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LD650A10A17
650nm 10mW 70°C CW Laser Diode in ⌀3.3mm TO-Can Package

Description

The Lasermate LD650A10A17 is a 650nm, 10mW laser diode in a ⌀3.3mm, TO-can package and with high operating temperature of 70°C. The laser diode is suitable as light source for many applications in the industry, consumer, and health fields.

Features

- 650nm Visible Laser Diode
- Optical output power: 10mW CW
- High temperature operation: +70°C
- Built-in photodiode for monitoring laser diode
- TE mode
- Single transverse mode
- Stable reliability
- Package: ⌀3.3mm, TO-can

Applications

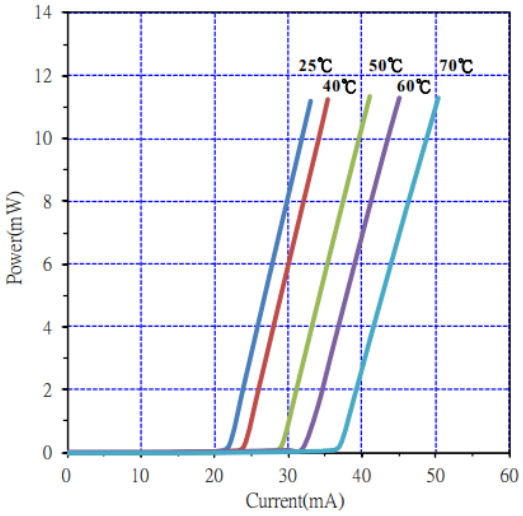
- Laser level
- Illumination
- Meter
- Scanner
- Detector
- Point light
- Game lighting

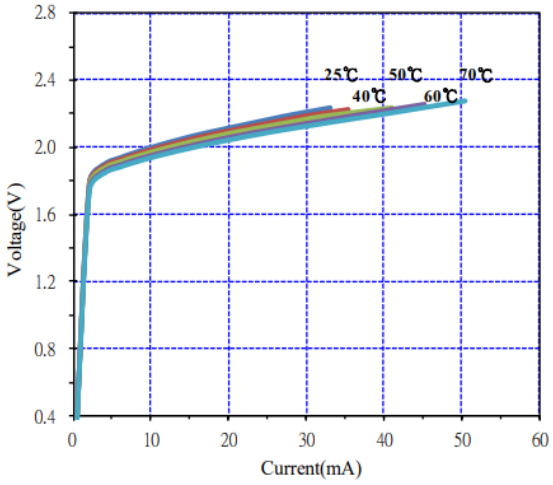
Specifications

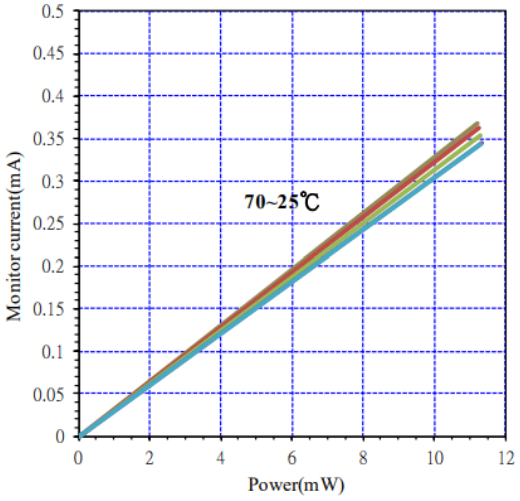
Absolute Maximum Ratings				
Parameter	Symbol	Condition	Rating	Unit
Optical output power	P_O	CW	11	mW
Reverse voltage (LD)	V_{RL}	-	2	V
Reverse voltage (PD)	V_{RD}	-	30	V
Operating temperature	T_{opr}	-	-10 to +70	°C
Storage temperature	T_{stg}	-	-40 to +85	°C

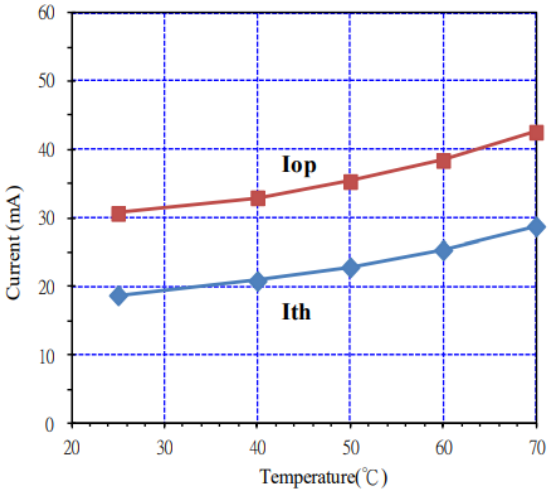
Electrical and Optical Characteristics (TC = 25 oC)						
Parameter	Symbol	Min.	Typ.	Max.	Unit	Conditions
Lasing wavelength	λ_p	645	650	660	nm	P_O = 10mW
Threshold current	I_{th}	-	20	28	mA	
Operating current	I_{op}	-	32	40	mA	P_O = 10mW
Differential Efficiency	η	0.6	0.9	1.1	mW/mA	P_O = 7-10mW
Operating voltage	V_{op}	-	2.2	2.6	V	P_O = 10mW
Monitor current	I_m	0.1	0.3	0.45	mA	P_O = 10mW, V_{RD} = 5V
Parallel divergence angle	$\Theta_{//}$	6	9	12	deg	P_O = 10mW
Perpendicular divergence angle	$\Theta_{\perp}$	24	26	32	deg	P_O = 10mW
Parallel FFP deviation angle	$\Delta\Theta_{//}$	-3	0	+3	deg	P_O = 10mW
Perpendicular FFP deviation angle	$\Delta\Theta_{\perp}$	-3	0	+3	deg	P_O = 10mW
Emission point accuracy	$\Delta x\ \Delta y\ \Delta z$	-80	0	+80	um	P_O = 10mW

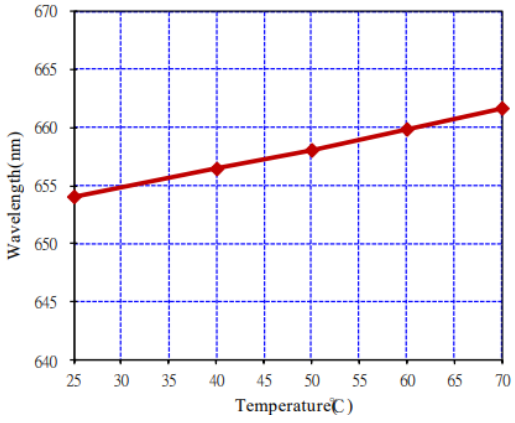
Typical Characteristics

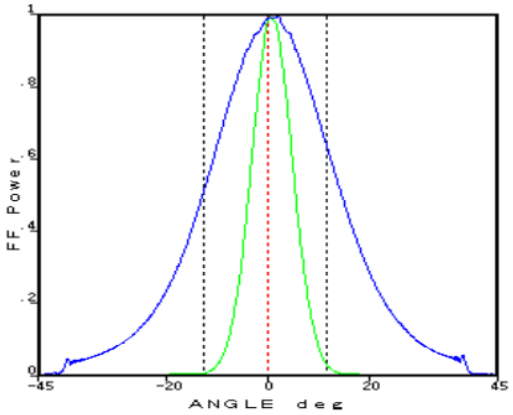




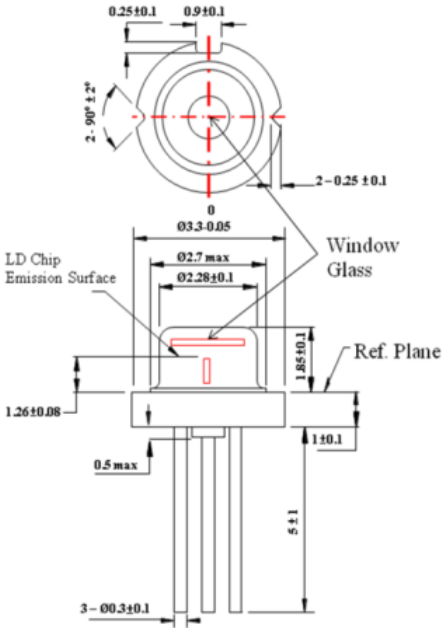


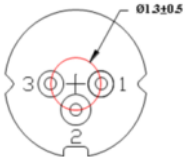




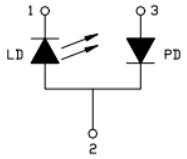


Mechanical Outline (unit: mm)





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.