



## LD450E80C17

## 450nm 80mW 70°C CW Laser Diode in TO-18 ø5.6mm Package

## Description

The Lasermate LD450E80C17 is a 450nm, 80mW laser diode in a ø5.6mm, TO-can package and with high operating temperature of 70°C. The laser diode is suitable for many applications, including OA equipment, audio visual equipment, home appliance, telecommunication equipment, measuring equipment, tooling machines, and computers.

## Features

- 450nm InAlGaIn MQW Blue Laser Diode
- Optical output power: 80mW CW
- High temperature operation: 70°C
- TE oscillating transverse mode
- Package: ø5.6mm, TO-18 can

## Applications

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

Absolute Maximum Ratings ( $T_C = 25^\circ\text{C}$ )

PARAMETER	SYMBOL	CONDITION	RATING	UNIT
Optical output power	$P_O$	CW	85	mW
Reverse voltage	$V_{RL}$	-	2	V
Operating temperature (Case temperature)	$T_{op(c)}$	-	-10 to +70	°C
Storage temperature	$T_{stg}$	-	-40 to +85	°C
Soldering temperature <sup>(1)</sup>	$T_{sld}$	-	350	°C

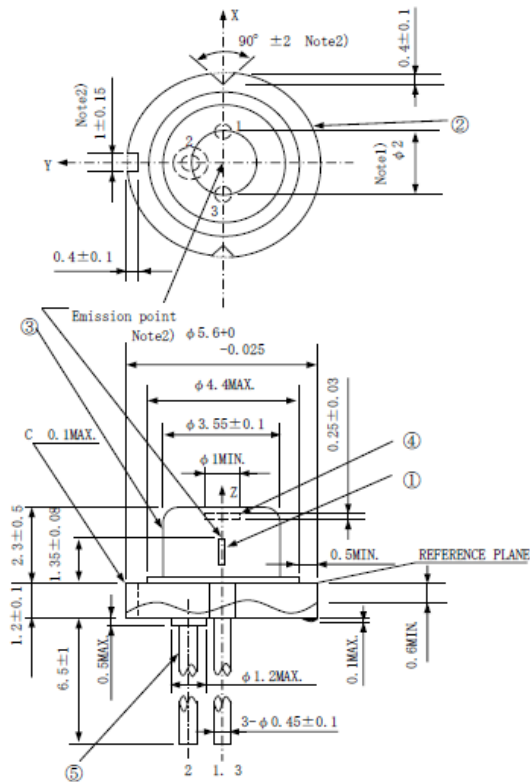
Note: 1. Soldering temperature means soldering iron tip temperature (The power 20W) while soldering. Soldering position is 1.6mm apart from bottom edge of the case (Immersion Time: ≤3s).

Electrical and Optical Characteristics ( $T_C = 25^\circ\text{C}$ , CW unless otherwise stated)

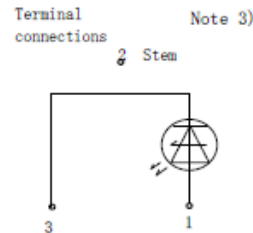
PARAMETER	SYMBOL	MIN.	TYP.	MAX.	UNIT	CONDITIONS
Threshold current	$I_{th}$	-	22	40	mA	
Operating current	$I_{op}$	-	84	120	mA	$P_O = 80\text{mW}$
Operating voltage	$V_{op}$	-	5.1	6	V	$P_O = 80\text{mW}$
Wavelength	$\lambda_p$	440	450	460	nm	$P_O = 80\text{mW}$
Half Intensity Angle (Parallel)	$\Theta_{//}$	6	10	14	deg	$P_O = 80\text{mW}$
Half Intensity Angle (Perpendicular)	$\Theta_{\perp}$	19	24	29	deg	$P_O = 80\text{mW}$
Ripple	RI2	-	-	30	%	$P_O = 80\text{mW}$
Misalignment angle (Parallel)	$\Delta \Theta_{//}$	-3	0	+3	deg	$P_O = 80\text{mW}$
Misalignment angle (Perpendicular)	$\Delta \Theta_{\perp}$	-3	-0	+3	deg	$P_O = 80\text{mW}$
Differential Efficiency	$\eta_d$	0.8	1.3	-	mW/mA	$\frac{70\text{mW}}{I(80\text{mW}) - I(10\text{mW})}$
Kink	K-LI	-10	-	10	%	$P1=17\text{mW}, P2=51\text{mW}, P3=85\text{mW}$

Mechanical Outline (unit: mm)

General Tolerances  $\pm 0.2\text{mm}$



PIN CONFIGURATION



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.