

## AC13 Series Uncooled 980 nm Pump Laser Module

### Description

The AC13 series lasers are uncooled 980 nm pump modules provide high power, reliable and stable pump for Erbium Doped Fiber Amplifiers (EDFAs) applications. This uncooled module provides significant reductions in electrical power consumption and heat dissipation and thus offers important advantages to systems equipment providers. The device is delivered in hermetic MiniDIL package with photodiode for optical power monitoring. This package includes high fiber coupling optics to achieve high optical output power.

### Features

- 975 to 985 nm emission wavelength
- High power over wide temperature range (selection from 100 mW to 140 mW)
- Operating temperature from 5 to 75°C (type B)
- High Reliability chip and package
- Fiber Bragg Grating (FBG) wavelength stabilization
- Uncooled design for reduced power consumption

### Applications

- Coolerless EDFAs
- Amplets

**Absolute Maximum Rating**

Parameter	Min.	Max.
Current Transient at 1 $\mu$ s max.	-	1A
Reverse voltage	-	2.2V
Reverse current	-	10 $\mu$ A
Storage temperature	-40 $^{\circ}$ C	85 $^{\circ}$ C
Operating temperature (type A)	20 $^{\circ}$ C	70 $^{\circ}$ C
Operating temperature (type B)	5 $^{\circ}$ C	75 $^{\circ}$ C
Lead soldering time at 260 $^{\circ}$ C	-	10 sec.
Fiber axial pull force	-	5N
Fiber side pull force	-	2.5N
Fiber bend radius	16 mm	-

**Operating Power**

Product Number	Operating Power, P <sub>op</sub> (mW)	Max. Operating Current, I <sub>op</sub> (mA)	Minimum Kink-free Power, P <sub>max</sub> (mW)
AC13-100-xy	80	225	100
AC13-110-xy	88	240	110
AC13-120-xy	100	265	120
AC13-130-xy	105	275	130
AC13-140-xy	115	300	140

Note: 9xy is the specified fiber Bragg grating (FBG) wavelength in nm; xy=00 for no fiber Bragg grating option.

**Electrical/Optical Characteristics (T<sub>c</sub>=25 $^{\circ}$ C)**

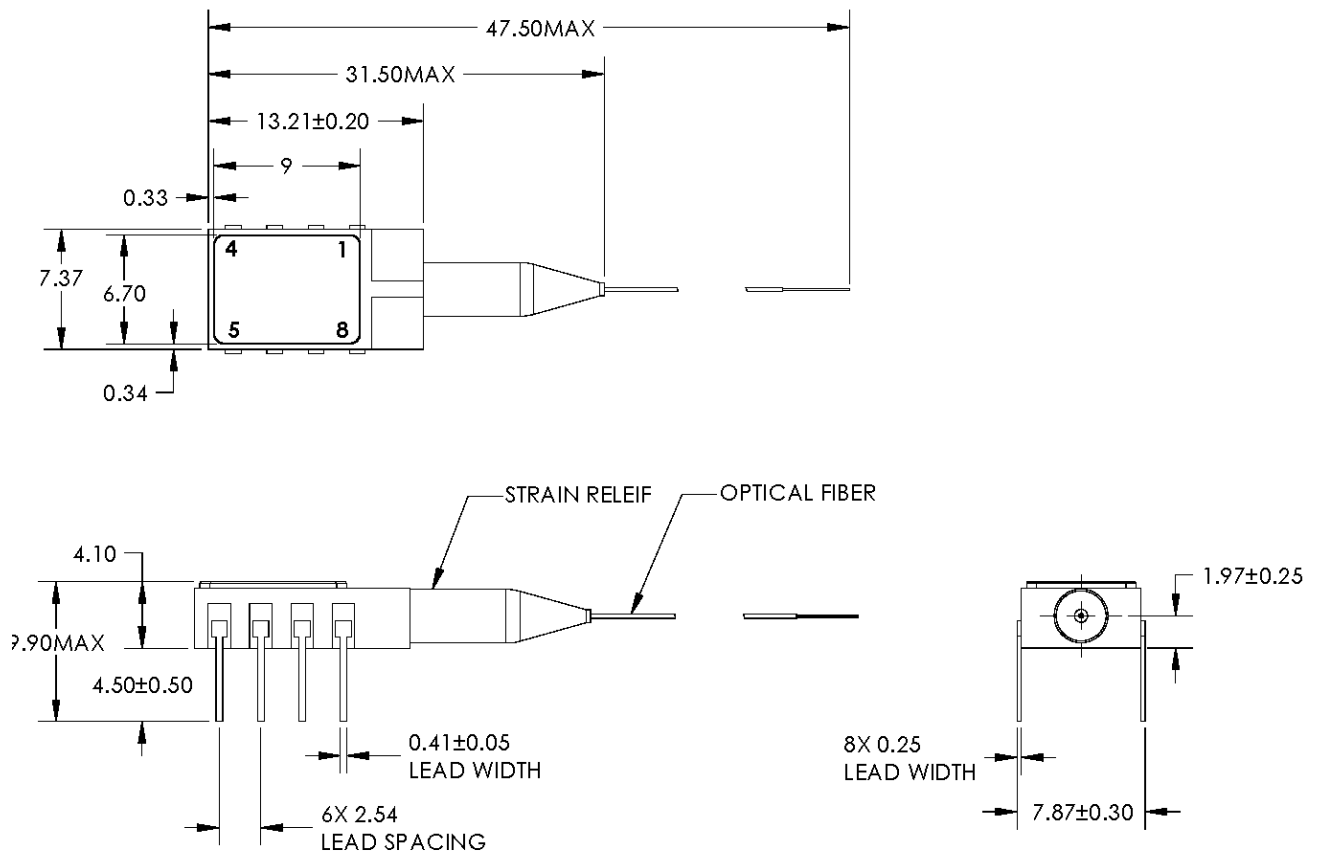
Symbol	Parameter	Test Conditions	Min.	Max.	Unit
I <sub>th</sub>	Threshold current	CW		40	mA
V <sub>f</sub>	Forward voltage	I <sub>f</sub> =I <sub>op</sub>		2.2	V
$\lambda_c$	Center Wavelength	T <sub>grating</sub> =room temp.	970	985	nm
P <sub>pump</sub>	Power in band	$\lambda_c \pm 1.5$ nm	80%		
SMSR	Side-mode-suppression ratio	Ratio of peak in band to peak out of band	-15dB		

**Ordering Information:**

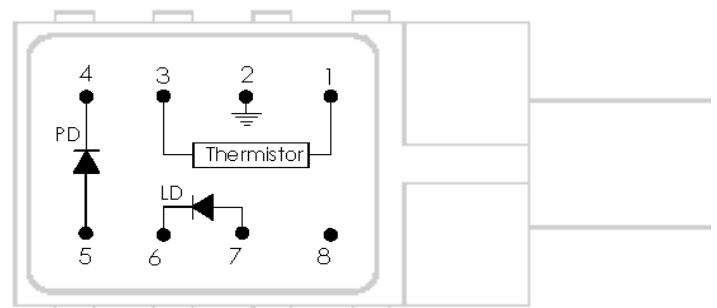
Customer needs to specify the kink free power (XXX), FBG wavelength (XX) and operational temperature range (type A or B),

Example: AC13-120-78-B is a pump laser module with 120 mW kink free power at 978 nm wavelength and with 5 to 75 $^{\circ}$ C operational temperature range.

Outline Drawing (Dimensions in mm)



Lead Assignment Layout	
Lead #	Description
1	Thermistor (Optional)
2	Case Ground
3	Thermistor (Optional)
4	Monitor PD Cathode (Optional)
5	Monitor PD Anode (Optional)
6	Laser Cathode
7	Laser Anode
8	N/C



Top View