REPOTEC
Facilitate your Network

Gigabit Ethernet / 1x Fiber Channel 1310 nm LX-MMF SFP Transceiver RoHS SFF-8472 Compliant Specification: MOD-MGLX02-D

Product Overview

The MOD-MGLX02-D of Small Form Factor Pluggable (SFP) transceiver module is specifically designed for high performance integrated duplex data link over multi mode optical fiber. The high-speed laser diode and photo diode are provided as a light source and a detector, respectively. An EEPROM contained the detailed product information for the host equipment is accessed by the 2-wire serial CMOS EEPROM protocol. It complies with SFP MSA, SONET/SDH standards, Class 1 laser products, EN60825, and EN60950.

Features

- **RoHS Compliant**
- **Digital Diagnostics are External Calibrated**
- **Operation Temperature: 0~70℃**
- **1310nm uncooled FP LD**
- **Hot pluggable**
- **Metal enclosure, low EMI**
- **Single 3.3V power supply**
- **Low Power Dissipation**

Applications

- **Metro Access Rings**
- **Point-to-Point networking**
- **1x Fiber Channel**
- **Gigabit Ethernet**
- **Suitable for Fast Ethernet and OC-12**

Ordering information

Product Code	Description/Clasp Color
MOD-MGLX02-D	1310nm, **Black**

Absolute Maximum Ratings

Parameter	Symbol	Min.	Typ.	Max.	Unit	Note
Storage Temperature	T_S	**-40**		**80**	℃	
Supply Voltage	$V_{CC}T$ $V_{CC}R$	**0**		**5.5**	V	
Relative Humidity	RH	**0**		**85**	%	

Recommended Operating Conditions

Parameter	Symbol	Min.	Typ.	Max.	Unit	Note
Operating Temperature	T_{OP}	**0**		**70**	℃	
Supply Voltage	$V_{CC}T,R$	**3.1**	**3.3**	**3.5**	V	
Supply Current	$I_{TX}+I_{RX}$		**200**	**300**	mA	

Transmitter Electro-Optical Interface (T_C = 0~70℃,VccT,R=3.1V<V_{CC}<3. 5V)

Parameter	Symbol	Min.	Typ.	Max.	Unit	Note
Transmitter Differential Input Voltage	TD +/-	**400**		**2000**	mVp-p	A
Optical Output Power	P_O	**-9**		**+1**	dBm	A
Optical Extinction Ratio	E_R	**9**			dB	A
Center Wavelength	λ_C	**1280**	**1310**	**1355**	nm	A
Spectral Width	$\Delta\lambda$			**<4**	nm	A
Optical Rise / Fall Time	t_r / t_f			**0.25**	nsec	A,B
Tx_Fault - High	V_{Fault_H}	**2**		**V_{CC}**	V	A
Tx_Fault - Low	V_{Fault_L}	**V_{ee}**		**V_{ee}+0.5**	V	A
Tx_Disable - High	$V_{Disable\_H}$	**2**		**V_{CC}**	V	A
Tx_Disable - Low	$V_{Disable\_L}$	**V_{ee}**		**V_{ee}+0.8**	V	A

Notes:

A. All of data is measured at 1250Mbps , PRBS 2^7-1 ,NRZ.

B: 20%~80%

Receiver Electro-Optical Interface (T_C = 0~70℃,VccT,R=3.1V<V_{CC}<3. 5V)

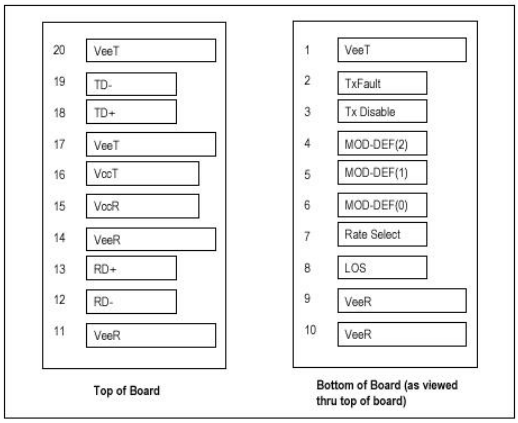
Parameter	Symbol	Min.	Typ.	Max.	Unit	Note
Receiver Differential Output Voltage	RD +/-	**600**	**800**		mV_{P-P}	
Receiver Overload	P_{IN}MAX	**-3**			dBm	A,B
Receiver Sensitivity	P_{IN}MIN			**-24**	dBm	A,B
Operating Center Wavelength	λ_c	**1270**		**1620**	nm	
Receiver LOS Assert Level	$P_{RX\_LOS\ A}$	**-35**			dBm	B
Receiver LOS Deassert Level	$P_{RX\_LOS\ D}$			**-24.5**	dBm	B
Receiver Loss of Signal Hysteresis		**0.5**	**2**		dB	B

Notes:

A. With BER better than or equal to 1×10^{-12}

B. measured in the center of the eye opening with 2^7 -1 PRBS, NRZ

Pin Description



SFP Transceiver Electric Pad Layout

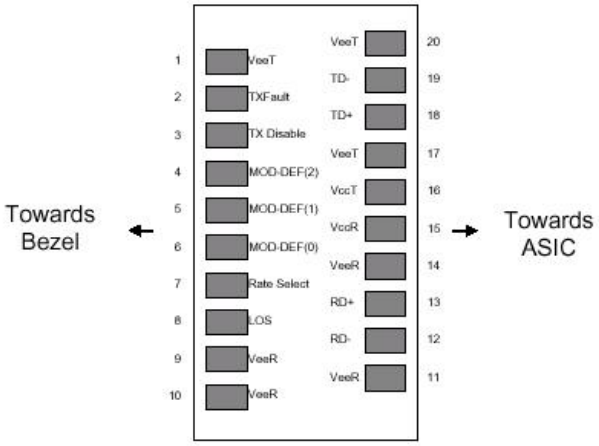


Diagram of Host Board Connector Block Pin Numbers and Names

Pin No.	Pin Name	Function	Plug Seq.	Notes
1	$V_{ee}T$	Transmitter Ground	1	**1**
2	TX Fault	Transmitter Fault Indication	3	**2**
3	TX Disable	Transmitter Disable	3	**3**
4	MOD_DEF 2	Module Definition 2	3	**4**
5	MOD_DEF 1	Module Definition 1	3	**4**
6	MOD_DEF 0	Module Definition 0	3	**4**
7	Rate Select	Select between full or reduced receiver bandwidth	3	**5**
8	LOS	Loss of Signal	3	**6**
9	$V_{ee}R$	Receiver Ground	1	**1**
10	$V_{ee}R$	Receiver Ground	1	**1**
11	$V_{ee}R$	Receiver Ground	1	**1**
12	RD -	Inv. Receiver Data Out	3	
13	RD +	Receiver Data Out	3	
14	$V_{ee}R$	Receiver Ground	1	**1**
15	$V_{CC}R$	Receiver Power	2	
16	$V_{CC}T$	Transmitter Power	2	
17	$V_{ee}T$	Transmitter Ground	1	**1**
18	TD +	Transmitter Data In	3	
19	TD -	Inv. Transmitter Data In	3	
20	$V_{ee}T$	Transmitter Ground	1	**1**

Note:

1, Circuit ground is internally isolated from chassis ground

2, Open-Collector outputs, asserted when LD and/or APC function fail.

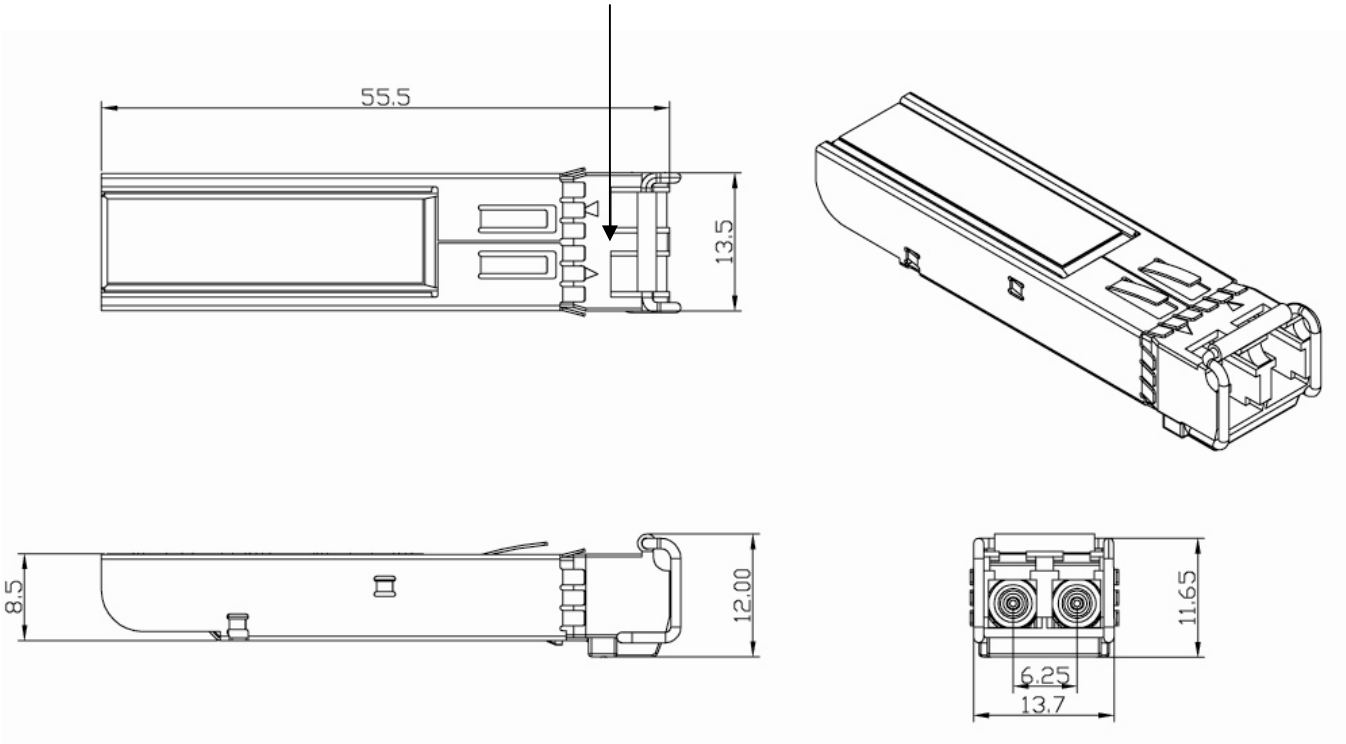
3, Disable when high voltage (>2.0V or Open)

4, Should be pulled up with 4.7k – 10kohms on host board to a voltage between 2.0V and 5.5V. MOD_DEF(0) pulls line low to indicate module is plugged in.

5, No connection required

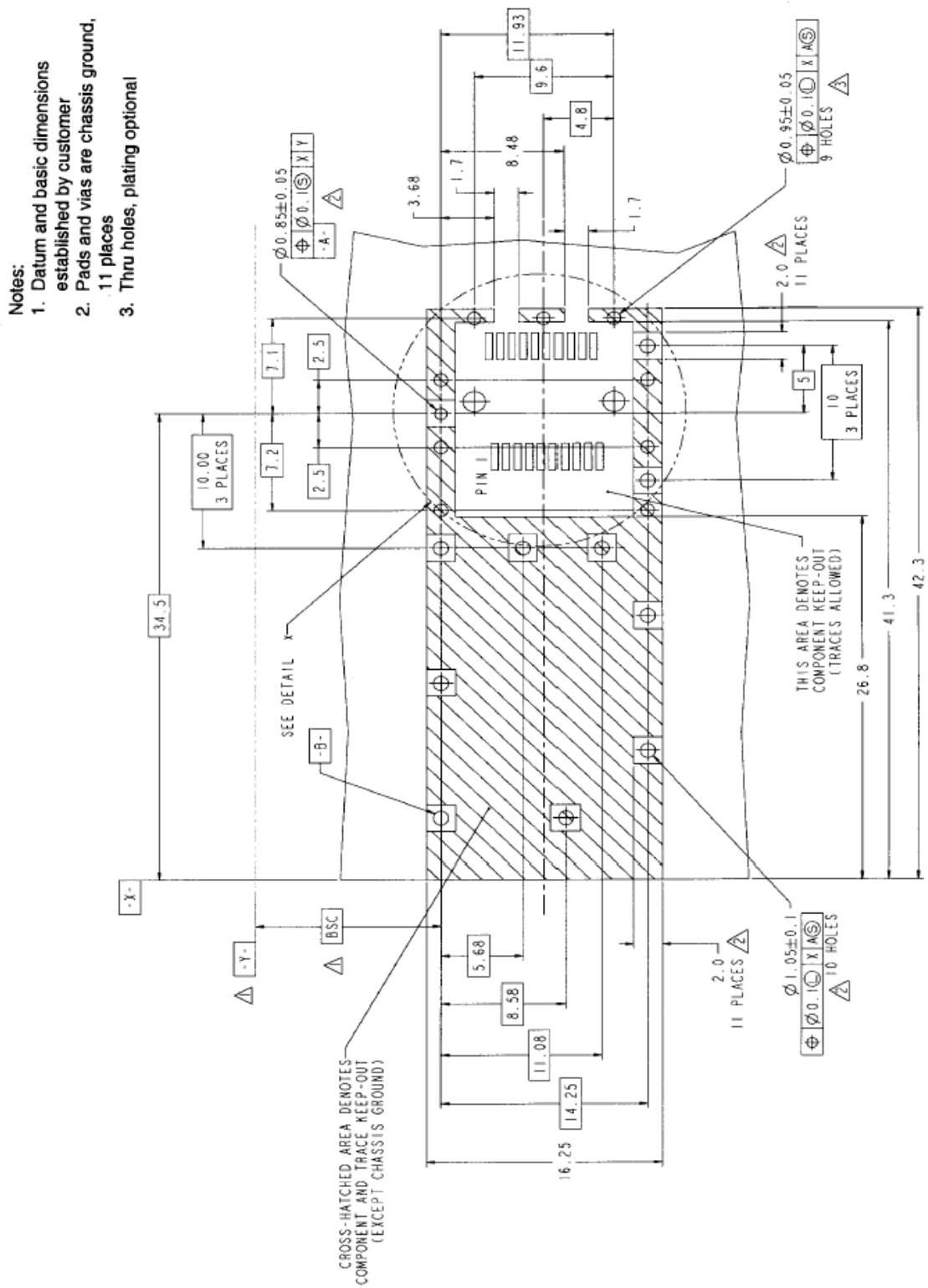
6, LOS is open collector output. Should be pulled up with 4.7k – 10kohms on host board to a voltage between 2.0V and 5.5V. Logic 0 indicates normal operation; logic 1 indicates loss of signal.

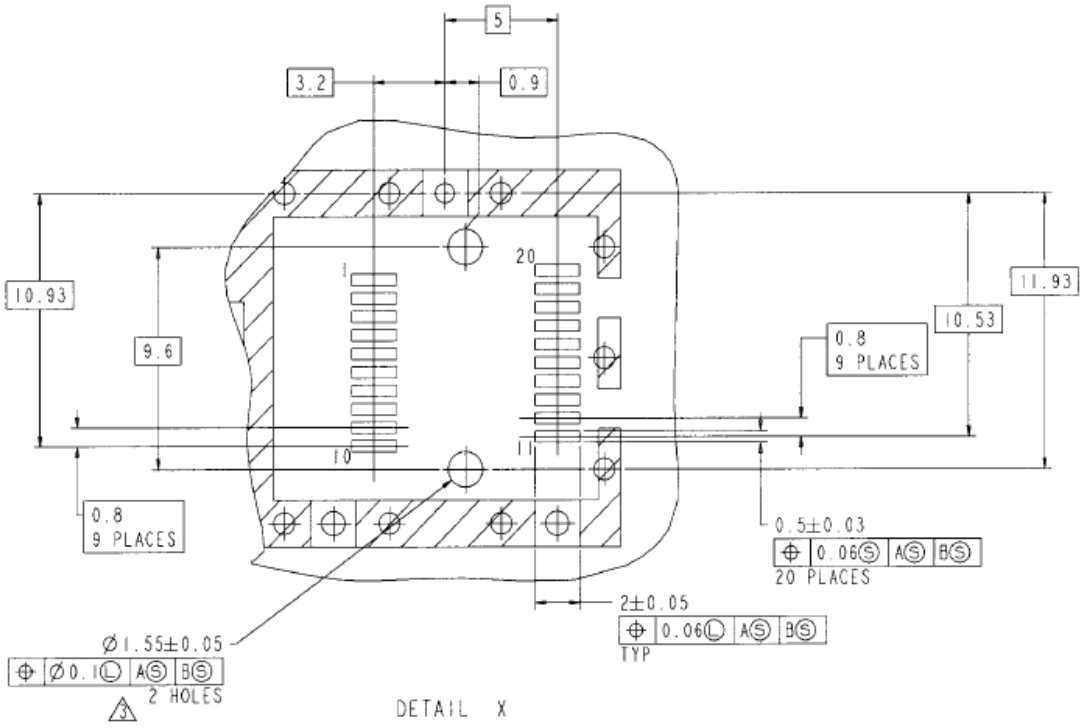
Mechanical Dimensions (Units in mm)



References (From SFP MSA September 14, 2000 page 11, 12, 13, and 23)

1. SFP Host PCB layout




5
3.2
0.9
10.93
9.6
20
1
10
11
11.93
10.53
0.8
9 PLACES
0.8
9 PLACES
0.5±0.03
0.06 Ⓢ A Ⓢ B Ⓢ
20 PLACES
2±0.05
0.06 Ⓛ A Ⓢ B Ⓢ
TYP
Ø1.55±0.05
Ø0.1 Ⓛ A Ⓢ B Ⓢ
2 HOLES
3
DETAIL X

2.Application Circuit

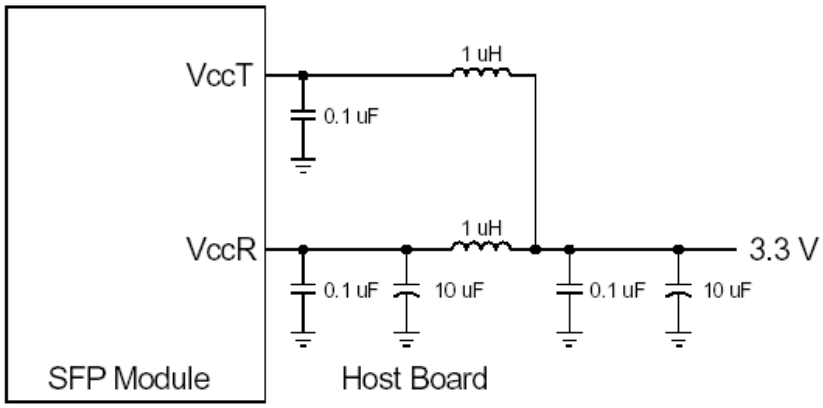


Figure 2A. Recommended Host Board Supply Filtering Network

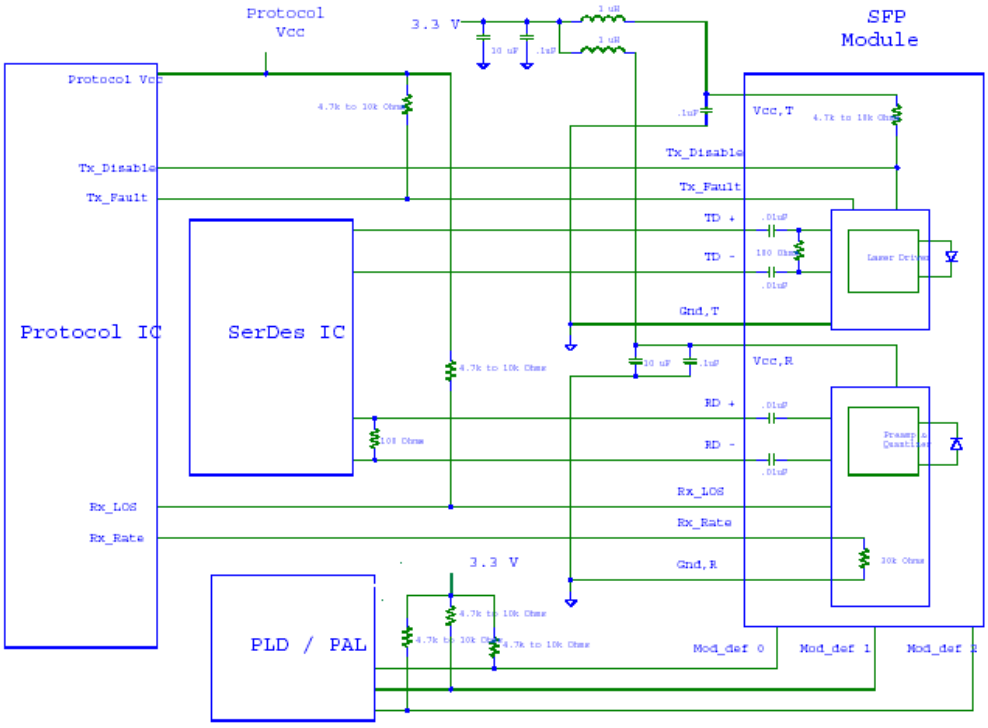


Figure 2B. Example SFP Host Board Schematic