

Features

- Compliant with 100GBASE-SR2 BiDi and 40GBASE-SR2 BiDi
- Compliant with SFF 8665 QSFP28 MSA
- Compliant with IEEE 802.3bm CAUI-4 Interface
- Dual wavelength 850/908 nm VCSEL Bi-Directional optical interface
- Optical Data Rate PAM4 2x10.3125GBd / 26.5625GBd
- Electrical Data Rate NRZ 4x10.3125Gbps / 25.78125Gbps
- Data Rate changed by Host software command (CDR bypass)
- Built in quad Tx CDR and Rx
- Hot Pluggable QSFP28 footprint
- Dual Bidi LC connector
- 2 wire interface for management and diagnostic monitor compliant with SFF-8636
- Single 3.3V power supply



- Link distance 100m over OM4 fiber and 70m over MM OM3 fiber
- Maximum power consumption 3.5W
- RoHS compliant

Applications

- 100GBASE-SR2 BiDi Ethernet @103.1G
- 40GBASE-SR2 BiDi Ethernet @41.3G
- Data Centers Switch Interconnect
- Server and Storage Area Network Interconnect

1. Absolute Maximum Ratings

| Parameter | Symbol | Min | Max | Units |
|---------------------------|--------|------|-----|-------|
| Storage Temperature | TST | -40 | 85 | °C |
| Storage Relative Humidity | RH | 0 | 85 | % |
| Supply Voltage | VCC3 | -0.5 | 3.6 | V |

2. Recommended Operating Conditions

| Parameter | Symbol | Min | Typical | Max | Units |
|----------------------------|--------|------|---------|------|-------|
| Case Operating Temperature | TOP | 0 | - | 70 | °C |
| Supply Voltage | VCC | 3.13 | 3.3 | 3.47 | V |

| | | | | | |
|------------------------------------------|-------------|---------|----------|--------------------|------|
| Electrical Data Rate, per Lane | DR | 10.3125 | 25.78125 | | Gb/s |
| Data Rate Accuracy | Δ DR | -100 | | 100 | ppm |
| Bit Error Rate (NO FEC) | BER | | | 5x10 ⁻⁵ | |
| Supply Current | ICC | | | 1000 | mA |
| Power Consumption | P | | | 3.5 | W |
| Transceiver Power-on Initialization Time | | | | 2000 | ms |
| Control Input Voltage High | Vih | 2.0 | | Vcc | V |
| Control Input Voltage Low | Vil | GND | | 0.7 | V |
| Control Output Voltage High | Voh | 2.0 | | Vcc | V |
| Control Output Voltage Low | Vol | GND | | 0.7 | V |

3. Electro-optical Characteristics

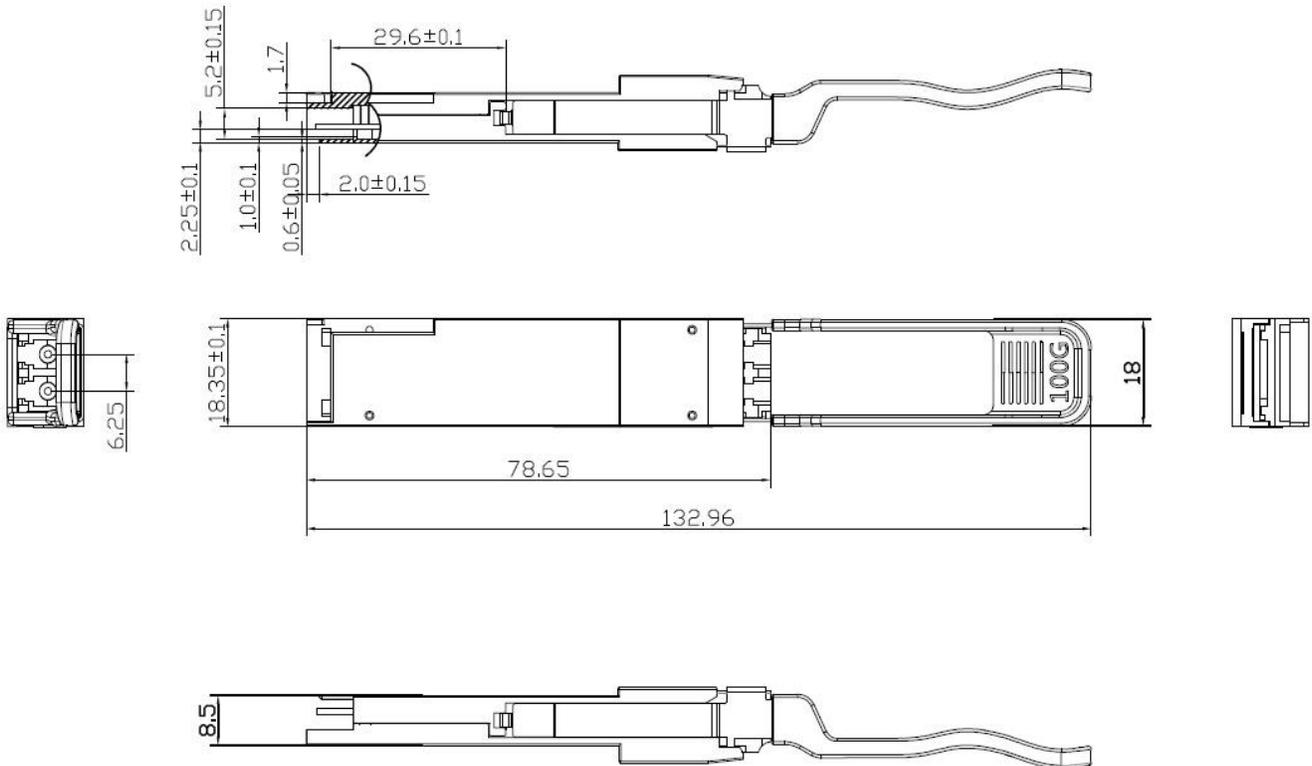
| Parameters | Symbol | Min. | Typ. | Max. | Unit |
|------------------------------------------------------|-----------------|---------|----------|------|----------|
| Transmitter | | | | | |
| Electrical Data Rate, per CAUI-4 Lane | DRel | 10.3125 | 25.78125 | | Gb/s |
| Optical Data Rate, per Optical Channel | DRop | 10.3125 | 26.5625 | | GBd |
| Average Launch Power, per Channel | Pavg | -3 | | 4 | dBm |
| Optical Wavelength, CH1 ¹ | λ CH1 | 832 | 850 | 868 | nm |
| Optical Wavelength, CH2 ¹ | λ CH2 | 882 | 908 | 928 | nm |
| Spectral Width (RMS) ¹ | $\Delta\lambda$ | | 0.5 | 0.65 | nm |
| Optical Extinction Ratio | ER | 3 | | | dB |
| Average Launch Power OFF, per Channel | Poff | | | -30 | dBm |
| Optical Return Loss Tolerance | ORLT | | | 12 | dB |
| Input Differential Impedance | Zin | 80 | 100 | 120 | Ω |
| Differential Data Input Voltage | Vin-pp | 120 | | 1200 | mVpp |
| Receiver | | | | | |
| Optical Data Rate, per Optical Channel | DRop | 10.3125 | 26.5625 | | GBd |
| Electrical Data Rate, per CAUI-4 Lane | DRel | 10.3125 | 25.78125 | | Gb/s |
| Maximum Receive Power, per Channel ² | Prx-max | 0.5 | | | dBm |
| Receiver Sensitivity (OMA), per Channel ³ | SENoma | | | -8 | dBm |
| Optical Wavelength, CH1 | λ CH1 | 882 | 908 | 928 | nm |
| Optical Wavelength, CH2 | λ CH2 | 832 | 850 | 868 | nm |
| Receiver Reflectance | RRX | | | -15 | dB |
| LOS De-Assert | LOSD | | | -10 | dBm |

| | | | | | |
|----------------------------------|---------|-----|-----|-----|----------|
| LOS Assert | LOSA | -30 | | | dBm |
| LOS Hysteresis | LOSHY | 0.5 | | | dB |
| Output Differential Impedance | Zout | 80 | 100 | 120 | Ω |
| Differential Data Output Voltage | Vout-pp | 300 | 600 | 800 | mVpp |

Notes:

1. Transmitter wavelength, RMS spectral width and launch power need to meet the OMA minus TDP specs to guarantee link performance.
2. The receiver shall be able to tolerate, without damage, continuous exposure to a modulated optical input signal having this power level on one lane. The receiver does not have to operate correctly at this input power.
3. Measured with conformance test signal at receiver input for BER= 5×10^{-5} .

4. Mechanical Diagram



Note: External physical characteristics are subject to variation. This may include, but is not limited to, external case designs, pull tab colors and/or shapes, removal latch styles or colors, and label sizes and placement. These variations do not affect the function or characteristics of the transceivers.

5. Ordering Information

| OEM | Part Number | OEM | Part Number |
|-------|--------------------|-------------|-------------------|
| Cisco | QSFP-40/100-SRBD-A | MSA OnePort | OP-QSFP28-SRBD-MR |
| MSA | AN-QSFP28-SRBD-MR | | |

6. Contact Information

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