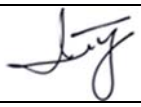
制定人

制定人	签署	制定日期
Lib	Lib	2016.06.12

审核人

审核人	签署	审核日期
Joey		2016.06.12

批准人

批准人	签署	批准日期
Jeffrey		2016.06.12

修订履历

序号	版本号	修改章节	修 改 摘 要	制定	生效日期
1	A01	/	首次发行	Lib	2016.06.12

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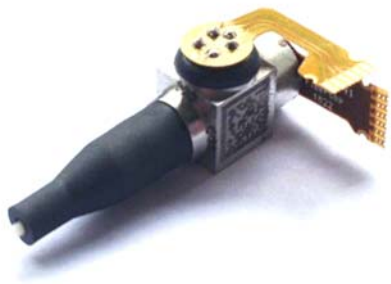

10G XGSPON BOSA

BA-53 series T10G/R10G

Description

This BOSA is a high performance optical sub-assembly in single fiber by using 1270nm transmitter and 1577nm receiver.

The transmitter section uses a multiple quantum well 1270nm DFB laser supporting burst-mode operation. The receiver section uses an integrated 1577nm APD and preamplifier mounted in a TO-can.

Applications

- 10G XGSPON symmetric SFP+ transceiver, ONU
- 10 Gigabit Ethernet Access Networks

Features

- Single fiber pigtail type bi-directional transmission design for 10G XGPON ONU
- Symmetric 10Gbps Tx burst mode and 10Gbps Rx CW data rate
- Integrated micro-optics WDM filters for dual wavelength Tx/Rx operation at 1270/1577nm
- 1270nmInGaAsP/InP MQW DFB laser diode transmission with InGaAs monitor photodiode
- 1577nm digital APD-TIA continuous mode receiver
- Flex PCB standard ping-out
- Optical reflection free with built-in 1270nm free space isolator
- High optical isolation from external 1490nm source, and low optical cross-talk from internal 1270nm source
- 0°C to +70°C commercial temperature with excellent temperature dependent power tracking error

Standard

- ITU-T 987.2 10G XGPON-2 communication protocol
- Compliant with Telcordia GR-468 reliability test criterion
- Compliant with RoHS6 standard

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1. Absolute Maximum Ratings

Item	Unit	Min	Max	Note
Forward Current for LD	mA	--	120	
Reverse Voltage for LD	V	--	2	
Forward Current for MPD	mA	--	2	
Reverse Voltage for MPD	V	--	20	
APD Reverse Voltage	V	--	Vbr	
TIA Supply Voltage	V	-0.4	4	
Operating Temp	°C	0	70	
Storage Temperature	°C	-40	85	
Storage Relative Humidity	%	--	85	
Soldering Temperature	°C	--	260	(*1)
ESD threshold	V	500		

(*1): For soldering by iron and 10 seconds on leads

2. Transmitter Electro-Optical Characteristics (T_C=25°C, CW)

Item	Symbol	Test Condition	Min.	Typ.	Max.	Unit
Transmitter Bit Rate		0~70°C	--	9.953	--	Gbps
Threshold Current	Ith	25°C	--	8	15	mA
		0~70°C	--	--	50	mA
Optical Output Power (*2)	Pf	If=Ith+20mA	2.5	--	--	mW
		If=Ith+20mA, 0~70°C	1.5	--	--	mW
Forward Voltage	Vf	If=Ith+20mA	--	1.1	1.8	V
Peak Wavelength	λc	If=Ith+20mA	1260	1270	1280	nm
Side Mode Suppression Ratio	SMSR	If=Ith+20mA, 0~70°C	30	--	--	dB
Monitor Current	Im	If=Ith+20mA	100	--	1200	μA
Tracking Error (*3)	TE	Tc=0~70°C	-1.5	--	1.5	dB

(*2): Launched into 9/125μm SMF, measured with a master plug and an extra receptacle

(*3): ΔPf =10x log (Pf (Tc) /Pf (25°C)), Im hold(@Pf=2.5mW, 25°C)

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3. Receiver Electro-Optical Characteristics (TC=25°C, Vcc=3.3V)

Item	Symbol	Test Condition	Min.	Typ.	Max.	Unit
Supply Voltage	Vcc	No loads	3.0	3.3	3.6	V
Supply Current	Icc	No loads	--	--	50	mA
Operating Wavelength	λ		1575	1577	1580	nm
Sensitivity	Sen	9.953Gbps, NRZ, PRBS23, ER=8.2dB, BER=10E-3	--	--	-29.5	dBm
Overload	OL		-7.0	--	--	dBm
Breakdown Voltage	Vbr	Id=10μA	22	--	45	V
Optical Return Loss	RL	λ=1270nm	10	--	--	dB
		λ=1577nm	20	--	--	dB
Optical Crosstalk	X-talk		--	-45	-40	dB
Optical Isolation from External Source	ISO	λ=1260~1560nm	35	--	--	dB
		λ=1600~1675nm	35	--	--	dB

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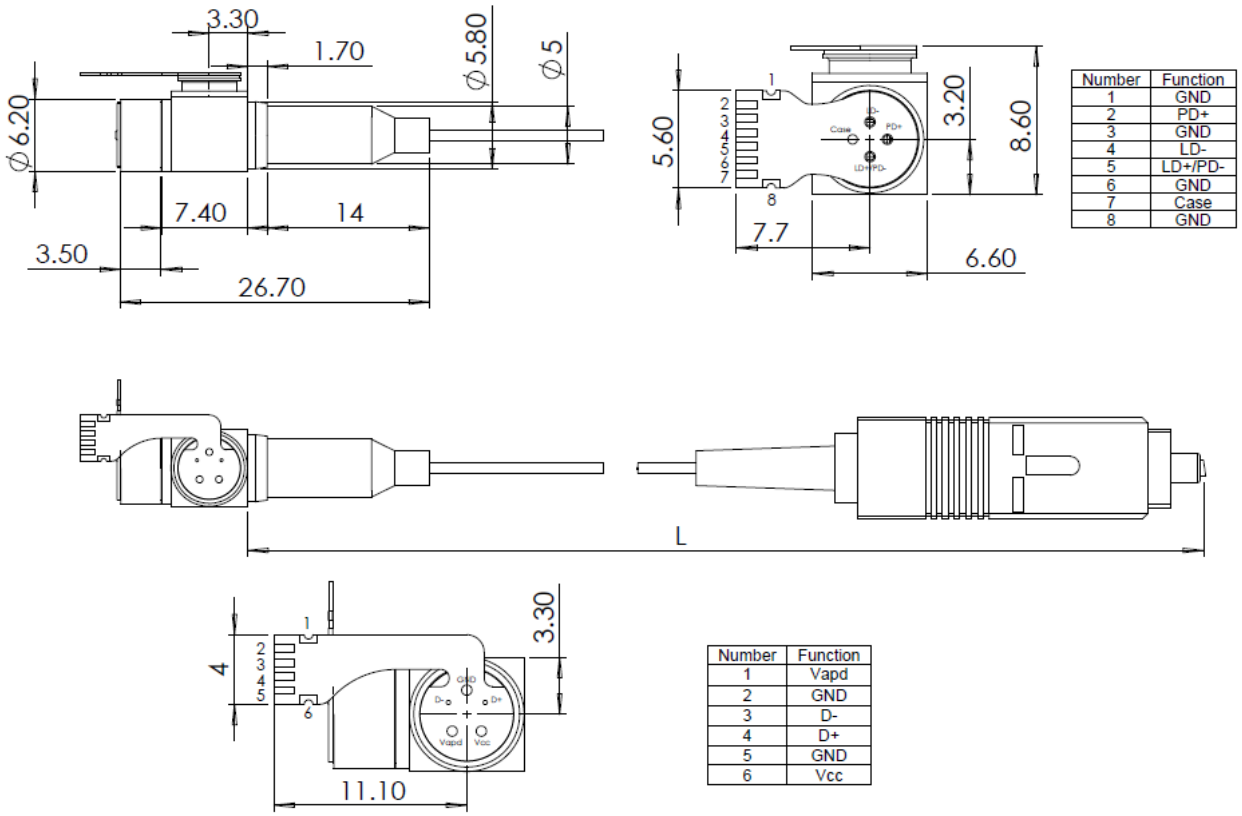
4. Dimension Outline



Number	Function
1	GND
2	PD+
3	GND
4	LD-
5	LD+/PD-
6	GND
7	Case
8	GND

Number	Function
1	Vapd
2	GND
3	D-
4	D+
5	GND
6	Vcc

5. Other Characteristics

Parameter	Symbol	Min.	Typ.	Max.	Unit	Note
Mode Field Diameter		8	9	10	μm	
Gladding Diameter		123	125	127	μm	
Fiber Macro bend Loss				0.05	dB	Radius 16mm
Optical Connector Insertion Loss		--	--	0.4	dB	SC/APC connector
Fiber Bending Radius		25	--	--	mm	
Fiber Diameter		0.8	0.9	1.0	mm	
Fiber Length		280	--	340	mm	L
Pull Force on LD Assembly		30	--	--	Kgw	
Pull Force on APD Assembly		15	--	--	Kgw	
Shear Strength on XY Welding		30	--	--	Kgw	
Tension Force on Fiber Pigtail		5	--	--	N	

(*4): Connector fiber end face accord with IPC-8497-1

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