



LU0808T020 Industrial Laser Diode Up to 2W Operation Power @ 808nm



Description:

The LU0808T020 series offers an optical power of 2W from a 50µm core, NA 0.12 or NA 0.22 multi-mode fiber. At this common wavelength our Laser Diode offers a very competitive price-performance value for applications in materials processing, illumination and medicine.

Very high life time is achieved due to the Lumics proprietary laser diode facet passivation technology and due to extensive burn-in testing

Features & Functions:

- Wavelength 808nm
- 50µm core, NA 0.12 or 0.22 fiber
- Hermetically sealed single emitter
- Floating Anode / Cathode
- Direct Modulation up to 10 MHz

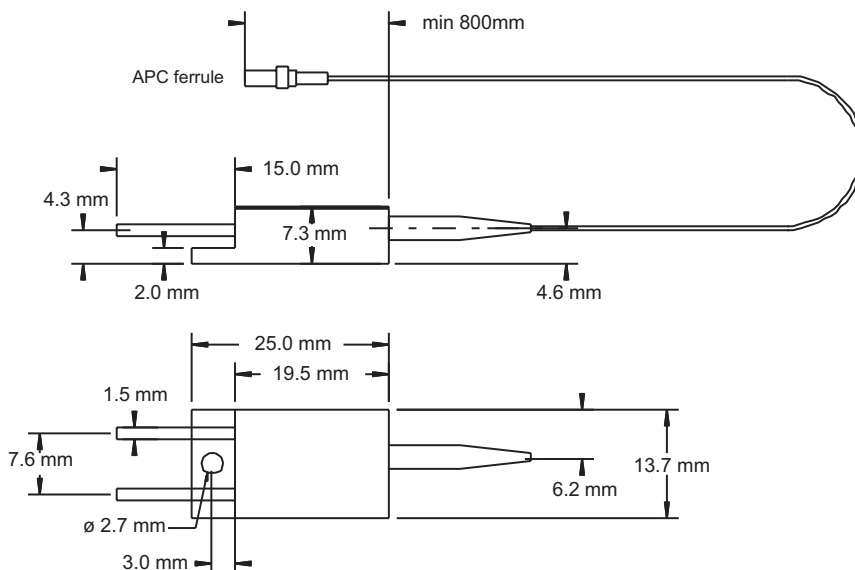
Benefits:

- Ultra long Lifetime
- burn-in tested
- Cost-effective
- Robust design
- Easy to mount

Applications:

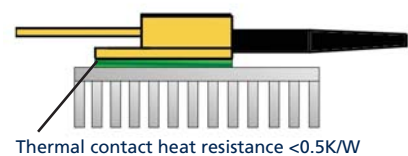
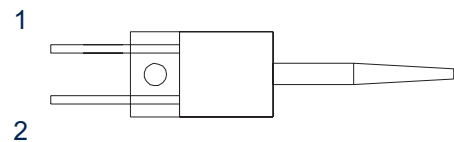
- Printing
- Pumping
- Materials Processing
- Illumination
- Medical Laser Treatment

Modul Drawing (dimensions in mm)



Pin Connections

| Pin | Function | Pin | Function |
|-----|--------------|-----|----------------|
| 1 | LD Anode (+) | 2 | LD Cathode (-) |



Your ideas are welcome.

Typical Electrical and Optical Characteristics

| Parameter | Symbol | Typical | Unit |
|--|------------------|-----------|--------|
| Output Power c.w. | P_{op} (c.w.) | 2 | W |
| Peak Wavelength at P_{op} | λ_{peak} | 808 +/-10 | nm |
| Spectral Width (FWHM) | λ_{rms} | 2.5 | nm |
| Threshold Current | I_{th} | 450 | mA |
| Operating Current | I_{op} | 2.7 | A |
| Operating Voltage | V_{op} | 1.82 | V |
| Rise and Fall time | T_r | 20 | nsec |
| Connector Type (optional) | | SMA | |
| Heat Resistance LD to bottom of base plate | R_H | 3.5 | K / W |
| Power Conversion Efficiency | | 45 | % |
| Recommended Case Temperature | T_{op} | 20 - 30 | °C |
| Wavelength Shift vs. Temperature | | 0.35 | nm / K |
| Wavelength Shift vs. Power | | 1.2 | nm / W |

Fiber Specifications

| | | | |
|--------------------------|----|----------------|----|
| Type | | AFS 50 / 125 Y | |
| Fiber Core Diameter | | 50 | μm |
| Fiber Numerical Aperture | NA | 0.12 or 0.22 | |
| Fiber Cladding Diameter | | 125 | μm |
| Fiber Buffer Diameter | | 250 | μm |
| Fiber Length | | 1 | |
| Min. Bend Radius | | 50 | mm |

Application Note:

- (1) For pulsed operation max peak power can be $2 \times P_{op}$ if pulse time is $< 5 \mu\text{sec}$ and average power is lower than P_{op} (c.w.).
- (2) Keep the heat sink at $\leq 35^\circ$
- (3) We recommend a standard TO-220 heatsink with thermal resistance of $< 0.5 \text{K/W}$ using forced air flow cooling. There is no heat film required, since the base is electrically isolated from laser cathode and anode.

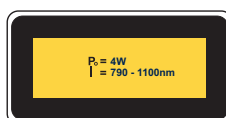
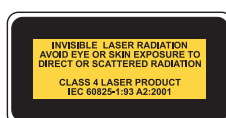
Absolute Maximum Ratings

| Parameter | Symbol | Min | Max | Unit |
|-------------------------------------|----------------------|-----|-----|------|
| Storage Temperature | T_{max} | -30 | 70 | °C |
| Operating Heat Sink Temp. | $T_{op, heatsink}$ | -10 | 40 | °C |
| Maximum Processing Temp.-max 10sec. | $T_{op, Processing}$ | | 180 | °C |
| LD Forward Current c.w. | $I_{op, max}$ | | 3.2 | A |
| LD Reverse Voltage | $V_{R, max}$ | | 2 | V |
| Rel. Humidity | | 0 | 85 | % |

Note:

Absolute Maximum Ratings may be applied to the laser module for short periode of time only. Exposure to maximum ratings for extended period of time or exposure above one or more max ratings may cause damage or affect the reliability of the device.

User Safety



Your ideas are welcome.