
Center Wavelength	λc	nm	1530	-	1565	
Side Mode Suppression Ratios	SMSR	dB	30			
Extinction Ratio	ER	dB	8.2			
Eye Diagram	Complies with IEEE802.3ae eye masks when filtered					
Pout of OFF transmitter	Poff	dBm	-	-	-40	
Optical receiver Characteristics						
Center Wavelength Range	λc	nm	1260		1620	
Receiver Sensitivity	Sen	dBm			-22	80km,1
Overload Input Optical Power	Psat	dBm	-7			80km
LOS De-assert	LosD	dBm			-18	
LOS Assert	LosA		-35			
LOS Hysteresis		dB	0.5	3	5	2

Notes:

1. Measured with a PRBS 2^{31}-1 test pattern, @10.3Gb/s, ER=10dB, BER<10^{-12}
2. The LOS Hysteresis to minimize “chatter” on the output line. In principle, hysteresis alone does not guarantee chatter-free operation

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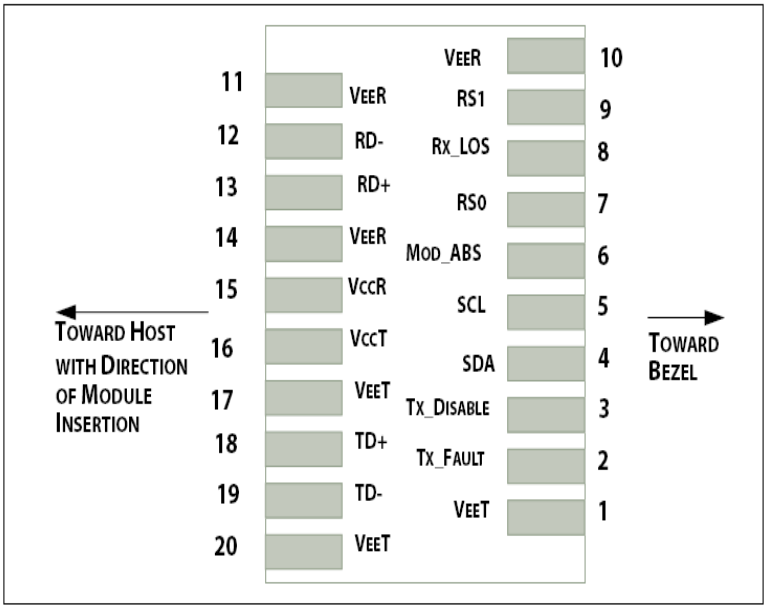
Monitoring Interface

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

Pin Assignment



Host PCB SFP+ pad assignment top view

Pin Description

Pin	Name	Function/Description	Notes
1	VEET	Transmitter Ground	1
2	TX_Fault	Transmitter Fault (LVTTL-O) - High indicates a fault condition	2
3	TX_Disable	Transmitter Disable (LVTTL-I) – High or open disables the transmitter	3

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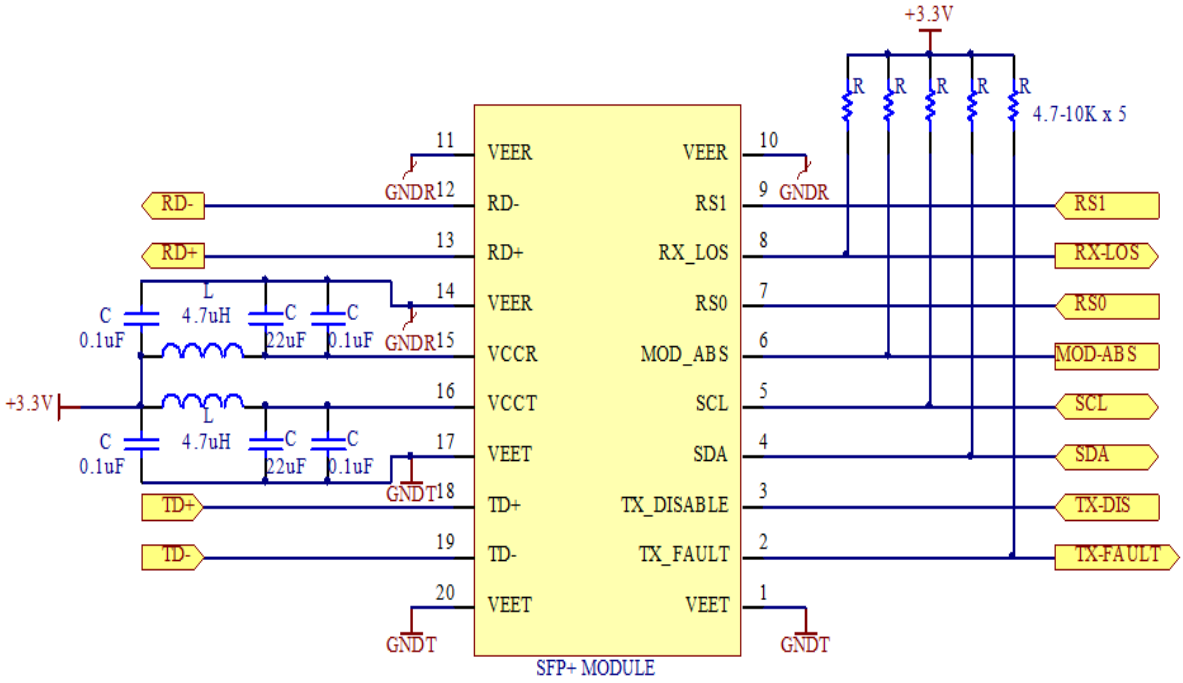
4	SDA	Two wire serial interface Data Line (LVCMOS-I/O) (MOD-DEF2)	4
5	SCL	Two wire serial interface Clock Line (LVCMOS-I/O) (MOD-DEF1)	4
6	MOD_ABS	Module Absent (Output), connected to VeeT or VeeR in the module	5
7	RS0	Rate Select 0 – Not used, Presents high input impedance	-
8	RX_LOS	Receiver Loss of Signal (LVTTL-O)	2
9	RS1	Rate Select 1 – Not used, Presents high input impedance	-
10	VEER	Receiver Ground	1
11	VEER	Receiver Ground	1
12	RD-	Inverse Received Data out (CML-O)	-
13	RD+	Received Data out (CML-O)	-
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)	-
19	TD-	Inverse Transmitter Data In (CML-I)	-
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 4.7KΩ to 10KΩ pull-up resistor to VccHost.
3. This input is internally biased high with a 4.7KΩ to 10KΩ 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 4.7KΩ to 10KΩ pull-up resistor to VccHost.

Typical Application Circuit



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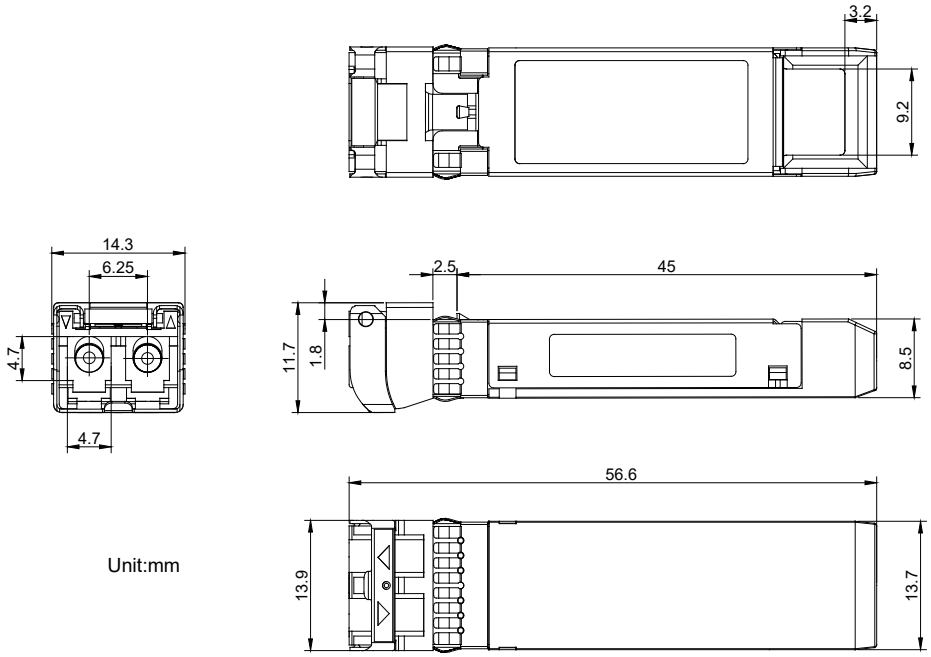
Mechanical specifications



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 ℃	Reach km	Other
GZ10GPS55L-80	10.3125	EML	1550	0~+4	APD	<-22	0~70	80	RoHS
GZ10GPS55L-80I	10.3125	EML	1550	0~+4	APD	<-22	-40~85	80	RoHS

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NOTE:

APD input optical power should not be greater than -8dbm, otherwise it will damage the optical module!

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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