

T CWDM/R1550 Analog Pigtail BOSA

FB-x56G3AN2-00

1. Description:

The FB-x56G3AN2-MU Bi-Directional modules have been designed specifically for full-duplex communication over a single fiber. The devices are particularly suited for ONU application, With CWDM transmit (from 1270nm to 1610nm) and 1550nm receive application. The modules are designed to be compliant with FSAN PON application.

2. Features:

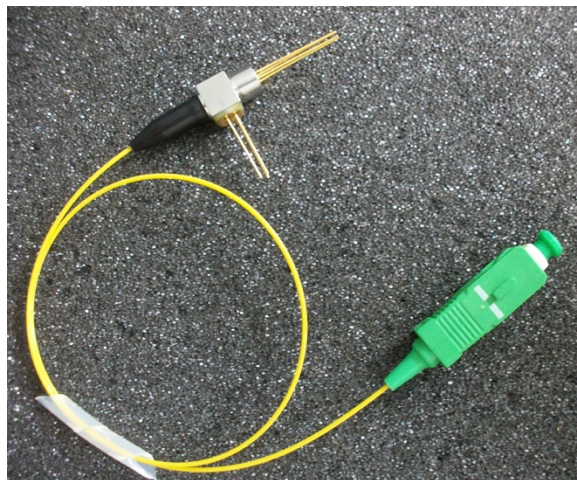
- AOI CWDM Laser Diode with Multi-Quantum Well structure, suitable for Burst-Mode transmission.
- High linearity Laser Diode
- Built-in Optical Isolator
- 1550nm High linearity PIN Photodiode.
- Operation in wide temperature range
- Cost-effective Uncooled Laser Technology.
- SC/APC Connector

3. Application:

- 1.25Gbps upstream and analog downstream reception.
- RFOG

4. Absolute Maximum Ratings

Parameter	Symbol	Min	Max	Unit	Condition
Module					
Operating Case Temperature	Top	-40	+85	°C	
Storage Temperature	Tstg	-40	+85	°C	
Solderability	Stemp	--	350°C(<5S)	°C,S	ANSJ/J-ATD-002
			260°C(<10S)	°C,S	
ESD susceptibility	ESD	--	300	V	
Laser Diode					
Forward Current	If	--	120	mA	CW
Forward Voltage	Vf	--	2	V	CW
Monitor PD Forward Current	Imf	--	2	mA	
Monitor PD Reverse Voltage	Vmf	--	10	V	
Fiber tensile load (10 sec. Max.)	--	10	--	N	
Analog PIN					
Reverse Voltage	Vr	--	20	V	
Forward Voltage	Vf	--	0	V	
Saturated Optical Power	Ps	--	6	dBm	Vr=12V,1550nm
Forward Current	If	--	10	mA	
Reverse Current	Ir	--	10	mA	



5. Optical/Electrical Characteristics (T=25°C , unless otherwise stated)

5.1 CWDM DFB Laser Transmitter

Parameter	Symbol	Min	Typ	Max	Unit	Test Conditions
Optical Output Power	P_o	2.0	--	3.5	mW	CW, $I_{op}=I_{th}+30mA$
Threshold Current	I_{th}	--	--	15	mA	T=25 °C
Forward Voltage	V_F	--	1.1	1.6	V	
Operating Current	I_{op}	--	30	40	mA	CW, T=25 °C
Center Wavelength	λ_c	xx-3	xx	xx+3	nm	CW, T=25 °C,1270nm~1610nm
Isolator	Iso	35	--	--	dB	
Side-mode Suppression Ratio	SMSR	35	--	--	dB	CW, $I_{op}=I_{th}+30mA$
Spectral Width (-20 dB)	$\Delta\lambda$	--	--	1	nm	CW, $I_{op}=I_{th}+30mA$
Tracking Error	TE	-1	--	1	dB	APC, -40~85 °C
Monitor Current	I_{mon}	100	--	1000	μA	$V_R=5 V$,
Monitor Dark Current	I_D	--	--	0.1	μA	$V_R=5 V$
PD Capacitance	C_t	--	--	10	PF	$V_{RD}=5V$, $f=1 MHz$
Second-Order Inter-Modulation	IMD2	--	--	-55	dBc	f1=13MHZ,f2=19MHZ, OMI=10%,P=2mW
Third-Order Inter-Modulation	IMD3	--	--	-60	dBc	
Carrier to Noise Ratio	CNR	51	--	--	dB	
Relative Intensity Noise	RIN	--	--	-145	dB/HZ	f=5~300 MHz
Bandpass Flatness	BF	--	--	1	dB	Peak to Valley, 5~300 MHz
Rise/Fall Times	T_r , T_f	--	--	0.1	nS	20% to 80%
Noise Power Ratio	NPR	38	--	--	dB	Over a $\geq 10dB$ dynamic range, SCTE 174 7.1.2,Table 5

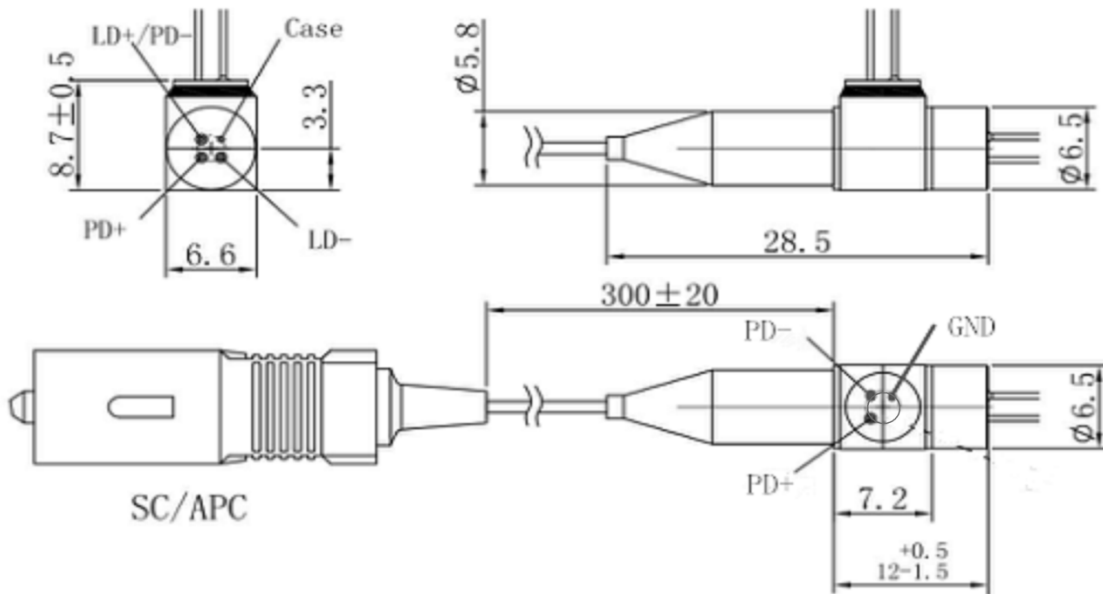
5.2 1550nm analog PIN Receiver

Parameter	Symbol	Min	Typ	Max	Unit	Test ,Condition
Input Wavelength	λ_{pd}	1540	1550	1560	nm	Tc=25°C
Responsivity	R	0.8	--	--	A/W	Tc=-40~+85°C
Capacitance	Cpd	--	--	0.7	pF	Vf=10V,f=1MHZ,Popt=0uW
Bandwidth	BW	3.0	--	--	GHZ	
Dark Current	Id	--	--	5	nA	Vf=10V,Popt=0uW
Second Order Inter-Modulation Distortion	IMD2	--	--	-70	dBc	$\lambda=1550nm(*1),V_{pd}=12V$
Composite Triple Beat	IMD3	--	--	-80		
Optical Return Loss	ORL	40	--	--	dB	$\lambda=1540nm\sim 1560nm$
Polarization Dependent Loss	PDL	--	--	0.5	dB	
Optical Isolation from External Source	ISO1	31	--	--	dB	$\lambda=1260nm\sim 1360nm$
	ISO2	31				$\lambda=1480nm\sim 1500nm$
	ISO3	31				$\lambda=1575nm\sim 1580nm$
Optical Crosstalk from Internal LASER	Xopt	---	--	-30	dB	(*2)

Note: 1* Fiber-Grid's test scenario: Two tone two laser test (f1=373.25MHZ, f2=451.25MHZ), OMI=40%, 0.5mW Per Laser

Note: 2* $X_{opt}=10 \times \log \left\{ \frac{I_{xopt}}{R} / P_f \right\}$,Ixopt is photo current at Pf=3dBm.

6. Dimensions and Pin Type



7. Contact us

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