GPON Pigtail BOSA

Model: BA-GDP121SP49

1. Features:

- Single fiber bi-di data links application with 1.244Gbps upstream and 2.488Gbps downstream.
- 1310nm burst mode DFB transmitter and Burst On/Off time is less than 30ns;
- 1490nm continuous mode continuous-mode Super-TIA receiver;
- -20 to 85℃ operating case temperature;
- Package with SC/UPC Pigtail.

RoHS Compliance for SOEB3466-FUGF.

2. Applications:

- SM Fiber bidi data links application with 1.244Gbps upstream and 2.488Gbps downstream.

3. Absolute Maximum Ratings(T=25℃):

Parameter	Symbol	Condition	Min.	Max.	Unit
LD Forward current	I_{FLD}	-	-	150	mA
LD Reverse voltage	V_{RLD}	-	-	2	V
MPD Forward current	I_{FMPD}	CW	-	2	mA
MPD Reverse voltage	V_{RMPD}	-	-	15	V
TIA Supply voltage	V_{CC}	-	-	4.5	V
Case operating temperature	T_C	-	-20	+85	℃
Ambient storage temperature	T_{STG}	-	-40	+85	℃
Operating humidity	RH	-	5	85	%
Lead soldering temperature	V_{TEC}	-	-	260/10	℃/S
ESDThreshold	-	-	-	500	V

4. Recommended Operating Conditions:

Parameter	Symbol	Condition	Min.	Typ.	Max.	Unit
Power supply voltage	V_{CC}	3.3V±5%	3.13	3.3	3.47	V
Data rate upstream	-	-	-	1.244	-	Gbit/s
Data rate downstream	-	-	-	2.488	-	Gbit/s

5. Electro-Optical Characteristics(T=25℃,unless noted otherwise):

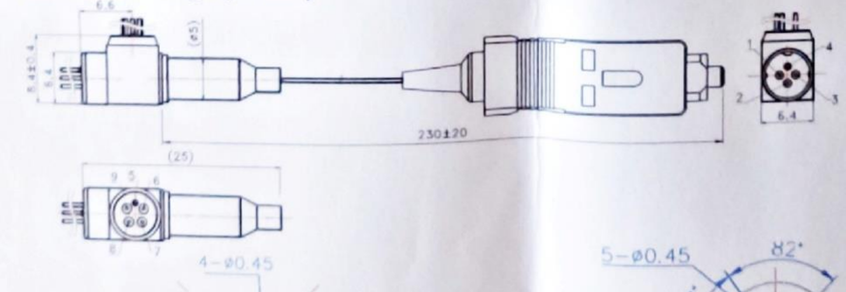
Parameter	Symbol	Condition	Min.	Typ.	Max.	Unit
Transmitter						
Threshold current	I_{TH}	CW, T_C= 25℃	-	11	15	mA
		CW, T_C=-20℃~85℃	-	-	50	
Fiber output power	P_F	CW,T_C=25℃,I_{OP}=I_{TH}+20mA	1.4	-	3.5	mW
		CW,T_C=85℃,I_{OP}=I_{TH}+20mA	1.0	-	-	
Slope efficiency drop	ΔSE	(SE(25℃)-SE(85℃))/SE(25℃)	20	-	45	%
Forward voltage	V_F	CW,T_C=25℃,I_{OP}=I_{TH}+20mA	-	1.1	1.5	V
Rise/Fall time	T_R /T_F	20%~80%	-	-	0.2	ns
Peak wavelength	λ	T_C=-40~+85℃	1300	1310	1320	nm

-20dB Spectrum width	Δλ	CW, I=Ith+20mA	-	-	1	nm
SMSR	SMSR	CW, I=Ith+20mA	30	-	-	dB
Monitor current	I_M	CW, I=Ith+20mA	100	-	1000	μA
MPD Capacitance	C_{PD}	V_{RMP}=10V, f=1MHz	-	10	-	pF
CW Tracking error	TE	TE=10*log(Pf(TC)/Pf(25℃))	-1.5	-	+1.5	dB
Receiver (1480~1500nm)						
Supply voltage	V_{CC}	-	3.0	3.3	3.6	V
Supply current	I_{CC}	No Load	15	-	50	mA
Optical wavelength	λ	-	1480	1490	1500	nm
Sensitivity	Sen.	2.488Gbps, PRBS2^{23}-1, BER=10^{-10}, ER=10dB	-	-	-28.5	dBm
Saturation power	P_{SAT}		-3	-	-	dBm
Low frequency cut	LF	-	30	50	110	KHz
Output impedance	Ro	Single output	25	40	60	Ω
1490nm Optical	ORL_{1490}	λ=1490nm	20	-	-	dB
1310nm Optical	ORL_{1310}	λ=1310nm	12	-	-	dB
1550nm Optical	ORL_{1550}	λ=1550nm	20	-	-	dB
Optical isolation from external source	ISO1	λ=1441~1450nm	25	-	-	dB
		λ=1530~1539nm				
	ISO2	λ=1260~1441nm	35	-	-	dB
		λ=1539~1625nm				
Optical crosstalk	CT	1310nm/1490nm	-	-	-45	dB
Others						
Housing retention force	-	Including all joint parts to the housing (Note1)	25	-	-	kg
Fiber bend radius	-	Note 2	-	-	30	mm
Fiber length	-	-	210	230	250	mm

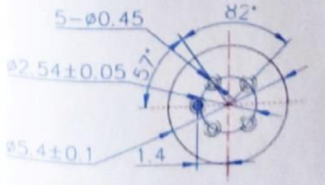
Note 1: The housing retention force of Rx TO-CAN to housing could be kept at larger than 15kg now.

Note 2: The pigtail fiber is recommended to be Corning SMF-28e.

6. Outline Drawings (in mm):



LD Bottom View



PIN-TIA Bottom View

LD PIN	Description	PIN-TIA PIN	Description
1	Laser Anode and MPD Cathode	1	GND
2	MPD Anode	2	OUT+
3	Laser Cathode	3	Vcc
4	GND	4	Isource
		5	OUT-

7. Ordering information:BA-GDP-

XX	-X	X	X	-XX	X	XX	XX
BOSA	Name	LD Type	PD Type	Data Rate	Wavelength	Connector	PIN Array
BA	G: GPON	D: DFB	P: PIN-TIA	12: 1.25/2.5G	1:1310T/1490R	SC: SC/APC	49

Precaution:

(1) The modules should be handled in the same manner as ordinary semiconductor device to prevent the electro-static damages. For safety keeping and carrying, the modules should be packaged with ESD proof material. To assemble the modules on PCB, the workbench, the soldering iron and the human body should be grounded.

(2) Please pay special attention to the atmosphere condition because the dew on the module may cause some electrical damages.

(3) Under such a strong vibration environment as in automobile, the performance and reliability are not guaranteed.