

Bi-directional Optical Sub Assembly (BOSA)

REV. A/03/2003

1310/1550nm BOSA

Features

- Data Rate : up to 155Mbps
- Designed for short or long reach application
- Integrated 1310/1550nm WDM for a single fiber
- MQW FP Laser device (DFB Laser Optional)
- InGaAs PIN Photodiode
- Single +3.3V or +5.0V Power Supply
- SC/LC Receptacle or Pigtailed type version



Applications

- 10/100Base Ethernet, PON, SONET/OC-3 and SDH/STM-1

Absolute Maximum Ratings

Parameter	Symbol	Value	Unit
Storage Temperature	T _{stg}	-40°C ~ +85°C	°C
Operating Case Temperature	T _{op}	-40°C ~ +85°C	°C
Supply Voltage	V _{cc}	3.3Volt 5.0Volt	3.7 5.5 V

Operating Conditions

Parameter	Symbol	Value	Unit
Ambient operating Temperature	T _{stg}	-40°C ~ +85°C	°C
Operating Voltage	V _{cc}	3.3Volt 5.0Volt	3.13 ~ 3.47 4.75 ~ 5.25 V

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Specifications

Optical/Electrical Characteristics

Parameter	Symbol	Values			Test Condition	Unit	
		Min.	Typ.	Max.			
Transmitter							
Optical Output Power ¹	P_f	0.2			CW, @ $I_{th}+20mA$	mW	
Threshold Current	I_{th}	5		15	CW, $T_c=25^{\circ}C$	mA	
Laser Forward Current	I_{FL}			100		mA	
Laser Forward Voltage	V_{FL}		1.1	1.5	CW, $P_f=0.5mW$	V	
Monitor PD Current	I_M	0.1			CW, $P_f=0.2mW$	mA	
Peak Wavelength	1310nm LD 1550nm LD	λ_P	1290 1530	1310 1550	1330 1570		nm
Spectral Width ² (RMS)	1310nm LD 1550nm LD	$\Delta\lambda$			3.0 3.0	CW, $P_f=0.5mW$	nm
Receiver							
Detect Range	1310nm Window 1550nm Window	λ	1260 1480		1360 1600		nm
Optical Sensitivity		S		-34	-33	BER= 1×10^{-10}	dBm
Optical Overload		OL	-3				dBm
Crosstalk ³		CRT			-40		dB
Tracking Error		γ	-1.5		+1.5	$-40 \sim +85^{\circ}C$	dB

Notes:

1. Measured values at pigtailed fiber end point

2. Measured value in root mean square (RMS)

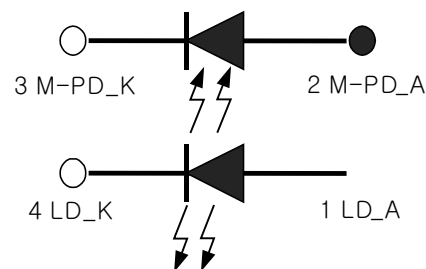
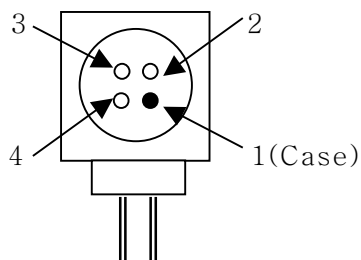
3. Crosstalk is defined as $CRT = 10 \times \log(I_a/I_b)$

* I_a = The photocurrent with 0.2mW optical output power, without optical input CW laser operation

* I_b = The photocurrent without optical power but 0.2mW optical input power

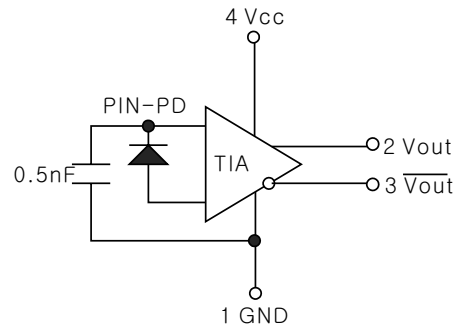
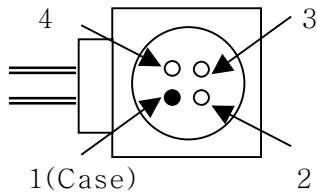
Pin Number/Description

1) Transmitter (FP-LD)



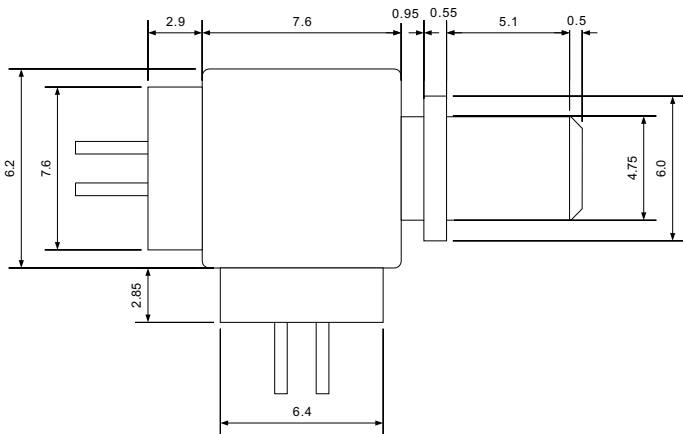
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2) Receiver (PIN-TIA)

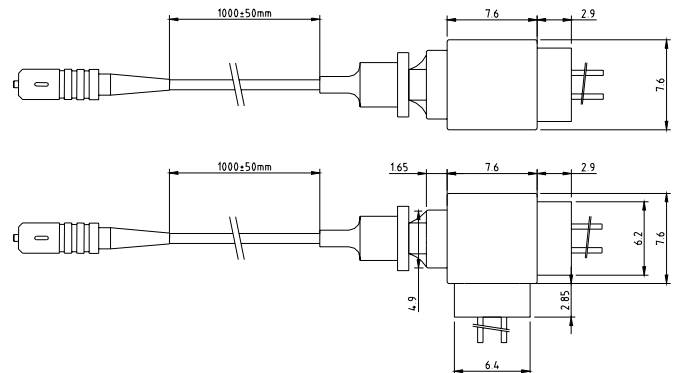


Dimension in mm

1) Receptacle Type



2) Pigtailed Type



Ordering Information

iBR03-3S5SC: 155Mbps, 1310nm Tx, 1550nm Rx Bi-directional SC Receptacle Device, 5V

iBR03-5S5SC: 155Mbps, 1550nm Tx, 1310nm Rx Bi-directional SC Receptacle Device, 5V

iBR03-3S3SC: 155Mbps, 1310nm Tx, 1550nm Rx Bi-directional SC Receptacle Device, 3.3V

iBR03-5S3SC: 155Mbps, 1550nm Tx, 1310nm Rx Bi-directional SC Receptacle Device, 3.3V

iBM03-3S5SC: 155Mbps, 1310nm Tx, 1550nm Rx Bi-directional SC Pigtailed Device, 5V

iBM03-5S5SC: 155Mbps, 1550nm Tx, 1310nm Rx Bi-directional SC Pigtailed Device, 5V

iBM03-3S3SC: 155Mbps, 1310nm Tx, 1550nm Rx Bi-directional SC Pigtailed Device, 3.3V

iBM03-5S3SC: 155Mbps, 1550nm Tx, 1310nm Rx Bi-directional SC Pigtailed Device, 3.3V