SFP-6GBASE-LR-2-I-PRO

MSA and TAA Compliant 6GBase-LR SFP+ Transceiver (SMF, 1310nm, 15km, DOM, -40 to 85C, LC)

Features

- SFF-8432 and SFF-8472 Compliance
- Uncooled DFB transmitter and PIN receiver
- Duplex LC Connector
- Industrial Temperature -40 to 85 Celsius
- Single-mode Fiber
- Hot Pluggable
- Excellent ESD Protection
- Metal with Lower EMI
- RoHS Compliant and Lead Free

Applications:

- 6G Ethernet

Product Description

This MSA Compliant SFP+ transceiver provides 6GBase-LR throughput up to 15km over single-mode fiber (SMF) using a wavelength of 1310nm via an LC connector. It is built to MSA standards and is uniquely serialized and data-traffic and application tested to ensure that they will integrate into your network seamlessly. Digital optical monitoring (DOM) support is also present to allow access to real-time operating parameters. 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

Absolute Maximum Ratings

Parameter	Symbol	Min.	Typ.	Max.	Unit	Notes
Maximum Supply Voltage	Vcc	-0.5		4	V	1
Storage Temperature	TS	-40		85	°C	2
Operating Case Temperature	Tc	-40		85	°C	3
Data Rate	DR	9.83	10.3125	11.3	Gbps	4
Bit Error Rate	BER			10^{-12}		

Notes:

1. For electrical power interface
2. Ambient Temperature
3. Case Temperature
4. IEEE 802.3ae

Link Distances

Data Rate	Fiber Type	Distance Range (km)
9.83 –11.3 Gb/s	9/125um SMF	2

Electrical Characteristics (VCC=3.14V to 3.46V, TC=-0°C to 70°C)

Parameter	Symbol	Min.	Typ.	Max.	Unit	Notes
Power Supply Voltage	Vcc	3.14	3.30	3.46	V	
Power Supply Current	Icc		230	300	mA	
Transmitter						
Differential data input swing	VIN,pp	180		700	mV	
Input differential impedance	RIN		100		Ω	
Transmit Disable Voltage	V_D	2		Vcc	V	
Transmit Enable Voltage	V_{EN}	V_{EE}		V_{EE}+0.8	V	
Receiver						
Differential data output swing	VOUT, pp	300		850	mV	
Data output rise/fall time (20%-80%)	Tr /Tf	28			ps	
LOS Asset	VLOSA	2		Host_Vcc	V	
LOS De-Assert	VLOSD	Vcc		Vcc+0.5	V	

Optical Characteristics

Parameter	Symbol	Min.	Typ.	Max.	Unit	Notes
Transmitter						
Output Optical Power	Ptx	-8.2		0.5	dBm	1
Optical Center Wavelength	λc	1260	1310	1355	nm	
Optical Modulation Amplitude	OMA	-5.2			dBm	2
Extinction Ratio	ER	3.5			dB	
Side Mode Suppression Ratio	SMSR	30			dB	
Relative Intensity Noise	RIN			-128	dB/Hz	
Transmitter Dispersion Penalty	TDP			3.2	dB	
Launch Power of OFF Transmitter	Poff			-30	dBm	1
Receiver						
Optical Center Wavelength	λc	1260		1355	nm	
Average Receive Power	Prx	-14.4		0.5	dBm	
Receiver Sensitivity @10.3Gb/s	S			-14.4	dBm	3
Receiver Reflectance	RL			-12	dB	
LOS Assert	LOSA	-30			dBm	
LOS De-Assert	LOSD			-15	dBm	
LOS Hysteresis	LOSH	0.5			dB	

Notes:

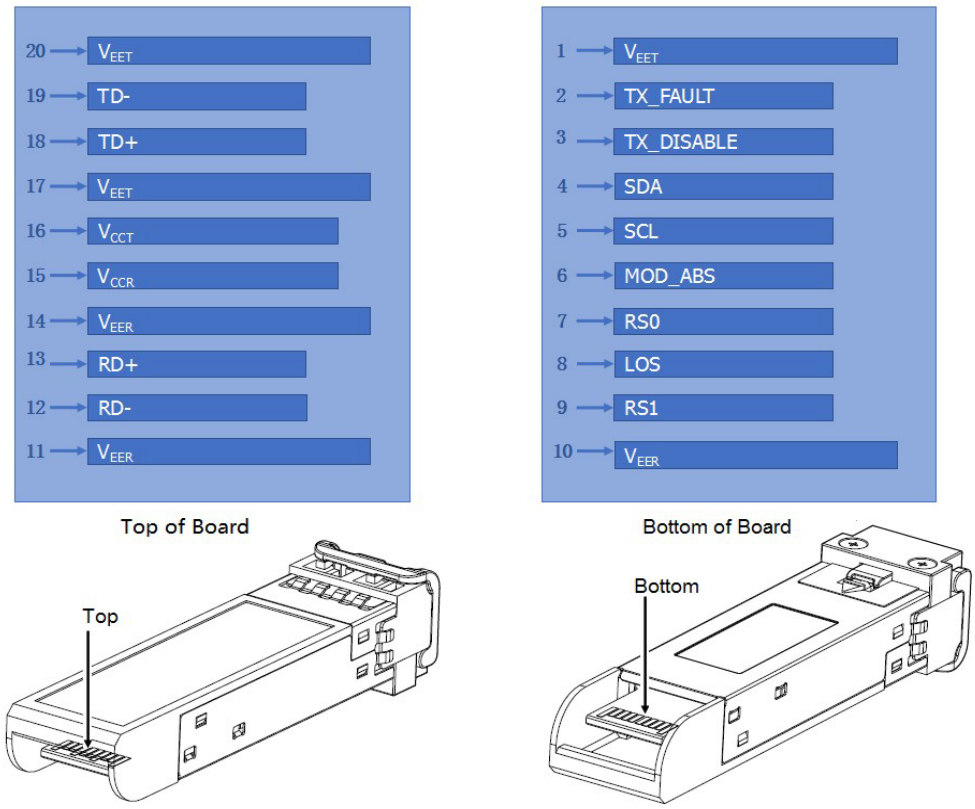
1. Average.
2. According to IEEE 802.3ae requirement.
3. Average. Test the resulting value using the minimum ER value within the defined range: BER<10^{-12}, PRBS 2^{31}-1.

Pin Descriptions

Pin	Symbol	Name/Descriptions	Ref.
1	VeeT	Transmitter Ground (Common with Receiver Ground).	1
2	Tx_Fault	Transmitter Fault.	2
3	Tx_Disable	Transmitter Disable. Laser output disabled on “high” or “open.”	3
4	SDA	2-Wire Serial Interface Data Line.	4
5	SCL	2-Wire Serial Interface Clock Line.	4
6	MOD_ABS	Module Absent. Grounded within the module.	4
7	RS0	No connection required.	
8	LOS	Loss of Signal indication. Logic 0 indicates normal operation	5
9	RS1	No connection required.	1
10	V_{eeR}	Receiver Ground (Common with Transmitter Ground).	1
11	V_{eeR}	Receiver Ground (Common with Transmitter Ground).	1
12	RD–	Receiver Inverted Data Out. AC Coupled.	
13	RD+	Receiver Non-Inverted Data Out. AC Coupled.	
14	V_{eeR}	Receiver Ground (Common with Transmitter Ground).	1
15	VccR	Receiver Power Supply	
16	VccT	Transmitter Power Supply	
17	V_{eeT}	Transmitter Ground (Common with Receiver Ground).	1
18	TD+	Transmitter Non-Inverted Data In. AC Coupled.	
19	TD–	Transmitter Inverted Data In. AC Coupled.	
20	VeeT	Transmitter Ground (Common with Receiver Ground).	1

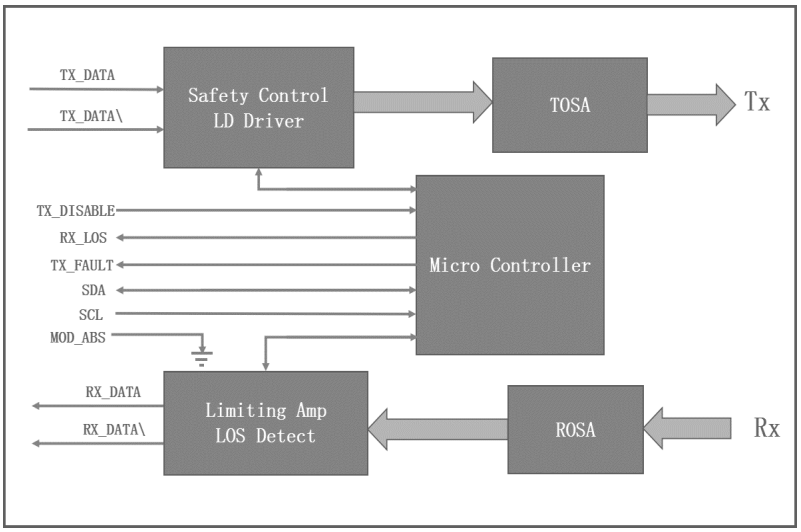
Notes:

1. Circuit ground is isolated from the chassis ground.
2. Tx_Fault is the open collector output and should be pulled up with 4.7kΩ-10kΩ on the host board to a voltage between 2V and Vcc+0.3V.
3. Disabled: T_{DIS}>2V or open, enabled: T_{DIS}<0.8V.
4. Should be pulled up with 4.7kΩ-10kΩ on the host board to a voltage between 2V and Vcc+0.3V.
5. LOS is an open collector output and should be pulled up with 4.7kΩ-10kΩ on the host board to a voltage between 2V and Vcc+0.3V. The logic "0" indicates normal operation, and the logic "1" indicates that the receiver signal is lost.



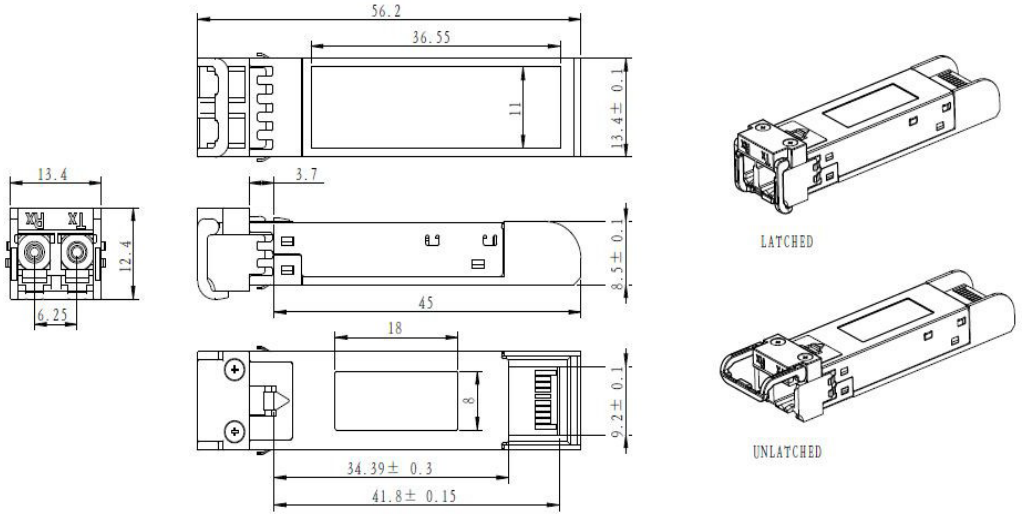
Pin-out of connector Block on Host board

Block Diagram



Mechanical Specifications

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

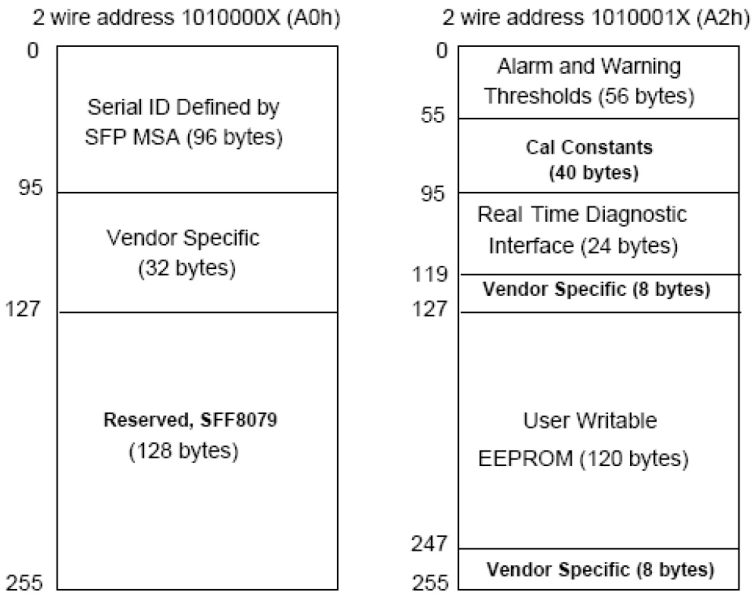


ALL DIMENSIONS ARE ±0.2mm UNLESS OTHERWISE SPECIFIED

UNIT: mm

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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