



830nm 50mW Laser Diode, TO-56 (5.6mm) Package

LD830A50C16

Data Sheet

Features

- 830nm Infrared laser diode
- Optical output power: 50mW CW
- Operating temperature: +60°C
- Small perpendicular divergence angle
- Lateral single mode lasing
- 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°C)

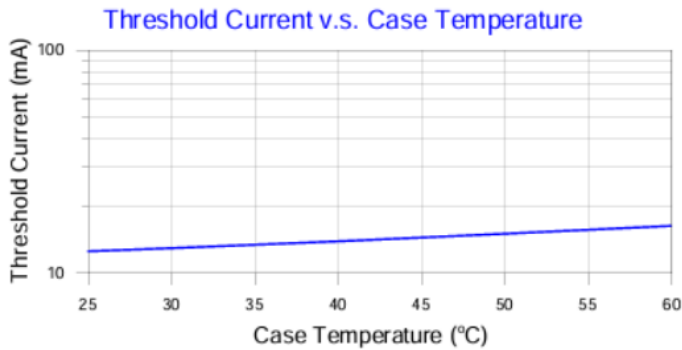
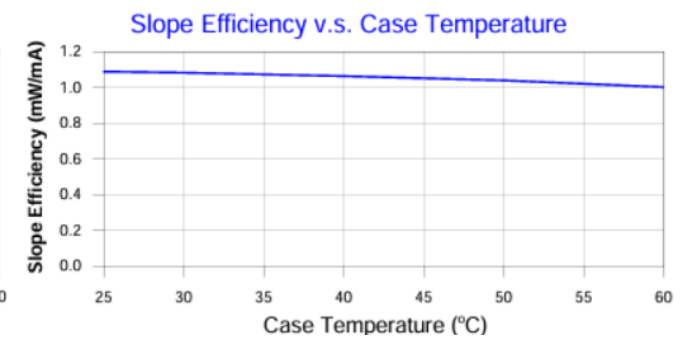
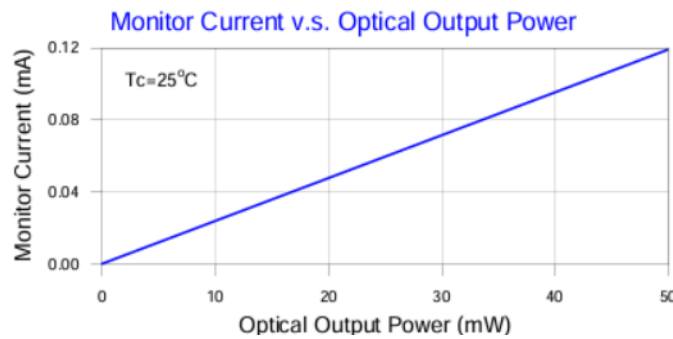
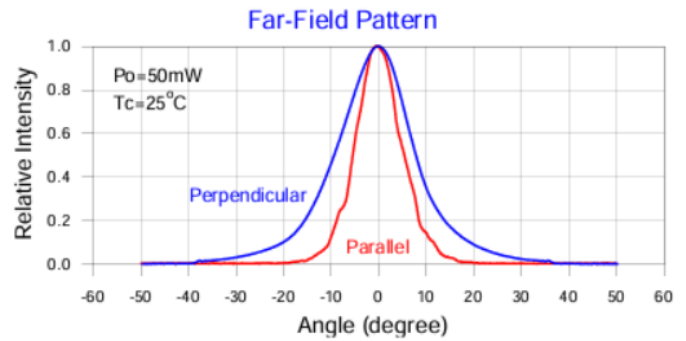
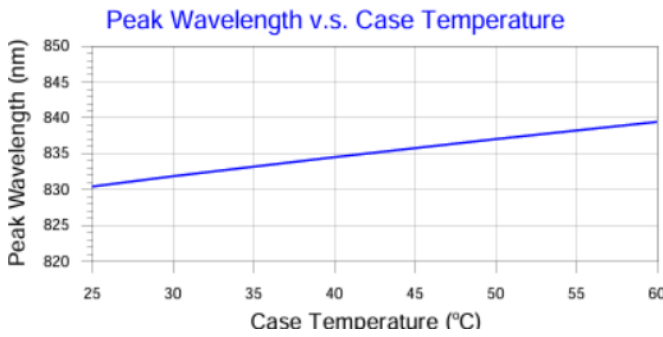
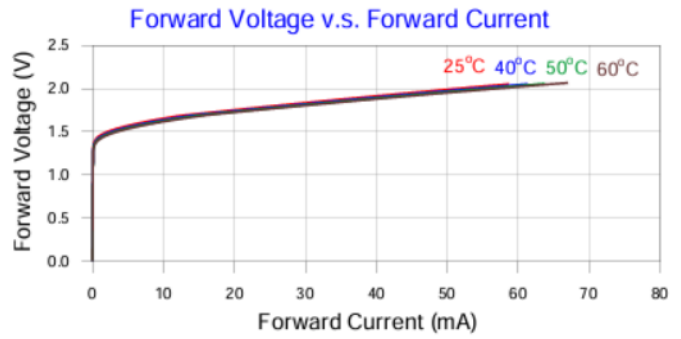
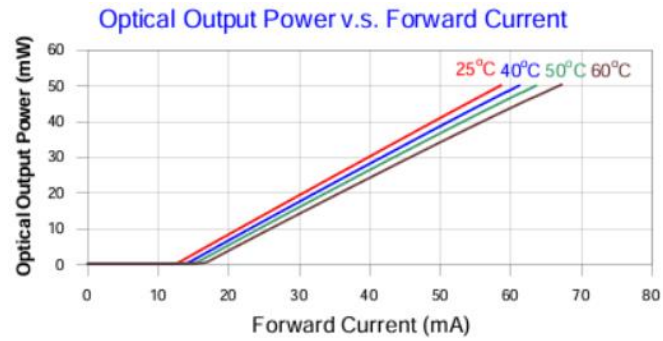
PARAMETER	SYMBOL	RATING	UNIT
Optical output power	P _O	50	mW
Reverse voltage (LD)	V _{RL}	2	V
Reverse voltage (PD)	V _{RD}	30	V
Operating temperature	T _{op}	-10 to +60	°C
Storage temperature	T _{stg}	-40 to +85	°C

Electrical and Optical Characteristics (T_c = 25°C)

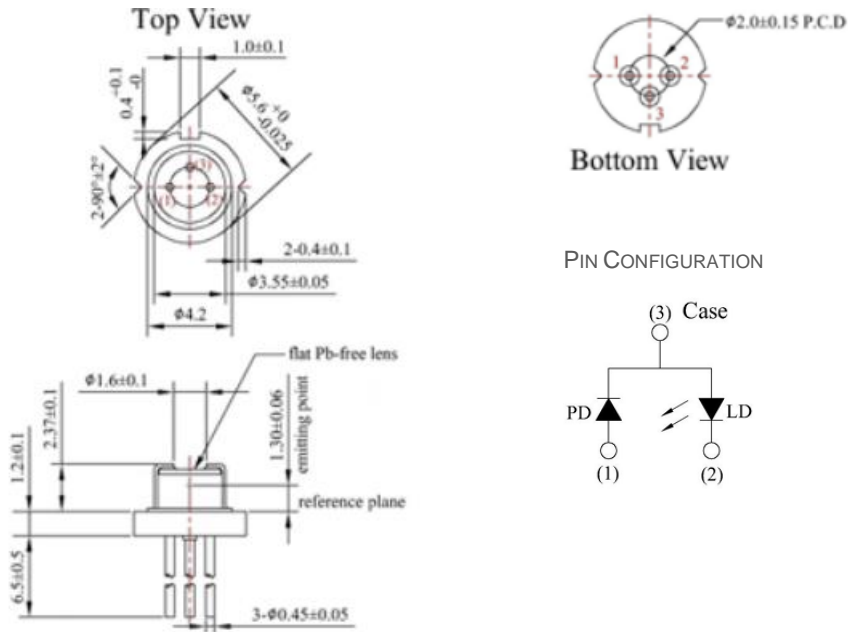
PARAMETER	SYMBOL	MIN.	TYP.	MAX.	UNIT	CONDITIONS	
Lasing wavelength	λ _p	820	830	840	nm	P _O = 50mW	
Threshold current	I _{th}	-	13	18	mA	-	
Operating current	I _{op}	-	62	75	mA	P _O = 50mW	
Slope efficiency	η	-	1.0	-	mW/mA	P _O = 12.5-37.5mW	
Operating voltage	V _{op}	-	2.1	2.6	V	P _O = 50mW	
Monitor current	I _m	0.05	0.12	0.5	mA	P _O = 50mW, V _{RD} = 5V	
Beam divergence (FWHM)	Parallel	Θ _{//}	-	11	16	deg	P _O = 50mW
	Perpendicular	Θ _⊥	-	18	23	deg	P _O = 50mW

Note: Θ_{//} and Θ_⊥ are defined as the angle within which the intensity is 50% of the peak value.

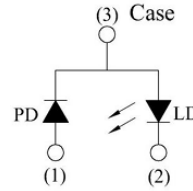
Typical Characteristics



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.