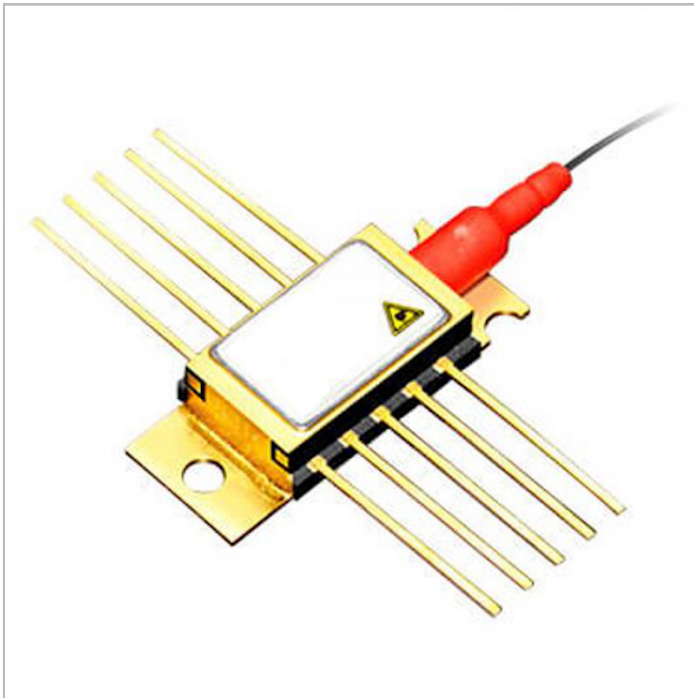




# 1030nm DFB Single-Frequency Laser Diode 200 mW CW Output Power / 800 mW Pulsed Power



## 1030NM SINGLE-FREQUENCY DFB

This 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.

A distributed feedback grating (DFB) located in the laser cavity results in the wavelength stabilization within couple of round trips. The laser chip and package are optimized for subnanosecond pulse operation. Processes and techniques of coupling the fiber to the laser allow high peak output powers that are very stable with both time and temperature.

## 1030LD-2-0-0 / LASER-DIODE

### FEATURES

- o Picosecond Pulse Capable, up to CW Output
- o 200 kHz Spectral Line Width
- o PM Fiber SM98-PS-U25D-H
- o Bare Fiber Termination (FC/APC on request)
- o Integrated TE Cooler, Thermistor, Monitor PD
- o Hermetically Sealed 10-Pin Butterfly Package

### APPLICATIONS

- o Fiber Laser Systems
- o Frequency Conversion
- o Spectroscopy



## 1030NM SINGLE-FREQUENCY DFB SPECIFICATIONS

### OPTICAL AND ELECTRICAL SPECIFICATIONS

- Wavelength: 1064 nm ( $\pm 2$  nm)
- Pulsed Output Power: 800 mW (for  $< 20$  nanosecond pulse widths)
- CW Output Power: 200 mW
- Spectral Width:  $< 200$  kHz
- Threshold Current: 40 mA
- Operating Current: 350 mA (CW)
- Operating Voltage: 2.0 V
- Wavelength Shift w/Temperature: 0.06 nm/ $^{\circ}$ C
- Wavelength Shift w/Current: 0.0025 nm/mA
- ---- **SHORT-PULSE MODE (1 - 20 Nanoseconds)**
- Short-Pulse Mode: 1 - 20 nanoseconds
- Short-Pulse Mode Current: 1,600 mA (max)
- Short-Pulse Mode Peak Output Power: 800 mW (typ)
- Short-Pulse Mode Duty Cycle Limit: 1%  
*(repetition rate max 10 MHz; max rep rate is determined by the pulse width and duty cycle)*
- ---- **STANDARD PULSE MODE (20 - 200 nanoseconds)**
- Standard Pulse Mode Range: 20 nsec to 200 nsec
- Standard Pulse Mode Current: 800 mA (max)
- Standard Pulse Mode Peak Output Power: 400 mW (typ)
- Standard Pulse Mode Duty Cycle Limit: 5%  
*(repetition rate max 10 MHz; max rep rate is determined by the pulse width and duty cycle)*
- ---- **PICOSECOND PULSE MODE (100 picoseconds to 1 nanosecond)**
- Picosecond Pulse Mode Range: 0.1 nsec to 1 nsec
- Picosecond Pulse Mode Current: 1,600 mA (max)
- Picosecond Pulse Mode Peak Output Power: 800 mW (typ)
- Picosecond Pulse Mode Duty Cycle Limit: 1%  
*(repetition rate max 50 MHz; max rep rate is determined by the pulse width and duty cycle)*
- \*\* ~100 picosecond pulses are achievable in a gain switching mode with dedicated pulse driver



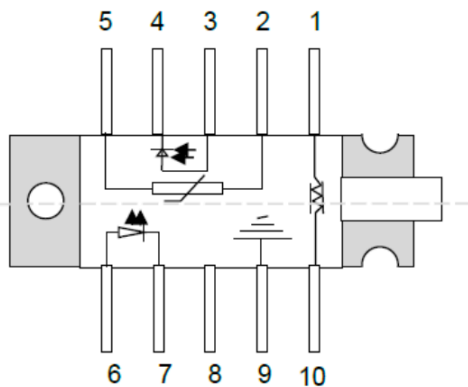
## 1030NM SINGLE-FREQUENCY DFB SPECIFICATIONS

### FIBER AND PACKAGE SPECIFICATIONS

- Fiber Type: Nufern PM980-HP or Fujikura SM98
- Mode Field Diameter: 6.6  $\mu\text{m}$
- Buffer Diameter: 250  $\mu\text{m}$
- Fiber Length: 1 m
- Fiber Termination: Ceramic Ferrule (contact for FC/APC fiber termination)
- Package Type: 10-Pin Butterfly

### ABSOLUTE MAXIMUM RATINGS

- Storage Temperature: -40°C to 58°C
- CW Laser Forward Current: 1.5 A
- Laser Reverse Voltage: 2 V
- Heat Pump Current: 2.2 A
- Heat Pump Voltage: 3.5 V
- Lead Soldering Temperature: 350°C
- Fiber Bend Radius: 20mm (min)



| Pin | Description         | Pin | Description       |
|-----|---------------------|-----|-------------------|
| 1   | TEC (+)             | 6   | Laser anode (+)   |
| 2   | Thermistor          | 7   | Laser cathode (-) |
| 3   | Monitor anode (-)   | 8   | NC                |
| 4   | Monitor cathode (+) | 9   | Package ground    |
| 5   | Thermistor          | 10  | TEC (-)           |



Offered by  
**LASER LAB SOURCE**



**LASER  
DIODE  
SOURCES**

## **PRODUCT SALES AND SERVICE:**

Unlimited phone and email support is provided for products purchased through Laser Lab Source. Orders for this product are fulfilled by Laser Lab Source in North America and select international regions.

## **PRODUCT WARRANTY:**

This product is sold with a full one-year warranty. It is warranted to be free from defects in material and/or workmanship for a period of one year from the date of shipment.



Laser Lab Source, a division of Research Lab Source, Inc.  
670 S. Ferguson St., Suite 3  
Bozeman, MT 59718 USA

Phone: 406-219-1472

[www.LaserLabSource.com](http://www.LaserLabSource.com)

**Aero**DiODE

Rue François Mitterrand Institut d'Optique d'Aquitaine  
33400 Talence  
FRANCE