

BOA1137S
SM Fiber

Description

The BOA1137S is a Booster Optical Amplifier (BOA) designed for amplifying polarized optical signals near 1050 nm. It is also an ideal gain medium for implementing wide-bandwidth tunable lasers.

The semiconductor device is contained in a standard 14-pin butterfly package with FC/APC connectors. The BOA1137S uses non-polarization maintaining HI1060 fiber on both input and output sides. An integrated thermoelectric cooler and thermistor enables temperature control to stabilize the gain and optical spectrum.

Specifications

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

BOA1137S				
	Symbol	Min	Typical	Max
Center Wavelength	λ_C	1030 nm	1050 nm	1070 nm
Operating Current	I_{OP}	-	-	300 mA
Small Signal Gain @ Pin= -20 dBm ^{a, b}	G	17 dB	21 dB	-
Optical 3 dB Bandwidth ^a	BW	40 nm	50 nm	-
Saturation Output Power @ -3 dB ^{a, b}	P_{SAT}	6 dBm	9 dBm	-
Gain Ripple (rms) ^a	δG	-	-	0.5 dB
Noise Figure ^{a, b}	NF	-	11 dB	14 dB
Forward Voltage @ I_{OP}	V_F	-	1.8 V	2.5 V
TEC Operation (Typ. / Max @ $T_{CASE} = 25\text{ }^{\circ}\text{C} / 70\text{ }^{\circ}\text{C}$)				
- TEC Current	I_{TEC}	-	0.25 A	1.5 A
- TEC Voltage	V_{TEC}	-	0.35 V	4.0 V
- Thermistor Resistance	R_{TH}	-	10 k Ω	-

^a $I_{op} = 300\text{ mA}$

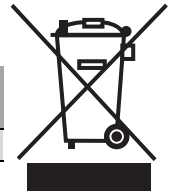
^b $\lambda = 1054.7\text{ nm}$

Note: These Operating Specifications are a consistent set of values, which will yield the specified performance. Please note that exceeding the Absolute Maximum Ratings below may cause device failure.

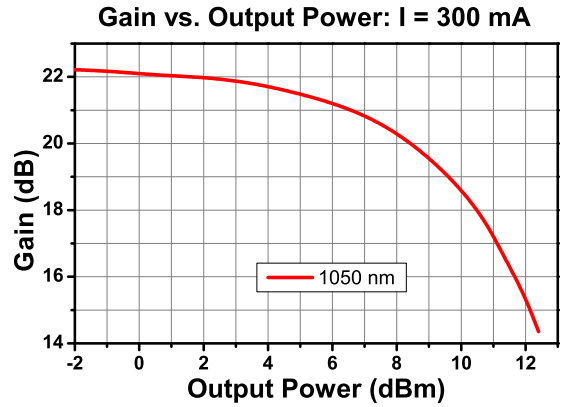
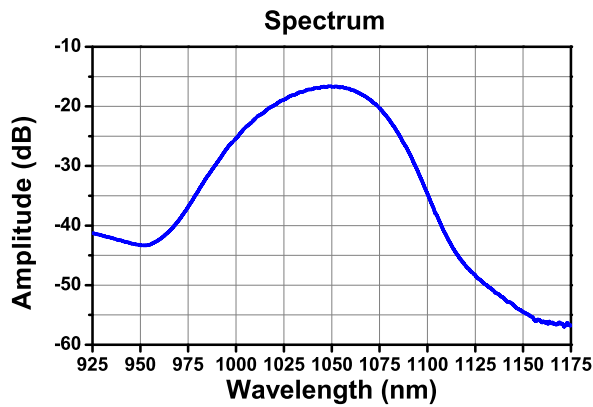
Absolute Maximum Ratings*

BOA1137S			
	Symbol	Min	Max
Operating Current	I_{OP}	-	360 mA
Optical Output Power, CW	P_{Out}	-	15 mW
Chip Temperature (TEC)	T_{Chip}	10 $^{\circ}\text{C}$	30 $^{\circ}\text{C}$
Case Temperature	T_{Case}	0 $^{\circ}\text{C}$	70 $^{\circ}\text{C}$

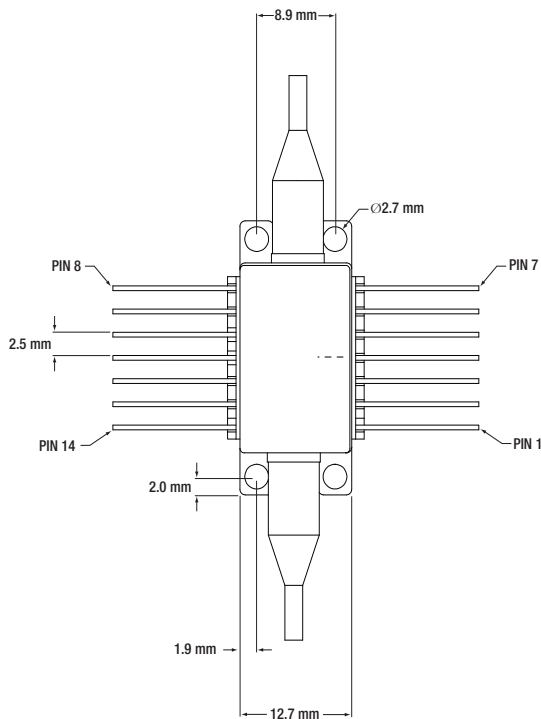
*Exceeding these Absolute Maximum Ratings may cause permanent damage to the device. Operation at or above these values is not advised.



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 - |

