SFP-100BASE-EX-MO-OPC

Moxa® Compatible TAA 100Base-LX SFP Transceiver (SMF, 1310nm, 40km, LC, DOM)

Features

- INF-8074 and SFF-8472 Compliance
- Duplex LC Connector
- Single-mode Fiber
- Commercial Temperature 0 to 70 Celsius
- Hot Pluggable
- Metal with Lower EMI
- Excellent ESD Protection
- RoHS Compliant and Lead Free

Applications:

- 100Base Ethernet

Product Description

This Moxa® SFP-1FESLC-T Compatible TAA compliant SFP transceiver provides 100Base-LX throughput up to 40km over single-mode fiber (SMF) using a wavelength of 1310nm via an LC connector. It is guaranteed to be 100% compatible with the equivalent Moxa® transceiver. This easy to install, hot swappable transceiver has been programmed, uniquely serialized and data-traffic and application tested to ensure that it will initialize and perform identically. Digital optical monitoring (DOM) support is also present to allow access to real-time operating parameters. This transceiver is Trade Agreements Act (TAA) compliant. We stand behind the quality of our products and proudly offer a limited lifetime warranty.

Regulatory Compliance

- ESD to the Electrical PINs: compatible with MIL-STD-883 Method 3015.
- ESD to the Duplex LC Receptacle: compatible with IEC 61000-4-2.
- Immunity compatible with IEC 61000-4-3.
- EMI compatible with FCC Part 15 Class B EN55022 Class B (CISPR 22B) VCCI Class B.
- Laser Eye Safety compatible with FDA 21CFR 1040.10 and 1040.11 EN60950, EN (IEC) 60825-1,2.
- RoHs compliant with 2002/95/EC 4.1&4.2 2005/747/EC.

Absolute Maximum Ratings

Parameter	Symbol	Min.	Typ.	Max.	Unit
Maximum Supply Voltage	Vcc	-0.5		4.0	V
Storage Temperature	Tstg	-40		85	˚C
Operating Humidity	RH	5		85	%
Operating Case Temperature	Tc	0		70	˚C
Data Rate			155		Mbps

Electrical Characteristics (Tc=25˚C, Vcc=3.3V)

Parameter	Symbol	Min.	Typ.	Max.	Unit	Notes
Power Supply Voltage	Vcc	3.14	3.3	3.46	V	
Power Supply Current	Icc		165	300	mA	
Transmitter						
Input Differential Impedance	ZIN	85	100	120	Ω	1
LVPECL Inputs (Differential)	VIN	500		2400	mVp-p	2
Receiver						
Output Differential Impedance	ZOUT	85	100	120	Ω	
LVPECL Outputs (Differential)	VOUT	600	800	1600	mVp-p	2

Notes:

1. RIN>100kΩ @ DC.
2. AC coupled.

Optical Characteristics

Parameter	Symbol	Min.	Typ.	Max.	Unit	Notes
Transmitter						
Average Output Power	PO	-5		0	dBm	1
Optical Wavelength	λ	1275	1310	1350	nm	
Spectral Width (RMS)	Δλ			3	nm	
Optical Rise/Fall Time	Tr/Tf		250	500	ps	2
Extinction Ratio	ER	9			dB	3
Output Optical Eye		IUT-T G.957 Compliant				
Receiver						
Receiver Sensitivity	Pmin			-32	dBm	4
Receiver Overload	Pmax	0			dBm	
Optical Center Wavelength	λC	1260		1600	nm	
LOS De-Assert	LOSD			-32	dBm	
LOS Assert	LOSA	-45			dBm	
LOS Hysteresis		0.5			dB	

Notes:

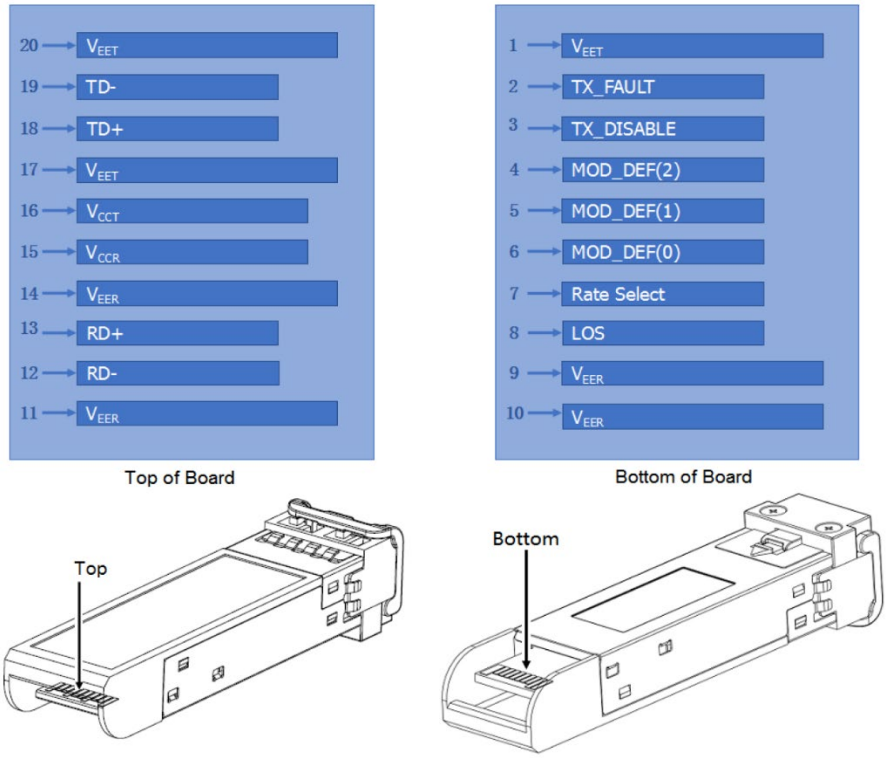
1. Average.
2. 20-80%.
3. Filtered, measured with a PRBS 2^{23}-1 test pattern @155Mbps.
4. Minimum average optical power is measured at BER less than $1E^{-12}$ with 2^{23}-1 PRBS and ER=9dB.

Pin Descriptions

Pin	Symbol	Name/Description	Notes
1	VeeT	Transmitter Ground (Common with Receiver Ground).	1
2	Tx_Fault	Transmitter Fault.	
3	Tx_Disable	Transmitter Disable. Laser output disabled on "high" or "open."	2
4	MOD_DEF(2)	Module Definition 2. Data Line for Serial ID.	3
5	MOD_DEF(1)	Module Definition 1. Clock Line for Serial ID.	3
6	MOD_DEF(0)	Module Definition 0. Grounded within the module.	3
7	Rate Select	No Connection Required.	
8	LOS	Loss of Signal Indication. "Logic 0" indicates normal operation.	4
9	VeeR	Receiver Ground (Common with Transmitter Ground).	1
10	VeeR	Receiver Ground (Common with Transmitter Ground).	1
11	VeeR	Receiver Ground (Common with Transmitter Ground).	1
12	RD-	Receiver Inverted Data Out. AC Coupled.	
13	RD+	Receiver Non-Inverted Data Out. AC Coupled.	
14	VeeR	Receiver Ground (Common with Transmitter Ground).	1
15	VccR	Receiver Power Supply.	
16	VccT	Transmitter Power Supply.	
17	VeeT	Transmitter Ground (Common with Receiver Ground).	1
18	TD+	Transmitter Non-Inverted Data In. AC Coupled.	
19	TD-	Transmitter Inverted Data In. AC Coupled.	
20	VeeT	Transmitter Ground (Common with Receiver Ground).	1

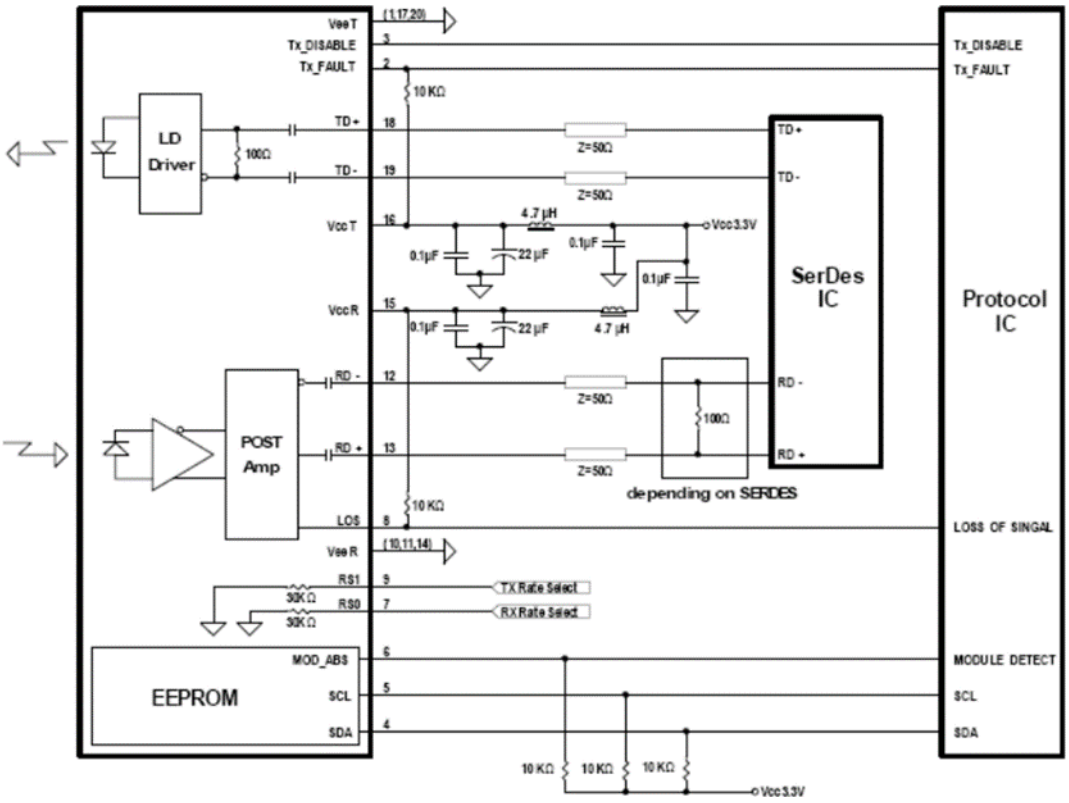
Notes:

1. The circuit ground is internally isolated from the chassis ground.
2. Laser output is disabled on Tx_Disable>2.0V or open, enabled on Tx_Disable<0.8V.
3. Should be pulled up with 4.7kΩ-10kΩ on the host board to a voltage between 2.0V and 3.6V. MOD_DEF(1) pulls the line low to indicate that the module is plugged in.
4. LOS is an open collector output. Should be pulled up with 4.7kΩ-10kΩ on the host board to a voltage between 2.0V and 3.6V. "Logic 0" indicates normal operation. "Logic 1" indicates a loss of signal.



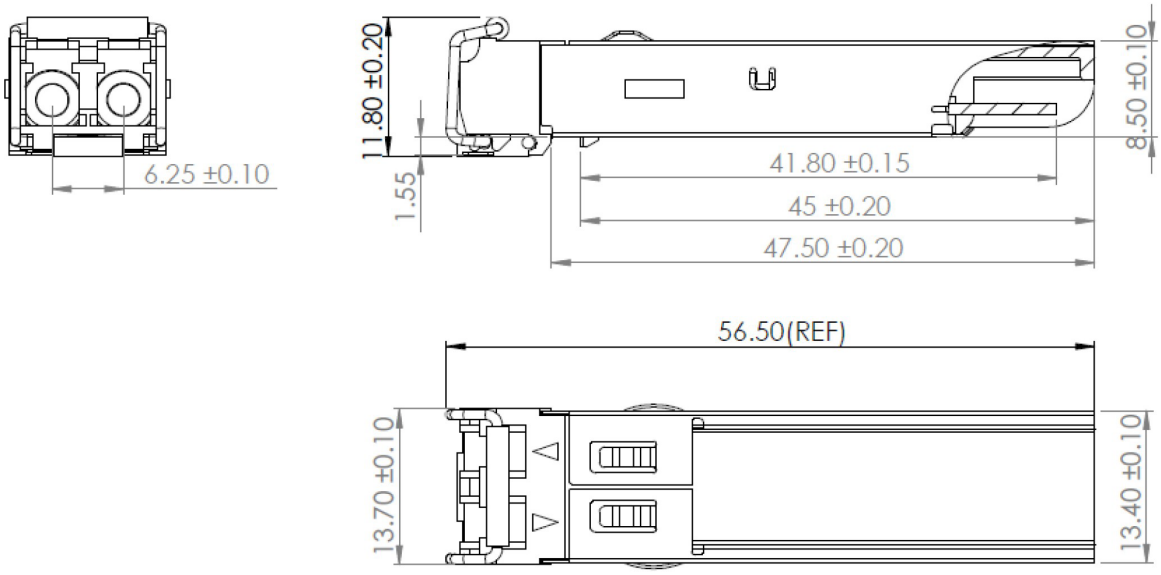
Pin-Out of Connector Block on the Host Board

Recommended Circuit Schematic



Mechanical Specifications

Small Form Factor Pluggable (SFP) transceivers are compatible with the dimensions defined by the SFP Multi-Sourcing Agreement (MSA).



EEPROM Information

EEPROM memory map-specific data field description is as below: