



# 638nm 50mW Laser Diode, TO-18 ( $\varnothing$ 5.6mm) Package LD638A50C15

## Data Sheet

### Features

- 638nm Visible Laser Diode
- Optical output power: 50mW CW
- High temperature operation: 50°C
- Small size
- Single transverse mode
- High performance in temperature characteristic
- Package: TO-18,  $\varnothing$ 5.6mm

### Applications

- Laser projection
- Medical therapy

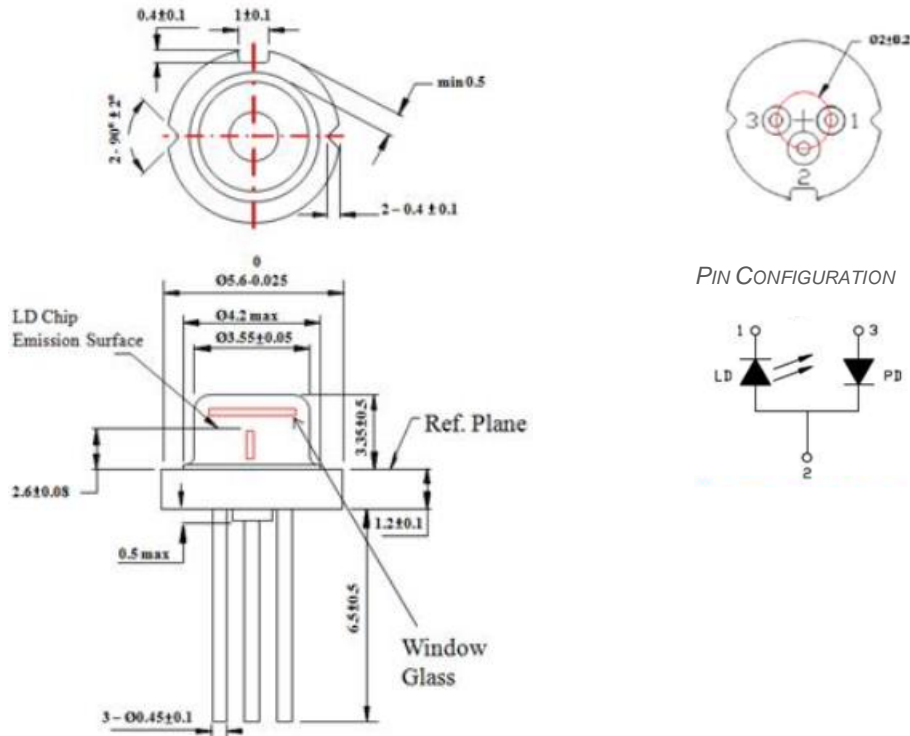
### Specifications

ABSOLUTE MAXIMUM RATINGS			
PARAMETER	SYMBOL	RATING	UNIT
Optical output power	$P_O$	50	mW
Reverse voltage (LD)	$V_{RL}$	2	V
Operating temperature	$T_{opr}$	-10 to +50	°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
Peak wavelength	$\lambda$	-	638	-	nm	$P_O = 50\text{mW}$
Threshold current	$I_{th}$	-	45	-	mA	$P_O = 50\text{mW}$
Operating current	$I_{op}$	-	90	-	mA	$P_O = 50\text{mW}$
Operating voltage	$V_{op}$	-	2.4	-	V	$P_O = 50\text{mW}$
Slope efficiency	$\eta$	-	1.0	-	mW/mA	$P_O = 45\text{-}50\text{mW}$
Monitor current	$I_m$	-	0.25	-	mA	
Parallel divergence angle	$\Theta_{//}$	-	8	-	deg	$P_O = 50\text{mW}$
Perpendicular divergence angle	$\Theta_{\perp}$	-	20	-	deg	$P_O = 50\text{mW}$

\*Sufficient heat dissipation is required for CW operation.

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.