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

### Datasheet

### **SFP Optical Transceiver**

#### **Product Features**

- 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

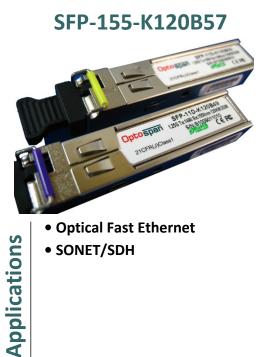
### Description

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.

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		
<b>Optical Calculation Results</b>			-28.6	-22.6	26.6	34



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

Parameter	Unit	Min.	Тур.	Max
Ab	solute Maximu	m Ratings		
Maximum Supply Voltage	V	-0.5		3.6
Storage Temperature	٥C	-40		+85
Case Operating Temperature	٥C	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.	Тур.	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	

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

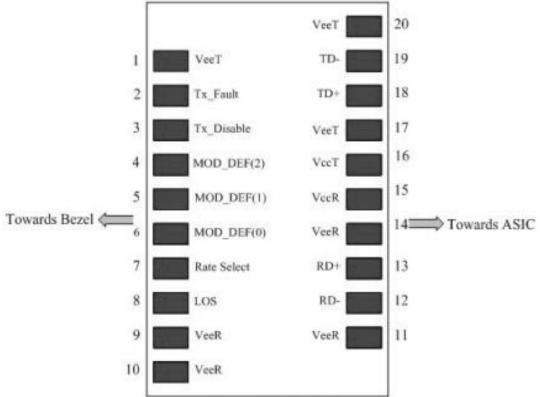
### **Optical Characteristics**

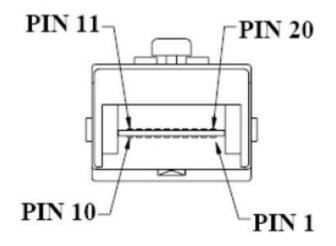
Parameter	Unit	Min.	Тур.	Max
	Transmitt	er		
Output Optical Power	dBm	0		5
Optical Extinction Ratio	dB	9		
Optical Wavelength	nm	λс-6.5	λс	λc+7
Spectral Width	nm			1
Side Mode Suppression Ratio	dB	30		
Receiver				
Optical Center Wavelength	nm	λ-20	λ	λ+20
Receiver Sensitivity @ OC-3	dBm	-34		-10
Receiver 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.

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

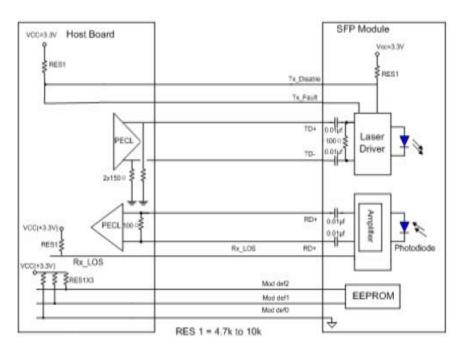


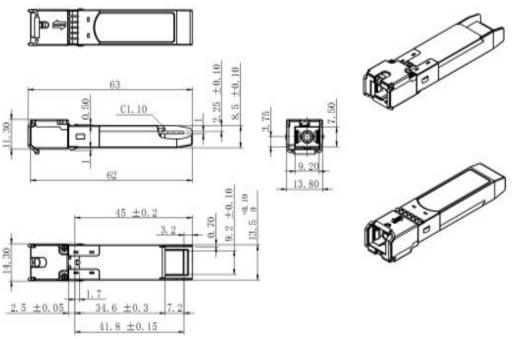


### SFP Single Fiber 120 km transceiver | 155Mb BX SONET OC-3 / STM-1 PIN Functions

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   Receiver Ground     14   Receiver Ground     15   Receiver Power     16   Transmitter Power     17   Transmitter Ground     18   Transmitter Ground     19   Inv. Transmit Data In     19   Inv. Transmit Data In     20   Transmitter Ground     21   Inter Ground     22   Inter Ground     23   Inter Ground     24   Inter Ground     25   Inter Ground     26   Inter Ground     27   Inter Ground     28	B. //	
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   Receiver Ground     14   Receiver Ground     15   Receiver Ground     16   Transmitter Power     16   Transmitter Power     17   Transmitter Ground     18   Transmitter Ground     19   Inv. Transmit Data In     19   Inv. Transmit Data In     20   Transmitter Ground     21	Pin #	Name - Description
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   Receiver Ground     14   Receiver Ground     15   Receiver Ground     16   Transmitter Power     16   Transmitter Power     17   Transmitter Ground     18   Transmitter Ground     19   Inv. Transmit Data In     19   Inv. Transmit Data In     20   Transmitter Ground     21		Transmitter Ground
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   Receiver Ground     14   Receiver Ground     15   Receiver Ground     16   Transmitter Power     16   Transmitter Ground     18   Transmitter Ground     20   Transmitter Ground     21	2	Transmitter Fault Indication
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   Receiver Ground     14   Receiver Ground     15   Receiver Ground     16   Transmitter Power     17   Transmitter Ground     18   Transmit Data In     19   Inv. Transmit Data In     20   Transmitter Ground     21	3	Transmitter Disable
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   Receiver Ground     14   Receiver Ground     15   Receiver Ground     16   Transmitter Power     16   Transmitter Ground     18   Transmitter Ground     19   Inv. Transmit Data In     20   Transmitter Ground     21	4	Module Definition 2
7   Not Connected     8   Loss of Signal     9   Receiver Ground     10   Receiver Ground     11   Received Data Out     12   Inv. Received Data Out     13   Receiver Ground     14   Receiver Ground     15   Receiver Ground     16   Transmitter Power     16   Transmitter Ground     18   Transmitter Ground     19   Inv. Transmit Data In     20   Transmitter Ground     21	5	Module Definition 1
8   Loss of Signal     9   Receiver Ground     10   Receiver Ground     11   Receiver Ground     12   Inv. Received Data Out     13   Receiver Ground     14   Receiver Ground     15   Receiver Ground     16   Transmitter Power     17   Transmitter Ground     18   Transmit Data In     20   Transmitter Ground     21	6	Module Definition 0
9   Receiver Ground     10   Receiver Ground     11   Receiver Ground     12   Inv. Received Data Out     13   Receiver Ground     14   Receiver Ground     15   Receiver Ground     16   Transmitter Power     17   Transmitter Ground     18   Transmit Data In     19   Inv. Transmit Data In     20   Transmitter Ground     21	7	Not Connected
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	8	Loss of Signal
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	9	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	10	Receiver Ground
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	11	Receiver Ground
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	12	Inv. Received Data Out
15   Receiver Power     16   Transmitter Power     17   Transmitter Ground     18   Transmit Data In     19   Inv. Transmit Data In     20   Transmitter Ground     21   Image: Comparison of	13	Received Data Out
16   Transmitter Power     17   Transmitter Ground     18   Transmit Data In     19   Inv. Transmit Data In     20   Transmitter Ground     21   Image: Comparison of the state	14	Receiver Ground
17   Transmitter Ground     18   Transmit Data In     19   Inv. Transmit Data In     20   Transmitter Ground     21   Image: Construction of the second of the secon	15	Receiver Power
18   Transmit Data In     19   Inv. Transmit Data In     20   Transmitter Ground     21	16	Transmitter Power
19   Inv. Transmit Data In     20   Transmitter Ground     21	17	Transmitter Ground
20   Transmitter Ground     21	18	Transmit Data In
21     22     23     24     25     26     27     28     29	19	Inv. Transmit Data In
22     23     24     25     26     27     28     29	20	Transmitter Ground
23     24     25     26     27     28     29	21	
24     25     26     27     28     29	22	
25     26     27     28     29	23	
26   27   28   29	24	
27   28   29	25	
28 29	26	
29	27	
	28	
30	29	
	30	

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





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