

Features

- Electrical interface compliant to SFF-8431
- 850nm VCSEL laser and PIN photo-detector
- Maximum link length of 70m on OM3 MMF and 100m on OM4 MMF
- Digital diagnostics functions are available via the I²C interface
- Operating case temperature
Commercial: 0°C to +70 °C
Industrial: -40°C to +85 °C
- RoHS compliant



Application

- 25GBASE-SR Ethernet
- InfiniBand QDR, SDR, DDR
- Servers, switches, storage and host card adapters

Order Information

Table 1- order information

Part No.	Data Rate	Laser	Fiber Type	Distance	Optical Interface	Temp	DDMI
HOLS-P2885M1-LD-CV	25Gbps	850nm	MMF	100m	LC	0°C ~70°C	Y
HOLS-P2885M1-LD-IV	25Gbps	850nm	MMF	100m	LC	-40°C ~85°C	Y

Absolute Maximum Ratings

Table 2-Absolute Maximum Ratings

Parameter	Symbol	Min.	Typical	Max.	Unit	Notes
Storage Temperature	T _S	-40	-	+85	°C	
Supply Voltage	V _{CC}	-0.3	-	+3.6	V	
Operating Relative Humidity	RH	0	-	+85	%	no condensation

Recommended Operating Conditions

Table 3-Recommended Operating Conditions

Parameter	Symbol	Min.	Typical	Max.	Unit	Notes
Operating Case Temperature	T _C	0	-	+70	°C	HOLS-P2885M1-LD-CV
		-40	-	+85	°C	HOLS-P2885M1-LD-IV
Power Supply Voltage	V _{CC}	3.13	3.3	3.47	V	
Power Supply Current	I _{CC}	-	-	300	MA	
Maximum Power Dissipation	P _D	-	-	1	W	
Data Rate	DR _{Ave}	-	25.78125	-	Gb/s	

Transmission Distance	TD	-	100	m	Over MMF
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Optical Characteristics

Table 4-Optical Characteristics

Transmitter						
Parameter	Symbol	Min.	Typical	Max.	Unit	Notes
Center Wavelength	λ	840	850	860	nm	
RMS spectral width				0.65	nm	
Average Optical Power	P _{avg}	-7.5	-	2.5	dBm	1
Extinction Ratio	ER	2	-	-	dB	2
Receiver						
Center Wavelength	λ_r	840	850	860	nm	
Receiver Sensitivity	P _{sens}			-10	dBm	3
Receiver Overload	P _{IN-OL}	2.5	-		dBm	3
LOS Assert	LOS _A	-30	-	-	dBm	
LOS De-assert	LOS _D	-	-	-11	dBm	
LOS Hysteresis	LOS _H	0.5	-	6	dB	

Notes:

1. The optical power is launched into MMF
2. Measured with a PRBS 2³¹-1 test pattern @25.78125Gbps
3. Measured with a PRBS 231-1 test pattern @25.78125Gbps, BER≤5x10⁻⁵.

Electrical Characteristics

Table 5-Electrical Characteristics

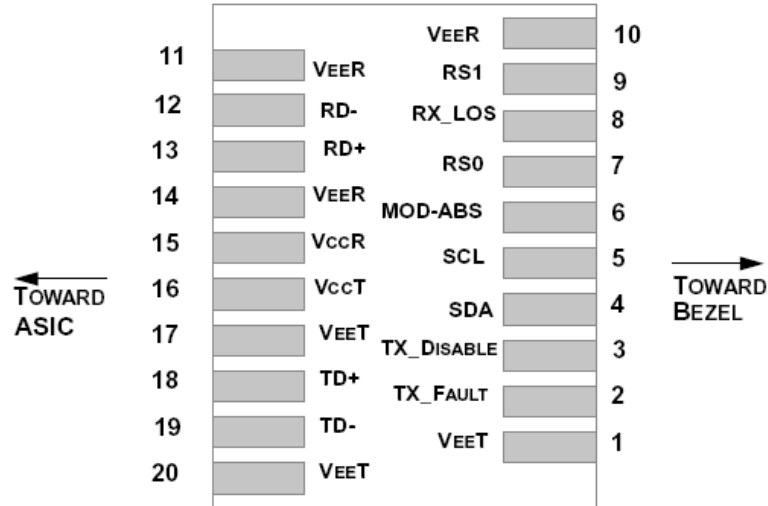
Transmitter (Module Input)						
Parameter	Symbol	Min.	Typical	Max.	Unit	Notes
Differential Data Input Amplitude	V _{IN,P-P}	300	-	1100	mVpp	
Differential Termination Mismatch		-	-	10	%	
Tx_Fault	Normal Operation	VOL	-0.3	-	0.4	V
	Transmitter Fault	VOH	2.4	-	VCC	V
Tx_Disable	Normal Operation	V _{IL}	-0.3	-	0.8	V
	Laser Disable	V _{IH}	2.0	-	VCC+0.3	V
Receiver (Module Output)						
Differential Data Output Amplitude	V _{OUT,P-P}	500	-	800	mVpp	
Differential Termination Mismatch (1MHZ)		-	-	10	%	
Rx_LOS	Normal Operation	V _{OL}	-	-	0.4	V
	Lose Signal	V _{OH}	VCC-0.5	-	-	V

Digital Diagnostics

Table 6-Digital Diagnostics

Parameter	Range	Accuracy	Unit	Calibration
Temperature	0 to 70 or -40 to 85	±3	°C	Internal
Voltage	0 to V _{CC}	0.1	V	Internal
Tx Bias Current	0 to 10	10%	mA	Internal
Tx Output Power	2.5 to -7.5	±3	dBm	Internal
Rx Power	2.5 to -10	±3	dBm	Internal

Pin Definitions



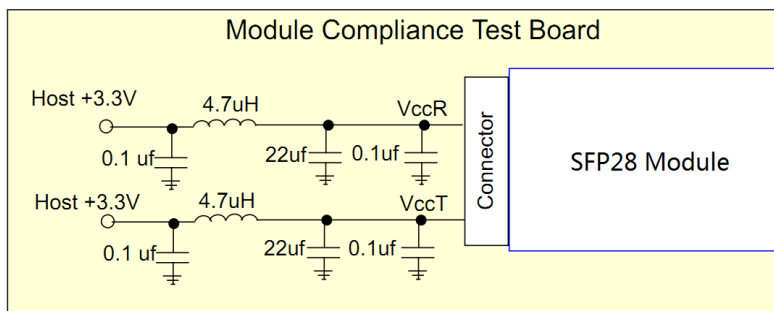
Pin	Logic	Symbol	Name/Description	Note
1		V _{EE} T	Module Transmitter Ground	1
2	LVTTL-O	TX_FAULT	Module Transmitter Fault	2
3	LVTTL-I	TX_DISABLE	Transmitter Disable; Turns off transmitter laser output	3
4	LVTTL-I/O	SDL	2-Wire Serial Interface Data Line (MOD-DEF2)	
5	LVTTL-I/O	SCL	2-Wire Serial Interface Clock (MOD-DEF1)	
6		MOD_ABS	Module Absent, connected to V _{EE} T or V _{EE} R in the module	2
7	LVTTL-I	RS0	Rate Select 0, NOT implement	4
8	LVTTL-O	RX_LOS	Receiver Loss of Signal Indication (in FC designated as RX_LOS, in SONET designated as LOS, and in Ethernet designated as NOT Signal Detect)	2
9	LVTTL-I	RS1	Rate Select 1, NOT implement	4
10		V _{EE} R	Module Receiver Ground	1
11		V _{EE} R	Module Receiver Ground	1
12	CML-O	RD-	Receiver Inverted Data Output	
13	CML-O	RD+	Receiver Non-Inverted Data Output	
14		V _{EE} R	Module Receiver Ground	1

15		V _{CC} R	Module Receiver 3.3 V Supply	
16		V _{CC} T	Module Transmitter 3.3 V Supply	
17		V _{EE} T	Module Transmitter Ground	1
18	CML-I	TD+	Transmitter Non-Inverted Data Input	
19	CML-I	TD-	Transmitter Inverted Data Input	
20		V _{EE} T	Module Transmitter Ground	1

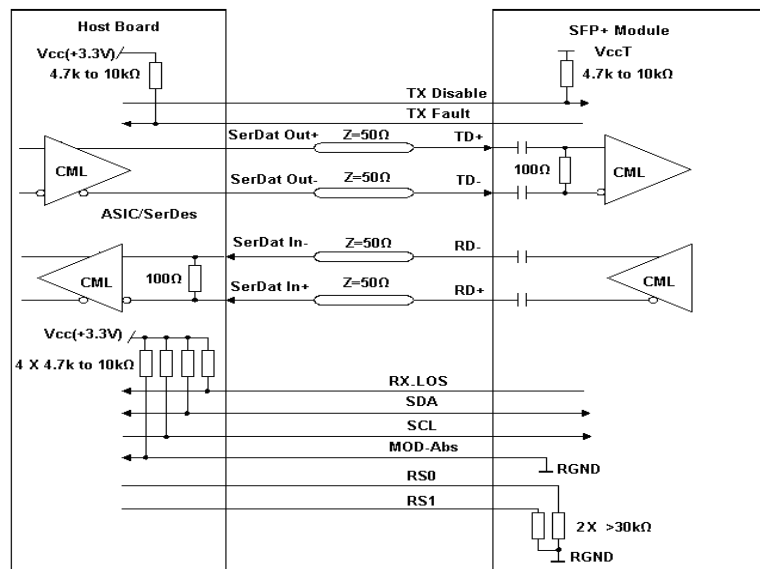
Notes:

1. The module ground pins are isolated from the module case.
2. The pins shall be pulled up with 4.7K-10Kohms to a voltage between 3.14V and 3.47V on host board.
3. The pin is pulled up to V_{CC}T with a 4.7K-10KΩ resistor in the module.
4. The pins are pulled low to V_{EE}T with a >30kΩ resistor in the module.

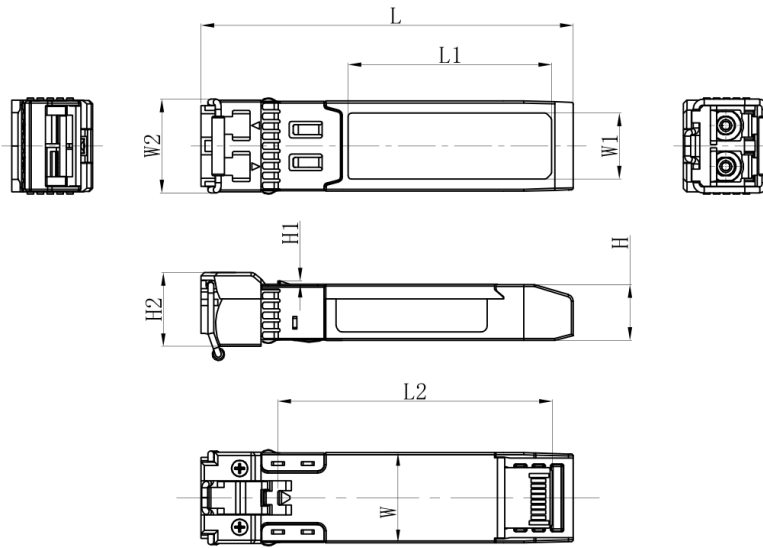
Recommended Host Board Power Supply Circuit



Recommended interface Circuit



Mechanical Dimension



Unit: mm

	L	L1	L2	W	W1	W2	H	H1	H2
MAX	56.9	31.2	41.95	13.8	10.2	14.5	8.7	0.55	11.5
Typical	56.7	31.0	41.80	13.7	10.0	14.3	8.6	0.5	11.3
MIN	56.5	30.8	41.65	13.6	9.8	14.1	8.5	0.45	11.1

Warnings

Handling Precautions: This device is susceptible to damage as a result of electrostatic discharge (ESD). A static free environment is highly recommended. Follow guidelines according to proper ESD procedures.

Laser Safety: Radiation emitted by laser devices can be dangerous to human eyes. Avoid eye exposure to direct or indirect radiation.