XFP-B1045L-80

Optical XFP Module

10Gbps XFP Transceiver Bi-Di TX1490/RX1550nm 80KM LC

Features

- Supports 9.95Gbps to 11.3Gbps bit rates
- 1490nm EML laser and APD receiver
- Up to 80km for SMF transmission
- Hot-pluggable XFP footprint
- XFI Loopback Mode
- Compliant with XFP MSA with single LC receptacle
- 2-wire interface with integrated Digital Diagnostic monitoring
- EEPROM with Serial ID Functionality
- Single +3.3V power supply
- Power dissipation <2.5W
- Compatible with RoHS
- Operating case temperature:

  Standard: 0 to +70° C

  Industrial: -40 to +85° C

Application

- 10GBASE-BX 10.3125Gb/s Ethernet
- 10GBASE-BX 9.953Gb/s Ethernet
- SONET OC-192 SR-1 SDH STM I-64.1

Standard

- Compliant with XFP MSA
- Compliant with SFF-8472
- Compliant with IEEE 802.3ae

Absolute Maximum Ratings

Parameter	Symbol	Min	Max	Unit
Supply Voltage	Vcc	-0.3	4	V
Storage Temperature	Ts	-40	+85	°C
Operating Humidity	-	5	85	%

Recommended Operating Conditions

Parameter		Symbol	Min	Typical	Max	Unit
Operating Case Temperature	Standard	Tc	0		+70	°C
	Industrial		-40		+85	°C
Power Supply Voltage		Vcc	3.13	3.3	3.47	V
Power Supply Current		Icc			850	mA
Data Rate			9.95	10.3	11.3	Gbps
Transmission Distance			-		80	km

Optical and Electrical Characteristics

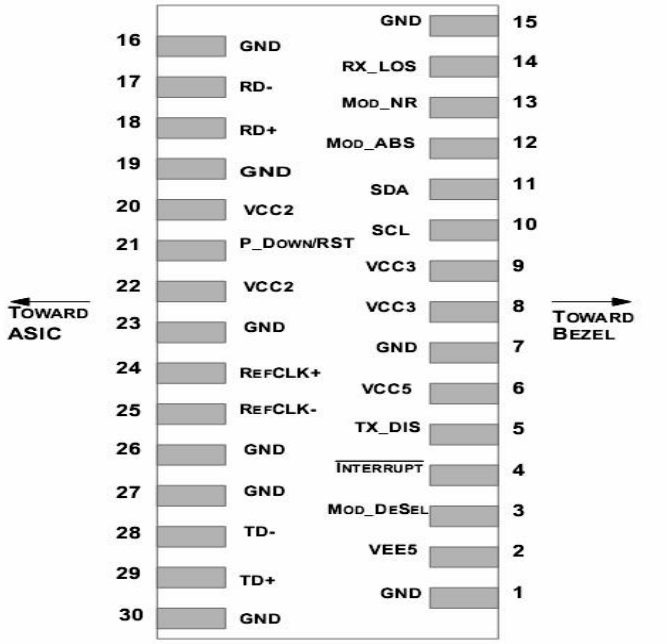
Parameter	Symbol	Min	Typical	Max	Unit	Notes
Transmitter						
Centre Wavelength	λc	1480	1490	1500	nm	
Spectral Width（-20dB）	Δλ			1	nm	
Side-Mode Suppression Ratio	SMSR	30	-		dB	
Average Output Power	P_{out}	-1		4	dBm	

Average Launch power of OFF transmitter		P_{off}			-45	dBm	1
Extinction Ratio		ER	6			dB	
Data Input Swing Differential		V_{IN}	120		820	mV	2
Input Differential Impedance		Z_{IN}	80	100	120	Ω	
Supply Voltage – 1.8V supply		Vcc2	1.71		1.89	V	
Supply Voltage – 3.3V supply		Vcc3	3.13		3.47	V	
Supply Current – 1.8V supply		Icc2			200	mA	
Supply Current – 3.3V supply		Icc3			650	mA	
Module total power		P			2.5	W	
Interrupt Assert Delay		Interrupt_on			200	ms	
Interrupt Negate Delay		Interrupt_off			500	us	
Mod_NR Assert / Negate Delay					1	ms	
P-Down reset time			10			us	
XFP Interrupt, Mod_NR	Vol		0		0.4	V	
	Voh		VccHOST -0.5		VccHOST +0.3	V	
P_Down/RST	Vil		-0.3		0.8	V	
	Vih		2.0		Vcc3+0.3	V	
TX Disable	Disable		2		Vcc	V	
	Enable		GND		GND+0.8	V	
Receiver							
Centre Wavelength		λc	1540	1550	1560	nm	
Receiver Sensitivity					-24	dBm	3
Receiver Overload			-6			dBm	3
LOS De-Assert		LOS_D			-25	dBm	
LOS Assert		LOS_A	-38			dBm	
LOS Hysteresis			0.5		4	dB	
Differential Output Impedance		Rout	80	100	120	Ω	
Differential data output swing		Vout,pp	340		850	mV	
Data Output Rise/Fall time		tr/tf		20		ps	
LOS Output Voltage-High		VLOSH	Vcc – 0.5		Vcc	V	
LOS Output Voltage-Low		VLOSL	GND		GND+0.5	V	

Notes:

1. The optical power is launched into SMF.
2. PECL input, internally AC-coupled and terminated.
3. Measured with a PRBS2^{31}-1 test pattern @10312Mbps, BER ≤1×10^{-12}.

Pin Description



Pin	Signal Name	Description	Plug Seq.	Notes
1	GND	Module Ground		1
2	VEE5	Optional –5.2 Power Supply – Not required		
3	Mod-Desel	Module De-select; When held low allows the module to respond to 2-wire serial interface commands	LVTTL-I	
4	Interrupt	Interrupt (bar); Indicates presence of an important condition which can be read over the serial 2-wire interface	LVTTL-O	2
5	TX_DIS	Transmitter Disable; Transmitter laser source turned off	LVTTL-I	
6	VCC5	+5 Power Supply		
7	GND	Module Ground		1
8	VCC3	+3.3V Power Supply		
9	VCC3	+3.3V Power Supply		
10	SCL	Serial 2-wire interface clock	LVTTL-I	2
11	SDA	Serial 2-wire interface data line	LVTTL-I/O	2
12	Mod_Abs	Module Absent; Indicates module is not	LVTTL-I	2

		present. Grounded in the module.		
13	Mod_NR	Module Not Ready; XGIGA defines it as a logical OR between RX_LOS and Loss of Lock in TX/RX.	LVTTL-I	2
14	RX_LOS	Receiver Loss of Signal indicator	LVTTL-I	2
15	GND	Module Ground		1
16	GND	Module Ground		1
17	RD-	Receiver inverted data output	CML-O	
18	RD+	Receiver non-inverted data output	CML-O	
19	GND	Module Ground		1
20	VCC2	+1.8V Power Supply – Not required		
21	P_Down/RST	Power Down; When high, places the module in the low power stand-by mode and on the falling edge of P_Down initiates a module reset Reset; The falling edge initiates a complete reset of the module	LVTTL-I	
22	VCC2	including the 2-wire serial interface, equivalent to a power cycle. +1.8V Power Supply – Not required		
23	GND	Module Ground		1
24	RefCLK+	Reference Clock non-inverted input, AC coupled on the host board – Not required	PECL-I	3
25	RefCLK-	Reference Clock inverted input, AC coupled on the host board – Not required	PECL-I	3
26	GND	Module Ground		1
27	GND	Module Ground		1
28	TD-	Transmitter inverted data input	CML-I	
29	TD+	Transmitter non-inverted data input	CML-I	
30	GND	Module Ground		1

Notes:

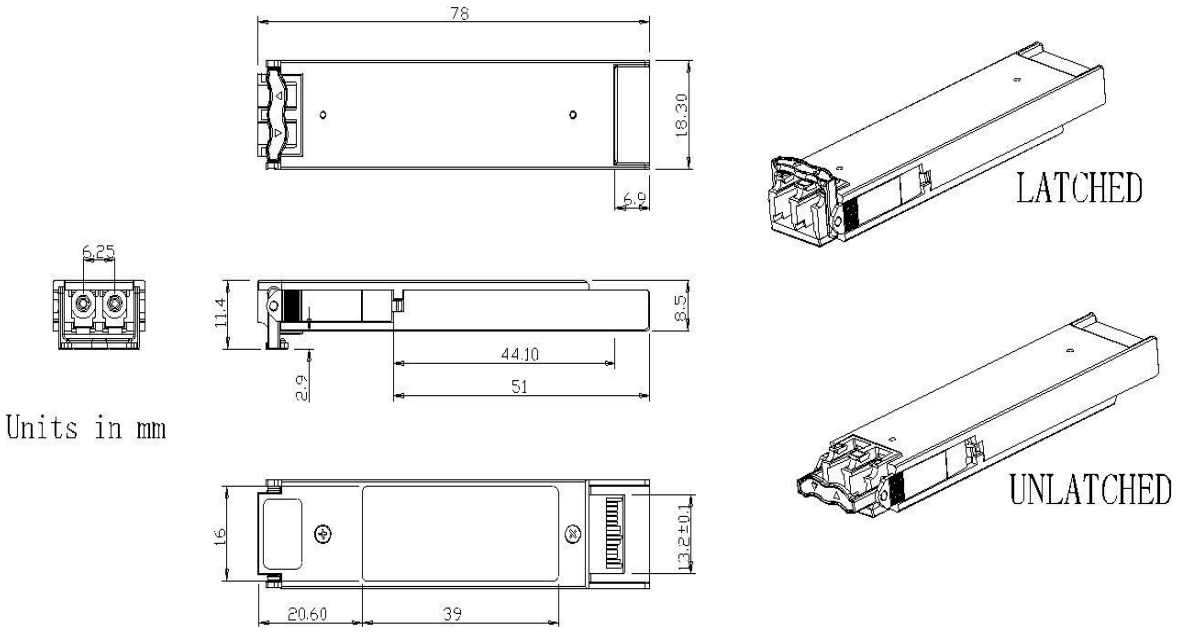
Plug Seq.: Pin engagement sequence during hot plugging.

1) Module circuit ground is isolated from module chassis ground within the module.

2) Open collector; should be pulled up with 4.7k – 10kohms on host board to a voltage between 3.15V and 3.6V.

3) A Reference Clock input is not required.

Mechanical Dimensions



Ordering information

Model No.	Product Description
XFP-B1045L-80	10Gbps, Bidi TX1490/RX1550nm, SMF, 80km, 0ºC ~ +70ºC, with DDM
XFP-B1045L-80I	10Gbps, Bidi TX1490/RX1550nm, SMF, 80km, -40°C~+85°C, with DDM

For further information, please visit our website https://www.aoatech.com