



# 830nm 500mW Laser Diode, TO-56 (5.6mm) Package

## LD830A500C16

### Data Sheet

#### Features

- 830nm Infrared laser diode
- Optical output power: 500mW 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
- Infrared illumination
- Industry
- Phototherapy

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

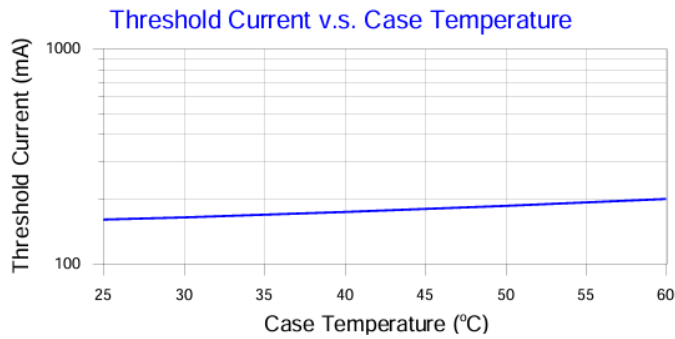
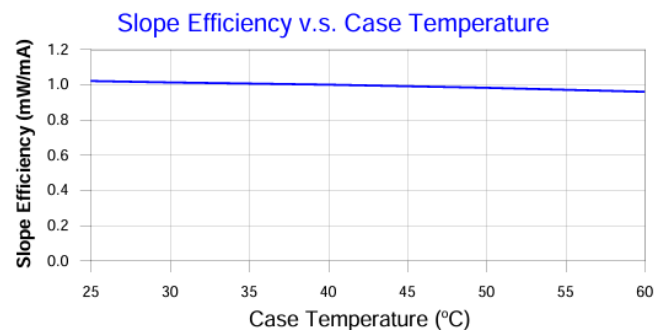
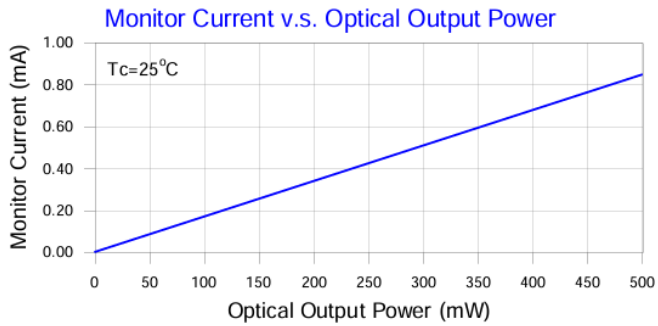
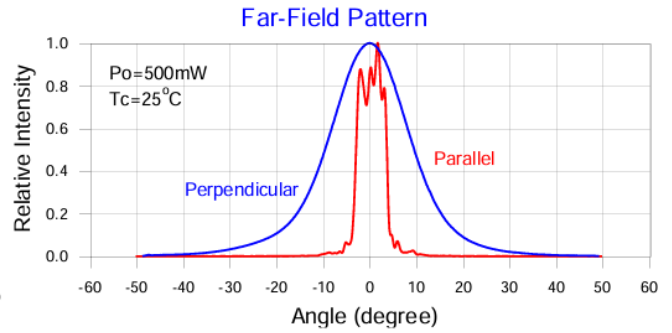
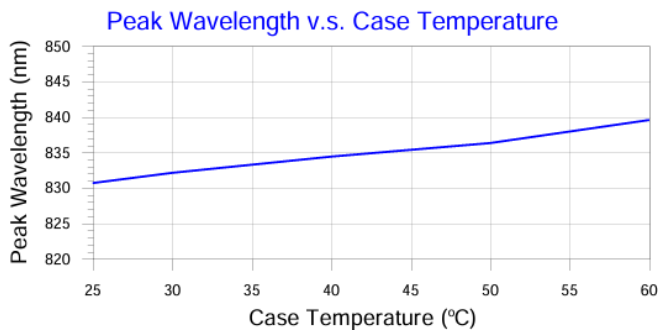
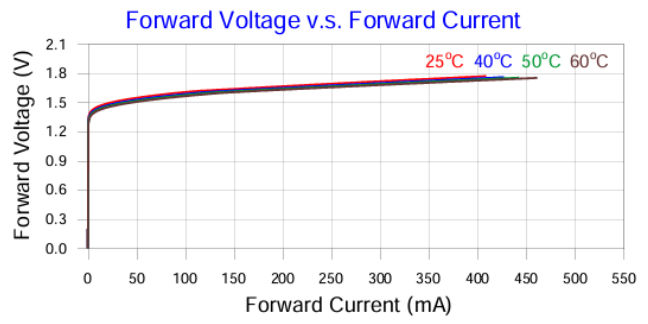
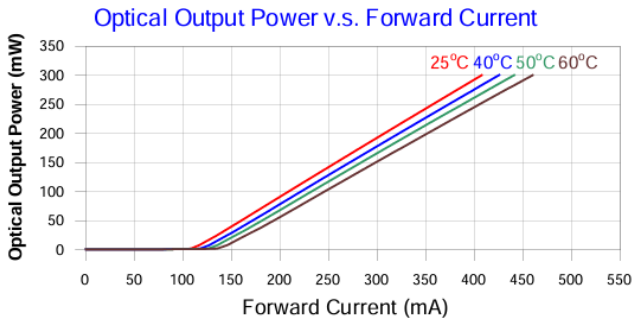
PARAMETER	SYMBOL	RATING	UNIT
Optical output power	$P_O$	500	mW
Reverse voltage (LD)	$V_{RL}$	2	V
Reverse voltage (PD)	$V_{RD}$	30	V
Operating temperature	$T_{op}$	-10 to +60	$^\circ\text{C}$
Storage temperature	$T_{stg}$	-40 to +85	$^\circ\text{C}$

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

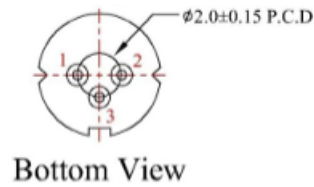
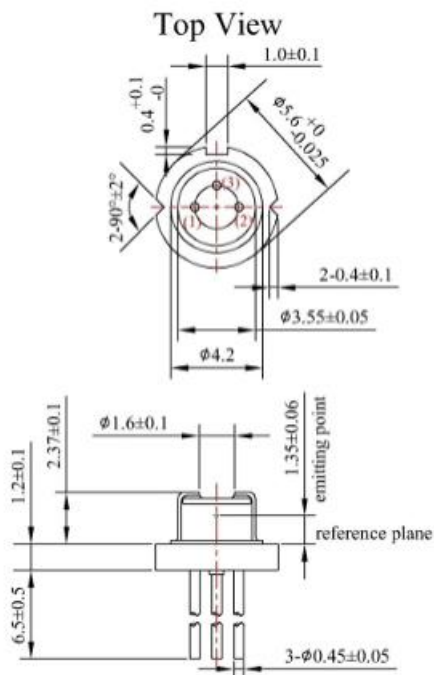
PARAMETER	SYMBOL	MIN.	TYP.	MAX.	UNIT	CONDITIONS	
Lasing wavelength	$\lambda_p$	820	830	840	nm	$P_O = 500\text{mW}$	
Threshold current	$I_{th}$	-	170	190	mA	-	
Operating current	$I_{op}$	-	660	720	mA	$P_O = 500\text{mW}$	
Slope efficiency	$\eta$	-	1.0	-	mW/mA	$P_O = 125\text{-}375\text{mW}$	
Operating voltage	$V_{op}$	-	1.95	2.2	V	$P_O = 500\text{mW}$	
Monitor current	$I_m$	0.1	0.85	2.0	mA	$P_O = 500\text{mW}, V_{RD} = 5\text{V}$	
Beam divergence (FWHM)	Parallel	$\Theta_{//}$	-	8	13	deg	$P_O = 500\text{mW}$
	Perpendicular	$\Theta_{\perp}$	-	18	23	deg	$P_O = 500\text{mW}$

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

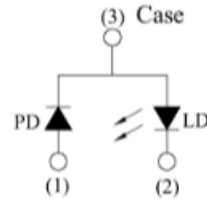
Typical Characteristics



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.