



850 nm Multi-mode Transceiver Small Form Pluggable (SFP), with Diagnostic Monitoring 2500Base Ethernet



Features

- RoHS compliant
- 2500Base Ethernet application
- 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	VOLTAGE	TEMPERATURE
LM28-F3S-TI-N-EA	3.3V	-10°C to 85 °C
LM28-F3S-TI-N-EB	3.3V	-40°C to 85 °C

Transmit distance

Fiber Type(MMF)	Distance
OM1(62.5/125um,200MHz.km)	75m
OM2(50/125um,500MHz.km)	160m
OM3(50/125um,2000MHz.km)	400m
OM4(50/125um,4700MHz.km)	500m



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Absolute Maximum Ratings

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

Recommended Operating Conditions

PARAMETER	SYMBOL	MIN	MAX	UNITS	NOTE
Case operating Temperature	T_C	-10 -40	85 85	°C	
Bit rate	B		3125	Mbps	
Supply Voltage	V_{CC}	3.135	3.465	V	
Supply Current	$I_{TX} + I_{RX}$	---	300	mA	



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Transmitter Electro-optical Characteristics

PARAMETER	SYMBOL	MIN	TYP.	MAX	UNITS	NOTE
Output Optical Power	P_{out}	-7.5	---	-1	dBm	
Extinction Ratio	ER	6	---	---	dB	
Center Wavelength	λ_C	830	850	860	nm	
Spectral Width (RMS)	$\Delta\lambda$	---	---	0.85	nm	
Max. P_{out} TX-DISABLE Asserted	P_{OFF}	---	---	-35	dBm	
Differential Input Voltage	V_{DIFF}	300	---	1200	mV	
Transmit Fault Output-Low	TX_FAULT_L	0.0	---	0.5	V	
Transmit Fault Output-High	TX_FAULT_H	2.4	---	V_{CC}	V	
TX_DISABLE Assert Time	t_{off}	---	---	10	μs	
TX_DISABLE Negate Time	t_{on}	---	---	1	ms	
Time to initialize, include reset of TX_FAULT	t_{init}	---	---	300	ms	
TX_FAULT from fault to assertion	t_{fault}	---	---	100	μs	
TX_DISABLE time to start reset	t_{reset}	10	---	---	μs	



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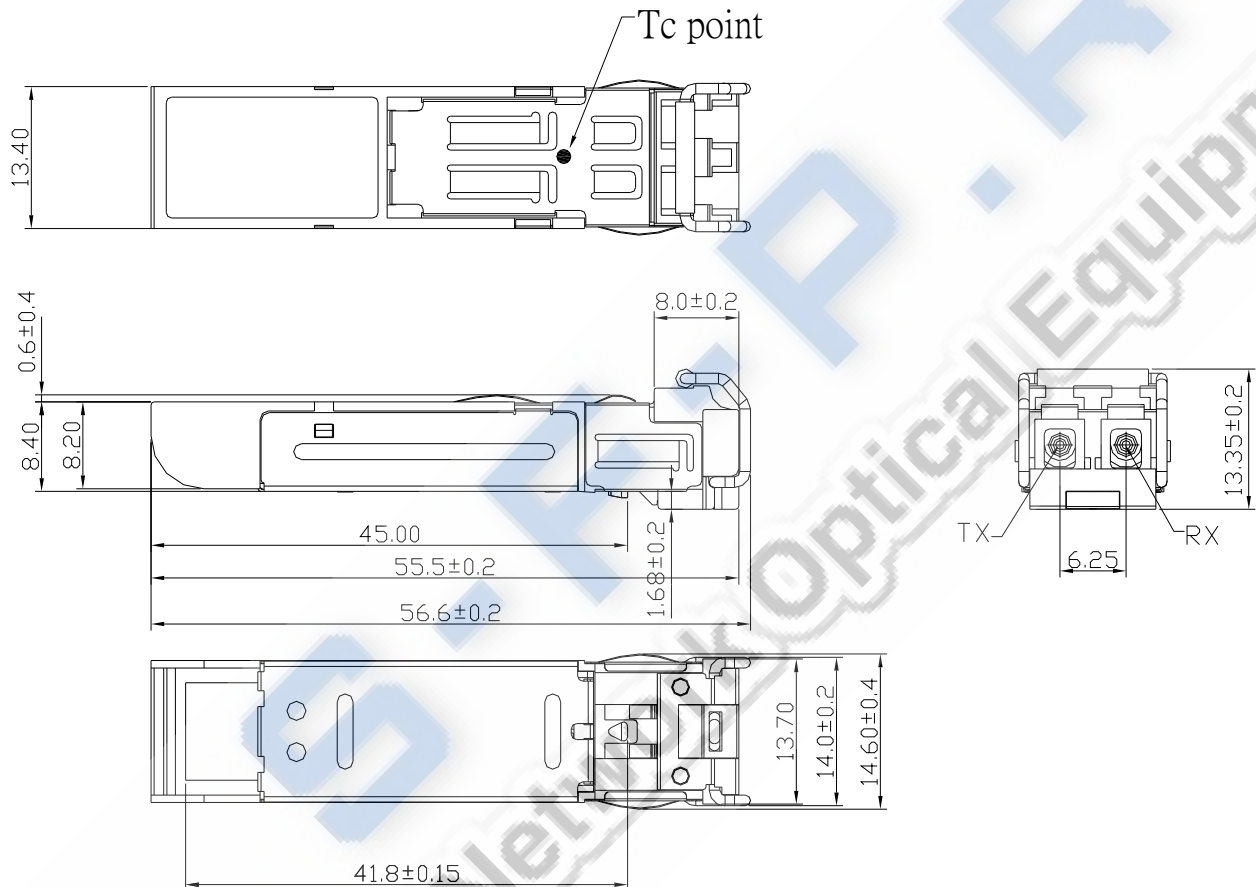
Receiver Electro-optical Characteristics

PARAMETER	SYMBOL	MIN	TYP.	MAX	UNITS	NOTE
Optical Input Power-maximum	P_{IN}	0	---	---	dBm	BER < 10^{-12}
Receiver Sensitivity	P_{IN}	---	---	-13.5	dBm	@830~860nm BER < 10^{-12}
Operating Center Wavelength	λ_C	770	---	860	nm	
Loss of Signal-Asserted	P_A	-14	---	---	dBm	
Loss of Signal-Deasserted	P_D	---	---	-30	dBm	
Differential Output Voltage	V_{DIFF}	400	---	1200	mV	
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	
Receiver Loss of Signal Assert Time (off to on)	t_{A,RX_LOS}	---	---	100	μs	
Receiver Loss of Signal Assert Time (on to off)	t_{D,RX_LOS}	---	---	100	μs	

Diagnostics

Parameter	Range	Accuracy	Unit	Calibration
Temperature	-40 to 85	± 3	$^{\circ}C$	Internal
Voltage	3.1 to 3.5	± 0.1	V	
Bias Current	0 to 25	$\pm 10\%$	mA	
TX Power	-7.5 to -1	± 3 dB	dBm	
RX Power	-13.5 to 0	± 3 dB	dBm	

Dimensions

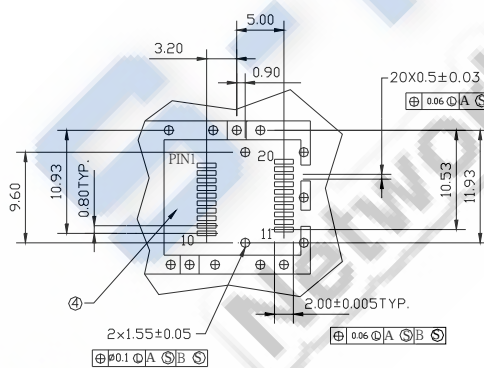
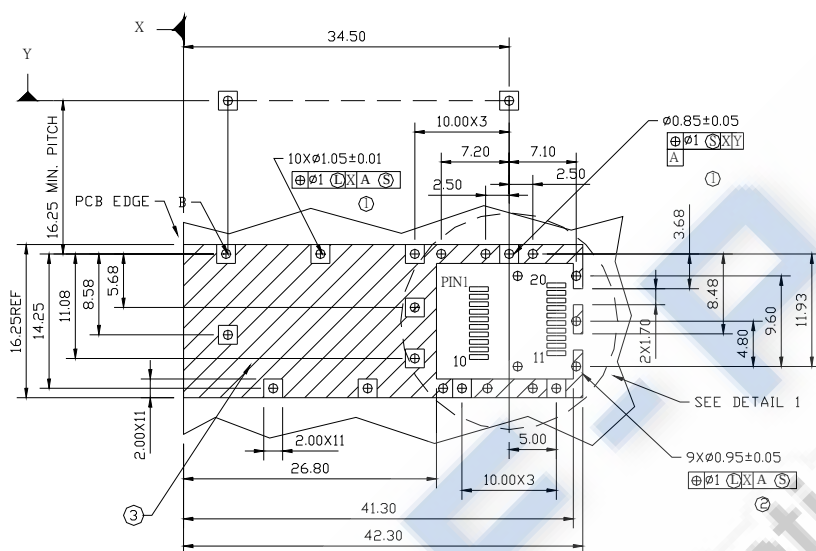


DIMENSIONS ARE IN MILLIMETERS

ALL DIMENSIONS ARE ± 0.1mm UNLESS OTHERWISE SPECIFIED

Unit: mm

SFP host board mechanical layout



DETAIL 1

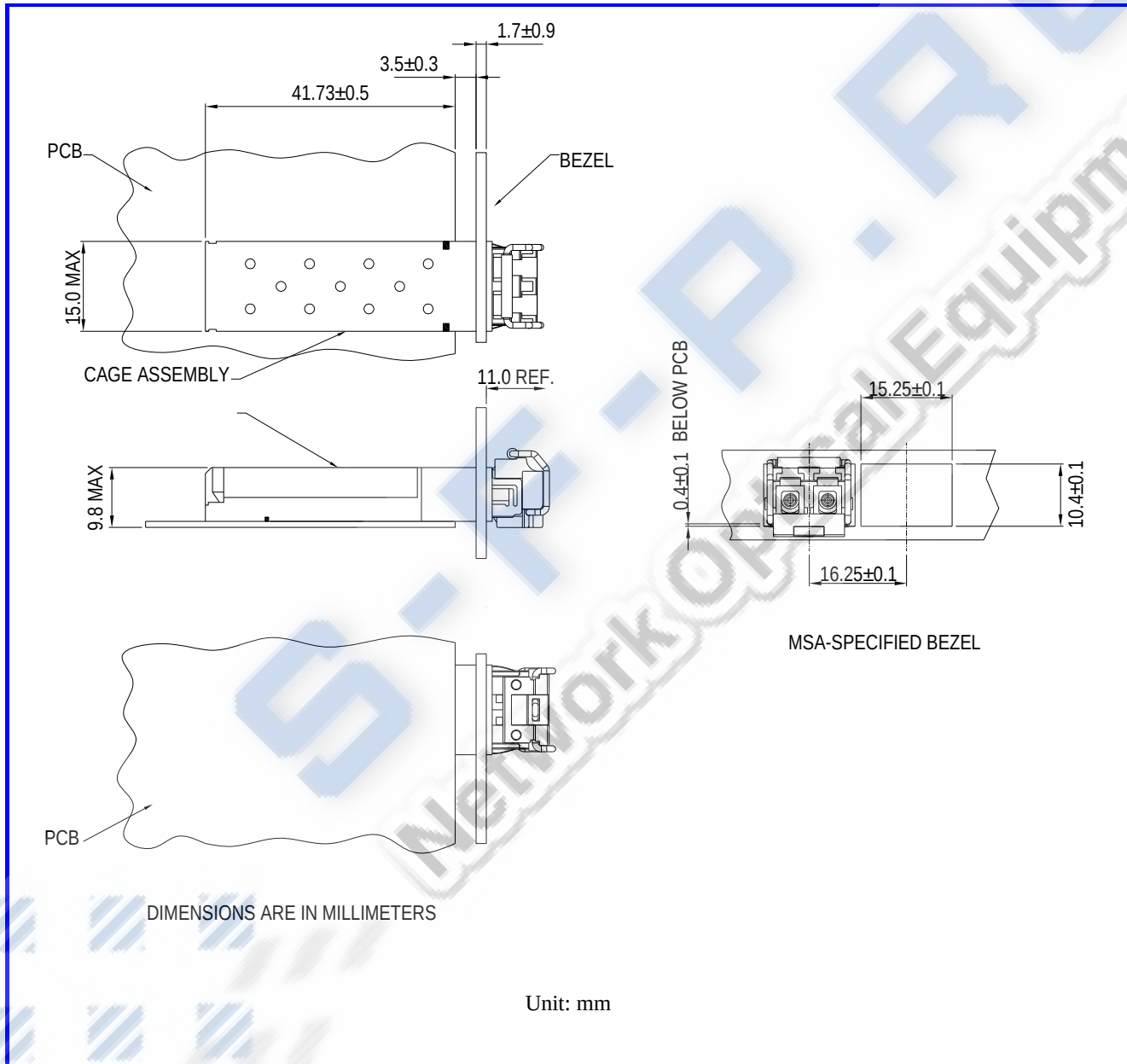
LEGEND

- 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

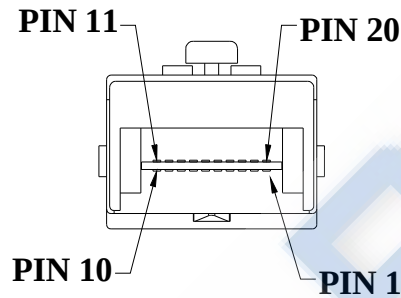
Unit: mm

Assembly drawing



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 , ac coupled
13	$RX+$	Receive Data, Differential , 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 , ac coupled
19	$TX-$	Transmit Data Bar, Differential , ac coupled
20	T_{GND}	Transmitter Ground

Note : All information contained in this document is subject to change without notice.