

# XFP-B1023L-40

## Optical XFP Module

10Gbps XFP Transceiver Bi-Di TX1270/RX1330nm 40KM LC



### Features

- Supports 9.95Gbps to 11.3Gbps bit rates
- 1270nm DFB laser and PIN receiver
- Up to 40km 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 <2.0W
- 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	V <sub>cc</sub>	0	4	V
Storage Temperature	T <sub>s</sub>	-40	+85	°C
Operating Humidity	-	5	85	%

## Recommended Operating Conditions

Parameter	Symbol	Min	Typical	Max	Unit
Operating Case Temperature	Standard	0		+70	°C
	Industrial	-40		+85	°C
Power Supply Voltage	V <sub>cc</sub>	3.13	3.3	3.47	V
Power Supply Current	I <sub>cc</sub>			600	mA
Data Rate			10.3	11.3	Gbps
Transmission Distance		-	40	-	km

## Optical and Electrical Characteristics

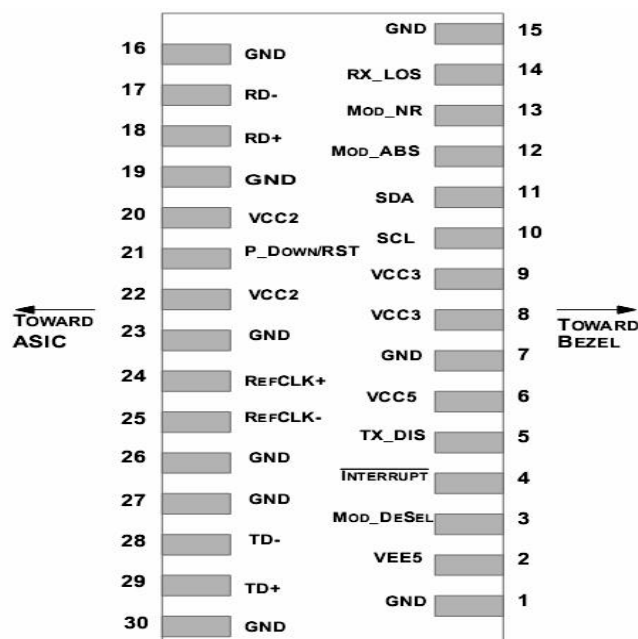
Parameter	Symbol	Min	Typical	Max	Unit	Notes
<b>Transmitter</b>						
Centre Wavelength	$\lambda_c$	1260	1270	1280	nm	
Spectral Width (-20dB)	$\Delta\lambda$			1	nm	
Side-Mode Suppression Ratio	SMSR	30	-		dB	
Average Output Power	P <sub>out</sub>	0		5	dBm	1

Extinction Ratio		ER	3.5			dB	
Data Input Swing Differential		V <sub>IN</sub>	120		820	mV	2
Input Differential Impedance		Z <sub>IN</sub>	85	100	115	Ω	
TX Disable	Disable		2.4		V <sub>cc</sub>	V	
	Enable		-0.3		0.8	V	
<b>Receiver</b>							
Centre Wavelength		λ <sub>c</sub>	1320	1330	1340	nm	
Receiver Sensitivity					-15	dBm	3
Receiver Overload			0.5			dBm	3
LOS De-Assert		LOS <sub>D</sub>			-17	dBm	
LOS Assert		LOS <sub>A</sub>	-32			dBm	
LOS Hysteresis			0.5		4	dB	
Data Output Rise/Fall time		tr/tf		20		ps	
LOS Output Voltage-High		VLOSH	2		V <sub>cc</sub>	V	
LOS Output Voltage-Low		VLOSL	-0.3		0.4	V	
Receiver LOS Pull up Resistor		RLOS	4.7		10	KOhm	

**Notes:**

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

## 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	LVTTTL-I	
4	Interrupt	Interrupt (bar); Indicates presence of an important condition which can be read over the serial 2-wire interface	LVTTTL-O	2
5	TX_DIS	Transmitter Disable; Transmitter laser source turned off	LVTTTL-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	LVTTTL-I	2
11	SDA	Serial 2-wire interface data line	LVTTTL-I/O	2
12	Mod_Abs	Module Absent; Indicates module is not present. Grounded in the module.	LVTTTL-I	2
13	Mod_NR	Module Not Ready; XGIGA defines it as a logical OR between RX_LOS and Loss of Lock in TX/RX.	LVTTTL-I	2
14	RX_LOS	Receiver Loss of Signal indicator	LVTTTL-I	2

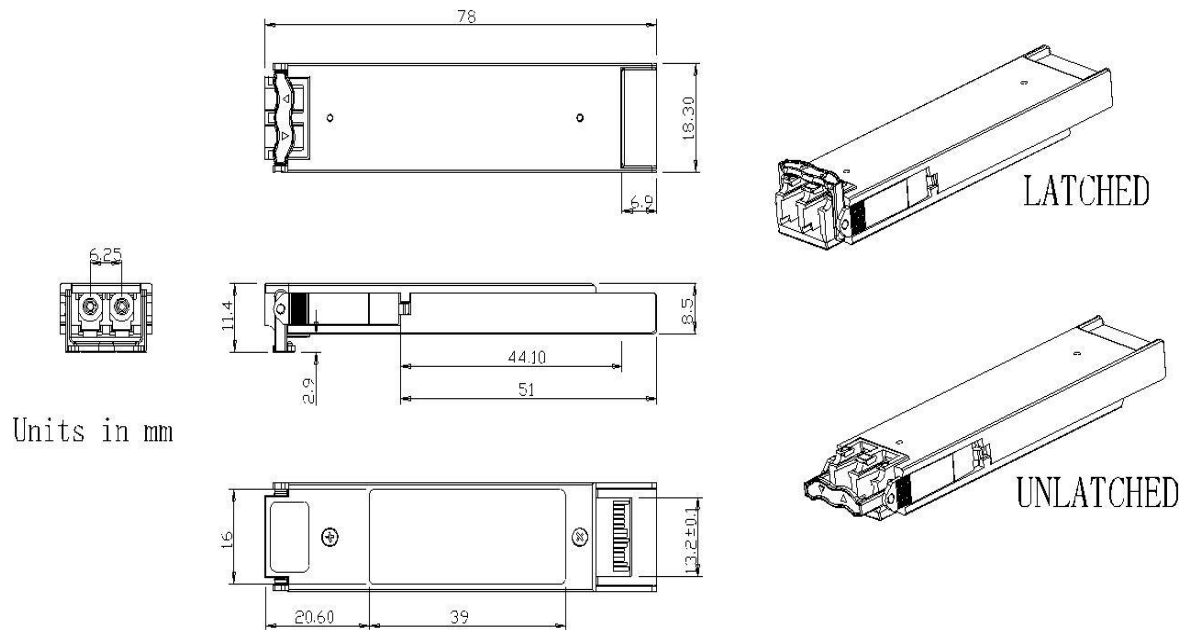
15	GND	Module Ground		1
16	GND	Module Ground		1
17	RD-	Receiver inverted data output	CML-O	
18	RD+	Receiver non-inverted data output	CML-O	
19	GND	Module Ground		1
20	VCC2	+1.8V Power Supply – Not required		
21	P_Down/RST	Power Down; When high, places the module in the low power stand-by mode and on 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-B1023L-40	10Gbps, Bidi TX1270/RX1330nm, SMF, 40km, 0°C ~ +70°C, with DDM
XFP-B1023L-40I	10Gbps, Bidi TX1270/RX1330nm, SMF, 40km, -40°C~+85°C, with DDM



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