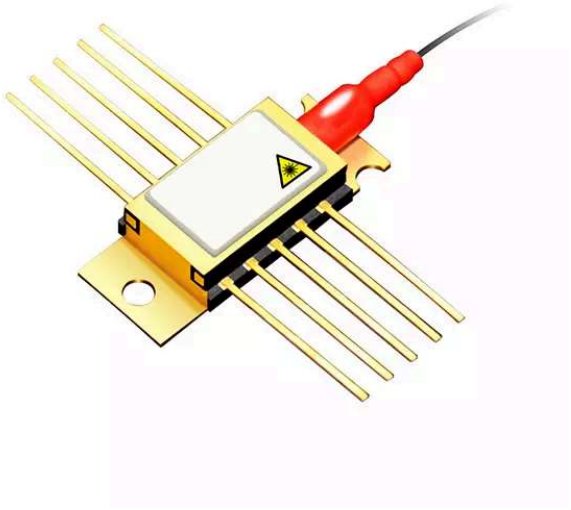
COHERENT

DATASHEET

Diode Lasers

PULSED 1064 nm NARROW BANDWIDTH FBG HIGH POWER MINI-BUTTERFLY LASER DIODE MODULE



The Coherent CM97A1064NFBG next generation wavelength stabilized high power single mode laser module has been designed as a light source for pulsed narrow bandwidth fiber laser and direct frequency conversion applications. Processes and techniques of coupling the fiber to the laser allow high peak output powers that are very stable with both time and temperature. A narrow bandwidth grating located in the polarization maintaining optical fiber close to the package allows for short pulse operation.

FEATURES AND BENEFITS

- High kink-free pulse output power, up to 1.5 W peak
- Wavelength stabilized at 1064 nm
- Narrow bandwidth emission of <0.3 nm
- Short pulse operation: 5 ns–500 ns
- Polarization-maintaining single-mode optical fiber
- Internal thermoelectric heat pump and monitor diode
- Hermetically sealed 10-pin mini-butterfly package
- RoHS compliant

APPLICATIONS

- Fiber lasers
- Frequency conversion
- Spectroscopy

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DATASHEET

Parameter	CM97A1064NFBG
Package	10-pin Butterfly
Operating Condition	Pulsed
CW Electrical and Optical Specification[1]	
Threshold Current (mA)	60 (typ.), 40 (min.), 80 (max.)
Operating Forward Current (A)	1.1 (max.)
Operating Power (mW)	700 (typ.), 600 (min.)
Operating Forward Voltage (V)	1.7 (typ.), 2.5 (max.)
Polarization Extinction Ratio (dB)	13 (typ.)
PULSED SPECIFICATIONS	
Output Power (W)	1.4 (typ.), 1.2 (min.), peak power[2]
Operating Peak Current[2] (A)	2.2 (max.)
Center Wavelength (Centroid) (nm)	1064 (typ.)
Center Wavelength Range (nm)	1050 - 1075
Spectral Width FWHM (nm)	0.15 (typ.), 0.3 (max.)
Pulse Width (ns)	5 (min.), 500 (max.)
Repetition Rate (kHz)	500 (max.)
Duty Cycle (%)	5
Rise Time (ns)	1.6 (max.)
Package	
Monitor Detector Responsivity (µA/mW)	2.5 - 40
Monitor Dark Current (nA)	50 (max.)
Thermistor Resistance (at 25°C) (kOhm)	10 (typ.), 9 (min.). 11 (max.)
TEC Current (ΔT = 35 °C, If = If max) (A)	1.5 (max.)
TEC Voltage (ΔT = 35 °C, If = If max) (V)	3.0 (max.)
ABSOLUTE MAXIMUM RATINGS[3]	
Package	
Storage Temperature (°C)	-40–85
Lead Soldering Temperature (10s max) (°C)	350 (max.)
TEC Current (A)	-2.2 to 2.2
TEC Voltage (V)	-3.3 to 3.3
Laser	
Laser Forward Current (10s max) (mA)	1500 (max.)
Laser Reverse Voltage (V)	2 (max.)
Fiber Pigtail	
Fiber Bend Radius (mm)	20 (min.)
Fiber Type	Polarization maintaining Nufern PM980-XP or Corning PM 98-U25
Fiber Core Diameter (µm)	6.6
Mode Field Diameter (µm)	6.6 (typ.), 5.6 (min.), 7.6 (max.)
Buffer Diameter (µm)	250 (typ.), 230 (min.), 270 (max.)
FBG Center to Fiber End (cm)	70 (min.)
Module Case to FBG Center (cm)	14 (typ.), 10 (min.), 18 (max.)

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Parameter	CM97A1064NFBG
Pristine Fiber Proof Test Level (kpsi)	200 (min.)
Fiber Pull to Housing (psi)	150 (min.)
Miscellaneous	
RoHS Compliance	compliant (China RoHS 50)
Laser Safety	Class 4 Laser Product
Comment	Narrow band FBG

Notes:
1. Conditions unless otherwise stated: Case temperature -20 to +75°C, Submount temperature 25°C, Monitor diode bias: -5 V, CW operation
2. <500 ns / 500kHz
3. The absolute maximum ratings are conditions for which the device is expected to recover fully the specified performance. Exceeding these limits may impair the device reliability. The ratings apply to each parameter in isolation; that is when all other parameter have values within the relevant characteristics. It cannot be assumed that limiting values of more than one parameter may be applied to a device at the same time.

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