SFP-1G-BX-60

1000Base SFP BiDi EX (BXU)1310/1490nm, (BXD)1490/1310nm SMF 60km Transceiver

Product Features

- Up to 1.25Gb/s data links
- 1310nm DFB laser and PIN receiver
- 1490nm DFB laser and PIN receiver
- Up to 60km on 9/125um SMF
- Single 3.3V Power supply and TTL Logic Interface
- Hot-Pluggable SFP Footprint Simplex SC/LC
- Connector Interface
- Class 1 FDA and IEC60825-1 Laser Safety Compliant
- Compliant with SFP MSA Specification
- Compliant with Digital Diagnostic Monitor Interface SFF 8472 MSA
- Available operating temperature ranges:
  - Commercial: 0°C to 70°C
  - Industrial: -40°C to 85°C

Product Applications

- 1000BASE-EX
- 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			95	%

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	
Supply Current	ICC			300	mA	
Link Distance	D			60	km	9/125um

III. Electrical Characteristics

Parameter	Symbol	Min.	Typ.	Max.	Unit	Notes
Transmitter						
LVPECL Inputs (Differential)	Vin	400		2000	mVpp	1, 3
Input Impedance (Differential)	Zin	85	100	115	Ohms	2
(TX_DIS) Disable		2		Vcc+0.3	V	
(TX_DIS) Enable		0		0.8	V	
(TX_FAULT) Fault		2		Vcc+0.3	V	
(TX_FAULT) Normal		0		0.8	V	
Receiver						
LVPECL Outputs (Differential)	Vout,pp	400		2000	mVpp	1, 3
Output Impedance (Differential)	Zout	85	100	115	ohms	
(RX_LOS) LOS		2		Vcc+0.3	V	
(RX_LOS) Normal		0		0.8	V	
MOD_DEF (0:2)	VOH	2.5			V	
	VOL	0		0.5	V	

Notes:

1. AC coupled inputs
2. Rin > 100 kohm @ DC
3. LVPECL logic, internally AC coupled.

IV. Optical Characteristics

Parameter	Symbol	Min.	Typ.	Max.	Unit	Notes
Transmitter						
Centre Wavelength	λC	1270	1310	1350	nm	BXU
		1480	1490	1500		BXD
Spectral width (-20dB)	σ			1	nm	
Side Mode Suppression Ratio	SMSR	30			dB	
Average Output Power	Pout, AVG	-5		0	dBm	1
Optical Extinction Ratio	ER	9			dB	
Rise/Fall Time (20%～80%)	Tr,Tf			260	ps	
TX_Disable Assert Time	Toff			10	us	
Pout@TX Disable Asserted	Pot			-45	dBm	
Output Optical Eye	Compliant with IEEE 802.3ah-2004					2
Receiver						
Center Wavelength	λc	1480	1490	1500	nm	BXU
		1270	1310	1350		BXD
Receiver Sensitivity (AVG Power)	Pmin			-24	dBm	4
Input Saturation Power (overload)	Pmax	-3			dBm	
LOS Assert	LOSA	-35			dBm	
LOS De-Assert	LOSD			-25	dBm	
LOS Hysteresis	LOSH	0.5			dBm	

Notes:

1. Output is coupled into a 9/125μm single-mode fiber.
2. Filtered, measured with a PRBS 2^7-1.
3. LVPECL logic, internally AC coupled.
4. Measured at all data rates specified in Data Rate table with ER=9 Db, 2^7-1 PRBS data pattern, BER <1E-12.
5. Eye Pattern Mask

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.