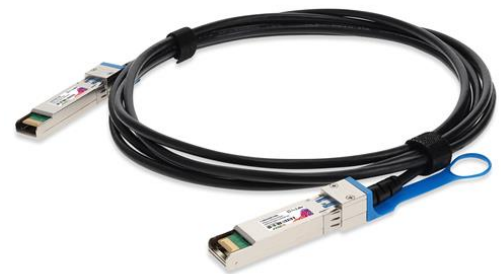


### **C-S28JUS28FT-P4M**

Juniper Networks® to Fortinet® Compatible TAA 25GBase-CU SFP28 to SFP28 Direct Attach Cable (Passive Twinax, 4m)

#### **Features:**

- Up to 25Gbps bi-directional data links
- Compliant with SFF-8402
- Hot-pluggable
- AC coupled inputs and outputs
- 100 Ohm differential impedance
- Enhanced EMI design
- Single power supply 3.3V
- Operating Temperature: 0 to 70 Celsius
- RoHS Compliant and Lead-Free



#### **Applications:**

- 25GBase Ethernet

#### **Product Description**

This Juniper Networks® to Fortinet® dual OEM compatible 25GBase-CU SFP28 to SFP28 passive TAA (Trade Acts Agreement) compliant direct attach cable has a maximum reach of 4.0m (13.1ft). It is 100% Juniper Networks® to Fortinet® compatible and has been programmed, uniquely serialized, and data-traffic and application tested to ensure that it is compliant and functional. This direct attach cable will initialize and perform identically to Juniper Networks® and Fortinet®'s individual cables and is built to meet or exceed Juniper Networks® and Fortinet®'s specifications, and comply with MSA (Multi-Source Agreement) standards. 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.")



## General Specifications

| Parameter             | Symbol | Min. | Typ. | Max.       | Unit     | Notes |
|-----------------------|--------|------|------|------------|----------|-------|
| Data Rate             | DR     |      | 25   |            | Gbps     | 1     |
| Bit Error Rate        | BER    |      |      | $10^{-12}$ |          |       |
| Operating Temperature | Tc     | 0    |      | 70         | °C       | 2     |
| Storage Temperature   | Tstg   | -40  |      | 85         | °C       | 3     |
| Supply Current        | Icc    |      |      | 4          | mA       | 4     |
| Input Voltage         | Vcc    | 3.14 | 3.3  | 3.46       | V        | 4     |
| Cable Impedance       | Z      | 90   | 100  | 110        | $\Omega$ |       |
| Product Weight        | GD     |      | 90   |            | g/PCS    | 5     |
| Cable Weight          | GC     |      | 44   |            | G/M      |       |
| Dust Cap Weight       | GS     |      | 0.80 |            | g/PCS    |       |

### Notes:

1. IEEE 802.3by.
2. Case temperature.
3. Ambient temperature.
4. For electrical power interface.

## Cable Dimensions and Insertion Loss Level

| Length | Standard Wire Gauge AWG | Cable Diameter OD (mm) | Minimum Bending Radius R (mm) | Insertion Loss Level (Note 1) | Tolerance Range ( $\pm$ cm) |
|--------|-------------------------|------------------------|-------------------------------|-------------------------------|-----------------------------|
| 4m     | 26AWG                   | 5.6                    | 30                            | CA-25G-L                      | 6                           |

### Notes:

1. Cable insertion loss classification standard IEEE 802.3by 110-10.

## Pin Descriptions

| Pin | Symbol     | Name/Description                                                                   | Notes |
|-----|------------|------------------------------------------------------------------------------------|-------|
| 1   | VeeT       | Transmitter Ground (Common with Receiver Ground).                                  | 1     |
| 2   | Tx_Fault   | Transmitter Failure Alarm. Not Used.                                               |       |
| 3   | Tx_Disable | Not Used. The signal turns off the module transmitter when it is “high” or “open.” |       |
| 4   | SDA        | Data Line for Serial ID.                                                           | 2     |
| 5   | SCL        | Clock Line for Serial ID.                                                          | 2     |
| 6   | MOD_ABS    | Module Absent. Grounded within the module.                                         | 2     |
| 7   | RS0        | No Connection Required.                                                            |       |
| 8   | LOS        | Loss of Signal Indication. “Logic 0” indicates normal operation.                   |       |
| 9   | RS1        | No Connection Required.                                                            |       |
| 10  | VeeR       | Receiver Ground (Common with Transmitter Ground).                                  | 1     |
| 11  | VeeR       | Receiver Ground (Common with Transmitter Ground).                                  | 1     |
| 12  | RD-        | Receiver Inverted Data Out. AC Coupled.                                            |       |
| 13  | RD+        | Receiver Non-Inverted Data Out. AC Coupled.                                        |       |
| 14  | VeeR       | Receiver Ground (Common with Transmitter Ground).                                  | 1     |
| 15  | VccR       | Receiver Power Supply.                                                             |       |
| 16  | VccT       | Transmitter Power Supply.                                                          |       |
| 17  | VeeT       | Transmitter Ground (Common with Receiver Ground).                                  | 1     |
| 18  | TD+        | Transmitter Non-Inverted Data In. AC Coupled.                                      |       |
| 19  | TD-        | Transmitter Inverted Data In. AC Coupled.                                          |       |
| 20  | VeeT       | Transmitter Ground (Common with Receiver Ground).                                  | 1     |

### Notes:

1. The circuit ground is isolated from the chassis ground.
2. Should be pulled up with 4.7k $\Omega$  to 10k $\Omega$  on the host board to a voltage between 2V and 3.6V.

## Electrical Pad Layout



Top of Board



Bottom of Board



## Block Diagram of Transceiver



**Mechanical Specifications**



Unmarked Tolerance  $\pm 0.2$   
Unit: mm

## 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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