**C-DSFPAR2S56-P3M**

Arista Networks® to MSA Compatible TAA 100GBase-CU DSFP to 2xSFP56 Direct Attach Cable (Passive Twinax, 3m)

**Features:**

- Compliant with DSFP and SFP MSA Specifications
- Compliant with IEEE 802.3cd
- Up to 100Gbps Data Rate on PAM4
- Hot-Pluggable
- Optimized Construction to Minimize Insertion Loss and Crosstalk
- Customized Cable Braid Termination Limits EMI Radiation
- Single 3.3V Power Supply
- Operating Temperature: 0 to 70 Celsius
- RoHS Compliant and Lead-Free

**Applications:**

- 100GBase Ethernet

**Product Description**

This Arista Networks® to MSA dual OEM compatible 100GBase-CU DSFP to 2xSFP56 active optical cable has a maximum reach of 3.0m (9.8ft). It is 100% Arista Networks® to MSA compatible and has been programmed, uniquely serialized, data-traffic and application tested to ensure that it is compliant and functional. This active optical cable will initialize and perform identically to Arista Networks® and MSA's individual cables and is built to meet or exceed Arista Networks® and MSA's specifications. This product complies with MSA (Multi-Source Agreement) standards and is TAA (Trade Acts Agreement) 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.")

**Rev. 112425**

## Absolute Maximum Ratings

| Parameter | Symbol | Min. | Typ. | Max. | Unit | Notes |
|---|---|---|---|---|---|---|
| **Supply Voltage** | Vcc | | | 3.3 | V | Nominal |
| **Storage Temperature** | Tstg | -40 | | 85 | °C | |
| **Operating Case Temperature** | Tc | 0 | | 70 | °C | |
| **Data Rate** | DR | | 53.125 | | Gbps | |
| **Wire Gauge** | | | 26 | | AWG | |

## High Speed Characteristics

| Parameter | Symbol | Min. | Typ. | Max. | Unit | Notes |
|---|---|---|---|---|---|---|
| **Differential Impedance** | TDR | 90 | 100 | 110 | Ω | Not including gold finger site |
| **Insertion Loss** | SDD21 | -17.16 | | | dB | At 13.28GHz |
| **Differential Return Loss** | SDD11<br>SDD22 | | | Note 1 | dB | At 0.05 to 4.1GHz |
| | | | | Note 2 | dB | At 4.1 to 19GHz |
| **Common-Mode to Common-Mode Output Return Loss** | SCC11<br>SCC22 | | | -2 | dB | At 0.2 to 19GHz |
| **Differential to Common-Mode Return Loss** | SCD11<br>SCD22 | | | Note 3 | dB | At 0.01 to 12.89GHz |
| | | | | Note 4 | dB | At 12.89 to 19GHz |
| **Differential to Common-Mode Conversion Loss** | SCD21-IL | | | 10 | dB | At 0.01 to 12.89GHz |
| | | | | Note 5 | dB | At 12.89 to 15.7GHz |
| | | | | -6.3 | dB | At 15.7 to 19GHz |

**Notes:**

1. Reflection Coefficient given by equation SDD11(dB) < -16.5 + 2 × SQRT(f ), with f in GHz.
2. Reflection Coefficient given by equation SDD11(dB) < -10.66 + 14 × log10(f/5.5), with f in GHz.
3. Reflection Coefficient given by equation SCD11(dB) < -22 + (20/25.78)*f, with f in GHz.
4. Reflection Coefficient given by equation SCD11(dB) < -15 + (6/25.78)*f, with f in GHz.
5. Reflection Coefficient given by equation SCD21(dB) < -27 + (29/22)*f, with f in GHz.

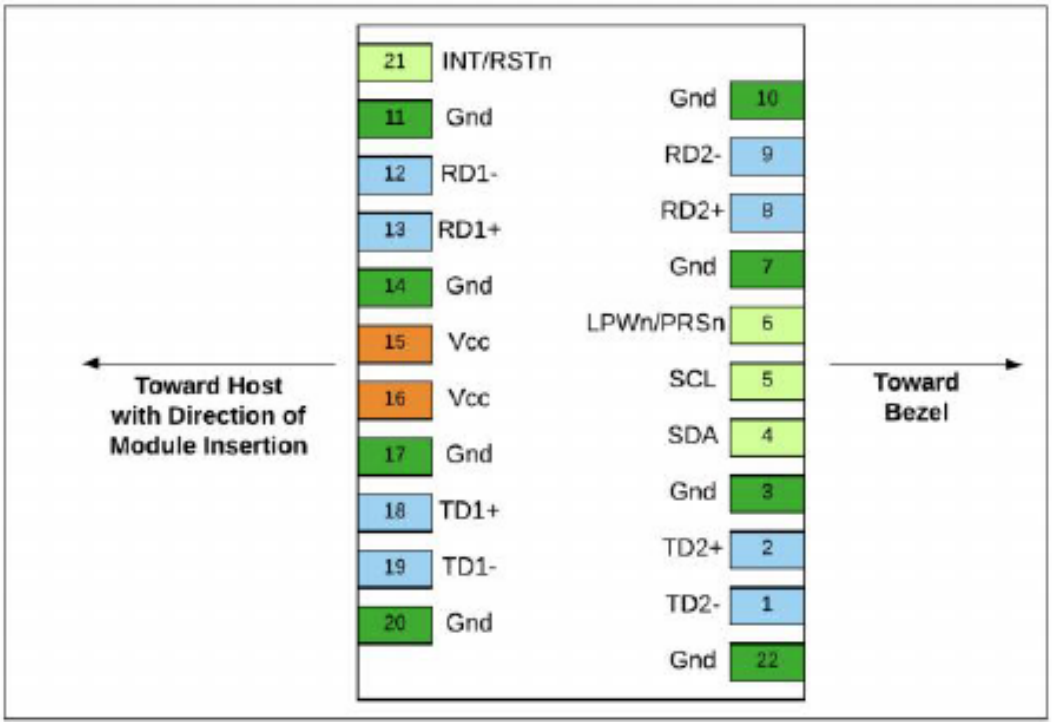
**DSFP Pin Descriptions**

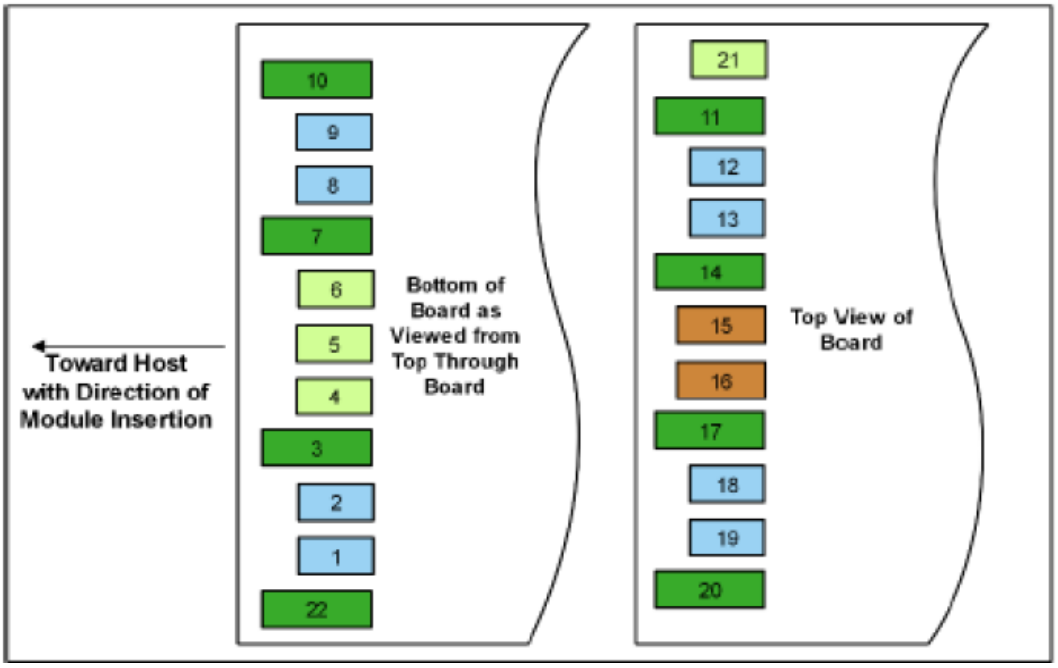
| Pin | Logic | Symbol | Name/Description | Notes |
|---|---|---|---|---|
| **1** | CML-I | TD2- | Transmitter Inverted Data Input Lane 2. | |
| **2** | CML-I | TD2+ | Transmitter Data Input Lane 2. | |
| **3** | | GND | Module Ground. | 2 |
| **4** | LVTTL-I/O | SDA | 2-Wire Serial Interface Data Line. | |
| **5** | LVTTL-I/O | SCL | 2-Wire Serial Interface Clock Line. | |
| **6** | Multi-Level-I/O | LPWn/PRSn | Low-Power Mode/Module Present (MOD_ABS). | |
| **7** | | GND | Module Ground. | 2 |
| **8** | CML-O | RD2+ | Receiver Non-Inverted Data Output Lane 2. | |
| **9** | CML-O | RD2- | Receiver Inverted Data Output Lane 2. | |
| **10** | | GND | Module Ground. | 2 |
| **11** | | GND | Module Ground. | 2 |
| **12** | CML-O | RD1- | Receiver Inverted Data Output Lane 1. | 1 |
| **13** | CML-O | RD1+ | Receiver Data Output Lane 1. | 1 |
| **14** | | GND | Module Ground. | 2 |
| **15** | | Vcc | Module +3.3V Power Supply. | |
| **16** | | Vcc | Module +3.3V Power Supply. | |
| **17** | | GND | Module Ground. | 2 |
| **18** | CML-I | TD1+ | Transmitter Non-Inverted Data Input Lane 1. | 1 |
| **19** | CML-I | TD1- | Transmitter Inverted Data Input Lane 1. | 1 |
| **20** | | GND | Module Ground. | 2 |
| **21** | Multi-Level-I/O | INT/RSTn | Dual Function Module Interrupt and Reset Pin. | |
| **22** | | GND | Module Ground. | 2 |

**Notes:**

1. Backwards compatible with SFF-8431 SFI Interface.
2. The module ground contacts GND recommended to be isolated from the module case by offering flexibility in the host EMI control strategy.

**DSFP Electrical Pin-Out Details**



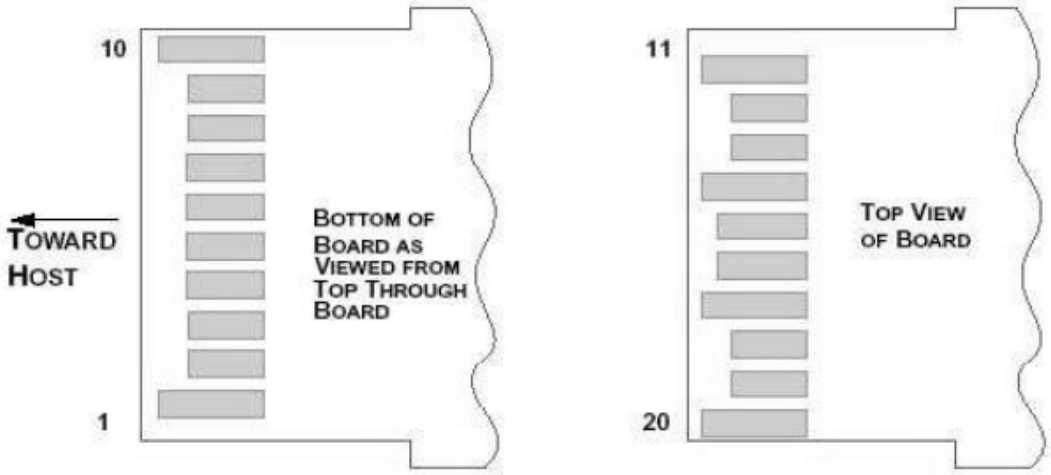
**SFP Pin Descriptions**

| Pin | Logic | Symbol | Name/Description | Notes |
|---|---|---|---|---|
| **1** | | VeeT | Transmitter Ground. | |
| **2** | LVTTL-O | Tx_Fault | Not Connected. | 1 |
| **3** | LVTTL-I | Tx_Disable | Transmitter Disable. | 2 |
| **4** | LVTTL-I/O | SDA | 2-Wire Serial Data. | |
| **5** | LVTTL-I | SCL | 2-Wire Serial Clock. | |
| **6** | | MOD_DEF0 | Module Present. Connected to the VeeT. | |
| **7** | LVTTL-I | RS0 | Not Connected. | 1 |
| **8** | LVTTL-O | LOS | Loss of Signal. | 2 |
| **9** | LVTTL-I | RS1 | Not Connected. | 1 |
| **10** | | VeeR | Receiver Ground. | |
| **11** | | VeeR | Receiver Ground. | |
| **12** | CML-O | RD- | Receiver Data Inverted. | |
| **13** | CML-O | RD+ | Receiver Data. | |
| **14** | | VeeR | Receiver Ground. | |
| **15** | | VccR | Receiver Power Supply 3.3V. | |
| **16** | | VccT | Transmitter Power Supply 3.3V. | |
| **17** | | VeeT | Transmitter Ground. | |
| **18** | CML-I | TD+ | Transmitter Data. | |
| **19** | CML-I | TD- | Transmitter Data Inverted. | |
| **20** | | VeeT | Transmitter Ground. | |

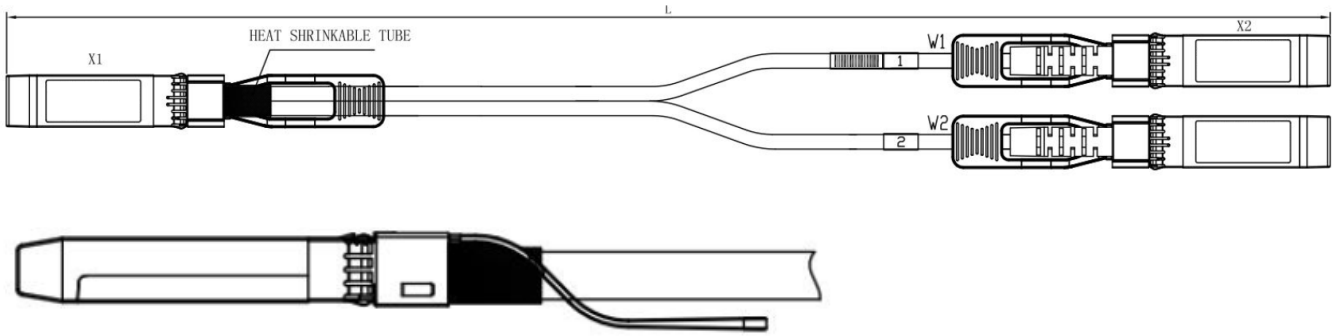
**Notes:**

1. Signals not supported in SFP+ copper pulled down to the VeeT with a 30kΩ resistor.
2. Passive cable assemblies do not support LOS and Tx_Disable.

**SFP Electrical Pin-Out Details**



## Mechanical Specifications



**About ProLabs**

Our experience comes as standard; for over 15 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 over 90 optical switching and transport platforms.

**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 400G 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.

**Trusted Partner**

Customer service is our number one value. ProLabs has invested in people, labs and manufacturing capacity to ensure that you get immediate answers to your questions and compatible product when needed. 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.

**Contact Information**

ProLabs US

Email: sales@prolabs.com
Telephone: 952-852-0252

ProLabs UK

Email: salessupport@prolabs.com
Telephone: +44 1285 719 600