XGS-PON ONU BOSA SC-APC Pigtail

PA3-XGSPON-ONU-BOSA-CT-250

Revision 1

Revision History

Revision nr.	Description	Date
1	First release	December 2018

Features

- Single Fiber 10G/10GPONONU BOSA with SC/APC Pigtail
  - DFB 1270nm laser diode as 9.9853~10.3Gb/s transmitter
  - APD 1577nm with TIA as 9.9853~10.3Gb/s pre-amplifier receiver
- Single mode fiber package with Pigtail SC/APC connector.
- Kink free P-I characteristics with high return loss
- RoHS compliant
- Excellent Reliability
- Operating temperature range: -10℃~ +85℃

Application

- XGSPON Transceiver module

Description

The BOSA is used for 1270nm Tx/1577 (1575~1580nm) Rx 9.953Gbps/ 9.953Gbps Diplexer Optical Module BOSA consists of 1270 nm multi-quantum-well structured DFB laser diode, a 1577 nm digital receiver integrated by a WDM filter. It is suitable for XGSPON ONU transceiver module.

Absolute Maximum Ratings

Parameter	Symbol	Min.	Max.	Unit
Reverse Voltage (LD)	V_{RL}	--	2	V
Forward Current (LD)	I_{FL}	--	150	mA
Reverse Voltage (MPD)	V_{RMP}	--	20	V
Forward Current (MPD)	I_{FMP}	--	2	mA
Reverse Voltage (MPD)	V_{RP}	--	20	V
TIA Supply Voltage	V_{CC}	+3.0	+3.6	V
Damage Input optical power (λ=1550nm), Tc=25ºC	P_{DAM}	-1	-	dBm
Operating Case Temperature	T_C	-10	+85	ºC
Storage Temperature	T_{STG}	-40	+85	ºC
Lead Soldering Temperature (Max 10sec)	T_S	--	260	ºC

Transmitter Optical & Electrical Characteristics

Parameter	Symbol	Min.	Typ.	Max.	Unit	Note
Threshold Current	Ith	--	--	15	mA	CW, Tc=25ºC
		--	--	45		CW, Tc=85ºC
Operating Voltage	Vop	--	--	1.7	V	CW, I=Ith+20mA
Slope efficiency	SE	0.125	--	--	mW/mA	CW, Tc=25ºC, I=Ith+20mA
Rise/Fall Time	Tr/Tf	--	--	50	ps	Ib=Ith, 20%~80%, Filter off
Optical Operating Power	Po	2.5	--	-	mW	CW, Tc=25ºC, I=Ith+20mA
Center Wavelength	λc	1260	1270	1280	nm	CW, Iop=Ith+20mA, Tc=-10ºC~85ºC
Spectrum Width (-20dB)	Δλ	--	--	1	nm	CW, Iop=Ith+20mA
Side-mode Suppression Ratio	SMSR	30	--	--	dB	CW, I=Ith+20mA
Monitor Current	Im	50	--	1000	μA	CW, I=Ith+20mA
Monitor Dark Current	Id	--	--	0.1	μA	V_{RD}=5V
Capacitance (MPD)	CPD	--	10	20	pF	V_{RD}=5V, f=1MHz
Tracking Error	TE	-1.5	--	1.5	dB	Pf at 25°C vs. Pf at 85°C or-10°C by the same Imon at 25°C. Tc=-10ºC~85ºC

Receiver Optical & Electrical Characteristics

Parameter	Symbol	Min.	Typ.	Max.	Unit	Note
Operating Wavelength	λ	1575	1577	1580	nm	--
Power Supply	Vcc	3.0	3.3	3.6	V	--

Supply Current	Icc	--	32	50	mA	
APD Breakdown Voltage	Vbr	20	--	40	V	Id=10uA, Tc = 25ºC
APD Operating Voltage	Vop	-	Vbr-2.5	-	V	Vop=Vbr-2.5V
Sensitivity	Sens	--	--	-28.5	dBm	9.953Gbps, PRBS 2^{31}-1, ER = 9dB,
Saturation power	Psat	-5	--	--	dBm	BER=10^{-3}, Vop=Vbr-2.5V λ=1577nm
Optical Crosstalk	Xtalk	--	--	-40	dB	1270nm/1577nm
Optical Isolation External Source	Iso1	30	---	---	dB	λ= 1310nm/1490nm/1550nm
Optical return loss	ORL_{1270}	10	--	--	dB	λ = 1270nm
	ORL_{1577}	20	--	--	dB	λ = 1577nm
Housing retention force		25	--	--	kg	Including all joint parts to the housing (Note 1)

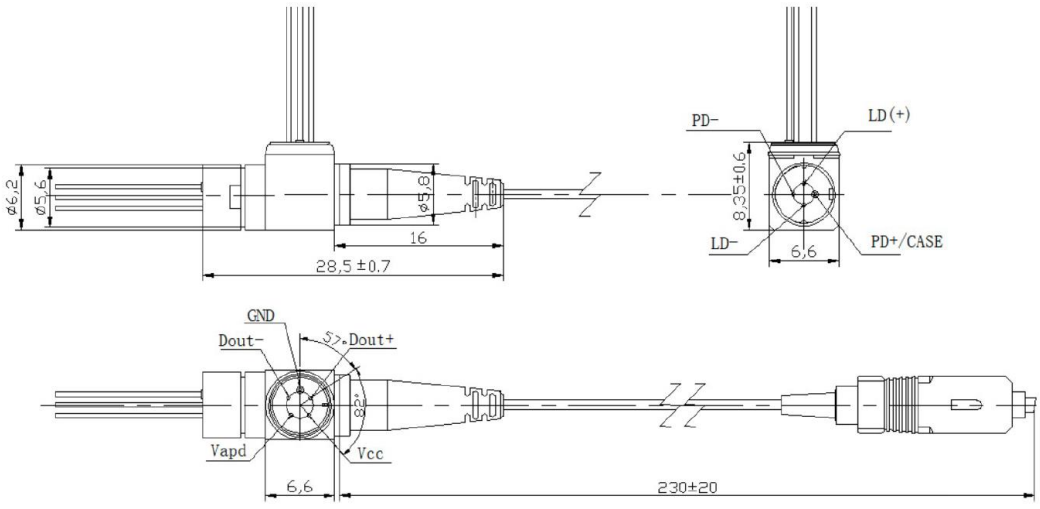
Note 1: The housing retention force of Rx TO-CAN to housing could be kept at larger than 15kg now

Component Information

Component Description	P/N	Vendor
LD TOCAN	ML768LA42T-92A27	MITSUBISHI
APD-TIA TOCAN	PD831AH28-01	MITSUBISHI

Outline Diagram and Pin Assignment

L = 230 ±20 mm



Unit: mm

Notice

PICadvanced reserves the right to make changes to this product in this specification without notice, in order to improve product performance.

Order information

Please contact PICadvanced for ordering and quotation: global@picadvanced.com