X2 80 km transceiver | 10G ZR Ethernet

Datasheet

X2 Optical Transceiver

X2T-10G-K080T55

Product Features

- 10GBASE-ZR/ZW Ethernet 24dB X2
- 80 km ZR X2 for SMF @ 10Gbps
- 1550nm 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-10GT55K080**

Applications

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

Description

OptoSpan X2T-10G-K080T55 is a Duplex 10GBASE-ZR/ZW Ethernet X2 transceiver designed for long distance optical communications up to 80 km with signaling rates up to 10Gbps.

OptoSpan 10Gb 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# PX2T-10GT55K080.

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 Duplex transceivers with LC interface.

Optical Budget Calculation for 80 km X2 Optical Transceiver

X2T-10G-K080T55	Distance: 80 km				Fiber: 1550nm SMF	
	Tx Min dBm	Tx Max dBm	Rx Min dBm	Rx Max dBm	Link Attenuation dB	Power Budget dB
Product Specifications	0	4	-24	-7		
Optical Calculation Results			-23.4	-19.4	23.4	24

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	3.14	3.3	3.47
Supply Current	mA			300
Data Rate	Gbps		10.31	

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			

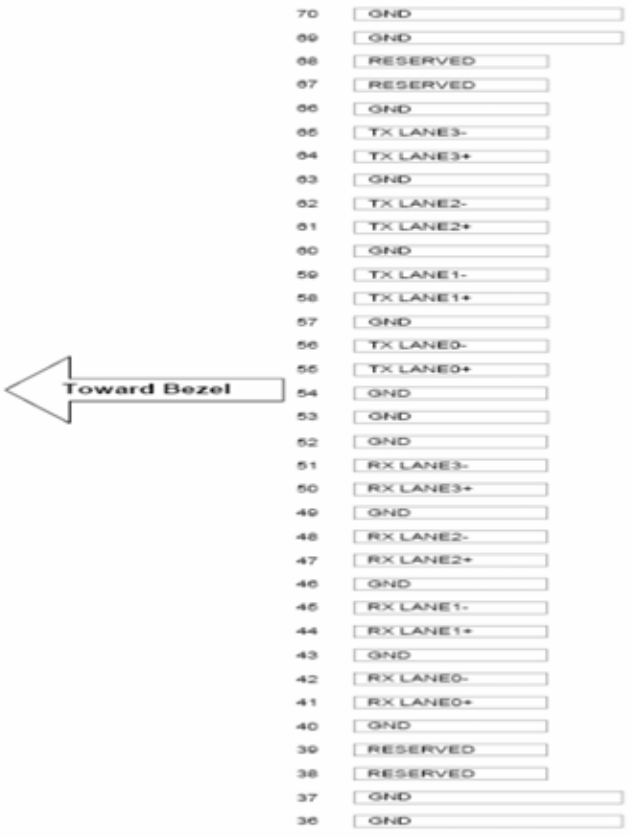
Optical Characteristics

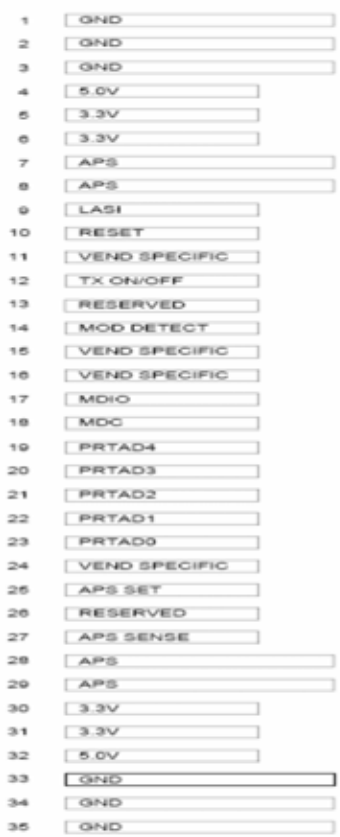
Parameter	Unit	Min.	Typ.	Max
Transmitter				
Output Optical Power	dBm	0		4
Optical Extinction Ratio	dB	8.2		
Optical Wavelength	nm	1530	1550	1570
Spectral Width	nm		0.6	
Side Mode Suppression Ratio	dB	30		
Receiver				
Optical Center Wavelength	nm	1260		1600
Receiver Sensitivity @ 10.31Gbp	dBm	-24		-7
LOS DE-Assert	dBm			
LOS Assert	dBm			

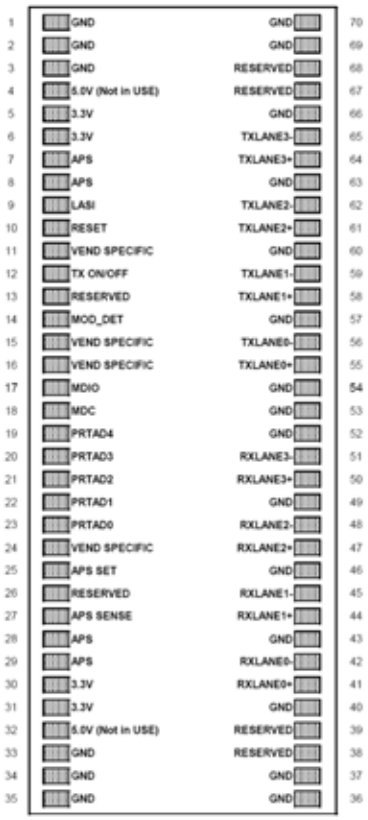
Laser Safety

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.

PIN Layout


70 GND
69 GND
68 RESERVED
67 RESERVED
66 GND
65 TX LANE3-
64 TX LANE3+
63 GND
62 TX LANE2-
61 TX LANE2+
60 GND
59 TX LANE1-
58 TX LANE1+
57 GND
56 TX LANE0-
55 TX LANE0+
54 GND
53 GND
52 GND
51 RX LANE3-
50 RX LANE3+
49 GND
48 RX LANE2-
47 RX LANE2+
46 GND
45 RX LANE1-
44 RX LANE1+
43 GND
42 RX LANE0-
41 RX LANE0+
40 GND
39 RESERVED
38 RESERVED
37 GND
36 GND
Toward Bezel


1 GND
2 GND
3 GND
4 5.0V
5 3.3V
6 3.3V
7 APS
8 APS
9 LASI
10 RESET
11 VEND SPECIFIC
12 TX ON/OFF
13 RESERVED
14 MOD DETECT
15 VEND SPECIFIC
16 VEND SPECIFIC
17 MDIO
18 MDC
19 PRTAD4
20 PRTAD3
21 PRTAD2
22 PRTAD1
23 PRTAD0
24 VEND SPECIFIC
25 APS SET
26 RESERVED
27 APS SENSE
28 APS
29 APS
30 3.3V
31 3.3V
32 5.0V
33 GND
34 GND
35 GND


1 GND
2 GND
3 GND
4 5.0V (Not in USE)
5 3.3V
6 3.3V
7 APS
8 APS
9 LASI
10 RESET
11 VEND SPECIFIC
12 TX ON/OFF
13 RESERVED
14 MOD_DET
15 VEND SPECIFIC
16 VEND SPECIFIC
17 MDIO
18 MDC
19 PRTAD4
20 PRTAD3
21 PRTAD2
22 PRTAD1
23 PRTAD0
24 VEND SPECIFIC
25 APS SET
26 RESERVED
27 APS SENSE
28 APS
29 APS
30 3.3V
31 3.3V
32 5.0V (Not in USE)
33 GND
34 GND
35 GND
GND 70
GND 69
RESERVED 68
RESERVED 67
GND 66
TXLANE3- 65
TXLANE3+ 64
GND 63
TXLANE2- 62
TXLANE2+ 61
GND 60
TXLANE1- 59
TXLANE1+ 58
GND 57
TXLANE0- 56
TXLANE0+ 55
GND 54
GND 53
GND 52
RXLANE3- 51
RXLANE3+ 50
GND 49
RXLANE2- 48
RXLANE2+ 47
GND 46
RXLANE1- 45
RXLANE1+ 44
GND 43
RXLANE0- 42
RXLANE0+ 41
GND 40
RESERVED 39
RESERVED 38
GND 37
GND 36

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 1 (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

Mechanical Layouts