

CFP2-200GB-DCO-C

MSA and TAA 200GBase-DWDM CFP2 Transceiver (SMF, 1528.77nm to 1568.36nm, 80km, LC)

Features:

- CFP MSA 1.0 Compliance
- Duplex LC Connector
- Single-mode Fiber
- Commercial Temperature 0 to 70 Celsius
- Hot Pluggable
- Metal with Lower EMI
- Excellent ESD Protection
- RoHS Compliant and Lead Free



Applications:

- 200GBase Ethernet
- Access and Enterprise

Product Description

This MSA Compliant CFP2 transceiver provides 200GBase-DWDM throughput up to 80km over single-mode fiber (SMF) using a wavelength of 1528.77nm to 1568.36nm 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. This transceiver is Trade Agreements Act (TAA) compliant. We stand behind the quality of our products and proudly offer a limited lifetime warranty.

ProLabs'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."



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. | Тур. | Max. | Unit | Notes |
|---|--------|------|------|-----------|------|-------|
| Supply Voltage | Vcc | | | 3.6 | V | |
| Input Voltage | | -0.3 | | Vcc + 0.5 | V | |
| RX Input Power | Prx | | | 17 | dBm | 1 |
| Operating Relative Humidity | RHop | 5 | | 85 | % | 2 |
| Storage Temperature | Ttrs | -40 | | +85 | °C | |
| Operating Case Temperature (long term) | Tcase | -5 | | 70 | °C | |
| Operating Case Temperature (short term) | Tcase | -5 | | 75 | °C | |
| Storage / Transportation RH | RHst | 5 | | 93 | % | |

Note:

- 1. This should be considered an operating fault condition experienced for only short timeframe and should not result in damage; above it could risk damage.
- 2. Constant humidity ratio of 0.026 kg water/kg dry air not to be exceeded according to GR-63.

Power Supplies

| Parameter | Symbol | Min. | Тур. | Max. | Unit | Notes |
|---|--------|------|------|------|------|-------|
| +3.3V Supply Voltage | Vcc | 3.2 | 3.3 | 3.4 | V | |
| +3.3 V Supply current (200G, 16QAM with SD-FEC) | Icc | | | 6.1 | А | |
| +3.3 V Supply current -5°C to 70°C | Icc | | | TBD | Α | |
| Power dissipation -5°C to 70°C | Pdiss | | | | | |
| QPSK with HDFEC | | | 15.5 | | W | |
| QPSK with SDFEC | | | 17.5 | | W | |
| 8QAM | | | 21.5 | | W | |
| 16QAM | | | 20.5 | | W | |

Optical Characteristics

| Parameter | Conditions | Min. | Тур. | Max. | Unit | Notes |
|---|-----------------------|---------|------|----------------|-----------|-------|
| Transmitter | | _ | _ | _ | _ | _ |
| | I = | I | | 1.5 | 1 1 | |
| Baud rate | Per IQ modulator | 27.95 | | 43 | GBaud | |
| Mean modulated output power | DP_QPSK | -5 | | 2 | dBm | |
| Mean modulated output power | DP-8QAM | -5 | | 2 | dBm | |
| Mean modulated output power | DP-16QAM | -5 | | 2 | dBm | |
| Shuttered output power | | | | -35 | dBm | |
| Wavelength range | | 1528.77 | | 1568.36 | nm | |
| Frequency range | | 191.150 | | 196.100 | THz | |
| Default channel grid spacing | Tunable across C-band | | 50 | | GHz | |
| Fine tune frequency resolution | | 0.1 | | | GHz | |
| Wavelength deviation | ± 20 pm | -1.5 | | +1.5 | GHz | |
| On-grid tuning range | Unshuttered tuning | -6 | | +6 | GHz | |
| Lorentzian linewidth | Tx and LO | | 300 | | kHz | |
| OSNR | Inband | 35 | | | dB | |
| OSNR | Outband | 45 | | | dB | |
| Optical transmitter turn on time 1 | Warm start | | | 1 | S | |
| Optical transmitter turn on time 1 | Cold start | | | 60 | S | |
| Optical transmitter turn off time | From TX_DIS activated | | | 10 | ms | |
| Transmitter channel tuning | | | | 60 | S | |
| Optical return loss | Towards the module | 27 | | | dB | |
| Receiver | | | | | | |
| Frequency range | | 191.150 | | 196.100 | THz | |
| Average optical input power | | -20 | | +13 | dBm | |
| Receiver dynamic range | | -20 | | 0 | dBm | |
| VOA range | On input signal | 10 | | | dB | |
| VOA step size | - mparagram | | | 0.4 | dB | |
| VOA response time | | | | 100 | ms | |
| | | -2.5 | | | dB | |
| Signal input monitor accuracy | | -2.5 | | +2.5 | | |
| Optical return loss | | | | 27 | dB | |
| Required OSNR DP-QPSK (10-15 post FEC error rate) | SDFEC | | 11.4 | | dB/0.1 nm | |
| Required OSNR DP-8QAM (10-15 post | SDFEC | | 18.1 | | dB/0.1nm | |
| FEC error rate) Required OSNR DP-16QAM (10-15 | SDFEC | | 19.8 | | dB/0.1nm | |
| post FEC error rate) | 33120 | | 15.0 | | | |
| Chromatic dispersion tolerance | QPSK 8QAM 16QAM | | | 40 20 16 | ns/nm | |

| DGD tolerance | QPSK 8QAM | | 90 | ps ps ps | |
|------------------|-----------|------|----|-----------|--|
| | 16QAM | | 45 | | |
| | | | 45 | | |
| SOPMD tolerance | QPSK 8QAM | 2500 | | ps^2 ps^2 | |
| | 16QAM | 2500 | | ps^2 | |
| | | 1000 | | | |
| Acquisition time | | | 30 | ms | |
| | | | | | |

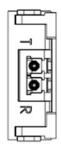
Notes:

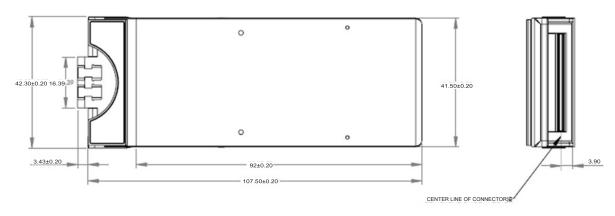
1. Absolute tuning speed dependent on required power/wavelength mask requirements

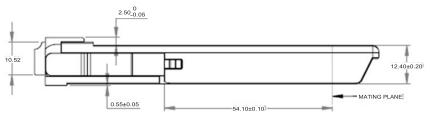
Pin Descriptions

| Botton | Bottom Row | | Top Row | | Bottom Row | | ow . |
|--------|------------|-----|-----------|-----|---------------------|-----|-----------|
| Pin | Name | Pin | Name | Pin | Name | Pin | Name |
| 1 | GND | 104 | GND | 27 | MOD_ABS | 78 | (REFCLKp) |
| 2 | TX_OHIOn | 103 | TX1_0n | 28 | MOD_RSTn | 77 | GND |
| 3 | TX_OHIOp | 102 | TX1_0p | 29 | GLB_ALRMn | 76 | RX1_0n |
| 4 | GND | 101 | GND | 30 | GND | 75 | RX1_0p |
| 5 | RX_OHIOn | 100 | TX0_3n | 31 | MDC | 74 | GND |
| 6 | RX_OHIOp | 99 | TX0_3p | 32 | MDIO | 73 | RX0_3n |
| 7 | 3.3V_GND | 98 | GND | 33 | PRTADR0 | 72 | RXO_3p |
| 8 | 3.3V_GND | 97 | TX0_2n | 34 | PRTADR1 | 71 | GND |
| 9 | 3.3V | 96 | TX0_2p | 35 | PRTADR2 | 70 | RXO_2n |
| 10 | 3.3V | 95 | GND | 36 | SWDIO | 69 | RX0_2p |
| 11 | 3.3V | 94 | TX1_1n | 37 | BER threshold alarm | 68 | GND |
| 12 | 3.3V | 93 | TX1_1p | 38 | DSP_UARTTO_TX | 67 | RX1_1n |
| 13 | 3.3V_GND | 92 | GND | 39 | 3.3V_GND | 66 | RX1_1p |
| 14 | 3.3V_GND | 91 | TX1_2n | 40 | 3.3V_GND | 65 | GND |
| 15 | HOST_INT | 90 | TX1_2p | 41 | 3.3V | 64 | RX1_2n |
| 16 | SWCLK | 89 | GND | 42 | 3.3V | 63 | RX1_2p |
| 17 | PRG_CNTL1 | 88 | TX0_1n | 43 | 3.3V | 62 | GND |
| 18 | PRG_CNTL2 | 87 | TX0_1p | 44 | 3.3V | 61 | RX0_1n |
| 19 | PRG_CNTL3 | 86 | GND | 45 | 3.3V_GND | 60 | RX0_1p |
| 20 | PRG_ALRM1 | 85 | TX0_0n | 46 | 3.3V_GND | 59 | GND |
| 21 | PRG_ALRM2 | 84 | TX0_0p | 47 | OHIO_REFCLKn | 58 | RX0_0n |
| 22 | PRG_ALRM3 | 83 | GND | 48 | OHIO_REFCLKp | 57 | RXO_Op |
| 23 | GND | 82 | TX1_3n | 49 | GND | 56 | GND |
| 24 | TX_DIS | 81 | TX1_3p | 50 | MUX_UART_RX | 55 | RX1_3n |
| 25 | RX_LOS | 80 | GND | 51 | MUX_UART_TX | 54 | RX1_3p |
| 26 | MOD_LOPWR | 79 | (REFCLKn) | 52 | GND | 53 | GND |

Mechanical Specifications







About ProLabs

Our experience comes as standard; for over 15 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 over 90 optical switching and transport platforms.

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 400G 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.

Trusted Partner

Customer service is our number one value. ProLabs has invested in people, labs and manufacturing capacity to ensure that you get immediate answers to your questions and compatible product when needed. 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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