10G XGSPON ONU BOSA

Product	**10G XGSPON ONU BOSA**
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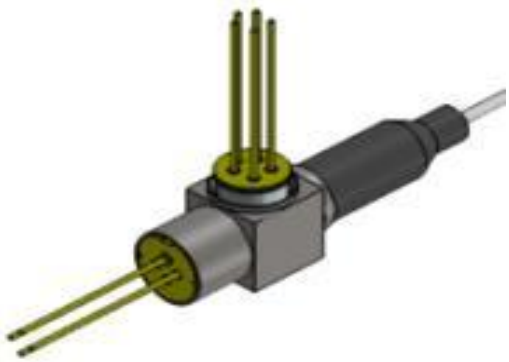

Specification Revision Record					
Date	Version	Page	Revision Description	Prepare	Approve
20240318	1.0			CTL	

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10G XGSPON ONU 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.

Features

- Single fiber pigtail type bi-directional transmission design for 10G XGSPON ONU.
- Symmetric 10GbpsTx and 10GbpsRx data rate.
- Integrated micro-optics WDM filters for dualwavelength Tx/Rxoperation at 1270/1577nm.
- 1270nmInGaAsP/InPMQW DFB laser diode transmission with InGaAs monitor photodiode.
- 1577nm digital APD-TIA continuous mode receiver.
- Optical reflection free with built-in 1270nm free space isolator.
- High optical isolation from external 1577nm source, and low optical cross-talk from internal 1270nm source.
- -40°C to +85°C temperature with excellent temperature dependent power tracking error.

Application

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

Standard

- ITU-T 987.2 10GXGPON-2 communication protocol
- Compliant with TelcordiaGR-468 reliability test criterion
- Compliant with TelcordiaGR-326 connector qualification standard
- Compliant with RoHS6 standard

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 Current	mA	--	2	
APD Reverse Voltage	V	--	Vbr	

TIA Supply Voltage	V	-0.4	4	
Operating Temp	℃	-40	85	
Storage Temperature	℃	-40	85	
Storage Relative Humidity	%	--	85	
Soldering Temperature	℃	--	260	(*1)
ESD threshold	V	500	--	

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

Transmitter Electro-Optical Characteristics (TC=25°C, CW)

Item	Symbol	Test Condition	Min.	Typ.	Max.	Unit
Transmitter Bit Rate	BR	--	--	9.953	--	Gbps
Threshold Current	Ith	25℃	--	7.5	15	mA
		-40~85°C	--	--	40	mA
Optical Output Power (*2)	Pf	CW, If=Ith+20mA	2.5	--	6.0	mW
		CW, If=Ith+20mA, -40~85°C	1.0	--	--	mW
Forward Voltage	Vf	CW, If=Ith+20mA	--	--	1.8	V
Peak Wavelength	λc	CW, If=Ith+20mA	1260	1270	1280	nm
Spectrum Width (-20dB)	Δλ	CW, If=Ith+20mA	--	--	1.0	nm
Side Mode Suppression Ratio	SMSR	CW, If=Ith+20mA	30	--	--	dB
Monitor Current	Im	CW, If=Ith+20mA	100	--	1200	μA
Monitor Dark Current	Id	Vrp=5V	--	--	100	nA
Monitor Capacitance	C	CW,Vrp=5V, f=1MHz	--	10	20	pF
Tracking Error(*3)	TE	CW, Tc=-40~85°C	-1.5	--	1.5	dB

(*2): Launched into 9/125μm SMF

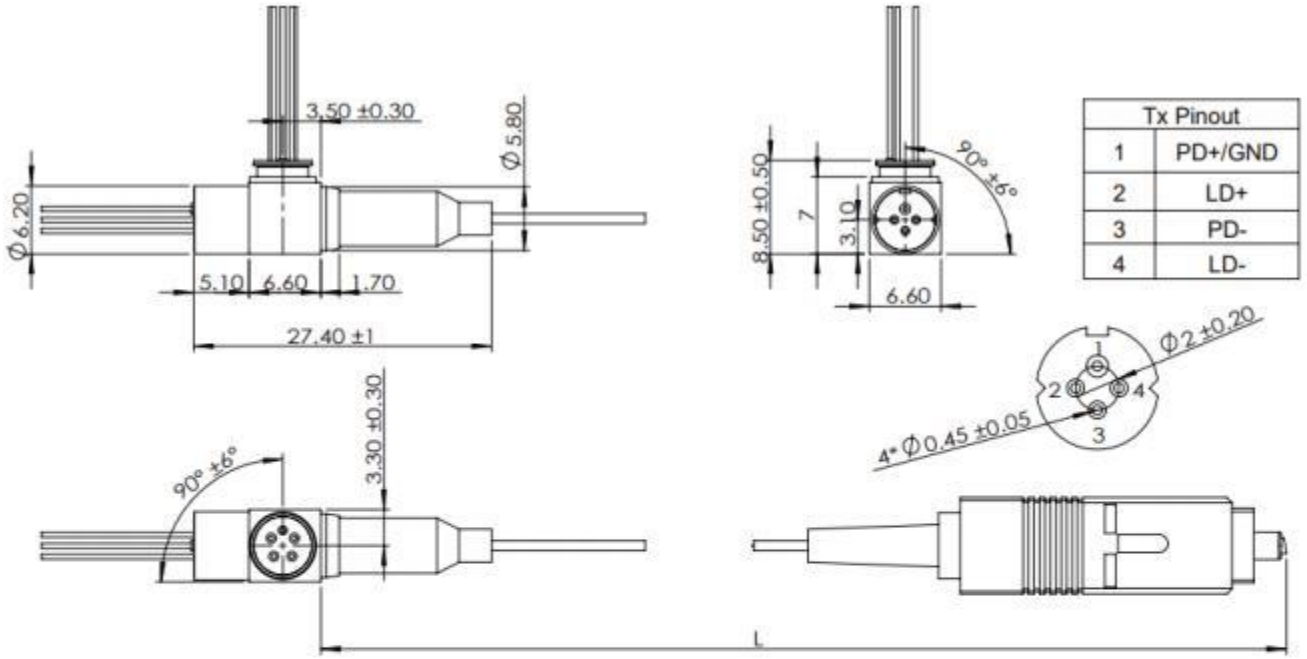
(*3): Pf =10xlog(Pf(Tc) /Pf(25℃)), Im hold(@Pf=2.5mW, 25°C)

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

Item	Symbol	Test Condition	Min.	Typ.	Max.	Unit
Receiver Bit Rate	BR	--	--	9.953	--	Gbps
Supply Voltage	Vcc	No loads	3.0	3.3	3.6	V
Supply Current	Icc	No loads	20	33	45	mA
Operating Wavelength	λ	--	1575	1577	1580	nm
Sensitivity	Sen	9.953Gbps, 1577nm,NRZ PRBS 2^31-1, ER=8.2dB, BER=10^-3,Vbr-3; Tc=25°C ;	--	--	-30.0	dBm
Overload	OL		-8.0	--	--	dBm
Breakdown Voltage	Vbr	Id=10μA	20	--	50	V

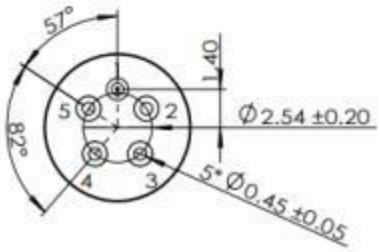
Output Impedance	Rout	Single end	--	50	--	Ω
Optical Return Loss	RL	λ=1270nm	10	--	--	dB
		λ=1577nm	20	--	--	dB
Optical Crosstalk	X-talk	1270nm/1577nm	45	--	--	dB
Optical Isolation from External Source	ISO	λ=1260~1560nm	30	--	--	dB
		λ=1600~1675nm	30	--	--	dB

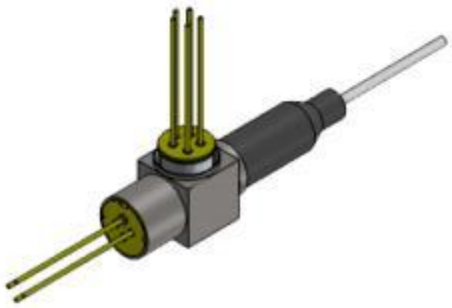
Dimension Outline



Tx Pinout	
1	PD+/GND
2	LD+
3	PD-
4	LD-

Rx Pinout	
1	GND
2	D+
3	Vcc
4	Vapd
5	D-





Other Characteristics:

Parameter	Symbol	Min.	Typ.	Max.	Unit	Note
Mode Field Diameter		8	9	10	μm	
Gladding Diameter		123	125	127	μm	
Optical Connector Insertion Loss		--	--	0.4	dB	SC/APC connector
Fiber Bending Radius		30	--	--	mm	
Fiber Diameter		0.8	0.9	1.0	mm	
Fiber Length		290	310	330	mm	L
Tension Force on Pigtail Fiber		5	--	--	N	