**SFP-10GB-DW62-80-I-J-OPC**

Juniper Networks® Compatible TAA 10GBase-DWDM SFP+ Transceiver C-Band 50GHz (SMF, 1527.99nm, 80km, LC, DOM, -40 to 85C)

**Features**

- SFF-8432 and SFF-8472 Compliance
- Duplex LC Connector
- Single-mode Fiber
- Industrial Temperature -40 to 85 Celsius
- Hot Pluggable
- Metal with Lower EMI
- Excellent ESD Protection
- RoHS Compliant and Lead Free

**Applications:**

- 10x Gigabit Ethernet over DWDM
- 8x/10x Fibre Channel
- Access and Enterprise

**Product Description**

This Juniper Networks® compatible SFP+ transceiver provides 10GBase-DWDM throughput up to 80km over single-mode fiber (SMF) using a wavelength of 1527.99nm via an LC connector. It is capable of withstanding rugged environments and can operate at temperatures between -40 and 85C. Our transceiver is built to meet or exceed OEM specifications and is guaranteed to be 100% compatible with Juniper Networks®. It has been programmed, uniquely serialized, and tested for data-traffic and application to ensure that it will initialize and perform identically. All of our transceivers comply with Multi-Source Agreement (MSA) standards to provide seamless network integration. Additional product features include Digital Optical Monitoring (DOM) support which allows 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.

OptioConnect's transceivers are RoHS compliant and lead-free.

**Absolute Maximum Ratings**

| Parameter | Symbol | Min. | Typ. | Max. | Unit | Notes |
|---|---|---|---|---|---|---|
| Maximum Supply Voltage | Vcc | -0.5 | | 3.6 | V | |
| Storage Temperature | Tstg | -40 | | 85 | °C | |
| Operating Case Temperature | Tc | -40 | | 85 | °C | |
| Operating Relative Humidity | RH | 5 | | 95 | % | |
| Power Supply Current | Icc | | | 2000 | mW | |
| Bit Rate | BR | | | 11.1 | Gbps | 1 |
| Bit Error Rate | BER | | | $10E^{-12}$ | | 2 |
| Maximum Supported Link Length | Lmax | | | 80 | km | 1 |

**Notes:**

1. 10GBASE-ZR, 10GBASE-ZW, and 1200-SM-LL-L 10GFC.
2. Tested with a $2^{31}$-1 PRBS.

**Electrical Characteristics**

| Parameter | Symbol | Min. | Typ. | Max. | Unit | Notes |
|---|---|---|---|---|---|---|
| Supply Voltage | Vcc | 3.14 | 3.3 | 3.46 | V | |
| **Transmitter** | | | | | | |
| Input Differential Impedance | RIN | 80 | 100 | 120 | Ω | |
| Differential Data Input | VIN | 180 | | 700 | mVp-p | |
| Transmit Disable Voltage | VDIS | 2 | | Host_Vcc | V | |
| Transmit Enable Voltage | VEN | Vee | | Vee+0.8 | V | |
| Transmit Fault Assert Voltage | VFA | 2 | | Host_Vcc | V | |
| Transmit Fault De-Assert Voltage | VFDA | Vee | | Vee+0.4 | V | |
| **Receiver** | | | | | | |
| Differential Data Output | VOD | mVp-p | 350 | 850 | | |
| Output Rise Time | Tr | pS | 25 | | | |
| Output Fall Time | Tf | | 25 | | | |
| LOS Fault | VLOSft | | 2 | | Host_Vcc | |
| LOS Normal | VLOSnr | | Vee | | Vee+0.4 | |

**Optical Characteristics**

| Parameter | Symbol | Min. | Typ. | Max. | Unit | Notes |
|---|---|---|---|---|---|---|
| **Transmitter** | | | | | | |
| Side-Mode Suppression Ratio | SMSR | 30 | | | dB | |
| Optical Output Power | Pavg | 0 | | 4 | dBm | |
| Extinction Ratio | ER | 8.2 | | | dB | |
| Average Launch Power of Off Transmitter | Poff | | | -30 | dBm | |
| Relative Intensity Noise | RIN | | | -128 | dB/Hz | |
| **Receiver** | | | | | | |
| Center Wavelength | λC | 1260 | | 1620 | nm | |
| Receiver Sensitivity | Rsense | | | -24 | dBm | 1 |
| Receiver Sensitivity @80km Fiber | Rsense | | | -21 | dBm | 2 |
| Receiver Overload | | -7 | | | dBm | |
| Optical Return Loss | | 27 | | | dB | |
| LOS Assert | LOSA | -37 | | | dBm | |
| LOS De-Assert | LOSD | | | -27 | dBm | |
| LOS Hysteresis | | 0.5 | | | dB | |

**Notes:**
1. Measured at 1528-1600nm, ER=9dBm, PRBS $2^{31}$-1, and BER better than 10E$^{-12}$.
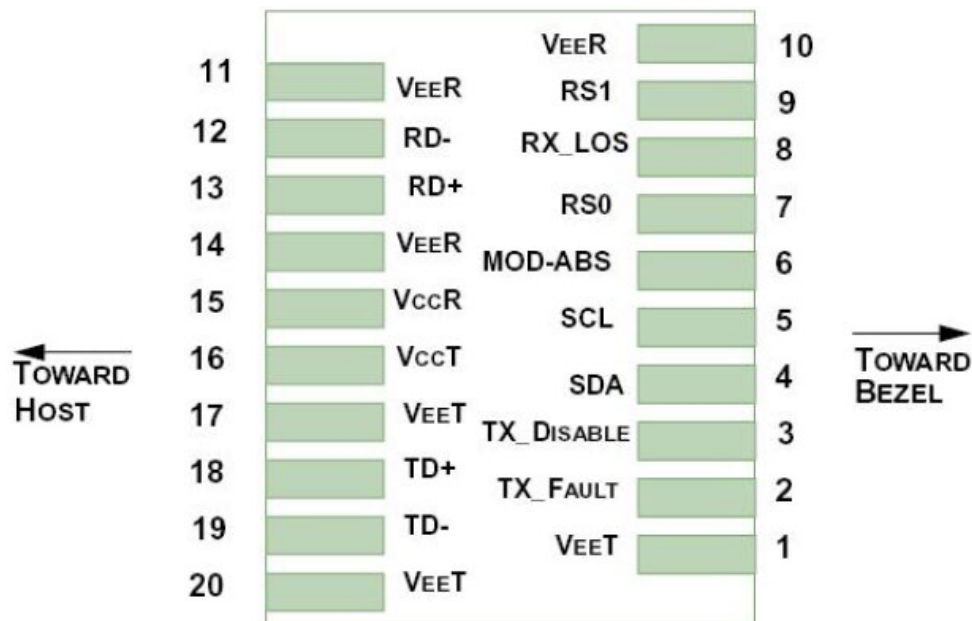2. Loopback using 80km fiber (SMF-28).

**Pin Descriptions**

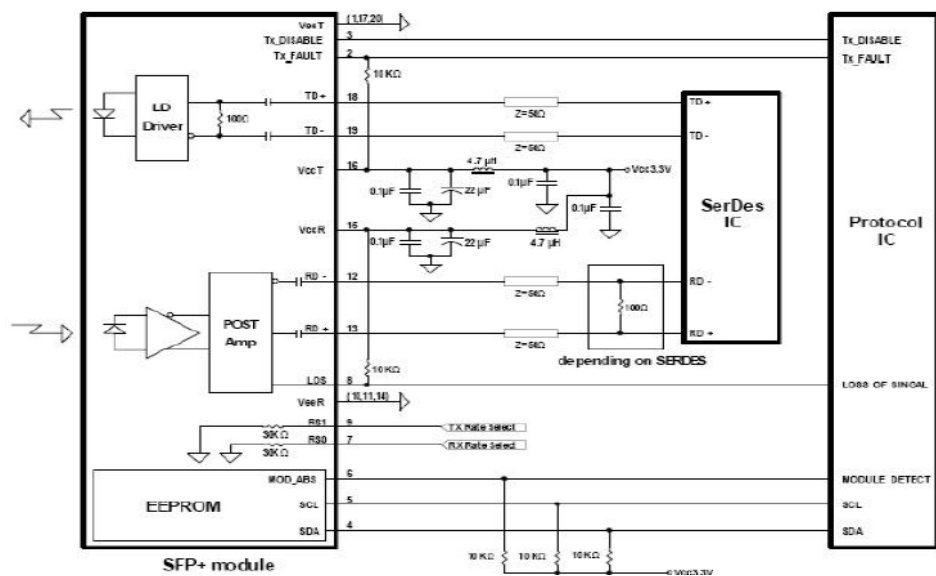| Pin | Symbol | Name/Description | Notes |
|-----|--------|------------------|-------|
| 1 | VeeT | Transmitter Ground. | 1 |
| 2 | Tx_Fault | Transmitter Fault Out. | 2 |
| 3 | Tx_Disable | Transmitter Disable In. LVTTL. | 3 |
| 4 | SDA | Module Definition Identifiers. | 4 |
| 5 | SCL | Module Definition Identifiers. | 4 |
| 6 | MOD_ABS | Module Definition Identifiers. | 4 |
| 7 | RS0 | Receiver Rate Select. LVTTL. Transmitter Rate Select. | 5 |
| 8 | LOS | Loss of Signal. | 6 |
| 9 | RS1 | Receiver Rate Select. LVTTL. Transmitter Rate Select. | 5 |
| 10 | VeeR | Receiver Ground. | 1 |
| 11 | VeeR | Receiver Ground. | 1 |
| 12 | RD- | Receiver Negative Data Out. CML. | 7 |
| 13 | RD+ | Receiver Positive Data Out. CML. | 8 |
| 14 | VeeR | Receiver Ground. | 1 |
| 15 | VccR | Receiver Power Supply. | 9 |
| 16 | VccT | Transmitter Power Supply. | 9 |
| 17 | VeeT | Transmitter Ground. | 1 |
| 18 | TD+ | Transmitter Positive Data In. CML. | 10 |
| 19 | TD- | Transmitter Negative Data In. CML. | 11 |
| 20 | VeeT | Transmitter Ground. | 1 |

**Notes:**

1. These pins should be connected to the signal ground on the host board.
2. Logic "1" Output = Laser fault (Laser off before Tx_Fault).
   Logic "0" Output = Normal operation.
   This pin is open collector compatible and should be pulled up to the Host_Vcc with a 10kΩ resistor.
3. Logic "1" Input (or No Connection) = Laser off.
   Logic "0" Input = Laser on.
   This pin is internally pulled up to the VccT with a 10kΩ resistor.
4. Serial ID with SFF-8472 diagnostics module definition pins should be pulled up to the Host_Vcc with 10kΩ resistors.
5. These pins have an internal 30kΩ pull-down to ground. A signal on either of these pins will not affect module performance.
6. Sufficient optical signal for potential BER < $1 \times 10^{-12}$ = Logic "0."
   Insufficient optical signal for potential BER < $1 \times 10^{-12}$ = Logic "1."
   This pin is open collector compatible and should be pulled up to the Host_Vcc with a 10kΩ resistor.

7. Light On = Logic "0" output receiver data output is internally AC coupled and series terminated with a 50Ω resistor.
8. Light On = Logic "1" output receiver data output is internally AC coupled and series terminated with a 50Ω resistor.
9. This pin should be connected to a filtered +3.3V power supply on the host board.
10. Logic "1" Input = Light on transmitter data inputs are internally AC coupled and terminated with a 100Ω resistor.
11. Logic "0" Input = Light on transmitter data inputs are internally AC coupled and terminated with a 100Ω resistor.
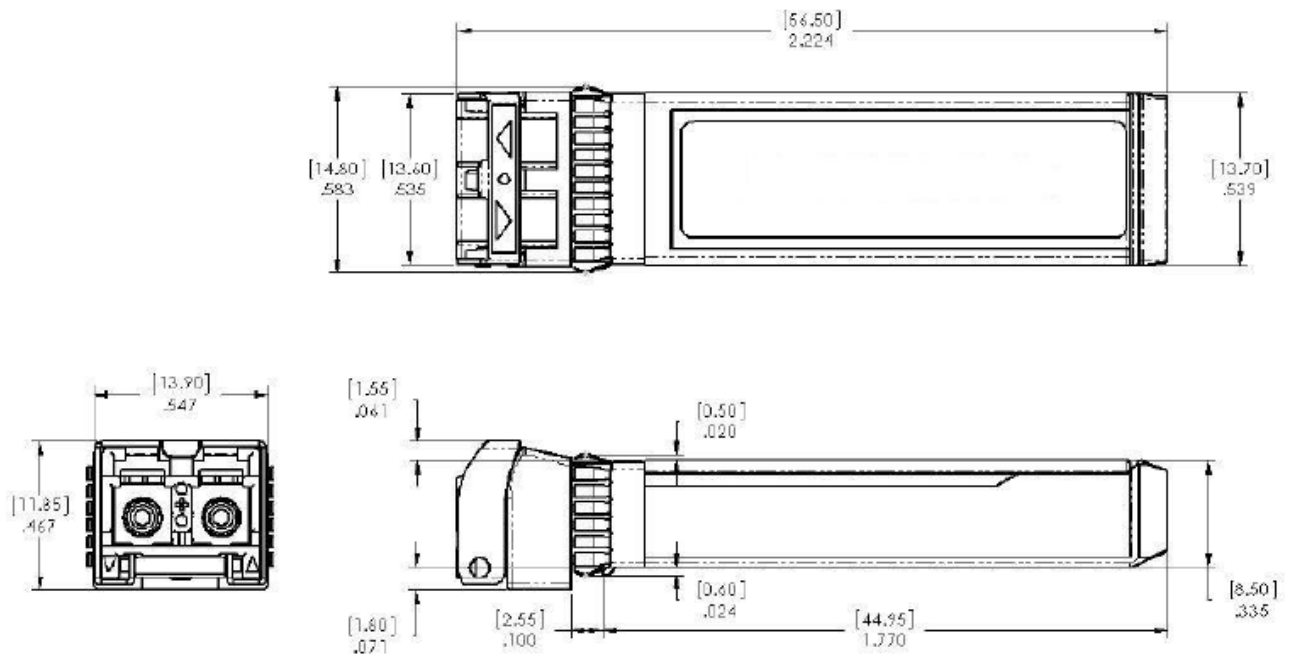
**Pin Connectors**

| Pin | Signal | | Signal | Pin |
|---|---|---|---|---|
| 11 | VEER | VEER | | 10 |
| | | RS1 | | 9 |
| 12 | RD- | RX_LOS | | 8 |
| 13 | RD+ | RS0 | | 7 |
| 14 | VEER | MOD-ABS | | 6 |
| 15 | VccR | SCL | | 5 |
| 16 | VccT | SDA | | 4 |
| 17 | VEET | TX_DISABLE | | 3 |
| 18 | TD+ | TX_FAULT | | 2 |
| 19 | TD- | VEET | | 1 |
| 20 | VEET | | | |

TOWARD HOST

TOWARD BEZEL

## Recommended Circuit Schematic



## Mechanical Specifications

**OptioConnect**
**Innovation for the Future of High-Speed Networking**

**Who We Are**
OptioConnect is reshaping the landscape of communication and high-speed networking through intelligent technology. With a core focus on cutting edge technology, we deliver smarter fiber optic solutions for enterprise networks, data centers, and next-gen telecom infrastructures.

**What We Do**
At OptioConnect, we fuse advanced engineering with intelligent automation to drive the future of networking. Our AI-integrated solutions are designed to optimize performance and streamline operations with:

- Superior Performance
- Network and traffic optimization
- Intelligent energy management
- Seamless OEM compatibility
- Scalable cost-efficiency

**Smarter Networks by Design**
Innovation isn't just a goal—it's our process. We embed AI and machine learning across our R&D and product lines, enabling adaptive performance, automated tuning, and faster deployment cycles. The result? Networks that don't just work—they learn, evolve, and outperform.

**Our Team**
Our engineers, data scientists, and network architects bring decades of experience and a future-focused mindset. We provide hands-on support with intelligent insights that turn complex challenges into simple solutions.

**Our Mission**
To deliver AI-enhanced connectivity that reduces cost, increases speed, and maximizes efficiency—empowering our partners to operate at the forefront of a rapidly evolving digital world.

**Let's Connect**
Discover how OptioConnect's intelligent infrastructure solutions can power your network's next leap forward.
www.optioconnect.com | info@optioconnect.com