1270nm Semiconductor Optical Amplifier

1. Description:

The Semiconductor Optical Amplifier (SOA) product series, is primarily used for optical signal amplification and can significantly increase the output optical power. The products feature high gain, low power consumption, and polarization maintenance, among other characteristics, and are fully processable with domestically controllable technology.

2. Features:

- 40G and 100G C-Band blocking shutter or modulation;
- 14PIN Butterfly package;
- Low Noise Figure & Low polarization dependence;
- SMF-28e fiber with FC/APC connector.

Reliability: Telcordia GR-468. RoHS

3. Applications:

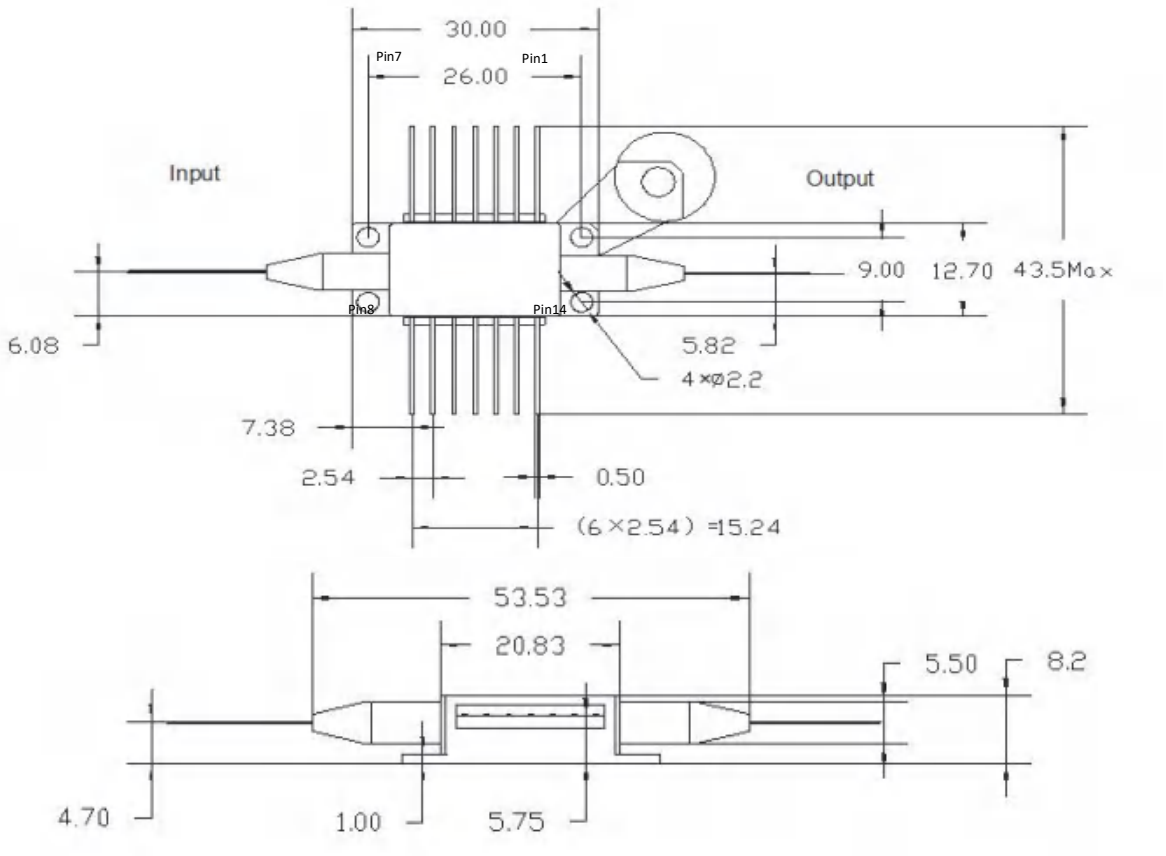
- Loss compensation for fiber optical connection and switch;
- WDM fiber optical networks;
- MOPA (Master Oscillator Power Amplifier) laser.

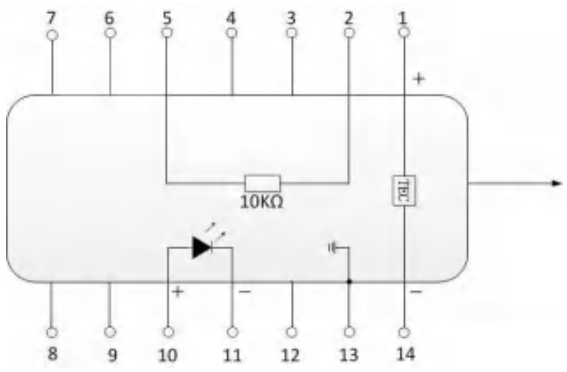
4. Electro-Optical Characteristics(25℃ laser temperature):

Parameter	Symbol	Condition	Min.	Typ.	Max.	Unit
Operating wavelength	λ_{PEAK}	25℃, P_{IN}=0dBm	-	1270	-	nm
ASE Centre wavelength	λ_{ASE}	25℃, I_F=120mA	-	1260	-	nm
-3dB Gain Bandwidth	$\Delta\lambda$	P_{IN}=-20dBm	60	-	-	nm
Saturation Optical Power	P_{MAX}	I_F=120mA, P_{IN}=5dBm@1270nm	10	-	13	dBm
Small Signal Gain	SSG	I_F=120mA, P_{IN}=-25dBm@1270nm	-	18	-	dB
Polarization extinction ratio	PDG	25℃, I_F=120mA	-	0.5	1.0	dB
Operating current	I_F	-	-	120	250	mA
Forward voltage	V_F	-	-	1.2	1.4	V
Noise Figure	NF	25℃, I_F=120mA, @1270nm	-	8	10	dB
TEC Current	I_{TEC}	-	-	-	1.8	A
TEC Voltage	V_{TEC}	-	-	-	3.4	V
Thermistor resistance	R_{therm}	T=25℃	9.5	10	10.5	KΩ
Thermistor current	I_{therm}	-	-	-	5	mA

Total power	P	-	-	-	4	W
Operating case temperature	T_{OP}	I=I_F	-10	-	70	℃
Storage temperature	T_S	-	-40	-	85	℃

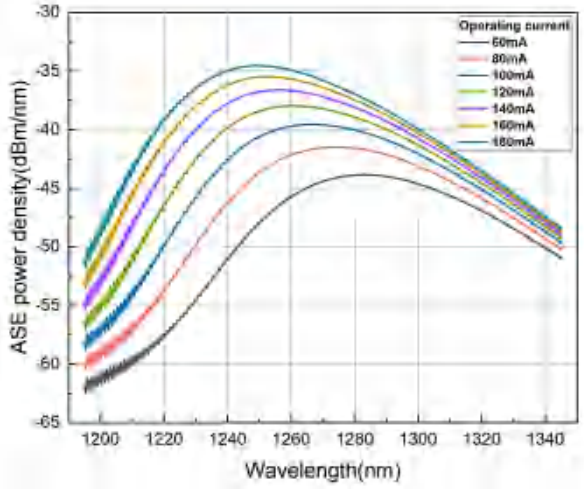
5. Package drawing&PIN-OUT Definition(Unit:mm):



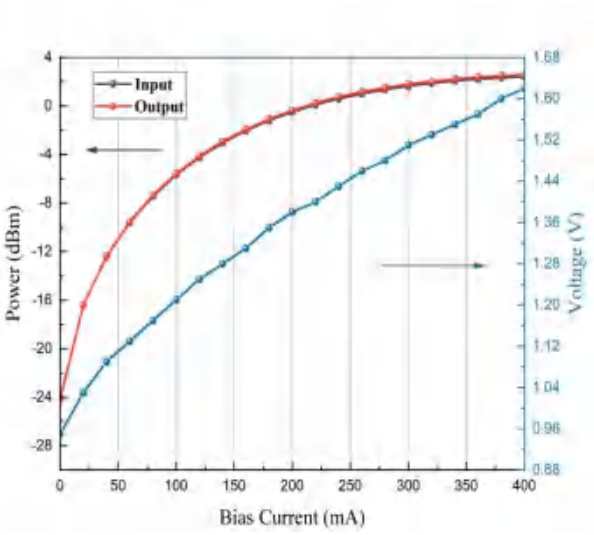


PIN	Description	PIN	Description
1	TEC(+)	14	TEC(–)
2	Thermistor	13	Case Ground
3		12	NC
4		11	Laser Cathode (-)
5	Thermistor	10	Laser Anode (+)
6	NC	9	NC
7	NC	8	NC

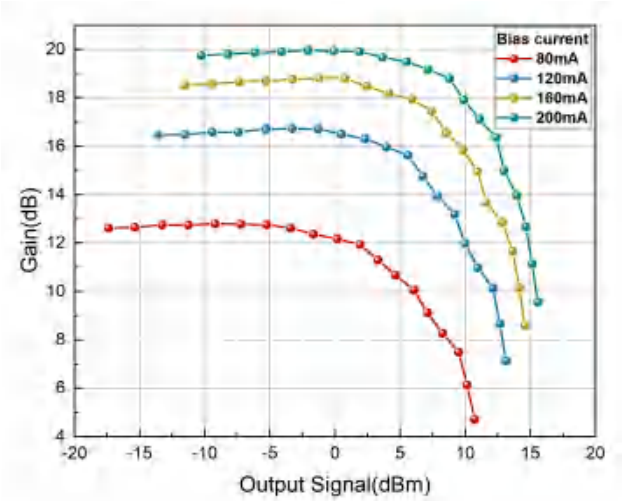
6. Typical Characteristic Curve:



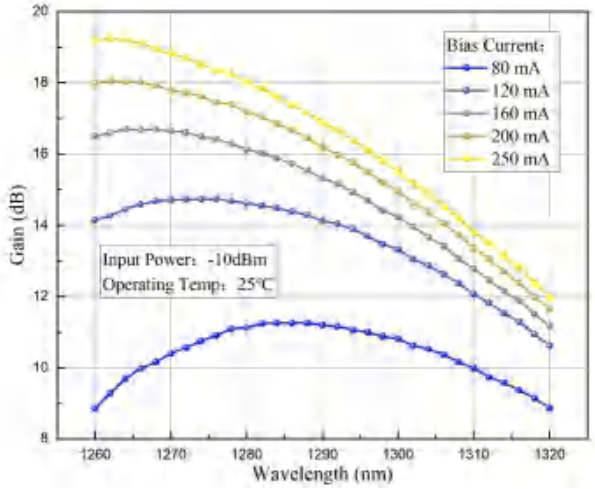
ASE Spectrum



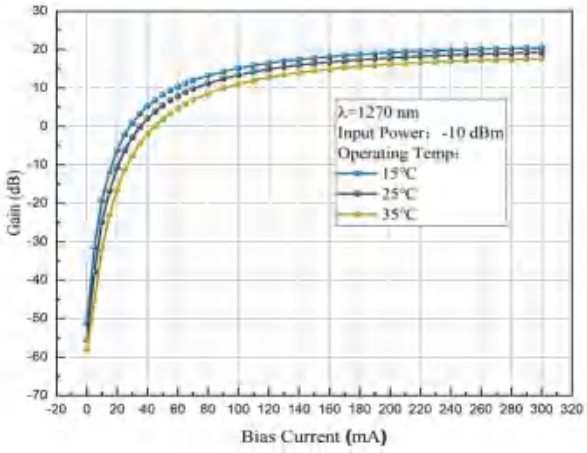
ASE LIV characteristics



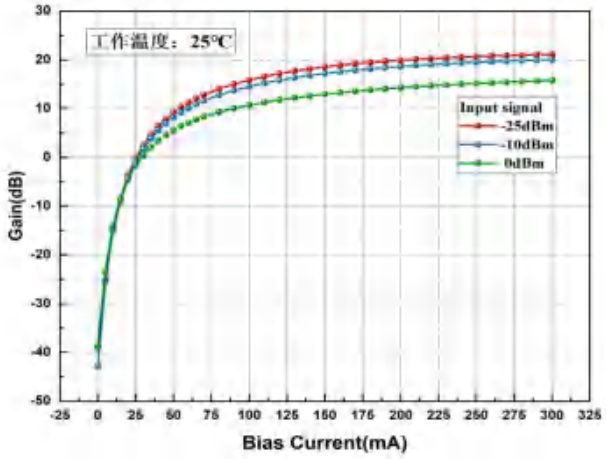
Gain@Output power



Gain Spectrum



Gain@Current(different temperature)



Gain@Current(different input power)