

## Datasheet

### SONET/SDH XFP Optical Transceiver Product Features

- SONET OC-192 / STM-64 w/ CDR 12dB SONET/SDH XFP
- 20 km LR SONET/SDH XFP for SMF @ 10Gbps
- 1330Tx-1270Rx DFB+PIN Laser 20 km SONET/SDH XFP
- 0°C - 70°C Temperature - Extended/Industrial Available
- 2-Wire Interface Digital Diagnostic Monitoring (SFF-8724)
- Hot-swappable for SONET/SDH XFP LC ports
- OptoSpan 1 year standard warranty
- Use with Finisar, Avago, JDSU & networks not requiring OEM compatibility
- XFP MSA, IEEE 802.3ae
- RoHS compliant

\* For OEM Compatibility, use Platinum Series Part# PXFS-10GB33K020

### XFS-10G-K020B33



### Applications

- SONET OC-192 / SDH STM-64
- OTN ITU-T G.709
- 10GBASE-LR @ 10.31Gbps
- 10GbE & 10Gb/s FC w/FEC

### Description

OptoSpan XFS-10G-K020B33 is a Single Fiber BiDirectional SONET OC-192 / STM-64 w/ CDR SONET/SDH XFP with CDR, FEC & OTN G.709 transceiver designed for long distance optical communications up to 20 km with signaling rates up to 10Gbps.

OptoSpan 10Gb Single Fiber 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# PXFS-10GB33K020.

All OptoSpan long-reach SONET/SDH XFP s are ROHS compliant, allow for real-time diagnostic monitoring as per SFF-8472 and designed to meet Multi-Source Agreement (MSA) standards for Single Fiber BiDirectional (BiDi) transceivers with LC interface.

### Optical Budget Calculation for 20 km SONET/SDH XFP Optical Transceiver

XFS- 10G- K020B33	Distance: 20 km				Fiber: 1330Tx- 1270Rx SMF	
	Tx Min dBm	Tx Max dBm	Rx Min dBm	Rx Max dBm	Link Attenuation dB	Power Budget dB
Product Specifications	-2	3	-14	0.5		
Optical Calculation Results			-12	-8	10	12



**XFP SONET/SDH Single Fiber 20 km transceiver | 10G LR SONET OC-192 / STM-64 w/ CDR**

**General Specifications**

Parameter	Unit	Min.	Typ.	Max
<b>Absolute Maximum Ratings</b>				
Maximum Supply Voltage	V	-0.5		4.0
Storage Temperature	°C	-40		+85
Case Operating Temperature	°C	0		+70
<b>Recommended Operating Condition</b>				
Supply Voltage	V	3.13		3.45
Supply Current	mA			580
Data Rate	Gbps	9.95		10.52

**Electrical Characteristics**

Parameter	Unit	Min.	Typ.	Max
<b>Transmitter</b>				
Differential Input Voltage Swing	mVpp	120		820
Input Differential Impedance	ohm	90	100	110
Transmit Disable Voltage - High	V	2.0		Vcc
Transmit Disable Voltage - Low	V	GND		GND+0.8
Transmit Fault Voltage - High	V			
Transmit Fault Voltage - Low	V			
<b>Receiver</b>				
Differential Output Voltage Swing	mVpp	340	650	850
Differential Output Impedance	ohms			
LOS Output Voltage - High	V	2.4		Vcc
LOS Output Voltage - Low	V	GND		GND+0.5



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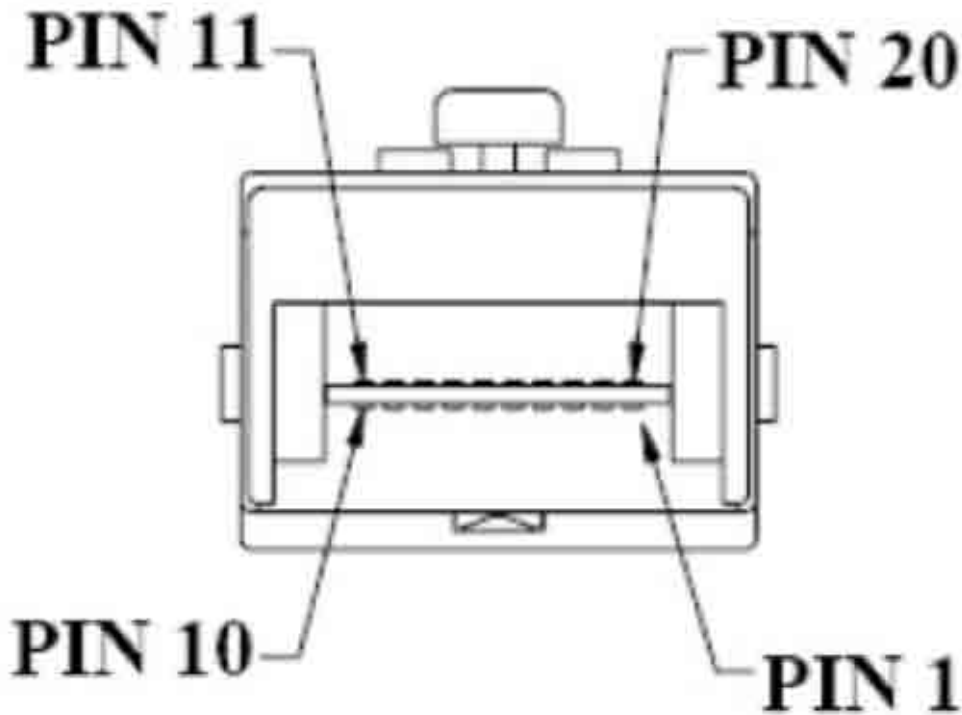
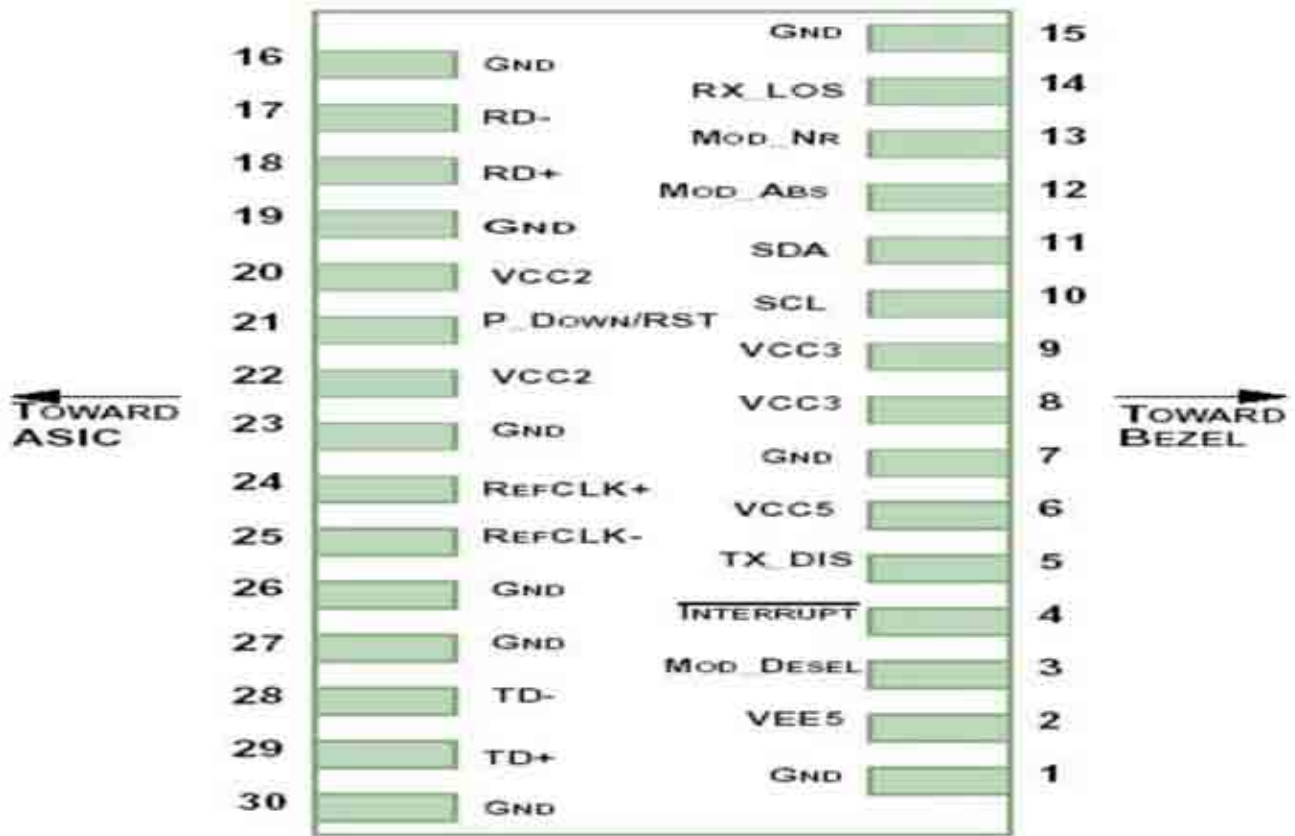
### Optical Characteristics

Parameter	Unit	Min.	Typ.	Max
<b>Transmitter</b>				
Output Optical Power	dBm	-2		3
Optical Extinction Ratio	dB	3.5		
Optical Wavelength	nm	1320	1330	1340
Spectral Width	nm			1
Side Mode Suppression Ratio	dB	30		
<b>Receiver</b>				
Optical Center Wavelength	nm	1260		1280
Receiver Sensitivity @	dBm	-14		0.5
LOS DE-Assert	dBm			-16
LOS Assert	dBm	-28		

### 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**

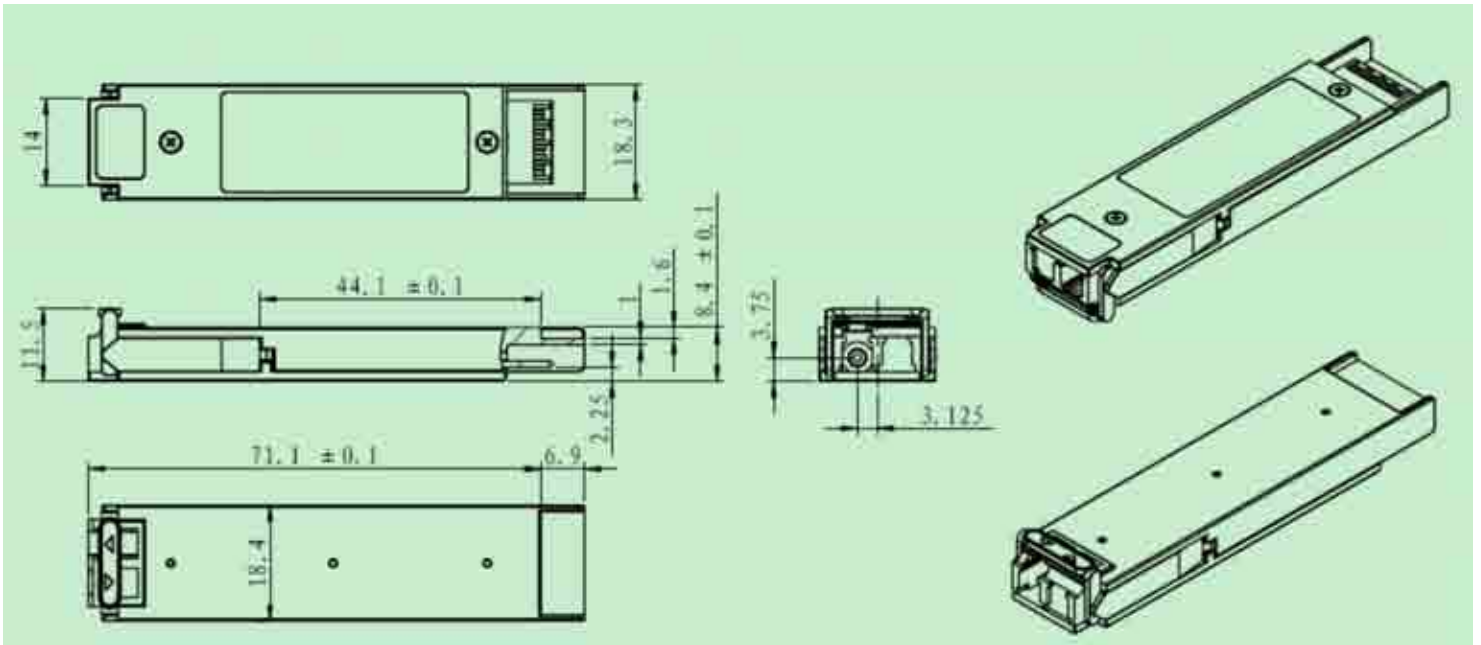
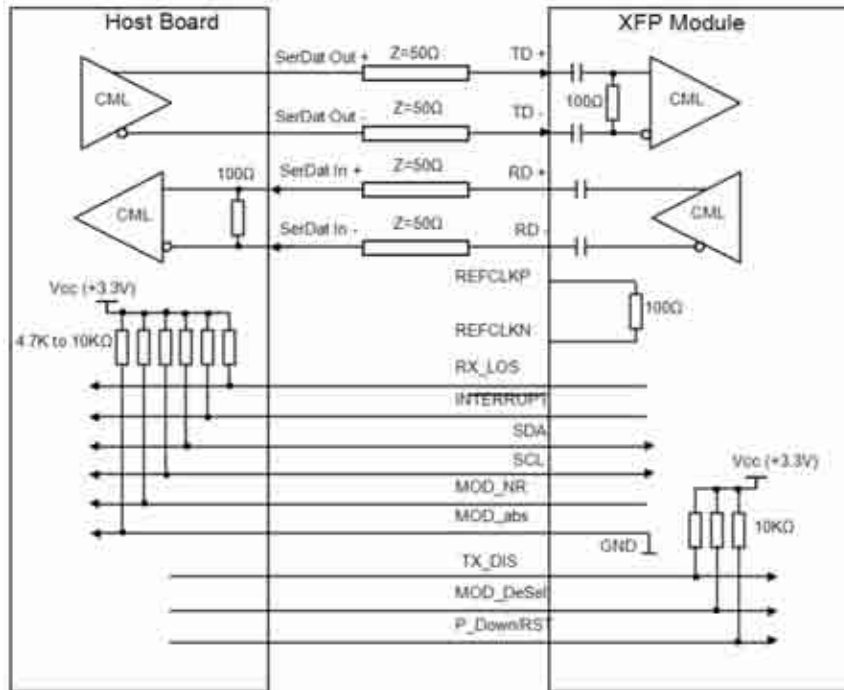




**XFP SONET/SDH Single Fiber 20 km transceiver | 10G LR SONET OC-192 / STM-64 w/ CDR**  
**PIN Functions**

Pin #	Name - Description
1	Module Ground
2	Optional –5.2 Power Supply – Not required
3	Module De-select; When held low allows the module to, respond to 2-wire serial
4	Interrupt (bar); Indicates presence of an important
5	Transmitter Disable; Transmitter laser source turned off
6	+5 Power Supply, Not required
7	Module Ground
8	+3.3V Power Supply
9	+3.3V Power Supply
10	Serial 2-wire interface clock
11	Serial 2-wire interface data line
12	Module Absent; Indicates module is not present. Grounded in the module.
13	Module Not Ready;
14	Receiver Loss of Signal indicator
15	Module Ground
16	Module Ground
17	Receiver inverted data output
18	Receiver non-inverted data output
19	Module Ground
20	+1.8V Power Supply – Not required
21	Power Down; When high, places the module in the
22	+1.8V Power Supply – Not required
23	Module Ground
24	Reference Clock non-inverted input, AC coupled on
25	Reference Clock inverted input, AC coupled on the host board – Not required
26	Module Ground
27	Module Ground
28	Transmitter inverted data input
29	Transmitter non-inverted data input
30	Module Ground

## XFP SONET/SDH Single Fiber 20 km transceiver | 10G LR SONET OC-192 / STM-64 w/ CDR Mechanical Layouts



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