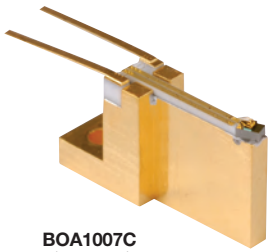
1550 nm (C-Band) Polarization-Dependent BOAs



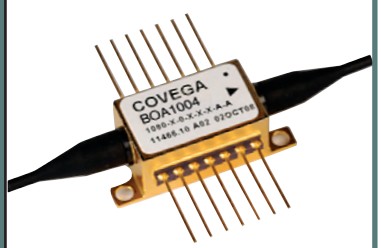
BOA1007C
Chip on Submount

Thorlabs has six varieties of 1550 nm Booster Optical Amplifiers (BOAs), a polarization-dependent variant of Semiconductor Optical Amplifiers (SOAs). 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. The BOA devices are available as chip on submount (CoS), as chip on heatsink (CoH), or in butterfly packages. Our BOA devices are designed and tested to ensure the highest available gain and saturated output power on the market. The butterfly devices come in an industry-standard 14-pin package with single mode fiber or polarization-maintaining pigtails. Devices can be customized to include input or output isolators.

Semiconductor Optical Amplifiers are devices that directly amplify optical signals using the properties of semiconductors. The SOAs structure consists of a highly efficient InP/InGaAsP Multiple Quantum Well (MQW) layer structure grown on an InP wafer and processed into a waveguide. Thorlabs' Semiconductor Optical Amplifiers are designed as single-pass, traveling-wave optical amplifiers that perform well with both monochromatic and polychromatic signals. Please contact Tech Support for help customizing a BOA.

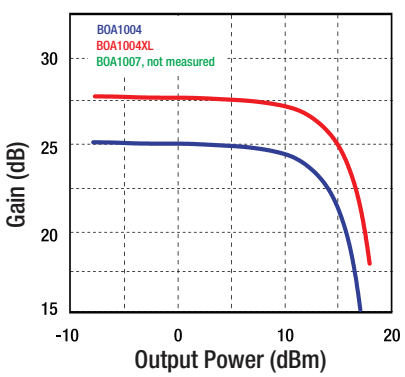
ITEM#	BOA1004S / BOA1004P			BOA1004SXL / BOA1004PXL			BOA1007C / BOA1007H		
Parameter	**Min**	**Typical**	**Max**	**Min**	**Typical**	**Max**	**Min**	**Typical**	**Max**
Operating Current	–	600 mA	750 mA	–	600 mA	750 mA	–	500 mA	–
Center Wavelength	1530 nm	1550 nm	1570 nm	1530 nm	1550 nm	1570 nm	1530 nm	1550 nm	1570 nm
Optical 3 dB Bandwidth	90 nm	100 nm	–	100 nm	–	–	90 nm	100 nm	–
Saturation Output Power (@ -3 dB)	13 dBm	15 dBm	–	15 dBm	–	–	N/A*	N/A*	N/A*
Small Signal Gain Across BW (@ Pin = -20 dBm)	25 dB	28 dB	–	28 dB	–	–	N/A*	N/A*	N/A*
Gain Ripple (p-p) @ IOP	–	0.1 dB	0.2 dB	–	0.1 dB	0.2 dB	–	0.05 dB	0.2 dB
Noise Figure	–	7.5 dB	9.0 dB	–	–	7.0 dB	N/A*	N/A*	N/A*
Forward Voltage	–	1.4 V	1.6 V	–	1.4 V	1.6 V	–	1.3 V	1.6 V
TEC Current**	–	0.12 A	1.5 A	–	0.12 A	1.5 A	–	–	–
TEC Voltage**	–	0.25 V	4.0 V	–	0.25 V	4.0 V	–	–	–
Thermistor Resistance**	–	10 kΩ	–	–	10 kΩ	–	–	–	–
Chip Length	–	–	–	–	–	–	–	1.5 mm	–
Lateral Beam Angle	–	–	–	–	–	–	–	19.5 °	–
Beam Divergence Angle (FWHM), Transverse	–	–	–	–	–	–	32 °	36 °	40 °
Beam Divergence Angle (FWHM), Lateral	–	–	–	–	–	–	10 °	14 °	18 °

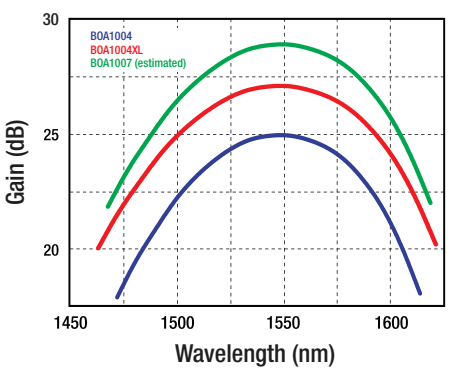
* Not Applicable
** TEC Operation (Typ/Max @ TCASE = 25/70 °C)



BOA1004SXL

Observed Gain and P_{sat} Performance





NEW products

ITEM#	$	£	€	RMB	DESCRIPTION
BOA1004S	$ 1,750.00	£ 1,213.00	€ 1.553,50	¥ 14,778.00	1550 nm BOA, 90 nm BW, Butterfly Pkg, SMF, FC/APC
BOA1004SXL	$ 3,500.00	£ 2,426.50	€ 3.107,50	¥ 29,555.00	1550 nm BOA, 100 nm BW, Butterfly Pkg, PMF, FC/APC
BOA1004P	$ 2,015.00	£ 1,397.00	€ 1.789,00	¥ 17,015.00	1550 nm BOA, 90 nm BW, Butterfly Pkg, SMF, FC/APC
BOA1004PXL	$ 4,030.00	£ 2,793.50	€ 3.578,00	¥ 34,030.00	1550 nm BOA, 100 nm BW, Butterfly Pkg, PMF, FC/APC
BOA1007C	$ 850.00	£ 589.30	€ 754,70	¥ 7,177.50	1550 nm BOA, 90 nm BW, Chip on Submount
BOA1007H	$ 925.00	£ 641.30	€ 821,30	¥ 7,810.80	1550 nm BOA, 90 nm BW, Chip on Heatsink