SFP Single Fiber 20 km transceiver | 2G LX SONET OC-48 / STM-16

Datasheet

SFP Optical Transceiver Product Features

SFP-MR2-K020B49

- **SONET OC-48 / STM-16 13dB SFP**
- **20 km LX SFP for SMF @ 2.67Gbps**
- **1490Tx-1310Rx DFB+PIN Laser 20 km SFP**
- **0°C - 70°C Temperature - Extended/Industrial Available**
- **2-Wire Interface Digital Diagnostic Monitoring (SFF-8724)**
- **Hot-swappable for SFP LC ports**
- **OptoSpan 1 year standard warranty**
- **Use with Finisar, Avago, JDSU & networks not requiring OEM compatibility**
- **SFP MSA / IEEE Std 802.3**
- **RoHS compliant**

*** For OEM Compatibility, use Platinum Series Part# PSFP-MR2B49K020**

Applications

- **1.25Gbps Gigabit Ethernet**
- **Fibre Channel 2x**
- **SONET/SDH**
- **SONET OC-48**
- **Other Optical Links**

Description

OptoSpan SFP-MR2-K020B49 is a Single Fiber BiDirectional SONET OC-48 / STM-16 SFP transceiver designed for long distance optical communications up to 20 km with signaling rates up to 2.67Gbps.

OptoSpan 2Gb 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# PSFP-MR2B49K020.

All OptoSpan long-reach SFP 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 SFP Optical Transceiver

SFP-MR2-K020B49	**Distance:** 20 km				**Fiber:** 1490Tx-1310Rx SMF	
	Tx Min dBm	**Tx Max dBm**	**Rx Min dBm**	**Rx Max dBm**	**Link Attenuation dB**	**Power Budget dB**
Product Specifications	**-5**	**0**	**-18**	**0**		
Optical Calculation Results			**-12.4**	**-7.4**	**7.4**	**13**

General Specifications

Parameter	Unit	Min.	Typ.	Max
Absolute Maximum Ratings				
Maximum Supply Voltage	V	-0.5		3.6
Storage Temperature	°C	-40		+85
Case Operating Temperature	°C	0		+70
Recommended Operating Condition				
Supply Voltage	V	3.15	3.3	3.45
Supply Current	mA			300
Data Rate	Gbps		2.5	

Electrical Characteristics

Parameter	Unit	Min.	Typ.	Max
Transmitter				
Differential Input Voltage Swing	mVpp	400		2000
Input Differential Impedance	ohm	85	100	115
Transmit Disable Voltage - High	V	2.0		Vcc
Transmit Disable Voltage - Low	V	0		0.8
Transmit Fault Voltage - High	V	2.0		Vcc+0.3
Transmit Fault Voltage - Low	V	0		0.5
Receiver				
Differential Output Voltage Swing	mVpp	370		1200
Differential Output Impedance	ohms	85	100	115
LOS Output Voltage - High	V	2.0		Vcc+0.3
LOS Output Voltage - Low	V	0		0.8

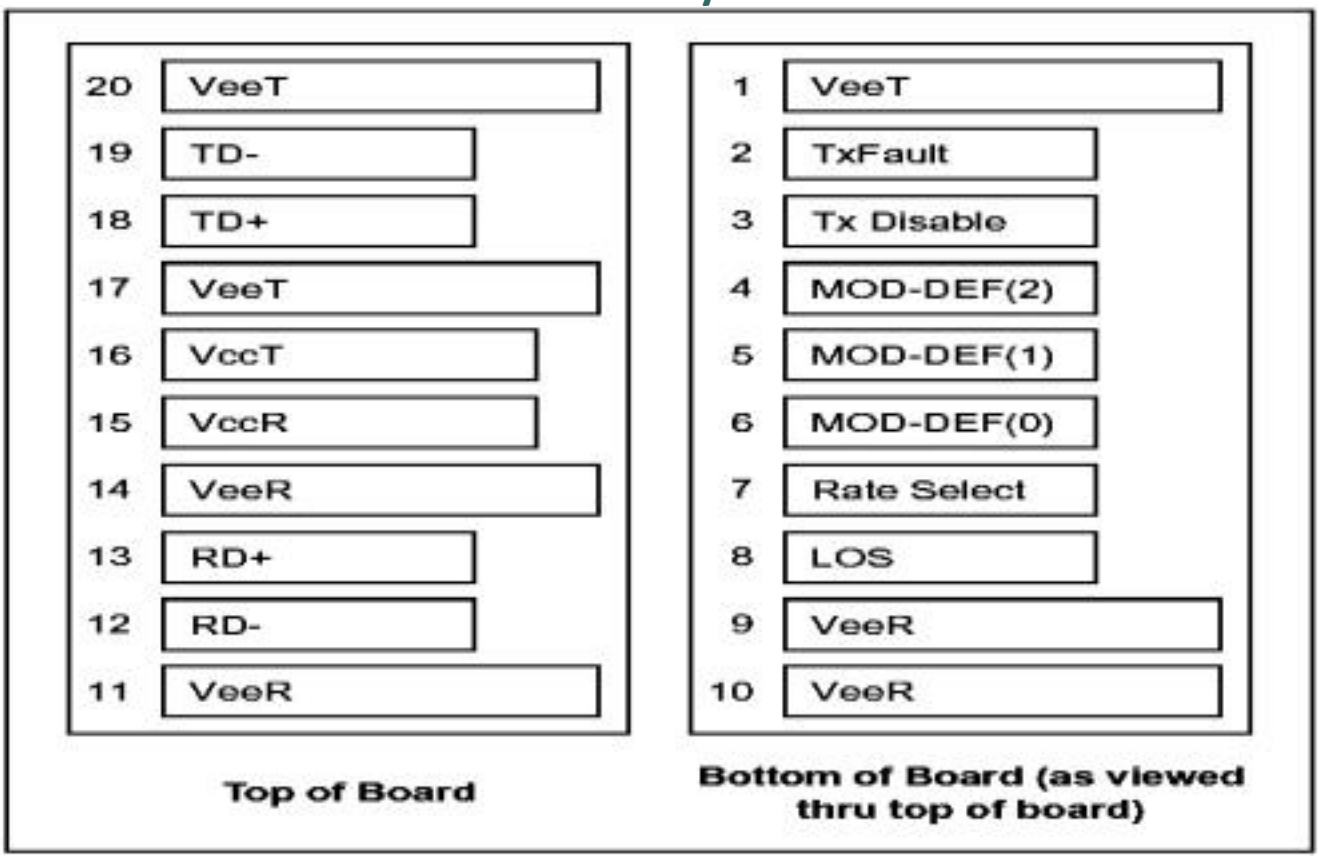
Optical Characteristics

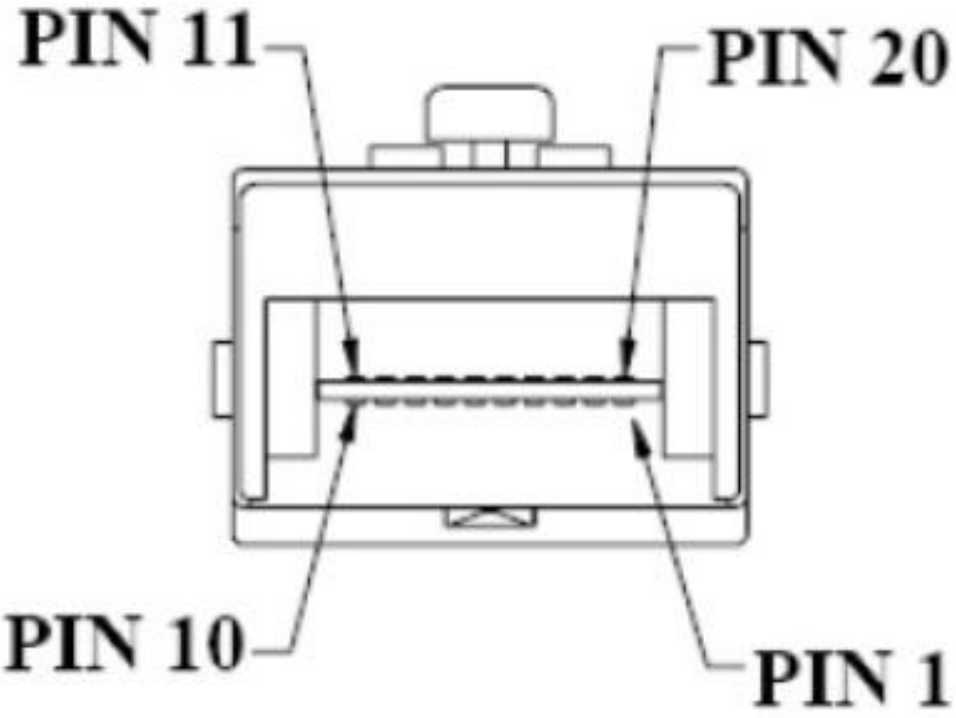
Parameter	Unit	Min.	Typ.	Max
Transmitter				
Output Optical Power	dBm	-5		0
Optical Extinction Ratio	dB	8.2		
Optical Wavelength	nm	1530	1550	1570
Spectral Width	nm			1
Side Mode Suppression Ratio	dB	30		
Receiver				
Optical Center Wavelength	nm	1260		1360
Receiver Sensitivity @ 2.67Gbps	dBm	-18		0
LOS DE-Assert	dBm			-19
LOS Assert	dBm	-45		

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


20 VeeT
19 TD-
18 TD+
17 VeeT
16 VccT
15 VccR
14 VeeR
13 RD+
12 RD-
11 VeeR
Top of Board
1 VeeT
2 TxFault
3 Tx Disable
4 MOD-DEF(2)
5 MOD-DEF(1)
6 MOD-DEF(0)
7 Rate Select
8 LOS
9 VeeR
10 VeeR
Bottom of Board (as viewed thru top of board)


PIN 11
PIN 20
PIN 10
PIN 1

PIN Functions

Pin #	Name - Description
1	Transmitter Ground
2	Transmitter Fault Indication
3	Transmitter Disable
4	SDA Serial Data Signal
5	SCL Serial Clock Signal
6	TTL Low
7	Not Connected
8	Loss of Signal
9	Receiver ground
10	Receiver ground
11	Receiver ground
12	Inv. Received Data Out
13	Received Data Out
14	Receiver ground
15	Receiver Power Supply
16	Transmitter Power Supply
17	Transmitter Ground
18	Transmit Data In
19	Inv. Transmit Data In
20	Transmitter Ground
21	
22	
23	
24	
25	
26	
27	
28	
29	
30	

Mechanical Layouts