

**X2 40 km transceiver | Cisco Compatible 10G ER Ethernet**

**Designed for OEM networks such as Cisco, HP, Juniper, Brocade, Alcatel etc.**

### Datasheet

#### X2 Optical Transceiver Product Features

- Exclusive Japanese OSAs for Ultimate Reliability
- 10GBASE-ER/EW Ethernet 13.1dB X2
- 40 km ER X2 for SMF @ 10Gbps
- 1550nm EML+PIN Laser 40 km X2
- 0°C - 70°C Temperature - Extended/Industrial Available
- 2-Wire Interface Digital Diagnostic Monitoring (SFF-8724)
- Hot-swappable for X2 LC ports
- Extended 2 Years Warranty
- Tested and Certified in Brand Specific Networks and Target Applications
- Assembled Using Highest Quality Raw Components
- X2 MSA / IEEE 802.3ae/q/k & ROHS

#### PX2T-10GT55K040



#### Applications

- 10 Gigabit Ethernet
- 10GBASE-ER @ 10.31Gbps
- Other Optical Links

#### Description

Platinum OEM Series PX2T-10GT55K040 is a Cisco Compatible Duplex 10GBASE-ER/EW Ethernet X2 transceiver designed for long distance optical communications up to 40 km with signaling rates up to 10Gbps.

OptoSpan Platinum OEM Series 10Gbps Duplex optical transceivers have undergone rigorous qualification and certification testing to provide End-to-End Compatibility using switching equipment from CISCO, BROCADE, JUNIPER, ALCATEL, HP (select models), NORTEL, EMC, QLOGIC and other OEMs.

All OptoSpan Platinum OEM Series 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 Duplex transceivers with LC interface.

#### Optical Budget Calculation for 40 km Platinum OEM X2 Optical Transceiver

| PX2T-10GT55K040             | Distance: 40 km |            |            |            | Fiber: 1550nm SMF   |                 |
|-----------------------------|-----------------|------------|------------|------------|---------------------|-----------------|
|                             | Tx Min dBm      | Tx Max dBm | Rx Min dBm | Rx Max dBm | Link Attenuation dB | Power Budget dB |
| Product Specifications      | -1              | 2          | -14.1      | 0.5        |                     |                 |
| Optical Calculation Results |                 |            | -13.2      | -10.2      | 12.2                | 13.1            |

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## General Specifications

| Parameter                              | Unit | Min. | Typ.  | Max  |
|--|------|------|-------|------|
| <b>Absolute Maximum Ratings</b>        |      |      |       |      |
| Maximum Supply Voltage                 | V    | -0.3 |       | 4.0  |
| Storage Temperature                    | °C   | -40  |       | +85  |
| Case Operating Temperature             | °C   | -5   |       | +70  |
| <b>Recommended Operating Condition</b> |      |      |       |      |
| Supply Voltage                         | V    | 3.13 | 3.3   | 3.47 |
| Supply Current                         | mA   |      |       | 300  |
| Data Rate                              | Gbps |      | 10.31 |      |

## Electrical Characteristics

| Parameter                         | Unit | Min. | Typ. | Max  |
|-----------------------------------|------|------|------|------|
| <b>Transmitter</b>                |      |      |      |      |
| 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    |      |      |      |
| <b>Receiver</b>                   |      |      |      |      |
| Differential Output Voltage Swing | mVpp | 800  |      | 1600 |
| Differential Output Impedance     | ohms | 80   | 100  | 120  |
| LOS Output Voltage - High         | V    |      |      |      |
| LOS Output Voltage - Low          | V    |      |      |      |

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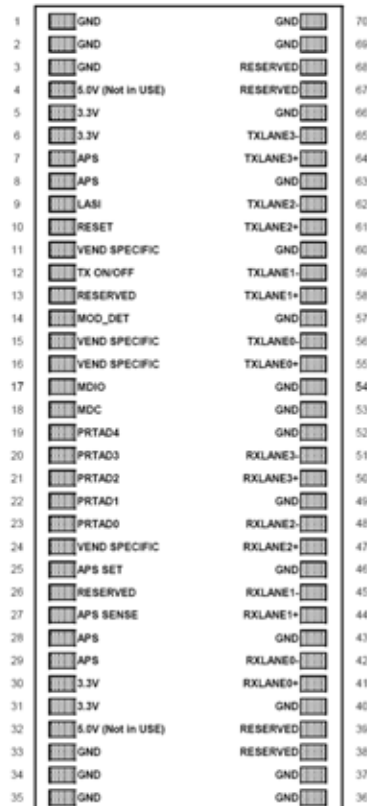
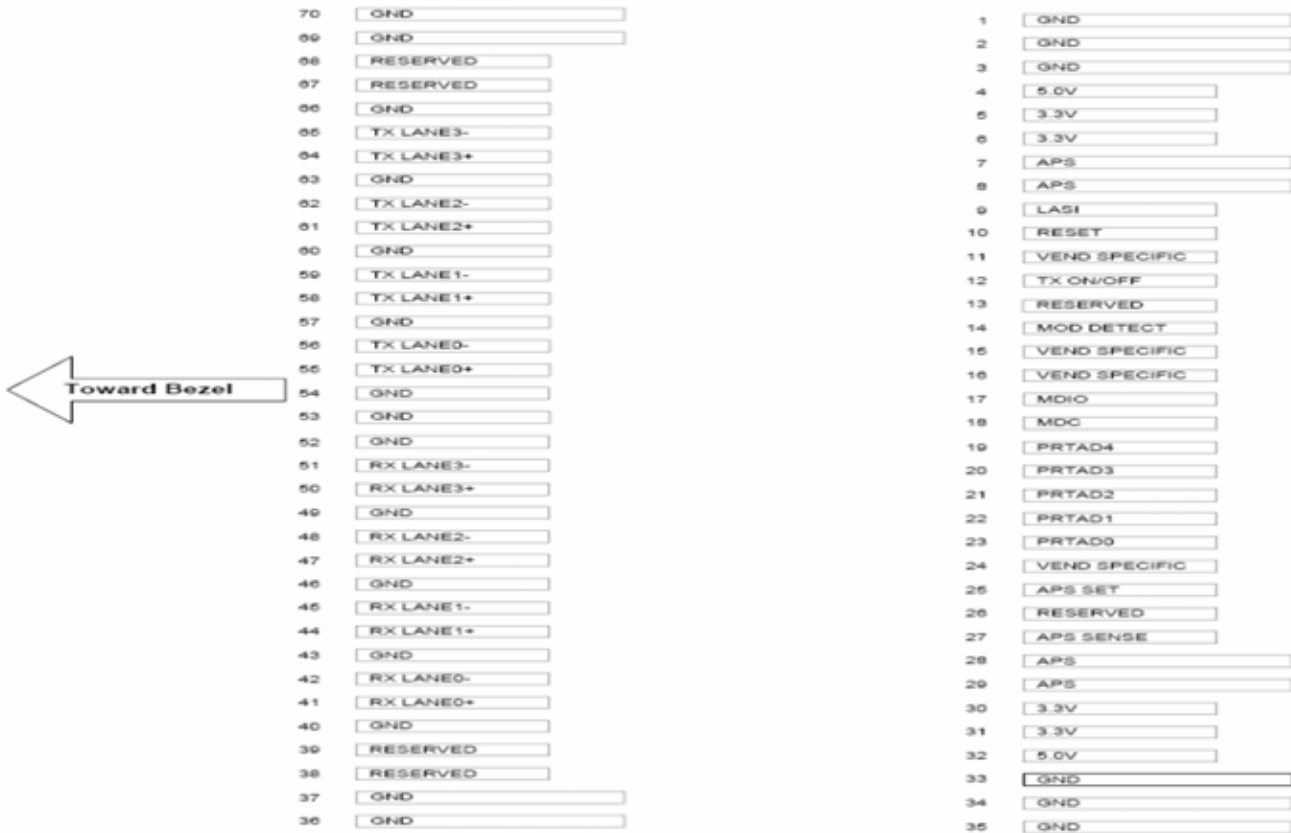
## Optical Characteristics

| Parameter                       | Unit | Min.  | Typ. | Max  |
|---------------------------------|------|-------|------|------|
| <b>Transmitter</b>              |      |       |      |      |
| Output Optical Power            | dBm  | -1    |      | 2    |
| Optical Extinction Ratio        | dB   |       | 8.2  |      |
| Optical Wavelength              | nm   | 1530  | 1550 | 1570 |
| Spectral Width                  | nm   |       | 0.6  |      |
| Side Mode Suppression Ratio     | dB   | 30    |      |      |
| <b>Receiver</b>                 |      |       |      |      |
| Optical Center Wavelength       | nm   | 1260  |      | 1600 |
| Receiver Sensitivity @ 10.31Gbp | dBm  | -14.1 |      | 0.5  |
| 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.

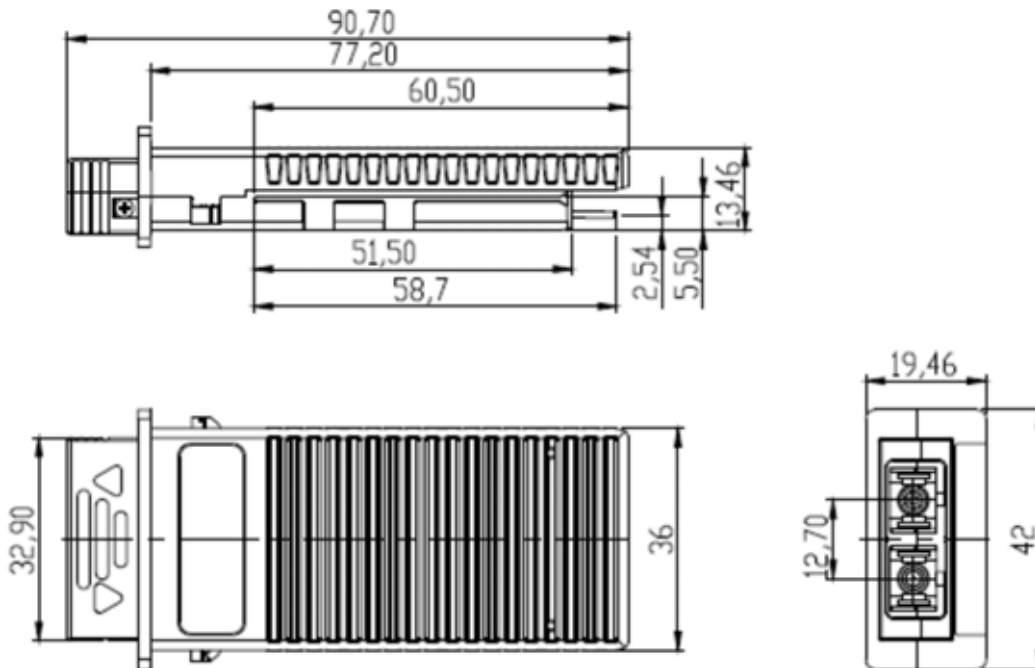
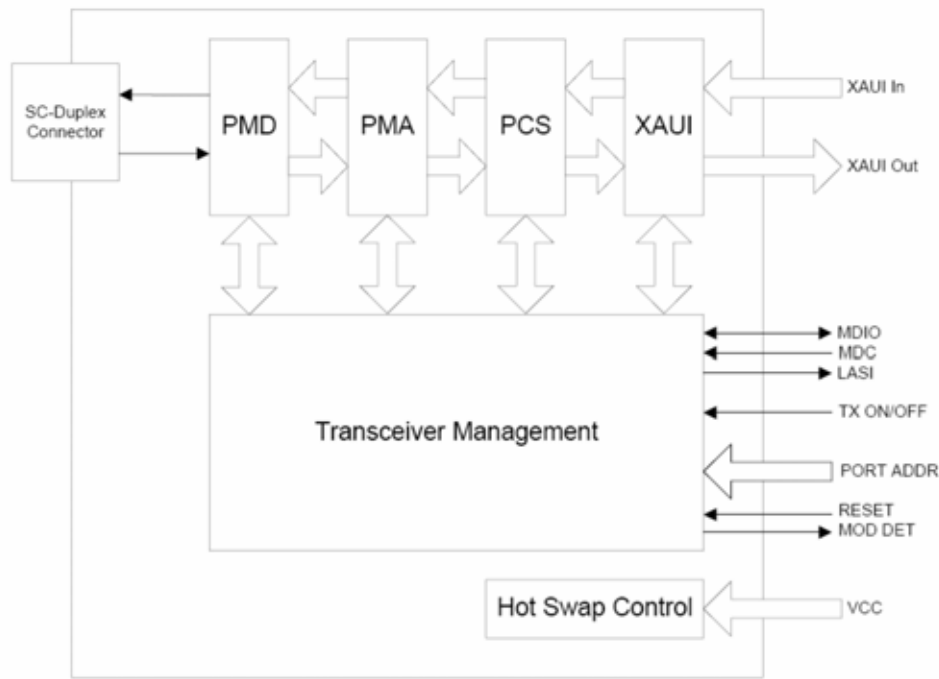
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**PIN Layout**



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**PIN Functions**

| Pin # | Name - Description                                     |
|-------|--|
| 1     | Electrical Ground                                      |
| 2     | Electrical Ground                                      |
| 3     | Electrical Ground                                      |
| 4     | Power  |
| 5     | Power  |
| 6     | Power  |
| 7     | Adaptive Power Supply                                  |
| 8     | Adaptive Power Supply                                  |
| 9     | Open Drain Compatible 10K-22K pull up on host          |
| 10    | Open Drain compatible.10-22K pull-up on transceiver    |
| 11    | Vendor Specific Pin. Leave unconnected when not in use |
| 12    | Open Drain compatible. 10-22K pull-up on transceiver   |
| 13    | Reserved   |
| 14    | Pulled low inside module through 1k                    |
| 15    | Vendor Specific Pin.Leave unconnected when not in use  |
| 16    | Vendor Specific Pin.Leave unconnected when not in use  |
| 17    | Management Data IO                                     |
| 18    | Management Data Clock                                  |
| 19    | Port Address Bit 4 (Low = 0)                           |
| 20    | Port Address Bit 3 (Low = 0)                           |
| 21    | Port Address Bit 2(Low = 0)                            |
| 22    | Port Address Bit 3(Low = 0)                            |
| 23    | Port Address Bit 0 (Low = 0)                           |
| 24    | Vendor Specific Pin.Leave unconnected when not in use  |
| 25    | Feedback input for APS                                 |
| 26    | Reserved for Avalanche Photodiode use                  |
| 27    | APS Sense Connection                                   |
| 28    | Adaptive Power Supply                                  |
| 29    | Adaptive Power Supply                                  |
| 30    | Power  |

### X2 40 km transceiver | Cisco Compatible 10G ER Ethernet Mechanical Layouts



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