

### 0061704528-03-NT-PRO

ADVA® 0061704528-03 Compatible TAA Compliant 1000Base-DWDM 100GHz SFP Transceiver (SMF, 1557.36nm, 120km, DOM, 0 to 70C, LC)

#### Features

- INF-8074 and SFF-8472 Compliance
- Commercial Temperature 0 to 70 Celsius
- Duplex LC Connector
- Hot Pluggable
- Excellent ESD Protection
- Single-mode Fiber
- RoHS Compliant and Lead Free
- Metal with Lower EMI



#### Applications:

- Gigabit Ethernet over DWDM
- 1x Fibre Channel
- Access, Metro and Enterprise

#### Product Description

This ADVA® 0061704528-03 compatible SFP transceiver provides 1000Base-DWDM throughput up to 120km over single-mode fiber (SMF) using a wavelength of 1557.36nm via an LC connector. It is guaranteed to be 100% compatible with the equivalent ADVA® 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. Digital optical monitoring (DOM) support is also present to allow access to real-time operating parameters. This transceiver is Trade Agreements Act (TAA) compliant. We stand behind the quality of our products and proudly offer a limited lifetime warranty.

Proline's 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 |
|---|--------|------|------|------|------|-------|
| Maximum Supply Voltage                  | Vcc    | 0    |      | 3.6  | V    |       |
| Storage Temperature                     | TS     | -40  |      | +85  | °C   |       |
| Operating Case Temperature              | Tc     | 0    |      | +70  | °C   |       |
| Relative Humidity                       | RH     | 5    |      | 85   | %    | 1     |
| Electrical static discharge (HBM Model) | ESD    | 500  |      | 1000 | V    | 2     |
| Receiver Optical Damage Threshold       | RXDmg  |      |      | +3.5 | dBm  | 3     |

### Notes:

1. Non-condensing
2. ESD, per JEDEC JESD22-A114-B
3. This must not be exceeded

## Electrical Characteristics

| Parameter               | Symbol | Min. | Typ. | Max. | Unit | Notes |
|-------------------------|--------|------|------|------|------|-------|
| Power Supply Voltage    | Vcc    | 3.14 | 3.3  | 3.46 | V    |       |
| Power supply current    | Icc    |      |      | 550  | mA   |       |
| Total power dissipation | PD     |      |      | 1.8  | W    |       |

## Optical Characteristics

| Parameter  | Symbol         | Min.               | Typ. | Max.             | Unit     |
|--|----------------|--------------------|------|------------------|----------|
| <b>Transmitter</b>                                 |                |                    |      |                  |          |
| Signaling Rate                                     |                |                    |      | 1.25             | Gbps     |
| Optical Output Power                               | P <sub>o</sub> | -1                 |      | +5               | dBm      |
| Transmission Distance                              |                | 0                  |      | 120              | km       |
| Transmitter Dispersion Penalty                     | TDP            |                    |      | 2                | dB       |
| Extinction Ratio                                   | ER             | 8.2                |      |                  | dB       |
| Optical Eye Shape & Mask                           |                | IEEE 802.3ab       |      |                  |          |
| Eye Mask Margin                                    |                | 10                 |      |                  | %        |
| Spectral Width                                     |                |                    |      | 1                | nm       |
| Optical Frequency Tuning Range (5 bands)           |                | 192.00 (1561.42)   |      | 195.90 (1530.33) | THz (nm) |
| SMSR   |                | 30                 | 35   |                  | dB       |
| Optical Frequency Minimum Tuning Grid              |                | 100                |      |                  | GHz      |
| Optical Centre Wavelength                          | $\lambda_c$    | As per ITU-T 694.1 |      |                  | nm       |
| Optical Frequency Accuracy (deviation from centre) |                | -12.5              |      | +12.5            | GHz      |
| Time to Initialize Cooled Operation                |                |                    | 10   | 90               | Sec      |
| Tuning Speed (Channel to Channel)                  |                |                    |      | 10               | Sec      |
| <b>Receiver</b>                                    |                |                    |      |                  |          |
| Receiver Wavelength Range                          |                | 191.00 (1569.59)   |      | 197.00 (1521.79) | THz (nm) |
| Receiver Overload                                  |                | -12                |      |                  | dBm      |
| Receiver Sensitivity (BER 1E-12, PRBS 231-1)       |                |                    |      | -30              | dBm      |
| Receiver Optical Reflectance                       |                |                    |      | -27              | dB       |
| LOS assert   |                | -35                |      | -30              | dBm      |
| LOS assert/de-assert hysteresis                    |                | 0.5                |      | 2.0              | dB       |

## Block Diagram



## Pin Descriptions

| Pin | Logic      | Symbol     | Name/Descriptions                                    | Notes |
|-----|------------|------------|--|-------|
| 1   |            | VeeT       | Module Transmitter Ground                            | 1     |
| 2   | LVTTTL-O   | TX Fault   | Module Transmitter Fault                             | 2     |
| 3   | LVTTTL-I   | TX Disable | Transmitter Disable. Turns off laser output          | 3     |
| 4   | LVTTTL-I/O | SDA        | 2-wire Serial interface Data line                    |       |
| 5   | LVTTTL-I/O | SCL        | 2-wire Serial Interface Clock                        |       |
| 6   |            | Mod ABS    | Module absent, connect to VeeT or VeeR in the module |       |
| 7   | LVTTTL-I   | RS0        | Unused   |       |
| 8   | LVTTTL-O   | Rx LOS     | Receiver Loss of Signal Indication                   | 2     |
| 9   | LVTTTL-I   | RSI        | Unused   |       |
| 10  |            | VeeR       | Module Receiver Ground                               | 1     |
| 11  |            | VeeR       | Module Receiver Ground                               | 1     |
| 12  | CML-O      | RD-        | Receiver Inverted Data Output                        |       |
| 13  | CML-O      | RD+        | Receiver Non-Inverted Data Output                    | 1     |
| 14  |            | VeeR       | Module Receiver Ground                               |       |
| 15  |            | VccR       | Module Receiver 3.3V Supply                          |       |
| 16  |            | VccT       | Module Transmitter 3.3V Supply                       |       |
| 17  |            | VeeT       | Module Transmitter Ground                            | 1     |
| 18  | CML-I      | TD+        | Transmitter Non-Inverted Data Input                  |       |
| 19  | CML-I      | TD-        | Transmitter Inverted Data Input                      |       |
| 20  |            | VeeT       | Module Transmitter Ground                            | 1     |

### Notes:

1. The module signal ground pins, VeeR and VeeT, are isolated from the module chassis ground.

2. This pin is an open collector/drain output pin and shall be pulled up with 4.7-10 kohms to power supply voltage between 3.3V and 3.5V on the host board.
3. TX\_Disable is an input contact with a 4.7-10 kohm pull-up to VccT inside the module.

### Electrical Pin-out Details



### Mechanical Specifications

Small Form Factor Pluggable (SFP) transceivers are compatible with the dimensions defined by the SFP Multi-Sourcing Agreement (MSA).

W 13.9mm x L 56.5mm x H 11.85mm



**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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