C-Band Booster Optical Amplifier

BOA1137P
PM Fiber

Description

The BOA1137P 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 BOA1137P uses polarization-maintaining PM980 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 °C, T_{CASE} = 0 - 70 °C

BOA1137P				
	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[1]	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 (Typical / Max) @ T_{Case} = 25 °C / 70 °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 kΩ	-

[a] I_{op} = 300 mA [b] λ =1054.7 nm

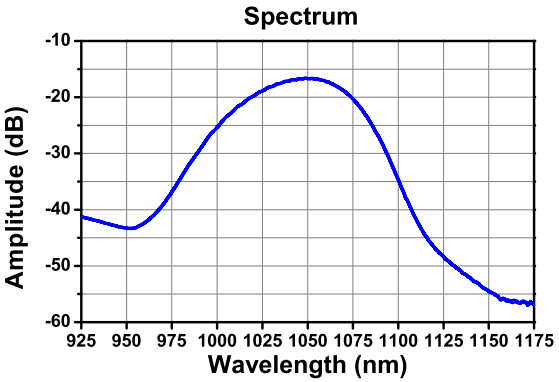
Note: These Operating Specifications are a consistent set of values, which will yield the specified performance. Please note that exceeding the Absolute Maximum Ratings below may cause device failure.

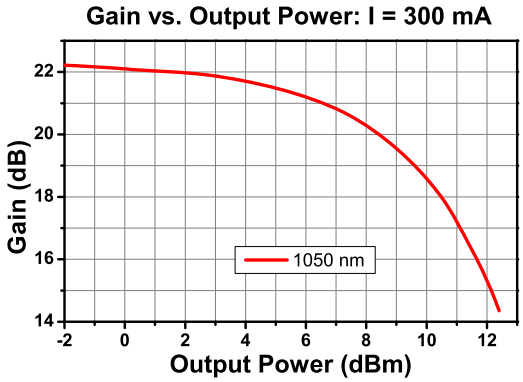
Absolute Maximum Ratings*

BOA1137P			
	Symbol	**Min**	**Max**
Operating Current	**I_{OP}**	**-**	**360 mA**
Optical Output Power, CW	**P_{Out}**	**-**	**15 mW**
Chip Temperature (TEC)	**T_{Chip}**	**10 °C**	**30 °C**
Case Temperature	**T_{Case}**	**0 °C**	**70 °C**

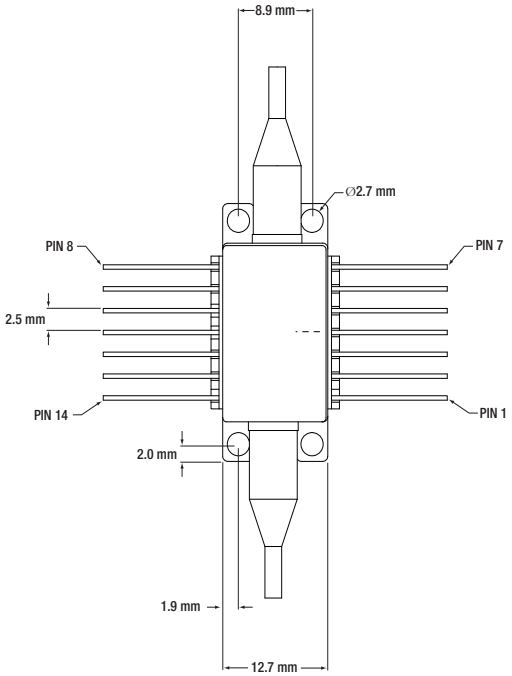
***Exceeding these Absolute Maximum Ratings may cause permanent damage to the device. Operation at or above these values is not advised.**

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 -