



LASERMATE GROUP, INC.

The Friend of Lasers

Model No. LD850A10C16 (LD-850-10A)
850nm 10mW 60°C Laser Diode in TO-18 Ø5.6mm Package

FEATURES

- 850nm 10mW CW AlGaAs Laser Diode
- Package: TO-18 (dia. 5.6mm)
- Built-in photodiode for monitoring laser diode
- Attractive light source

APPLICATIONS

- Sensor
- Industrial optical module

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
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	845	850	855	nm	$P_O = 10\text{mW}$
THRESHOLD CURRENT	I_{th}	5	10	20	mA	-
OPERATING CURRENT	I_{op}	15	25	35	mA	$P_O = 10\text{mW}$
DIFFERENTIAL EFFICIENCY	η	0.4	0.7	0.9	mW/mA	$P_O = 5\text{-}10\text{mW}$
OPERATING VOLTAGE	V_{op}	-	1.9	2.5	V	$P_O = 10\text{mW}$
MONITOR CURRENT	I_m	0.1	0.3	0.5	mA	$P_O = 10\text{mW}$
PARALLEL DIVERGENCE ANGLE	$\Theta_{//}$	7	9	12	deg	$P_O = 10\text{mW}$
PERPENDICULAR DIVERGENCE ANGLE	$\Theta_{\perp}$	25	32	40	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	$P_O = 10\text{mW}$
ASTIGMATISM	A_s			15	um	
EMISSION POINT ACCURACY	$\Delta x \Delta y \Delta z$	-60	0	+60	um	

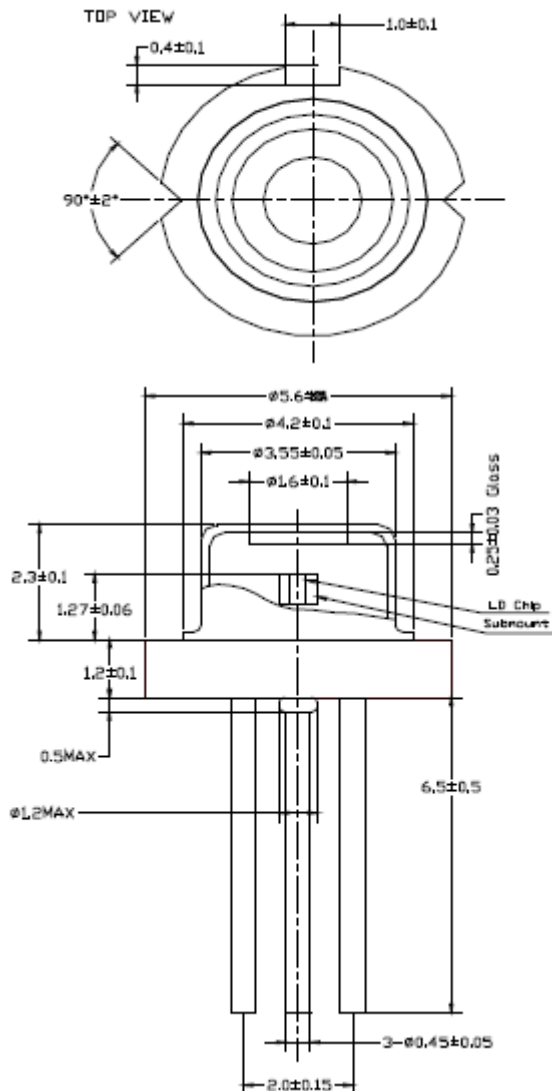
Note: The above specifications are subject to change without notice.



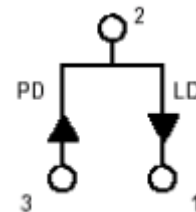
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MECHANICAL OUTLINE (unit: mm)



Pin Configuration

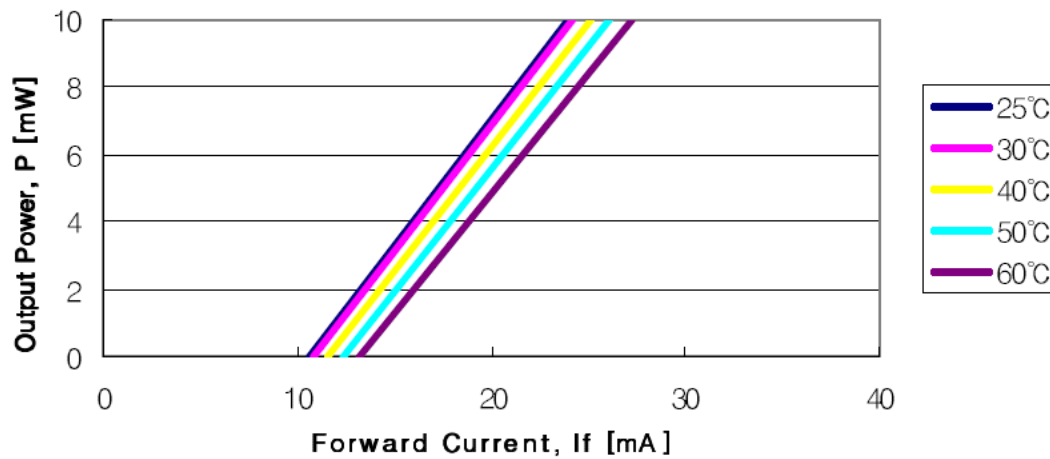


PRECAUTIONS

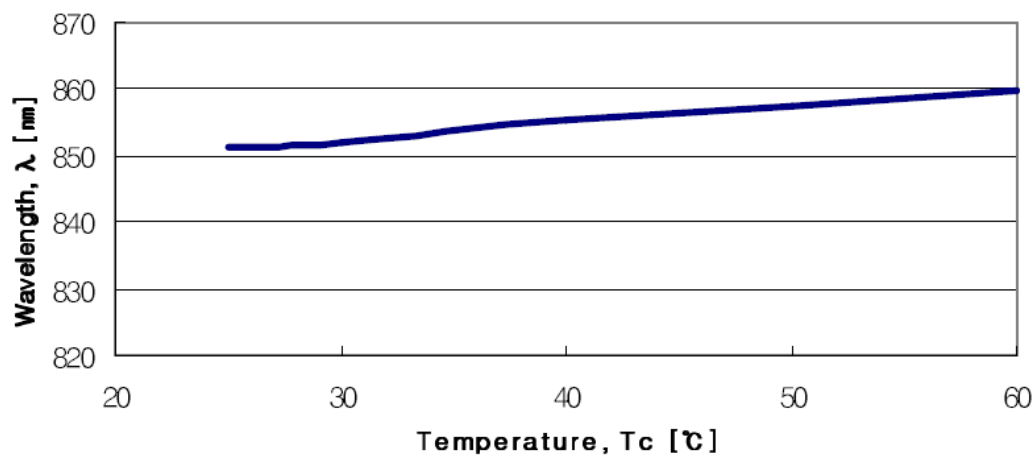
- Do not operate the device above maximum ratings. Doing so may cause unexpected and permanent damage to the device.
- Take precautions to avoid electrostatic discharge and/or momentary power spikes. A change in the characteristics of the laser or premature failure may result.
- Proper heat sinking of 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.

TYPICAL CHARACTERISTICS

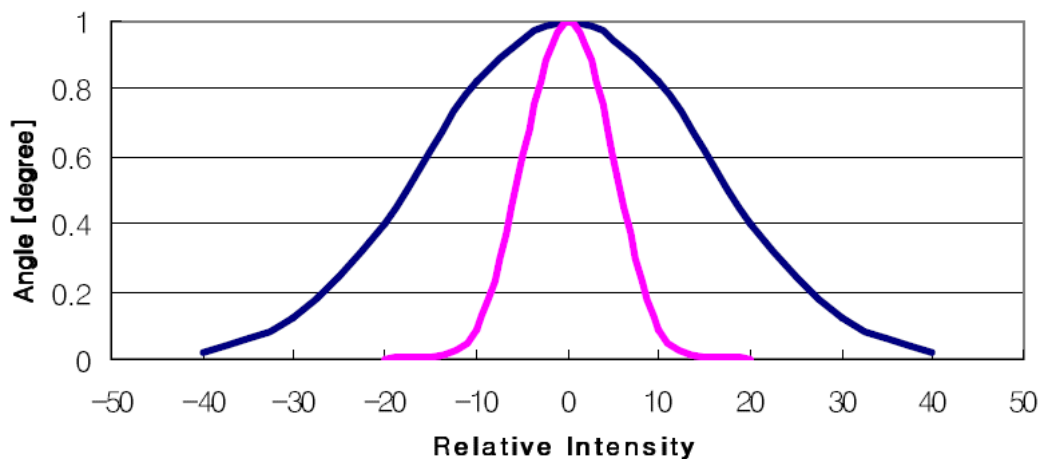
Optical Power vs Forward Current



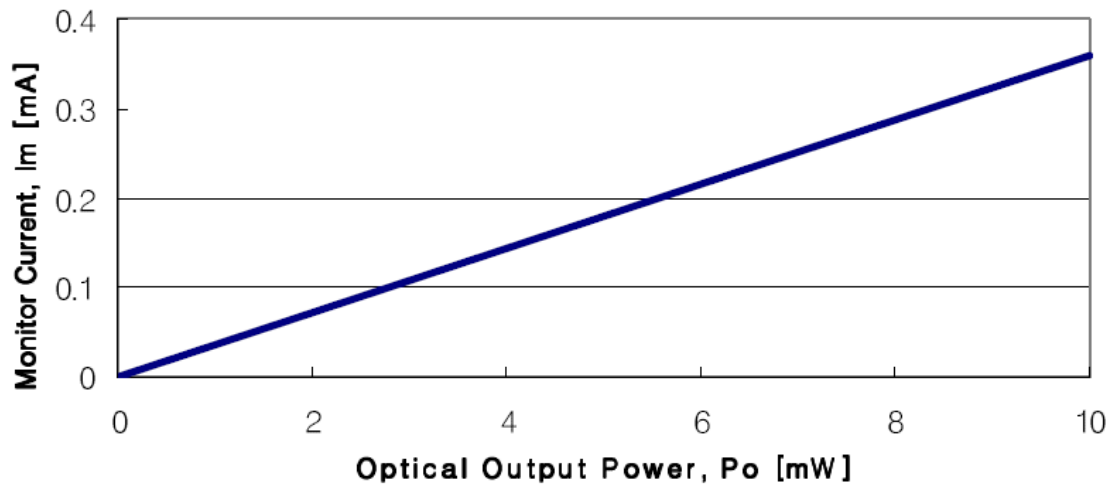
Wavelength vs Temperature



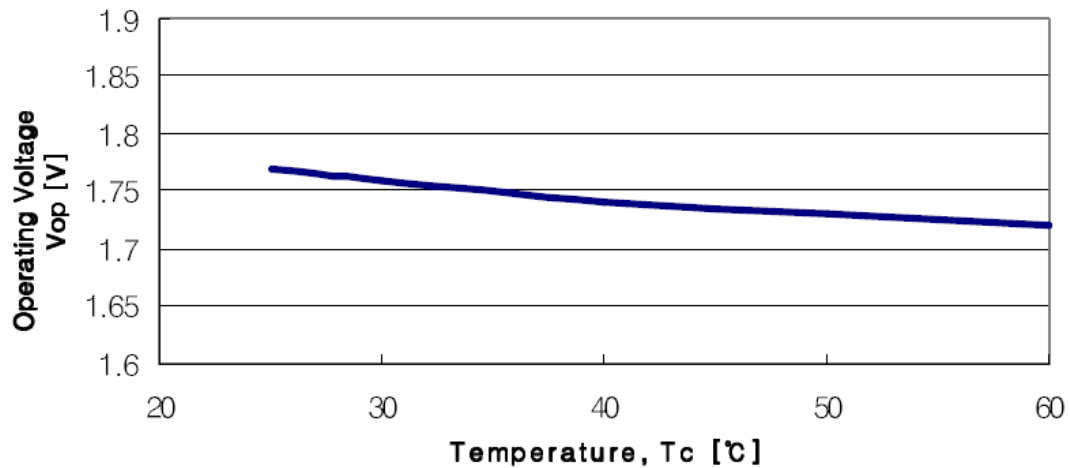
Far Field Pattern ($P_o=10\text{mW}$, $T_c=25^\circ\text{C}$)



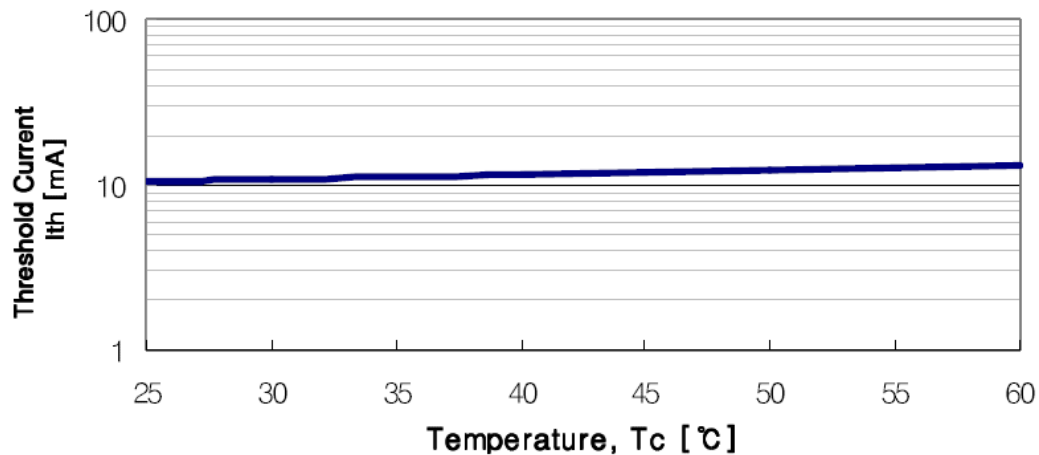
Monitor Current vs Optical Power



Operating Voltage vs Temperature



Threshold Current vs Temperature



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