TEG-MGBS10D35-PRO

TRENDnet® TEG-MGBS10D35 Compatible TAA Compliant 1000Base-BX SFP Transceiver (SMF, 1310nmTx/1550nmRx, 10km, 0 to 70C, LC)

Features

- INF-8074 and SFF-8472 Compliance
- Simplex LC Connector
- Commercial Temperature 0 to 70 Celsius
- Single-mode Fiber
- Hot Pluggable
- Excellent ESD Protection
- Metal with Lower EMI
- RoHS Compliant and Lead Free

Applications:

- 1000Base-BX Ethernet
- 1x Fibre Channel
- Access (FTTx) and Enterprise

Product Description

This TRENDnet® TEG-MGBS10D35 compatible SFP transceiver provides 1000Base-BX throughput up to 10km over single-mode fiber (SMF) using a wavelength of 1310nmTx/1550nmRx via an LC connector. It is guaranteed to be 100% compatible with the equivalent TRENDnet® transceiver. This easy to install, hot swappable transceiver has been programmed, uniquely serialized and data-traffic and application tested to ensure that it will initialize and perform identically. It is built to meet or exceed the specifications of TRENDnet®, as well as to comply with MSA (Multi-Source Agreement) standards to ensure seamless network integration. This transceiver is Trade Agreements Act (TAA) compliant. We stand behind the quality of our products and proudly offer a limited lifetime warranty.

Proline's transceivers are RoHS compliant and lead-free.

TAA refers to the Trade Agreements Act (19 U.S.C. & 2501-2581), which is intended to foster fair and open international trade. TAA requires that the U.S. Government may acquire only "U.S. – made or designated country end products.

TAA COMPLIANT

Rev. 031924

Regulatory Compliance

- ESD to the Electrical PINs: compatible with MIL-STD-883E Method 3015.4.
- ESD to the LC Receptacle: compatible with IEC 61000-4-3.
- EMI/EMC: compatible with FCC Part 15 Subpart B Rules, EN55022:2010.
- Laser Eye Safety: compatible with FDA 21CFR, EN60950-1& EN (IEC) 60825-1, 2.
- RoHS: compliant with EU RoHS 2.0 directive 2015/863/EU.

Absolute Maximum Ratings

Parameter	Symbol	Min.	Typ.	Max.	Unit
Maximum Supply Voltage	Vcc	-0.5		4.0	V
Storage Temperature	Tstg	-40		85	°C
Operating Case Temperature	Tc	0		70	°C
Operating Humidity	RH	5		95	%
Data Rate			155		Mbps

Electrical Characteristics (TOP=25°C, Vcc=3.3Volts)

Parameter	Symbol	Min.	Typ.	Max.	Unit	Notes
Power Supply Voltage	Vcc	3.13	3.30	3.47	V	
Power Supply Current	Icc			250	mA	
Transmitter						
Single-Ended Data Input Swing	VIN, pp	250		1200	mV	
Input Differential Impedance	RIN		100		Ω	1
Receiver						
Single-Ended Data Output Swing	VOUT, pp	300	400	800	mV	2
Output Differential Impedance	ZOUT		100		Ω	

Notes:

1. AC coupled.
2. Into 100Ω differential termination.

Optical Characteristics

Parameter	Symbol	Min.	Typ.	Max.	Unit	Notes
Transmitter						
Optical Power (Average)	P_{AVE}	-15		-8	dBm	1
Optical Extinction Ratio	ER	10			dB	
Optical Wavelength	Tλ	1275	1310	1350	nm	
Spectral Width	σ			3	nm	
Optical Rise/Fall Time	Tr/Tf			1500	ps	2
Total Jitter (Peak-to-Peak)	J_{TXp-p}			0.07	UI	3
Total Jitter (RMS)	J_{TXrms}			0.007	UI	
Receiver						
Receiver Sensitivity	S			-30	dBm	4
Receiver Overload	P_{max}	-2			dBm	5
Receiver Wavelength	Rλ	1530	1550	1570	nm	
LOS De-Assert	LOSD			-32	dBm	
LOS Assert	LOSA	-40			dBm	
LOS Hysteresis	LOSH	0.5		5	dB	

Notes:

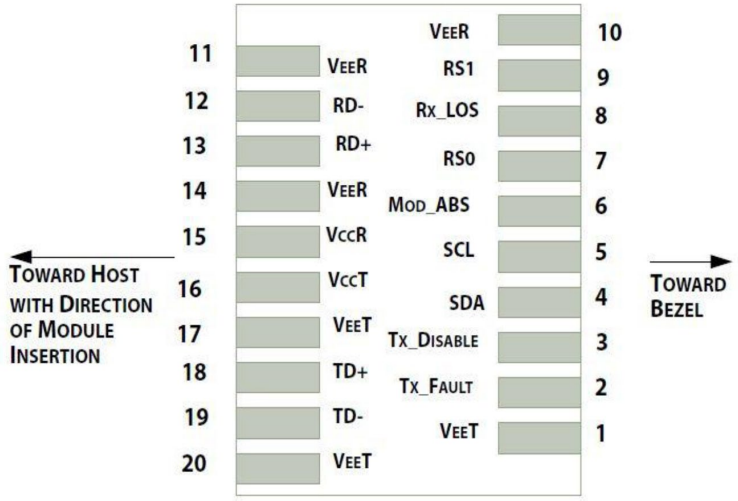
1. Class 1 Laser Safety.
2. Unfiltered, 20-80%. Complies with OC-3 eye masks when filtered.
3. Measured with DJ-free data input signal. In actual application, output DJ will be the sum of input DJ and ΔDJ.
4. Measured with PRBS 2^{23}-1 at 10^{-10} BER.
5. Exceeding the receiver overload can physically damage the module. Please use appropriate attenuation.

Pin Descriptions

Pin	Symbol	Name/Descriptions	Ref.
1	VeeT	Transmitter Ground (Common with Receiver Ground).	1
2	Tx_Fault	Transmitter Fault. LVTTL-O.	2
3	Tx_Disable	Transmitter Disable. Laser output disabled on “high” or “open.” LVTT-I.	3
4	SDA	2-Wire Serial Interface Data (Same as MOD-DEF2 in INF-8074i). LVTTL-I/O.	
5	SCL	2-Wire Serial Interface Clock (Same as MOD-DEF2 in INF-8074i). LVTTL-I.	
6	MOD_ABS	Module Absent. Connect to VeeT or VeeR in the module.	4
7	RS0	Rate Select 0. Not used.	5
8	LOS	Loss of Signal indication. “Logic 0” indicates normal operation. LVTTL-O.	2
9	RS1	Rate Select 1. Not used.	5
10	VeeR	Receiver Ground (Common with Transmitter Ground).	1
11	VeeR	Receiver Ground (Common with Transmitter Ground).	1
12	RD-	Receiver Inverted Data Out. AC Coupled. CML-O.	
13	RD+	Receiver Non-Inverted Data Out. AC Coupled. CML-O.	
14	VeeR	Receiver Ground (Common with Transmitter Ground).	1
15	VccR	Receiver Power Supply.	
16	VccT	Transmitter Power Supply.	
17	VeeT	Transmitter Ground (Common with Receiver Ground).	1
18	TD+	Transmitter Non-Inverted Data In. AC Coupled. CML-I.	
19	TD-	Transmitter Inverted Data In. AC Coupled. CML-O.	
20	VeeT	Transmitter Ground (Common with Receiver Ground).	1

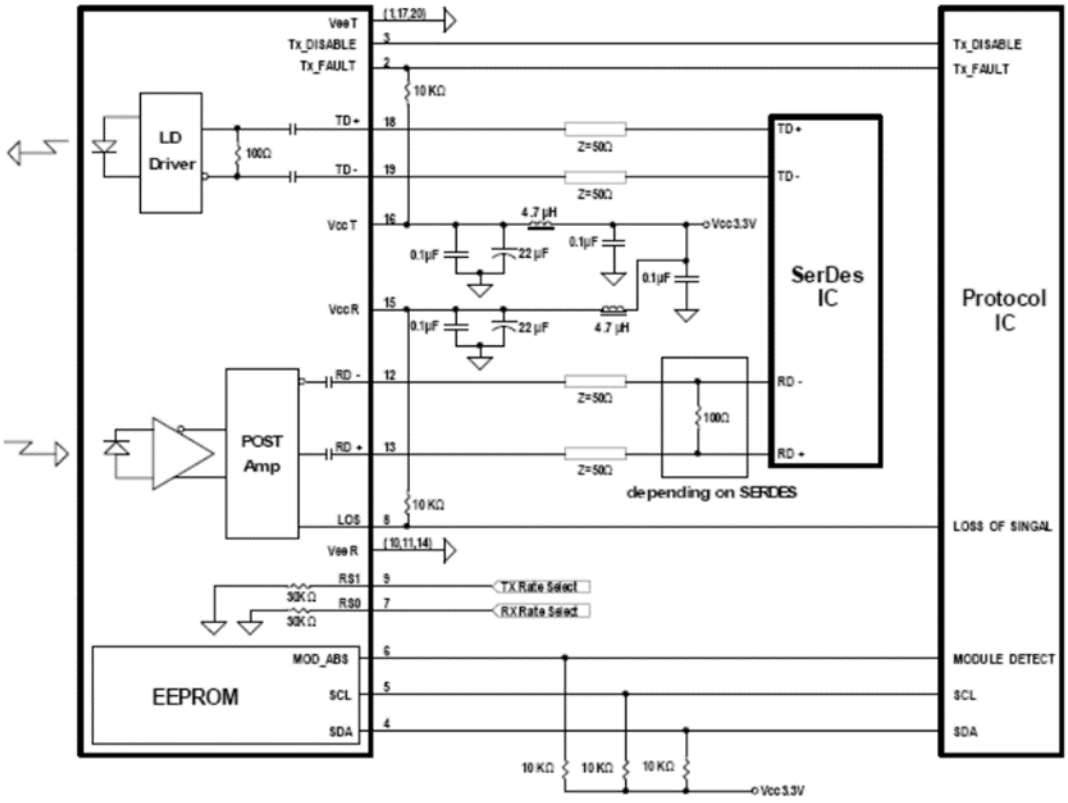
Notes:

1. The module signal ground contacts, VeeR and VeeT, should be isolated from the module case.
2. This contact is an open collector/drain output and should be pulled up to the Host_Vcc with resistor in the range 4.7KΩ to 10KΩ. Pull-ups can be connected to one or several power supplies; however, the host board design shall ensure that no module contract has voltage exceeding module VccT/R +0.5V.
3. Tx_Disable is an input contact with a 4.7KΩ to 10KΩ pull-up resistor to VccT inside module.
4. MOD_ABS is connected to VeeT or VeeR in the SFP+ module. The host may pull the contract up to the Host_Vcc with a resistor in the range from 4.7KΩ to 10KΩ. MOD_ABS is asserted “High” when the SFP+ module is physically absent from a host slot.
5. Internally pulled down per SFF-8431.



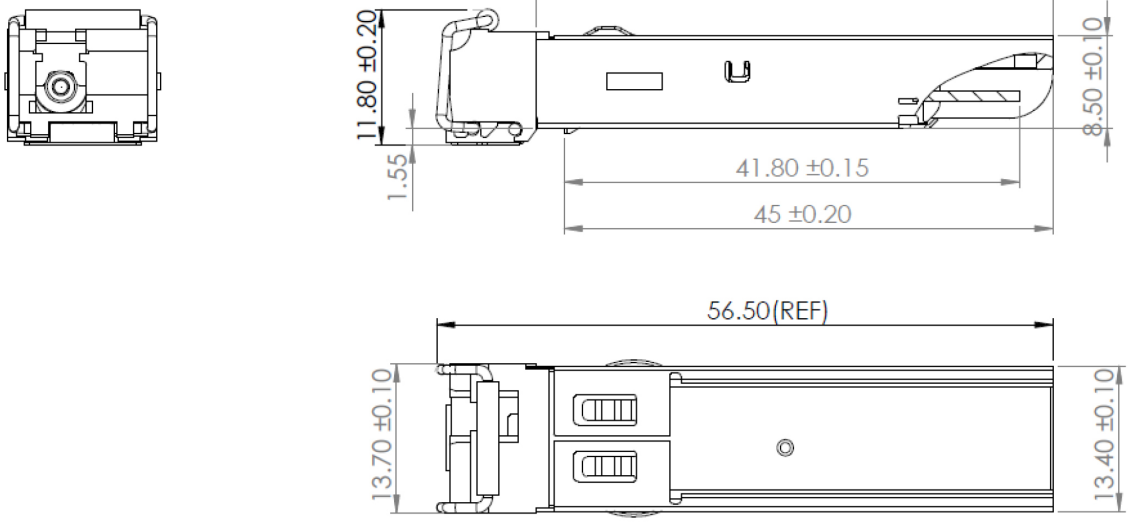
Pin-Out of Connector Block on the Host Board

Recommended Circuit Schematic



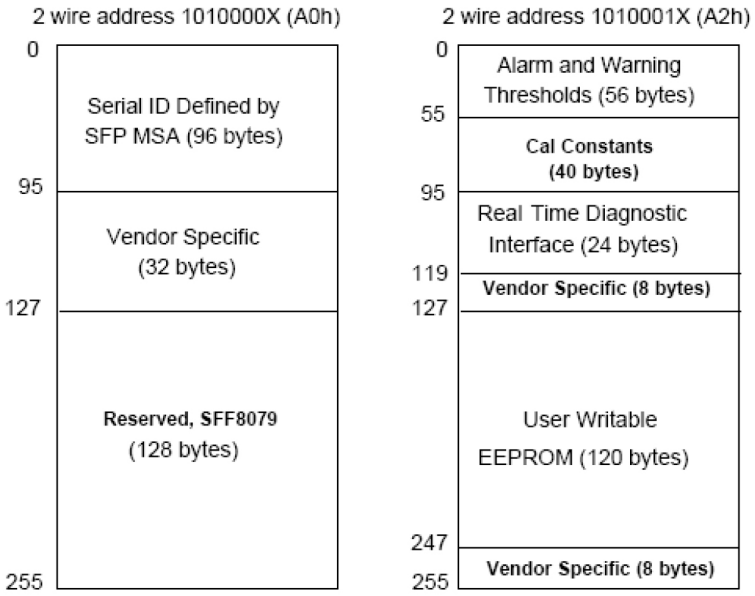
Mechanical Specifications

Small Form Factor Pluggable (SFP) transceivers are compatible with the dimensions defined by the SFP Multi-Sourcing Agreement (MSA).



EEPROM Information

EEPROM memory map-specific data field description is as below:



About Us:

Proline Options is one of North America's leading providers of transceivers and high speed cabling. With a reputation for quality, tested products that cover the connectivity spectrum, Proline Options has a solution for you regardless of the specification.

At Proline Options, every product is tested in its intended application - never batch or spec tested only. We run bandwidth, distance and IOS network tests. We have documented an impressive 0.03% failure rate over the last 10 years. To continue this rate of success we invest millions annually in our own on-site testing lab.

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