产 品 规 格 书

Product Specification Sheet

OP-MP313L1SD-10

RoHS Compliant 3.125Gb/s SFP 1310nm 10km Optical Transceiver

Shenzhen Optostar Optoelectronics Co., Ltd.
Address:14F,Building A,Haide Building,the Intersection of Nanxin Road and Haide Second Road Nanshan District,Shenzhen,P.R.China
Tel:0086-755-26400288 Fax:0086-755-26411001
E-mail:info@optostar.com.cn Http://www.optostar.com.cn

PRODUCT FEATURES

DFB transmitter, PIN photo-detector

Duplex LC connector

Supports 1.0625/2.125/3.125Gb/s Fiber Channel Operation

Up to 10km transmission distance

Specification compliant with SFF-8472

Single 3.3V power supply

Very low EMI and excellent ESD protection

Case operating temperature range: 0°C to +70°C

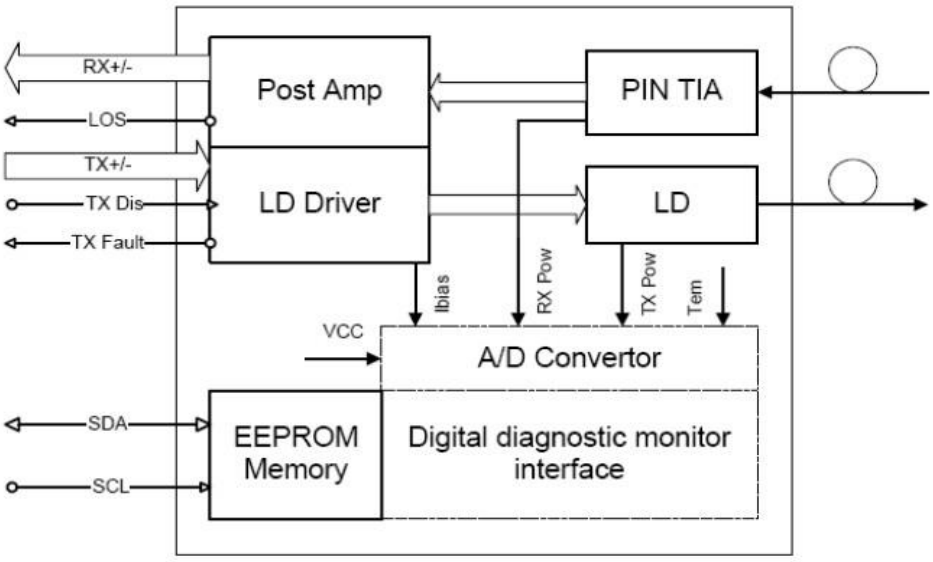
APPLICATIONS

Tri Rate 1.0625 / 2.125 / 3.125Gbp/s Fiber Channel

1.25Gbp/s 1000Base-LX Ethernet and 1000Base-LX10 (Rate selectable version)

RoHS Compliant.

FUNCTIONAL DIAGRAM



Shenzhen Optostar Optoelectronics Co., Ltd.
Address:14F,Building A,Haide Building,the Intersection of Nanxin Road and Haide Second Road Nanshan District,Shenzhen,P.R.China
Tel:0086-755-26400288 Fax:0086-755-26411001
E-mail:info@optostar.com.cn Http://www.optostar.com.cn

ABSOLUTE MAXIMUM RATINGS

Parameter	Symbol	Min.	Max.	Unit	Note
Supply Voltage	Vcc	-0.5	4.0	V	
Storage Temperature		-40	85	°C	
Relative Humidity			85	%	

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

GERERAL OPERATING CHARACTERISTICS

Parameter		Symbol	Min.	Typ	Max.	Unit	Note
Data Rate	Ethernet			3.125		Gb/s	
	Fiber Channel						
Supply Voltage		Vcc	3.13	3.3	3.47	V	
		Vcc				V	
Supply Current		Icc_5				mA	
		Icc_3			350	mA	
Operating Case Temp.		Tc	0		70	°C	

ELECTRICAL INPUT/OUTPUT CHARACTERISTICS

Transmitter

Parameter		Symbol	Min.	Typ	Max.	Unit	Note
Diff. input voltage swing			120		820	mVpp	1
Tx Disable input	H	VIH	2.0		Vcc+0.3	V	
	L	VIL	0		0.8		
Tx Fault output	H	VOH	2.0		Vcc+0.3	V	2
	L	VOL	0		0.8		
Input Diff. Impedance		Zin		100		Ω	

Receiver

Parameter		Symbol	Min.	Typ	Max.	Unit	Note
Diff. output voltage swing			340	650	800	mVpp	3
Rx LOS Output	H	VOH	2.0		Vcc+0.3	V	2
	L	VOL	0		0.8		

Note 1) TD+/- are internally AC coupled with 100Ω differential termination inside the module.
Note 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.
Note 3) RD+/- outputs are internally AC coupled, and should be terminated with 100Ω (differential) at the user SERDES.

OPTICAL CHARACTERISTICS

Transmitter

Parameter	Symbol	Min.	Typ	Max.	Unit	Note
Operating Wavelength		1260		1360	nm	
Ave. output power (Enabled)	Po	-8		0	dBm	1
Extinction Ratio	ER	5			dB	1
RMS spectral width	Δλ			1	nm	
Rise/Fall time (20%~80%)	Tr/Tf				ps	
Optical modulation amplitude	OMA	-6.2			dBm	
Dispersion penalty				1	dB	
Output Optical Eye	IEEE 802.3-2005 Compliant					

Shenzhen Optostar Optoelectronics Co., Ltd.
Address:14F,Building A,Haide Building,the Intersection of Nanxin Road and Haide Second Road Nanshan District,Shenzhen,P.R.China
Tel:0086-755-26400288 Fax:0086-755-26411001
E-mail:info@optostar.com.cn Http://www.optostar.com.cn

Receiver

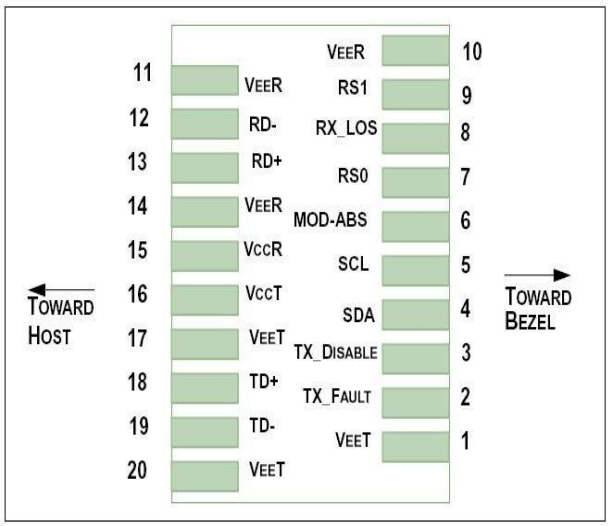
Parameter	Symbol	Min.	Typ	Max.	Unit	Note
Operating Wavelength		1260	1310	1360	nm	
Sensitivity	Psen			-15	dBm	2
Min. overload	Pimax	0.5			dBm	
LOS Assert	Pa	-28			dBm	
LOS De-assert	Pd			-20	dBm	
LOS Hysteresis	Pd-Pa	0.5		4	dB	

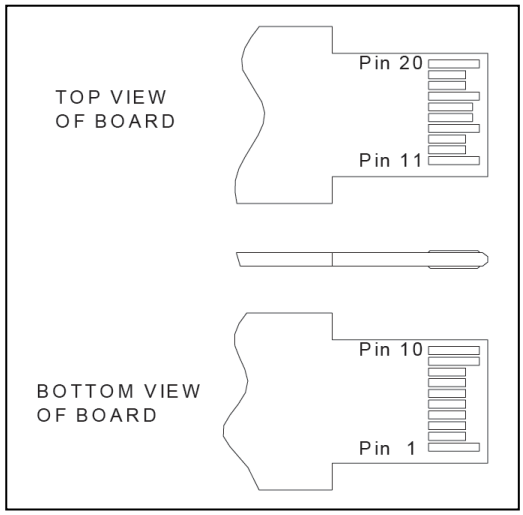
Note 1) Class 1 Laser Safety per FDA/CDRH and IEC-825-1 regulations.

Note 2) Measured with a PRBS 2^7-1 test pattern, @3.125Gb/s, BER<1x10-^{12}

.

PIN DEFINITIONS AND FUNCTIONS





PIN #	Name	Function	Notes
1	VeeT	Module transmitter ground	Note1
2	Tx Fault	Module transmitter fault	Note 2
3	Tx Disable	Transmitter Disable; Turns off transmitter laser output	Note 3
4	SDL	2 wire serial interface data input/output (SDA)	
5	SCL	2 wire serial interface clock input (SCL)	
6	MOD-ABS	Module Absent, connect to VeeR or VeeT in the module	Note 2
7	RS0	Rate select0,optionally control SFP+ receiver. When high, input data rate >4.5Gb/s;when low, input data rate <=4.5Gb/s	
8	LOS	Receiver Loss of Signal Indication	Note4
9	RS1	Rate select0,optionally control SFP+ transmitter. When high, input data rate >4.5Gb/s;when low, input data rate <=4.5Gb/s	
10	VeeR	Module receiver ground	Note 1
11	VeeR	Module receiver ground	Note 1
12	RD-	Receiver inverted data out put	
13	RD+	Receiver non-inverted data out put	
14	VeeR	Module receiver ground	Note 1
15	VccR	Module receiver 3.3V supply	
16	VccT	Module transmitter 3.3V supply	
17	VeeT	Module transmitter ground	Note 1
18	TD+	Transmitter inverted data out put	
19	TD-	Transmitter non-inverted data out put	
20	VeeT	Module transmitter ground	Note1

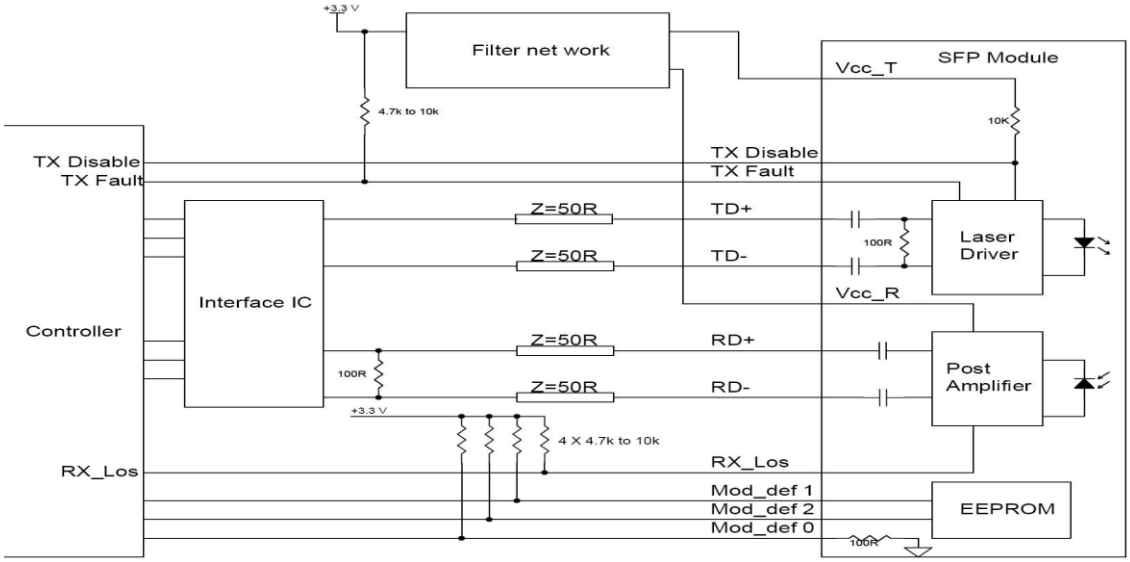
Note 1) The module ground pins shall be isolated from the module case.

Note 2) This pin is an open collector/drain output pin and shall be pulled up with 4.7K-10Kohms to Host_Vcc on the host board.

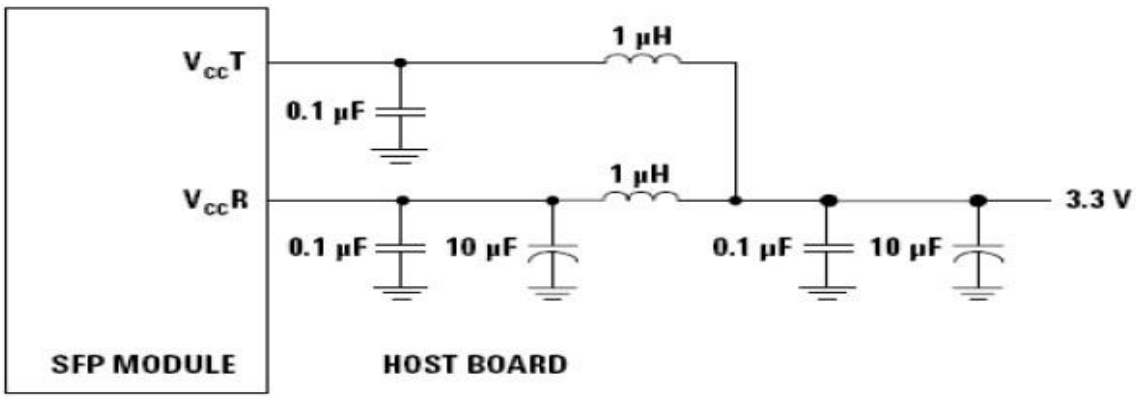
Note 3) This pin shall be pulled up with 4.7K-10Kohms to VccT in the module.

Note 4) This pin is an open collector/drain output pin and shall be pulled up with 4.7K-10Kohms to Host_Vcc on the host board. In FC designated as RX_LOS, inSONET designated as LOS, and in Ethernet designated at Signal Detect.

TYPICAL INTERFACE CIRCUIT

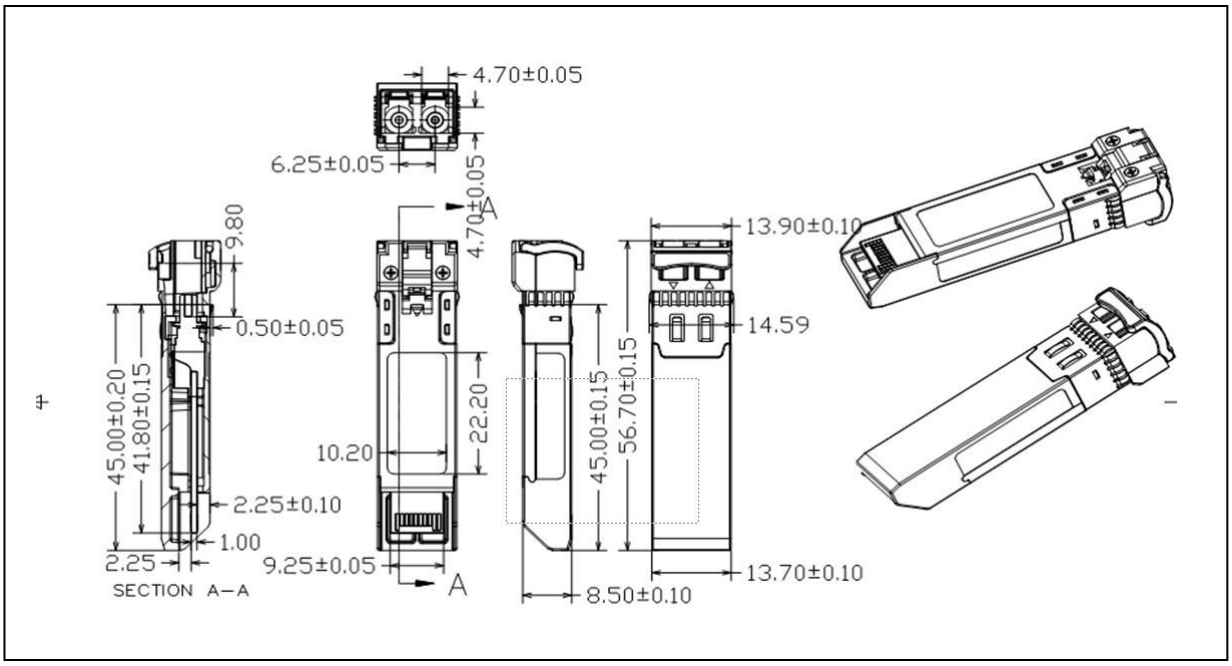


Recommended power supply filter



Note: Inductors with DC resistance of less than 1Ω should be used in order to maintain the required voltage at the SFP input pin with 3.3V supply 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 mA greater than the steady state value

PACKAGE DIMENSION



Contact US

Shenzhen Optostar Optoelectronics Co., Ltd.

Tell:86-0755-26400198

Fax: 86-0755-26401001

Skype：ouyangroya

Email: info@optostar.com.cn

Addres:A-14,Haide Building,the Intersection of Nanxin Road and Haide Second Road Nanshan District,Shenzhen,P.R.China