450nm 80mW 70°C Laser Diode in TO-18 ϕ5.6mm Package

Part No. LD450E80C17

FEATURES

- Single mode 450nm 80mW CW Laser Diode
- Package: TO-18 (dia. 5.6mm) without PD

APPLICATIONS

- OA equipment
- Audio visual equipment
- Home appliance
- Telecommunication equipment (Terminal)
- Measuring equipment
- Tooling machines
- Computers

ABSOLUTE MAXIMUM RATINGS (T_c=25°C [1])

Parameter	Symbol	Condition	Rating	Unit
Optical output power [2]	P_O	CW	80	mW
Reverse voltage (LD)	V_{RL}	-	2	V
Operating temperature (Case temperature)	$T_{op\ (c)}$	-	-10 to +70	°C
Storage temperature	T_{stg}	-	-40 to +85	°C

Notes:

1. T_c: Case temperature
2. CW: Continuous Wave operation

ELECTRICAL AND OPTICAL CHARACTERISTICS [1] (T_C = 25 °C)

Parameter	Symbol	Min.	Typ.	Max.	Unit	Conditions
Threshold current	I_{th}	-	22	-	mA	
Operating current	I_{op}	-	110	-	mA	P_O = 80mW
Operating voltage	V_{op}	-	5.3	-	V	P_O = 80mW
Wavelength	λ_p	440	450	460	nm	P_O = 80mW
Half Intensity Angle (Parallel) [2] [3]	$\Theta_{//}$	-	10	-	deg	P_O = 80mW
Half Intensity Angle (Perpendicular) [2] [3]	$\Theta_{\perp}$	-	24	-	deg	P_O = 80mW
Misalignment angle (Parallel) [3]	$\Delta\ \Theta_{//}$	-3	-	+3	deg	P_O = 80mW
Misalignment angle (Perpendicular) [3]	$\Delta\ \Theta_{\perp}$	-3	-	+3	deg	P_O = 80mW
Differential Efficiency	ηd	-	1.3	-	mW/mA	$\frac{70\text{mW}}{\text{I}(80\text{mW}) - \text{I}(10\text{mW})}$

Notes:

1. Initial value, Continuous Wave operation
2. Angle of 50% peak intensity (Full angle at half-maximum)
3. Parallel to the junction plane (X-Z plane); Perpendicular to the junction plane (Y-Z plane)

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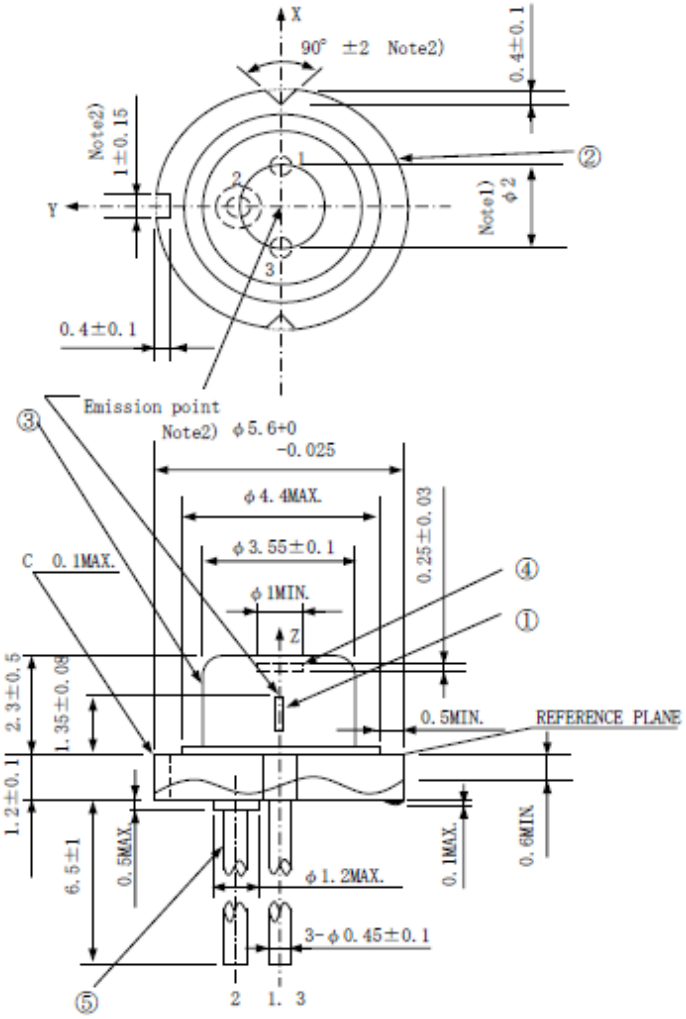
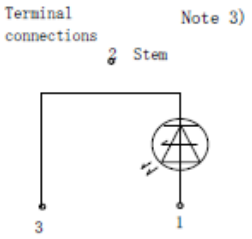
MECHANICAL OUTLINE (unit: mm)

General Tolerances ±0.2mm



Pin Configuration



No.	Component	Material	Finish
1	Laser Diode Chip	InAlGaN	-
2	Stem	Fe, Cu	Gold-plated
3	Cap	45Alloy	Nickel+Pd plated
4	Window glass	Borosilicated glass	-
5	Lead pins	Kovar	Gold-plated

Notes:

1. Dimension of the bottom of leads.
2. These dimensions are valid only in the range of 0~0.6mm below from the reference plane.
3. Please do not connect the lead pin No. 2 to the driving circuit.

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.

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