Optospan

SFP Single Fiber 120 km transceiver | 155Mb BX SONET OC-3 / STM-1

Datasheet

SFP Optical Transceiver Product Features

SFP-155-K120B57

- **SONET OC-3 / STM-1 34dB SFP**
- **120 km BX SFP for SMF @ .155Gbps**
- **1570Tx-1510Rx DFB+LD Laser 120 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-155B57K120**

Applications

- **Optical Fast Ethernet**
- **SONET/SDH**

Description

OptoSpan SFP-155-K120B57 is a Single Fiber BiDirectional SONET OC-3 / STM-1 SFP transceiver designed for long distance optical communications up to 120 km with signaling rates up to .155Gbps.

OptoSpan 155Mb 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-155B57K120.

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 120 km SFP Optical Transceiver

SFP-155-K120B57	**Distance:** 120 km				**Fiber:** 1570Tx-1510Rx SMF	
	Tx Min dBm	**Tx Max dBm**	**Rx Min dBm**	**Rx Max dBm**	**Link Attenuation dB**	**Power Budget dB**
Product Specifications	**0**	**5**	**-34**	**-10**		
Optical Calculation Results			**-28.6**	**-22.6**	**26.6**	**34**

Optospan

SFP Single Fiber 120 km transceiver | 155Mb BX SONET OC-3 / STM-1

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		.155	

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		Vcc+0.3
Transmit Disable Voltage - Low	V	0		0.8
Transmit Fault Voltage - High	V	2		Vcc+0.3
Transmit Fault Voltage - Low	V	0		0.5
Receiver				
Differential Output Voltage Swing	mVpp	370		2000
Differential Output Impedance	ohms	85	100	115
LOS Output Voltage - High	V	2		Vcc+0.3
LOS Output Voltage - Low	V	0		0.8

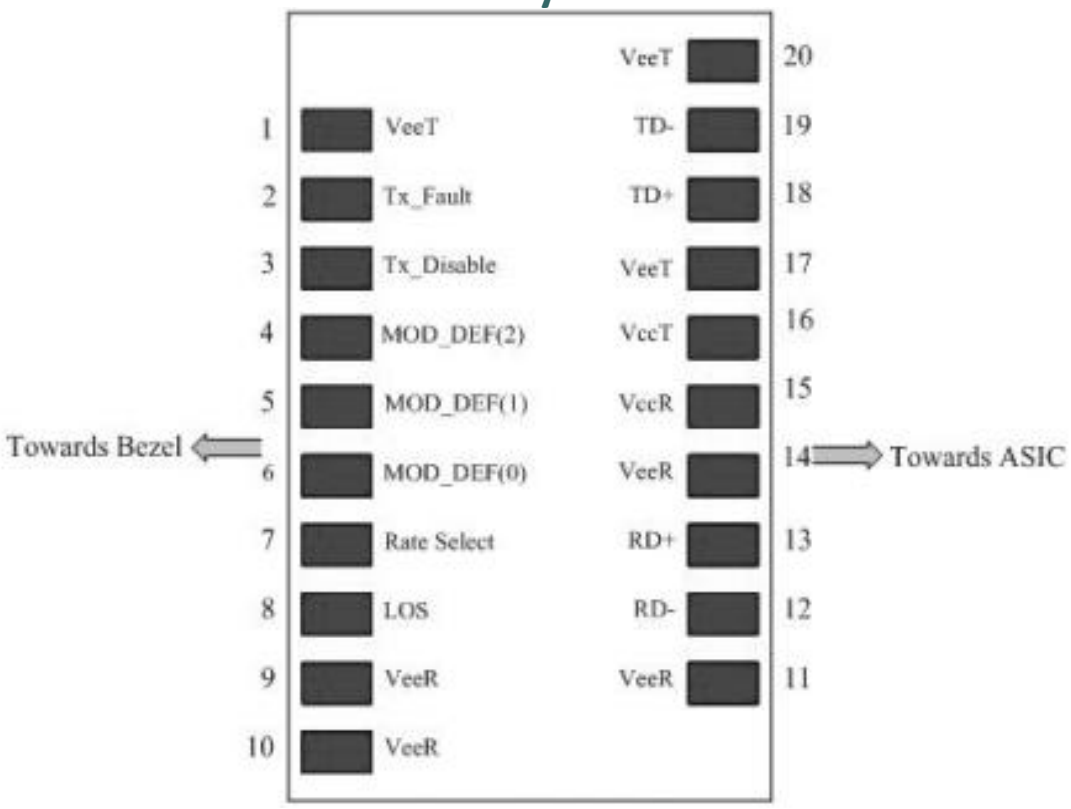
Optical Characteristics

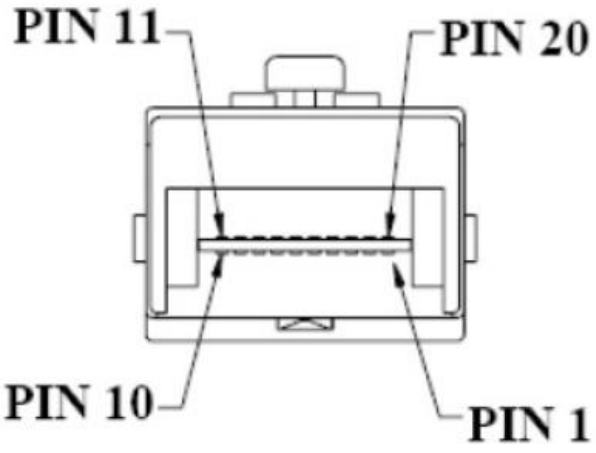
Parameter	Unit	Min.	Typ.	Max
Transmitter				
Output Optical Power	dBm	0		5
Optical Extinction Ratio	dB	9		
Optical Wavelength	nm	λc-6.5	λc	λc+7
Spectral Width	nm			1
Side Mode Suppression Ratio	dB	30		
Receiver				
Optical Center Wavelength	nm	λ-20	λ	λ+20
Receiver Sensitivity @ OC-3	dBm	-34		-10
Receiver Sensitivity @ 100M	dBm	-35		-10
LOS DE-Assert	dBm			-36
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


VeeT 20
1 VeeT
TD- 19
2 Tx_Fault
TD+ 18
3 Tx_Disable
VeeT 17
4 MOD_DEF(2)
VccT 16
5 MOD_DEF(1)
VccR 15
Towards Bezel
6 MOD_DEF(0)
VeeR 14
Towards ASIC
7 Rate Select
RD+ 13
8 LOS
RD- 12
9 VeeR
VeeR 11
10 VeeR


PIN 11
PIN 20
PIN 10
PIN 1

PIN Functions

Pin #	Name - Description
1	Transmitter Ground
2	Transmitter Fault Indication
3	Transmitter Disable
4	Module Definition 2
5	Module Definition 1
6	Module Definition 0
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
16	Transmitter Power
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