930 nm Booster Optical Amplifier, SM Fiber

BOA930S

Description

Thorlabs' BOA930S Booster Optical Amplifier (BOA) is designed to amplify polarized optical signals around 930 nm. The semiconductor device is housed in a standard 14-pin butterfly package with FC/APC connectors. Single mode fiber (780HP) is used on both input and output sides. An integrated TEC and thermistor provide temperature control to stabilize the gain and optical spectrum.

Specifications

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

BOA930S Specifications				
	Symbol	**Min**	**Typical**	**Max**
ASE Center Wavelength	λ_C	925 nm	935 nm	945 nm
Operating Current	I_{OP}	-	400 mA	425 mA
Optical 3 dB Bandwidth	BW	30 nm	37 nm	-
Small Signal Gain @ P_{IN} = -20 dBm[a,b]	G	25 dB	30 dB	-
Saturation Output Power (@ -3 dB)[a,b]	P_{SAT}	13 dBm	14 dBm	-
Gain Ripple (RMS)[a]	δG	-	0.04 dB	0.3 dB
Noise Figure[a,b]	NF	-	8.5 dB	10 dB
Forward Voltage[a]	V_F	-	1.7 V	2.4 V
TEC Operation (Typical/Max @ T_{CASE} = 25 °C / 70 °C)				
TEC Current	I_{TEC}	-	0.25 A	1.5 A
TEC Voltage	V_{TEC}	-	0.3 V	4.0 V
Thermistor Resistance	R_{TH}	-	10 kΩ	-

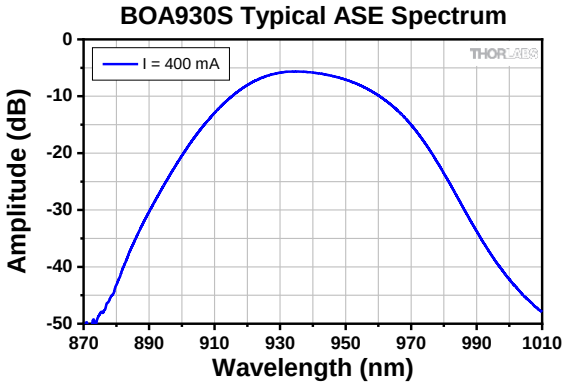
a. At I_{OP}.
b. At 935 nm

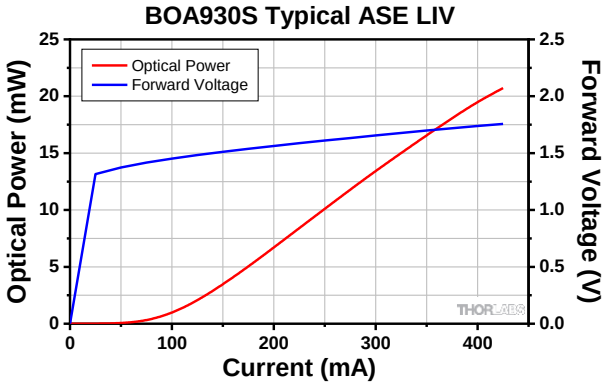
BOA930S Absolute Maximum Ratings[a]			
	Symbol	**Min**	**Max**
Operating Current	I_{OP}	-	425 mA
Optical Output Power, CW	P_{Out}	-	45 mW
Chip Temperature (TEC)	T_{Chip}	10 °C	30 °C
Case Temperature	T_{Case}	0 °C	70 °C

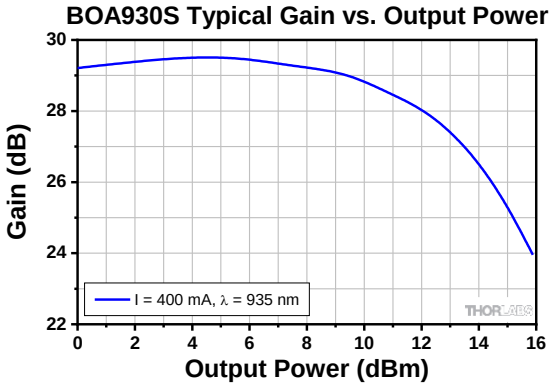
a. Absolute maximum rating specifications should never be exceeded. Operating at or beyond these conditions can permanently damage the amplifier.

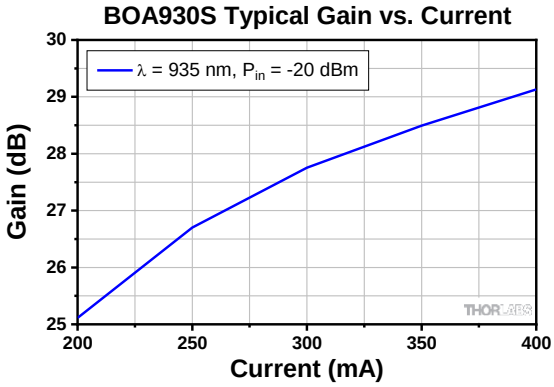
Fiber Specifications	
	Value
Fiber Type	780HP
Core Diameter	4.4 µm
Numeric Aperture	0.13
Fiber Pigtail Length	1.5 m
Connector	FC/APC, 2.0 mm Narrow Key

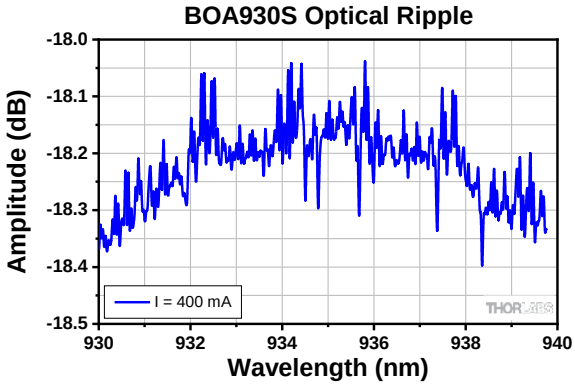
Performance Plots



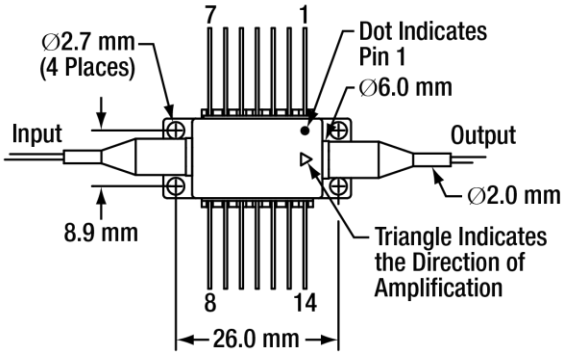








Drawings



Pin Identification

1.	TEC +	14.	TEC -
2.	Thermistor	13.	Ground
3.	Not Used	12.	Not Used
4.	Not Used	11.	Device Cathode
5.	Thermistor	10.	Device 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)