

Features

- ◇ Operating data rate up to 155M/622M/1.25~4.25Gbps
- ◇ 1310 nm FP LD Transmitter
1550 nm DFB LD Transmitter
- ◇ Distance up to 10~120km
- ◇ Single 3.3V Power supply and TTL Logic Interface
- ◇ Duplex/simplex LC Connector Interface
- ◇ Hot pluggable
- ◇ Operating case temperature
 - Standard: 0°C~+70°C
 - Industrial:-40°C~+85°C
- ◇ Compliant with MSA SFP specification
- ◇ Digital diagnostic monitor interface
 - Compatible with SFF-8472 APD High Sensitivity Receiver

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The Bi-Di SFP module series single mode transceivers is small form factor pluggable module for bi-directional serial optical data communications such as Gigabit Ethernet 1000BASE-LX and Fiber Channel 1x SM-LC-L FC-PI. It is with the SFP 20-pin connector to allow hot plug capability. This module is designed for single mode fiber and operates at a nominal wavelength of 1310 nm. The transmitter section uses a multiple quantum well laser and is a class 1 laser compliant according to International Safety Standard IEC-60825. The receiver section uses an integrated InGaAs detector preamplifier (IDP) mounted in an optical header and a limiting post-amplifier IC. The Bi-Di SFP module series are designed to be compliant with SFF-8472 SFP Multi-source Agreement (MSA). A Signal Detect status output flag is also provided. The transceiver operates from a single +3.3V power supply over an operating temperature range of 0 to +70°C. The transceiver uses the SFP 20-pin connector to allow hot plug capability. Detailed product information in EEPROM and digital diagnostic monitoring is offered.

Parameter

Absolute Maximum Ratings				
Parameter	Symbol	Min	Max	Unit
Supply Voltage	VCC	-0.5	3.6	V



Bi-Di/Dual SFP Module

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Operating Temperature	T_{OP}	-40	85	°C		
Recommended Operating Conditions						
Parameter	Symbol	Min	Max	Unit		
Supply Voltage	VCC	3.1	3.5	V		
Operating Temperature	T_{OP}	0	75	°C		
Optical characteristics						
Parameter	Symbol	Min	Typical	Max	Unit	
Transmitter						
Optical output	P_0	1	-3	3	-	dBm
		2	-8	-3	-	
Extinction ratio	ER	9	-	-	dB	
Optical wavelength	λ	1*	1270	1310	1340	nm
		2*	1530	1550	1570	
Spectral width	$\Delta\lambda$	FP	-	-	4	nm
		DFB	-	-	1	
Rise time	T_r	-	-	260	ps	
Fall time	T_f	-	-	260	ps	
Transmitter output eye	compliant with Eye Mask Defined in 802.3z standard					
Receiver						
Optical Sensitivity	Sen	1*	-	-	-22	dBm
		2*	-	-	-22	
Input power-maximum	P_{MAX}	0	-	-	dBm	
Receiver wavelength	λ	1*	1500	-	1600	nm
		2*	1260	-	1360	
Signal detect deasserted	P_D	-38	-	-	dBm	
Signal detect asserted	P_A	-	-	-22	dBm	
Optical Return Loss	RL	15	-	-	dB	
Optical isolation	ISO	-	-	-40	dB	

Electrical characteristics					
Parameter	Symbol	Min	Typical	Max	Unit
Data rate (NRZ)	B	-	1250	-	Mb/s
			622		
			155		
Supply voltage	V _{CCT}	3.1	3.3	3.6	V
Supply current	I _{CCT}	-	70	130	mA
Input HIGH Voltage	V _{IH}	V _{CCT} -1.165	-	V _{CCT} -0.700	V
Input LOW Voltage	V _{IL}	V _{CCT} -1.890	-	V _{CCT} -1.475	V
Transmitter Enable	V _{EN}	-	-	0.8	V
Transmitter Disable	V _D	2	-	-	V
Receiver					
Data rate (NRZ)	B	-	1250	-	Mb/s
			622		
			155		
Supply voltage	V _{CCR}	3.1	3.3	3.6	V
Supply current	I _{CCR}	-	100	150	mA
Data Output High	V _{OH}	V _{CCR} -1.025	-	V _{CCR} -0.880	V
Data Output LOW	V _{OL}	V _{CCR} -1.810	-	V _{CCR} -1.620	V
LOS Low Voltage	V _{LOUT}	-	-	0.8	V
LOS High Voltage	V _{HOUT}	2	-	-	V

(Sensitivity and Input power maximum levels for a 2^{-12} PRBS with 72 ones and 72 zeros inserted over temperature)

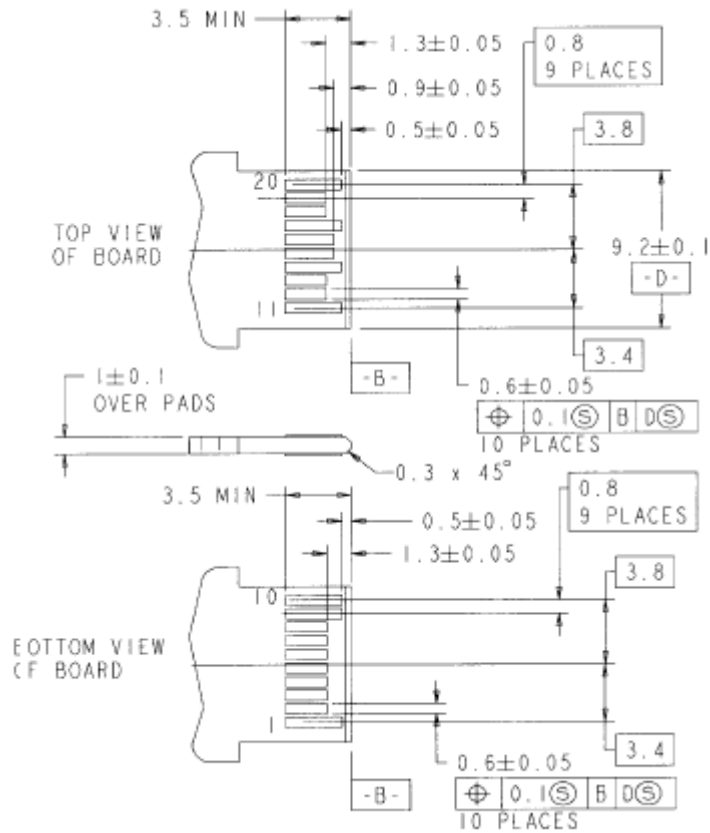
1* is 1310nm TX and 1550 RX

2* is 1550nm TX and 1310 RX

Applications

- ◇ Gigabit Ethernet switches and routers
- ◇ Fiber channel switch infrastructure
- ◇ XDSL applications
- ◇ Metro edge switching

Pattern Layout of SFP Printed Circuit Board:



(Unit: mm)

Dimensions configuration:

