TOPSTAR TECHNOLOGY INDUSTRIAL CO., LIMITED

产 品 规 格 书

Product Specification Sheet

TOP-SFP-1.25G-40D

RoHS Compliant 1.25Gbps 1310nm 40KM Single mode Optical Transceiver

E-MAIL: lisa@topsfp.com

Product Features

- Transceiver unit with independent
- DFB laser transmitter and PIN photo-detector
- Dual Data-rate of 1.25Gbps/1.0625Gbps Operation
- Up to 40KM transmission distance on 9/125μm SMF
- Standard serial ID information compliant with SFP MSA
- SFP MSA package with duplex LC connector
- Digital Diagnostic Monitor Interface
- Very low EMI and excellent ESD protection
- +3.3V single power supply
- Wide operating temperature range
- RoHS compliant
- Case operating temperature
- Commercial: 0°C to +70°C Extended: -10°C to +80°C Industrial: -40°C to +85°C

Applications

- Switch/Router
- SAN/Server
- Other optical transmission systems

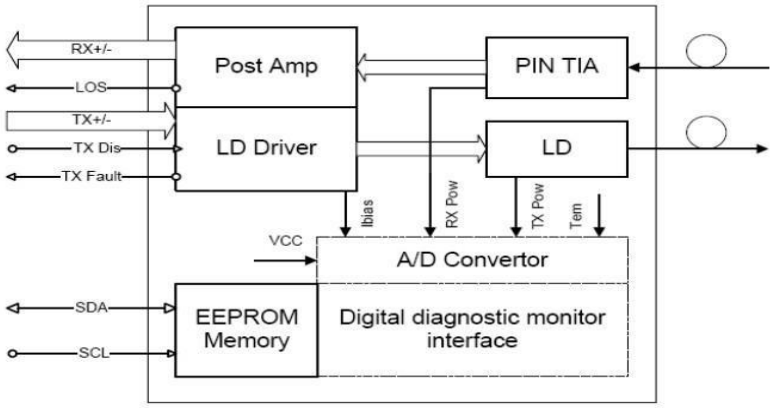
Standard

- SFP MSA (Version Sept.14 2000) compliant
- SFF-8472 (Rev 9.3, Aug. 2002) Digital Diagnostic Monitoring Interface for Optical Transceivers compliant
- IEEE 802.3z compliant
- ANSI specifications for Fiber Channel compliant
- Telcordia GR-468-CORE compliant

Description

SFP 1.25G 40KM 1310nm optical transceivers are designed for GE/1 x FC optical interface for data communications with single mode fiber (SMF), and multimode fiber (MMF) as well. They operate at both 1.25Gbps for GE and 1.0625Gbps for 1xFC. The transceiver designs are optimized for high performance and cost effective to supply customers the best solutions for datacom applications.

Functional Diagram



Absolute Maximum Ratings

Parameter	Symbol	Min.	Max	Unit	Notes
SupplyVoltage	Vc	-0.5	3.60	V	
StorageTemperature		-40	85	℃	
RelativeHumidity		5	95	%	

Note:Stress in excess of the maximum absolute ratings can cause permanent damage to the module.

General Operating Characteristics

Parameter		Symbol	Min.	Typ.	Max.	Unit	Note
Data Rate	Gigabit Ethernet			1.25		Gb/s	
	Fiber Channel			1.0625			
Supply Voltage		Vcc	3.1	3.3	3.5	V	
Supply Current		Icc			270	mA	
Operating Case Temperature		Tc	0		70	℃	
			-10		80		
			-45		85		

Electrical Input/Output Characteristics

Transmitter

Parameter		Symbol	Min.	Typ.	Max.	Unit	Notes
Diff.Input Voltage Swing			300		1800	mVpp	1
Tx Disable Input	H	V_{IH}	2.0		Vcc+0.3	V	
	L	V_{IL}	0		0.8		
TxFault Output	H	V_{OH}	2.0		Vcc+0.3	V	2
	L	V_{OL}	0		0.8		
Input Diff. Impedance		Zin		100		Ω	

Receiver

Parameter		Symbol	Min.	Typ.	Max.	Unit	Notes
Diff.Output Voltage Swing			400		1000	mVpp	3
RxLOS Output	H	V_{OH}	2.0		Vcc+0.3	V	2
	L	V_{OL}	0		0.8		

Note1)TD+/-are internally AC coupled with100Ωdifferential termination inside the module.

Note2)TxFault and RxLOS are open collector outputs,whichshouldbepulledupwith4.7kto10kΩ resistors on
the host board. Pull up voltage between2.0VandVcc+0.3V.
Note3)RD+/-outputs are internally AC coupled, and should be terminated with100Ω(differential)at the user
SERDES.

Optical Characteristics

Transmitter

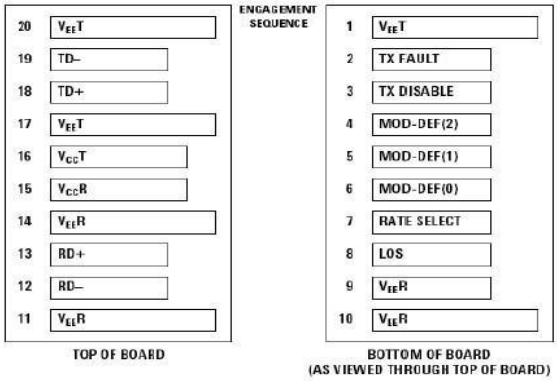
Parameter	Symbol	Min.	Type	Max.	Unit	Notes
Ave.Output Power (Enable)	Po	-2		3	dBm	1
Total Jitter	1.25G			0.431	UI	
Extinction Ratio	ER	9			dB	1
Rise/Fall Time(20%-80%)	Tr-Tf			0.26	ns	2
Wavelength Range		1270	1310	1360	nm	
Spectral Width(RMS)				1	nm	
OutputOptical Eye	Compliantwith IEEE802.3z(class 1laser safety)					

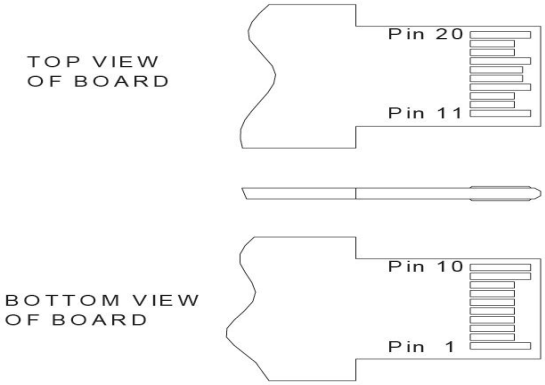
Receiver

Parameter	Symbol	Min.	Type	Max.	Unit	Notes
OperatingWavelength		1270		1610	nm	
Sensitivity	Pimin			-25	dBm	3
Min. Overload	Pimax	-1			dBm	3
Total Jitter	1.25G			0.749	UI	
LOSAssert	Pa	-38			dBm	
LOSDe-assert	Pd			-26	dBm	
LOSHysteresis	Pd-Pa	0.5		6	dB	

Note1)Measured at 1250Mb/s with PRBS27–1NRZ test pattern. Note2)Unfiltered, measured with a PRBS27-1 test pattern @1.25Gbps
Note3)Measured at 1250 Mb/s with PRBS27–1NRZ test pattern for BER<1x10-12

Pin Definitions and Functions





PIN #	Name	Function	Not
1	VeeT	Tx ground	
2	Tx Fault	Tx faultindication,Open Collector Output,active“H”	Note1
3	TxDisable	LVTTL Input,internal pull-up,Tx disabled on“H”	Note2
4	MOD-DEF2	2wire serial interface data in put/output(SDA)	Note3
5	MOD-DEF1	2wire serial interface clock input(SCL)	Note3
6	MOD-DEF0	Model present indication	Note3
7	Rate select	No connection	
8	LOS	Rx loss of signal,Open Collector Output,active“H”	Note4
9	VeeR	Rx ground	
10	VeeR	Rx ground	
11	VeeR	Rx ground	
12	RD-	Inverse received data out	Note5
13	RD+	Received data out	Note5
14	VeeR	Rx ground	
15	VccR	Rx power supply	
16	VccT	Tx power supply	
17	VeeT	Tx ground	
18	TD+	Transmit datain	Note6
19	TD-	Inverse transmit data in	Note6
20	VeeT	Tx ground	

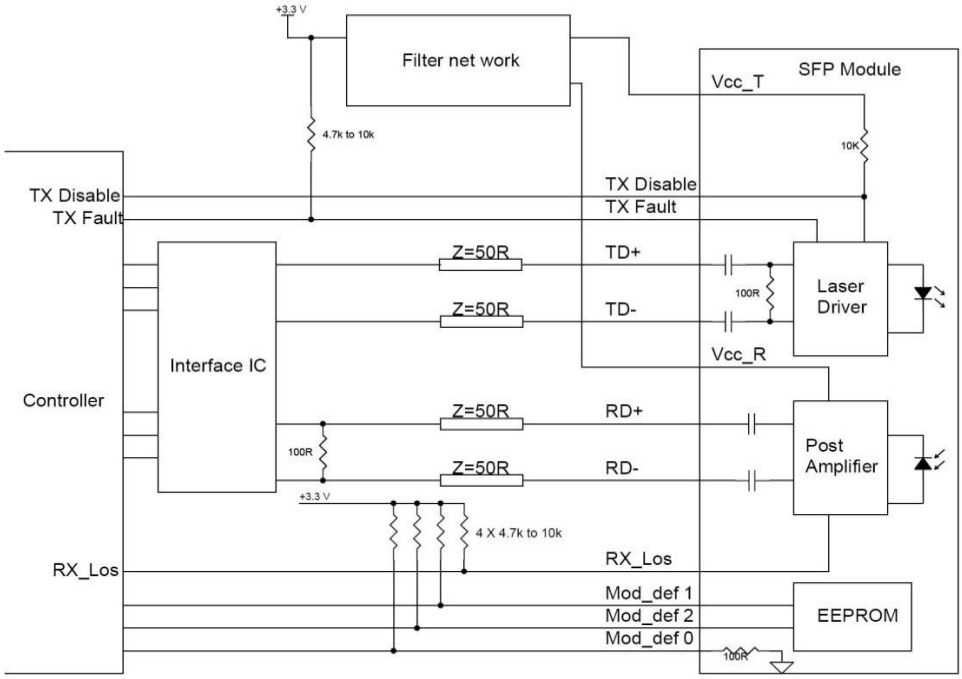
Note1) When high, this output indicates a laser fault of some kind. Low indicates normal operation .And should be pulled up with a 4.7 –10KΩ resistor on the host board.

Note2)TX disable is an input that is used to shut down the transmitter optical output. It is pulled up within the module with a4.7–10KΩresistor. Its states are:

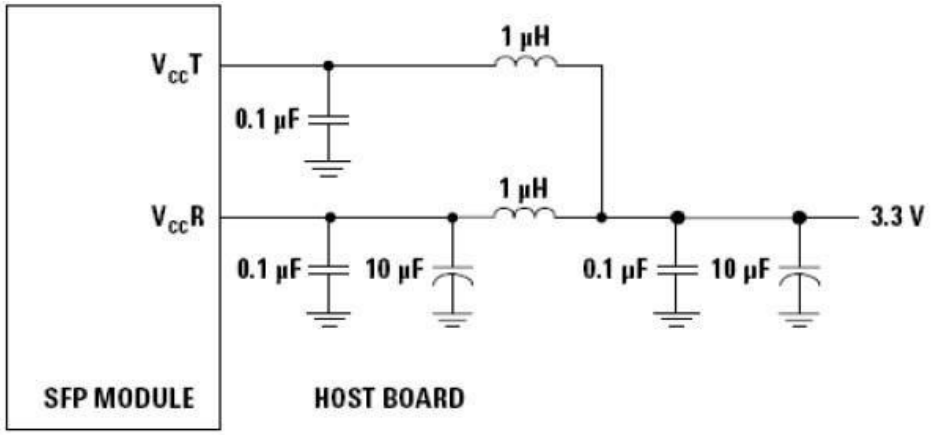
Low(0–0.8V): Transmitter on (>0.8,<2.0V): Undefined

High(2.0V~Vcc+0.3V): Transmitter Disabled Open: Transmitter Disabled
Note3)Mod-Def0,1,2.These are the module definition pins.They should be pulled up with a 4.7K–10KΩ resistor on the host board. The pull-up voltage shall be between 2.0V~Vcc+0.3V. Mod-Def0has been grounded by the module to indicate that the module is present
Mod-Def1is the clock line of two wire serial interface for serial ID
Mod-Def2 is the data line of two wire serial interface for serial ID
Note4)When high, this output indicates loss of signal (LOS).Low indicates normal operation.
Note5)RD+/-: These are the differential receiver outputs. They are AC coupled100Ωdifferential lines which should be terminated with 100Ω(differential)at the user SERDES. The AC coupling is done inside the module and is thus not required on the host board.
Note6)TD+/-:These are the differential transmitter inputs. They are AC-coupled, differential lines with 100Ω differential termination inside the module. The AC coupling is done inside the module and is thus not required on the host board.

Typical Interface Circuit

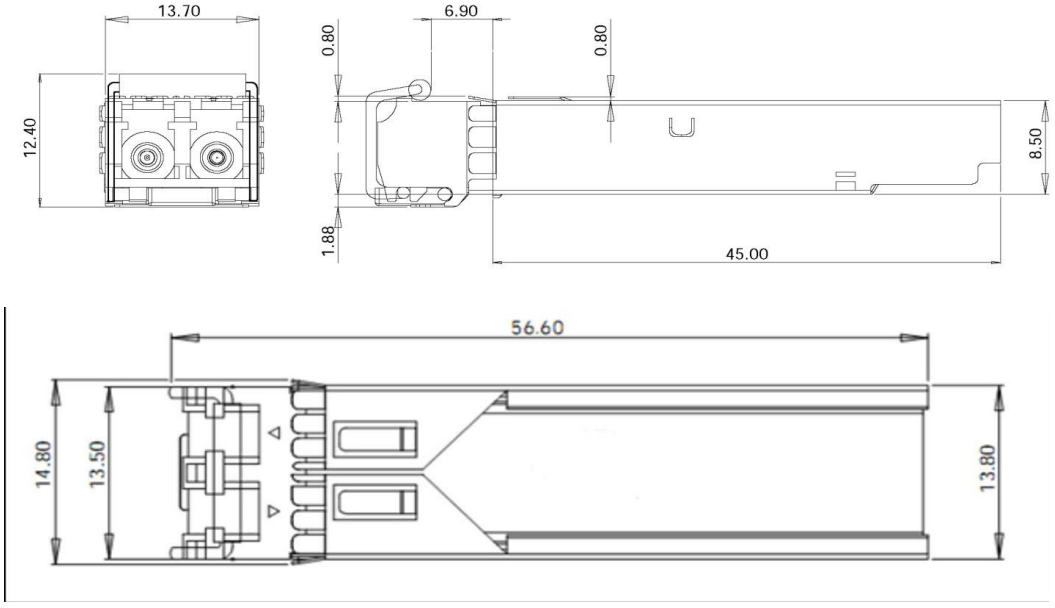


Recommended power supply filter



Note: Inductors with DC resistance of less than 1Ωshould be used in order to maintain the required voltage at the SFP input pin with3.3Vsupply voltage. When the recommended supply filtering network is used, hot plugging of the SFP transceiver module will result in an inrush current of no more than 30 m A greater than the steady state value.

Package Dimensions



Ordering Information& Related Products

ProductpartNumber	Data Rate (Mbps)	Media	Wavelength (nm)	Transmission Distance(km)	TemperatureRange （Tcase）（℃）	
TOP-SFP-1.25G-40 C	1250	Singlemode	1310	20	0~70	commercial
TOP-SFP-1.25G-40 E	1250	Singlemode	1310	20	-10~80	extended
TOP-SFP-1.25G-40 I	1250	Singlemode	1310	20	-45~85	industrial

Topstar Technology Industrial Co., Ltd

Add: F5, Rongcheng Building, 28 Yayuan Road Wuhe Community, BanTian Street, Shenzhen, China

Tel: +86 755 8255 2969 Email:lisa@topsfp.com

Skype: lisalin6565 Whatsapp: +86 13798265065

Wechat: 251081707

Facebook and Linked in: Topstar Technology Industrial Co., Ltd