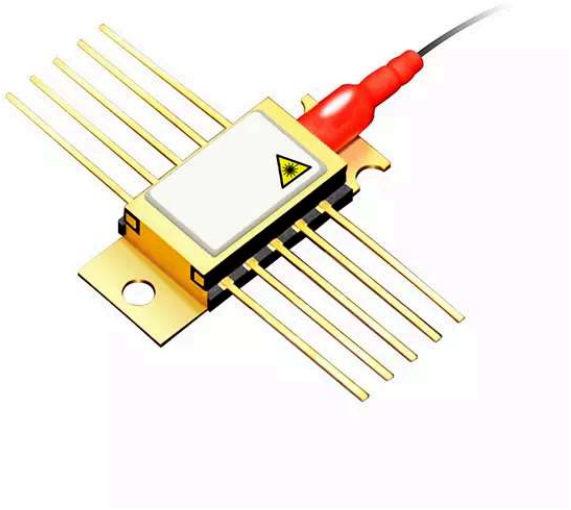
COHERENT

DATASHEET

Diode Lasers

976 nm MINI-BUTTERFLY LASER DIODE PUMP MODULE WITH FBG AND PM FIBER



The Coherent CM97-1000-76PM wavelength stabilized high power single mode laser diode module has been designed as a pump source for industrial pulsed fiber pre-amplifiers as well as for erbium doped fiber amplifier (EDFA) laser applications. Processes and techniques of coupling the fiber to the laser allow very high output powers that are stable with both time and temperature. The pump module utilizes a Polarization maintaining fiber pigtail and a fiber Bragg grating design for enhanced wavelength and power stability performance. Devices achieve high kink free output powers of 1 W.

FEATURES AND BENEFITS

- High output power, 1 W kink free
- Wavelength stabilized at 976 nm
- Polarization maintaining single-mode optical fiber
- Internal thermoelectric cooler and monitor diode
- Hermetically sealed 10-pin mini-butterfly package
- Telcordia GR-468-CORE compliant
- RoHS compliant

APPLICATIONS

- Fiber lasers
- Sensing
- EDFA

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DATASHEET

Parameter	CM97-1000-76PM
Package	10-pin Butterfly
Operating Condition	Continious Wave (CW)
CW Electrical and Optical Specification[1]	
Threshold Current (mA)	60 (typ.), 80 (max.)
Operating Forward Current (A)	1360 (max.)
Output Power (mW)	910 (min.)
Kink Free Current (mA)	1500 (max.)
Kink Free Power (mW)	1000 (min.)
Operating Forward Voltage (V)	2.0 (typ.), 2.2 (max.)
Center Wavelength (Centroid) (nm)	976
Center Wavelength Range (nm)	970 - 980
Spectral Width (-13 dB) (nm)	0.2 (typ.), 1 (max.)
Signal to Noise Ratio (dB)	20 (min.)
Polarization Extinction Ratio (dB)	13 (typ.)
Package	
Monitor Detector Responsivity[2] (µA/mW)	1–10
Monitor Dark Current[2] (nA)	50 (max.)
Thermistor Resistance (at 25°C) (kOhm)	10 (typ.), 9.5 (min.). 10.5 (max.)
TEC Current (ΔT = 35 °C, If = If max) (A)	2.0 (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 (for max. 10 s) (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.)
Fiber Length (from case to fiber end) (m)	2.1 (min.)
FBG Center to Fiber End (cm)	70 (min.)
Module Case to FBG Center (cm)	140 (max.)
Pristine Fiber Proof Test Level (kpsi)	200 (min.)
Fiber Pull to Housing (psi)	150 (min.)
Miscellaneous	

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Parameter	CM97-1000-76PM
RoHS Compliance	compliant (China RoHS 50)
Laser Safety	Class 4 Laser Product
Comment	Polarization Maintaining Fiber

Notes:
1. Conditions unless otherwise stated: Case temperature -20 to +75°C, Submount temperature 25°C, Monitor diode bias: -5 V, CW operation
2. At -5V bias voltage
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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