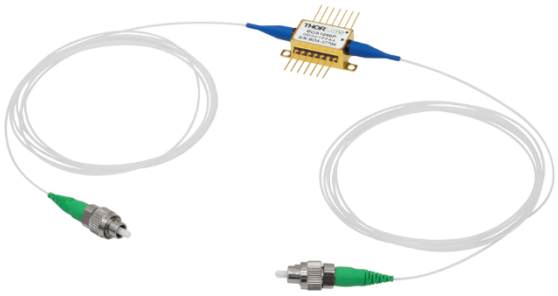
1050 nm Booster Optical Amplifier



BOA1050P

PM Fiber

Description

Thorlabs' BOA1050P High-Power Booster Optical Amplifier (BOA) is designed to amplify polarized optical signals near 1050 nm. It is an ideal gain medium for implementing wide bandwidth tunable lasers. The semiconductor device is housed in a standard 14-pin butterfly package with FC/APC connectors. Polarization maintaining PM980-XP fiber is used on both input and output sides. An integrated TEC and thermistor provide temperature control to stabilize the gain and optical spectrum.

Specifications

These operating specifications are a consistent set of values, which will yield the specified performance.

CW; T_{CHIP} = 25 °C; T_{CASE} = 0 - 70 °C

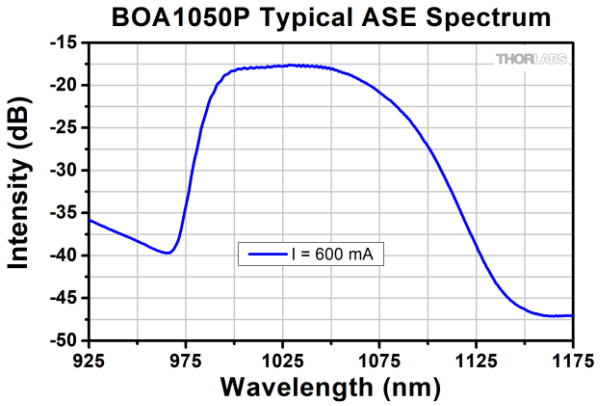
BOA1050P Specifications				
	Symbol	**Min**	**Typical**	**Max**
Center Wavelength[a]	λ_C	1020 nm	1040 nm	1060 nm
Operating Current	I_{OP}	-	-	600 mA
Optical 3 dB Bandwidth	BW	75 nm	85 nm	-
Small Signal Gain @ P_{IN} = -20 dBm[b,c]	G	24 dB	28 dB	-
Saturation Output Power (@ -3 dB)[b,c]	P_{SAT}	14 dBm	17 dBm	-
Gain Ripple (rms)[b]	δG	-	-	0.5 dB
Noise Figure[b,c]	NF	-	7.5 dB	10 dB
Forward Voltage[b]	V_F	-	1.7 V	3.0 V
TEC Operation (Typical/Max @ T_{CASE} = 25 °C / 70 °C)				
TEC Current	I_{TEC}	-	0.3 A	1.5 A
TEC Voltage	V_{TEC}	-	0.4 V	4.0 V
Thermistor Resistance	R_{TH}	-	10 kΩ	-

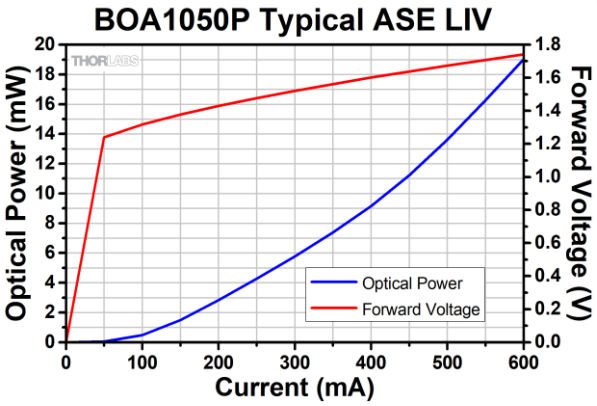
a. This is the center wavelength of the amplified spontaneous emission (ASE), and is not necessarily the operating wavelength. To yield the specified saturated output power (P_{SAT}), a wavelength around 1050 nm was selected as operating wavelength.
b. At I_{OP}
c. At 1054.7 nm

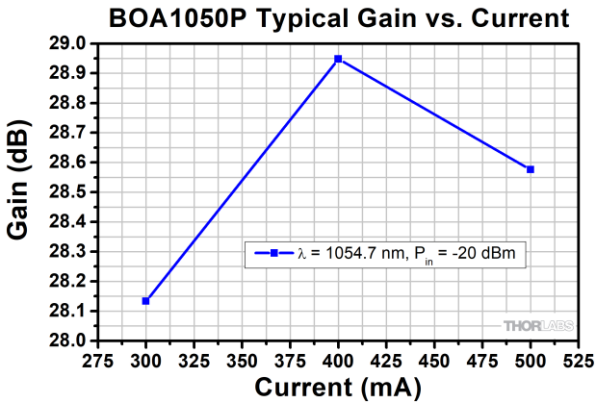
BOA1050P Absolute Maximum Ratings[a]			
	Symbol	**Min**	**Max**
Operating Current	I_{OP}	-	650 mA
Optical Output Power, CW	P_{Out}	-	100 mW
Chip Temperature (TEC)	T_{Chip}	10 °C	30 °C
Case Temperature	T_{Case}	0 °C	70 °C

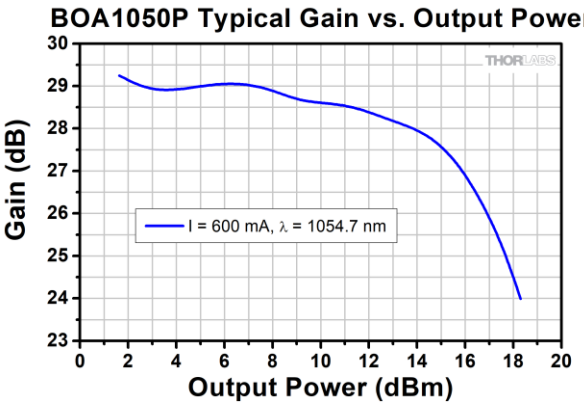
a. Absolute maximum rating specifications should never be exceeded. Operating at or beyond these conditions can permanently damage the amplifier.

Performance Plots

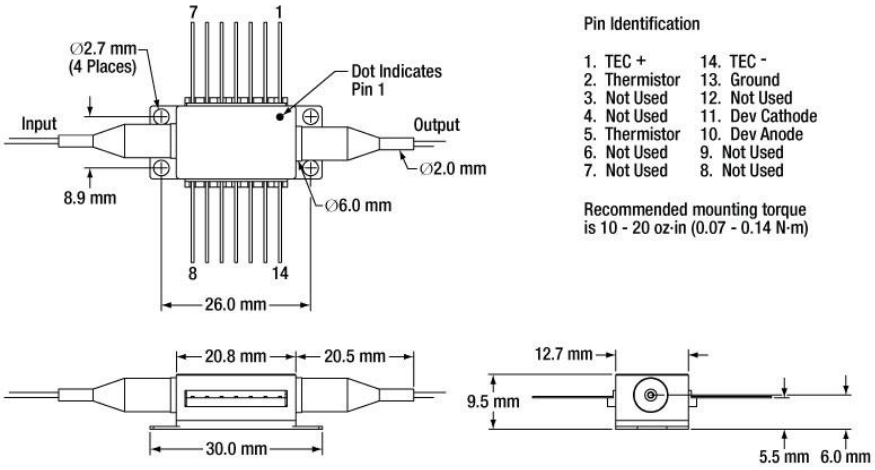








Drawings



Pin Identification

1. TEC +	14. TEC -
2. Thermistor	13. Ground
3. Not Used	12. Not Used
4. Not Used	11. Dev Cathode
5. Thermistor	10. Dev Anode
6. Not Used	9. Not Used
7. Not Used	8. Not Used

Recommended mounting torque
is 10 - 20 oz-in (0.07 - 0.14 N-m)