

10/25GBASE-BX SFP28 1330nm-TX/1270nm-RX 10km Industrial DOM Transceiver

10G-XFP-BXD-60K-LL



Application

- 10/25G Ethernet
- 25GBASE-LR
- Data Center
- CPRI Option 10 / eCPRI

Features

- Maximum Power Consumption 1.5W
- Operating Data Rate Up to 25.78Gbps
- Transmission Distance Up to 10km
- Industrial Temperature Range: -40~ +85°C
- Single 3.3V±5% Power Supply

Standards

- IEEE802.3cc
- SFF-8472
- SFF-8402
- SFF-8432
- SFF-8431
- CEI-28G-VSR
- LC Single Connector
- Hot Pluggable SFP+ MSA and SFP28 MSA Compliant
- Digital Diagnostic Monitoring(DOM) Supported
- Class 1 Laser Safety

Description

Longline's SFP28 transceiver supports up to 10km link lengths over OS2 SMF via an LC simplex connector and is suitable for 10/25G Ethernet, CPRI/eCPRI and Data Center applications. This bi-directional unit must be used with another transceiver or network equipment of complementary wavelengths. It is compliant with IEEE 802.3cc, SFP MSA, SFP28 MSA, SFF-8402, SFF-8472, SFF-8432, SFF-8431 and CEI-28G-VSR standards. The built-in digital diagnostics monitoring (DDM) allows access to real-time operating parameters.

The SFP-10/25G-BX-I-LL is for industrial operating temperature range and can work in harsh industrial environments, such as telecommunication, data processing & management, the application of industrial and factory automation, outdoor applications, rail and intelligent transportation systems (ITSs), marine, oil and gas, mining etc.

Products Specifications

I. Absolute Maximum Ratings

Parameter	Symbol	Min.	Max.	Unit
Storage Temperature Range	T_C	-45	85	°C
Supply Voltage	V_{CC}	-0.3	3.6	V
Relative Humidity	RH	0	85	%

II. Recommended Operating Conditions

Parameter	Symbol	Min.	Typical	Max.	Unit
Operating Case Temperature Range	T_S	-40		85	°C
Power Supply Voltage	V_{CC}	3.135	3.3	3.465	V
Bit Rate	BR	10.3125		25.78125	Gb/s
Max. Supported Link Length	L			10	km

III. Optical Characteristics

Parameter	Symbol	Min.	Typical	Max.	Unit	Notes
Transmitter						
Center Wavelength	λ	1320	1330	1340	nm	Upstream
		1260	1270	1280		Downstream
Spectral Width -20dB				1	nm	
Side Mode Suppression Ratio	SMSR	30			dB	
Average Launch Power(25Gbps)	P_{AVG}	-7		2.5	dBm	
Average Launch Power(10Gbps)	P_{AVG}	-8		1	dBm	
Transmitter and Dispersion Penalty 25G BER=5E-5	TDP			2.7	dB	
Average Launch Power of OFF Transmitter	P_{OFF}			-30	dBm	
Extinction Ratio	ER	3			dB	
RIN200MA	RIN			-130	dB/Hz	
Optical Return Loss Tolerance				20	dB	
Mask Margin		5			%	1
Receiver						
Center Wavelength	λ	1260	1270	1280	nm	Upstream
		1320	1330	1340		Downstream
Overload		2.5			dBm	

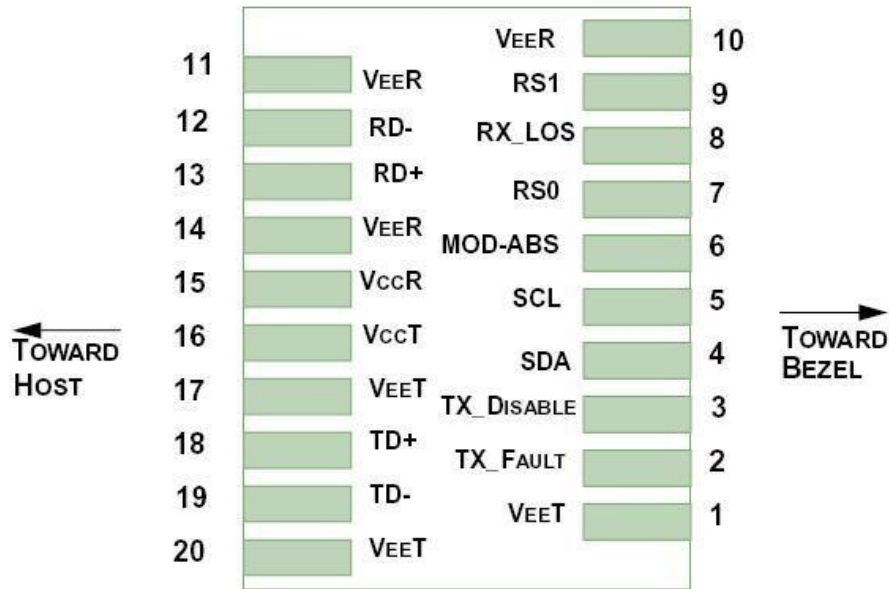
Parameter	Symbol	Min.	Typical	Max.	Unit	Notes
OMA Receiver Sensitivity Up to 25G 5E-5	P_{OMA}			-12	dBm	
Assert LOS	LOS_A	-30			dBm	
De-Assert LOS	LOS_D			-15	dBm	
LOS Hysteresis		0.5			dB	

NOTE 1: Template: {0.31, 0.40, 0.45, 0.34, 0.38, 0.40}, Hit Ratio: 5E-5.

IV. Electrical Characteristics

Parameter	Symbol	Min.	Typical	Max.	Unit	Notes
Supply Voltage	V_{CC}	3.14	3.3	3.46	V	
Supply Current	I_{CC}			360	mA	@3.3V
Transmitter (Module Input, TP1)						
Input Differential Impedance	R_{IN}		100		Ω	
Single Ended Data Input Swing	V_{IN}	90		450	mV _{p-p}	
Transmit Disable Voltage	V_{DIS}	2		$V_{CC}HOST$	V	
Transmit Enable Voltage	V_{EN}	V_{EE}		$V_{EE}+0.8$	V	
Transmit Fault Assert Voltage	V_{FA}	2.2		$V_{CC}HOST$	V	
Transmit Fault De-Assert Voltage	V_{FDA}	V_{EE}		$V_{EE}+0.4$	V	
Receiver						
Single Ended Data Output Swing	V_{OD}	200		450	mV _{p-p}	
LOS Fault	V_{LOSFT}	2.2		$V_{CC}HOST$	V	
LOS Normal	V_{LOSNR}	V_{EE}		$V_{EE}+0.4$	V	

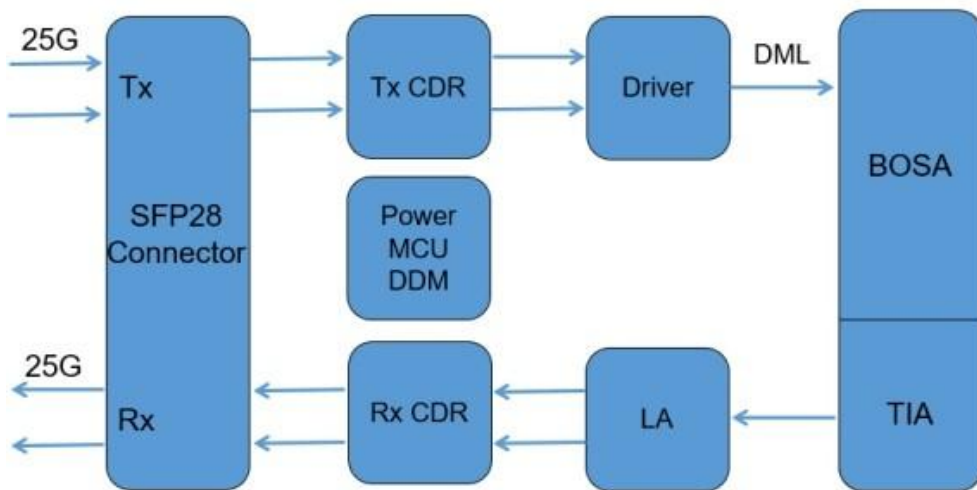
V. Pin Description



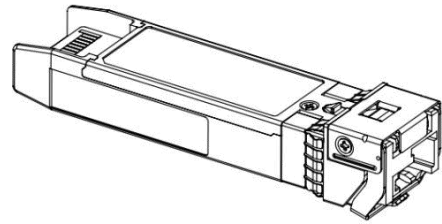
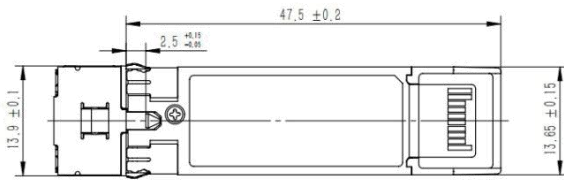
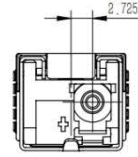
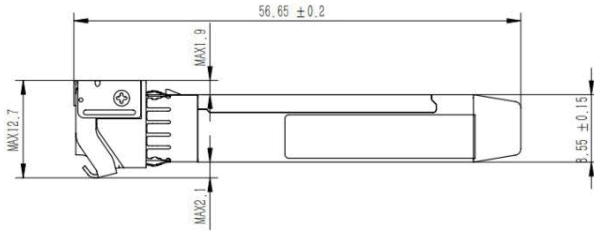
Pin Number	Symbol	Name	Description
1, 17, 20	V_{eeT}		Connected to Signal Ground on the Host Board
2	TX Fault	LVTTTL Output	Module Transmitter Fault Output
3	TX Disable	LVTTTL Input	Module Transmitter Disable Control
4	SDA	LVTTTL Input/Output	2-wire Serial Interface Data
5	SCL	LVTTTL Input/Output	2-wire Serial Interface Clock
6	MOD-ABS		Module Absent (Connected to Module Ground)
7	RS0	LVTTTL Input	Rate Select 0 (Rx): Low=CDR Bypass; High=CDR Select
8	LOS	LVTTTL Output	Receiver Loss of Signal
9	RS1	LVTTTL Input	Rate Select 1 (Tx): Low=CDR Bypass; High=CDR Select
10,11,14	V_{eeR}		Connected to Signal Ground on the Host Board

Pin Number	Symbol	Name	Description
12	RD-	CML Output	Receiver Inverted Data Output, Internally Ac Coupled and Terminated
13	RD+	CML Output	Receiver Non-inverted Data Output, Internally Ac Coupled and Terminated
15	V _{CC} R		Receiver Power 3.3V Supply
16	V _{CC} T		Transmitter Power 3.3V Supply
18	TD+	CML Input	Transmitter Non-inverted Data Input, Internally AC Coupled and Terminated
19	TD-	CML Input	Transmitter Inverted Data Input, Internally AC Coupled and Terminated

VI. Principle Diagram



VII. Diagram Mechanical Drawing



Unit, mm
Unspecified Tolerance: ± 0.1 mm