

SFP-10GB-CW-51-100-C

MSA and TAA Compliant 10GBase-CWDM SFP+ Transceiver (SMF, 1510nm, 100km, LC, DOM)

Features:

- SFF-8432 and SFF-8472 Compliance
- Duplex LC Connector
- Temperature-stabilized EML transmitter and PIN receiver
- Single-mode Fiber
- Commercial Temperature 0 to 70 Celsius
- Hot Pluggable
- Metal with Lower EMI
- Excellent ESD Protection
- RoHS Compliant and Lead Free



Applications:

- 10x Gigabit Ethernet over CWDM
- 8x/10x Fibre Channel
- Access, Metro and Enterprise
- Mobile Fronthaul CPRI/OBSAI

Product Description

This MSA compliant SFP+ transceiver provides 10GBase-CWDM throughput up to 100km over single-mode fiber (SMF) using a wavelength of 1510nm 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.

ProLabs' 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.")



CWDM Available Wavelengths

| Wavelengths | Min. | Typ. | Max. |
|-------------|------|------|------|
| 47 | 1465 | 1471 | 1477 |
| 49 | 1485 | 1491 | 1497 |
| 51 | 1505 | 1511 | 1517 |
| 53 | 1525 | 1531 | 1537 |
| 55 | 1545 | 1551 | 1557 |

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 | 25 | 70 | °C |
| Bit Error Rate | BER | | | 10 ⁻¹² | |
| Data Rate | DR | 1.2 | 10.3125 | 11.3 | Gbps |

Electrical Characteristics

| Parameter | Symbol | Min. | Typ. | Max. | Unit | Notes |
|-------------------------------------|---------|------|------|----------|------|-------|
| Power Supply Voltage | Vcc | 3.14 | 3.30 | 3.46 | V | |
| Power Supply Current | Icc | | | 550 | mA | 1 |
| Power Consumption | PC | | | 1.5 | W | |
| Transmitter | | | | | | |
| Input Differential Impedance | RIN | | 100 | | Ω | |
| Differential Data Input Swing | VIN,pp | 120 | | 1200 | mV | |
| Transmit Disable Voltage | VD | 2 | | Vcc | V | |
| Transmit Enable Voltage | VEN | Vee | | Vee+0.8 | V | |
| Receiver | | | | | | |
| Differential Data Output Swing | VOUT,pp | 640 | | 1000 | mV | |
| Data Output Rise/Fall Time (20-80%) | Tr/Tf | 28 | | | ps | |
| LOS Fault | VLOSA | 2 | | Host_Vcc | V | |
| LOS Normal | VLOSD | Vee | | Vee+0.5 | V | |

Notes:

1. For the electrical power interface.

Optical Characteristics

| Parameter | Symbol | Min. | Typ. | Max. | Unit | Notes |
|---------------------------------|--------------------|------|------|------|-------|-------|
| Transmitter | | | | | | |
| Output Optical Power | P _{TX} | 1.5 | | 4 | dBm | 1 |
| Optical Center Wavelength | λ_C | 1505 | 1511 | 1517 | nm | |
| Extinction Ratio | ER | 9 | | | dB | |
| Spectral Width (-20dB) | $\Delta\lambda$ | | | 0.6 | nm | |
| Side-Mode Suppression Ratio | SMSR | 30 | | | dB | |
| Relative Intensity Noise | RIN | | | -128 | dB/Hz | |
| Transmitter Dispersion Penalty | TDP | | | 4 | dB | |
| Transmitter Jitter | | | | | | 2 |
| Launch Power of Off Transmitter | P _{off} | | | -30 | dBm | 1 |
| Receiver | | | | | | |
| Optical Center Wavelength | λ_C | 1260 | | 1620 | nm | |
| Average Receive Power | P _{RX} | -25 | | -7 | dBm | |
| Receiver Sensitivity @10.3Gbps | R _{X_SEN} | | | -25 | dBm | 1 |
| Receiver Reflectance | T _{R_RX} | | | -27 | dB | |
| LOS Assert | LOSA | -35 | | | dBm | |
| LOS De-Assert | LOSD | | | -27 | dBm | |
| LOS Hysteresis | LOSH | 0.5 | | | dB | |

Pin Descriptions

| Pin | Symbol | Name/Description | Notes |
|-----|------------|--|-------|
| 1 | VeeT | Transmitter Ground (Common with Receiver Ground). | 1 |
| 2 | Tx_Fault | Transmitter Fault. | |
| 3 | Tx_Disable | Transmitter Disable. Laser output disabled on "high" or "open." | 2 |
| 4 | SDA | 2-Wire Serial Interface Data. | 3 |
| 5 | SCL | 2-Wire Serial Interface Clock. | 3 |
| 6 | MOD_ABS | Module Absent. Grounded within the module. | 3 |
| 7 | RS0 | No Connection Required. | |
| 8 | LOS | Loss of Signal Indication. "Logic 0" indicates normal operation. | 4 |
| 9 | RS1 | No Connection Required. | 1 |
| 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. | |
| 13 | RD+ | Receiver Non-Inverted Data Out. AC Coupled. | |
| 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. | |
| 19 | TD- | Transmitter Inverted Data In. AC Coupled. | |
| 20 | VeeT | Transmitter Ground (Common with Receiver Ground). | 1 |

Notes:

1. The circuit ground is isolated from the chassis ground.
2. Disabled: TDIS>2V or open, enabled: TDIS<0.8V.
3. Should be pulled up with 4.7kΩ to 10kΩ on the host board to a voltage between 2V and 3.6V.
4. LOS is an open collector output.

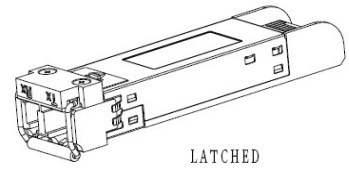
Electrical Pad Layout



Block Diagram of Transceiver



Mechanical Specifications



About ProLabs

Our extensive experience comes as standard. For over 20 years ProLabs has delivered optical connectivity solutions that give our customers freedom and choice through our ability to provide seamless interoperability. At the heart of our company is the ability to provide state-of-the-art optical transport and connectivity solutions that are compatible with more than 100 optical switching and transport platforms.

A Complete Portfolio of Network Solutions

ProLabs is focused on innovations in optical transport and connectivity. The combination of our knowledge of optics and networking equipment enables ProLabs to be your single source for optical transport and connectivity solutions from 100Mb to 1.6T while providing innovative solutions that increase network efficiency. We provide the optical connectivity expertise that is compatible with and enhances your switching and transport equipment.

The Trusted Partner

Customer service is our number one value. ProLabs has invested in people, labs and manufacturing capacity to ensure compatible products, and immediate answers to your questions. With Engineering and Manufacturing offices in the U.K. and U.S. augmented by field offices throughout the U.S., U.K. and Asia, ProLabs is able to be our customers best advocate 24 hours a day.



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