



25Gbps 1310nm SMF 10km SFP28 Optical Transceiver with Duplex LC Connector

Model No. CS13-25GF-3S-Tx-L

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 10km over single mode fiber
- Input/Output: AC/AC



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 30	±10%	mA	
TX Power	-4 to +2	±3	dB	
RX Average Power	-12 to +0	±3	dB	

ABSOLUTE MAXIMUM RATINGS

PARAMETER	SYMBOL	MIN	MAX	UNIT
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	UNIT	NOTES
Case Operating Temperature	T _C	0	70	°C	CS13-25GF-3S-TC-L
		-20	85		CS13-25GF-3S-TI-L
Supply Voltage	V _{CC}	3.14	3.46	V	
Supply Current	I _{TX} + I _{RX}		300	mA	
Power Consumption	P	-	1.0	W	

**TRANSMITTER ELECTRO-OPTICAL CHARACTERISTICS ($V_{CC} = 3.14V$ to $3.46V$, $T_C = 0^{\circ}C$ to $70^{\circ}C$ ($T_C = -20^{\circ}C$ to $85^{\circ}C$))**

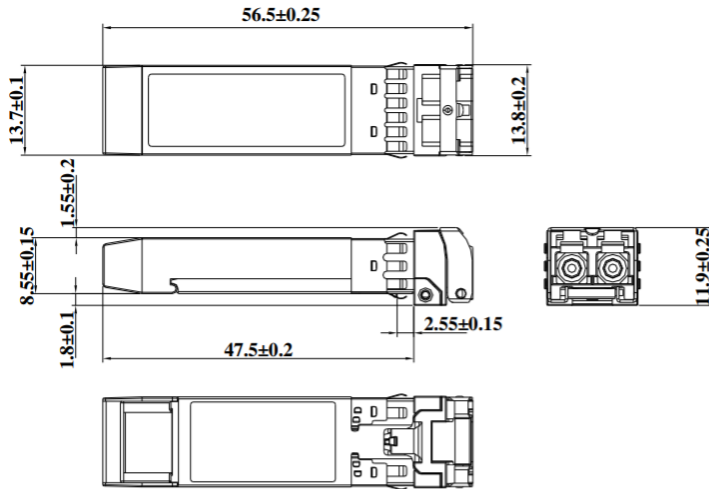
PARAMETER	SYMBOL	MIN	TYP.	MAX	UNIT
Data Rate	B	25.5	25.78		Gbps
Average Output Optical Power	P_{out}	-4	-	+2	dBm
Extinction Ratio	ER	3.5			dB
Center Wavelength	λ_C	1290	1310	1330	nm
Spectral Width (RMS)	$\Delta\lambda$	-	-	1	nm
Max. P_{out} TX-DISABLE Asserted	P_{OFF}	-	-	-35	dBm
Differential Input Impedance	Z_d		100		Ω
Differential Input Voltage Swing	V_{DIFF}	180		700	mV
Transmit Fault Output-Low	TX_FAULT_L	0.0	-	0.8	V
Transmit Fault Output-High	TX_FAULT_H	2.0	-	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}	-	-	100	μs
TX_DISABLE Time to start reset	t_{reset}	10	-	-	μs

RECEIVER ELECTRO-OPTICAL CHARACTERISTICS ($V_{CC} = 3.14V$ to $3.46V$, $T_C = 0^{\circ}C$ to $70^{\circ}C$ ($T_C = -20^{\circ}C$ to $85^{\circ}C$))

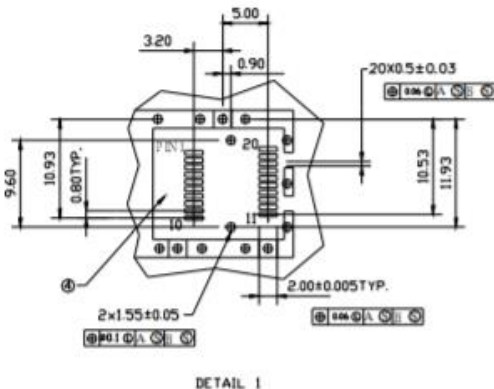
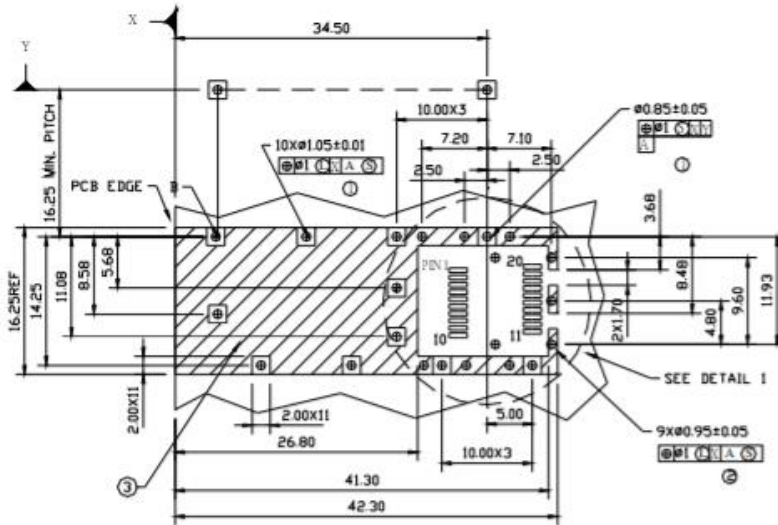
PARAMETER	SYMBOL	MIN	TYP.	MAX	UNIT
Data Rate	B	25.5	25.78		Gbps
Receiver Sensitivity (OMA)	P_{IN}	-	-	-11.5	dBm
Stressed Receiver Sensitivity (OMA)	P_{IN}	-	-	-6.8	dBm
Operating Center Wavelength	λ_C	1260	-	1360	nm
Optical Return Loss	ORL	12	-	-	dB
Loss of Signal-Asserted	P_A	-25	-	-	dBm
Loss of Signal-Deasserted	P_D	-	-	-12	dBm
Differential Output Impedance	Z_d		100		Ω
Differential Output Voltage	V_{DIFF}	300	-	800	mV
Receiver Loss of Signal Output Voltage-Low	RX_LOS_L	0	-	0.8	V
Receiver Loss of Signal Output-High	RX_LOS_H	2.0	-	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



DIMENSIONS (unit: mm)



SFP HOST BOARD MECHANICAL LAYOUT



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

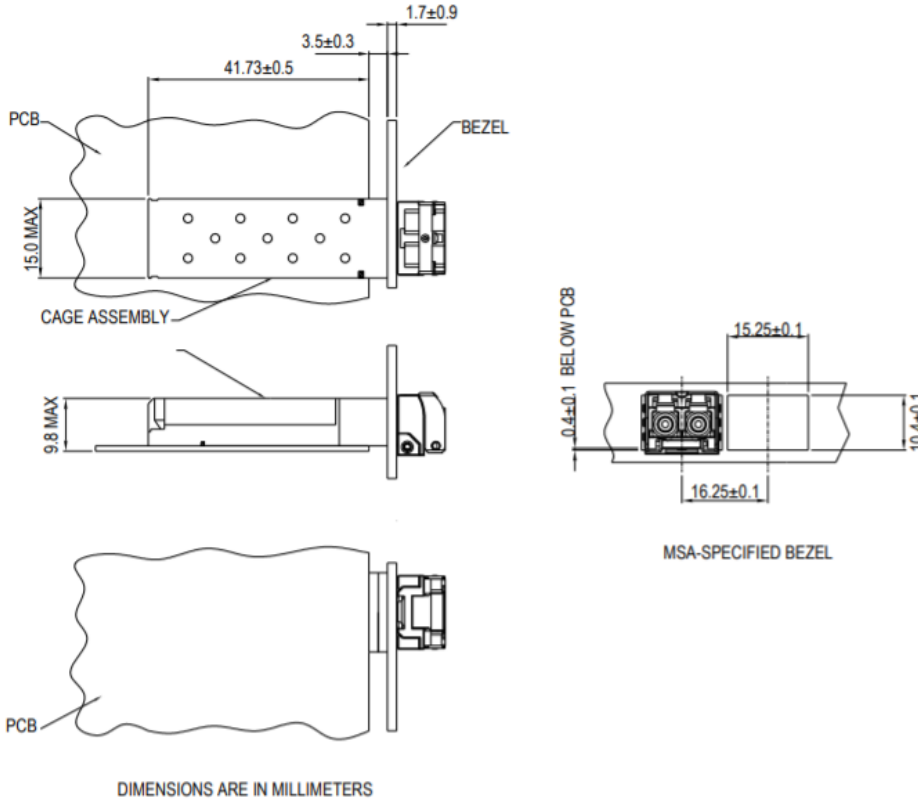
Lasermate Group, Inc.

19608 Camino De Rosa, Walnut, CA 91789, USA

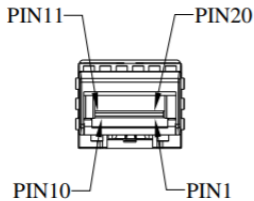
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ASSEMBLY DRAWING



PIN ASSIGNMENT



PIN	SIGNAL NAME	DESCRIPTION	PIN	SIGNAL NAME	DESCRIPTION
1	T _{GND}	Transmit Ground	11	R _{GND}	Receiver Ground
2	TX_FAULT	Transmit Fault	12	RX-	Receive Data out Bar, ac coupled
3	TX_DISABLE	Transmit Disable	13	RX+	Receive Data out, ac coupled
4	MOD_DEF (2)	SDA Serial Data Signal	14	R _{GND}	Receiver Ground
5	MOD_DEF (1)	SCL Serial Clock Signal	15	V _{CCR}	Receiver Power Supply
6	MOD_DEF (0)	TTL Low	16	V _{CCT}	Transmitter Power Supply
7	RS0	RX Rate Select, No used	17	T _{GND}	Transmitter Ground
8	RX_LOS	Receiver Loss of Signal, TTL High, open collector	18	TX+	Transmit Data in, ac coupled
9	RS1	TX Rate Select, No used	19	TX-	Transmit Data in Bar, ac coupled
10	R _{GND}	Receiver Ground	20	T _{GND}	Transmitter Ground



ORDERING INFORMATION

PART NUMBER	OPERATING TEMPERATURE
CS13-25GF-3S-TC-L	0°C to 70°C
CS13-25GF-3S-TI-L	-20°C to 85°C

Note: The specifications subject to change without notice.