



# 830nm 200mW Laser Diode, TO-56 (5.6mm) Package LD830A200C16

## Data Sheet

### Description

The Lasermate LD830A200C16 is an 830nm, 200mW laser diode in a  $\varnothing$ 5.6mm, TO-can package and with operating temperature of 60°C. The laser diode is suitable as a compact light source for many applications.

### Features

- 830nm Infrared laser diode
- Optical output power: 200mW CW
- Operating temperature: +60°C
- Small perpendicular divergence angle
- Built-in photodiode for monitoring laser diode
- Package: TO-56 (dia. 5.6mm)

### Applications

- Motion sensor
- 3D depth sensor
- Illumination
- Industry
- Medical application

### Absolute Maximum Ratings ( $T_C = 25^\circ\text{C}$ )

PARAMETER	SYMBOL	RATING	UNIT
Optical output power	$P_O$	200	mW
Reverse voltage (LD)	$V_{RL}$	2	V
Reverse voltage (PD)	$V_{RD}$	30	V
Operating temperature (Case)	$T_{op}$	-10 to +60	°C
Storage temperature	$T_{stg}$	-40 to +85	°C

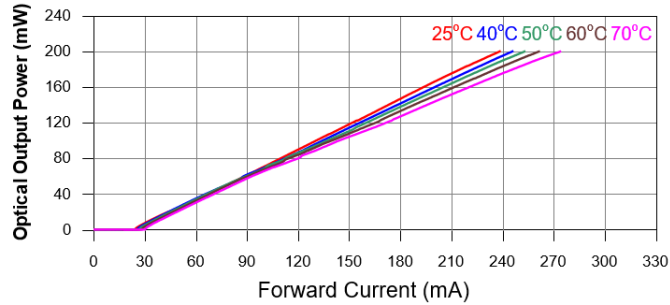
### Electrical and Optical Characteristics ( $T_C = 25^\circ\text{C}$ )

PARAMETER	SYMBOL	MIN.	TYP.	MAX.	UNIT	CONDITIONS
Lasing wavelength	$\lambda_p$	820	830	840	nm	$P_O = 200\text{mW}$
Threshold current	$I_{th}$	-	30	40	mA	-
Operating current	$I_{op}$	-	240	260	mA	$P_O = 200\text{mW}$
Differential Efficiency	$\eta$	-	0.94	-	mW/mA	$P_O = 50\text{-}150\text{mW}$
Operating voltage	$V_{op}$	-	2.0	2.3	V	$P_O = 200\text{mW}$
Monitor current	$I_m$	0.05	0.25	0.5	mA	$P_O = 200\text{mW}$ , $V_{RD}=5\text{V}$
Parallel divergence angle	$\Theta_{//}$	-	9	14	deg	$P_O = 200\text{mW}$ FWHM
Perpendicular divergence angle	$\Theta_{\perp}$	-	20	25	deg	$P_O = 200\text{mW}$ FWHM

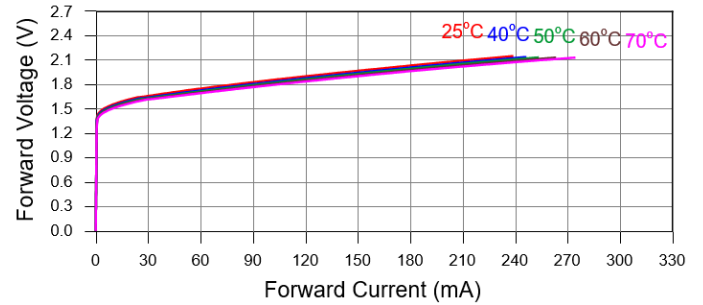
Note:  $\Theta_{//}$  and  $\Theta_{\perp}$  are defined as the angle within which the intensity is 50% of the peak value.

## Typical Characteristics

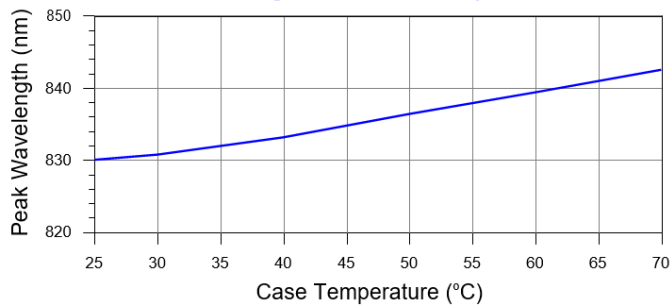
Optical Output Power v.s. Forward Current



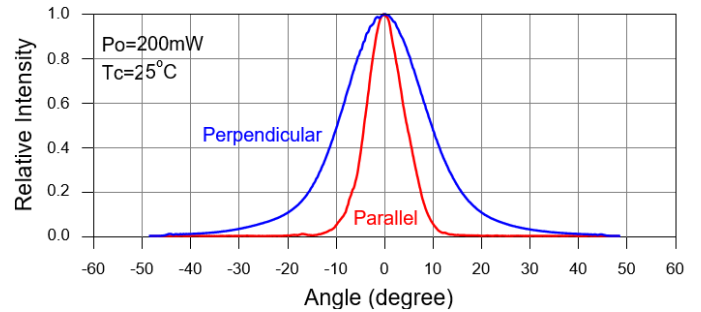
Forward Voltage v.s. Forward Current



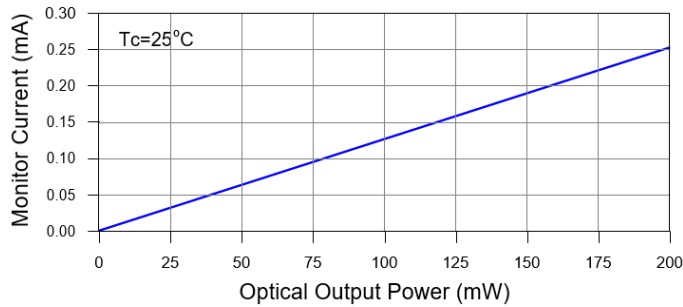
Peak Wavelength v.s. Case Temperature



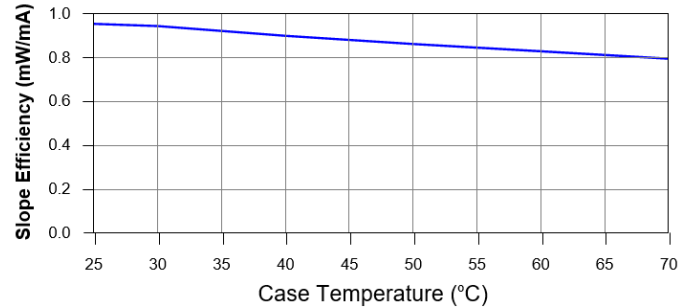
Far-Field Pattern



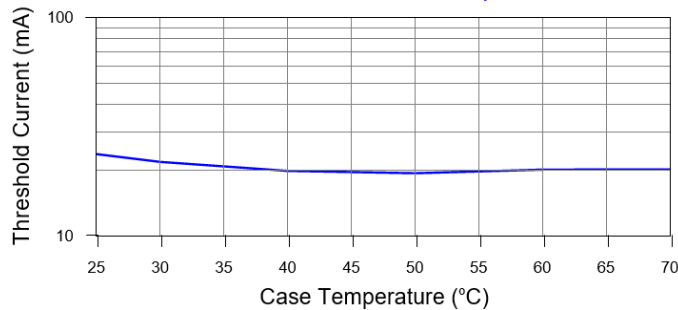
Monitor Current v.s. Optical Output Power



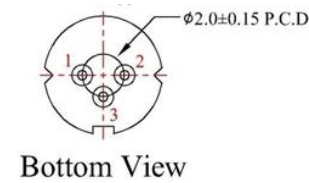
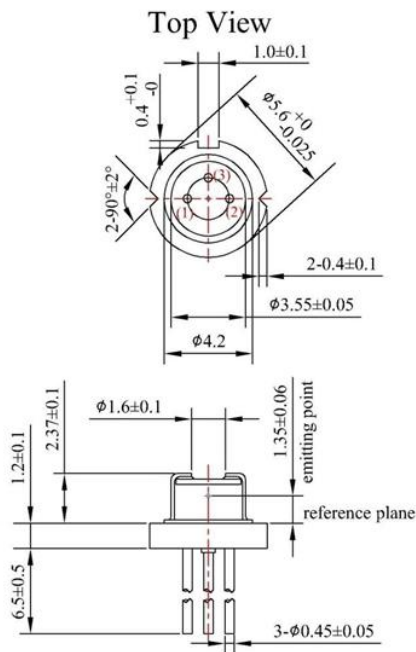
Slope Efficiency v.s. Case Temperature



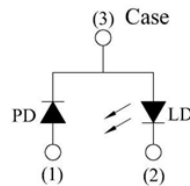
Threshold Current v.s. Case Temperature



Mechanical Outline (unit: mm)



PIN CONFIGURATION



#### 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.