

Gigabit Ethernet SFF Optical Module

Product Features

- Support IEEE802.3 and Fiber Channel Applicable
- Support 1.25G GbE and 1.0625G for Fiber-Channel
- Support to 40km transmission on G.652 SMF
- 1310nm transmitter with DFB laser
- 1310nm receiver with PIN-TIA
- 2-wire interface for integrated digital diagnostic monitoring
- SFF package with duplex LC/UPC receptacle optical interface
- Single +3.3V power supply
- Operation case temperature -40~85°C for Industrial, -20~85°C for extended and 0~70°C for commercial
- RoHS6 Compliant



Operating Condition

Parameter	Unit	Min.	Typical	Max.
Storage Temperature	°C	-40		85
Operating Case Temp for C-temp	°C	0		70
Operating Case Temp for E-temp	°C	-20		85
Operating Case Temp for I-temp	°C	-40		85
Power Supply Voltage	V	3.1	3.3	3.5
Supply Current	mA			300
Bit Rate for GE	Mbps	1250		
Bit Rate for Fiber Channel	Mbps	1062.5		

Characteristics

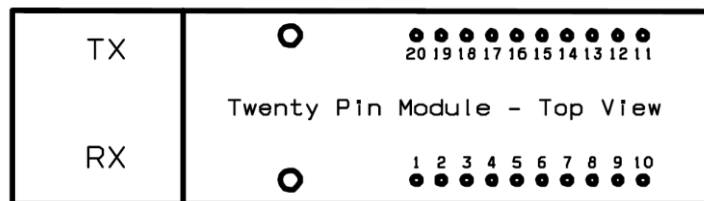
All performance is specified at whole working temperature and conditions

Parameter	Unit	Min.	Typical	Max.
Transmitter				
TX Central Wavelength	nm	1260	1310	1360
Spectral Width (-20dB)	nm			1
Mean Launched Power	dBm	-2		3
Mean Launched Power (TX Off)	dBm			-45

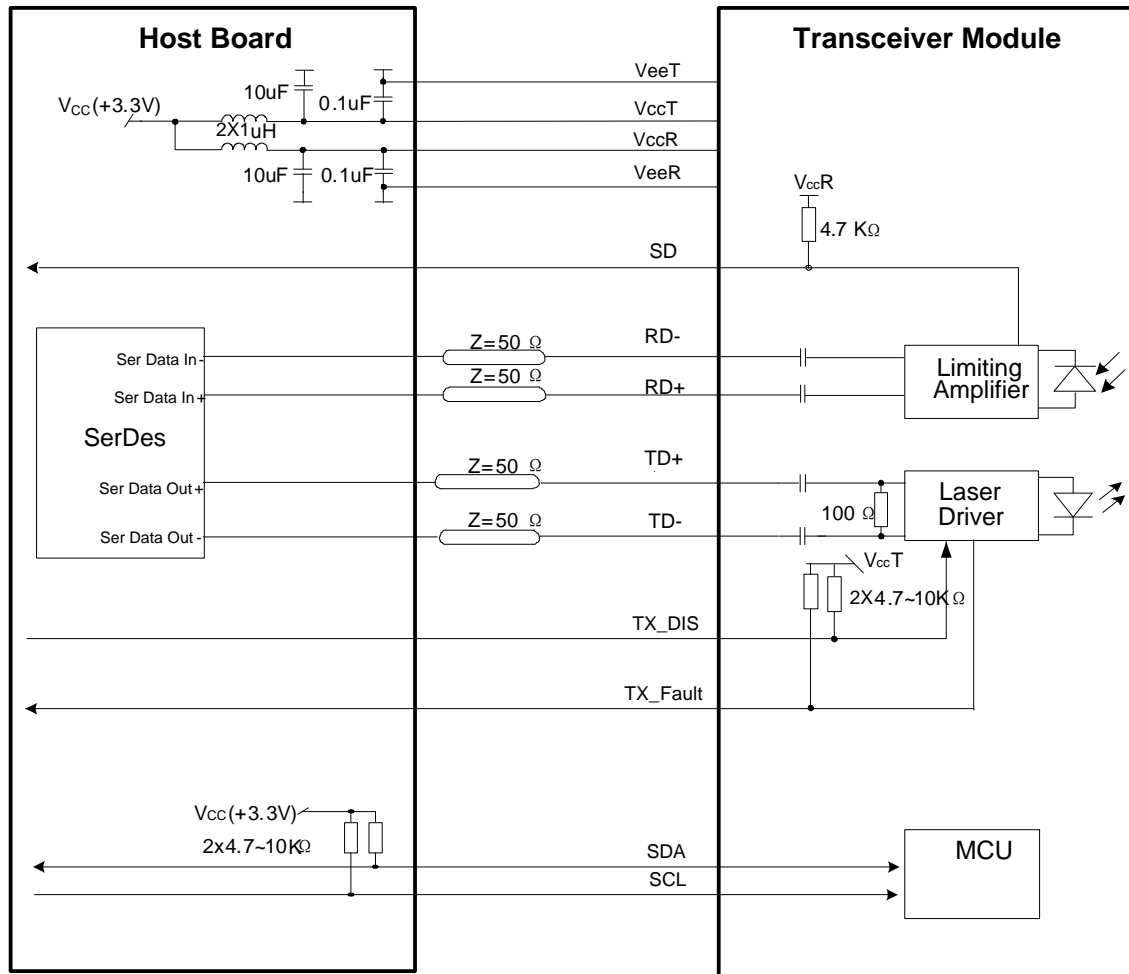
Extinction Ratio	dB	9		
Total Jitter	UI			0.43
Transmitter Mask (PRBS2 ⁷ -1@1.25G)	Compliant with IEEE 802.3ah			
Receiver				
Receive Wavelength	nm	1260	1310	1600
Sensitivity (PRBS2 ⁷ -1@1.25G, ER=9, BER<10 ⁻¹²)	dBm			-24
Overload	dBm	-3		
Signal Detected Assert Level	dBm			-25
Signal Detected De-assert Level	dBm	-39		
SD Hysteresis	dB	0.5		
Electrical Interface Characteristics				
Data Input Swing Differential/TX	mV	200		2000
Data Output Swing Differential/RX	mV	400		1600
Date Differential Impedance	Ω	90	100	110
LVTTL Output High	V	2.4		V _{cc}
LVTTL Output Low	V	0		0.4
LVTTL Input High	V	2.0		V _{cc} +0.3
LVTTL Input Low	V	0		0.8
Timing Characteristics				
SD Assert Time (T _{LOSA})	us			100
SD De-assert Time (T _{LOSD})	us			100

PIN Definition

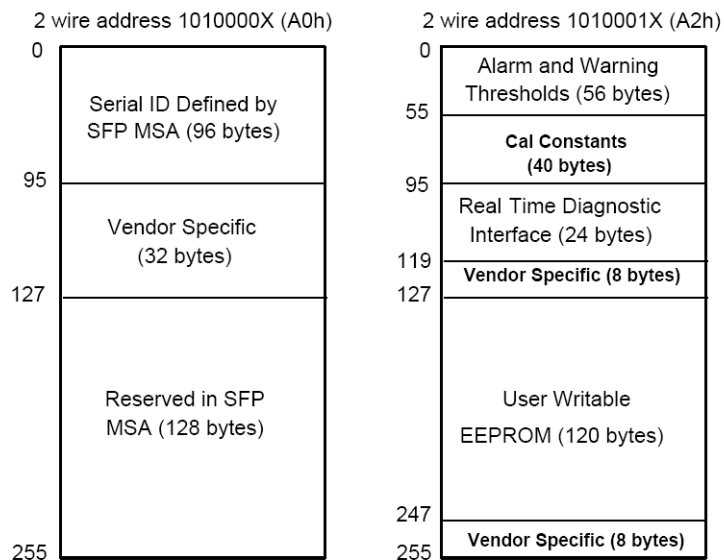
Pin No.	Symbol	Level / Logic	Function	Description
1	NC		NC	No connection in module
2	VeeR		Ground	
3	VeeR		Ground	
4	NC		NC	No connection in module
5	NC		NC	No connection in module
6	VeeR		Ground	
7	VccR		Receiver Power Supply	3.3V (+/-5%)
8	SD	LVTTL	Receiver Signal Detection	Pull-up internally. Asserted when light is on
9	RD-	CML	RxD-	RX data NOT output, AC coupled output
10	RD+	CML	RxD+	RX data output, AC coupled output
11	VccT	NA	Transmitter Power Supply	3.3V (+/-5%)
12	VeeT	NA	Ground	
13	TX_DIS	LVTTL	Transmitter Disable	High: disable the laser output
14	TD+	CML	TxD+	TX data input, internally DC coupled with 100ohm terminated
15	TD-	CML	TxD-	TX data NOT input, internally DC coupled with 100ohm terminated
16	VeeT		Ground	VeeT
17	SCL	LVTTL	SCL	I2C CLK
18	SDA	LVTTL	SDA	I2C Data
19	TX_Fault	LVTTL	TX Fault	TX Fault Alarm, TX Fault State: High; TX Normal State: Low
20	VeeT		Ground	



Recommended Interface Circuit



EEPROM Memory Map



Ordering Information

Ordering P/Ns	Description
HOLS-FG134-L3-CD	Gigabit Ethernet SFF, 40km, 1.25Gbps Tx 1310nm, 1.25Gbps Rx 1310nm, SFF form-factor, Dual LC/UPC receptacle connector, 0~70°C Commercial temperature
HOLS-FG134-L3-ED	Gigabit Ethernet SFF, 40km, 1.25Gbps Tx 1310nm, 1.25Gbps Rx 1310nm, SFF form-factor, Dual LC/UPC receptacle connector, -20~85°C Extended temperature
HOLS-FG134-L3-ID	Gigabit Ethernet SFF, 40km, 1.25Gbps Tx 1310nm, 1.25Gbps Rx 1310nm, SFF form-factor, Dual LC/UPC receptacle connector, -40~85°C Industrial temperature