

02310QBJ-PRO

Huawei® 02310QBJ Compatible TAA Compliant 10GBase-BX SFP+ Transceiver (SMF, 1270nmTx/1330nmRx, 10km, DOM, -40 to 85C, LC)

Features

- SFF-8432 and SFF-8472 Compliance
- Simplex 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:

- 10GBase-BX Ethernet
- 8x/10x Fibre Channel
- Access, Metro and Enterprise

Product Description

This Huawei® 02310QBJ compatible SFP+ transceiver provides 10GBase-BX throughput up to 10km over single-mode fiber (SMF) using a wavelength of 1270nmTx/1330nmRx via an LC connector. It is guaranteed to be 100% compatible with the equivalent Huawei® 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.



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. | Typ. | Max. | Unit | Notes |
|----------------------------|--------|------|------|-------------------|------|-------|
| Maximum Supply Voltage | Vcc | -0.5 | | 4.0 | V | 1 |
| Storage Temperature | Tstg | -40 | | 85 | °C | 2 |
| Operating Case Temperature | Tc | -40 | | 85 | °C | 3 |
| Data Rate | DR | 9.83 | | 11.3 | Gbps | 4 |
| Bit Error Rate | BER | | | 10 ⁻¹² | | |
| Supply Current | Icc | | 200 | 350 | mA | 1 |

Notes:

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

Electrical Characteristics

| Parameter | Symbol | Min. | Typ. | Max. | Unit | Notes |
|--|-------------------|------|------|----------|------|-------|
| Power Supply Voltage | Vcc | 3.14 | 3.3 | 3.46 | V | |
| Power Dissipation | P _{DISS} | | 0.65 | 1.2 | W | |
| Transmitter | | | | | | |
| Input Differential Impedance | RIN | | 100 | | Ω | |
| Differential Data Input Swing | VIN,pp | 180 | | 700 | mV | |
| Transmit Disable Voltage | VD | 2.0 | | Vcc | V | |
| Transmit Enable Voltage | VEN | Vee | | Vee+0.8 | V | |
| Receiver | | | | | | |
| Differential Data Output Swing | Vout,pp | 300 | | 850 | mV | |
| Data Output Rise Time/Fall Time (20-80%) | Tr/Tf | 28 | | | ps | |
| LOS Assert | LOSA | 2 | | Host_Vcc | V | |
| LOS De-Assert | LOSD | Vee | | Vee+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 | λ_C | 1260 | 1270 | 1280 | nm | |
| Extinction Ratio | ER | 3.5 | | | 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 | | | 3.2 | dB | |
| Launch Power of Off Transmitter | Poff | | | -30 | dBm | 1 |
| Transmitter Jitter | According to IEEE 802.3ae Requirement | | | | | |
| Receiver | | | | | | |
| Receiver Overload | | 0.5 | | | dBm | |
| Optical Center Wavelength | λ_C | 1320 | 1330 | 1340 | nm | |
| Receiver Sensitivity | S | | | -14.4 | dBm | 2 |
| Receiver Reflectance | | | | -12 | dB | |
| LOS Assert | LOSA | -30 | | | dBm | |
| LOS De-Assert | LOSD | | | -17 | dBm | |
| LOS Hysteresis | LOSH | 0.5 | | | dB | |

Notes:

1. Average.
2. Average. Measured with worst ER: BER<10⁻¹² and 2³¹-1 PRBS.

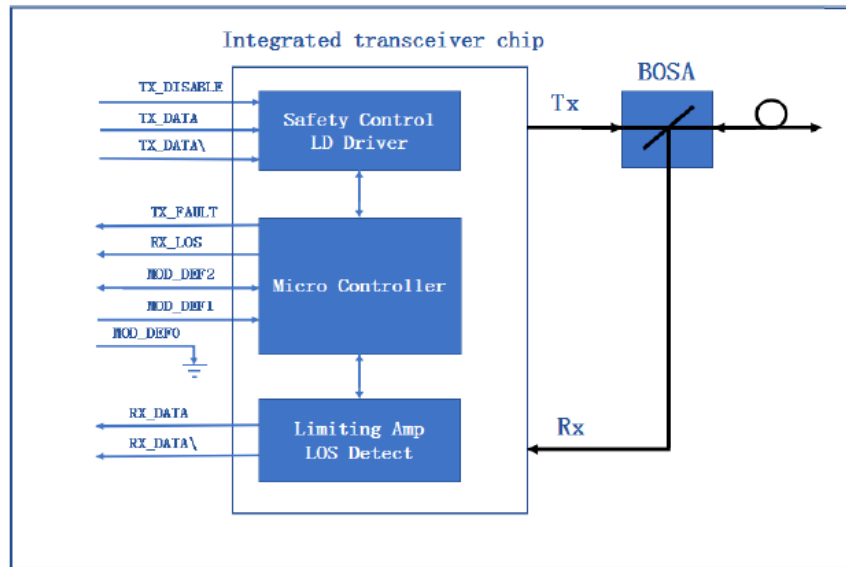
Pin Descriptions

| Pin | Symbol | Name/Descriptions | Notes |
|-----|------------|--|-------|
| 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. | 4 |
| 5 | SCL | 2-Wire Serial Interface Clock. | 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 | 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:

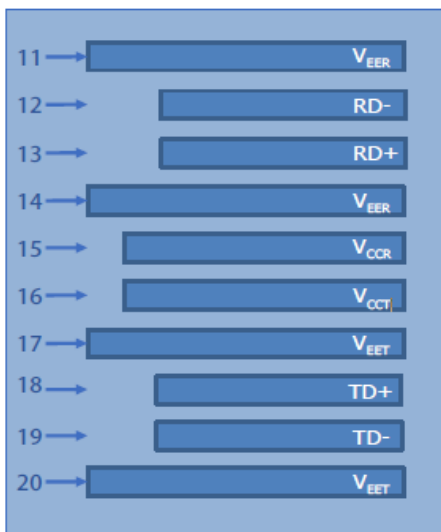
1. Circuit ground is isolated from the chassis ground.
2. Tx_Fault is the open collector output and should be pulled up with 4.7k Ω -10k Ω on the host board to a voltage between 2V and Vcc+0.3V.
3. Disabled: TDIS>2V or open. Enabled TDIS<0.8V.
4. Should be pulled up with the 4.7k Ω -10k Ω on the host board to a voltage between 2V and Vcc+0.3V.
5. LOS is open collector output and should be pulled with 4.7k Ω -10k Ω 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.

Transceiver Block Diagram

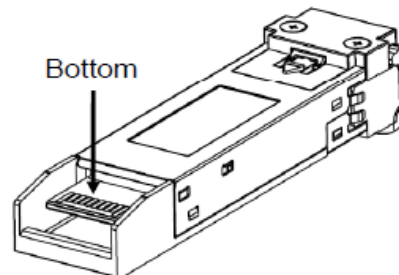
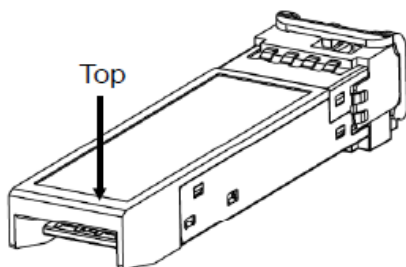
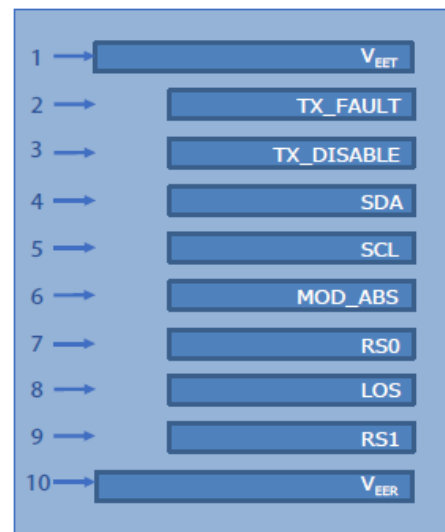


Electical Pad Layout

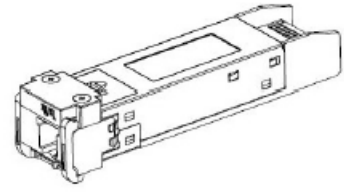
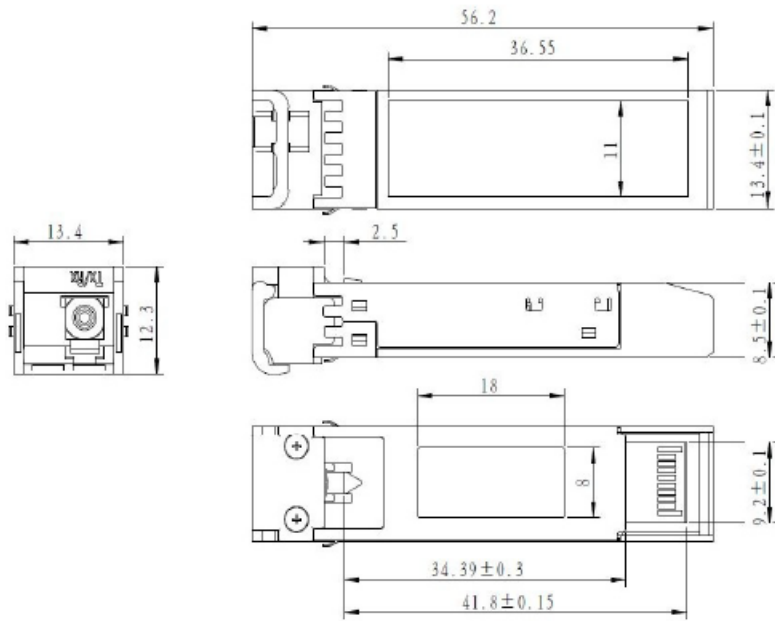
Top view



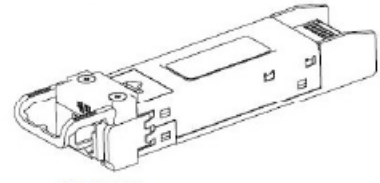
Bottom view



Mechanical Specifications



LATCHED



UNLATCHED

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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