

407-BBWW-PRO

Dell® 407-BBWW407-BBWW Compatible TAA Compliant 100GBase-SR4 QSFP28 Transceiver (MMF, 850nm, 100m, DOM, 0 to 70C, MPO)

Features

- SFF-8665 Compliance
- MPO Connector
- Commercial Temperature 0 to 70 Celsius
- Multi-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 Dell® 407-BBWW407-BBWW compatible QSFP28 transceiver provides 100GBase-SR4 throughput up to 100m over OM4 multi-mode fiber (MMF) using a wavelength of 850nm via an MPO connector. It is guaranteed to be 100% compatible with the equivalent Dell® 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.



Absolute Maximum Ratings

| Parameter | Symbol | Min. | Typ. | Max. | Unit | Notes |
|----------------------------|-----------------|------|----------|------|------|-------|
| Maximum Supply Voltage | V _{CC} | -0.5 | | 4.0 | V | |
| Storage Temperature | T _S | -40 | | +85 | °C | |
| Relative Humidity | RH | 5 | | 95 | % | |
| Operating Case Temperature | T _C | 0 | 25 | 70 | °C | |
| Data Rate PER Channel | DR | | 25.78125 | | Gb/s | |

Electrical Characteristics

| Parameter | Symbol | Min. | Typ. | Max. | Unit | Notes |
|--------------------------------|-------------------------------|-------|------|-------|-------|-------|
| Supply Voltage | V _{CC} | 3.135 | 3.3 | 3.465 | V | |
| Module Supply Current | I _{CC} | | | 750 | mA | |
| Power Dissipation | P _D | | | 2.5 | W | |
| Transmitter | | | | | | |
| Input Differential Impedance | Z _{IN} | | 100 | | Ω | |
| Differential Data Input Swing | V _{IN, P-P} | 180 | | 900 | mVp-p | |
| Receiver | | | | | | |
| Output Differential Impedance | Z _O | | 100 | | Ω | |
| Differential Data Output Swing | V _{OUT, P-P} | 300 | | 850 | mVp-p | 1 |
| Transition Time (20% to 80%) | T _{r, T_f} | 12 | | | ps | |

Notes:

1. The optical power is launched into OM3 MMF.
2. Measured with a PRBS 2³¹-1 test pattern @25.78125Gbps.

Optical Characteristics

| Parameter | Symbol | Min. | Typ. | Max. | Unit. | Notes |
|--|-----------------------------|------|------|-------|-------|-------|
| Transmitter | | | | | | |
| Launch Optical Power | P _o | -8.4 | | +2.4 | dBm | 1 |
| Center Wavelength Range | λ _c | 840 | 850 | 860 | nm | - |
| Extinction Ratio | EX | 2 | | | dB | 2 |
| Spectral width (RMS) | Δλ | | | 0.6 | nm | |
| Transmitter and Dispersion Penalty | TDP | | | 4.3 | dB | |
| Optical Return Loss Tolerance | ORLT | | | 12 | dB | |
| Eye Diagram | IEEE Std 802.3bm compatible | | | | | |
| Receiver | | | | | | |
| Center Wavelength | λ _c | 840 | 850 | 860 | nm | |
| Average Receiver Sensitivity (P _{avg}) | S | | | -11 | dBm | 3 |
| Average Receiver Sensitivity (P _{avg}) | S | | | -7.5 | dBm | 4 |
| Receiver Overload (P _{avg}) | P _{OL} | 2.5 | | | dBm | |
| Damage Threshold | P _{OL} | 3.4 | | | dBm | |
| Optical Reflectance | ORL | | | -12 | dB | |
| LOS Assert | LOS _A | -30 | | | dB | |
| LOS De-Assert | LOS _D | | | -11.5 | dB | |
| LOS Hysteresis | | 0.5 | | | dB | |

Notes:

1. The optical power is launched into OM3 MMF.
2. Measured with a PRBS 2³¹-1 test pattern @25.78125Gbps.
3. Measured with a PRBS 2³¹-1 test pattern, 25.78125Gb/s, BER<5E⁻⁵.
4. Measured with PRBS 2³¹-1 test pattern, 25.78125Gb/s, BER<10⁻¹².

Pin Descriptions

| Pin | Symbol | Function/Description | Notes |
|-----|---------|--|-------|
| 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:

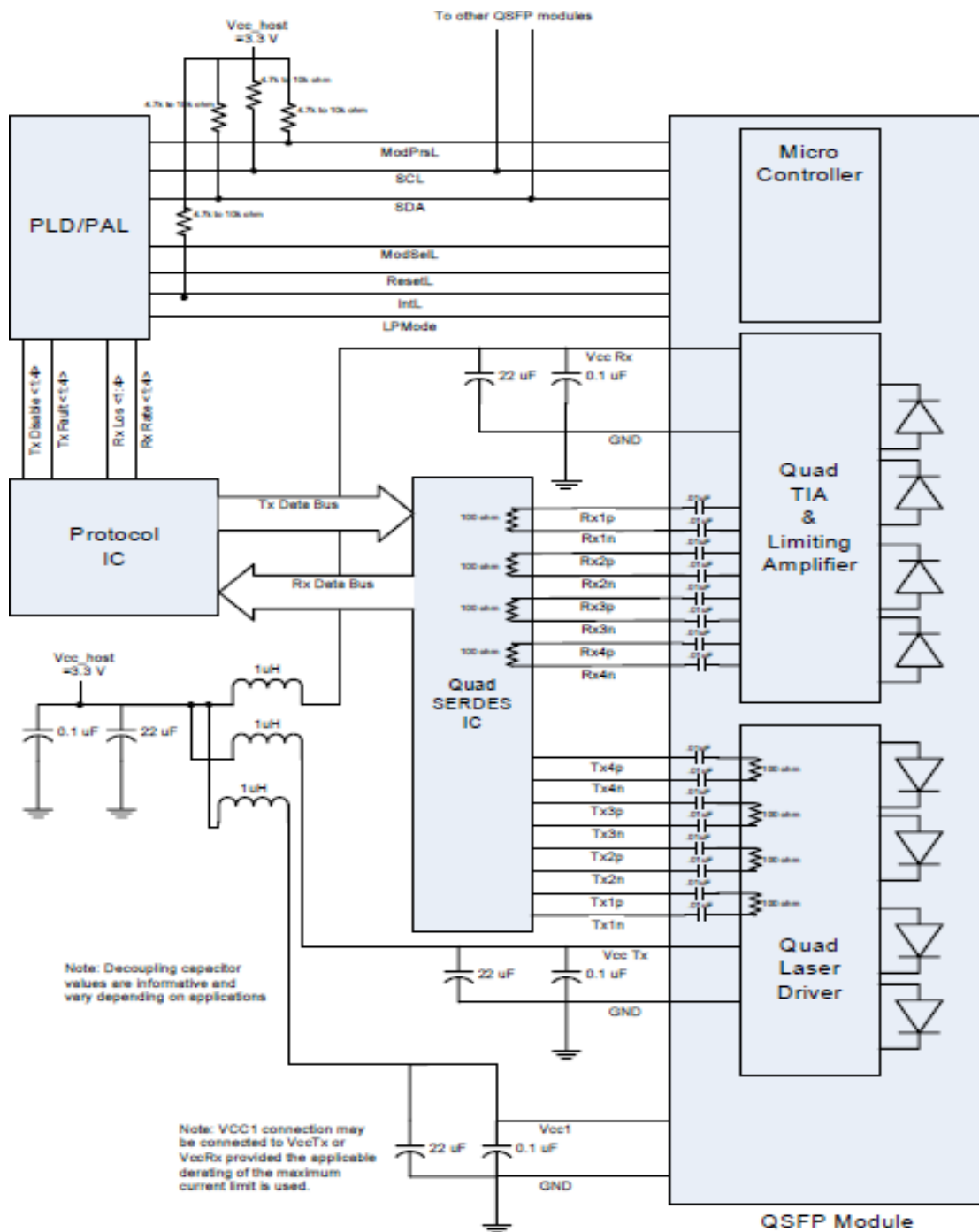
1. The module signal grounds are isolated from the module case.
2. This is an open collector/drain output that on the host board requires a 4.7KΩ to 10KΩ pull-up resistor to VccHost.



Recommended Host Board Power Supply Filter Network



Recommended Application Interface Block Diagram



Mechanical Specifications



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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