

Datasheet

X2 Optical Transceiver Product Features

- 10GBASE-ZR/ZW Ethernet 23dB X2
- 80 km ZR X2 for SMF @ 10Gbps
- 50GHz (C-Band) EML+APD Laser 80 km X2
- 0°C - 70°C Temperature - Extended/Industrial Available
- 2-Wire Interface Digital Diagnostic Monitoring (SFF-8724)
- Hot-swappable for X2 LC ports
- OptoSpan 1 year standard warranty
- Use with Finisar, Avago, JDSU & networks not requiring OEM compatibility
- X2 MSA / IEEE 802.3ae/q/k
- RoHS compliant

* For OEM Compatibility, use Platinum Series Part# PX2T-10GXXXK080

X2T-10G-K080XXX



Applications

- 10 Gigabit Ethernet
- 10 Gigabit Fibre Channel
- 10GBASE-ZR @ 10.31Gbps

Description

OptoSpan X2T-10G-K080XXX is a DWDM 10GBASE-ZR/ZW Ethernet X2 transceiver designed for long distance optical communications up to 80 km with signaling rates up to 10Gbps.

OptoSpan 10Gb DWDM 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# PX2T-10GXXXK080.

All OptoSpan long-reach X2 s are ROHS compliant, allow for real-time diagnostic monitoring as per SFF-8472 and designed to meet Multi-Source Agreement (MSA) standards for DWDM transceivers with LC interface.

Optical Budget Calculation for 80 km X2 Optical Transceiver

| X2T-10G-K080XXX | Distance: 80 km | | | | Fiber: 50GHz (C-Band) SMF | |
|-----------------------------|-----------------|------------|------------|------------|---------------------------|-----------------|
| | Tx Min dBm | Tx Max dBm | Rx Min dBm | Rx Max dBm | Link Attenuation dB | Power Budget dB |
| Product Specifications | 0 | 4 | -23 | -9 | | |
| Optical Calculation Results | | | -22.8 | -18.8 | 22.8 | 23 |



X2 DWDM 80 km transceiver | 10G ZR Ethernet

General Specifications

| Parameter | Unit | Min. | Typ. | Max |
|--|------|-------|----------|-------|
| Absolute Maximum Ratings | | | | |
| Maximum Supply Voltage | V | -0.3 | | 4.0 |
| Storage Temperature | °C | -40 | | +85 |
| Case Operating Temperature | °C | -5 | | +70 |
| Recommended Operating Condition | | | | |
| Supply Voltage | V | 3.135 | 3.3 | 3.465 |
| Supply Current | mA | 310 | 360 | 576 |
| Data Rate | Gbps | | 10.51875 | |

Electrical Characteristics

| Parameter | Unit | Min. | Typ. | Max |
|-----------------------------------|------|------|------|------|
| Transmitter | | | | |
| Differential Input Voltage Swing | mVpp | 175 | | 2000 |
| Input Differential Impedance | ohm | 80 | 100 | 120 |
| Transmit Disable Voltage - High | V | | | |
| Transmit Disable Voltage - Low | V | | | |
| Transmit Fault Voltage - High | V | | | |
| Transmit Fault Voltage - Low | V | | | |
| Receiver | | | | |
| Differential Output Voltage Swing | mVpp | 800 | | 1600 |
| Differential Output Impedance | ohms | 80 | 100 | 120 |
| LOS Output Voltage - High | V | | | |
| LOS Output Voltage - Low | V | | | |

Optical Characteristics

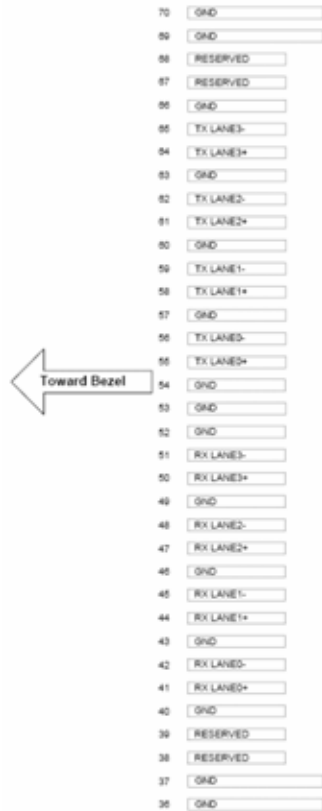
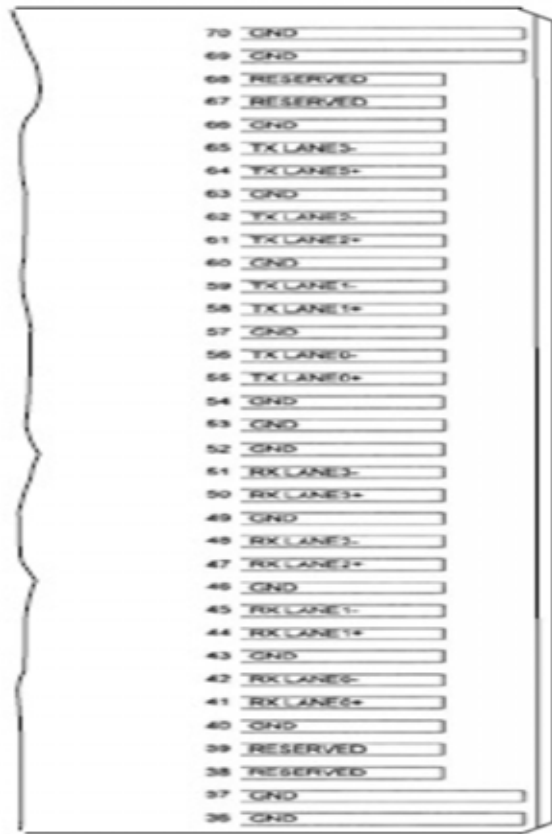
| Parameter | Unit | Min. | Typ. | Max |
|-----------------------------|------|------|------|-----|
| Transmitter | | | | |
| Output Optical Power | dBm | 0 | | 4 |
| Optical Extinction Ratio | dB | 9 | | |
| Optical Wavelength | nm | | | |
| Spectral Width | nm | | | |
| Side Mode Suppression Ratio | dB | 30 | | |
| Receiver | | | | |
| Optical Center Wavelength | nm | | | |
| Receiver Sensitivity @ 10G | dBm | -23 | | -9 |
| LOS DE-Assert | dBm | | | |
| LOS Assert | dBm | | | |

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.

Optospan

X2 DWDM 80 km transceiver | 10G ZR Ethernet PIN Layout

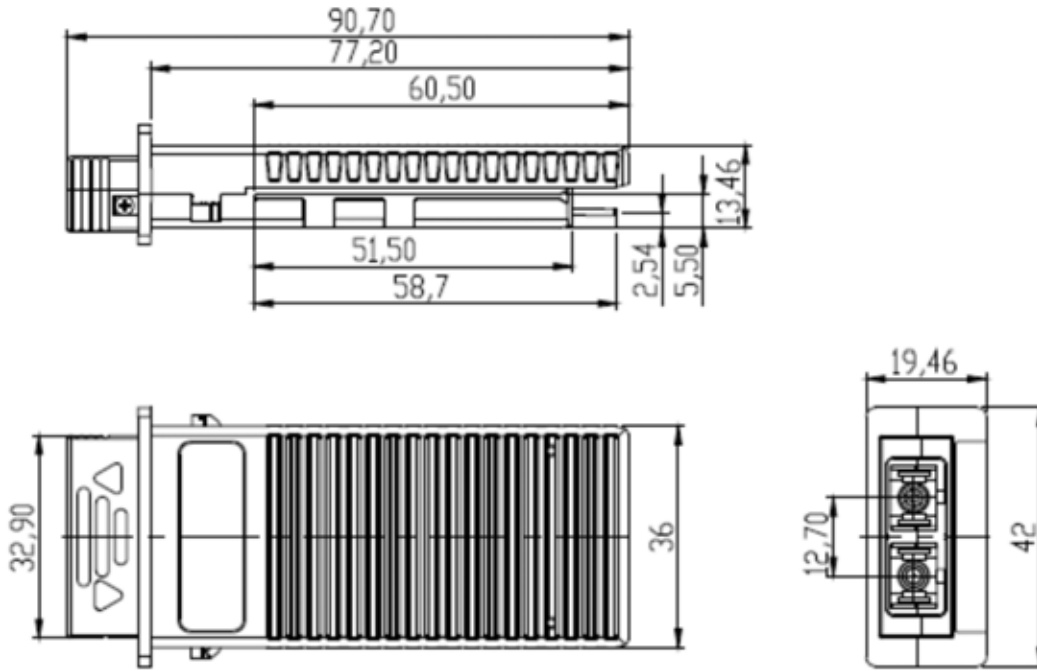




X2 DWDM 80 km transceiver | 10G ZR Ethernet

PIN Functions

| Pin # | Name - Description |
|--------------|--|
| 1 | Electrical Ground |
| 2 | Electrical Ground |
| 3 | Electrical Ground |
| 4 | Power Supply of Optical Receiver Frontend |
| 5 | Power Supply of Optical Receiver and Transmitter and Control Circuits |
| 6 | Power Supply of Optical Receiver and Transmitter and Control Circuits |
| 7 | Adaptive Power Supply, Supply of PHY XS and PCS Layer Devices |
| 8 | Adaptive Power Supply, Supply of PHY XS and PCS Layer Devices |
| 9 | Link Alarm Status Interrupt, low active, Open Drain Output Supposed to operate |
| 10 | Low active Reset Input |
| 11 | Vendor Specific Pin,. for proper operation leave unconnected |
| 12 | High active Transmitter Enable Input 10kilohms pull-up on Transceiver Logic high = |
| 13 | Reserved by MSA, internally not connected |
| 14 | 1kilohms to Ground for APS Circuit Environment |
| 15 | Vendor Specific Pin,. for proper operation leave unconnected |
| 16 | Vendor Specific Pin,. for proper operation leave unconnected |
| 17 | Management Data IO |
| 18 | Management Clock Input |
| 19 | Port Address Bit 4 (Low = 0), internally pulled up by 18kilohms |
| 20 | Port Address Bit 3 (Low = 0), internally pulled up by 18kilohms |
| 21 | Port Address Bit 2 (Low = 0), internally pulled up by 18kilohms |
| 22 | Port Address Bit 1 (Low = 0), internally pulled up by 18kilohms |
| 23 | Port Address Bit 0 (Low = 0), internally pulled up by 18kilohms |
| 24 | Vendor Specific Pin,. for proper operation leave unconnected |
| 25 | Feedback Input for APS, Input of APS Setting Resistor |
| 26 | Reserved for Avalanche Photodiode use, internally not connected |
| 27 | APS Sense Output for APS Control Circuit |
| 28 | Adaptive Power Supply, Supply of PHY XS and PCS Layer Devices |
| 29 | Adaptive Power Supply, Supply of PHY XS and PCS Layer Devices |
| 30 | Power Supply of Optical Receiver and Transmitter and Control Circuits |



| | |
|------------|---|
| FDA | Complies with 21 CFR 1040.10 and 1040.11 |
| IEC | Class 1 Laser Product |

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