

QSFP28-100GB-SR4-MDC-AR-C

Arista Networks® Compatible TAA 100GBase-SR4 QSFP28 Transceiver (MMF, 850nm, 100m, MDC, DOM)

Features:

- Hot-Pluggable QSFP28 Form Factor
- Supports 103.1Gbps Aggregate Bit Rate
- Maximum Link Length of 100m on OM4 MMF
- MDC Interface
- Single 3.3V Power Supply
- Power Consumption: 1.8W
- 4x25G Electrical Interface
- Operating Temperature: 0 to 70 Celsius
- RoHS Compliant and Lead-Free



Applications:

- 100GBase Ethernet
- Access and Enterprise

Product Description

This Arista Networks® compatible QSFP28 transceiver provides 100GBase-SR4 throughput up to 100m over OM4 multi-mode fiber (MMF) using a wavelength of 850nm via an MDC connector. Our transceiver is built to meet or exceed OEM specifications and is guaranteed to be 100% compatible with Arista Networks®. It has been programmed, uniquely serialized, and tested for data-traffic and application to ensure that it will initialize and perform identically. All of our transceivers comply with Multi-Source Agreement (MSA) standards to provide seamless network integration. Additional product features include Digital Optical Monitoring (DOM) support which allows 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.

ProLabs' 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 |
|-------------------------------------|---------|-------|-------------------|--------------------|------|-------|
| Storage Temperature | Tstg | -40 | | 85 | °C | |
| Operating Case Temperature | Tc | 0 | | 70 | °C | |
| Bit Rate (All Wavelengths Combined) | DR | | | 103.1 | Gbps | |
| Bit Error Rate (Pre-FEC) | BER | | | 5×10^{-5} | | |
| Data Rate Per Lane | DR | | 25.78125 ± 100ppm | | Gbps | 1 |
| Fiber Type | OM3 MMF | LMax1 | | 70 | m | |
| | OM4 MMF | LMax2 | | 100 | m | |

Notes:

- Receiver consists of 4 lasers and photo detectors operating at a maximum speed of 25.78125Gbps ± 100ppm each.

Electrical Characteristics

| Parameter | Symbol | Min. | Typ. | Max. | Unit | Notes |
|--------------------------------|---------|-------------------------------------|------|-------|-------|-------|
| Power Supply Voltage | Vcc | 3.135 | 3.3 | 3.465 | V | |
| Power Supply Current | Icc | | | 800 | mA | |
| Power Consumption | PC | | | 2.5 | W | |
| Transmitter | | | | | | |
| Differential Voltage Pk-Pk | | | | 900 | mV | |
| Single-Ended Voltage Tolerance | VIN,pp | -0.65 | | 3.3 | V | |
| Module Stressed Input Test | | Per Section 83E.3.4.1, IEEE 802.3bm | | | V | |
| Receiver | | | | | | |
| Differential Data Output Swing | VOUT,pp | 100 | | 400 | mVp-p | |
| | | 300 | | 600 | | |
| | | 400 | 600 | 800 | | |
| | | 600 | | 1200 | | |
| Eye Width | | 0.57 | | | UI | |
| Differential Eye Height | | 228 | | | mV | |
| Vertical Eye Closure | VEC | 5.5 | | | dB | |
| Transition Time (20-80%) | Tr/Tf | 12 | | | ps | |

Optical Characteristics

| Parameter | Symbol | Min. | Typ. | Max. | Unit | Notes |
|--|-----------------|-------|---|------|------|-------|
| Transmitter | | | | | | |
| Center Wavelength | λ_C | 840 | 850 | 860 | nm | |
| RMS Spectral Width | $\Delta\lambda$ | | | 0.6 | nm | |
| Average Optical Power Per Lane | TxPx | -8.4 | | 2.4 | dBm | |
| Optical Power OMA Per Lane | TxOMA | -6.4 | | 3 | dBm | |
| Launch Power OMA Minus TDEC Per Lane | P-TDEC | -7.3 | | | dBm | |
| TDEC Per Lane | TDEC | | | 4.3 | dBm | |
| Optical Extinction Ratio | ER | 2 | | | dB | |
| Optical Return Loss Tolerance | ORL | | | 12 | dB | |
| Encircled Flux | FLX | | >86% at 19 μ m <30% at 4.5 μ m | | | |
| Average Launch Power of Off Transmitter Per Lane | Poff | | | -30 | dBm | |
| Transmitter Eye Mask Definitions: {X1, X2, X3, Y1, Y2, Y3} | | | {0.25, 0.4, 0.45, 0.25, 0.28, 0.4} | | | 1 |
| Receiver | | | | | | |
| Center Wavelength | λ_C | 840 | | 860 | nm | |
| Damage Threshold | DT | 3.4 | | | dBm | |
| Average Receive Power Per Lane | RxPx | -10.3 | | 2.4 | dBm | |
| Receive Power on OMA Per Lane | RxOMA | | | 3 | dBm | |
| Receiver Reflectance | Rfl | | | -12 | dB | |
| LOS Assert | LOSA | -30 | | | dBm | |
| LOS De-Assert | LOSD | | | -13 | dBm | |
| LOS Hysteresis | LOSH | 0.5 | 2 | | dB | |
| Stressed Sensitivity (OMA) | SRS | | | -5.2 | dBm | 2 |
| Stressed Conditions | | | | | | |
| Stressed Eye Closure | SEC | | 4.3 | | dB | |
| Stressed Eye J2 Jitter | J2 | | 0.39 | | UI | |
| Stressed Eye J4 Jitter | J4 | | 0.53 | | UI | |
| OMA of Each Aggressor Lane | | | 3 | | dBm | |
| Stressed Receiver Eye Mask Definitions: {X1, X2, X3, Y1, Y2, Y3} | | | {0.25, 0.4, 0.45, 0.25, 0.28, 0.4} | | | 3 |

Notes:

1. Hit ratio 1.5×10^{-3} hits/sample.
2. Minimum value is informative only and not the principal indicator of signal strength.
3. Hit ratio 5×10^{-5} hits/sample.

Pin Descriptions

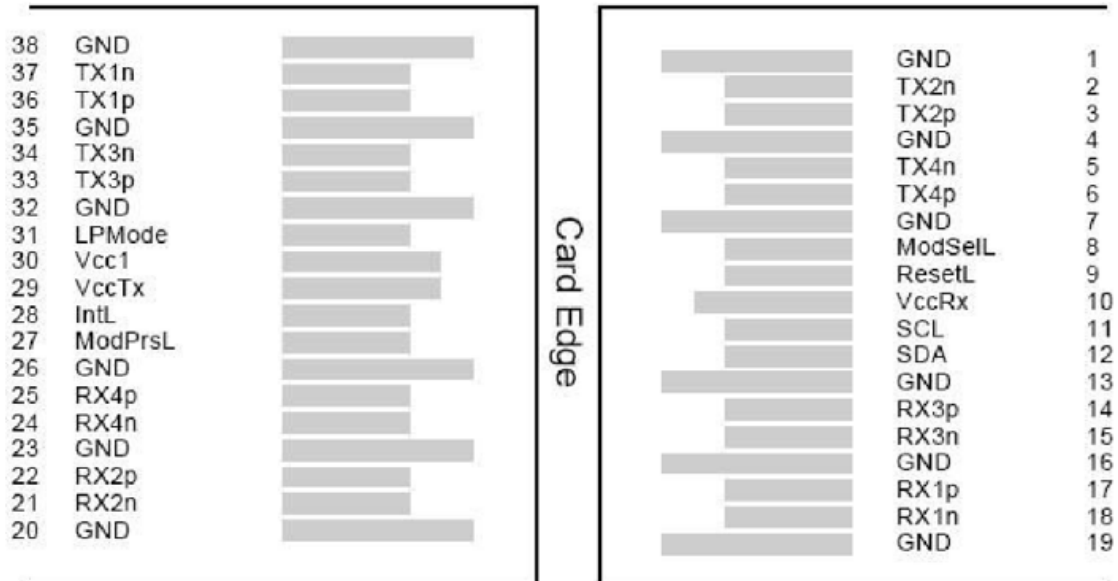
| Pin | Symbol | Name/Description | Notes |
|-----|--------------|---|-------|
| 1 | GND | Module Ground. | 1 |
| 2 | Tx2- | Transmitter Inverted Data Input. | |
| 3 | Tx2+ | Transmitter Non-Inverted Data Input. | |
| 4 | GND | Module Ground. | 1 |
| 5 | Tx4- | Transmitter Inverted Data Input. | |
| 6 | Tx4+ | Transmitter Non-Inverted Data Input. | |
| 7 | GND | Module Ground. | 1 |
| 8 | ModSelL | Module Select. | |
| 9 | ResetL | Module Reset. | |
| 10 | VccRx | +3.3V Receiver Power Supply. | 2 |
| 11 | SCL | 2-Wire Serial Interface Clock. | |
| 12 | SDA | 2-Wire Serial Interface Data. | |
| 13 | GND | Module Ground. | 1 |
| 14 | Rx3+ | Receiver Non-Inverted Data Output. | |
| 15 | Rx3- | Receiver Inverted Data Output. | |
| 16 | GND | Module Ground. | 1 |
| 17 | Rx1+ | Receiver Non-Inverted Data Output. | |
| 18 | Rx1- | Receiver Inverted Data Output. | |
| 19 | GND | Module Ground. | 1 |
| 20 | GND | Module Ground. | 1 |
| 21 | Rx2- | Receiver Inverted Data Output. | |
| 22 | Rx2+ | Receiver Non-Inverted Data Output. | |
| 23 | GND | Module Ground. | 1 |
| 24 | Rx4- | Receiver Inverted Data Output. | |
| 25 | Rx4+ | Receiver Non-Inverted Data Output. | |
| 26 | GND | Module Ground. | 1 |
| 27 | ModPrsL | Module Present. | |
| 28 | IntL/RxLOSL | Interrupt. Optionally configurable as RxLOSL via the management interface (SFF-8636). | |
| 29 | VccTx | +3.3V Transmitter Power Supply. | 2 |
| 30 | Vcc1 | +3.3V Power Supply. | 2 |
| 31 | LPMoDe/TxDis | Low-Power Mode. Optionally configurable as TxDis via the management Interface (SFF-8636). | |
| 32 | GND | Module Ground. | 1 |
| 33 | Tx3+ | Transmitter Non-Inverted Data Input. | |
| 34 | Tx3- | Transmitter Inverted Data Input. | |
| 35 | GND | Module Ground. | 1 |

| | | | |
|----|------|--------------------------------------|---|
| 36 | Tx1+ | Transmitter Non-Inverted Data Input. | |
| 37 | Tx1- | Transmitter Inverted Data Input. | |
| 38 | GND | Module Ground. | 1 |

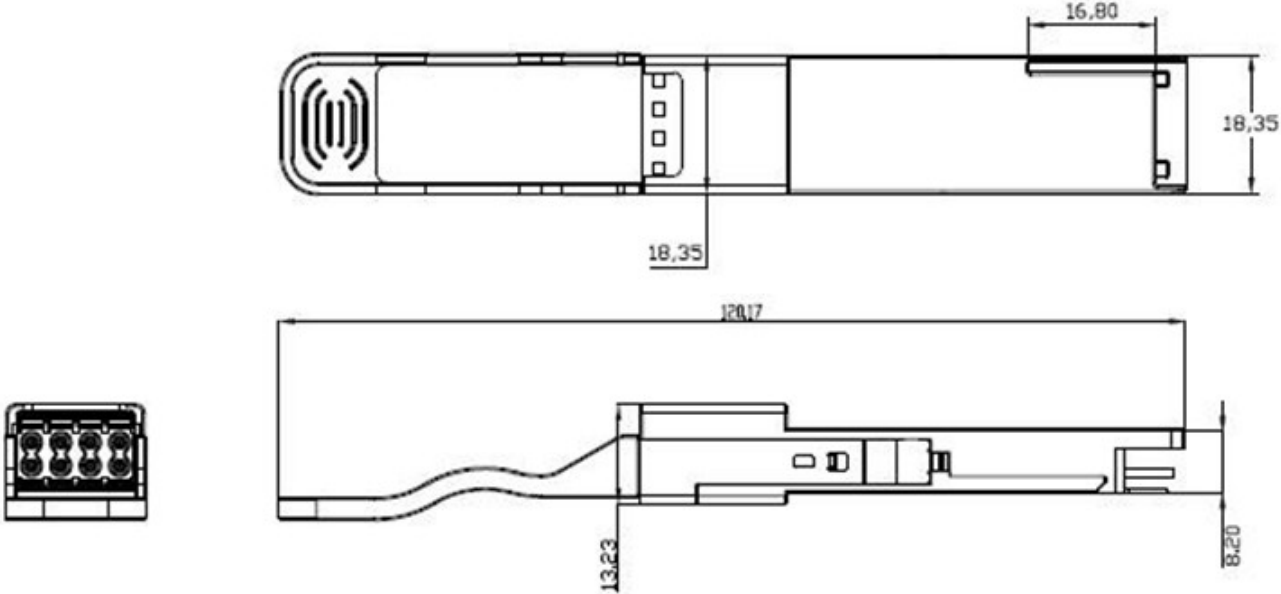
Notes:

1. GND is the symbol for signal and supply (power) common for the QSFP28 module. All are common within the module, and all module voltages are referenced to this potential unless otherwise noted. Connect these directly to the host board signal common ground plane.
2. VccRx, Vcc1, and VccTx are the receiving and transmission power suppliers and shall be applied concurrently. Recommended host board power supply filtering is shown below. VccRx, Vcc1, and VccTx may be internally connected within the module in any combination. The connector pins are each rated for a maximum current of 1000mA.

Electrical Pin-Out Details



Mechanical Specifications



About ProLabs

Our extensive experience comes as standard. For over 20 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 more than 100 optical switching and transport platforms.

A 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 1.6T 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.

The Trusted Partner

Customer service is our number one value. ProLabs has invested in people, labs and manufacturing capacity to ensure compatible products, and immediate answers to your questions. 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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