

Extreme Compatible Compatible 10501 Quick Spec:

| | |
|-----------------|--|
| Part Number: | 10501 10501-IND |
| Form Factor: | SFP28 |
| TX Wavelength: | 850nm |
| Reach: | 100m |
| Cable Type: | MMF |
| Rate Category: | 25G |
| Interface Type: | SR |
| DDM: | Yes |
| Connector Type: | Dual-LC |



Extreme Compatible Compatible 10501 Features

- Operating data rate up to 25.78Gbps
- 850nm VCSEL Transmitter
- Distance up to 100m @50 / 125 um OM4
- Distance up to 70m @50 / 125 um OM3
- Single 3.3V Power supply
- Duplex LC Connector Interface, Hot Pluggable
- Built-in dual CDR
- Electrical interface compliant to SFF-8431
- Power Dissipation < 1.0W
- Operating Case Temperature
 - Standard: 0°C~+70°C
 - Industrial: -40°C~+85°C

Extreme Compatible Compatible 10501 Applications

- 25GBase-SR

Product Description

The [Extreme Compatible Compatible 10501](#) is SFP28 module for duplex optical data, communications up to 25.78Gb/s. It is with the SFP+ 20-pin connector to allow hot plug capability, Digital diagnostic functions are available via an I2C. It has built-in clock and data recovery (CDR). This module is designed for multi-mode fiber and operates at a nominal wavelength of 850 nm. The transmitter section uses a Vertical Cavity Surface Emitted Laser (VCSEL) and is a Class 1, laser compliant according to International Safety Standard IEC 60825. The receiver section uses, an integrated GaAs detector preamplifier (IDP) mounted in an optical header and a limiting post-amplifier IC.

ABSOLUTE MAXIMUM RATINGS

The operation in excess of any absolute maximum ratings might cause permanent damage to this module.

| Parameter | Symbol | Min | Max | Unit | Notes |
|--------------------------------------|-----------------|------|-----|------|-------|
| Storage Temperature | TS | -40 | 85 | °C | |
| Operating Case Temperature | TOP | 0 | 70 | °C | |
| Power Supply Voltage | V _{cc} | -0.5 | 3.6 | V | |
| Relative Humidity (non-condensation) | RH | 5 | 85 | % | |

RECOMMENDED OPERATING CONDITIONS

| Parameter | Symbol | Min | Typical | Max | Unit | Notes |
|--------------------------------|--------|-------|---------|----------|------|-------|
| Operating Case Temperature | TOP | 0 | | 70 | degC | |
| Power Supply Voltage | VCC | 3.135 | 3.3 | 3.465 | V | |
| Data Rate, | | | | 25.78125 | Gb/s | |
| Data Rate Accuracy | | -100 | | 100 | ppm | |
| Tx DISABLE Input Voltage –High | | 2 | | | V | |
| Tx DISABLE Input Voltage – Low | | | | 0.8 | V | |
| 50 / 125 um MMF OM3 | D | 2 | | 70 | m | |
| 50 / 125 um MMF OM4 | D | 2 | | 100 | m | |

Optical Characteristics

All parameters are specified under the recommended operating conditions unless otherwise specified..

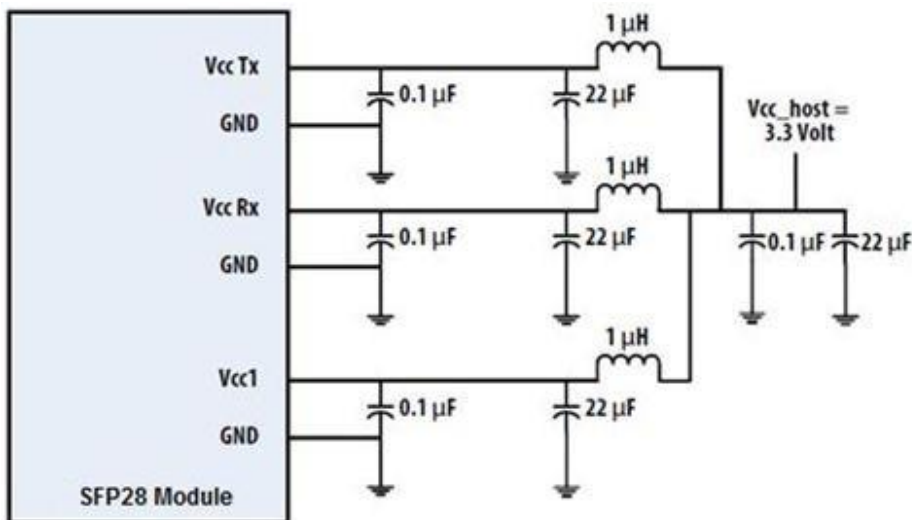
| Parameter | Symbol | Min | Typical | Max | Unit | Notes |
|------------------------------|------------------|-------|---------|------|---------|-------|
| Power Consumption | | | | 1.0 | W | |
| Supply Current | I _{cc} | | | 300 | mA | |
| Transmitter | | | | | | |
| Centre Wavelength | λ _C | 840 | 850 | 860 | nm | |
| Spectral Width (RMS)@25Gb/s | Δλ | 8.2 | | 0.6 | nm | |
| Average Output Power: 50 MMF | P _{out} | -8.4 | | 2.4 | dBm | |
| Extinction Ratio | ER | 2 | | | dB | |
| Receiver | | | | | | |
| Centre Wavelength | λ _C | 840 | 850 | 860 | nm | |
| Receiver Sensitivity (OMA) | S _{min} | | | -8.4 | dBm | |
| Average Receiver Power | P _{in} | -10.3 | | 3 | dBm | |
| Optical Return Loss | ORL | | | -12 | At 1MHz | |
| LOS De-Assert | LOSD | | | -13 | dB | |
| LOS Assert | LOSA | -30 | | | dB | |
| LOS Hysteresis | | 0.5 | | | dB | |

Digital Diagnostic Functions

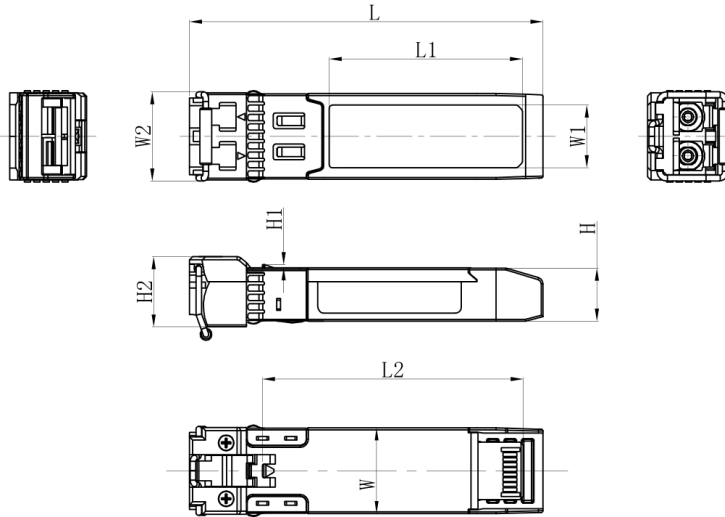
Digital diagnostics monitoring function is available on FluxLight's product. A 2-wire serial interface provides user to contact with module. It is compliant to SFF-8472 Rev10.2 with internal calibration mode. For external calibration mode please contact our sales staff.

| Parameter | Symbol | Min | Max | Unit | Notes |
|---------------------------------------|-----------|------|------|------|-------|
| Temperature monitor absolute error | DMI_Temp | -3 | +3 | °C | |
| Supply voltage monitor absolute error | DMI_VCC | -0.1 | +0.1 | V | |
| TX power monitor absolute error | DMI_RX | -3 | +3 | dB | |
| RX power monitor absolute error | DMI_RX | -3 | +3 | dB | |
| Bias current monitor | DMI_Ibias | -10% | +10% | mA | |

Recommended Circuit



Mechanical Dimensions

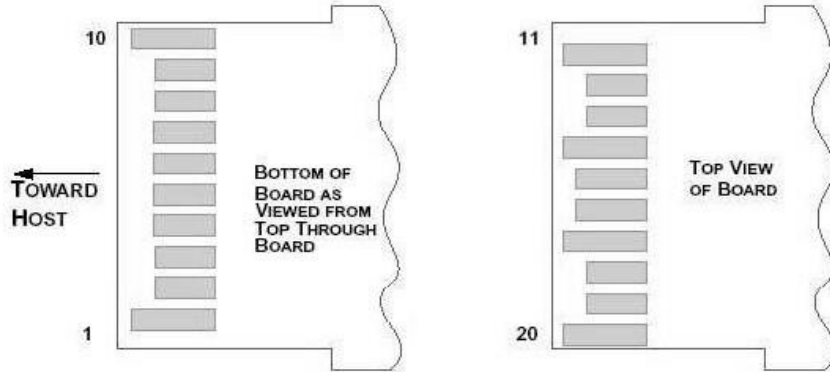


Unit: mm

| | 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 |

(Unit: mm [inch])

Pin Assignment and Description



Pin Assignment

| PIN # | Symbol | Description | Notes |
|-------|----------|---------------------------------|-------|
| 1 | VeeT | Transmitter Ground | |
| 2 | TX_Fault | N/A | 1 |
| 3 | TX_DIS | Transmitter Disable | 2 |
| 4 | SDA | Tow Wire Serial Data | |
| 5 | SCL | Tow Wire Serial Clock | |
| 6 | MOD_DEF0 | Module present, connect to VeeT | |
| 7 | RS0 | N/A | 1 |
| 8 | LOS | LOS of Signal | 2 |
| 9 | RS1 | N/A | 1 |
| 10 | VeeR | Reciever Ground | |
| 11 | VeeR | Reciever Ground | |
| 12 | RD- | Reciever Data Inverted | |
| 13 | RD+ | Reciever Data Non-Inverted | |
| 14 | VeeR | Reciever Ground | |
| 15 | VccR | Reciever Supply 3.3V | |
| 16 | VccT | Transmitter Supply 3.3V | |
| 17 | VeeT | Transmitter Ground | |
| 18 | TD+ | Transmitter Data Non-Inverted | |
| 19 | TD- | Transmitter Data Inverted | |
| 20 | VeeT | Transmitter Ground | |

Notes:

1. Signals not supported in SFP+ Copper pulled-down to VeeT with 30K ohms resistor
2. Passive cable assemblies do not support LOS and TX_DIS