



638nm 500mW Laser Diode, TO-56 (ø5.6mm) Package LD638D500C13

Data Sheet

Features

- 638nm Visible Laser Diode
- Optical output power: 500mW CW
- High power
- High brightness
- Package: TO-56, ø5.6mm

Applications

- Laser display
- PDT
- Biochemistry
- Military
- Medical/Life and health science
- Illumination

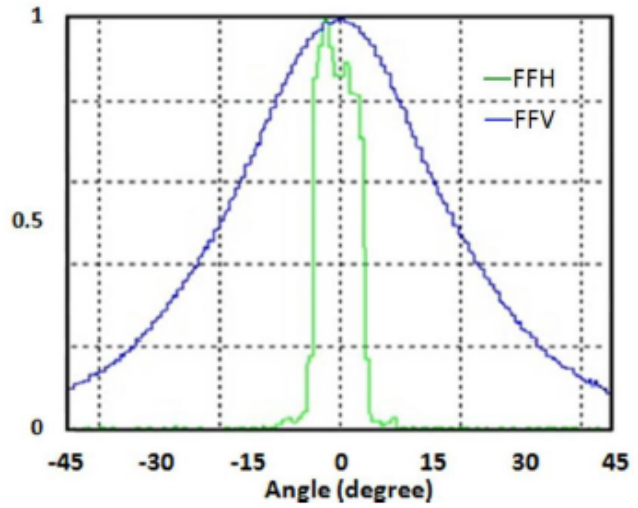
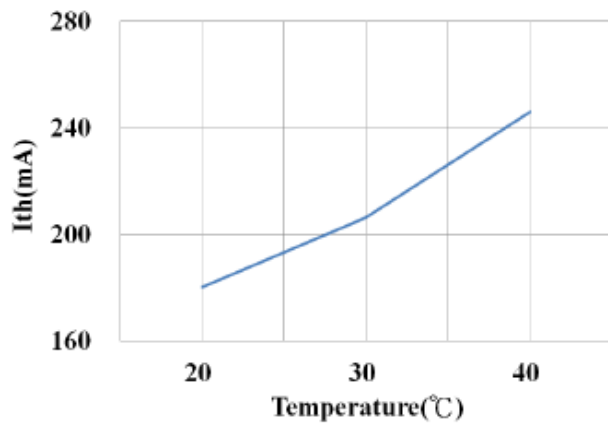
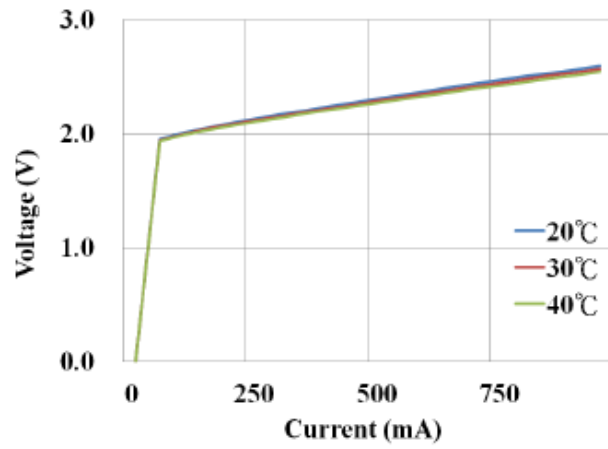
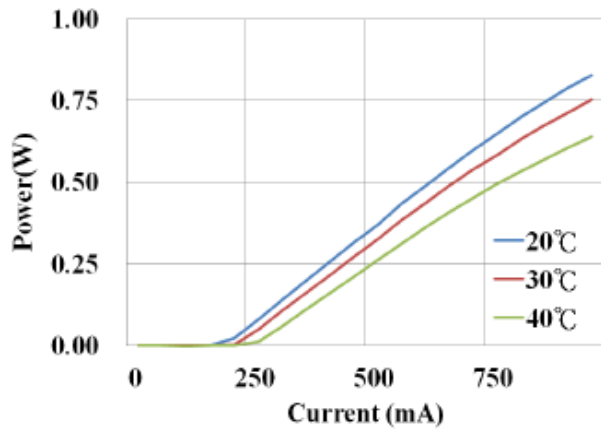
Specifications

ABSOLUTE MAXIMUM RATINGS			
PARAMETER	SYMBOL	RATING	UNIT
Optical output power	P_O	500	mW
Reverse voltage (LD)	V_{RL}	2	V
Operating temperature	T_{opr}	-10 to +30	°C
Storage temperature	T_{stg}	-40 to +85	°C

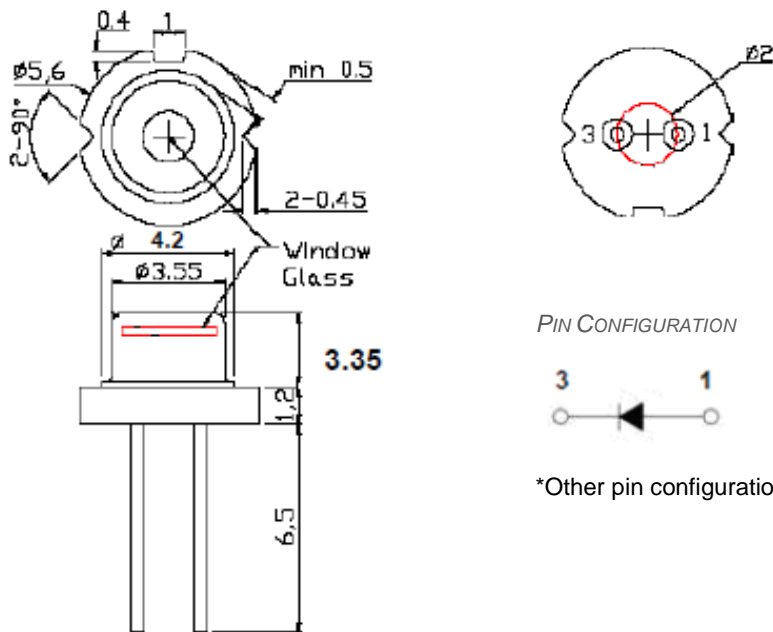
ELECTRICAL AND OPTICAL CHARACTERISTICS ($T_C = 25\text{ }^\circ\text{C}$)						
PARAMETER	SYMBOL	MIN.	TYP.	MAX.	UNIT	CONDITIONS
Peak wavelength	λ	632	638	644	nm	$P_O = 500\text{mW}$
Polarization			TM			
Threshold current	I_{th}	-	200	300	mA	
Operating current	I_{op}	-	700	900	mA	$P_O = 500\text{mW}$
Operating voltage	V_{op}	1.9	2.5	3.0	V	$P_O = 500\text{mW}$
Slope efficiency	η	-	1.0	-	mW/mA	$P_O = 50\text{-}500\text{mW}$
Parallel divergence angle	$\Theta_{//}$	-	6	-	deg	$P_O = 500\text{mW}$
Perpendicular divergence angle	Θ_{\perp}	25	36	45	deg	$P_O = 50\text{mW}$

*Sufficient heat dissipation is required for CW operation.

Typical Characteristics



Mechanical Outline (unit: mm)



PIN CONFIGURATION



*Other pin configurations may be available upon request.

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.