

SFP-25GB-PDAC2MLZ-C

MSA and TAA 25GBase-CU SFP28 to SFP28 Direct Attach Cable (Passive Twinax, 2m, 30AWG, LSZH)

Features:

- SFF-8431/8432, INF-8074i
- 25.78125Gbps
- SFP28 to SFP28
- 30AWG
- Passive copper
- Operating Temperature 0 to 70 Celsius
- RoHS 2.0 compliant and lead-free



Applications:

- 25GBase-CU

Product Description

This is a MSA Compliant 25GBase-CU SFP28 to SFP28 LSZH direct attach cable that operates over passive copper with a maximum reach of 2m. It has been programmed, uniquely serialized, and data-traffic and application tested to ensure it is 100% compliant and functional. We stand behind the quality of our products and proudly offer a limited lifetime warranty. This cable is TAA (Trade Agreements Act) compliant and is built to comply with MSA (Multi-Source Agreement) standards.

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."



Regulatory Compliance

- ESD to the Electrical PINs: compatible with MIL-STD-883 Method 3015.
- ESD to the Duplex LC Receptacle: compatible with IEC 61000-4-2.
- Immunity: compatible with IEC 61000-4-3.
- EMI: compatible with FCC Part 15 Class B EN55022 Class B (CISPR 22B) VCCI Class B.
- Laser Eye Safety: compatible with FDA 21CFR 1040.10 and 1040.11 EN60950, EN (IEC) 60825-1, 2.
- RoHS: compliant with 2002/95/EC 4.1&4.2 2005/747/EC.

Absolute Maximum Ratings

| Parameter | Symbol | Min. | Typ. | Max. | Unit |
|----------------------------|--------|------|----------|------|------|
| Supply Voltage | Vcc | 3.13 | 3.3 | 3.47 | V |
| Storage Temperature | Tstg | -40 | | 85 | °C |
| Operating Case Temperature | Tc | 0 | | 70 | °C |
| Humidity | RH | 5 | | 85 | % |
| Data Rate | | | 25.78125 | | Gbps |

Physical Characteristics

| Parameter | Symbol | Min. | Typ. | Max. | Unit |
|-----------------|---------------------------------------|------|------|------|------|
| Length | L | | | 2 | M |
| AWG | | | | 30 | AWG |
| Jacket Material | LSZH, Black | | | | |
| Top Shell | Zinc Alloy, Nickel-Plated Over Copper | | | | |
| Bottom Shell | Zinc Alloy, Nickel-Plated Over Copper | | | | |
| Pull Tab | Pull Ring, PA66 S1300, Deep Blue | | | | |
| EMI Shell | Stainless Steel SUS301 | | | | |

Electrical Specifications

| Parameter | Symbol | Min. | Typ. | Max. | Unit |
|---|-------------|---|------|-------|------|
| Resistance | Rcon | | | 3 | Ω |
| Insulation Resistance | Rins | | | 10 | MΩ |
| Raw Cable Impedance | Zca | 95 | 100 | 110 | Ω |
| Mated Connector Impedance | Zmated | 85 | 100 | 110 | Ω |
| Insertion Loss at 12.89GHz | SDD21 | 8 | | 22.48 | dB |
| Return Loss at 12.89GHz | SDD11/22 | $\text{Return_Loss}(f) \geq \begin{cases} 16.5 - 2\sqrt{f} & 0.05 \leq f < 4.1 \\ 10.66 - 14\log_{10}\left(\frac{f}{5.5}\right) & 4.1 \leq f \leq 19 \end{cases}$ | | | dB |
| Differential to Common-Mode Return Loss | SCD11/22 | $\text{Return_Loss}(f) \geq \begin{cases} 22 - \left(\frac{20}{25.78}\right)f, & 0.01 \leq f < 12.89 \\ 15 - \left(\frac{6}{25.78}\right)f & 12.89 \leq f \leq 19 \end{cases}$ | | | dB |
| Differential to Common-Mode Conversion Loss | SCD21-SDD21 | $\text{Conversion_Loss}(f) - \text{IL}(f) \geq \begin{cases} 10, & 0.01 \leq f < 12.89 \\ 27 - \left(\frac{29}{22}\right)f, & 12.89 \leq f < 15.7 \\ 6.3, & 15.7 \leq f \leq 19 \end{cases}$ | | | dB |
| Minimum COM | COM | 3 | | | dB |
| Rise Time (20-80%) | | | | 25 | ps |

Pin Descriptions

| Pin | Logic | Symbol | Name/Description | Plug Sequence | Note |
|------|-----------|------------|--|---------------|------|
| Case | | Case | Module Case. | See 2 | |
| 1 | | VeeT | Module Transmitter Ground. | 1 | 3 |
| 2 | LVTTL-O | Tx_Fault | Module Transmitter Fault. | 3 | 4 |
| 3 | LVTTL-I | Tx_Disable | Transmitter Disable. Turns off the transmitter laser output. | 3 | 5 |
| 4 | LVTTL-I/O | SDA | 2-Wire Serial Interface Data (Same as MOD_DEF2 in INF-8074i). | 3 | |
| 5 | LVTTL-I/O | SCL | 2-Wire Serial Interface Clock (Same as MOD_DEF1 in INF-8074i). | 3 | |
| 6 | | MOD_ABS | Module Absent. Connected to the VeeT or VeeR in the module. | 3 | |
| 7 | LVTTL-I | RS0 | Rate Select 0. Optionally controls the SFP+ module receiver. | 3 | 6 |
| 8 | LVTTL-O | Rx_LOS | Receiver Loss of Signal Indication. In FC, designated as Rx_LOS. In Ethernet, designated as Signal Detect. | 3 | 4 |
| 9 | LVTTL-I | RS1 | Rate Select 1. Optionally controls the SFP+ module transmitter. | 3 | 6 |
| 10 | | VeeR | Module Receiver Ground. | 1 | 3 |
| 11 | | VeeR | Module Receiver Ground. | 1 | 3 |
| 12 | CML-O | RD- | Receiver Inverted Data Output. | 3 | |
| 13 | CML-O | RD+ | Receiver Non-Inverted Data Output. | 3 | |
| 14 | | VeeR | Module Receiver Ground. | 1 | 3 |
| 15 | | VccR | +3.3V Receiver Power Supply. | 2 | |
| 16 | | VccT | +3.3V Transmitter Power Supply. | 2 | |
| 17 | | VeeT | Module Transmitter Ground. | 1 | 3 |
| 18 | CML-I | TD+ | Transmitter Non-Inverted Data Input. | 3 | |
| 19 | CML-I | TD- | Transmitter Inverted Data Input. | 3 | |
| 20 | | VeeT | Module Transmitter Ground. | 1 | 3 |

Notes:

1. Labelling as inputs (I) and outputs (O) are from the perspective of the module.
2. The case makes electrical contact to the cage before any of the board edge contacts are made.
3. The module signal ground contacts, VeeR and VeeT, should be isolated from the module case.
4. This contact is an open collector/drain output contact and shall be pulled up on the host. Pull-ups can be connected to one of several power supplies; however, the host board design shall ensure that no module contact has a voltage exceeding the module VccT/R+0.5V.
5. Tx_Disable is an input contact with a 4.7kΩ to 10Ω pull-up to the VccT inside the module.
6. If implementing SFF-8079, contacts 7 and 9 in SFF-8431 are used for AS0 and AS1, respectively.

Electrical Pin-Out Details



Electrical Pin-out Details for SFP

Mechanical Specifications



Notes:

- 1. 2 pairs.
- 2. 100% conductor test conditions: 5V, insulation resistance of 10MΩ, and conduction resistance maximum of 3Ω. IEEE802.3bj standard.

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.



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