Innolume GmbH
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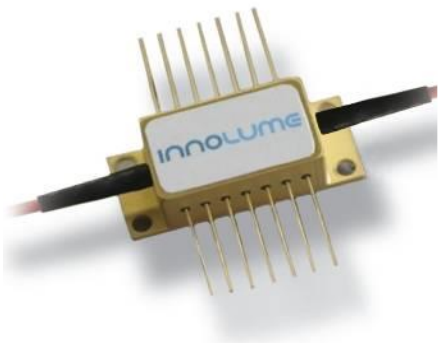
Phone: +49 231 47730 200; Web: www.innolume.com

BOA-1060-80-YY-120mW

High-power booster optical amplifier at 1060 nm



Features:
- High saturation output power 20 dBm
- Low ASE level and ripples
- Strong linear polarization
- RoHS compliance

Applications:
- Swept-source, tunable lasers
- Boosting laser transmitters
- Optical coherence tomography (OCT)

Specification DATE: 09th August 2018

RECOMMENDED OPERATING POINT

Parameter	Min	Typ	Max	Unit
Current		400	500	mA
Forward voltage		1.6	1.8	V
Thermistor temperature	20	25	30	C

GAIN

@ CW, recommended operating point,

Parameters	Min	Typ	Max	Unit
Output power[1,2]	100	120		mW
Mean wavelength[2]	1040	1060	1080	nm
Bandwidth[2] @ 3dB		80		nm
Small signal gain[1,3]	12	15		dB
Saturation output power[1] @ 3dB	17	20		dBm

[1] at wavelength of gain maximum
[2] at +10dBm input signal
[3] at -25dBm input signal

AMPLIFIED SPONTANEOUS EMISSION (ASE)

Tested for each device @ CW, recommended operating point, without input light

Parameter	Min	Typ	Max	Unit
Optical power ex fiber from each port		1.5		mW
Mean wavelength		1015		nm
Bandwidth @ -3dB		25		nm
Spectrum ripples[2] (RMS in 1nm range, 10pm resolution)		0.01	0.1	dB
Polarization extinction ratio (PER) at each port	15	18		dB
ASE rise time		0.5		ns
ASE fall time		0.5		ns

[2] at wavelength of ASE maximum

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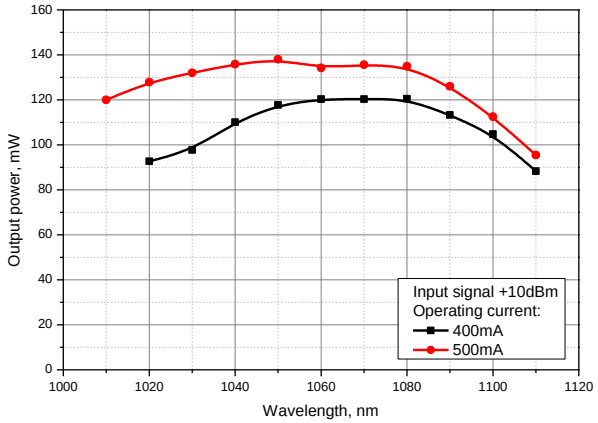
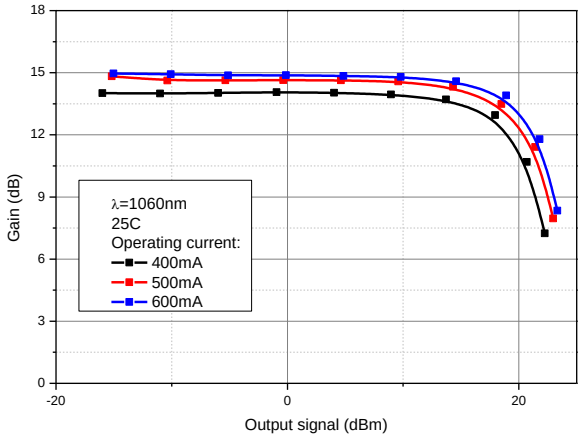
TYPICAL PERFORMANCE (for reference only)

@ CW, 25° chip temperature, the case is mounted on room temperature heatsink

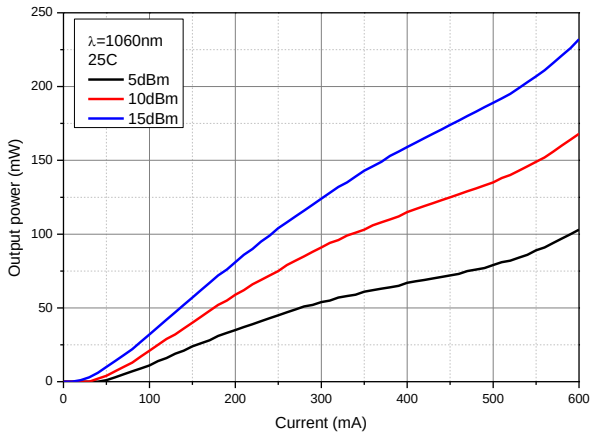
Power spectra at different currents



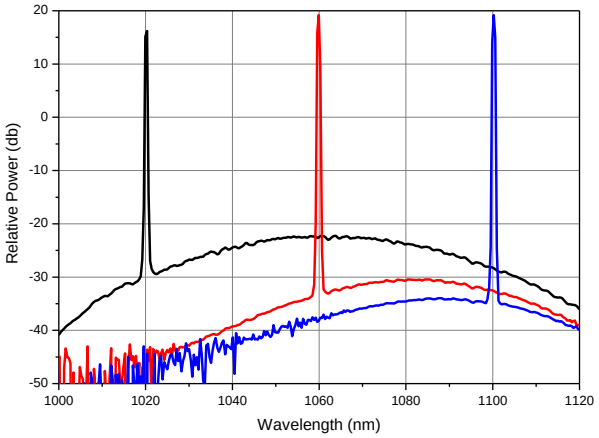
Gain vs. Output power



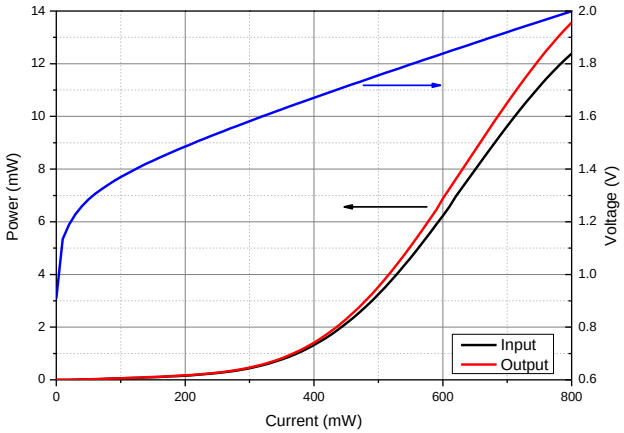
Output power at different input signals



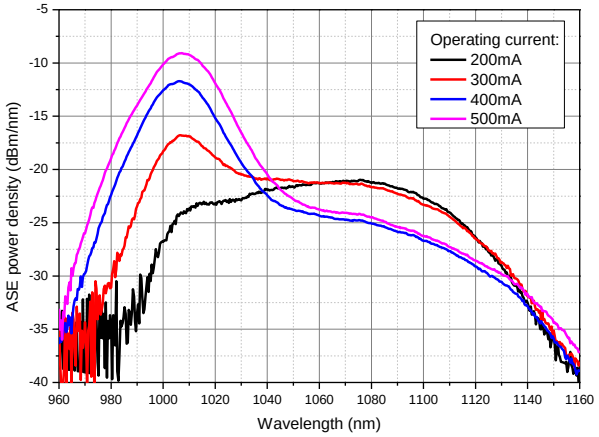
Spectra of amplified optical signal



ASE LIV characteristics



ASE spectra



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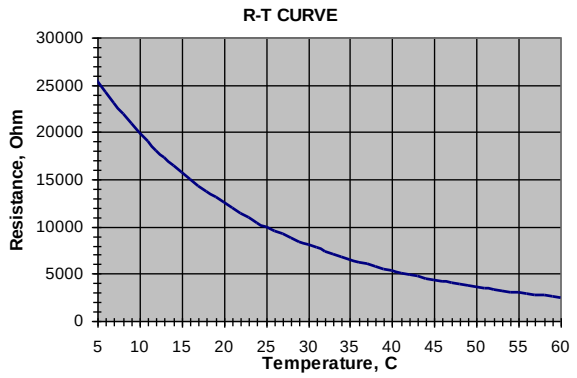
ABSOLUTE MAXIMUM RATINGS

Parameters	Min.	Max.	Unit
BOA reverse voltage	-	2	V
BOA CW forward current	-	600	mA
Input optical power	-	20	dBm
Thermo Electric Cooler current	-	3	A
Thermo Electric Cooler voltage	-	4	V
Fiber bend radius	3	-	cm
Chip operating temperature range	10	40	°C
Case operating temperature range	0	70	°C
Storage temperature range	-40	85	°C

THERMISTOR SPECIFICATION

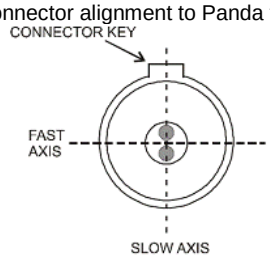
Parameters	Value	Unit
Thermistor type	NTC	-
Resistance @25°C	10 ± 0.1	kOhm
Beta 0-50°C	3375±1%	K



FIBER SPECIFICATION

Parameters	PANDA PM980	HI1060	Unit
Mode-field diameter	6.6±1.0	6.2±1.0	μm
Cut-off wavelength	920±50	900±70	nm
Cladding diameter	125±1	125±1	μm
Coating diameter	245±15	245±15	μm
Core-to-cladding offset	≤0.5	≤0.5	μm
Length (each port)	1.0 ± 0.2		m
Connector	FC/APC		

Connector alignment to Panda fiber:



PART NUMBER IDENTIFICATION

BOA-1060-80-**YY**-120mW
YY: Optical fiber type
PM – PM980 Panda fiber
Example: BOA-1060-80-PM-120mW

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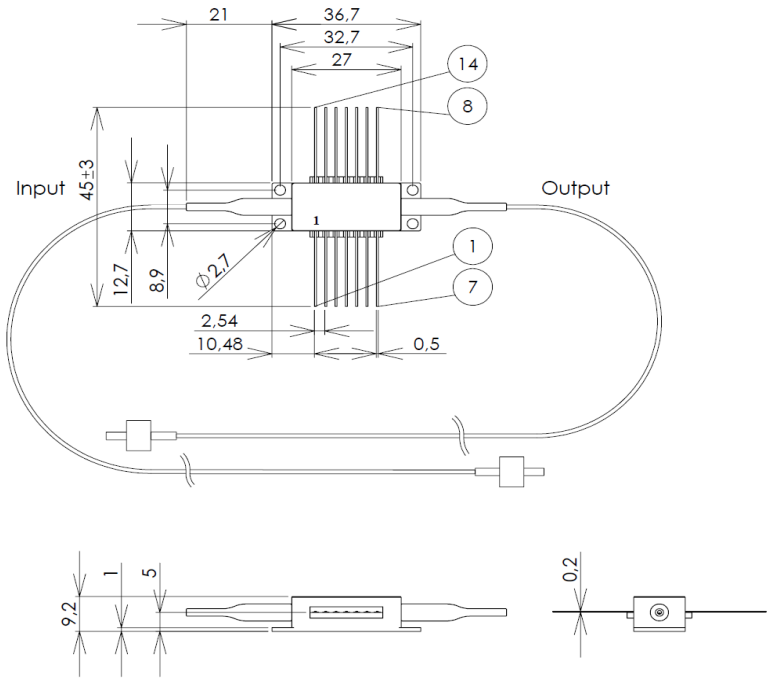
DIMENSIONS (subject to change)

(All sizes in mm)



Pin identification:

1. **TEC " + "**
2. **Thermistor**
3.
4.
5. **Thermistor**
6.
7.
8.
9.
10. **BOA anode (+)**
11. **BOA cathode (-)**
12.
13. **Case ground**
14. **TEC " - "**

SAFETY AND OPERATING INSTRUCTIONS

The light emitted from this device is invisible and can be harmful to the human eye. Avoid looking directly into the fiber connector when the device is in operation. Proper laser safety eyewear must be worn during operation with open connector.

Absolute Maximum Ratings may be applied to the BOA for short period of time only. Exposure to maximum ratings for extended period of time or exposure to more than one maximum rating may cause damage or affect the reliability of the device. Operating the BOA outside of its maximum ratings may cause device failure or a safety hazard. Power supplies used with the component must be employed such that the maximum forward current cannot be exceeded.

A proper heatsink for the BOA on thermal radiator is required. The BOA must be mounted on radiator with 4 screws (bolt down in X-style fashion with initial torque set to 0.075Nm and final X-style bolt down at 0.15Nm) or with clamps. The deviation from flatness of radiator surface must be less than 0.05mm. It's recommended using of Indium foil or thermal conductive and soft material between bottom of the case and heatsink for thermal interface. It's undesirable to use thermal grease for this.

Do not pull the fiber. Do not bend a fiber with a radius smaller than 3 cm. Operate the BOA with clean fiber connector only. Periodically check and clean the connector if necessary. To clean the connector use a clean-room compatible tissue only, put some Isopropyl alcohol onto it and carefully clean the facet of the connector, or use special fiber cleaning tools. Perform cleaning only with the BOA current switched off.

Electrostatic discharge can lead to device failure. Take necessary precautions to prevent ESD."

NOTE: Innolume product specifications are subject to change without notice.