

Datasheet

SFP Optical Transceiver Product Features

- SONET OC-48 / STM-16 29dB SFP
- 120 km ZX SFP for SMF @ 2.67Gbps
- 1510Tx-1590Rx DFB+APD Laser 120 km SFP
- 0°C - 70°C Temperature - Extended/Industrial Available
- 2-Wire Interface Digital Diagnostic Monitoring (SFF-8724)
- Hot-swappable for SFP LC ports
- OptoSpan 1 year standard warranty
- Use with Finisar, Avago, JDSU & networks not requiring OEM compatibility
- SFP MSA / IEEE Std 802.3
- RoHS compliant

* For OEM Compatibility, use Platinum Series Part# PSFP-MR2B51K120

SFP-MR2-K120B51



Applications

- 1.25Gbps Gigabit Ethernet
- Fibre Channel 2x
- SONET/SDH

Description

OptoSpan SFP-MR2-K120B51 is a Single Fiber BiDirectional SONET OC-48 / STM-16 SFP transceiver designed for long distance optical communications up to 120 km with signaling rates up to 2.67Gbps.

OptoSpan 2Gb Single Fiber optical transceivers are compatible with many brands such as Finisar, Avago, JDSU and network environments that do not require any special compatibility. For networks that require special OEM compatibility, such as CISCO, BROCADE, JUNIPER, ALCATEL, HP, NORTEL, EMC, QLOGIC and other OEMs, consider OptoSpan Platinum OEM Series transceiver model# PSFP-MR2B51K120.

All OptoSpan long-reach SFP s are ROHS compliant, allow for real-time diagnostic monitoring as per SFF-8472 and designed to meet Multi-Source Agreement (MSA) standards for Single Fiber BiDirectional (BiDi) transceivers with LC interface.

Optical Budget Calculation for 120 km SFP Optical Transceiver

| SFP-MR2-K120B51 | Distance: 120 km | | | | Fiber: 1510Tx-1590Rx SMF | |
|-----------------------------|------------------|------------|------------|------------|--------------------------|-----------------|
| | Tx Min dBm | Tx Max dBm | Rx Min dBm | Rx Max dBm | Link Attenuation dB | Power Budget dB |
| Product Specifications | 0 | 5 | -29 | -8 | | |
| Optical Calculation Results | | | -29.8 | -25.8 | 29.8 | 29 |



SFP Single Fiber 120 km transceiver | 2G ZX SONET OC-48 / STM-16

General Specifications

| Parameter | Unit | Min. | Typ. | Max |
|--|------|------|------|------|
| Absolute Maximum Ratings | | | | |
| Maximum Supply Voltage | V | -0.5 | | 3.6 |
| Storage Temperature | °C | -40 | | +85 |
| Case Operating Temperature | °C | 0 | | +70 |
| Recommended Operating Condition | | | | |
| Supply Voltage | V | 3.15 | 3.3 | 3.45 |
| Supply Current | mA | | | 300 |
| Data Rate | Gbps | | 2.5 | |

Electrical Characteristics

| Parameter | Unit | Min. | Typ. | Max |
|-----------------------------------|------|------|------|---------|
| Transmitter | | | | |
| Differential Input Voltage Swing | mVpp | 400 | | 2000 |
| Input Differential Impedance | ohm | 85 | 100 | 115 |
| Transmit Disable Voltage - High | V | 2 | | Vcc |
| Transmit Disable Voltage - Low | V | 0 | | 0.8 |
| Transmit Fault Voltage - High | V | 2 | | Vcc+0.3 |
| Transmit Fault Voltage - Low | V | 0 | | 0.5 |
| Receiver | | | | |
| Differential Output Voltage Swing | mVpp | 370 | | 1200 |
| Differential Output Impedance | ohms | 85 | 100 | 115 |
| LOS Output Voltage - High | V | 2 | | Vcc+0.3 |
| LOS Output Voltage - Low | V | 0 | | 0.8 |

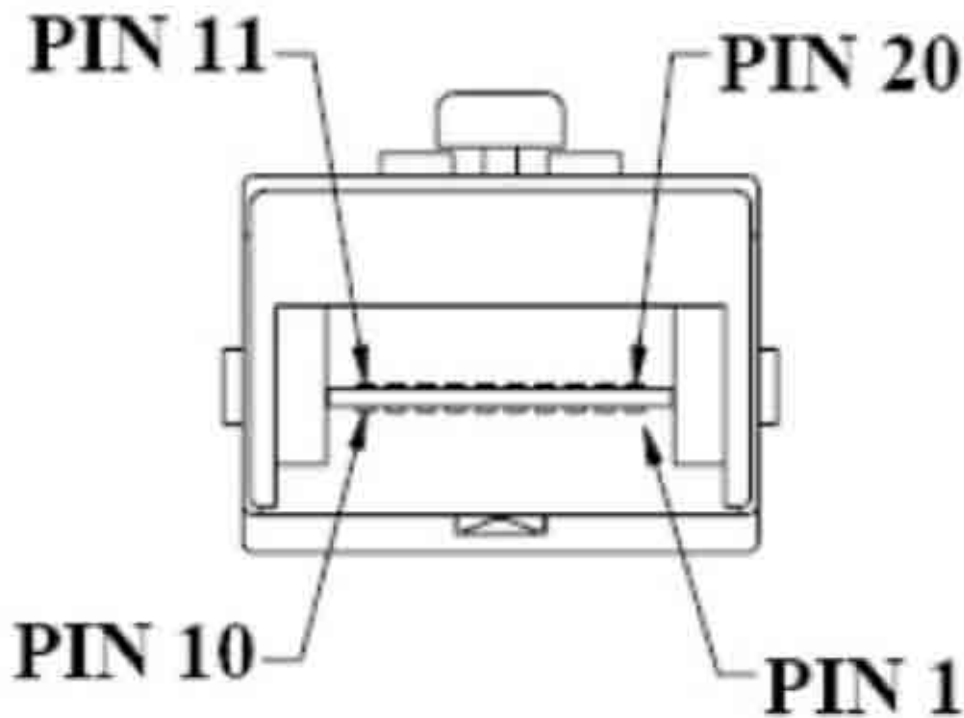
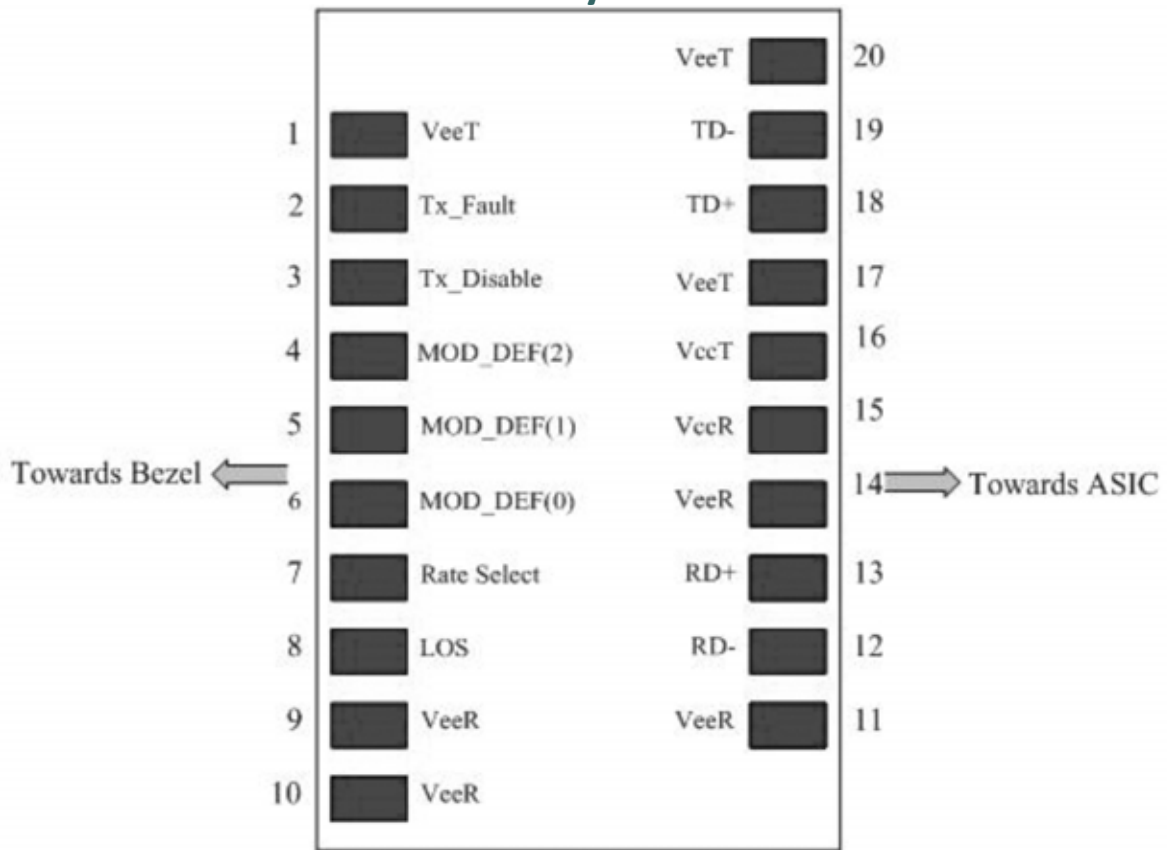
Optical Characteristics

| Parameter | Unit | Min. | Typ. | Max |
|--------------------------------|------|-------------------|-------------|-----------------|
| Transmitter | | | | |
| Output Optical Power | dBm | 0 | | 5 |
| Optical Extinction Ratio | dB | 9 | | |
| Optical Wavelength | nm | $\lambda_c - 6.5$ | λ_c | $\lambda_c + 7$ |
| Spectral Width | nm | | | 1 |
| Side Mode Suppression Ratio | dB | 30 | | |
| Receiver | | | | |
| Optical Center Wavelength | nm | $\lambda - 20$ | λ | $\lambda + 20$ |
| Receiver Sensitivity @ 2.5Gbps | dBm | -29 | | -8 |
| LOS DE-Assert | dBm | | | -30 |
| LOS Assert | dBm | -45 | | |

Laser Safety

This is a class 1 Laser Product according to IEC 60825-1:1993:+A1:1997+A2:2001. This product complies with 21 CFR 1040.10 and 1040 except for deviations pursuant to Laser Notice No. 50, dated July 26, 2001.

SFP Single Fiber 120 km transceiver | 2G ZX SONET OC-48 / STM-16
PIN Layout

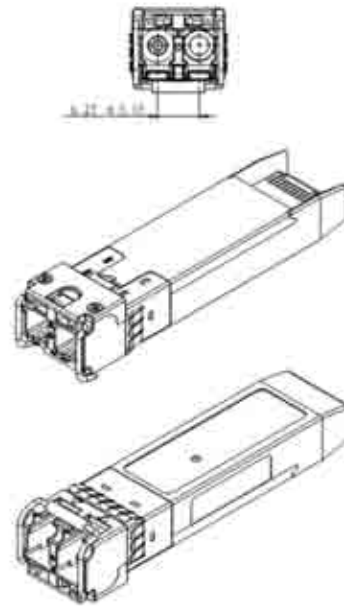
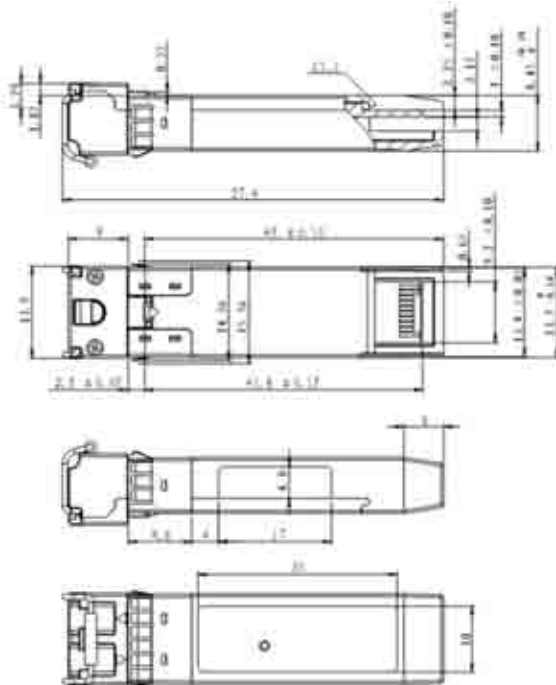
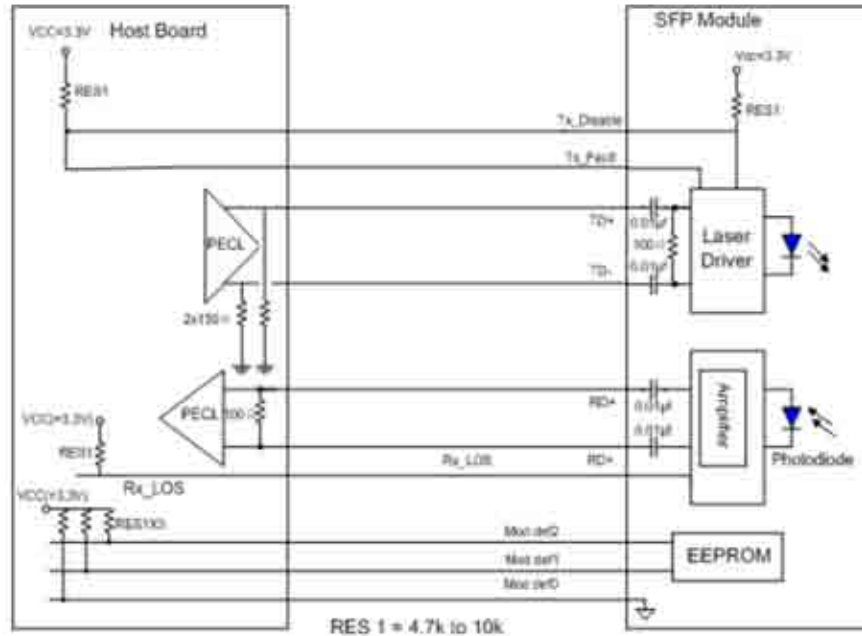




**SFP Single Fiber 120 km transceiver | 2G ZX SONET OC-48 / STM-16
PIN Functions**

| Pin # | Name - Description |
|-------|------------------------------|
| 1 | Transmitter Ground |
| 2 | Transmitter Fault Indication |
| 3 | Transmitter Disable |
| 4 | Module Definition 2 |
| 5 | Module Definition 1 |
| 6 | Module Definition 0 |
| 7 | Not Connect |
| 8 | Loss of Signal |
| 9 | Receiver Ground |
| 10 | Receiver Ground |
| 11 | Receiver Ground |
| 12 | Inv. Received Data Out |
| 13 | Received Data Out |
| 14 | Receiver Ground |
| 15 | Receiver Power |
| 16 | Transmitter Power |
| 17 | Transmitter Ground |
| 18 | Transmit Data In |
| 19 | Inv. Transmit Data In |
| 20 | Transmitter Ground |
| 21 | |
| 22 | |
| 23 | |
| 24 | |
| 25 | |
| 26 | |
| 27 | |
| 28 | |
| 29 | |
| 30 | |

SFP Single Fiber 120 km transceiver | 2G ZX SONET OC-48 / STM-16 Mechanical Layouts



OptoSpan reserves the right to make changes or to discontinue any optical product or service without any notice. Applications and features described herein are for illustrative purposes only. OptoSpan makes no representation of warranty that such applications or features will be suitable for any specific use or compatibility without further testing or modifications. Not responsible for typographical errors.