JEZETEK 九州光电子 Jiuzhou Opto-electronics

GPON OLT BOSA

BA-34 series T2.5G/R1.25G

Description

This GPON OLT BOSA is a high performance optical sub-assembly in single fiber by using 1490nm transmitter and 1310nm burst mode receiver with 1550/1650nm optical signal rejection.

The transmitter section uses a multiple quantum well 1490nm DFB laser and is class I laser complaint product according to International Safety Standard IEC-60825. Supporting burst-mode operation, the receiver section uses a TO-can built in a 1310nm APD chip and a burst mode trans-impedance amplifier.

Applications

- GPON Bi-directional play transceiver, OLT
- FTTH Bi-directional play

Features

- Receptacle type single fiber bi-directional transmission designed for Passive Optical Network (PON) digital communication
- Asymmetric 2.5Gbps downstream and 1.25Gbps upstream data link transmission
- Laser welded transmitter and epoxy cured receiver package
- Integrated micro-optics WDM filters for dual wavelength Tx/Rx operation at 1310/1490nm
- 1490nm InGaAsP/InP MQW DFB laser diode transmission with high bandwidth InGaAs monitor photodiode
- 1310nm digital APD with integrated 1.25Gbps, 3.3V burst mode transimpedance-amplifier
- Built-in free-space optical isolation, high optical isolation from external source and low optical cross-talk from internal source
- -5°C to 85°C extended commercial operating temperature range with excellent temperature dependent power tracking error

Standard

- Compliant with ITU-T G984.5 telecommunication protocol
- Compliant with Telcordia GR-468 reliability test criterion
- Compliant with RoHS6 standard

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网址(Url): http://www.jiuzhouoesz.com/

1. Absolute Maximum Ratings

Item	Unit	Min	Max	Note
Forward Current for LD	mA	--	150	
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	--	3.6	
Operating Temperature	°C	-5	85	
Storage Temperature	°C	-40	85	
Storage Relative Humidity	%	--	95	
Solder Reflow Temperature	°C	--	370 (Max.10sec)	
ESD threshold	V	--	500	

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

Item	Symbol	Test Condition	Min.	Typ.	Max.	Unit
Threshold Current	Ith	Tc=25°C	--	8	15	mA
		Tc=85°C	--	--	35	mA
Optical Output Power (*2)	Pf	If=Ith+20mA, Tc=25°C	2.3	2.8	6.0	mW
Forward Voltage	Vf	If=Ith+20mA	--	1.1	1.5	V
Peak Wavelength	λ	If=Ith+20mA	1480	1490	1500	nm
Spectrum Width (-20dB)	Δλ	If=Ith+20mA	--	--	1.0	nm
Side Mode Suppression Ratio	SMSR	If=Ith+20mA	30	--	--	dB
Monitor Current	Im	Pf=2.3mW	0.08	--	1	mA
Monitor Dark Current	Id	Vrp=10V	--	--	100	nA
Rise/fail Time	τ_r/τ_f	20%~80%	--	0.1	0.2	ns
Tracking Error (*3)	TE	Tc = -5~ 85°C	-1.5	--	1.5	dB

(*2): Launched into 9/125μm SMF

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

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

Item	Symbol	Test Condition	Min.	Typ.	Max.	Unit
Supply Voltage	Vcc	No load	3.1	3.3	3.6	V
Supply Current	Icc	Vcc	--	46	55	mA
Dark Current	Id	Vapd=0.9*Vbr, 25°C	10	--	150	nA
Operating Wavelength	λc	-	1260	--	1360	nm
Breakdown Voltage	Vbr	25°C, TIA off	37	--	50	V
Sensitivity	Sen	PRBS23, 1.25Gbps, ER=10dB, BER=10E-10	--	--	-33	dBm
Overload	OL		-6	--	--	dBm
Responsivity	Res	@Vpd=3.3V	0.75	--	--	A/W
Optical Return Loss	ORL1310	@1310nm	--	--	-10	dB
	ORL1490	@1490nm	--	--	-10	dB
	ORL1550	@1550nm	--	--	-10	dB
Optical Crosstalk	X-talk	1310nm/1490nm	--	--	-45	dB
Optical Isolation	ISO	λ=1260~1360nm	--	--	-40	dB
		λ=1550~1560nm	--	--	-40	dB
		λ=1640~1660nm	--	--	-40	dB

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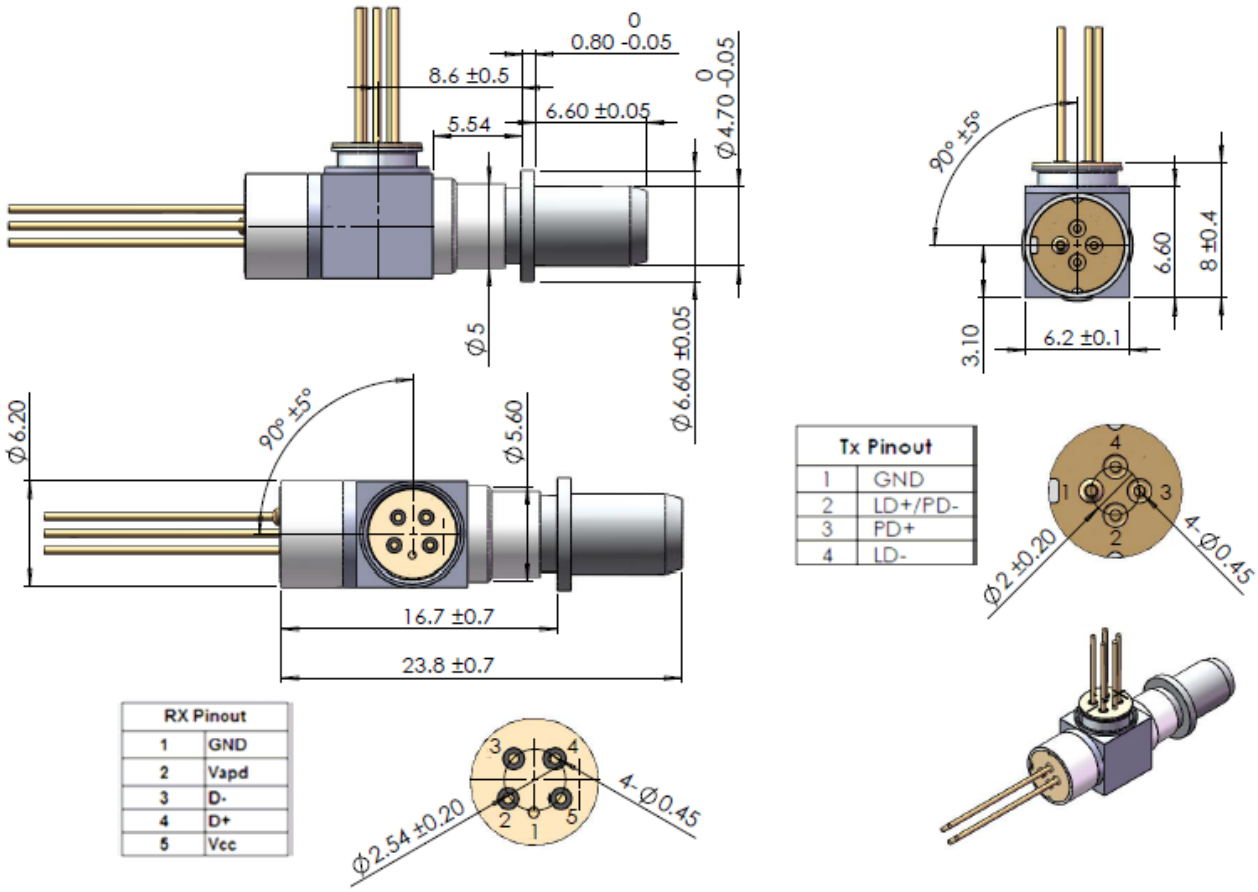
4. Dimension Outline (Unit: mm)



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

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

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5. Other Characteristics (T_C=25°C)

Parameter	Symbol	Min.	Typ.	Max.	Unit	Note
Fiber Mode Field Diameter		8	9	10	μm	
Pull Force on LD Assembly		30	--	--	Kgw	
Pull Force on APD Assembly		15	--	--	Kgw	
Shear Strength on XY Welding		30	--	--	Kgw	
Connector Repeatability (*4)		-1.0	--	+1.0	dB	

(*4): Same plug orientation, same patchcord, 5 times, Launched into 9/125μm SMF, measured with a master plug and an extra receptacle

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