X2 CWDM 40 km transceiver | 10G ER Ethernet

Datasheet

X2 Optical Transceiver

X2T-10G-K040CXX

Product Features

- 10GBASE-ER/EW Ethernet 14dB X2
- 40 km ER X2 for SMF @ 10Gbps
- 1470nm - 1610nm 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
- 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-10GCXXK040**

Applications

- 10 Gigabit Ethernet
- Fibre Channel 8x
- 10GBASE-ER @ 10.31Gbps

Description

OptoSpan X2T-10G-K040CXX is a CWDM 10GBASE-ER/EW Ethernet X2 transceiver designed for long distance optical communications up to 40 km with signaling rates up to 10Gbps.

OptoSpan 10Gb CWDM 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-10GCXXK040.

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 CWDM transceivers with LC interface.

Optical Budget Calculation for 40 km X2 Optical Transceiver

X2T-10G-K040CXX	Distance: 40 km				Fiber: 1470nm - 1610nm	
	Tx Min dBm	Tx Max dBm	Rx Min dBm	Rx Max dBm	Link Attenuation dB	Power Budget dB
Product Specifications	-1	4	-15	0.5		
Optical Calculation Results			-14.8	-9.8	13.8	14

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	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			

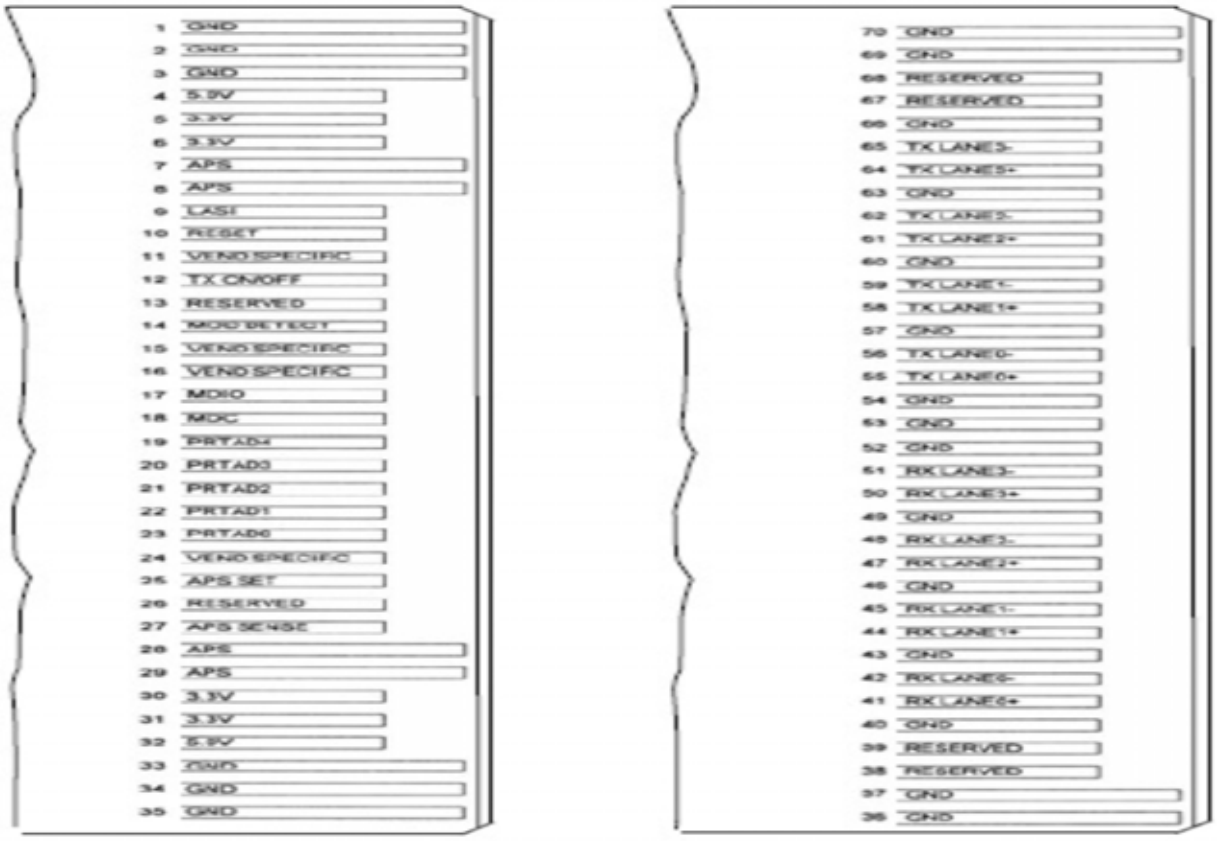
Optical Characteristics

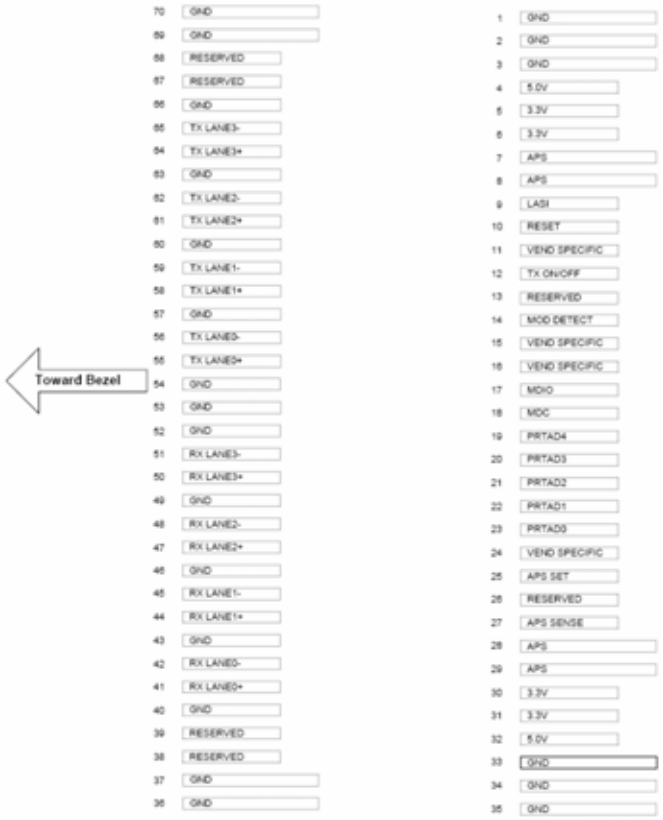
Parameter	Unit	Min.	Typ.	Max
Transmitter				
Output Optical Power	dBm	-1		4
Optical Extinction Ratio	dB	3.5		
Optical Wavelength	nm			
Spectral Width	nm			
Side Mode Suppression Ratio	dB	32		
Receiver				
Optical Center Wavelength	nm			
Receiver Sensitivity @ 10.31Gbp	dBm	-15		0.5
LOS DE-Assert	dBm			
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.

PIN Layout


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
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
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
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27 APS SENSE
28 APS
29 APS
30 3.3V
31 3.3V
32 5.0V
33 GND
34 GND
35 GND

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

Mechanical Layouts