RoHS Compliant
850 nm Multi-mode Transceiver
Small Form Pluggable (SFP+), with Diagnostic Monitoring 10G BASE-SW/SR 10G Ethernet, 10G Fiber channel

Features

- Compliant with SFP+ MSA SFF-8431
- 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	VOLTAGE	TEMPERATURE
JD850-SFP-LC.M	AC/AC	3.3V℃	-10℃ to -85℃

Transmit distance: 33m (OM1 Fiber), 82m (OM2 Fiber), 300m (OM3 Fiber), 400m(OM4 Fiber)

Diagnostics

Parameter	Range	Accuracy	Unit	Calibration
Internal Transceiver Temperature	-20 to 95	± 3	°C	Internal
Internal Transceiver Voltage	3.1 to 3.5	± 0.1	V	
Bias Current	0 to 20	± 10%	mA	
TX Power	-10 to +1	± 3	dB	
RX average Power	-14 to 0	± 3	dB	

Absolute Maximum Rating

PARAMETER	SYMBOL	MIN	MAX	UNITS	NOTE
Storage Temperature	T_S	−40	85	℃	
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
Case operating	T_c	-10	70	℃	
Temperature		-10	85	℃	
Supply Voltage	*Vcc*	3.14	3.46	V	
Supply Current	$I_{TX} + I_{RX}$		300	mA	
Power Consumption	*P*	---	1.0	W	

Transmitter Electro-optical Characteristics

***Vcc* = 3.14 V to 3.46 V, T_C = -10 ℃ to 70 ℃ & T_C = -10℃ to 85 ℃**

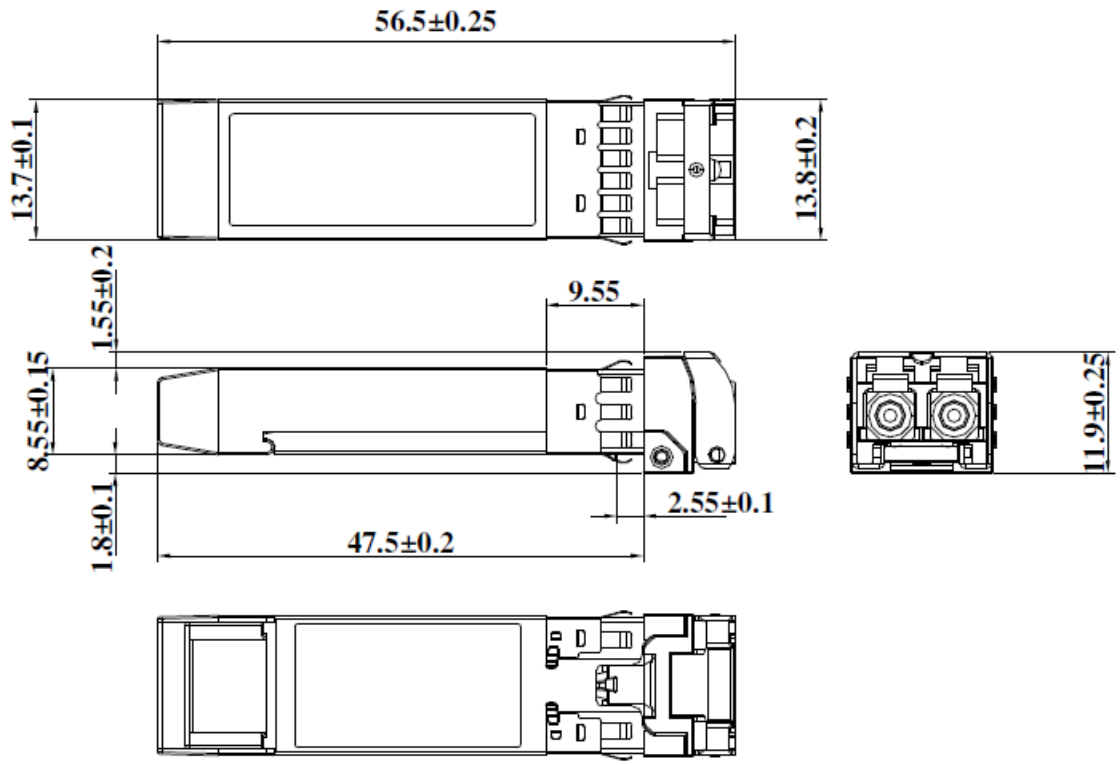
PARAMETER	SYMBOL	MIN	TYP.	MAX	UNITS
Data Rate	*B*		10.3125	10.7	Gbps
Output Optical Power (50/125□m fiber, NA=0.20) (62.5/125□m fiber, NA=0.275)	P_{out}	-7.1	---	-1	dBm
Optical Modulation Amplitude	*OMA*	-4.3			dBm
Extinction Ratio	*ER*	3.5			dB
Center Wavelength	λ_C	840	850	860	nm
Spectral Width (RMS)	$\Lambda\ \lambda$	---	---	0.45	nm
Transmitter and Dispersion Penalty	*TDP*			3.9	dB
Relative Intensity Noise	*RIN*	---	---	-128	dB/Hz
Output Eye			Compliant with IEEE802.3ae		
Max. P_{out} TX-DISABLE Asserted	P_{OFF}	---	---	-35	dBm
Differential Input Impedance	Z_d	80	100	120	Ω
Differential Input Voltage Swing	V_{DIFF}	200		800	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*	---	---	100	□s
TX_DISABLE Negate Time	*t_on*	---	---	2	ms
Time to initialize, include reset of TX_FAULT	*t_init*	---	---	300	ms
TX_FAULT from fault to assertion	*t_fault*	---	---	1	ms
TX_DISABLE time to start reset	*t_reset*	10	---	---	□s

Receiver Electro-optical Characteristics

***Vcc* = 3.14 V to 3.46 V, T_C = -10 °C to 70 °C & T_C = -10 °C to 85 °C**

PARAMETER	SYMBOL	MIN	TYP.	MAX	UNITS	NOTE
Data Rate	*B*		10.3125	10.7	Gbps	
Optical Input Power-maximum	P_{IN}	-1	---	---	dBm	BER < 10^{-12}
Receiver Sensitivity	P_{IN}	---	---	-9.9	dBm	BER < 10^{-12}
Receiver Sensitivity(OMA)	P_{IN}	---	---	-11.1	dBm	BER < 10^{-12}
Stressed Receiver Sensitivity(OMA)	P_{IN}	---	---	-7.5	dBm	BER < 10^{-12}
Operating Center Wavelength	λ_C	840	---	860	nm	
Optical Return Loss	*ORL*	12	---	---	dB	
Loss of Signal-Asserted	P_A	-30	---	---	dBm	
Loss of Signal-Deasserted	P_D	---	---	-12	dBm	
Differential Output Impedance	Z_d	80	100	120	Ω	
Differential Output Voltage	V_{DIFF}	300	---	800	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*	V	
Receiver Loss of Signal Assert Time	t_{A,RX_LOS}	---	---	100	µs	
Receiver Loss of Signal Assert Time	t_{D,RX_LOS}	---	---	100	µs	

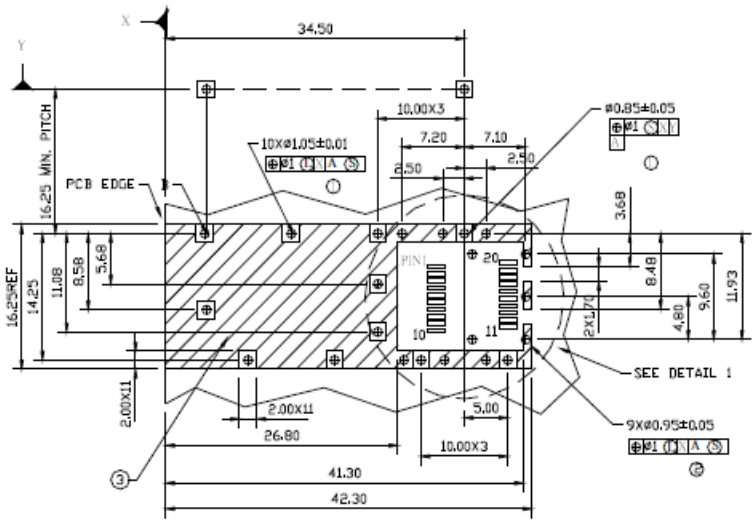
Dimensions

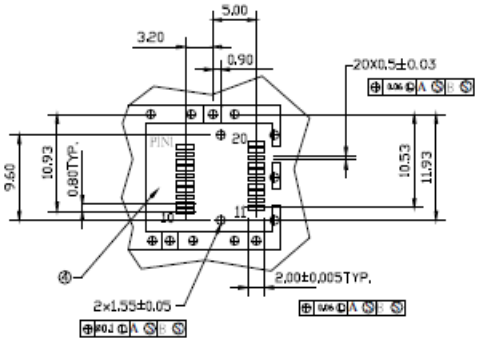


DIMENSIONS ARE IN MILLIMETERS

Unit: mm

SFP host board mechanical layout





DETAIL 1

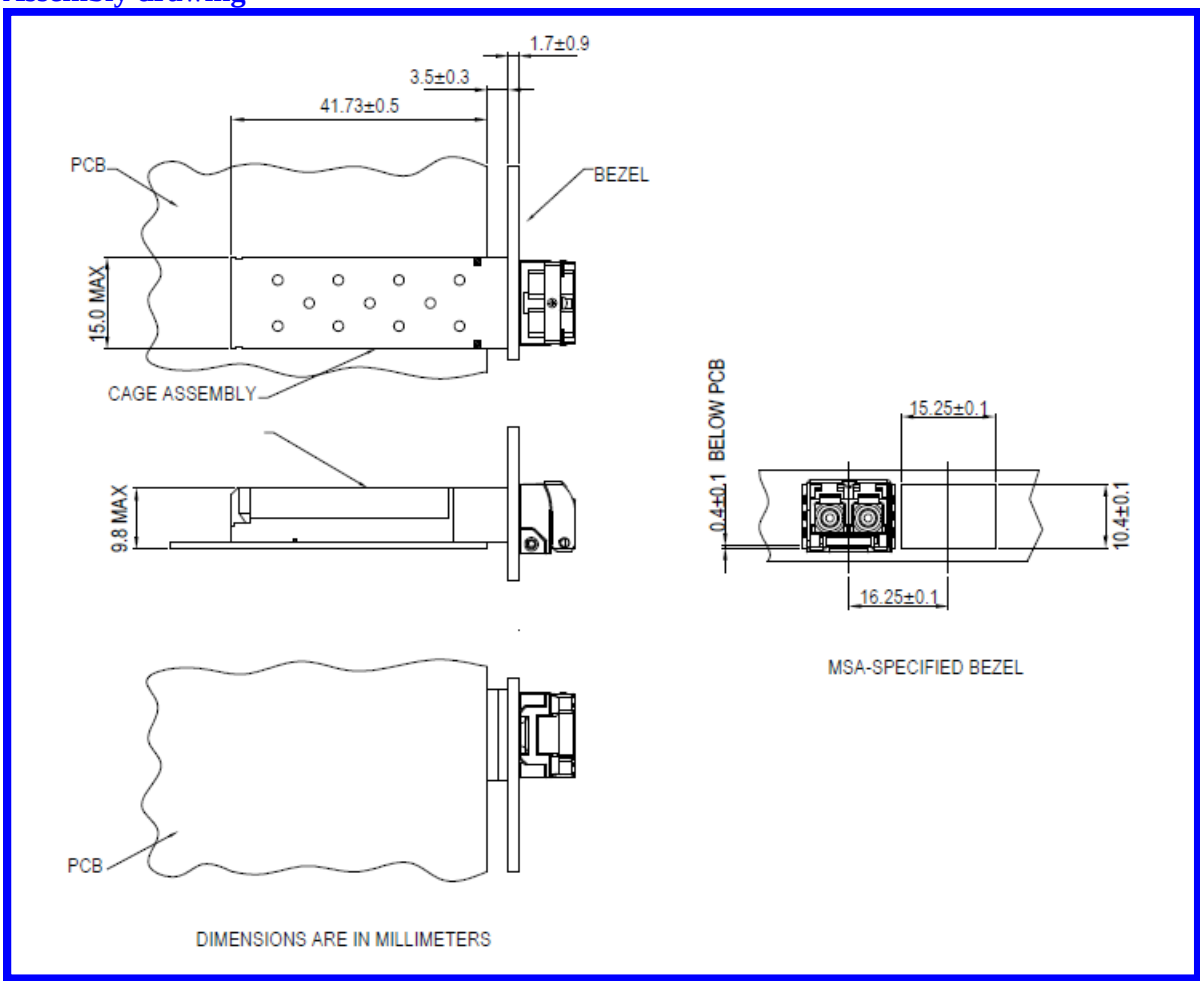
LEGEND

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)

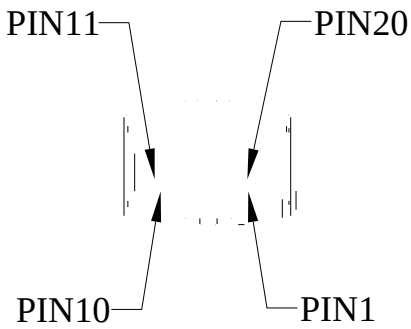
DIMENSIONS ARE IN MILLIMETERS

Unit: mm

Assembly drawing



Pin Assignment



Pin	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	*RS0*	RX Rate Select, No used
8	*RX_LOS*	Receiver Loss of Signal, TTL High, open collector
9	*RS1*	TX Rate Select, No used
10	R_{GND}	Receiver Ground
11	R_{GND}	Receiver Ground
12	*RX*	Receive Data out Bar, ac coupled
13	*RX*	Receive Data out, 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 in, ac coupled
19	*TX*	Transmit Data in Bar, ac coupled
20	T_{GND}	Transmitter Ground