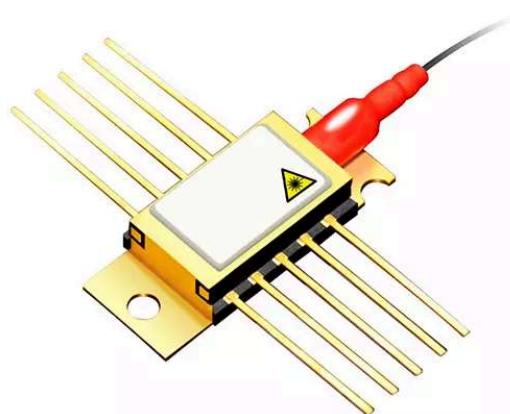




DATASHEET

Diode Lasers

PULSED 1060NM SLD TYPE HIGH POWER COOLED MINI-BUTTERFLY LASER DIODE MODULE

The new Coherent CM96A1060CWG high power single mode laser module has been designed as a broadband compact light source for pulsed fiber lasers. Its features a compact 3-pin miniature package. The device achieves high kink free output powers of 1 W pulse peak emitting a SLD type spectrum of larger 10 nm that helps to suppress SBS generation in pulsed fiber lasers.

FEATURES AND BENEFITS

- High kink-free pulse output power, up to 1 W peak
- Curved waveguide (CWG) 1060nm laser diode
- Short pulse operation of 5ns-500ns
- Internal thermoelectric heat pump and monitor diode
- Hermetically sealed 10-pin mini-butterfly package

APPLICATIONS

- Fiber lasers
- Sensing

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DATASHEET

Parameter	CM96A1060CWG
Package	10-pin Butterfly
Operating Condition	Pulsed
CW Electrical and Optical Specification¹	
Threshold Current (mA)	90 (max.)
Operating Forward Current (mA)	750 (max.)
Operating Power (mW)	350 (typ.), 300 (min.)
Operating Forward Voltage (V)	1.5 (typ.), 2.5 (max.)
Wavelength (centroid)⁴ (nm)	1060
Wavelength at chip bar test level (250mW) (nm)	1050 - 1060
Spectral Width (200 mW) (nm)	10 (min.)
Polarization Extinction Ratio (dB)	13 (typ.), 10 (min.)
PULSED SPECIFICATIONS²	
Output Power (W)	0.8 (typ.), 1.0 (min.), peak power
Operating Peak Current (A)	2.0 (max.)
Center Wavelength (Centroid) (nm)	1064 (typ.)
Center Wavelength Range (nm)	1050 - 1075
Pulse Width (ns)	5 (min.), 500 (max.)
Duty Cycle (%)	5
Rise Time from 10% to 90%(ns)	30 (max.)
Package	
Monitor Dark Current Responsivity⁵ (μA/mW)	0.25
Monitor Dark Current⁵ (nA)	10 (max.)
Monitor Capacitance⁵ (pF)	15 (max.)
Thermistor Resistance (at 25°C) (kOhm)	10 (typ.), 9.5 (min.). 10.5 (max.)
TEC Current ($\Delta T = 50^{\circ}\text{C}$, If = If max) (A)	1.5 (max.)
TEC Voltage ($\Delta T = 50^{\circ}\text{C}$, If = If max) (V)	3.0 (max.)
ABSOLUTE MAXIMUM RATINGS³	
Package	
Operating Temperature (°C)	-20 - 75
Storage Temperature (°C)	-40 - 85
Lead Soldering Temperature (10 s max) (°C)	350 (max.)
TEC Current (A)	2.2 (max.)
Thermistor Current (mA)	2 (max.)
Thermistor Voltage (V)	5 (max.)
Monitor Photodiode Reverse Voltage (V)	15 (max.)
COHERENT	
Laser Forward Current (for max. 10 sec) (mA)	1000 (max.)
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Laser Reverse Current (μA)	10 (max.)
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Laser Reverse Voltage (V)	2 (max.)
ESD Damage (HBM, C=100 pF, R=1.5 kW) (V)	500 (max.)
Fiber Pigtail	

Parameter	CM96A1060CWG
Fiber Bend Radius (mm)	30 (min.)
Fiber Pull Force (N)	5 (max.)
Fiber Type	Corning HI1060 or equivalent
Fiber Core Diameter (μm)	5.9
Mode Field Diameter (μm)	5.9 (typ.), 5.6 (min.), 6.2 (max.)
Buffer Diameter (μm)	245 (typ.), 235 (min.), 255 (max.)
Fiber Length (module case to fiber end) (m)	1 (min.)
Recoating Diameter (μm)	320 (max.)
Pristine Fiber Proof Test Level (kpsi)	200 (min.)
Miscellaneous	
RoHS Compliance	compliant (China RoHS 50)
Laser Safety	Class 4 Laser Product

Notes:

1. Conditions unless otherwise stated:

Case temperature: -20 to +75 °C, Submount temperature: 25 °C, Operating current 750 mA, CW operation, Lasers screened at bar-test for minimum linear current of 800 mW (corresponds to typically 500 mW linear power at bar-test)

2. Target Operating characteristics (BOL)

Conditions unless otherwise stated:

Ambient temperature 25 °C, 10 ns pulse width, 100 kHz repetition rate

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.

4. No screen

5. At -5V bias voltage

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