



LD780A10A16

780nm 10mW 60°C CW Laser Diode in \varnothing 3.3mm TO-Can Package

Description

The Lasermate LD780A10A16 is a 780nm, 10mW laser diode in a \varnothing 3.3mm, TO-can package and with operating temperature of 60°C. The laser diode is suitable as laser light source for many applications, including industrial tools and miniature size optical modules.

Features

- 780nm AlGaInP Infrared Laser Diode
- Optical output power: 10mW CW
- High operating temperature: +60°C
- Low operating current
- High efficiency
- Better power budget for optical design
- Package: \varnothing 3.3mm, TO-can

Applications

- Industrial tools
- Mini size optical modules

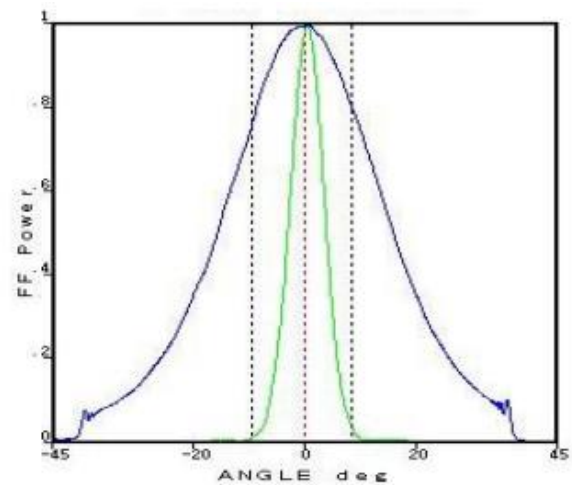
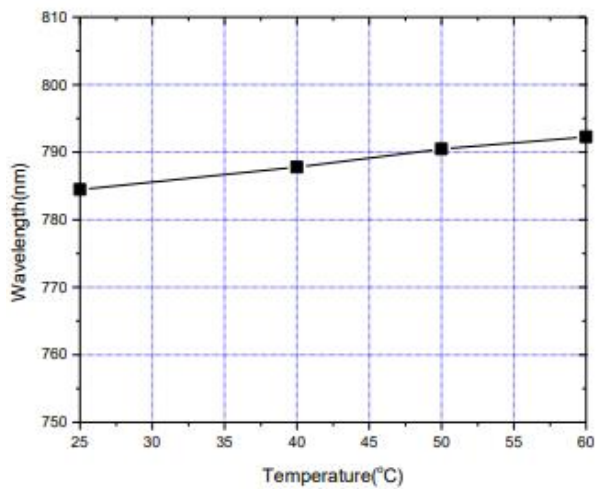
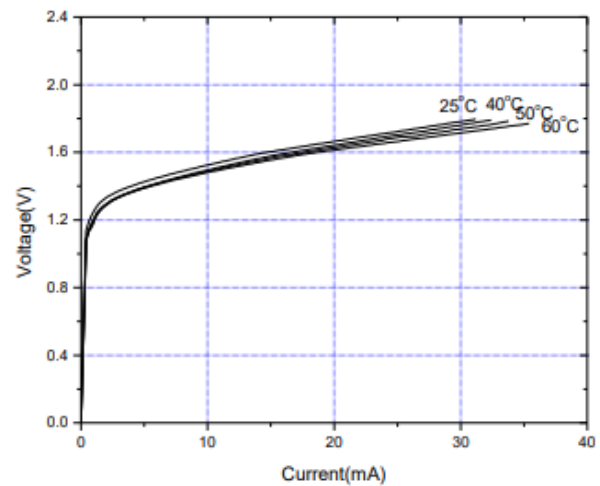
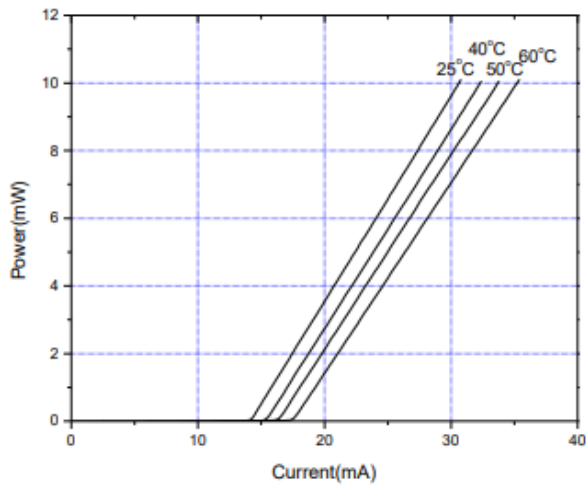
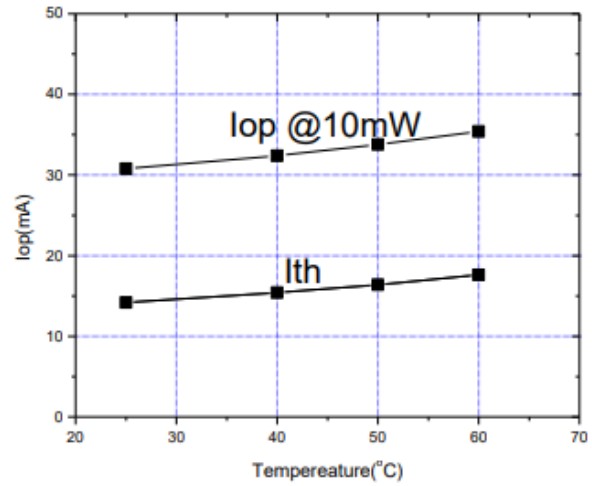
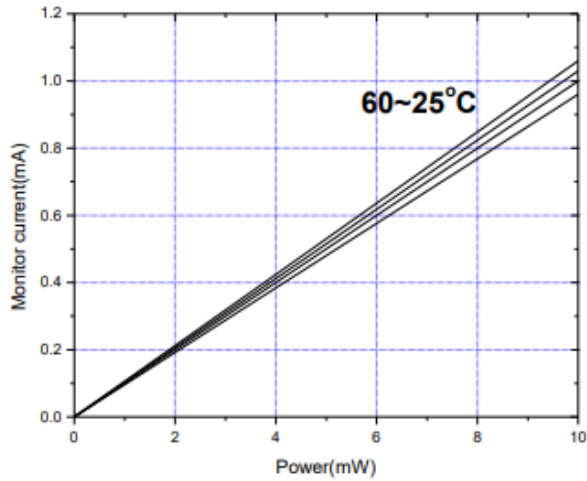
Absolute Maximum Ratings

PARAMETER	SYMBOL	CONDITION	RATING	UNIT
Optical output power	P_O	CW	12	mW
Reverse voltage (LD)	V_{RL}	-	2	V
Reverse voltage (PD)	V_{RD}	-	30	V
Forward current (PD)	I_{FD}	-	10	mA
Operating temperature	T_{opr}	-	-10 to +60	°C
Storage temperature	T_{stg}	-	-40 to +85	°C

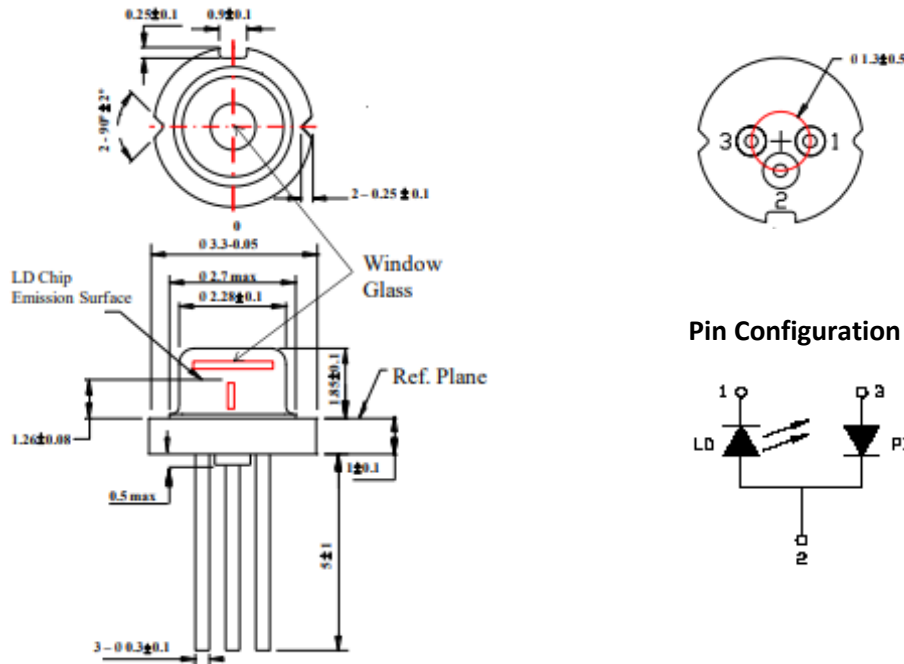
Electrical and Optical Characteristics ($T_C = 25^\circ\text{C}$)

PARAMETER	SYMBOL	MIN.	TYP.	MAX.	UNIT	CONDITIONS
Lasing wavelength	λ_p	770	780	790	nm	$P_O = 10\text{mW}$
Threshold current	I_{th}		15	25	mA	
Operating current	I_{op}	-	30	40	mA	$P_O = 10\text{mW}$
Differential Efficiency	η	0.4	0.6	0.8	mW/mA	$P_O = 7\text{-}10\text{mW}$
Operating voltage	V_{op}		1.9	2.2	V	$P_O = 10\text{mW}$
Monitor current	I_m	0.5	1.0	1.5	mA	$P_O = 10\text{mW}, V_{RD} = 5\text{V}$
Parallel divergence angle	$\theta_{//}$	7	11	15	deg	$P_O = 10\text{mW}$
Perpendicular divergence angle	θ_{\perp}	24	28	32	deg	$P_O = 10\text{mW}$
Parallel FFP deviation angle	$\Delta \theta_{//}$	-2	0	+2	deg	$P_O = 10\text{mW}$
Perpendicular FFP deviation angle	$\Delta \theta_{\perp}$	-3	0	+3	deg	$P_O = 10\text{mW}$
Emission point accuracy	$\Delta x \Delta y \Delta z$	-80	0	+80	um	$P_O = 10\text{mW}$

Typical Characteristics



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.