RoHS compliant
850 nm Multi-mode Transceiver
Small Form Pluggable (SFP), with Diagnostic Monitoring
125Mbps /Fast Ethernet

Features

- RoHS compliant
- Compliant with SFF8472 diagnostic monitoring interface
- Duplex LC connector
- Single power supply 3.3V
- Hot Pluggable
- Class 1 laser product complies with EN 60825-1

Ordering Information

PART NUMBER	INPUT/OUTPUT	SIGNAL DETECT	VOLTAGE	TEMPERATURE
SFP100FXMM850	AC/AC	TTL	3.3V	0°C to 70 °C
SFP100FXMM850RGD	AC/AC	TTL	3.3V	-10°C to 85 °C

Diagnostics

Parameter	Range	Accuracy	Unit	Calibration
Temperature	-40 to 95	± 3	°C	External
Voltage	3.0 to 3.6	± 0.1	V	
Bias Current	0 to 20	± 10%	mA	
TX Power	-9.5 to -4	± 3 dB	dBm	
RX Power	-18 to –4	± 3 dB	dBm	

Absolute Maximum Ratings

PARAMETER	SYMBOL	MIN	MAX	UNITS	NOTE
Storage Temperature	T_S	–40	85	°C	
Supply Voltage	*Vcc*	–0.5	4.0	V	
Input Voltage	V_{IN}	–0.5	*Vcc*	V	

Recommended Operating Conditions

PARAMETER	SYMBOL	MIN	MAX	UNITS	NOTE
Operating Case Temperature	T_C	0	70	°C	
		-10	85		
		-40	85		
Supply Voltage	*Vcc*	3.1	3.5	V	
Supply Current	$I_{TX} + I_{RX}$	---	200	mA	

Transmitter Electro-optical Characteristics

***Vcc* = 3.1 V to 3.5 V, T_C = 0 °C to 70 °C (-10 °C to 85 °C) (-40 °C to 85 °C)**

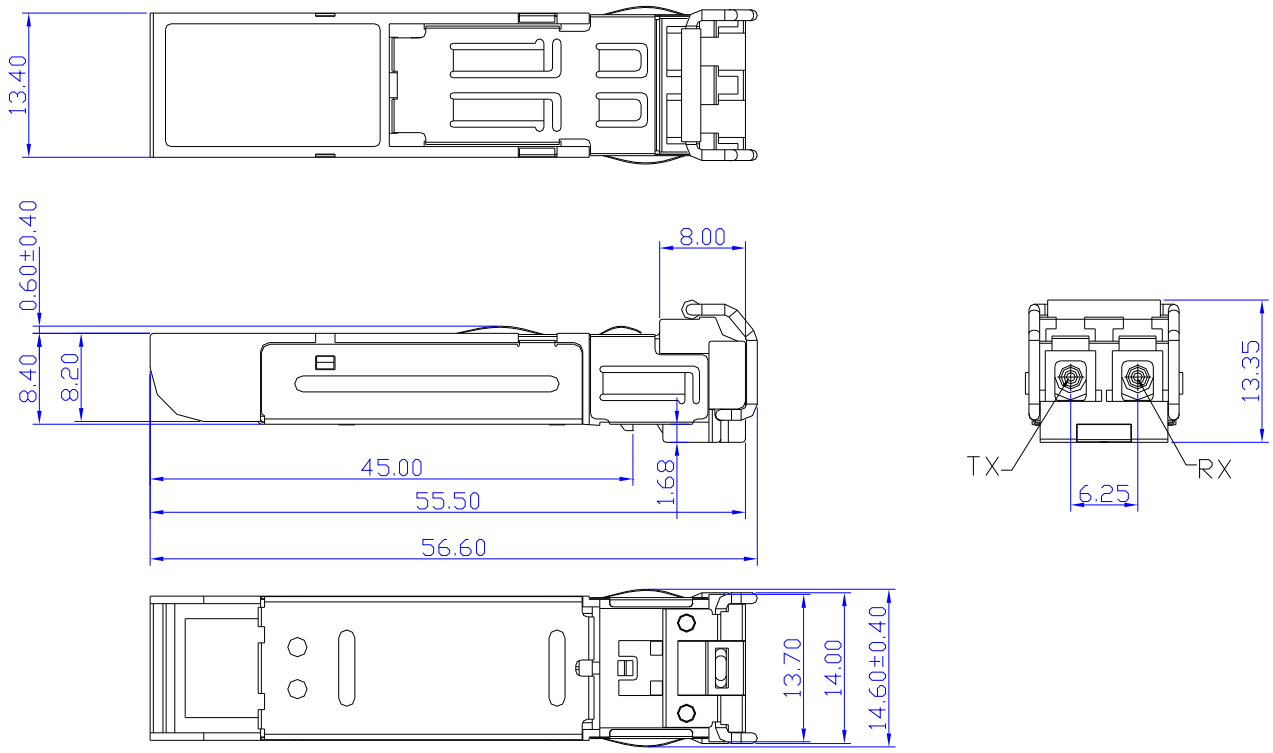
PARAMETER	SYMBOL	MIN	TYP.	MAX	UNITS	NOTE
Bit rate	*B*		125		Mbps	
Output Optical Power 62.5/125, 50/125 μm fiber	P_{out}	-9.5	---	-4	dBm	Average
Extinction Ratio	*ER*	9	---	---	dB	
Center Wavelength	λ_C	830	850	860	nm	
Spectral Width (RMS)	$\Delta\lambda$	---	---	0.85	nm	
Rise/Fall Time, (10–90%)	$T_{r,\,f}$	---	---	2	ns	
Max. P_{out} TX-DISABLE Asserted	P_{OFF}	---	---	–45	dBm	
Differential Input Voltage	V_{DIFF}	0.4	---	2.0	V	

Receiver Electro-optical Characteristics

***Vcc* = 3.1 V to 3.5 V, T_C = 0 °C to 70 °C (-10 °C to 85 °C) (-40 °C to 85 °C)**

PARAMETER	SYMBOL	MIN	TYP.	MAX	UNITS	NOTE
Bit rate	B		125		Mbps	
Optical Input Power-maximum	P_{IN}	-4	---	---	dBm	PRBS7, BER < 10^{-10}
Optical Input Power-minimum (Sensitivity)	P_{IN}	---	---	–18	dBm	PRBS7, BER < 10^{-10}
Operating Center Wavelength	λ_C	770	---	860	nm	
Optical Return Loss	ORL	12	---	---	dB	
Signal Detect-Asserted	P_A	---	---	–18	dBm	
Signal Detect-Deasserted	P_D	–35	---	---	dBm	
Differential Output Voltage	V_{DIFF}	0.5	---	1.2	V	
Data Output Rise, Fall Time (20–80%)	$T_{r,f}$	---	---	0.35	ns	
Receiver Loss of Signal Output Voltage-Low	RX_LOS_L	0	---	0.5	V	
Receiver Loss of Signal Output Voltage-High	RX_LOS_H	2.4	---	V_{CC}	V	

Dimensions

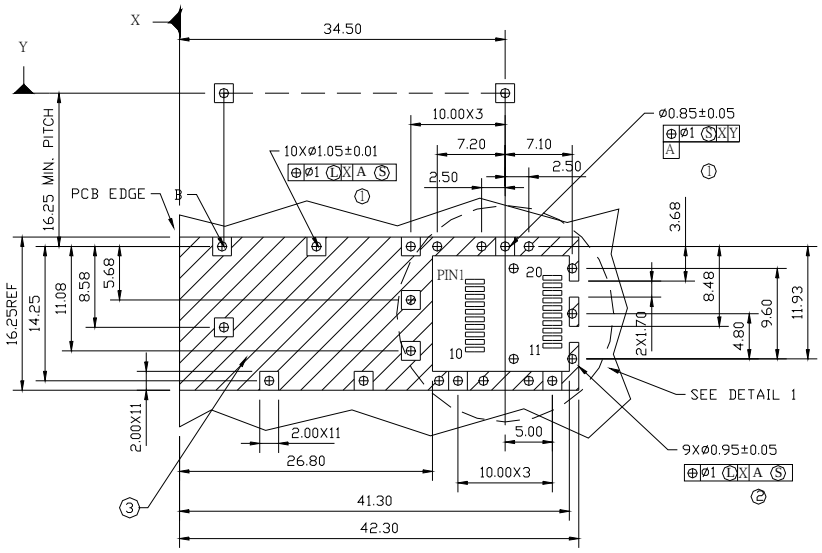


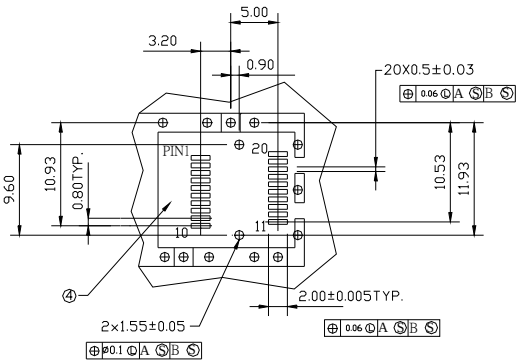
DIMENSIONS ARE IN MILLIMETERS

ALL DIMENSIONS ARE ± 0.2mm UNLESS OTHERWISE SPECIFIED

Unit: mm

SFP host board mechanical layout





DETAIL 1

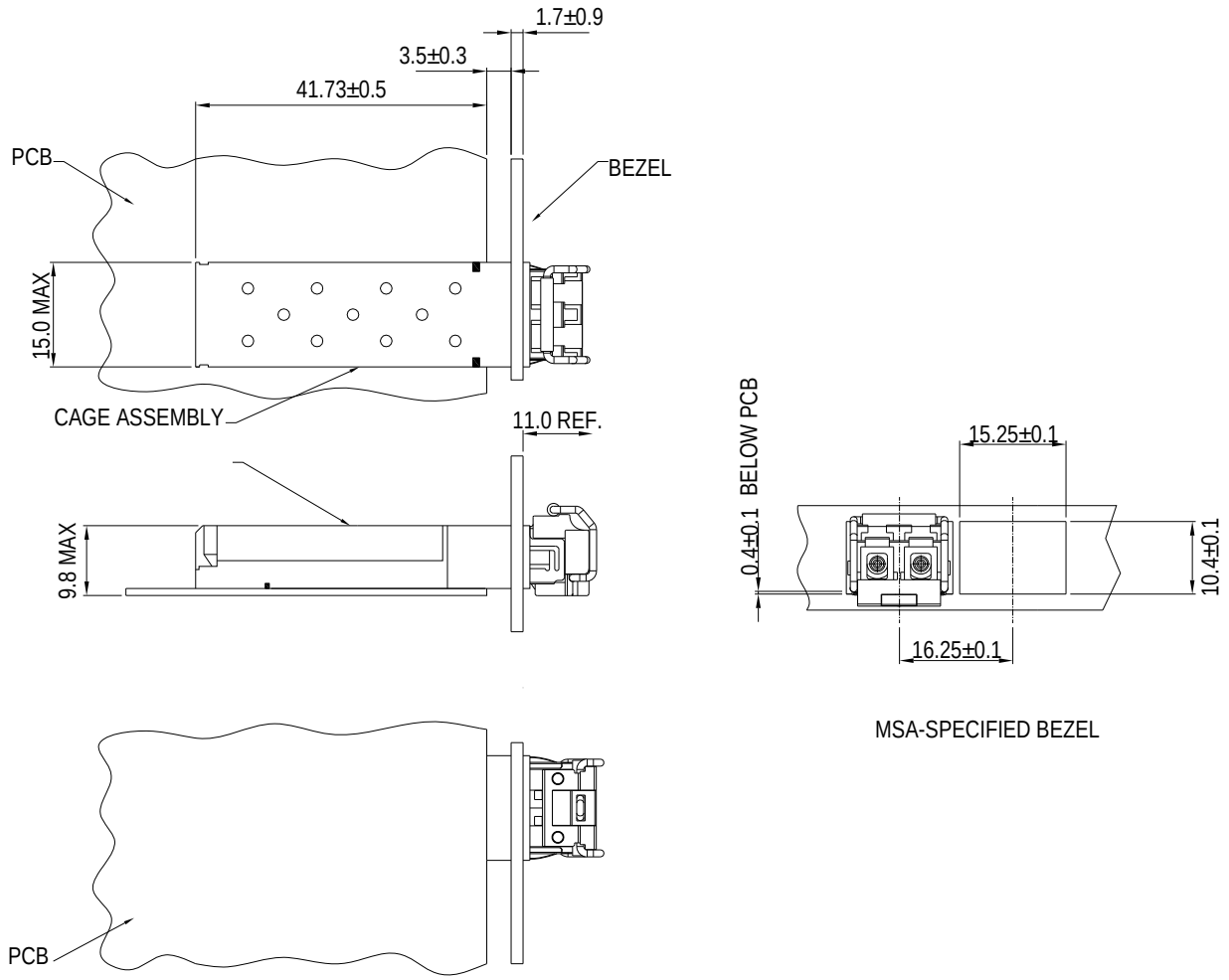
LEGEND

1.PADS AND VIAS ARE CHASSIS GROUND
2.THROUGH HOLES, PLATING OPTIONAL
3.HATCHED AREA DENOTES COMPONENT AND TRACE KEEPOUT(EXCEPT CHASSIS GROUND)
4.AREA DENOTES COMPONENT KEEPOUT (TRACES ALLOWED)

DIMENSIONS ARE IN MILLIMETERS

Unit: mm

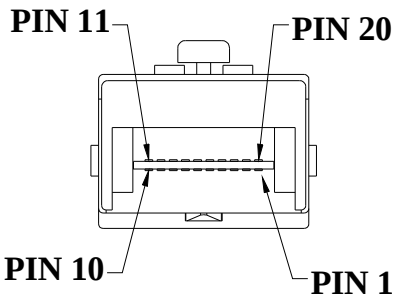
Assembly drawing



Unit: mm

Pin Assignment

Pin-Out



Pin	Signal Name	Description
1	T_{GND}	Transmit Ground
2	*TX_FAULT*	Transmit Fault
3	*TX_DISABLE*	Transmit Disable
4	*MOD_DEF (2)*	SDA Serial Data Signal
5	*MOD_DEF (1)*	SCL Serial Clock Signal
6	*MOD_DEF (0)*	TTL Low
7	*RATE SELECT*	Open Circuit
8	*RX_LOS*	Receiver Loss of Signal, TTL High, open collector
9	R_{GND}	Receiver Ground
10	R_{GND}	Receiver Ground
11	R_{GND}	Receiver Ground
12	*RX–*	Receive Data Bar, Differential PECL, ac coupled
13	*RX+*	Receive Data, Differential PECL, ac coupled
14	R_{GND}	Receiver Ground
15	V_{CCR}	Receiver Power Supply
16	V_{CCT}	Transmitter Power Supply
17	T_{GND}	Transmitter Ground
18	*TX+*	Transmit Data, Differential PCEL, ac coupled
19	*TX–*	Transmit Data Bar, Differential PCEL, ac coupled
20	T_{GND}	Transmitter Ground