

SFP MODULE SYSTEM PRODUCTS

SFP Industrail Module BiDi Fiber, 1.25Gbps 1550/1310nm 20km



DESCRIPTION

- It is mainly used in 1.25G Ethernet.
- It can transmit up to 20km.
- It adopts 1310nm FP laser and 1550nm PIN photo detector, 1550nm DFB laser and 1310nm PIN photo detector.
- Temperature range is Commercial: 0°C~70°C, Industrial: -40 to 85 °C
- It adopts Bi-Directional LC connector, supports DDM function.

FEATURE

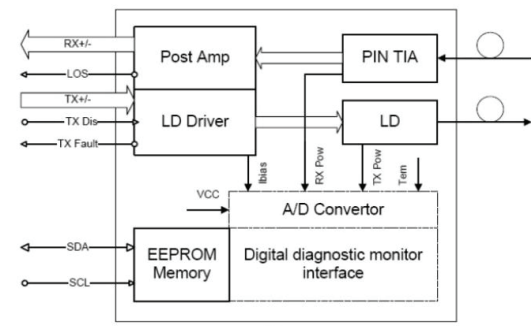
- Supports 1.25Gbps/1.0625Gbps bit rates
- Bi-Directional LC connector
- Hot pluggable SFP footprint
- 1310nm FP laser and 1550nm PIN photo detector
- 1550nm DFB laser and 1310nm PIN photo detector
- Applicable for 20Km SMF connection
- Low power consumption, < 0.8W
- Digital Diagnostic Monitor Interface
- Compliant with SFP MSA and SFF-8472
- Very low EMI and excellent ESD protection
- Operating case temperature:
- Commercial: 0 to 70 °C Industrial: -40 to 85 °C

APPLICATIONS

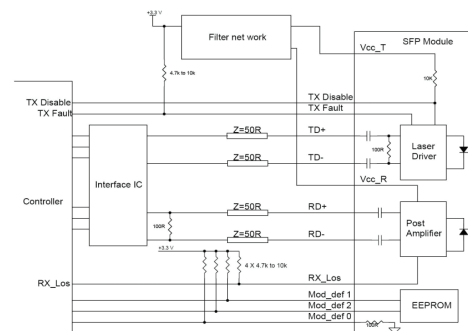
- Gigabit Ethernet
- Fiber Channel
- Switch to Switch interface
- Switched backplane applications
- Router/Server interface
- Other Optical Links



RECOMMENDED INTERFACE CIRCUIT



TYPICAL INTERFACE CIRCUIT



RECOMMENDED OPERATING CONDITIONS

DESCRIPTION	1G Single-Mode Single-fiber BiDi T1310/R1550 20KM
Data Rate (Mbps)	1250
Wavelength (nm)	TX1310/RX1550
Distance	20KM
Optical Power (dBm)	-10~-3
Source	FP
Sensitivity (dBm)	<-22
Receiver	PIN
Connector type	LC/SC

ABSOLUTE MAXIMUM RATINGS

Parameter	Symbol	Min	Max	Unit
Storage Temperature	Ts	-40	+85	°C
Supply Voltage	Vcc	-0.5	4.5	V
Relative Humidity	RH	0	85	%

RECOMMENDED OPERATING CONDITIONS

Parameter	Symbol	1.0625	Typical	Max	Unit
Data Rate	DR	3.13	1.25		Gb/s
Supply Voltage	Vcc		3.3	3.47	V
Supply Current	Icc5	0		220	mA
Operating Case Temp.	Tc	-40		70	°C
	Tl			85	

ELECTRICAL CHARACTERISTICS

Parameter	Symbol	Min	Typical	Max	Unit	Note
Differential data input swing	VIN,PP	120		820	mVpp	1
Tx Disable Input-High	VIH	2.0		Vcc+0.3	V	
Tx Disable Input-Low	VIL	0		0.8	V	
Tx Fault Output-High	VOH	2.0		Vcc+0.3	V	2
Tx Fault Output-Low	VOL	0		0.8	V	2
Input differential impedance	Rin		100		Ω	
Differential data output swing	Vout,pp	340	650	800	mVpp	3
Rx LOS Output-High	VROH	2.0		Vcc+0.3	V	2
Rx LOS Output-Low	VROL	0		0.8	V	2

Notes:

1. TD+/- are internally AC coupled with 100Ω differential termination inside the module.
2. Tx Fault and Rx LOS are open collector outputs, which should be pulled up with 4.7k to 10kΩ resistors on the host board. Pull up voltage between 2.0V and Vcc+0.3V.
3. RD+/- outputs are internally AC coupled, and should be terminated with 100Ω (differential) at the user SERDES.

OPTICAL CHARACTERISTICS

Parameter	Symbol	Min	Typical	Max	Unit
Operating Wavelength	λ	1270	1310	1360	nm
		1510	1550	1570	
Ave. output power (Enabled)	PAVE	-9		-3	dBm
Extinction Ratio	ER	9			dB
Side-Mode Suppression Ratio	SMSR	30			dB
RMS spectral width 1310nm FP	$\Delta\lambda$			3	nm
RMS spectral width 1550nm DFB				1	nm
Rise/Fall time (20%~80%)	Tr/Tf			0.26	ns
Dispersion penalty	TDP			3.9	dB
Output Optical Eye	Compliant with IEEE802.3 z (class 1 aser safety)				
Operating Wavelength	λ	1510	1550	1570	nm
		1270	1310	1360	
Receiver Sensitivity	PSEN1	-3		-22	dBm
Overload	PAVE				dBm
LOS Assert	Pa	-35			dBm
LOS De-assert	Pd			-24	dBm
LOS Hysteresis	Pd-Pa	0.5			dB

ORDER INFORMATION

PRODUCT	PART NUMBER
SFP Industrail Module BiDi Fiber, 1.25Gbps 1550/1310nm 20km	MC-ISFP-WDM-SM-0220A
SFP Industrail Module BiDi Fiber, 1.25Gbps 1310/1550nm 20km	MC-ISFP-WDM-SM-0220B