

C-Band Semiconductor Optical Amplifier



SOA1013S
SM Fiber

Description

Thorlabs' SOA1013S is a polarization-insensitive optical amplifier with advanced epitaxial wafer growth and opto-electronic packaging techniques that enable a high output saturation power, low noise figure, and large gain across a broad spectral bandwidth.

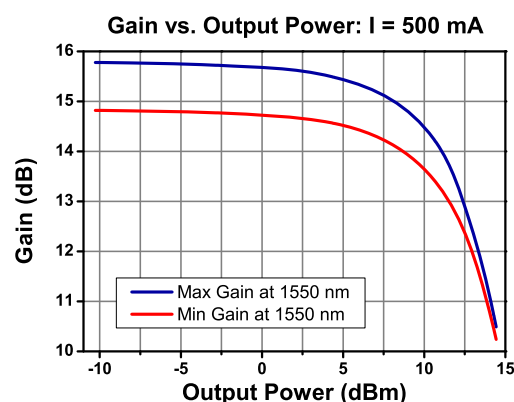
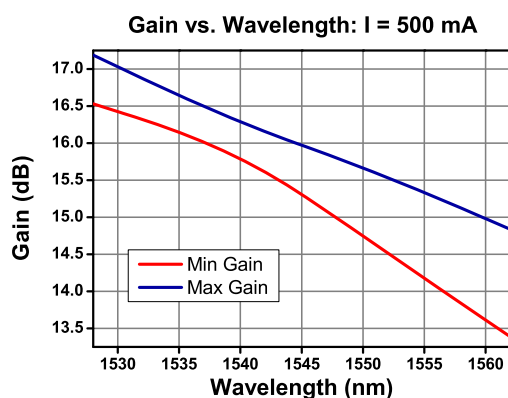
Specifications

$T_{CHIP} = 25\text{ }^{\circ}\text{C}$, $T_{CASE} = 0 - 70\text{ }^{\circ}\text{C}$

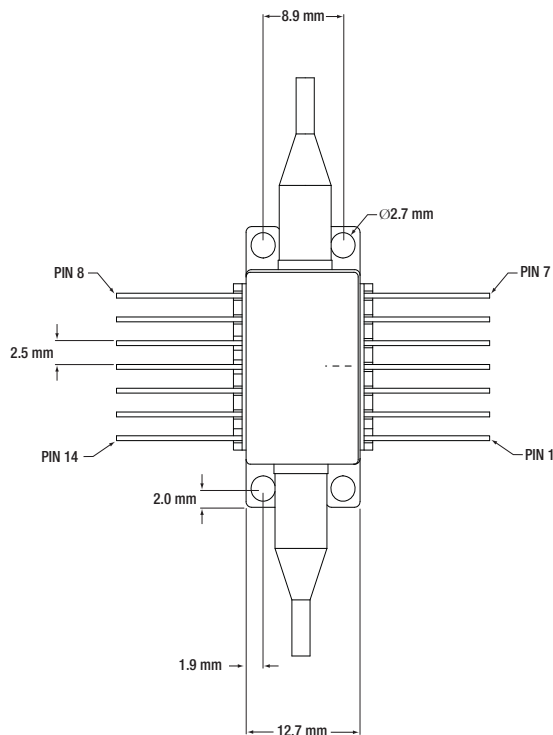


SOA1013S				
	Symbol	Min	Typical	Max
Operating Current	I_{OP}	-	500 mA	750 mA
Operating Wavelength Range (C-Band)	λ	1528 nm	-	1562 nm
Center Wavelength	λ_C		1500 nm	
Saturation Output Power @ -3 dB	P_{SAT}	12 dBm	14 dBm	-
Small Signal Gain over C-Band λ @ $P_{IN} = -20\text{ dBm}$	G	10 dB	13 dB	-
Gain Flatness over C-Band λ @ $P_{IN} = -20\text{ dBm}$	ΔG	-	5 dB	7 dB
Gain Ripple (p-p) @ I_{OP} , λ_C	δG	-	0.1 dB	0.5 dB
Polarization Dependent Gain	PDG	-	1.0 dB	1.8 dB
Noise Figure	NF	-	8 dB	9.5 dB
Forward Voltage	V_F	-	1.6 V	1.8 V
TEC Operation (Typical / Max @ $T_{CASE} = 25\text{ }^{\circ}\text{C} / 70\text{ }^{\circ}\text{C}$)				
-TEC Current	I_{TEC}	-	0.23 A	1.5 A
-TEC Voltage	V_{TEC}	-	0.5 V	4.0 V
-Thermistor Resistance	R_{TH}	-	10 k Ω	-

Performance Plots



Drawings



T. Case

1. TEC +	8. NC
2. Thermistor	9. NC
3. NC	10. Dev Anode
4. NC	11. Dev Cathode
5. Thermistor	12. NC
6. NC	13. Case
7. NC	14. TEC -

