



LU09xxT090 Industrial Laser Diode Up to 9W Operation Power



Description:

The LU09xxT090 series offers an optical power of 9W at 915, 940 or 975nm from a 105µm core, NA 0.15 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.

Features & Functions:

- Burn-in tested single emitter
- Hermetically sealed
- 105µm MM Fiber, NA 0.15 or 0.22
- Wavelength 915, 940, 960 or 975nm
- Floating Anode / Cathode
- Direct Modulation up to 100 MHz

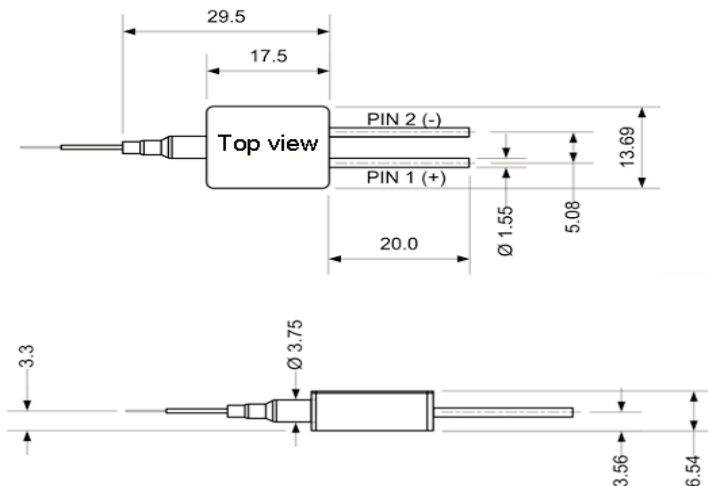
Benefits:

- Ultra long Lifetime
- Cost-effective
- Robust
- RoHS Compliant

Applications:

- Materials Processing
- Illumination
- Pumping
- Medical Treatment

Module 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.)	9	W
Peak Wavelength at P_{op}	λ_{peak}	915, 940, 960, 975+/-10	nm
Spectral Width (95% Power)	λ_{rms}	6	nm
Threshold Current	I_{th}	600	mA
Operating Current	I_{op}	11.0	A
Operating Voltage	V_{op}	1.9	V
Connector Type (optional)		SMA	
Heat Resistance LD to bottom of base plate	R_H	3.5	K / W
Power Conversion Efficiency		48	%
Recommended Case Temperature		20 - 30	°C
Wavelength Shift vs. Temperature		0.35	nm / K
Wavelength Shift vs. Power		1.1	nm / W

Fiber Specifications

Type		AFS 105 / 125 Y	
Fiber Core Diameter		105	μm
Fiber Numerical Aperture	NA	0.15 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 $1.5 \times P_{op}$ if pulse time is $< 5 \mu\text{sec}$ and average power is lower than P_{op} (c.w.).
- (2) Keep the heat sink at $\leq 30^\circ$
- (3) We recommend a standard heatsink with thermal resistance of $< 0.5 \text{K/W}$ using forced air flow cooling. Use thermal interface material rated for a thermal contact resistance of less than $1.3 \text{cm}^2 \text{K/W}$.

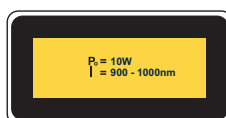
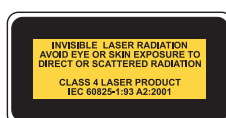
Absolute Maximum Ratings

Parameter	Symbol	Min	Max	Unit
Storage Temperature	T_{max}	-40	85	°C
Operating Case Temp.	$T_{op, case temp.}$	15	60	°C
Maximum Processing Temp.-max 10sec.	$T_{op, Processing}$		250	°C
LD Forward Current c.w.	$I_{op, max}$		12	A
LD Reverse Voltage	$V_{R, max}$		2	V
Rel. Humidity		5	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.