

**LD808A500C17****808nm 500mW 70°C CW Laser Diode in ø5.6mm TO-18 Can Package****Description**

The Lasermate LD808A500C17 is an 808nm, 500mW laser diode in a ø5.6mm, TO-can package and with operating temperature of 70°C. The laser diode is suitable as compact light source for many applications.

Features

- 808nm Infrared laser diode
- Optical output power: 500mW CW
- Operating temperature: +70°C
- High reliability
- Low operation current
- Low divergence angle
- Package: TO-18, ø5.6mm

Applications

- Motion sensor
- Medical application
- Pumping source for solid state laser
- Infrared illumination
- Industrial application

Absolute Maximum Ratings

PARAMETER	SYMBOL	RATING	UNIT
Optical output power($T_c=25^\circ\text{C}$)	P_o	600	mW
Reverse voltage (LD) ($T_c=25^\circ\text{C}$)	V_{RLD}	2	V
Reverse voltage (PD) ($T_c=25^\circ\text{C}$)	V_{RPD}	30	V
Operating temperature (Case)	T_{opr}	-10 to +70	$^\circ\text{C}$
Storage temperature	T_{stg}	-10 to +85	$^\circ\text{C}$

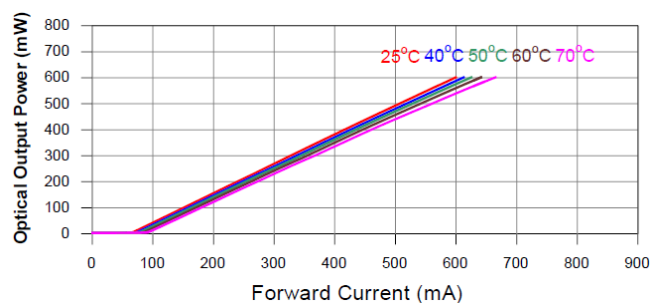
Electrical and Optical Characteristics ($T_c = 25^\circ\text{C}$)

PARAMETER	SYMBOL	MIN.	TYP.	MAX.	UNIT	CONDITIONS
Lasing wavelength	λ	805	808	811	nm	$P_o = 500\text{mW}$
Threshold current	I_{th}	-	70		mA	$P_o = 500\text{mW}$
Operating current	I_{op}	-	520	550	mA	$P_o = 500\text{mW}$
Operating voltage	V_{op}	-	1.92	2.1	V	$P_o = 500\text{mW}$
Slope efficiency	η	0.95	1.1	-	mW/mA	$P_o = 125\text{-}375\text{mW}$
Monitor current	I_m	-	0.6	2.5	mA	$P_o = 500\text{mW}$
Parallel divergence angle	$\Theta_{//}$	-	8	-	deg	$P_o = 500\text{mW}$
Perpendicular divergence angle	$\Theta_{\perp}$	-	28	-	deg	$P_o = 500\text{mW}$

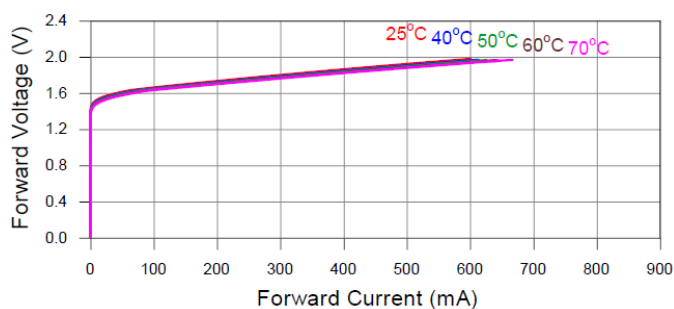
* $\Theta_{//}$ and $\Theta_{\perp}$ are defined as the angle within which the intensity is 50% of the peak value.

Typical Characteristics

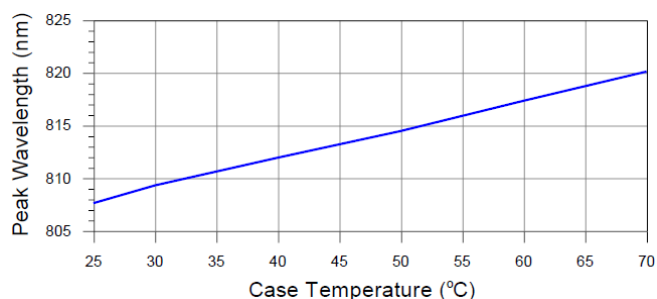
Optical Output Power vs. Forward Current



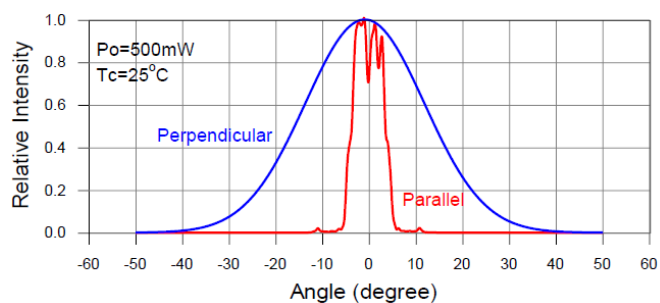
Forward Voltage vs. Forward Current



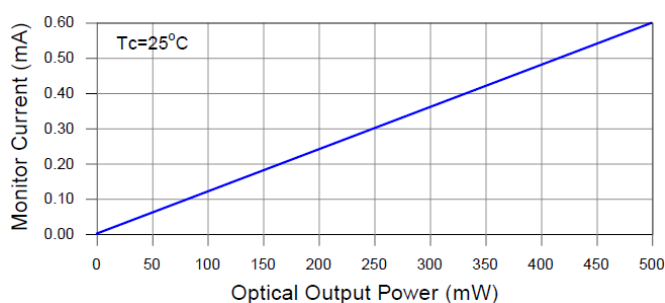
Peak Wavelength vs. Case Temperature



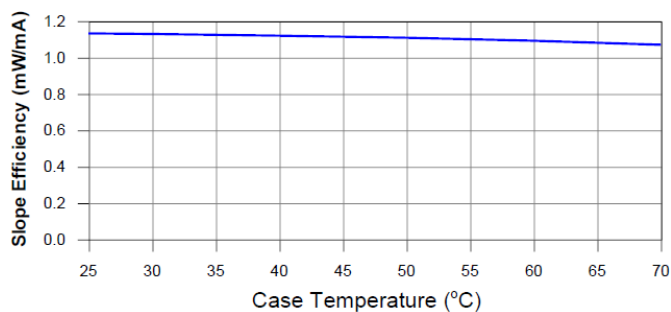
Far-Field Pattern



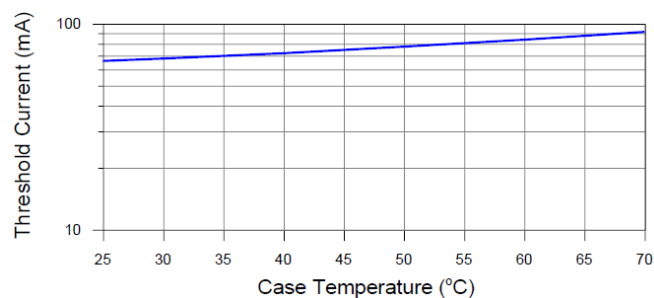
Monitor Current vs. Optical Output Power



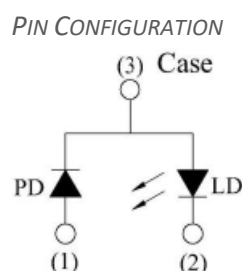
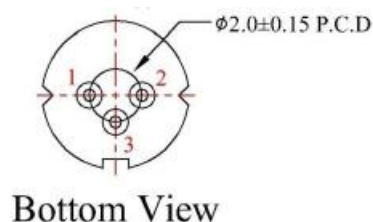
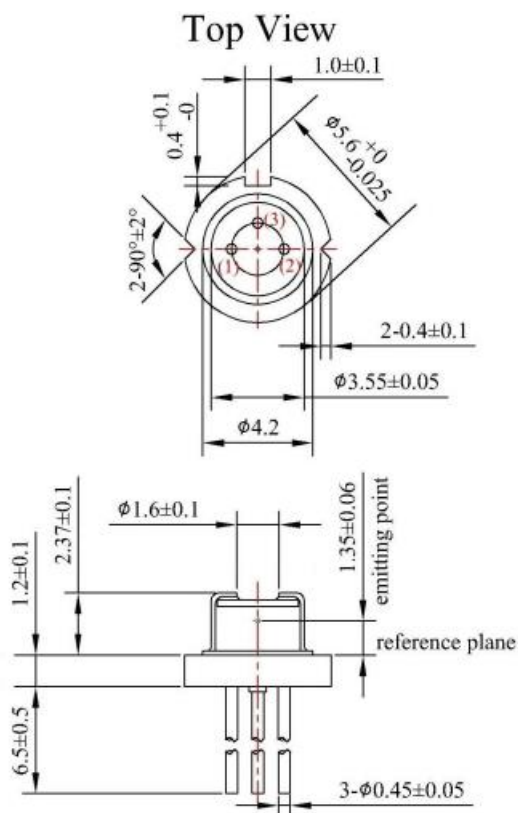
Slope Efficiency vs. Case Temperature



Threshold Current vs. Case Temperature



Mechanical Outline (unit: mm)



Additional Notes

- Do not operate the device above maximum ratings. Doing so may cause unexpected and permanent damage to the device.
- Take precautions to avoid electrostatic discharge and/or momentary power spikes. A change in the characteristics of the laser or premature failure may result.
- Proper heat sinking of the device assures stability and lifetime. Always ensure that maximum operating temperatures are not exceeded.
- Observing visible or invisible laser beams with human eye directly, or indirectly, can cause permanent damage. Use a camera to observe the laser.
- No laser device should be used in any application or situation where life or property is at risk in the event of device failure.
- Specifications are subject to change without notice. Ensure that you have the latest specification by contacting us prior to purchase or use of the product.