

## Datasheet

### SFP Optical Transceiver Product Features

- SONET OC-12 / STM-4 40dB SFP
- 160 km Duplex SFP for SMF @ .622Gbps
- 1550nm DFB Laser 160 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-622T55K160

### SFP-622-K160T55



### Applications

- Optical Fast Ethernet
- SONET/SDH
- SONET OC-12
- SONET OC-3

### Description

OptoSpan SFP-622-K160T55 is a Duplex SONET OC-12 / STM-4 SFP transceiver designed for long distance optical communications up to 160 km with signaling rates up to .622Gbps.

OptoSpan 622Mb Standard 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-622T55K160.

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 Duplex transceivers with LC interface.

### Optical Budget Calculation for 160 km SFP Optical Transceiver

| SFP-622-K160T55             | Distance: 160 km |               |               |               | Fiber: 1550nm SMF      |                       |
|-----------------------------|------------------|---------------|---------------|---------------|------------------------|-----------------------|
|                             | Tx Min<br>dBm    | Tx Max<br>dBm | Rx Min<br>dBm | Rx Max<br>dBm | Link Attenuation<br>dB | Power<br>Budget<br>dB |
| Product Specifications      | 1                | 5             | -39           | -10           |                        |                       |
| Optical Calculation Results |                  |               | -35.2         | -31.2         | 36.2                   | 40                    |



SFP 160 km transceiver | 622Mb SONET OC-12 / STM-4

### 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 |      | .622 |      |

### 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+0.3 |
| 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 | 400  |      | 2000    |
| Differential Output Impedance     | ohms | 85   | 100  | 115     |
| LOS Output Voltage - High         | V    | 2    |      | Vcc+0.3 |
| LOS Output Voltage - Low          | V    | 0    |      | 0.8     |



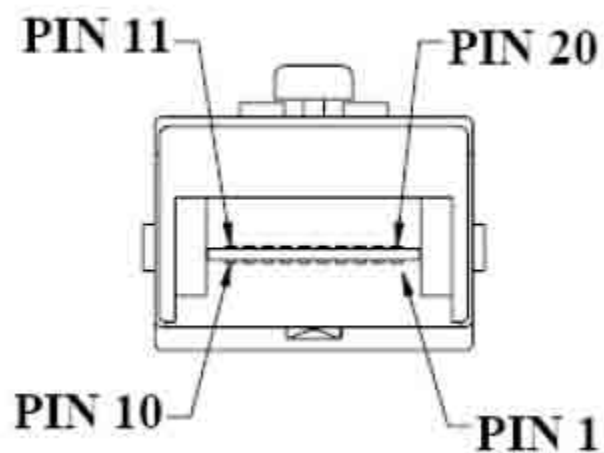
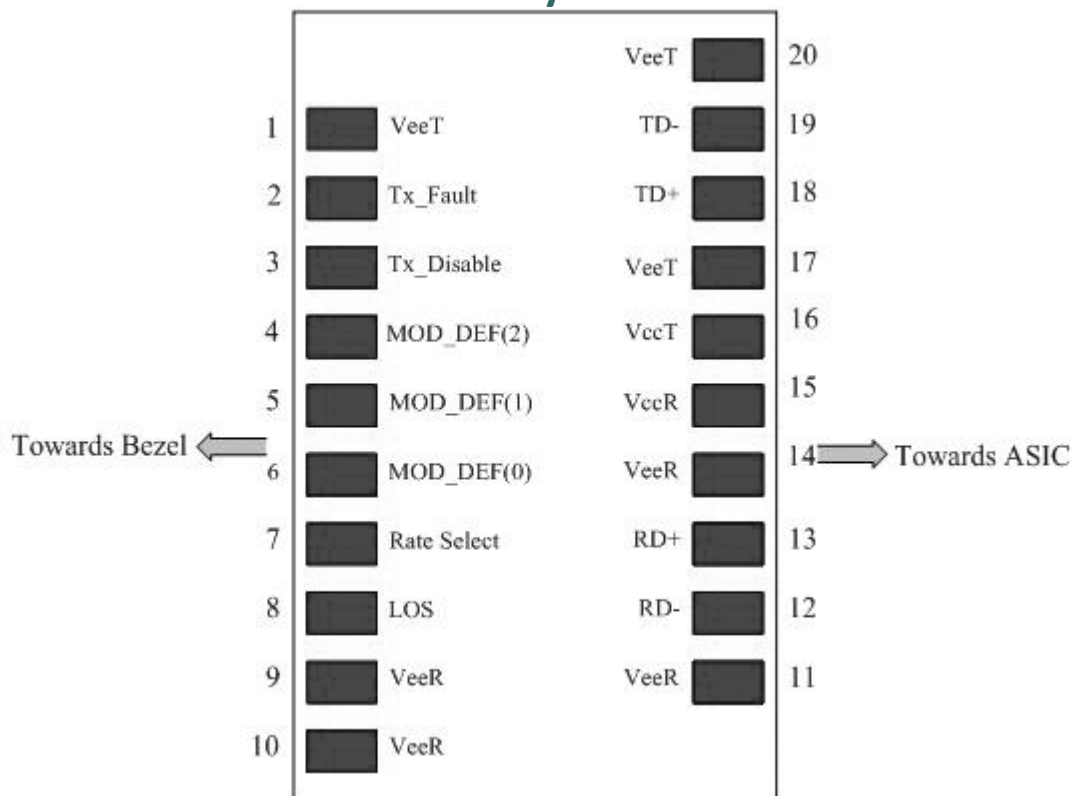
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## Optical Characteristics

| Parameter                    | Unit | Min. | Typ. | Max  |
|------------------------------|------|------|------|------|
| <b>Transmitter</b>           |      |      |      |      |
| Output Optical Power         | dBm  | 1    |      | 5    |
| Optical Extinction Ratio     | dB   | 10   |      |      |
| Optical Wavelength           | nm   | 1520 | 1550 | 1580 |
| Spectral Width               | nm   |      |      | 1    |
| Side Mode Suppression Ratio  | dB   |      |      |      |
| <b>Receiver</b>              |      |      |      |      |
| Optical Center Wavelength    | nm   | 1260 |      | 1600 |
| Receiver Sensitivity @ OC-12 | dBm  | -39  |      | -10  |
| Receiver Sensitivity @ OC-3  | dBm  | -38  |      | -10  |
| Receiver Sensitivity @ 100M  | dBm  | -37  |      | -10  |
| LOS DE-Assert                | dBm  |      |      | -38  |
| 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.

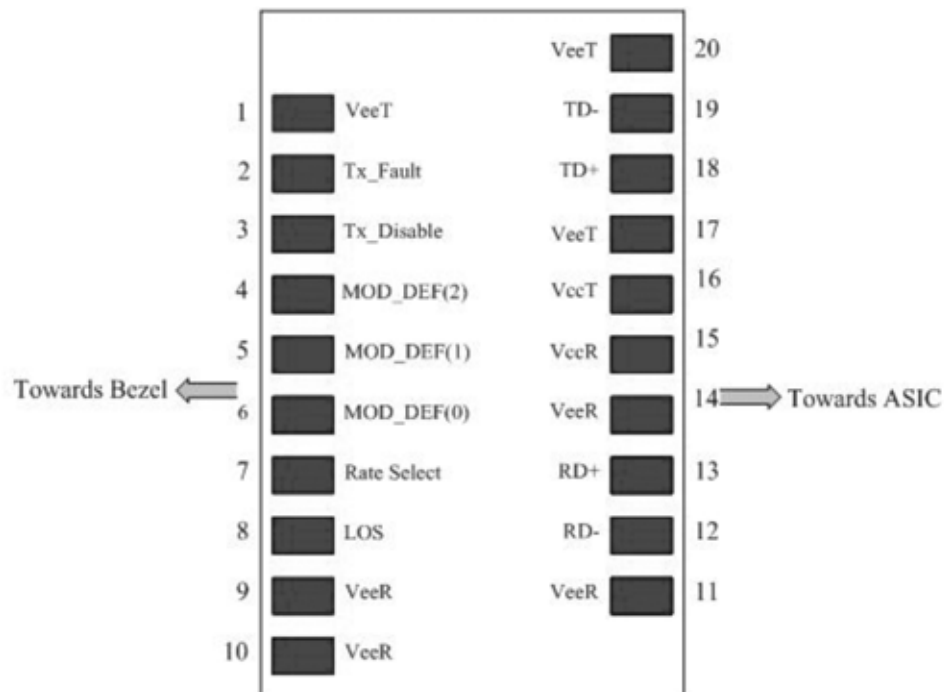
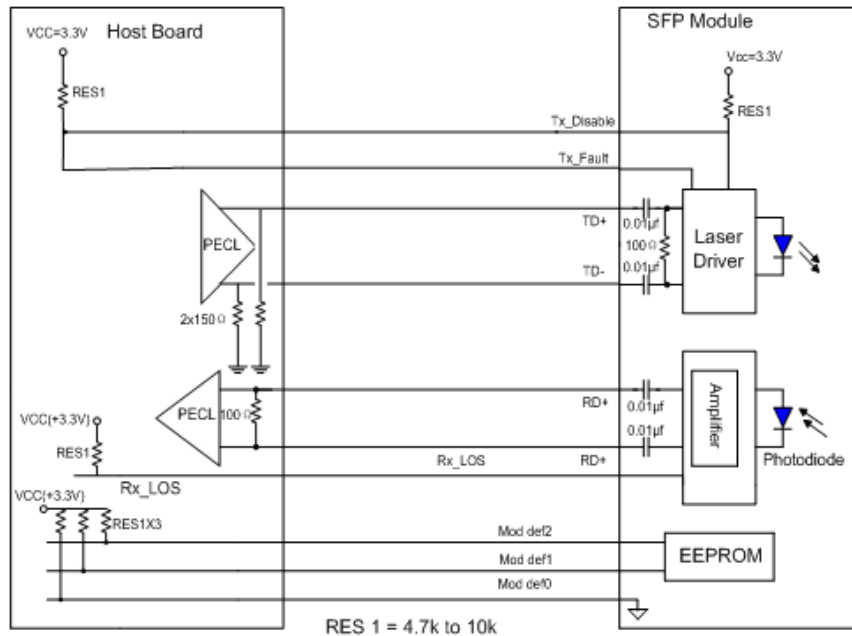




**SFP 160 km transceiver | 622Mb SONET OC-12 / STM-4**  
**PIN Functions**

| 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 Connected                |
| 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 160 km transceiver | 622Mb SONET OC-12 / STM-4 Mechanical Layouts



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