

JNP-QSFP-100G-LR-CW27-PRO

Juniper Networks® JNP-QSFP-100G-LR-CW27 Compatible TAA Compliant 100GBase-CWDM QSFP28 Single Lambda Transceiver (SMF, 10km, 0 to 70C, LC)

Features

- Supports 100Gbps
- Single 3.3V Power Supply
- 100G Lambda MSA 100G-LR Specification Compliant
- Up to 10km over SMF with FEC
- QSFP28 MSA Compliant
- Power Dissipation < 4.5W
- 4x25G Electrical Interface
- SFF-8636 Rev 2.10a Compliant
- Operating Case Temperature: 0C to 70C
- LC Duplex Connector
- I2C Interface with Integrated Digital Diagnostic Monitoring
- RoHS compliant



Applications:

- 100GBase Ethernet over CWDM
- Access, Metro and Enterprise

Product Description

This Juniper Networks® JNP-QSFP-100G-LR-CW27 compatible QSFP28 transceiver provides 100GBase-CWDM throughput up to 10km over single-mode fiber (SMF) using a wavelength of 1270nm via an LC connector. It is guaranteed to be 100% compatible with the equivalent Juniper 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. 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.



CWDM Available Wavelengths

| Wavelengths | Min. | Typ. | Max. |
|-------------|--------|------|--------|
| 27 | 1264.5 | 1271 | 1277.5 |
| 29 | 1284.5 | 1291 | 1297.5 |
| 31 | 1304.5 | 1311 | 1317.5 |
| 33 | 1324.5 | 1331 | 1337.5 |

Absolute Maximum Ratings

| Parameter | Symbol | Min. | Typ. | Max. | Unit |
|-----------------------------|--------|------|------|------|------|
| Maximum Supply Voltage | Vcc | -0.5 | | 4.0 | V |
| Storage Temperature | TS | -40 | | +85 | °C |
| Operating Case Temperature | Tc | 0 | | 70 | °C |
| Operating Relative Humidity | RH | 5 | | 85 | % |
| Damage threshold | Rxdmg | 5.5 | | | dBm |

Electrical Characteristics

| Parameter | Symbol | Min. | Typ. | Max. | Unit | Notes |
|--|--------|-------|------|-------|-------|-------------|
| Power Supply Voltage | Vcc | 3.135 | 3.3 | 3.465 | V | |
| Power Dissipation | PD | | | 4.5 | W | |
| Transmitter | | | | | | |
| Differential data input swing per lane | | 900 | | | mVp-p | |
| Differential input impedance | Zin | 90 | 100 | 110 | ohm | |
| DC common mode voltage (Vcm) | | -350 | | 2850 | mV | |
| Receiver | | | | | | |
| Differential output amplitude | | | | 900 | mVp-p | |
| Differential output impedance | Zout | 90 | 100 | 110 | ohm | |
| Output Rise/Fall Time | tr/tf | 12 | | | ps | 20%~80% |
| AC Common Mode Output Voltage | | | | 7.5 | mV | |
| Eye width | | 0.57 | | | UI | |
| Eye height differential | | 228 | | | mV | @TP4, 1E-15 |
| DC common mode voltage (Vcm) | | -350 | | 2850 | mV | 1 |

Notes:

1. Vcm is generated by the host. Specification includes effects of ground offset voltage.

Optical Characteristics

| Parameter | Symbol | Min. | Typ. | Max. | Unit | Notes | |
|--|-----------|-------------------|-------------|---------------------|-------|-------|--|
| Transmitter | | | | | | | |
| Signaling speed | | | 53.125 | | Gbaud | | |
| Modulation format | | PAM4 | | | | | |
| Optical center wavelength | λ | $\lambda_c - 6.5$ | λ_c | $\lambda_c + 6.5$ | nm | | |
| Side-mode suppression ratio | SMSR | 30 | | | dB | | |
| Extinction ratio | ER | 3.5 | | | dB | | |
| Transmit OMA | TxOMA | 0.7 | | 4.7 | dBm | | |
| Transmit average | TxAVG | -1.4 | | 4.5 | dBm | 1 | |
| Launch power in OMA _{outer} minus TDECQ | | -0.7 | | | dBm | 2 | |
| Launch power in OMA _{outer} minus TDECQ | | -0.6 | | | dBm | 3 | |
| Transmitter and dispersion eye closure | TDECQ | | | 3.4 | dB | | |
| Optical return loss tolerance | | | | 15.6 | dB | 4 | |
| Receiver | | | | | | | |
| Signaling speed | | | 53.125 | | Gbaud | | |
| Damage threshold | | 5.5 | | | dBm | | |
| Receive power (OMA _{outer}) | RxOMA | | | 4.7 | dBm | | |
| Average receive power | RxAVG | -7.7 | | 4.5 | dBm | | |
| Receiver sensitivity (OMA _{outer}) | SenOMA | | | Max(-6.1, SECQ-7.5) | dBm | 5 | |
| Receiver reflectance | | | | -26 | dB | | |
| LOS assert | LOSA | -15 | | | dBm | | |
| LOS De-assert | LOSD | | | -12 | dBm | | |
| LOS hysteresis | | 0.5 | | | dB | | |

Notes:

1. Average launch power (min) is informative and not the principal indicator of signal strength. A transmitter with launch power below this value cannot be compliant; however, a value above this does not ensure compliance.
2. For $ER \geq 4.5$ dB
3. For $ER < 4.5$ dB
4. Transmitter reflectance is defined looking into the transmitter.
5. Sensitivity is specified at 2.4×10^{-4} BER.

Pin Descriptions

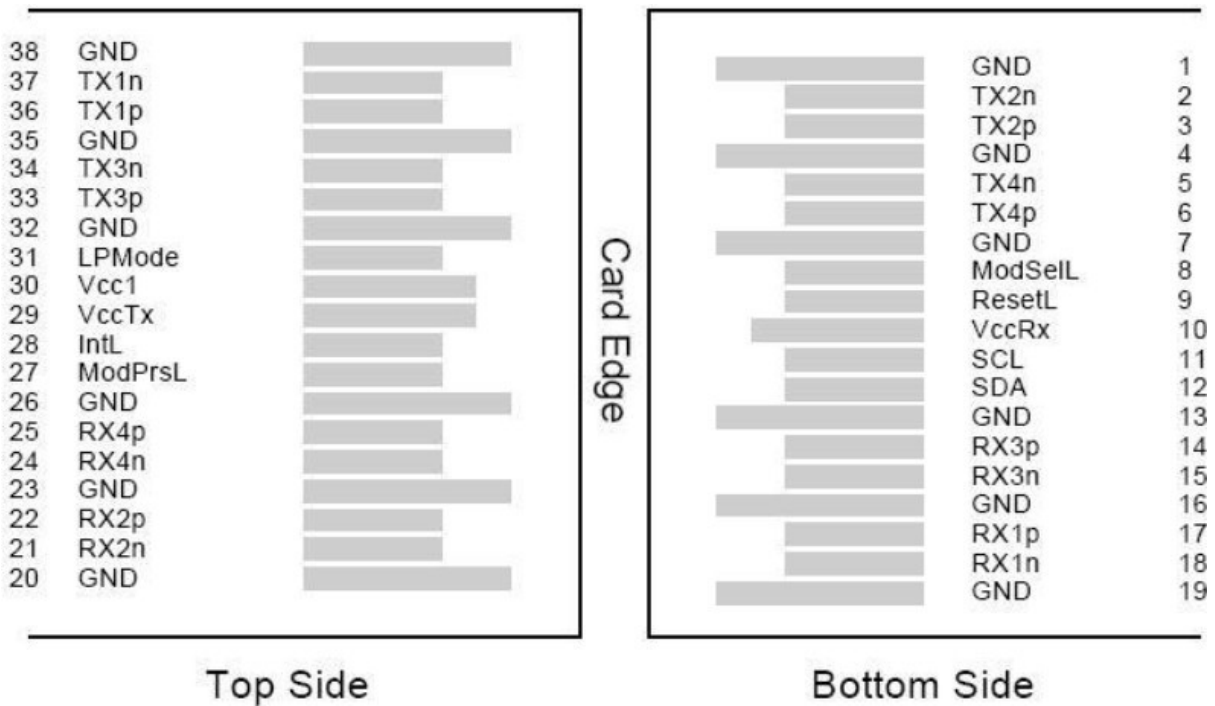
| Pin | Symbol | Name/Descriptions | Ref. |
|-----|---------|--|------|
| 1 | GND | Transmitter Ground (Common with Receiver Ground) | 1 |
| 2 | Tx2- | Transmitter Inverted Data Input | |
| 3 | Tx2+ | Transmitter Non-Inverted Data output | |
| 4 | GND | Transmitter Ground (Common with Receiver Ground) | 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 |

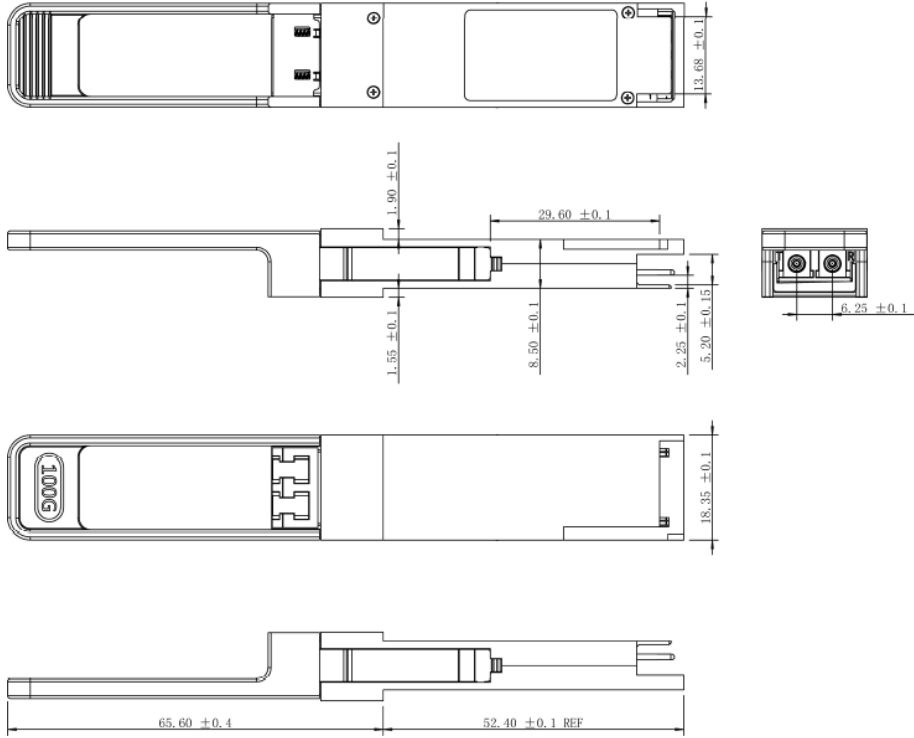
Notes:

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 4.7KΩ to 10KΩ pull-up resistor to VccHost.

Electrical Pin-out Details



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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