

QSFP-100G-PDAC3M-I-PRO

MSA and TAA Compliant 100GBase-CU QSFP28 to QSFP28 Direct Attach Cable (Passive Twinax, 3m, 28AWG, -40 to 85C)

Features

- QSFP28 conforms to the Small Form Factor SFF-8436
- 4-Channel Full-Duplex Passive Copper Cable Transceiver
- Support for multi-gigabit data rates: 16Gb/s – 25.78Gb/s (per channel)
- Maximum aggregate data rate: 100Gb/s (4x25.78Gb/s)
- IEEE 802.3bj 100GBase-CR4
- Copper link length up to 3m
- Power Supply: +3.3V
- Low crosstalk
- I2C based two-wire serial interface for EEPROM signature which can be customized
- Industrial Temperature -40 to +85 Celsius
- ROHS Compliant



Applications

- 100Gigabit Ethernet
- Serial Data Transmission

Product Description

This is an MSA compliant 100GBase-CU QSFP28 to QSFP28 direct attach cable that operates over passive copper with a maximum reach of 3m. It has been programmed, uniquely serialized, and data-traffic and application tested to ensure it is 100% compliant and functional. This direct attach cable is TAA (Trade Agreements Act) compliant, and is built to comply with MSA (Multi-Source Agreement) standards. We stand behind the quality of our products and proudly offer a limited lifetime warranty.

Proline's active optical cables 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."



General Specifications

| Parameter | Symbol | Min. | Typ. | Max. | Unit | Notes |
|--------------------------|--------|------|------|----------|------|-------|
| Storage Temperature | Tstg | -40 | | 85 | °C | |
| Operating Temperature | Tc | -40 | | 85 | °C | |
| Operating Humidity Range | RH | 0 | | 85 | % | |
| Data Rate Per Channel | DR | | | 25.78125 | Gbps | |

Cable Specifications

| Parameter | Symbol | Min. | Typ. | Max. | Unit | Notes |
|---|--------|--------|-------|------|------|-------|
| Wire Gauge | | | 28AWG | | AWG | |
| Cable Differential Impedance | Z | 95 | 100 | 110 | Ω | |
| Cable Outer Diameter | | | 8.00 | | mm | |
| Cable Bend Radius (Measured at Diecast Endface) | | | 45 | | mm | |
| Cable Flame Rating | | UL 75C | | | | |

Electrical Specifications

| Parameter | Symbol | Min. | Typ. | Max. | Unit | Notes |
|---|--------------------------------------|--|------|-------|--------------------|-------|
| Supply Voltage | Vcc | 2.95 | 3.3 | 3.6 | V | |
| Supply Current | Icc | | 0.2 | 2 | mA | 1 |
| Insertion Loss | SDD ₂₁ | 8 | | 22.48 | dB, at 12.8906GHz | |
| Input/Output Return Loss | SDD ₁₁ /SDD ₂₂ | 6 | | | dB, at 12.8906GHz | |
| Differential to Common-Mode Return Loss | SCD ₁₁ /SCD ₂₂ | Meet IEEE802.3bj 100GBASE-CR4 Spec, Equation (92-28) | | | dB, 10MHz to 19GHz | |
| Differential to Common-Mode Conversion Loss | SCD ₂₁ | Meet IEEE802.3bj 100GBASE-CR4 Spec, Equation (92-29) | | | dB, 10MHz to 19GHz | |
| Common-Mode to Common-Mode Return Loss | SCC ₁₁ /SCC ₂₂ | Meet IEEE802.3bj 100GBASE-CR4 Spec, Equation (92-29) | | | dB, 10MHz to 19GHz | |
| Multi-Disturber Near-End Crosstalk | MDNEXT | | | -35 | dB, 10MHz to 19GHz | |
| Multi-Disturber Far-End Crosstalk | MDFEXT | | | -30 | dB, 10MHz to 19GHz | 2 |

Notes:

1. Dissipates power only during EEPROM read/write.
2. Far-end crosstalk depends on the cable insertion loss. The low-loss and thick-gauge cables would exhibit the highest FEXT.

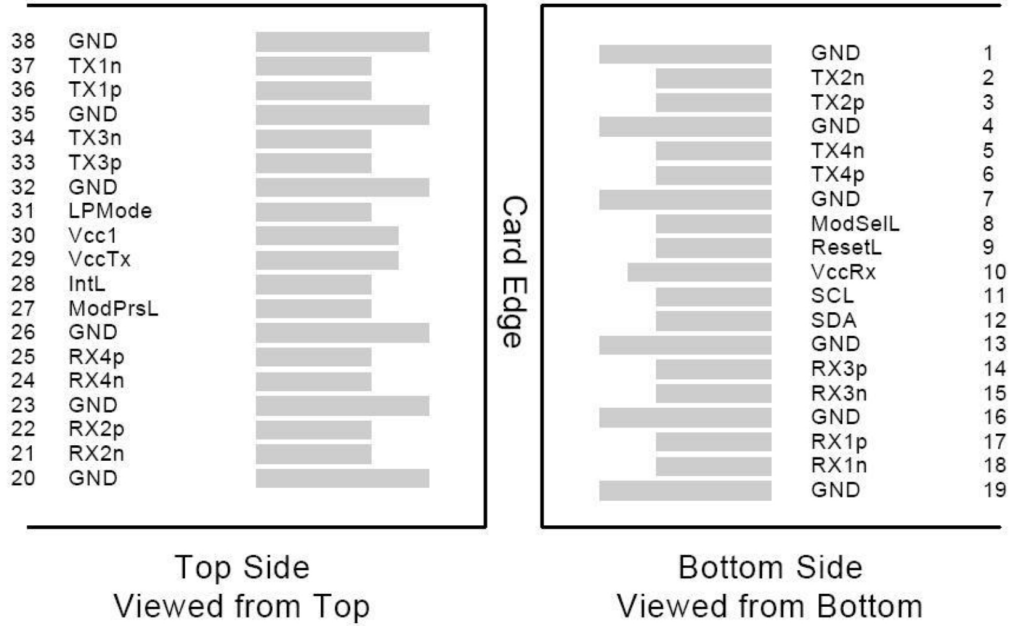
Pin Descriptions

| Pin | Logic | Symbol | Name/Descriptions | Ref. |
|-----|------------|---------|---|------|
| 1 | | GND | Module Ground. | 1 |
| 2 | CML-I | Tx2- | Transmitter Inverted Data Input. | |
| 3 | CML-I | Tx2+ | Transmitter Non-Inverted Data Input. | |
| 4 | | GND | Module Ground. | 1 |
| 5 | CML-I | Tx4- | Transmitter Inverted Data Input. | |
| 6 | CML-I | Tx4+ | Transmitter Non-Inverted Data Input. | |
| 7 | | GND | Module Ground. | 1 |
| 8 | LVTTTL-I | MODSEIL | Module Select. | 2 |
| 9 | LVTTTL-I | ResetL | Module Reset. | 2 |
| 10 | | VccRx | +3.3V Receiver Power Supply. | |
| 11 | LVCNOS-I | SCL | 2-Wire Serial Interface Clock. | 2 |
| 12 | LVCNOS-I/O | SDA | 2-Wire Serial Interface Data. | 2 |
| 13 | | GND | Module Ground. | 1 |
| 14 | CML-O | Rx3+ | Receiver Non-Inverted Data Output. | |
| 15 | CML-O | Rx3- | Receiver Inverted Data Output. | |
| 16 | | GND | Module Ground. | 1 |
| 17 | CML-O | Rx1+ | Receiver Non-Inverted Data Output. | |
| 18 | CML-O | Rx1- | Receiver Inverted Data Output. | |
| 19 | | GND | Module Ground. | 1 |
| 20 | | GND | Module Ground. | 1 |
| 21 | CML-O | Rx2- | Receiver Inverted Data Output. | |
| 22 | CML-O | Rx2+ | Receiver Non-Inverted Data Output. | |
| 23 | | GND | Module Ground. | 1 |
| 24 | CML-O | Rx4- | Receiver Inverted Data Output. | |
| 25 | CML-O | Rx4+ | Receiver Non-Inverted Data Output. | |
| 26 | | GND | Module Ground. | 1 |
| 27 | LVTTTL-O | ModPrsL | Module Present. Internally pulled down to GND. | |
| 28 | LVTTTL-O | IntL | Interrupt output should be pulled up on the host board. | 2 |
| 29 | | VccTx | +3.3V Transmitter Power Supply. | |
| 30 | | Vcc1 | +3.3V Power Supply. | |
| 31 | LVTTTL-I | LPMode | Low-Power Mode. | 2 |
| 32 | | GND | Module Ground. | 1 |
| 33 | CML-I | Tx3+ | Transmitter Non-Inverted Data Input. | |
| 34 | CML-I | Tx3- | Transmitter Inverted Data Input. | |
| 35 | | GND | Module Ground. | 1 |
| 36 | CML-I | Tx1+ | Transmitter Non-Inverted Data Input. | |
| 37 | CML-I | Tx1- | Transmitter Inverted Data Input. | |
| 38 | | GND | Module Ground. | 1 |

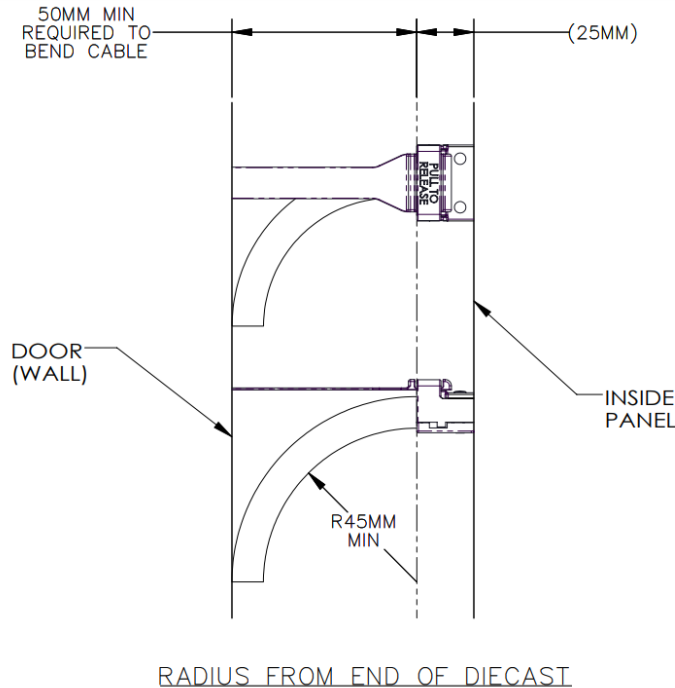
Notes:

1. Module circuit ground is isolated from module chassis ground within the module.
2. Open collector. Should be pulled up with 4.7kΩ-10kΩ on the host board to a voltage between 3.15V and 3.6V.

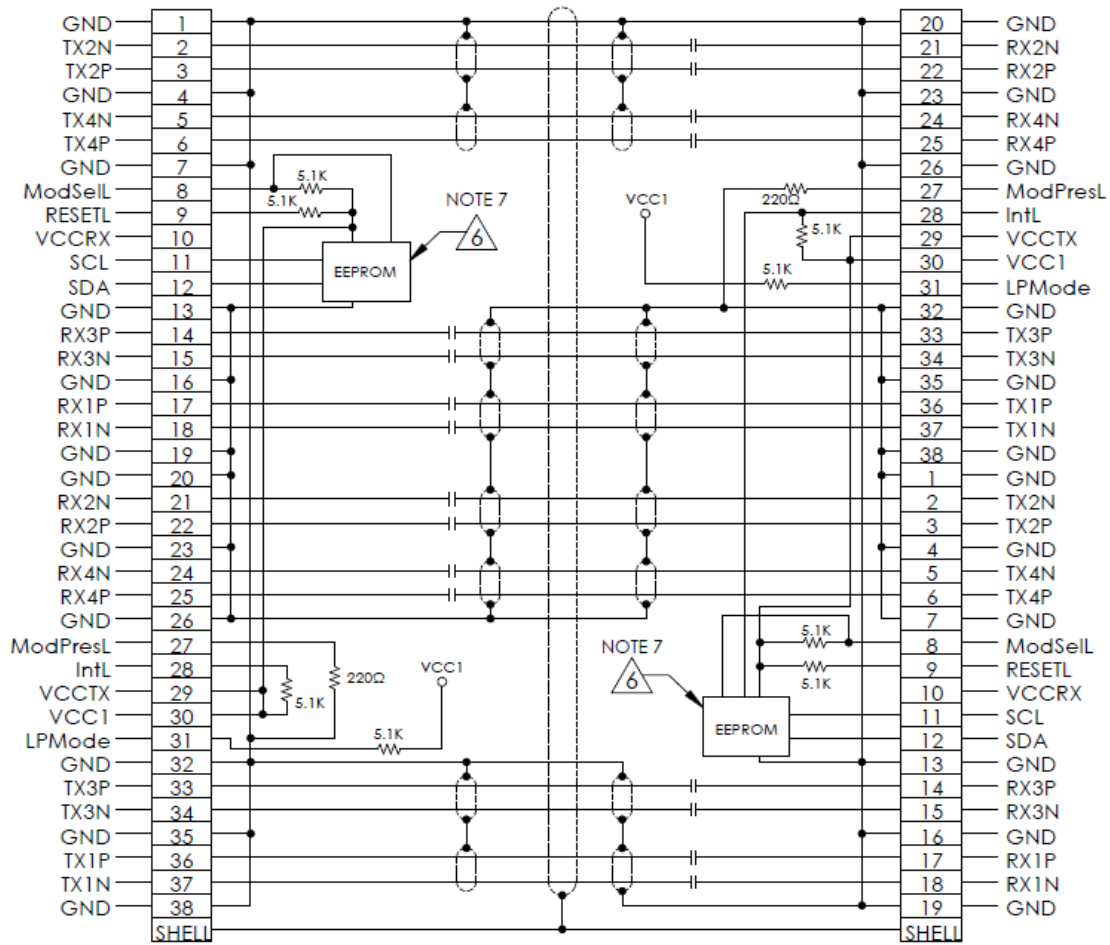
Electrical Pin-Out Details



28AWG Bend Radius

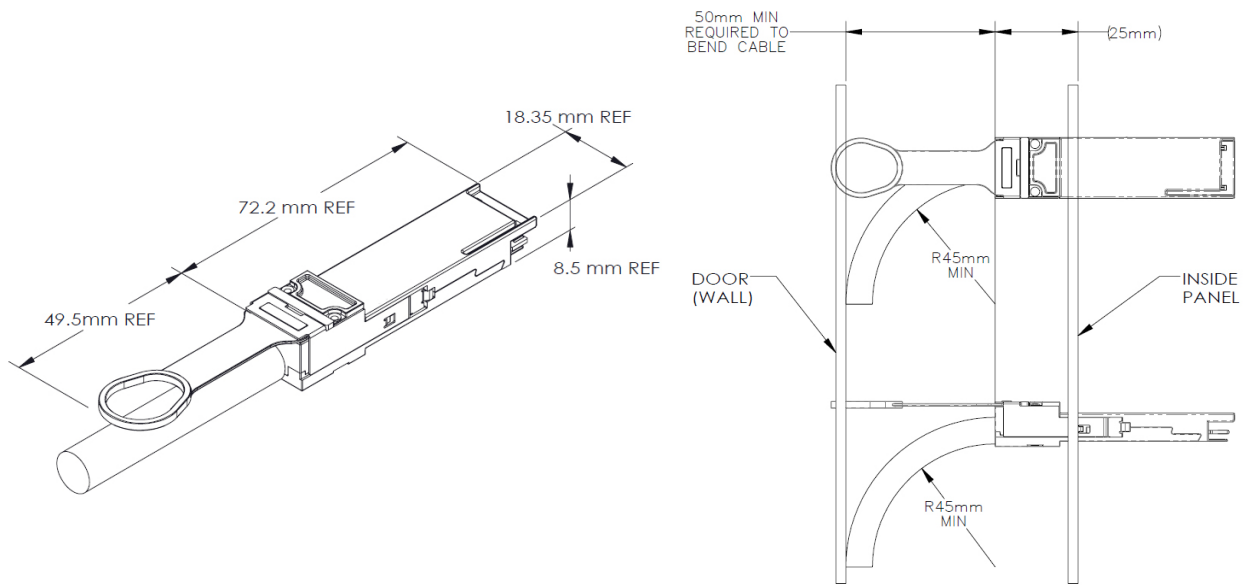
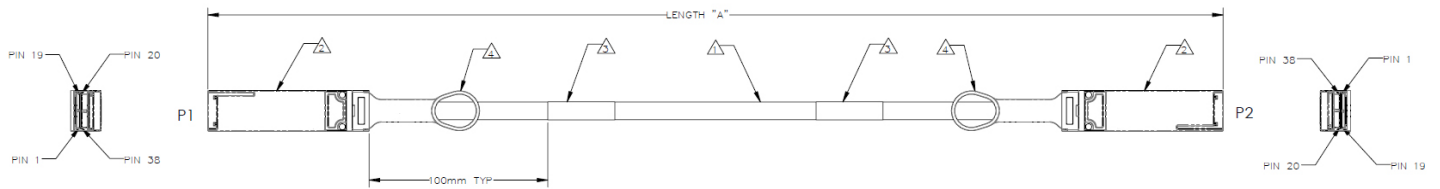


Signal Description



NOTE: DC BLOCKING CAP VALUE IS 0.1 μ F
 EPROM CONNECTED TO VCCTX

Mechanical Specifications



QSFP Diecast Dimensions

Radius from Edge of Diecast

Notes:

1. 28AWG, 8-PR, PVC Black, UL 75C, CM or AWM Style 20276 80°C.
2. Plug, QSFP28, Reference SFF-8661.
3. Label.
4. Lanyard, Green, UL 94V-0.

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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