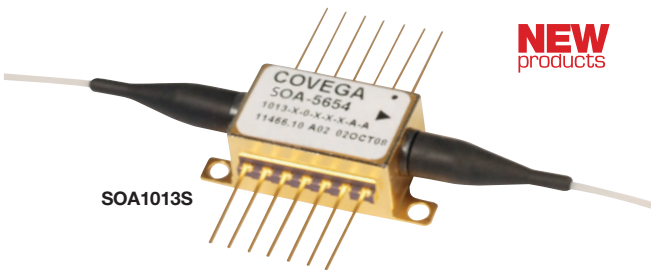


1550 nm (C-Band) Polarization-Independent SOAs



NEW
products

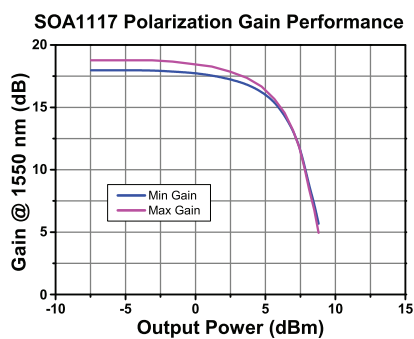
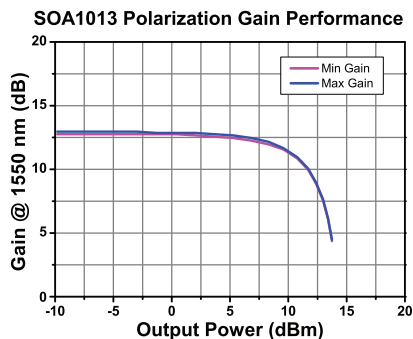
SOA – Polarization-Independent Optical Amplifier

- Linear/Nonlinear Operation
- High Saturation Power (up to 14 dBm)
- High Gain Levels (up to 20 dB)
- SM or PM Fiber Pigtailed Butterfly Package
- 1.5 m Fiber Pigtailed FC/APC Connectors
- Typical Applications Include Inline Amplifier and Detector Pre-Amp

For applications in the 1550 nm, where the input polarization is unknown or fluctuates, Thorlabs has two varieties of C-band polarization-independent optical amplifiers – the linear SOA1013S and the nonlinear SOA1117S/P. Our advanced epitaxial wafer growth and opto-electronic packaging techniques enable a high output saturation power, low noise figure, and large gain across a broad spectral bandwidth.

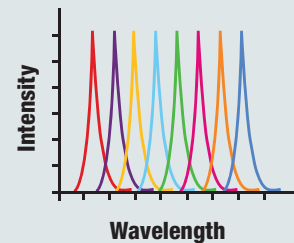
Semiconductor Optical Amplifiers (SOAs) are devices that directly amplify optical signals using the properties of semiconductors. Thorlabs' SOAs are designed as single pass, traveling-wave optical amplifiers that perform well with both monochromatic and polychromatic signals. The SOA structure consists of a highly efficient InP/InGaAsP Multiple Quantum Well (MQW) layer structure grown on an InP wafer and processed into a proven reliable ridge waveguide. The device is packaged in an industry-standard 14-pin butterfly package with either SMF or PMF pigtailed that are terminated with FC/APC connectors. The SOAs can be customized upon request to have isolators on the input, output, or both. Please contact Tech Support for help customizing a device for your application.

Observed Gain Performance for Linear and Nonlinear SOAs



WDM Sources

See Pages 1064-1073



ITEM#	SOA1013S			SOA1117S / P		
Parameter	Min	Typical	Max	Min	Typical	Max
Operating Current	–	500 mA	600 mA	–	500 mA	600 mA
Center Wavelength	1520 nm	1550 nm	1570 nm	1520 nm	1550 nm	1570 nm
Optical 3 dB Bandwidth	70 nm	74 nm	–	50 nm	60 nm	–
Saturation Output Power (@ -3 dB)	12 dBm	14 dBm	–	6 dBm	9 dBm	–
Small Signal Gain Across BW (@ Pin = -20 dBm)	10 dB	13 dB	–	15 dB	20 dB	–
Gain Flatness @ IOP	–	5 dB	7 dB	–	–	–
Gain Ripple (p-p) @ IOP	–	0.1 dB	0.5 dB	–	0.2 dB	0.5 dB
Noise Figure	–	8.0	9.5	–	9.0	11.0
Forward Voltage	–	1.6 V	1.8 V	–	1.4 V	2.0 V
TEC Current*	–	0.23 A	1.5 A	–	0.2 A	1.2 A
TEC Voltage*	–	0.5 V	3.5 V	–	0.4 V	3.5 V
Thermistor Resistance*	–	10 kΩ	–	–	10 kΩ	–

* TEC Operation (Typ/Max @ TCASE = 25/70 °C)

Mechanical
Drawings Available on the
WEB

ITEM#	\$	£	€	RMB	DESCRIPTION
SOA1013S	\$ 1,685.00	£ 1,168.00	€ 1,496.00	¥ 14,229.00	1550 nm Linear SOA, 70 nm BW, Butterfly Pkg, SMF, FC/APC
SOA1117S	\$ 1,585.00	£ 1,099.00	€ 1,407.00	¥ 13,384.00	1550 nm Nonlinear SOA, 50 nm BW, Butterfly Pkg, SMF, FC/APC
SOA1117P	\$ 1,850.00	£ 1,282.50	€ 1,642.50	¥ 15,622.00	1550 nm Nonlinear SOA, 50 nm BW, Butterfly Pkg, PMF, FC/APC