产 品 规 格 书

Product Specification Sheet

TOP-SFP-6.25G-LR

RoHS Compliant 6.25Gb/s SFP+ 1310nm 10km Optical Transceiver

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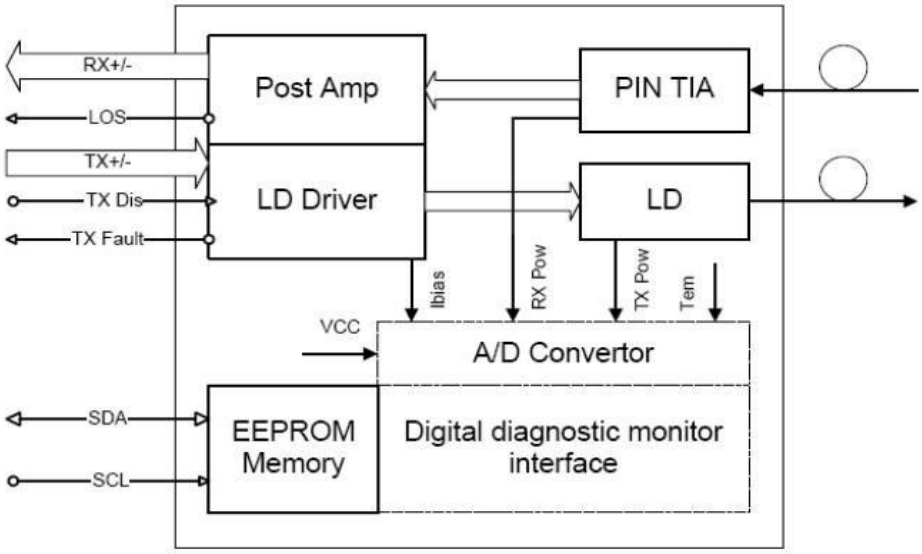
PRODUCT FEATURES

- DFB transmitter, PIN photo-detector
- Duplex LC connector
- Metal enclosure, for lower EMI
- Electrical interface compliant toSFF-8431
- Up to10km transmission distance
- 2-wire interface for management
- Specification compliant with SFF-8472
- Single 3.3Vpower supply
- Very low EMI and excellent ESD protection
- Case operating temperature range:0°Cto+70°C

APPLICATIONS

- High-speed storage are a networks
- Computer cluster cross-connect
- Custom high-speed data pipes
- LTE optical repeater application

FUNCTIONAL DIAGRAM



ABSOLUTE MAXIMUM RATINGS

Parameter	Symbol	M	M	Unit	Note
SupplyVoltage	V	-0.5	4.0	V	
StorageTemperatu		-40	85	°C	
RelativeHumidity			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
DataRate	Ethernet			6.25		Gb/s	
	FiberChannel						
SupplyVoltage		Vcc	3.13	3.3	3.4	V	
		Vcc				V	
SupplyCurrent		Icc5				mA	
		Icc3			350	mA	
OperatingCaseTemp.		Tc	0		70	°C	

ELECTRICAL INPUT/OUTPUT CHARACTERISTICS

Transmitter

Parameter		Symbol	Min.	Typ	Max.	Unit	Note
Diff.inputvoltageswing			120		820	mVp	1
TxDisableinput	H	VIH	2.0		Vcc+0.	V	
	L	VIL	0		0.8		
TxFaultoutput	H	VO	2.0		Vcc+0.	V	2
	L	VOL	0		0.8		
InputDiff.Impedance		Zin		100		Ω	

Receiver

Parameter		Symbol	Min.	Typ	Max.	Unit	Note
Diff.outputvoltageswing			340	650	800	mVp	3
RxLOSOutput	H	VO	2.0		Vcc+0.	V	2
	L	VOL	0		0.8		

Note1)TD+/- are internally AC coupled with 100Ω differential termination inside the module.
Note2)TxFault and RxLOS are open collector outputs, which should be pulled up with 4.7k to10kΩ
resistors on the host board. Pull up voltage between 2.0VandVcc+0.3V.
Note3)RD+/- outputs are internally AC coupled, and should be terminated with100Ω(differential)at the userSERDES.

OPTICAL CHARACTERISTICS

Transmitter

Parameter	Symbol	Min.	Typ	Max.	Unit	Note
OperatingWavelength		1260		1355	nm	
Ave.outputpower(Enabled)	Po	-6.5		0.5	dBm	1
ExtinctionRatio	ER	3.5			dB	1
RMS spectralwidth	Δλ			1	nm	
Rise/Falltime(20%~80%)	Tr/Tf			50	ps	2
Opticalmodulationamplitude	OMA	-6.2			dBm	
Dispersionpenalty				1	dB	
OutputOpticalEye	IEEE802.3-2005Compliant					

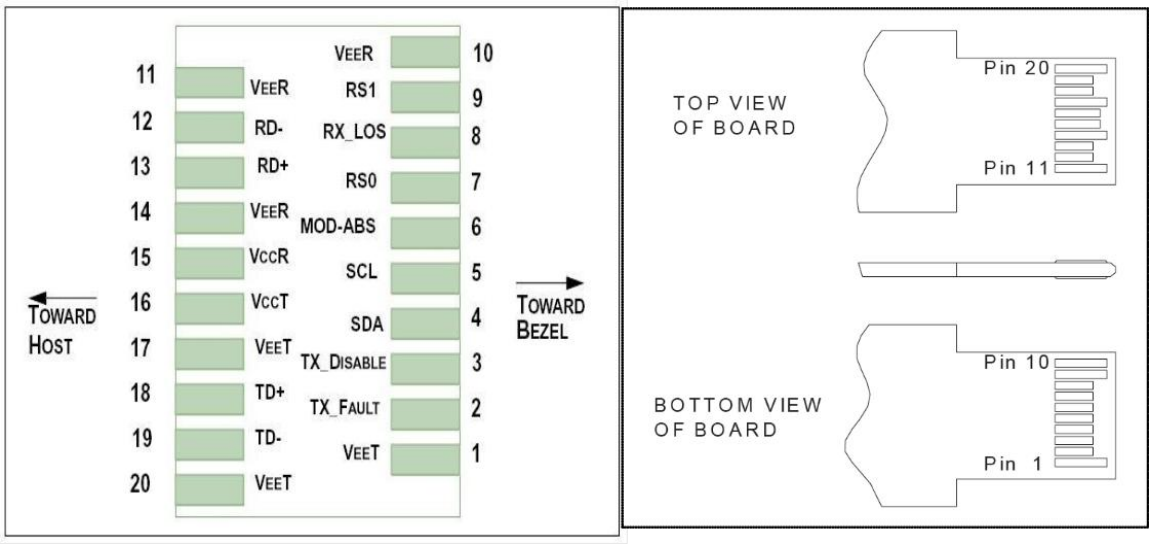
Receiver

Parameter	Symbol	Min.	Typ	Max.	Unit	Note

OperatingWavelength		1270	1310	1610	nm	
Sensitivity	Psen			-14.4	dBm	3
Min.overload	Pimax	0.5			dBm	
LOSAssert	Pa	-30			dBm	
LOSDe-assert	Pd			-16	dBm	
LOSHysteresis	Pd-Pa	0.5		4	dB	

Note1)Class 1 Laser Safety per FDA/CDRH and IEC-825-1 regulations.
Note2)20%~80%
Note3)Measured with a PRBS231-1 test pattern,@6.25Gb/s,BER<10-12

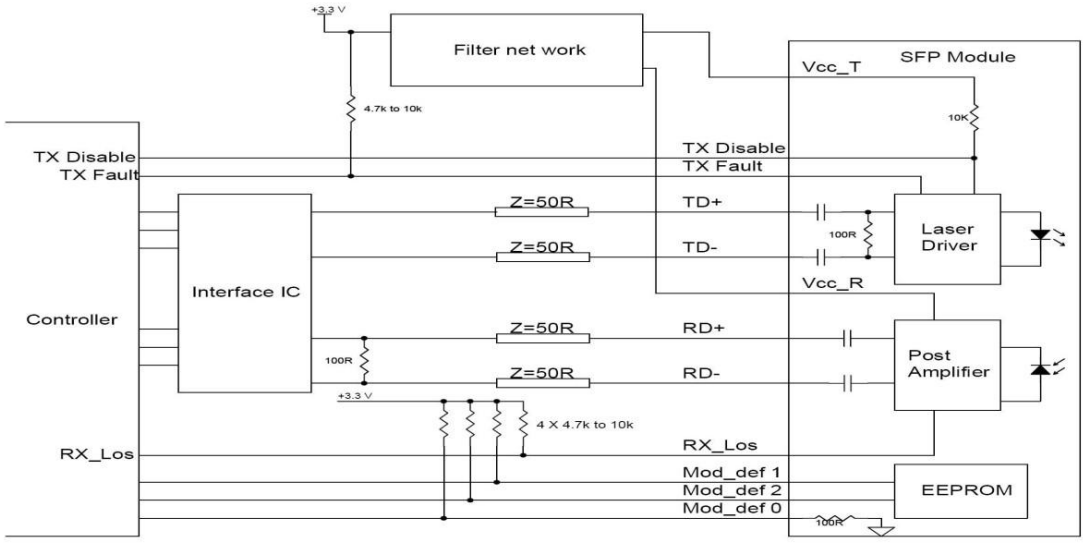
PIN DEFINITIONS AND FUNCTIONS



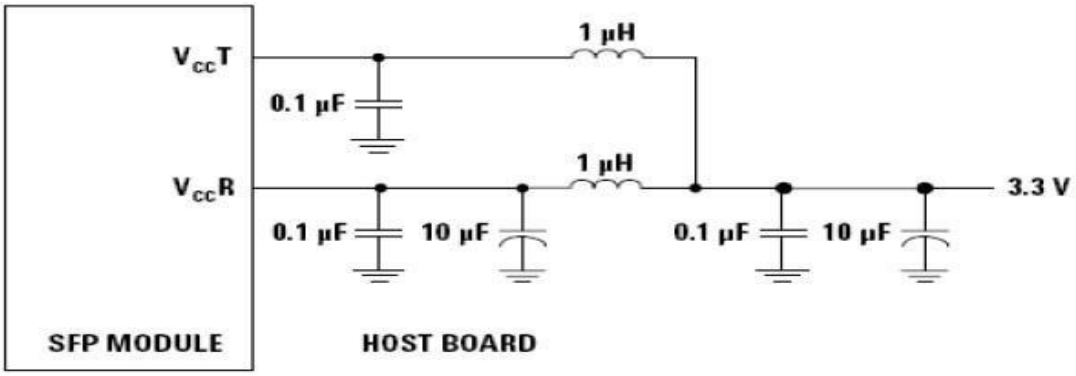
PIN #	Name	Function	Notes
1	VeeT	Module transmitter ground	Note1
2	Tx Fault	Module transmitter fault	Note 2
3	Tx Disable	Transmitter Disable; Turns off transmitter laser output	Note 3
4	SDL	2 wire serial interface data input/output (SDA)	
5	SCL	2 wire serial interface clock input (SCL)	
6	MOD-ABS	Module 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

Note1)The module ground pins shall be isolated from the module case.
Note2)This pin is an open collector/drain output pin and shall be pulled up with 4.7K-10Kohmsto Host_Vcc on the host board.
Note3)This pin shall be pulled up with 4.7K-10Kohmsto VccT in the module.
Note4)This pin is an open collector/drain output pin and shall be pulled up with 4.7K-10KohmstoHost_Vcc on the host board. InFCdesignated as RX_LOS, in SONET designated as LOS, and in Ethernet designated at Signal Detect.

TYPICAL INTERFACECIRCUIT

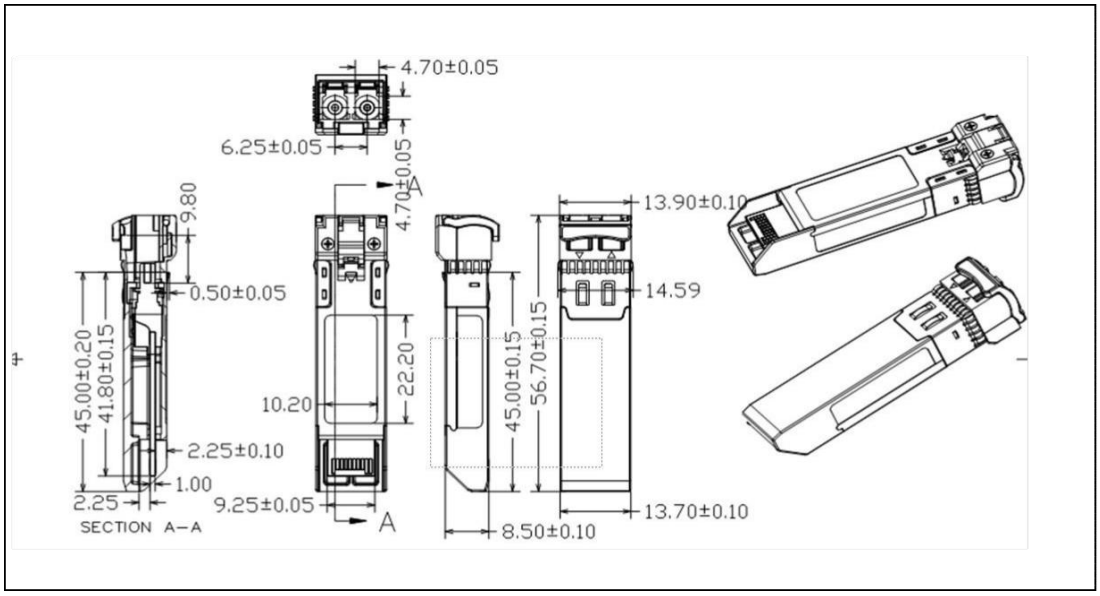


Recommended power supply filter



Note: Inductors with DC resistance of less than 1Ωshould be used in order to maintain the required voltage at the SFP input pin 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 30m A greater than the steady state value

PACKAGE DIMENSION



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