

TITLE 1.25G SFP LX Transceiver	DOC No. RFD-20260413100-001	
	REVISION : 02	AUTHORIZED BY : Henry Chen
	DATE : 2026.04.13	CLASSIFICATION: Optical Transceiver

1. Description

1G SFP LX is a high performance, cost effective modules, which is supporting up to 1.25Gbps, and transmission distance up to 10km on SM fiber. The transceiver consists of two sections: The transmitter section incorporates a laser driver and a 1310nm FP laser. The receiver section consists of a PIN photodiode integrated with a transimpedance preamplifier (TIA) and a Limiting Amplifier. The module is hot pluggable into the 20-pin connector. The high-speed electrical interface is base on low voltage logic, with nominal 100Ohms differential impedance and AC coupled in the module.

The optical output can be disabled by LVTTL logic high-level input of TX_DIS. Transmit Fault (Tx_Fault) is provided to indicate that the module transmitter has detected a fault condition related to laser operation or safety. Loss of signal (RX_LOS) output is provided to indicate the loss of an input optical signal of receiver. A serial EEPROM in the transceiver allows the user to access transceiver monitoring and configuration data via the 2-wire SFP Management Interface. This interface uses a single address, A0h, with a memory map divided into a lower and upper area. Basic digital diagnostic (DD) data is held in the lower area while specific data is held in a series of tables in the high memory area.

2. Features

- Up to 10km transmission on SMF
- Up to 1.25Gbps
- 1310nm FP laser and PIN receiver
- 2-wire interface for integrated Digital Diagnostic monitoring
- Hot pluggable
- Very low EMI and excellent ESD protection
- +3.3V power supply
- Power consumption less than 0.8W
- Operating temperature range: -40°C to +85°C

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3. Product Description

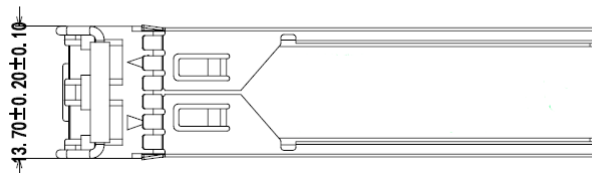
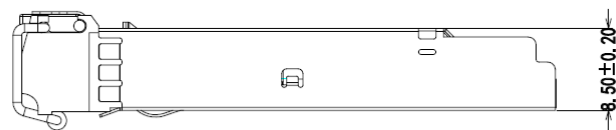
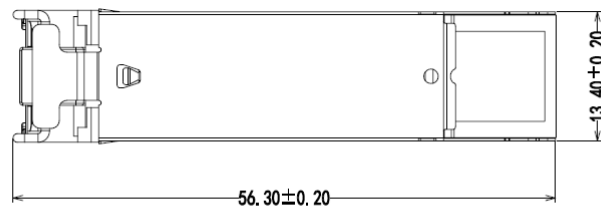
3.1 Product Name

1G SFP LX Transceiver

JPC P/N	Laser(nm)	Distance	Fiber Type	Power (dBm)	Sen. (dBm)	Connector	Tem.
P58**0ARIB10-1	1310	10km	SMF	-9 ~ -3	-20	Dual LC	I

Note-1 : ** Indicates the customer code.

3.2 Dimension, Materials, Platings and Marking



All dimensions' unit are mm.

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4. Applications

- High-speed storage area networks
- Computer cluster cross-connect
- Custom high-speed data pipes
- 1000Base-LX
- Compliant with MSA SFF-8472
- Compliant with SFP MSA

5. Product Specification

Absolute Maximum Ratings

Parameter	Symbol	Min.	Typ.	Max.	Unit
Storage Temperature	T_s	-40		85	°C
Relative Humidity	RH	5		95	%
Power Supply Voltage	V_{CC}	-0.3		4	V
Signal Input Voltage	V_{SI}	$V_{CC} - 0.3$		$V_{CC} + 0.3$	V

Recommended Operating Conditions

Parameter	Symbol	Min.	Typ.	Max.	Unit
Case Operating Temperature	T_{case}	-40		85	°C
Power Supply Voltage	V_{CC}	3.14	3.3	3.47	V
Power Supply Current	I_{CC}			240	mA
Data Rate	BR		1.25		Gbps
Transmission Distance	TD			10	km

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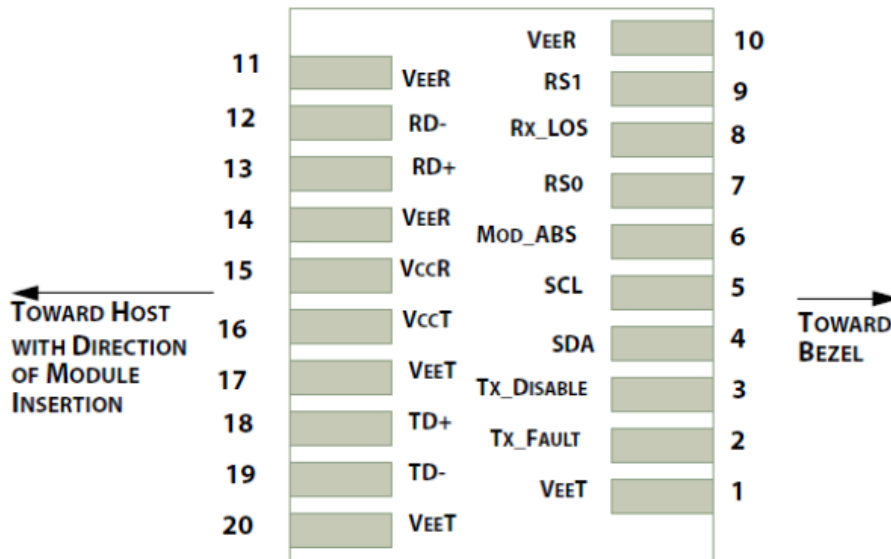
Optical Characteristics

Parameter	Symbol	Min.	Typ.	Max.	Unit
Transmitter					
Center Wavelength	λ	1260	1310	1355	nm
RMS spectral width	P_m			4	nm
Average optical power	P_{avg}	-9		-3	dBm
Average launch power of OFF transmitter	P_{off}			-30	dBm
Extinction ratio	ER	9			dB
Transmitter Dispersion Penalty	TDP			3.9	dB
Output Optical Eye		Compliant with IEEE 802.3			
Optical return loss tolerance				12	dB
Receiver					
Center wavelength	λ	1260		1620	nm
Damage threshold	R_{sen}	3			dBm
Receive power overload	R_{sen}	-3			dBm
Receiver sensitivity	R_{ov}			-20	dBm
Los Assert	LOS_A	-28			dBm
Los De-assert	LOS_D			-23	dBm
Los Hysteresis	LOS_H	0.5		6	dB

Parameter	Accuracy	Unit
Internally measured transceiver temperature	+/-3	deg.C
Internally measured transceiver supply voltage	+/-3	%
Measured Tx bias current	+/-10	%
Measured Tx output power	+/-3	dB
Measured Rx received average optical power	+/-3	dB

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Pin Diagram

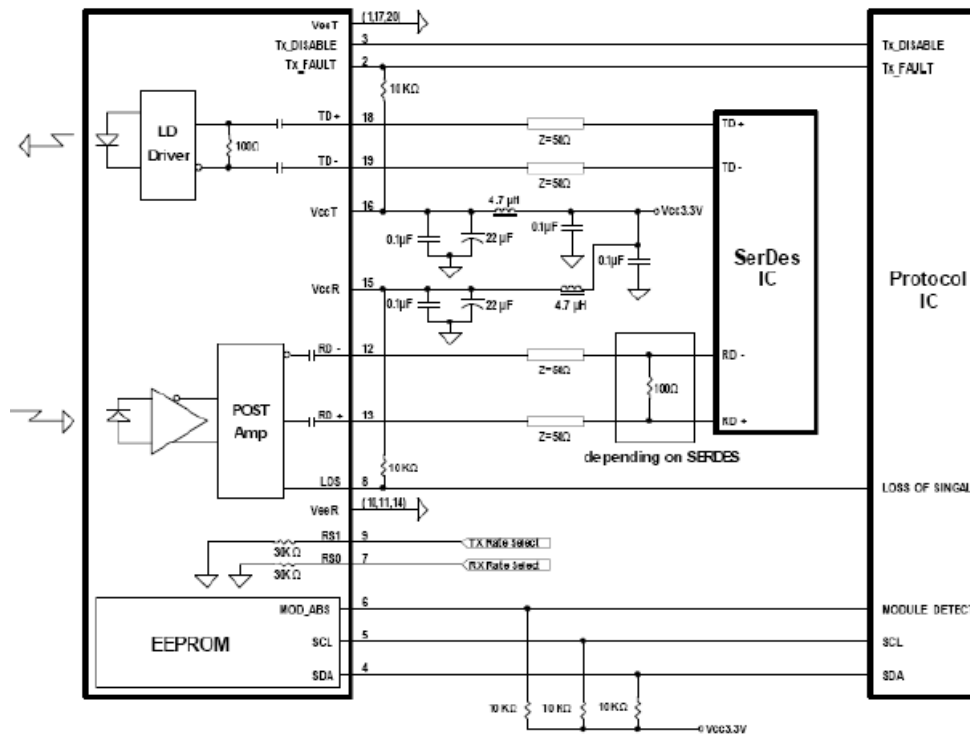


5.1 Pin Descriptions

PIN	Logic	Symbol	Name / Description
1		VeeT	Module Transmitter Ground
2	LVTTL-O	TX_Fault	Module Transmitter Fault
3	LVTTL-I	TX_Dis	Transmitter Disable; Turns off transmitter laser output
4	LVTTL-I/O	SDA	2-Wire Serial Interface Data Line
5	LVTTL-I	SCL	2-Wire Serial Interface Clock
6		MOD_DEF0	Module Definition, Grounded in the module
7	LVTTL-I	RS0	Receiver Rate Select
8	LVTTL-O	RX_LOS	Receiver Loss of Signal Indication Active LOW
9	LVTTL-I	RS1	Transmitter Rate Select (not used)
10		VeeR	Module Receiver Ground
11		VeeR	Module Receiver Ground
12	CML-O	RD-	Receiver Inverted Data Output
13	CML-O	RD+	Receiver Data Output
14		VeeR	Module Receiver Ground
15		VccR	Module Receiver 3.3 V Supply
16		VccT	Module Receiver 3.3 V Supply
17		VeeT	Module Transmitter Ground
18	CML-I	TD+	Transmitter Non-Inverted Data Input
19	CML-I	TD-	Transmitter Inverted Data Input
20		VeeT	Module Transmitter Ground

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5.2 Recommended Interface Circuit



6. Modification History

Rev.	Comments	Date	Originator	Approval
01	Preliminary Draft	2026/03/25	Henry Chen	Mike Sun
02	Document Modify	2026/04/13	Henry Chen	Mike Sun