1550nm 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;
- PM1550 fiber with FC/APC connector.

Reliability: Telcordia GR-468. RoHS

3. Applications:

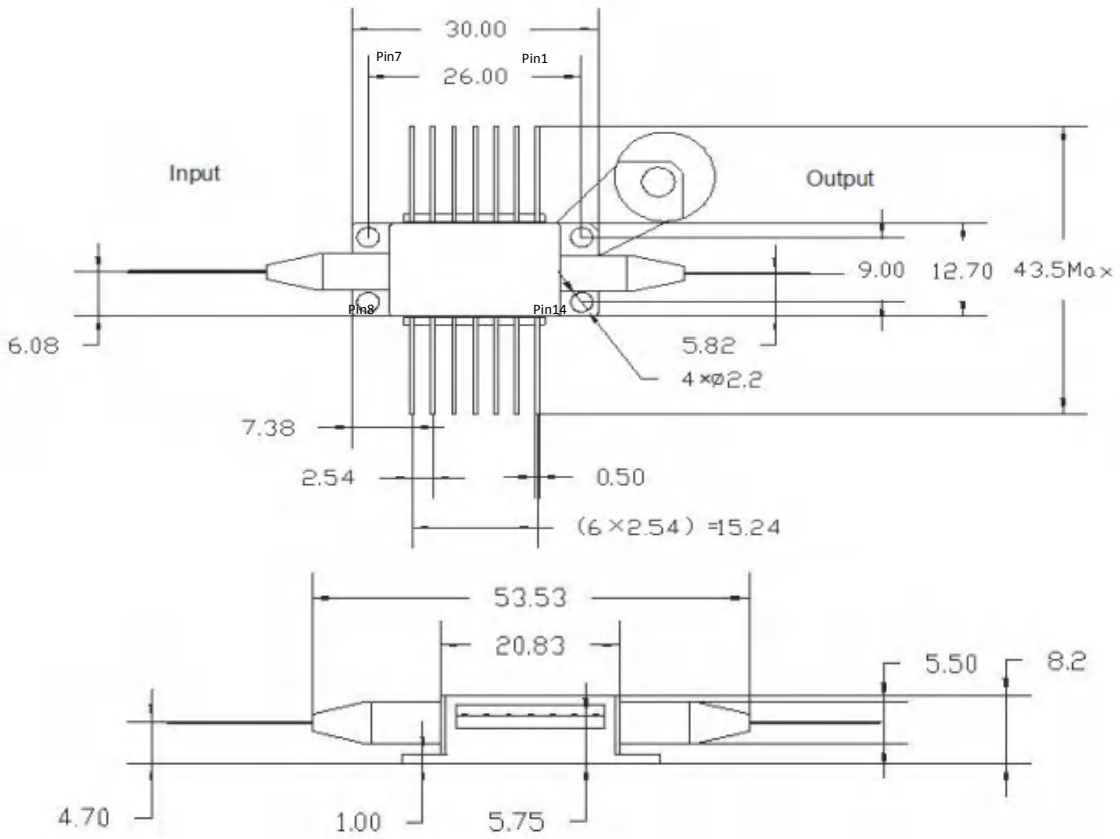
- Loss compensation for fiber optical connection and switch;
- WDM fiber optical networks;
- MOPA (Master Oscillator Power Amplifier) laser.

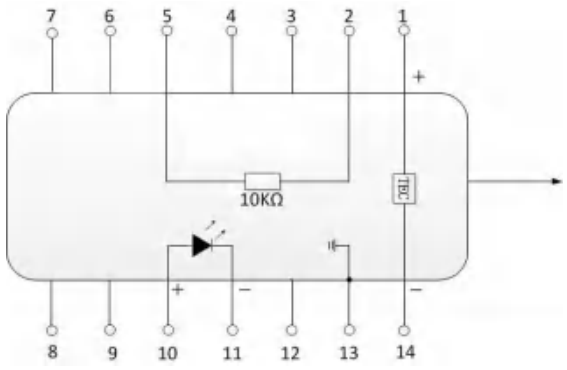
4. Electro-Optical Characteristics(25℃ laser temperature):

Parameter	Symbol	Condition	Min.	Typ.	Max.	Unit
Operating wavelength	λ_{PEAK}	25℃, P_{IN}=0dBm	-	1550	-	nm
ASE Centre wavelength	λ_{ASE}	25℃, I_F=1000mA	-	1490	-	nm
-3dB Gain Bandwidth	$\Delta\lambda$	P_{IN}=-10dBm,I_F=1000mA	-	100	-	nm
Saturation Optical Power	P_{MAX}	I_F=1000mA, P_{IN}=5dBm@1550nm	-	23	-	dBm
Small Signal Gain	SSG	I_F=1000mA, P_{IN}=-25dBm@1550nm	30	35	-	dB
Operating current	I_F	-	-	1000	1200	mA
Forward voltage	V_F	-	-	2.4	2.6	V
Noise Figure	NF	25℃, I_F=1000mA, @1550nm	-	6	8	dB
Shutdown extinction ratio	ER	I_F=1000mA/I_F=0mA, P_{IN}=0dBm	-	35	-	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	℃

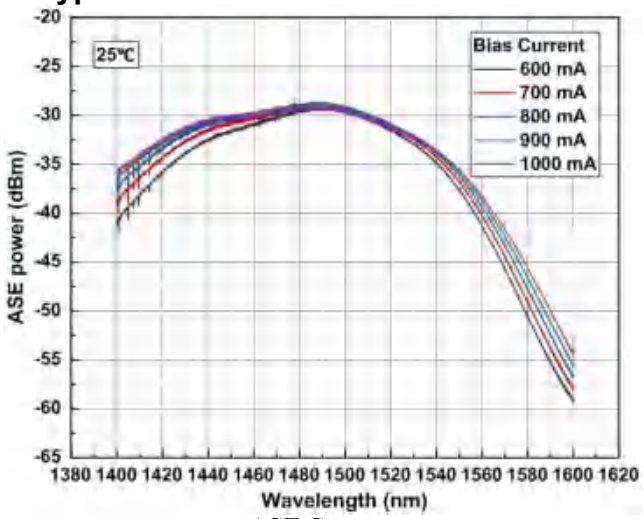
5. Package drawing&PIN-OUT Definition(Unit:mm):



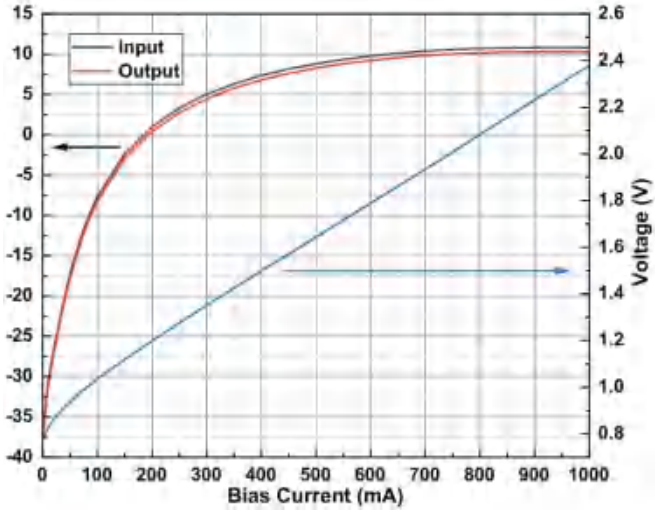


PIN	Description	PIN	Description
1	TEC(+)	14	TEC(–)
2	Thermistor	13	Case Ground
3		12	NC
4		11	Laser Cathode (-)
5	Thermistor	10	Laser Anode (+)
6	NC	9	NC
7	NC	8	NC

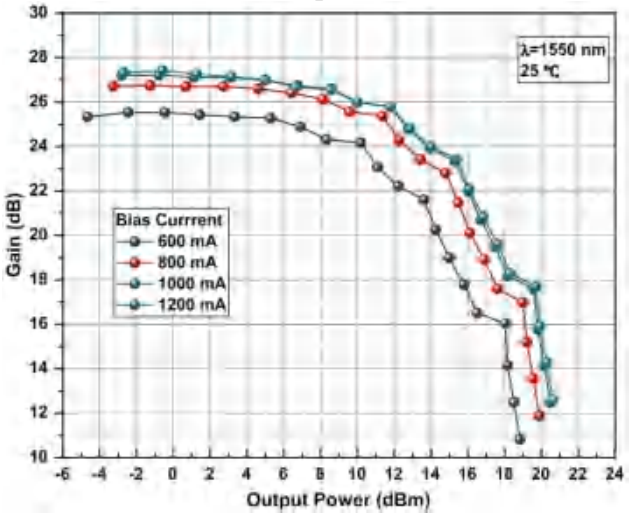
6. Typical Characteristic Curve:



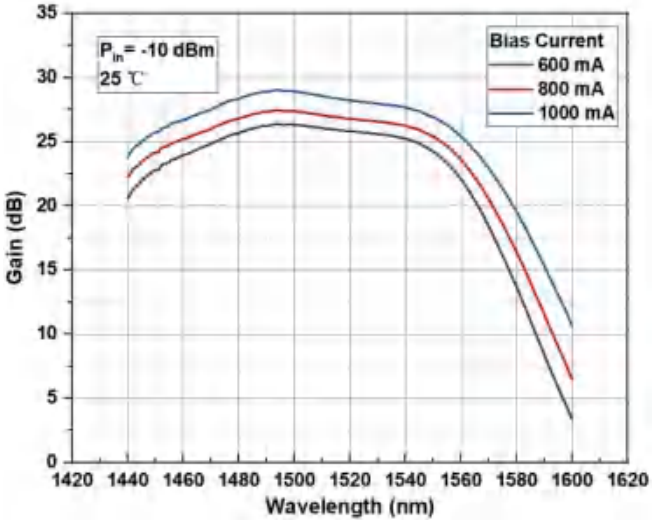
ASE Spectrum



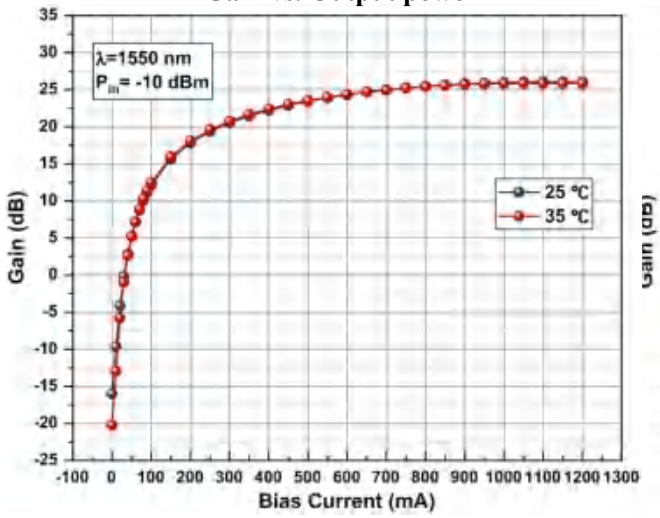
ASE LIV characteristics



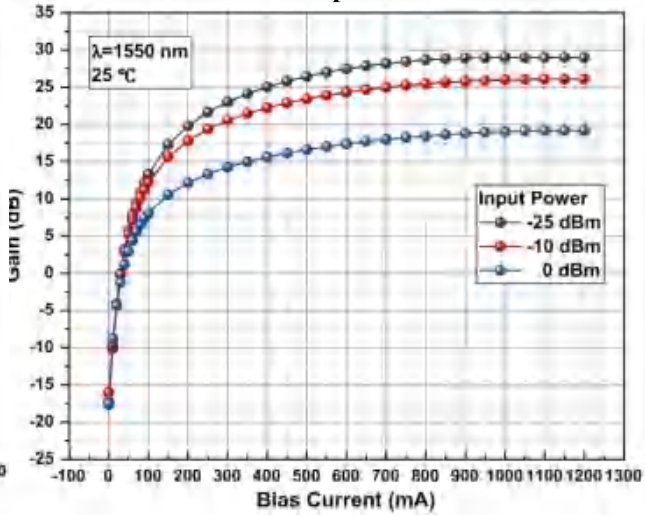
Gain vs. Output power



Gain Spectrum



Gain@different temperature



Gain@different input power