

### **SFP-10GBASE-TL-80M-C**

MSA and TAA Compliant 10GBase-TX SFP+ Transceiver (Copper, 80m, RJ-45)

#### **Features**

- Low power consumption (1.6W @ 10Gbps 30m, 2.0 @ 10Gbps 80m)
- Supports 10GBase-T using 80m Cat 6a/7 cable
- Supports 1000Base-T using 100m Cat 5e cable
- Auto-sense MDI/MDIX
- Compliant with IEEE 802.3az
- Compliant with SFF-8431 and SFF-8432 MSA
- RoHS Compliant and Lead Free

#### **Applications**

- 10 Gigabit Ethernet

#### **Product Description**

This MSA compliant SFP+ transceiver provides 10GBase-TX throughput up to 80m over a copper connection via a RJ-45 connector. This TX module supports 10GBase and can be configured to fit your needs. It is guaranteed to be 100% compatible with the equivalent MSA compliant transceiver. This easy to install, hot swappable transceiver has been programmed, uniquely serialized and data-traffic and application tested to ensure that it will initialize and perform identically. It is built to meet or exceed the specifications of MSA compliant, as well as to comply with MSA (Multi-Source Agreement) standards to ensure seamless network integration. This transceiver is Trade Agreements Act (TAA) 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.



### Regulatory Compliance

- ESD to the Electrical PINs: compatible with MIL-STD-883E Method 3015.4
- ESD to the LC Receptacle: compatible with IEC 61000-4-3
- EMI/EMC: compatible with FCC Part 15 Subpart B Rules, EN55022:2010
- Laser Eye Safety: compatible with FDA 21CFR, EN60950-1& EN (IEC) 60825-1,2
- RoHS compliant with EU RoHS 2.0 directive 2015/863/EU

### Absolute Maximum Ratings

| Parameter                  | Symbol | Min. | Typ. | Max.       | Unit | Notes |
|----------------------------|--------|------|------|------------|------|-------|
| Data Rate                  | BR     |      | 10   |            | Gbps | 1     |
| Bit Error Rate             | BER    |      |      | $10^{-12}$ |      |       |
| Storage Temperature        | Tstg   | -40  |      | 85         | °C   | 2     |
| Operating Case Temperature | Tc     | 0    |      | 70         | °C   |       |
| Maximum Voltage            | Vcc    | -0.5 |      | 4          | V    |       |

#### Notes:

1. IEEE 802.3ae.
2. Ambient temperature.

### Electrical Characteristics

| Parameter      | Symbol | Min. | Typ. | Max. | Unit | Notes |
|----------------|--------|------|------|------|------|-------|
| Input Voltage  | Vcc    | 3.14 | 3.3  | 3.46 | V    |       |
| Supply Current | Icc    |      | 590  |      | mA   | 1     |
| Surge Current  | Isurge |      |      | 30   | mA   |       |

#### Notes:

1. Test at 10Gbps rate using an 80m CAT 6A cable.

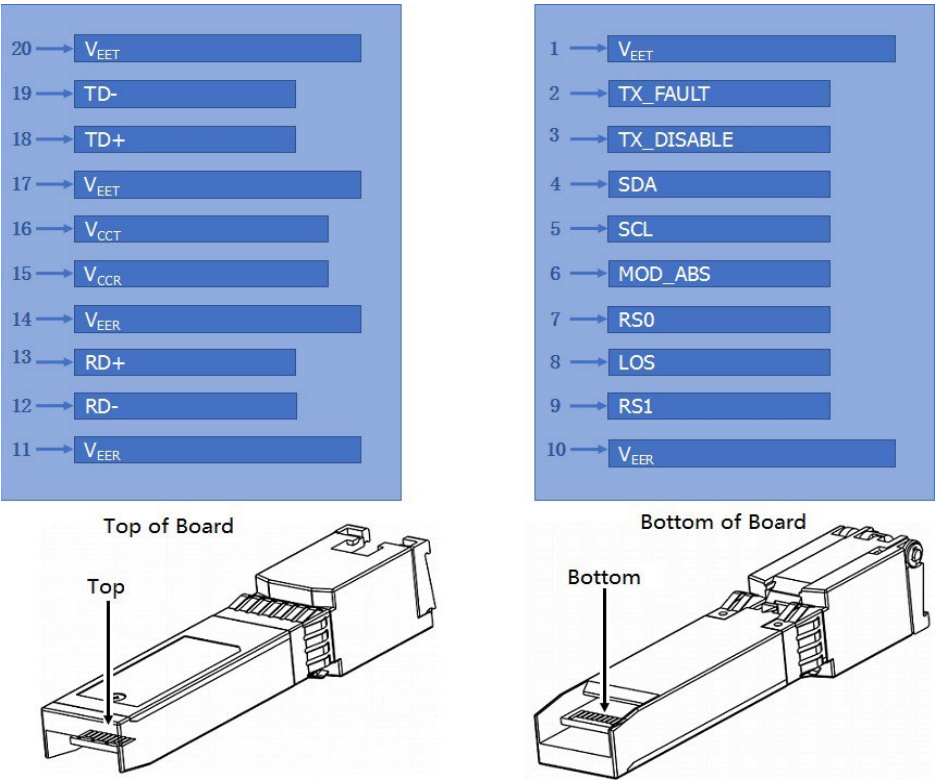
## Pin Descriptions

| Pin | Symbol     | Description  | Ref. |
|-----|------------|--|------|
| 1   | VeeT       | Transmitter Ground (Common with Receiver Ground).              | 1    |
| 2   | Tx_Fault   | Transmitter Fault. Not supported.                              |      |
| 3   | Tx_Disable | Transmitter Disable. PHY disabled on high or open.             | 2    |
| 4   | SDA        | 2-Wire Serial Interface Data.                                  | 3    |
| 5   | SCL        | 2-Wire Serial Interface Clock.                                 | 3    |
| 6   | MOD_ABS    | Module Absent. Grounded within the module.                     | 3    |
| 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 Receiver 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    |

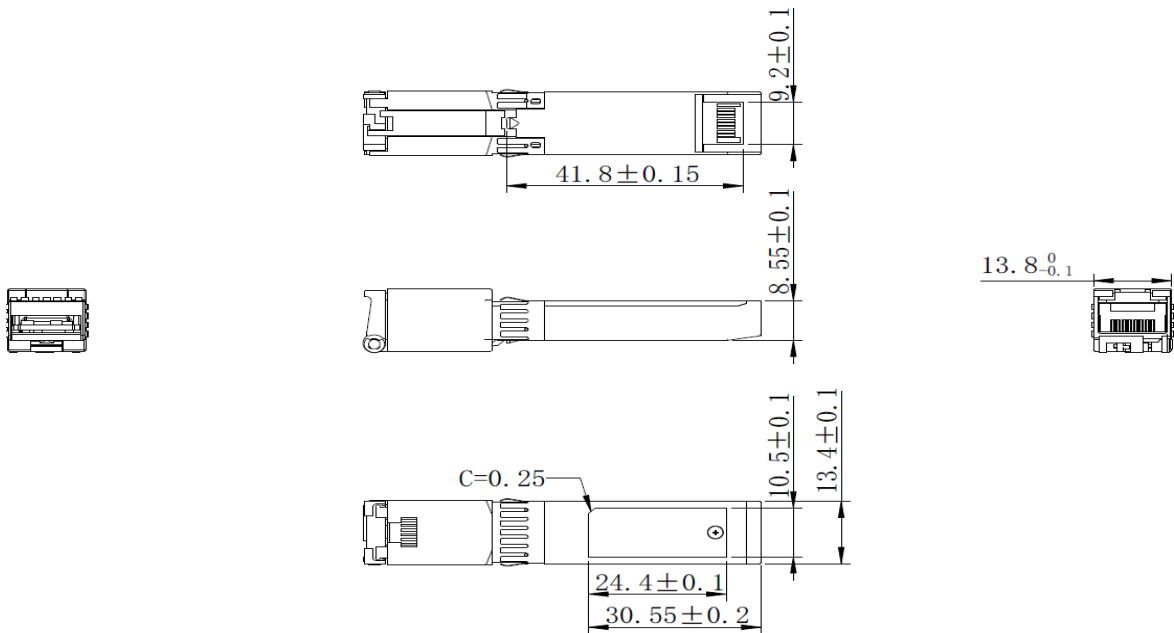
### Notes:

1. Circuit ground is connected to the chassis ground.
2. Disabled  $T_{DIS} > 2V$ , or open enabled  $T_{DIS} < 0.8V$ .
3. Should be pulled up with  $4.7K\Omega$ - $10K\Omega$  on the host board to a voltage between 2V and 3.6V.

Electrical Pad Layout



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.

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