

10501-PRO

Extreme Networks® 10501 Compatible TAA Compliant 25GBase-SR SFP28 Transceiver (MMF, 850nm, 100m, DOM, 0 to 70C, LC)

Features

- SFF-8402 and SFF-8472 Compliance
- Duplex LC Connector
- Commercial Temperature 0 to 70 Celsius
- Multi-mode Fiber
- Hot Pluggable
- Excellent ESD Protection
- Metal with Lower EMI
- RoHS Compliant and Lead Free



Applications:

- 25GBase Ethernet
- Access and Enterprise

Product Description

This Extreme Networks® 10501 compatible SFP28 transceiver provides 25GBase-SR throughput up to 100m over multi-mode fiber (MMF) using a wavelength of 850nm via an LC connector. It is guaranteed to be 100% compatible with the equivalent Extreme Networks® 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. 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.



Absolute Maximum Ratings

| Parameter | Symbol | Min. | Typ. | Max | Unit |
|----------------------------|--------|------|------|-----|------|
| Storage Temperature | Ts | -40 | | 85 | °C |
| Relative Humidity | RH | 5 | | 95 | % |
| Supply Voltage | Vcc | -0.5 | | 4.0 | V |
| Operating Case Temperature | Tc | 0 | 25 | 70 | °C |

Electrical Characteristics

| Parameter | Symbol | Min | Typ | Max | Unit | Notes | |
|-----------------------------------|-----------------------|-----------------|-------|-------|-------------------|-------|------------|
| Supply Voltage | Vcc | 3.135 | 3.3 | 3.465 | V | | |
| Data Rate | | | 25.78 | | GB/s | | |
| Module Supply Current | Icc | | | 290 | mA | | |
| Power Dissipation | P _D | | | 1000 | mW | | |
| Transmitter | | | | | | | |
| Input Differential Impedance | Z _{IN} | | 100 | | Ω | | |
| Differential Data Input Swing | V _{IN, P-P} | 180 | | 700 | mV _{P-P} | | |
| TX_FAULT | Transmitter Fault | V _{OH} | 2.0 | | V _{CC} | V | TX_FAULT |
| | Normal Operation | V _{OL} | 0 | | 0.8 | V | |
| TX_DISABLE | Transmitter Disable | V _{IH} | 2.0 | | V _{CC} | V | TX_DISABLE |
| | Transmitter Enable | V _{IL} | 0 | | 0.8 | V | |
| Receiver | | | | | | | |
| Output Differential Impedance | Z _O | | 100 | | Ω | | |
| Differential Data Output Swing | V _{OUT, P-P} | 300 | | 850 | mV _{P-P} | 1 | |
| Data Output Rinse Time, Fall Time | tr, tf | | 30 | | Ps | 2 | |
| Rx_LOS | Loss of Signal (LOS) | V _{OH} | 2.0 | | V _{CC} | V | RX_LOS |
| | Normal Operation | V _{OL} | 0 | | 0.8 | V | |

Notes:

1. Internally AC coupled, but requires a external 100Ω differential load termination.
2. 20-80%
3. LOS is an open collector output. Should be pulled up with 4.7Ω on the host board.

Optical Characteristics

| Parameter | Symbol | Min | Typ | Max | Unit | Notes |
|---|-----------------|------|-----|------|------|-------|
| Transmitter | | | | | | |
| Launch Optical Power | P_o | -7.6 | | +2.4 | dBm | 1 |
| Extinction Ratio | ER | 2 | | | dB | |
| Center Wavelength Range | λ_c | 840 | 850 | 860 | nm | |
| Transmitter Dispersion Penalty @25.78GB/s | TWDP | | | 5 | dB | |
| Spectral Width (RMS) @25.78Gb/s | $\Delta\lambda$ | | | 0.6 | nm | |
| Optical Return Loss Tolerance | ORLT | | | 12 | dB | |
| Pout @TX-Disable Asserted | P_{OFF} | | | -30 | dBm | 1 |
| Receiver | | | | | | |
| Center Wavelength | λ_c | 840 | | 860 | nm | |
| Receiver Sensitivity (P avg) | S | | | -11 | dBm | 2 |
| Receiver Overload (P avg) | P_{OL} | 2.5 | | | dBm | |
| Optical Return Loss | ORL | 12 | | | dB | |
| LOS De-Assert | LOS_D | | | -12 | dBm | |
| LOS Assert | LOS_A | -30 | | | dBm | |
| LOS Hysteresis | | 0.5 | | | dB | |

Notes:

1. 50/125 μ m fiber with NA = 0.2, 62.5/125 μ m fiber with NA = 0.275.
2. Measured with PRBS 231-1 at 10⁻⁴ BER @25.78Gb/s.

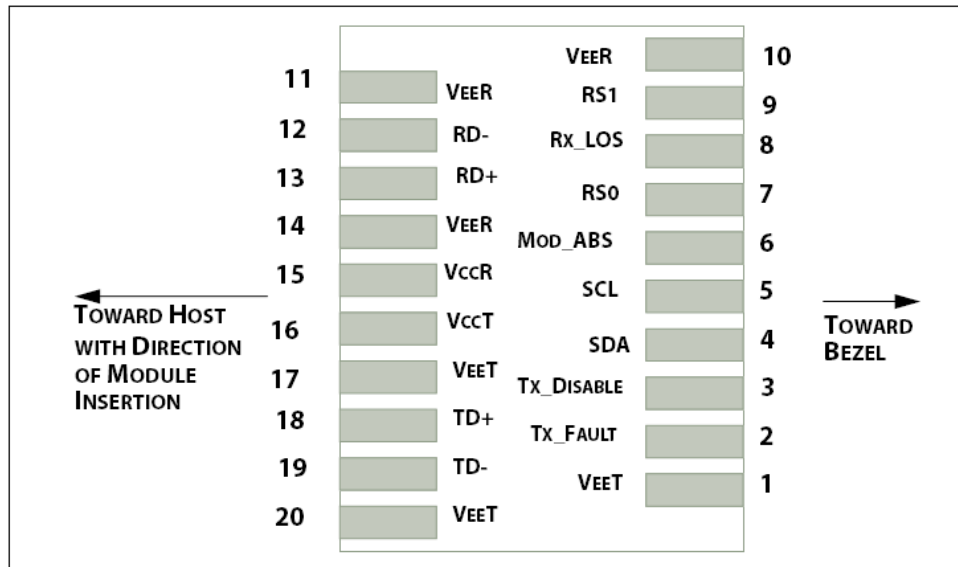
Pin Descriptions

| Pin | Symbol | Name/Descriptions | Ref. |
|-----|------------|--|------|
| 1 | VeeT | Transmitter Ground | 1 |
| 2 | TX Fault | Transmitter Fault (LVTTTL-O) - High indicates a fault condition | 2 |
| 3 | TX Disable | Transmitter Disable (LVTTTL-I) – High or open disables the transmitter | 3 |
| 4 | SDA | Two wire serial interface Data Line (LVCMOS-I/O) (MOD-DEF2) | 4 |
| 5 | SCL | Two wire serial interface Clock Line (LVCMOS-I/O) (MOD-DEF1) | 4 |
| 6 | MOD_ABS | Module Absent (Output), connected to VeeT or VeeR in the module | 5 |
| 7 | RS0 | Rate Select 0 – Not used, Presents high input impedance | 6 |
| 8 | RX_LOS | Receiver Loss of Signal (LVTTTL-O) | 2 |
| 9 | RS1 | Rate Select 1 – Not used, Presents high input impedance | 6 |
| 10 | VeeR | Receiver Ground | 1 |
| 11 | VeeR | Receiver Ground | 1 |
| 12 | RD- | Inverse Received Data out (CML-O), AC Coupled | |
| 13 | RD+ | Received Data out (CML-O), AC Coupled | |
| 14 | VeeR | Receiver Ground | |
| 15 | VccR | Receiver Power - +3.3V | |
| 16 | VccT | Transmitter Power - +3.3 V | |
| 17 | VeeT | Transmitter Ground | 1 |
| 18 | TD+ | Transmitter Data In (CML-I), AC Coupled | |
| 19 | TD- | Inverse Transmitter Data In (CML-I), AC Coupled | |
| 20 | VeeT | Transmitter Ground | 1 |

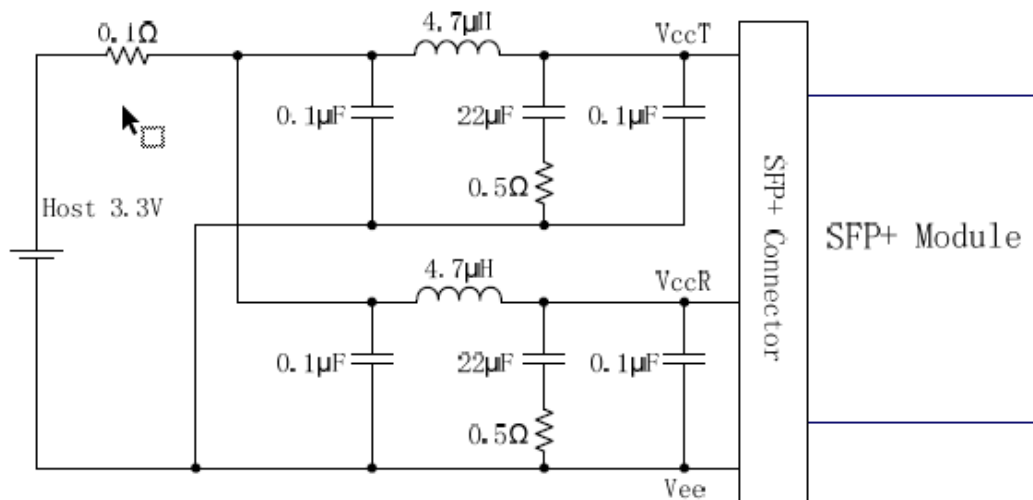
Notes:

1. The module signal grounds are isolated from the module case.
2. This is an open collector/drain output that on the hostboard requires a 4.7KΩ to 10KΩ pull-up resistor to VccHost.
3. This input is internally biased high with a 4.7KΩ to 10KΩ pull-up resistor to VccT.
4. Two-Wire Serial interface clock and data lines require an external pull-up resistor dependent on the capacitance load.
5. This is a ground return that on the host board requires a 4.7KΩ to 10KΩ pull-up resistor to VccHost.
6. Rate select can also be set through the 2-wire bus in accordance with SFF-8472 v. 10.2, Rx Rate Select is set at Bit 3, Byte 110.
Address A2h. Tx Rate Select is set at Bit 3, Byte 118, Address A2h.
Note: writing a “1” selects maximum bandwidth operation. Rate select is the logic OR of the input state of Rate Select Pin and 2-wire bus.

Host PCB SFP+ pad assignment top view



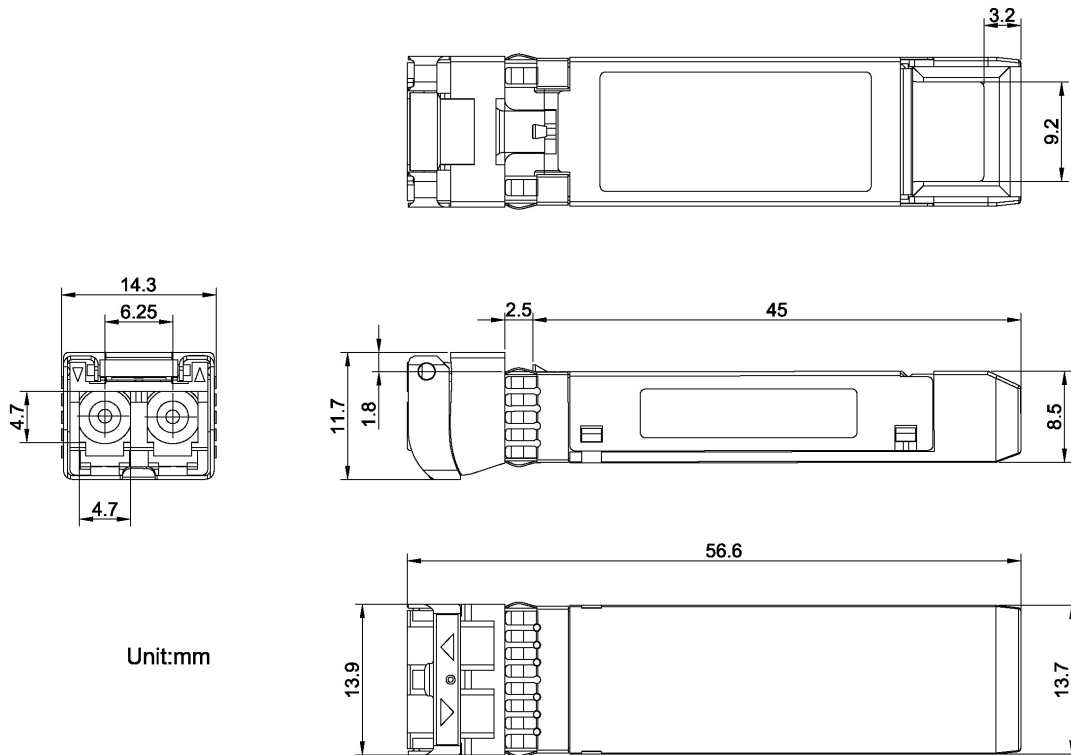
Recommended Host Board Power Supply Filter Network



Recommended Application Interface Block Diagram



Mechanical Specifications



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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