

QSFP-100G-CWDM4-PRO

Arista Networks® Compatible 100GBase-CWDM4 QSFP28 Transceiver (SMF, 1310nm, 2km, DOM, 0 to 70C, LC)

Features

- SFF-8665 Compliance
- Duplex LC Connector
- Commercial Temperature 0 to 70 Celsius
- Single-mode Fiber
- Hot Pluggable
- Excellent ESD Protection
- Metal with Lower EMI
- RoHS Compliant and Lead Free



Applications:

- 100GBase Ethernet
- Access and Enterprise

Product Description

This Arista Networks® QSFP28 transceiver provides 100GBase-CWDM4 throughput up to 2km over single-mode fiber (SMF) using a wavelength of 1310nm via an LC connector. It is guaranteed to be 100% compatible with the equivalent Arista 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. 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 |
|----------------------------|-----------------|------|----------|------|------|
| Maximum Supply Voltage | V _{cc} | -0.5 | | 4.0 | V |
| Storage Temperature | T _S | -40 | | +85 | °C |
| Operating Case Temperature | T _c | 0 | 25 | 70 | °C |
| Relative Humidity | RH | 5 | | 95 | % |
| Data Rate PER Channel | | | 25.78125 | | Gb/s |

Electrical Characteristics

| Parameter | Symbol | Min. | Typ. | Max. | Unit | Notes |
|--|------------------------|-------|------|-------|-------------------|-------|
| Power Supply Voltage | V _{cc} | 3.135 | 3.3 | 3.465 | V | |
| Power Dissipation | PD | | | 3500 | mW | |
| Module Supply Current | I _{cc} | | | 1100 | mA | |
| Transmitter | | | | | | |
| Single-ended Input Voltage Tolerance | Z _{IN} | -0.3 | | 4.0 | V | |
| Input Differential Impedance | V _{IN} , P-P | | 100 | | Ω | |
| Differential Data Input Swing | | 190 | | 700 | mV _{P-P} | |
| AC Common Mode Input Voltage Tolerance | | 15 | | | mV | |
| Differential Input Voltage Swing Threshold | | 50 | | | mV _{pp} | |
| Receiver | | | | | | |
| Single-ended Output Voltage | | -0.3 | | 4.0 | V | |
| Output Differential Impedance | Z _o | 90 | 100 | 110 | Ω | |
| Differential Data Output Swing | V _{OUT} , P-P | 300 | | 850 | mV _{P-P} | |
| AC Common Mode Output Voltage | | | | 7.5 | mV | |

Optical Characteristics

| Parameter | Symbol | Min. | Typ. | Max. | Unit | Notes |
|-----------------------------------|-----------------|------------------------------------|------|--------|------|-------|
| Transmitter | | | | | | |
| Launch Optical Power per lane | Po | -6.5 | | 2.5 | dBm | 1 |
| Total Launch Optical Power | Po | | | +8.5 | dBm | 1 |
| Center Wavelength Range | L1 | 1264.5 | 1271 | 1277.5 | nm | |
| | L2 | 1284.5 | 1291 | 1297.5 | nm | |
| | L3 | 1304.5 | 1311 | 1317.5 | nm | |
| | L4 | 1324.5 | 1331 | 1337.5 | nm | |
| Extinction Ratio | EX | 4 | | | dB | 2 |
| Spectral width (-20dB) | $\Delta\lambda$ | | | 1 | nm | |
| Side-mode suppression ratio | SMSR | 30 | | | dB | |
| Optical Return Loss Tolerance | ORLT | | | 20 | dB | |
| Pout @TX-Disable Asserted | | | | -30 | | 1 |
| Eye Mask {X1, X2, X3, Y1, Y2, Y3} | | {0.31, 0.4, 0.45, 0.34, 0.38, 0.4} | | | | |
| Receiver | | | | | | |
| Center Wavelength | L1 | 1264.5 | 1271 | 1277.5 | nm | |
| | L2 | 1284.5 | 1291 | 1297.5 | nm | |
| | L3 | 1304.5 | 1311 | 1317.5 | nm | |
| | L4 | 1324.5 | 1331 | 1337.5 | nm | |
| Sensitivity per Channel | S | | | -11.5 | dBm | 3 |
| Overload (each channel) | POL | 2.5 | | | dBm | 3 |
| Damage Threshold (each channel) | Pdamage | 3.5 | | | dBm | |
| Optical Return Loss | ORL | 26 | | | dB | |
| LOS Assert | LOSA | -24 | | | dBm | |
| LOS De-Assert | LOSD | | | -12.0 | dBm | |
| LOS Hysteresis | | 0.5 | | | dB | |

Notes:

1. The optical power is launched into SMF.
2. Measured with a PRBS $2^{31}-1$ test pattern @25.78125Gbps.
3. Measured with PRBS $2^{31}-1$ test pattern, 25.78125Gb/s, BER 5.0E-5

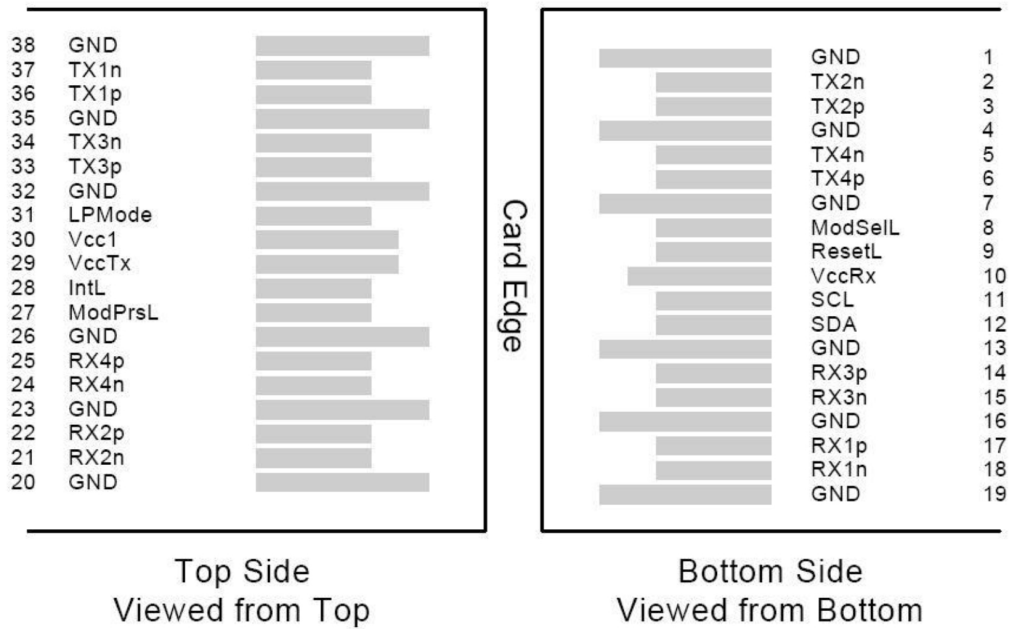
Pin Descriptions

| Pin | Symbol | Name/Descriptions | Ref. |
|-----|---------|--|------|
| 1 | GND | Transmitter Ground (Common with Receiver Ground) | 1 |
| 2 | Tx2- | Transmitter Inverted Data Input | |
| 3 | Tx2+ | Transmitter Non-Inverted Data output | |
| 4 | GND | Transmitter Ground (Common with Receiver Ground) | 1 |
| 5 | Tx4- | Transmitter Inverted Data Input | |
| 6 | Tx4+ | Transmitter Non-Inverted Data output | |
| 7 | GND | Transmitter Ground (Common with Receiver Ground) | 1 |
| 8 | ModSelL | Module Select | 2 |
| 9 | ResetL | Module Reset | 2 |
| 10 | VccRx | 3.3V Power Supply Receiver | |
| 11 | SCL | 2-Wire serial Interface Clock | 2 |
| 12 | SDA | 2-Wire serial Interface Data | 2 |
| 13 | GND | Transmitter Ground (Common with Receiver Ground) | 1 |
| 14 | Rx3+ | Receiver Non-Inverted Data Output | |
| 15 | Rx3- | Receiver Inverted Data Output | |
| 16 | GND | Transmitter Ground (Common with Receiver Ground) | 1 |
| 17 | Rx1+ | Receiver Non-Inverted Data Output | |
| 18 | Rx1- | Receiver Inverted Data Output | |
| 19 | GND | Transmitter Ground (Common with Receiver Ground) | 1 |
| 20 | GND | Transmitter Ground (Common with Receiver Ground) | 1 |
| 21 | Rx2- | Receiver Inverted Data Output | |
| 22 | Rx2+ | Receiver Non-Inverted Data Output | |
| 23 | GND | Transmitter Ground (Common with Receiver Ground) | 1 |
| 24 | Rx4- | Receiver Inverted Data Output | 1 |
| 25 | Rx4+ | Receiver Non-Inverted Data Output | |
| 26 | GND | Transmitter Ground (Common with Receiver Ground) | 1 |
| 27 | ModPrsl | Module Present | |
| 28 | IntL | Interrupt | 2 |
| 29 | VccTx | 3.3V power supply transmitter | |
| 30 | Vcc1 | 3.3V power supply | |
| 31 | LPMode | Low Power Mode | 2 |
| 32 | GND | Transmitter Ground (Common with Receiver Ground) | 1 |
| 33 | Tx3+ | Transmitter Non-Inverted Data Input | |
| 34 | Tx3- | Transmitter Inverted Data Output | |
| 35 | GND | Transmitter Ground (Common with Receiver Ground) | 1 |
| 36 | Tx1+ | Transmitter Non-Inverted Data Input | |
| 37 | Tx1- | Transmitter Inverted Data Output | |
| 38 | GND | Transmitter Ground (Common with Receiver Ground) | 1 |

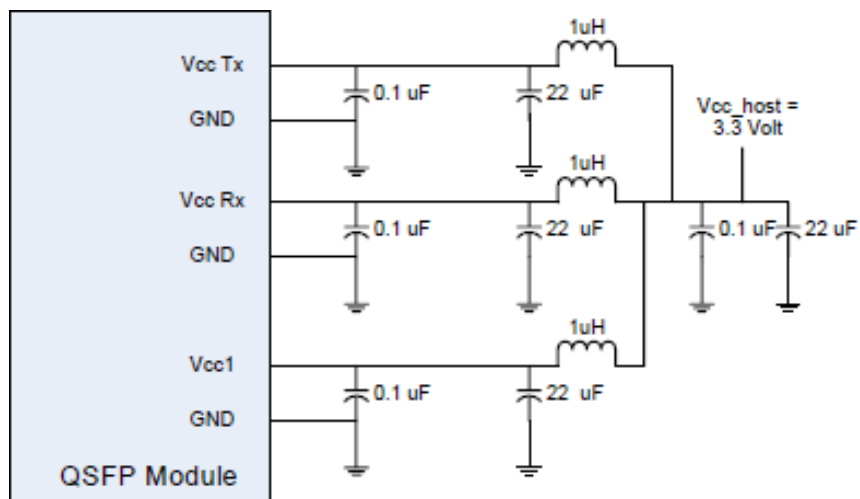
Notes:

1. The module signal grounds are isolated from the module case.
2. This is an open collector/drain output that on the host board requires a a 4.7KΩ to 10KΩ pull-up resistor to VccHost.

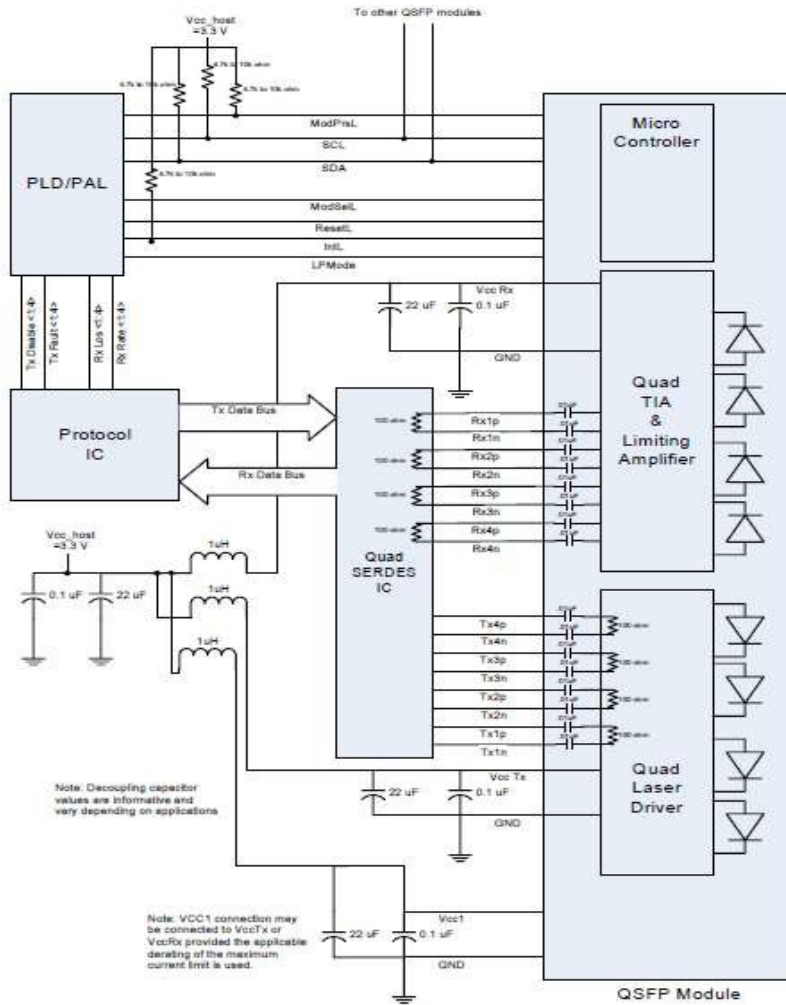
Electrical Pin-out Details



Recommended Host Board Power Supply Filter Network

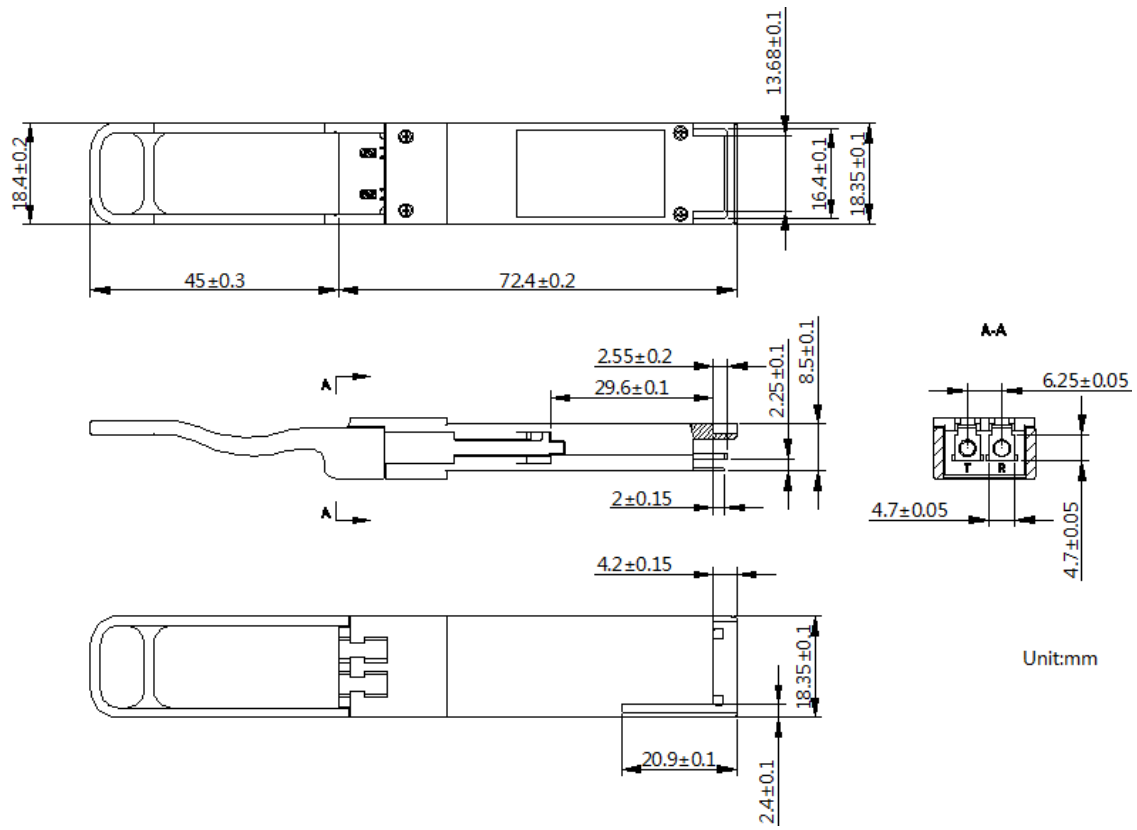


Recommended Application Interface Block Diagram



Mechanical Specifications

Measurement unit: mm



Unit:mm

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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