650nm 7mW Laser Diode – ⌀5.6mm TO-18 Package, 85°C Operation
LD-650-7AM

Data Sheet

Description

The Lasermate LD-650-7AM is a 650nm, 7mW laser diode in a ⌀5.6mm, TO-can package and with high operating temperature of 85ºC. The laser diode is suitable as a light source for many applications, including automobile DVD, bar code readers, high reliability laser instrument, and outdoor PM2.5 detection.

Features

- 650nm AlGaInP Visible Laser Diode
- Optical output power: 7mW CW
- High temperature operation: +85ºC
- High power
- High reliability
- Package: TO-18, ⌀5.6mm

Applications

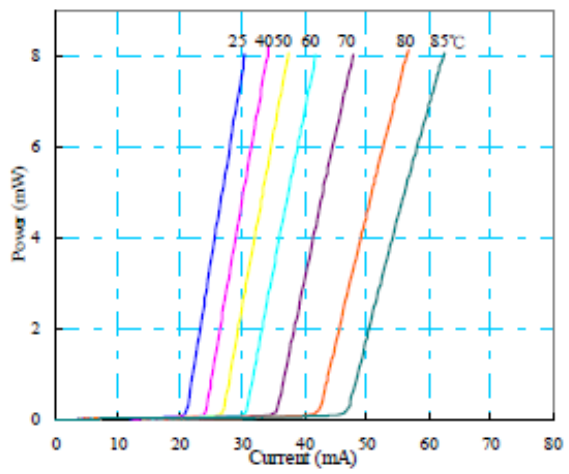
- Automobile DVD
- Bar code readers
- High reliability laser instrument
- PM2.5 detection (for outdoor)

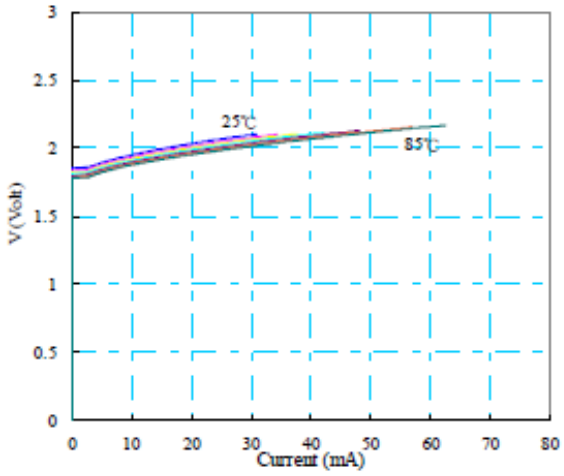
Specifications

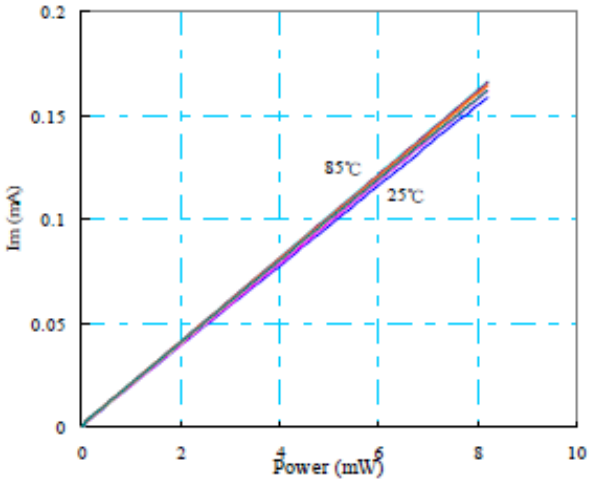
Absolute Maximum Ratings				
Parameter	Symbol	Condition	Rating	Unit
Light output power	P_O	CW	10	mW
Reverse voltage (LD)	V_{RL}	-	2	V
Reverse voltage (PD)	V_{RD}	-	30	V
Forward current (PD)	I_{FD}	-	10	mA
Case temperature	T_C	-	-10 to +85	ºC
Storage temperature	T_S	-	-40 to +85	ºC

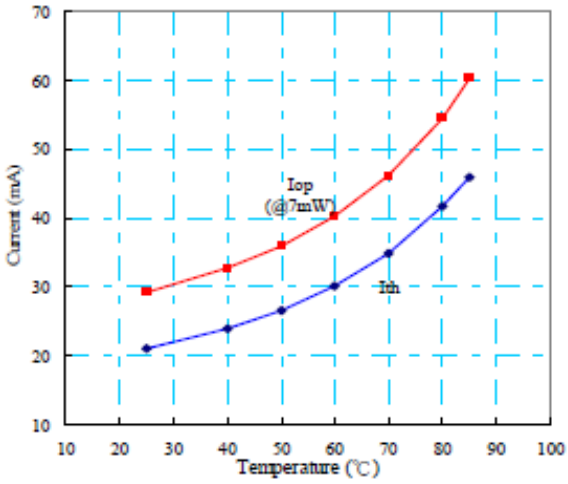
Electrical and Optical Characteristics (TC = 25 oC)						
Parameter	Symbol	Min.	Typ.	Max.	Unit	Conditions
Peak wavelength	λ	645	655	660	nm	P_O = 7mW
Threshold current	I_{th}	-	20	28	mA	
Operating current	I_{op}	-	28	35	mA	P_O = 7mW
Operating voltage	V_{op}	-	2.2	2.5	V	P_O = 7mW
Differential efficiency	η	0.7	0.85	1.10	mW/mA	P_O = 3-5mW
Monitor current	I_m	0.1	0.2	0.3	mA	P_O = 7mW, V_{RD} = 5V
Parallel divergence angle	$\Theta_{//}$	6	9	12	deg	P_O = 7mW
Perpendicular divergence angle	$\Theta_{\perp}$	25	28	32	deg	
Parallel FFP deviation angle	$\Delta\Theta_{//}$	-2	0	+2	deg	
Perpendicular FFP deviation angle	$\Delta\Theta_{\perp}$	-2	0	+2	deg	
Emission point accuracy	Δx Δy Δz	-80	0	+80	um	

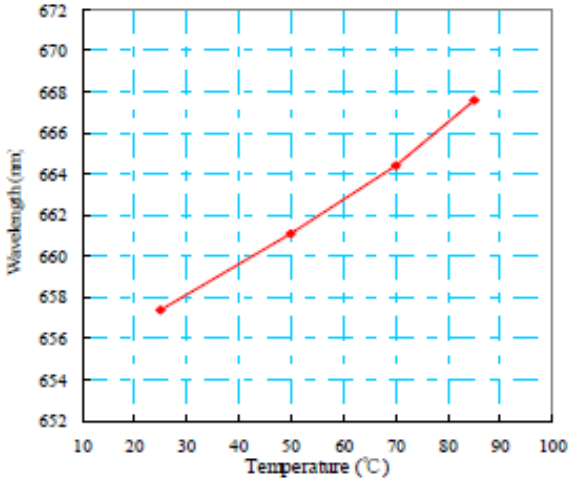
Typical Characteristics

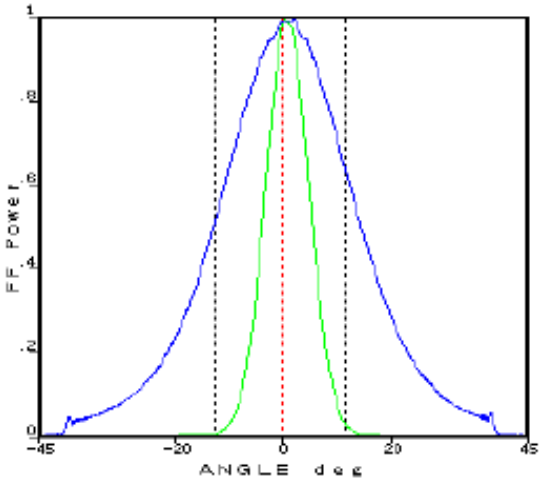




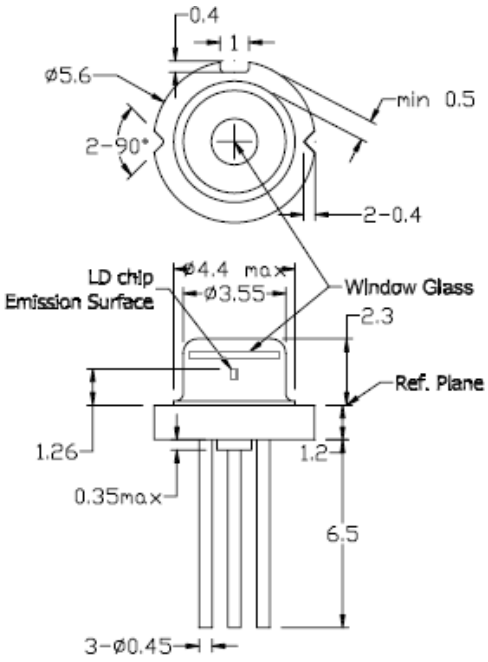


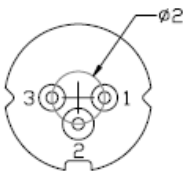




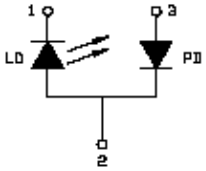


Mechanical Outline (unit: mm)





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.