



10GBASE-BX TX:1270nm/RX:1330nm SMF 10km BiDi SFP+ LC Optical Transceiver

Model No. 10G2T3-SSFPx-L

FEATURES

- 10.3125Gbps application
- Compliant with SFF 8432 SFP+ Module
- Simplex LC connector
- Single power supply 3.3V
- LVTTTL signal detect indicator
- Hot Pluggable
- Class 1 laser product compliant with EN 60825-1
- Reliability compliant with Telcordia (Bellcore) GR-468-CORE
- Input/Output: AC/AC



DIAGNOSTICS

PARAMETER	RANGE	ACCURACY	UNIT	CALIBRATION
Internal Transceiver Temperature	-40 to 95	±3	°C	Internal
Internal Transceiver Voltage	3.1 to 3.5	±0.1	V	
Bias Current	0 to 100	±10%	mA	
TX Power	-5 to 0.5	±3	dB	
RX Average Power	-14 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	10G2T3-SSFPC-L
		-40	85		10G2T3-SSFPI-L
Supply Voltage	V _{CC}	3.1	3.5	V	
Supply Current	I _{TX} + I _{RX}		300	mA	10G2T3-SSFPC-L
			350		10G2T3-SSFPI-L
Fiber		SMF (G.652)			
Distance	D	-	10	km	
Dispersion Penalty			2	dB	@10km

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**TRANSMITTER ELECTRO-OPTICAL CHARACTERISTICS ($V_{CC} = 3.1V$ to $3.5V$, $T_C = 0^\circ C$ to $70^\circ C$, $-40^\circ C$ to $85^\circ C$)**

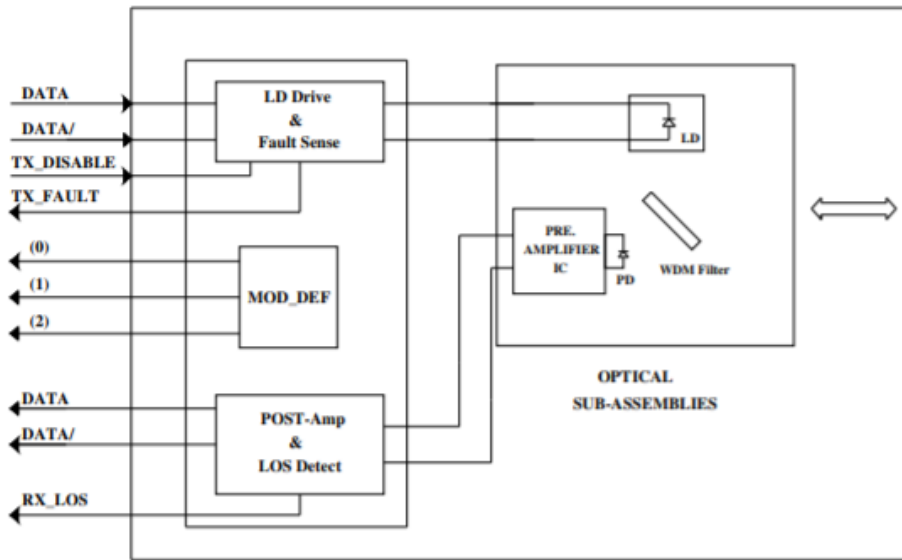
PARAMETER	SYMBOL	MIN	TYP.	MAX	UNIT	NOTES
Bit Rate	B	-	10.3125	-	Gbps	
Output Optical Power	P_{out}	-5	-	0.5	dBm	Average
Extinction Ratio	ER	4.8	-	-	dB	
Center Wavelength	λ_C	1260	1270	1280	nm	
Spectral Width (-20dB)	$\Delta\lambda$	-	-	1	nm	
Side Mode Suppression Ratio	SMSR	30			dB	
Max. P_{out} TX-DISABLE 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}	-	-	100	us	
TX_DISABLE Time to start reset	t_{reset}	10	-	-	μs	

RECEIVER ELECTRO-OPTICAL CHARACTERISTICS ($V_{CC} = 3.1V$ to $3.5V$, $T_C = 0^\circ C$ to $70^\circ C$, $-40^\circ C$ to $85^\circ C$)

PARAMETER	SYMBOL	MIN	TYP.	MAX	UNIT	NOTES
Bit Rate	B	-	10.3125	-	Gbps	
Optical Input Power-Maximum	P_{IN}	0.5	-	-	dBm	BER<10 ⁻¹²
Optical Input Power-Minimum (Sensitivity)	P_{IN}	-	-	-14	dBm	BER<10 ⁻¹²
Operating Center Wavelength	λ_C	1320	-	1340	nm	
Optical Return Loss	ORL	14	-	-	dB	
Loss of Signal-Asserted	P_A	-30	-	-	dBm	
Loss of Signal-Deasserted	P_D	-	-	-14	dBm	
Differential Output Voltage	V_{DIFF}	350	-	850	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	us	
Receiver Loss of Signal Assert Time (on to off)	t_{D,RX_LOS}	-	-	100	us	



BLOCK DIAGRAM OF TRANSCEIVER

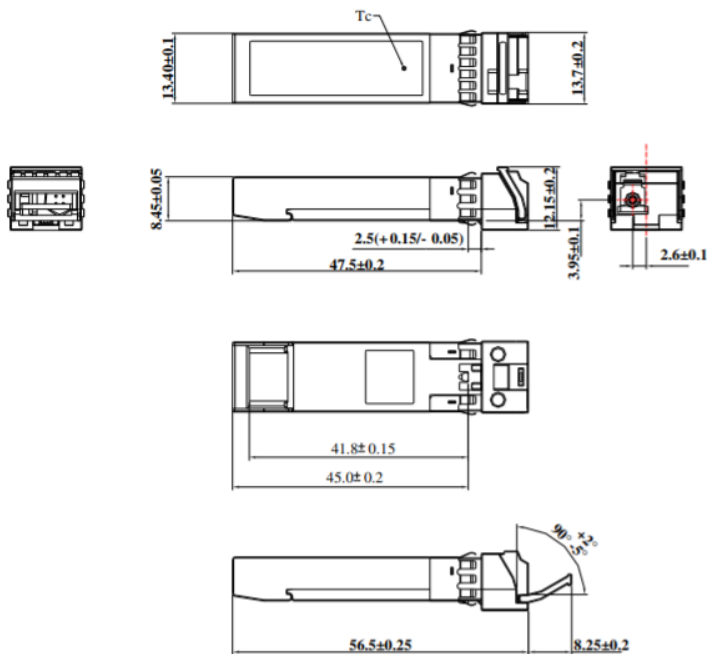


Transmitter and Receiver Optical Sub-assembly Section - A 1270 nm InGaAsP laser and an InGaAs PIN photodiode integrate with a WDM filter to form a bi-directional single fiber optical subassembly (OSA).

TX_DISABLE - The TX_DISABLE signal is high (TTL logic "1") to turn off the laser output.

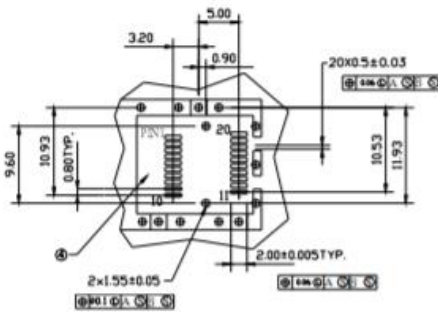
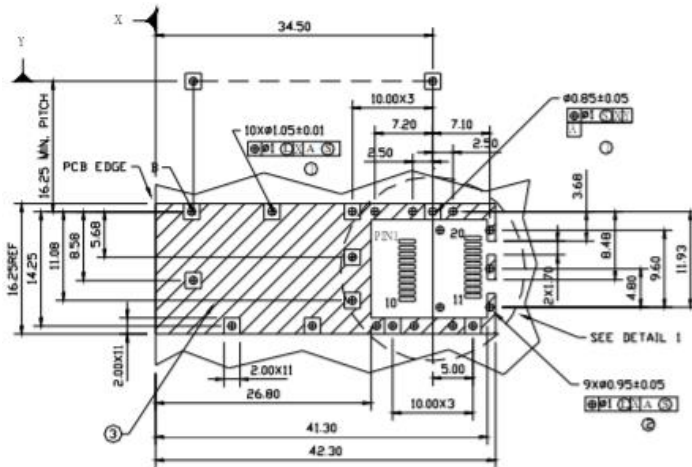
Receive Loss (RX_LOS) - The RX_LOS is high (logic "1") when there is no incoming light from the companion transceiver. This signal is normally used by the system for the diagnostic purpose.

DIMENSIONS (unit: mm)





SFP HOST BOARD MECHANICAL LAYOUT (unit: mm)



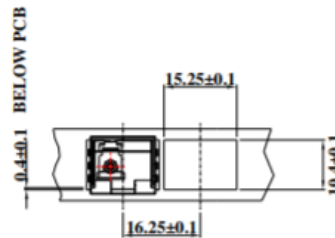
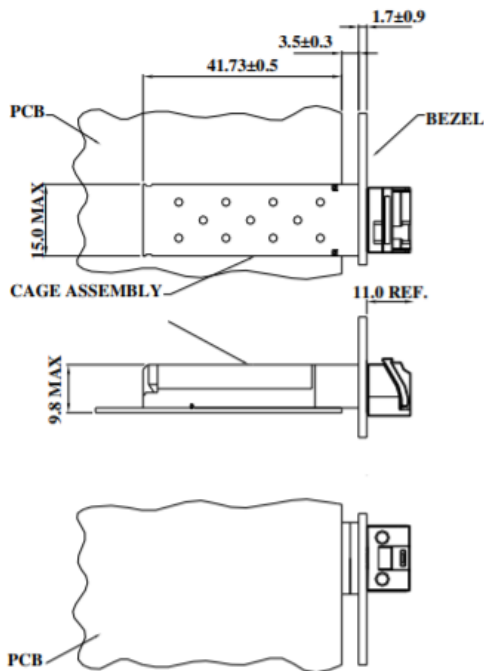
DETAIL I

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

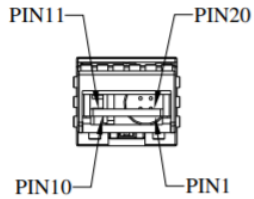
ASSEMBLY DRAWING (unit: mm)



MSA-SPECIFIED BEZEL



PIN ASSIGNMENT



Pin	Signal Name	Description
1	<i>T_{GND}</i>	Transmit Ground
2	<i>TX_FAULT</i>	Transmit Fault
3	<i>TX_DISABLE</i>	Transmit Disable
4	<i>SDA</i>	SDA Serial Data Signal
5	<i>SCL</i>	SCL Serial Clock Signal
6	<i>MOD_ABS</i>	Internal connected to ground
7	<i>RS0</i>	Rate select 0, not used
8	<i>RX_LOS</i>	Receiver Loss of Signal, LVTTTL High, open collector
9	<i>RS1</i>	Rate select 1, not used
10	<i>R_{GND}</i>	Receiver Ground
11	<i>R_{GND}</i>	Receiver Ground
12	<i>RX-</i>	Receive Data Bar, ac coupled
13	<i>RX+</i>	Receive Data, ac coupled
14	<i>R_{GND}</i>	Receiver Ground
15	<i>V_{CCR}</i>	Receiver Power Supply
16	<i>V_{CCT}</i>	Transmitter Power Supply
17	<i>T_{GND}</i>	Transmitter Ground
18	<i>TX+</i>	Transmit Data, ac coupled
19	<i>TX-</i>	Transmit Data Bar, ac coupled
20	<i>T_{GND}</i>	Transmitter Ground

ORDERING INFORMATION

PART NUMBER	OPERATING TEMPERATURE
10G2T3-SSFPC-L	0°C to 70°C
10G2T3-SSFPI-L	-40°C to 85°C

Note: The specifications subject to change without notice.