RoHS compliant
TX-1270/RX-1310 nm Single-mode Bi-directional,
SMF 30km without Host FEC / 40km with Host FEC
SFP LC Simplex Connector, 25GEthernet/CPRI

Features

- Compliant with SFP+ MSA SFF-8431
- Compliant with SFF8472 diagnostic monitoring interface Duplex LC connector
- Single power supply 3.3V
- Hot Pluggable
- Link distance up to 30km without host FEC /40km with host FEC over single mode fiber

Ordering Information

PART NUMBER	TX/RX	TEMPERATURE	LD Type	Distance
LG38-J3M-TC-B27	1270/1310	0°C to 70 °C	1270 DFB	30km without host FEC
LG38-J3M-TJ-B27	1270/1310	-20°C to 85 °C	1270 DFB	40km with host FEC
LG38-J3M-TI-B27	1270/1310	-40°C to 85 °C	1270 DFB	

Diagnostics

Parameter	Range	Accuracy	Unit	Calibration
Internal Transceiver Temperature	-20 to 85	± 3	°C	Internal
Internal Transceiver Voltage	3.1 to 3.5	± 0.1	V	
Bias Current	0 to 80	± 10%	mA	
TX Power	0 to +6	± 3	dBm	
RX average Power	-18 to -6	± 3	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
Case operating Temperature	T_C	0	70	°C	-20~85°C for LG38-J3M-TJ-B27 -40~85°C for LG38-J3M-TI-B27
Supply Voltage	*Vcc*	3.14	3.46	V	
Supply Current	$I_{TX} + I_{RX}$		300	mA	
Power Consumption	*P*	---	1.5	W	

Transmitter Electro-optical Characteristics

Vcc = 3.1 V to 3.5 V, T_C = 0 °C to 70 °C
(T_C = -20 °C to 85 °C for LG38-J3M-TJ-B27 & T_C = -40 °C to 85 °C for LG38-J3M-TI-B27)

PARAMETER	SYMBOL	MIN	TYP.	MAX	UNITS	NOTE
Bit Rate	B	24	25.78	26.5	Gbps	
Output Optical Power	P_{out}	0	---	+6	dBm	Average
Extinction Ratio	ER	3.5	---	---	dB	
Center Wavelength	λ_C	1260	1270	1280	nm	
Spectral Width (-20dB)	$\Delta\lambda$	---	---	1	nm	
Side Mode Suppression Ratio	$SMSR$	30			dB	
Max. P_{out} TX-DISABLE Asserted	P_{OFF}	---	---	-45	dBm	
Differential Input Voltage	V_{DIFF}	180		850	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	μs	
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	---	---	μs	

Receiver Electro-optical Characteristics

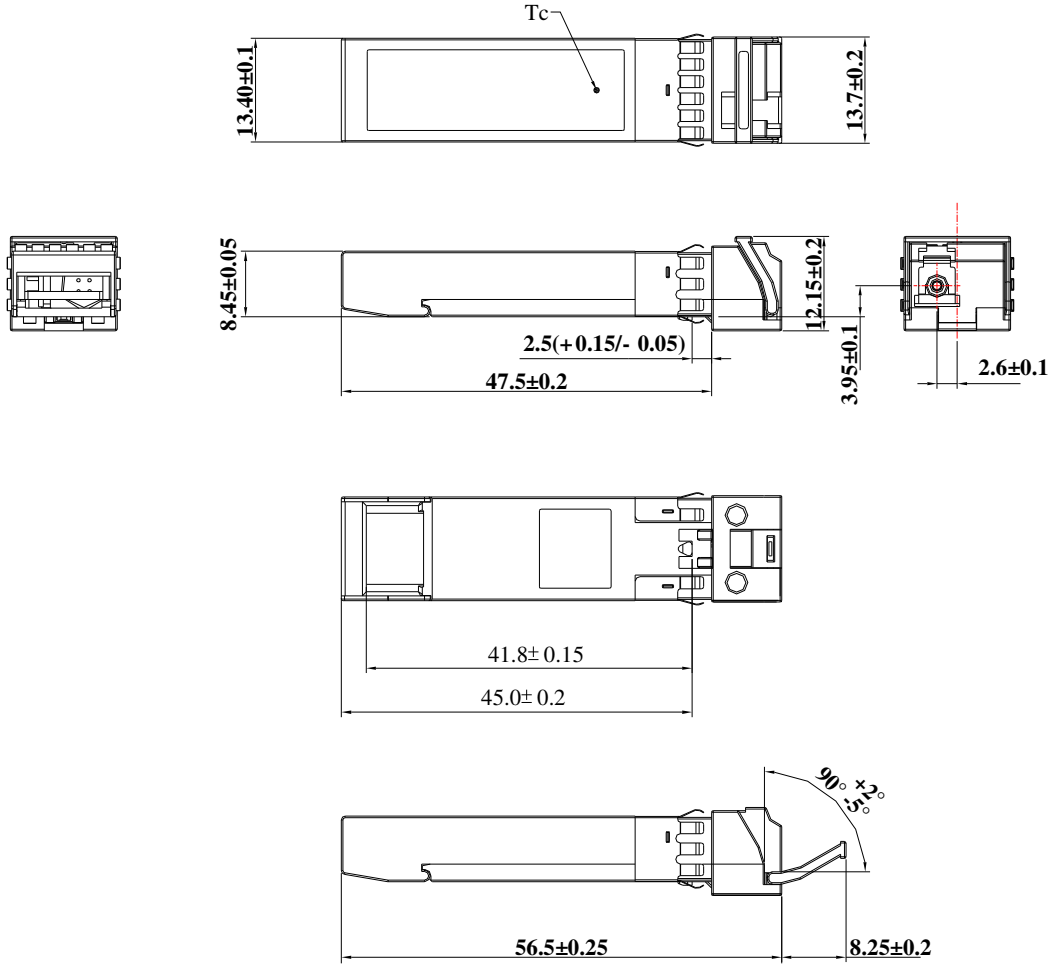
Vcc = 3.1 V to 3.5 V, T_C = 0 °C to 70 °C
(T_C = -20 °C to 85 °C for LG38-J3M-TJ-B27 & T_C = -40 °C to 85 °C for LG38-J3M-TI-B27)

PARAMETER	SYMBOL	MIN	TYP.	MAX	UNITS	NOTE
Data Rate	B	24	25.78	26.5	Gbps	
Receiver Sensitivity(OMA)	P_{IN}	---	---	-13	dBm	BER=10e-12
Receiver Sensitivity(OMA)	P_{IN}	---	---	-18	dBm	BER=5e-5
Operating Center Wavelength	λ_C	1300	---	1320	nm	
Optical Return Loss	ORL	14	---	---	dB	
Loss of signal -Deasserted	P_D	---	---	-18	dBm	
Loss of signal -Asserted	P_A	-30	---	---	dBm	
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_{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	

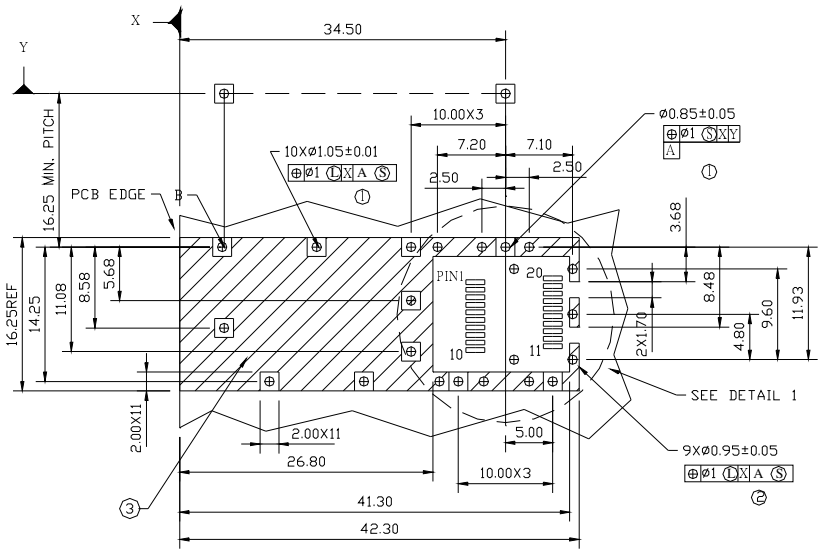
I2C Electrical Characteristics

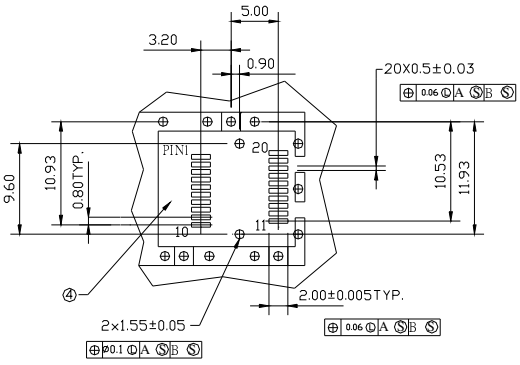
PARAMETER	SYMBOL	MIN	TYP.	MAX	UNITS	NOTE
High-Level Input Voltage SDA, SCL	VIH	0.7*Vcc	---	Vcc+0.3	V	
Low-Level Input Voltage SDA, SCL	VIL	-0.3	---	0.3*Vcc	V	
SCL Clock Frequency	fSCL	0	---	400	kHz	
Serial Interface Clock Holdoff "Clock Stretching"	T_clock_hold	---		500	μs	

Dimensions


Tc
13.40±0.1
13.7±0.2
8.45±0.05
12.15±0.2
2.5(+0.15/- 0.05)
47.5±0.2
3.95±0.1
2.6±0.1
41.8± 0.15
45.0± 0.2
90° +2° -5°
56.5±0.25
8.25±0.2

SFP host board mechanical layout





DETAIL 1

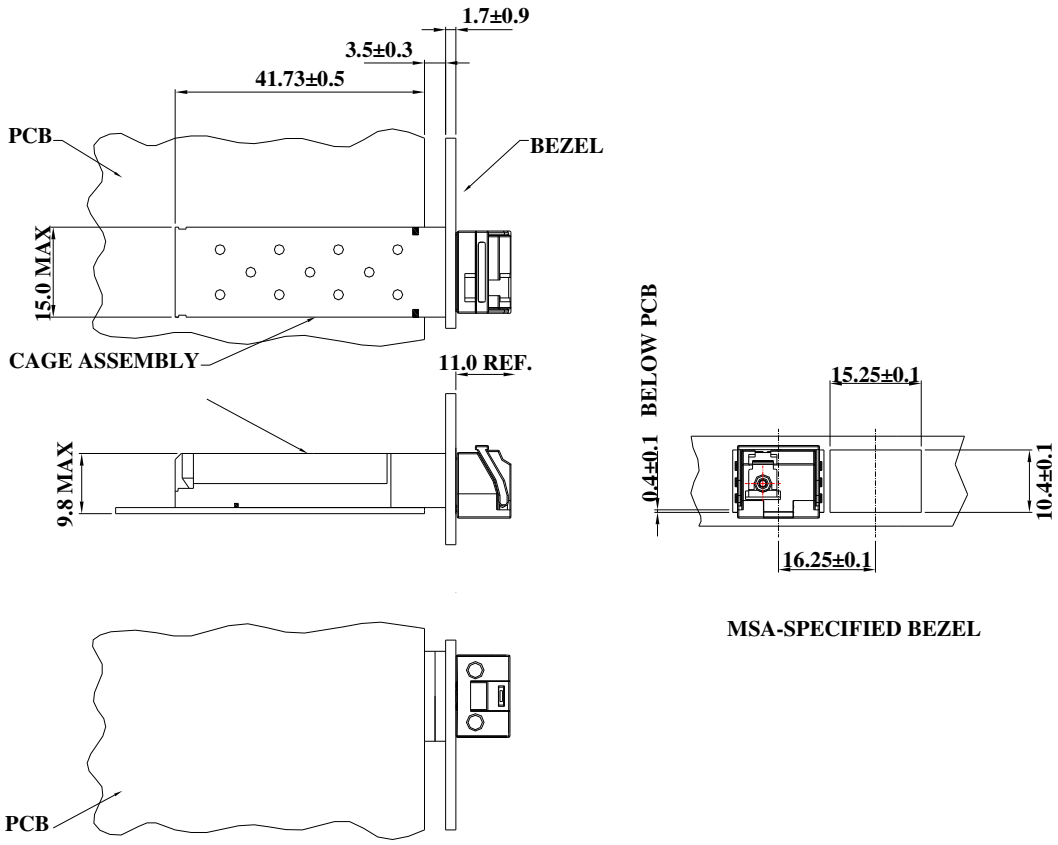
LEGEND

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

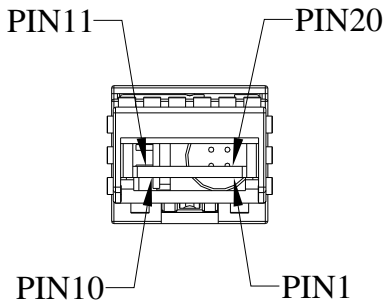
Assembly drawing



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	*SDA*	SDA Serial Data Signal
5	*SCL*	SCL Serial Clock Signal
6	*MOD_ABS*	Internal connected to ground
7	*RS0*	Rate select 0, not used
8	*RX_LOS*	Receiver Loss of Signal, LVTTL High, open collector
9	*RS1*	Rate select 1, not used
10	R_{GND}	Receiver Ground
11	R_{GND}	Receiver Ground
12	*RX–*	Receive Data Bar, ac coupled
13	*RX+*	Receive Data, 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, ac coupled
19	*TX–*	Transmit Data Bar, ac coupled
20	T_{GND}	Transmitter Ground

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