SFP-1G-BX-10

1000Base SFP BiDi LX (BXU)1310/1490nm, (BXD)1490/1310nm SMF 10km Transceiver

Product Features

- Up to 1.25Gb/s data links
- 1310nm FP laser and PIN receiver
- 1490nm DFB laser and PIN receiver
- Up to 10km on 9/125um SMF
- Hot-pluggable SFP footprint
- Simplex LC/UPC type pluggable optical interface
- Low power dissipation
- RoHS-10 compliant and lead-free
- Support Digital Monitoring interface
- Single +3.3V power supply
- Compliant with SFF-8472
- Metal enclosure, for lower EMI
- Meet ESD requirements, resist 8KV direct contact voltage
- Available operating temperature ranges:
  - Commercial: 0°C to 70°C
  - Industrial: -40°C to 85°C

Product Applications

- 1000BASE-LX
- OTN
- Other optical links

I. Maximum Ratings

Exceeding the limits below may damage the transceiver module permanently.

Parameter	Symbol	Min.	Typ.	Max.	Units
Storage Temperature	TS	-40		+85	℃
Power Supply Voltage	Vcc	-0.5		3.6	V
Relative Humidity (non-condensation)	RH	5		95	%
Damage Threshold	THd	5			dBm

II. Operating Specifications

Parameter	Symbol	Min.	Typ.	Max.	Units	Notes
Case Operating Temperature	TC	0		+70	°C	Commercial
		-40		+85	°C	Industrial
Power Supply Voltage	VCC	3.1	3.3	3.47	V	
Data Rate	BR		1.25		Gbps	
Control Input Voltage High		2		Vcc	V	
Control Input Voltage Low		0		0.8	V	
Link Distance	D			10	km	9/125um

III. Optical Characteristics

Parameter	Symbol	Min.	Typ.	Max.	Unit	Notes
Transmitter						
Centre Wavelength	λC	1290	1310	1330	nm	BXU
		1470	1490	1510		BXD
Spectral Bandwidth (RMS)	σ			3.5/1	nm	FP/DFB
Side Mode Suppression Ratio	SMSR	30			dB	DFB
Average Output Power*	Pout, AVG	-9		-3	dBm	1
Optical Extinction Ratio	ER	9			dB	
Transmitter OFF Output Power	POff			-45	dB/Hz	
Transmitter Eye Mask	Compliant with 802.3z(class 1 laser safety)					2
Receiver						
Center Wavelength	λc	1470	1490	1510	nm	BXU
		1290	1310	1330		BXD
Receiver Sensitivity (AVG Power)	PIN			-20	dBm	3
Input Saturation Power (overload)	Psat	-3			dBm	
LOS Assert	LOSA	-36			dBm	4
LOS De-Assert	LOSD			-21	dBm	4
LOS Hysteresis	LOSH	0.5			dBm	

Notes:

1. Measure at 2^7-1 NRZ PRBS pattern
2. Transmitter eye mask definition.
3. Measured with Light source 1310nm/1490nm, ER=9dB; BER≤1E-12 @PRBS=2^7-1 NRZ
4. When LOS de-asserted, the RX data+/- output is High-level (fixed).

IV. Electrical Characteristics

Parameter	Symbol	Min.	Typ.	Max.	Unit	Notes
Power Consumption	P			0.86	W	Commercial
				0.95		Industrial
Supply Current	Icc			260	mA	Commercial
				280		Industrial
Transmitter						
Single-ended Input Voltage Tolerance	Vcc	-0.3		4.0	V	
Differential Input Voltage Swing	Vin,pp	200		2400	mVpp	
Differential Input Impedance	Zin	90	100	110	Ohm	
Transmit Disable Assert Time				5	us	
Transmit Disable Voltage	Vdis	Vcc-1.3		Vcc	V	
Transmit Enable Voltage	Ven	Vee-0.3		0.8	V	
Receiver						
Differential Output Voltage Swing	Vout,pp	500		900	mVpp	
Differential Output Impedance	Zout	90	100	110	ohms	
Data output rise/fall time	Tr/Tf		100		ps	
LOS Assert Voltage	VlosH	Vcc-1.3		Vcc	V	
LOS De-assert Voltage	VlosL	Vee-0.3		0.8	V	

Warranty
All transceivers feature a limited lifetime warranty.

Disclaimer
External physical characteristics are subject to variation. This may include, but is not limited to, external case designs, pull tab colors and/or shapes, removal latch styles or colors, and label sizes and placement. These variations do not affect the function or characteristics of the transceivers.