

Features

- 125 Mbps data throughput
- Pluggable SFP MSA 8472 Rev. 9.3 compliant
- Simplex LC/UPC connector
- Tx/Rx distance up to 20 km over SMF
- 1310 nm laser diode transmitter
- Extended operating temperature range (-40°C to +85°C)

125 Mbps Bi-Directional Optical Transceiver Module (1310 nm Tx / 1550 nm Rx)



The TFA1310-TF17 Bi-Directional Optical Transceiver Module is ideally suited for Fast Ethernet and applications where a single fiber is required to simultaneously carry both Tx and Rx signals up to 20 km (over SMF). The built-in high isolation WDM enables full duplex operation.

Conforming to the Small Form Pluggable (SFP) Multisource Agreement for a 2x10 package with a Simplex LC/UPC optical connector, these state-of-the-art components are designed expressly for bi-directional communication applications that require rates of up to 125 Mbps. The transmitter and receiver subassemblies incorporate a high performance 1310 nm DFB laser assembly and high sensitivity 1550 nm PIN/TIA photo receiver with limiting amplifier.

The TFA1310-TF17 features a very low jitter contribution, resulting in extremely clean, high-quality eye patterns. The module operates over extended temperature (-40° to +85°C) ranges, and dissipates less than 700 mW. The Class I laser transmitter complies with applicable safety standards (IEC 60825-1, FDA 21, CFR 1040.10 and 1040.11).

Physical:

- Dimensions:
2.2" L x 0.4" H x 0.5" W (5.6 cm x 1.0 cm x 1.3 cm)
- Weight: 0.1 lbs (0.05 kg)

Environmental:

- Operating temperature range: -40° to $+85^{\circ}\text{C}$ (-40° to 185°F)
- Storage temperature range: -40° to $+85^{\circ}\text{C}$ (-40° to 185°F)
- Humidity: 5% to 95% non-condensing

Optical Interface:

- Optical connector: Simplex LC/UPC

Power Requirements:

- Input voltage: $3.3 V_{\text{DC}}$ (160 mA)
- Power consumption: 700 mW max

General:

- Hot plug-in/out

Regulatory:

Laser Class 1 devices per FDA/CDRH and IEC 60825-1

Optical:**Transmitter:**

- Wavelength: 1270–1350 nm (1310 nm typical)
- Signaling speed: 125 Mbps
- Optical output power:
with 9/125 μ SMF: -15 to -8 dBm
- Extinction ratio (ER): 10.0 dB min
- Optical isolation: 30 dB

Receiver:

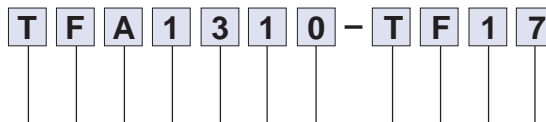
- Receiver type: 1550 nm PIN/TIA
- Wavelength: 1000–1670 nm (1550 nm typical)
- Received optical power:
with 9/125 μ SMF: -32 to -8 dBm
- Receive LOS assert level: -31 dBm

System:

- Optical return loss, min: 50 dB
- WDM crosstalk (optical), max: -40 dB
- Packet error loss, max: 10^{-10} (random packet size)
- Power budget, min with 9/125 μ SMF: 17 dB
- Fiber span, max with 9/125 μ SMF: 20 km

Ordering Information

125 Mbps Bi-directional SFP
Optical Transceiver Module
(1310nm Tx / 1550nm Rx)

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