



LD520A80C16

520nm 80mW 60°C CW Laser Diode in TO-18 \varnothing 5.6mm Package

Description

The Lasermate LD520A80C16 is a 520nm, 80mW laser diode in a \varnothing 5.6mm, TO-can package and with high operating temperature of 60°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

- 520nm Green Laser Diode
- Optical output power: 80mW CW
- High temperature operation: 60°C
- TE oscillating transverse mode
- Package: \varnothing 5.6mm, TO-18

Applications

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

Absolute Maximum Ratings ($T_C = 25^\circ\text{C}$ ⁽¹⁾)

| Parameter | Symbol | Condition | Rating | Unit |
|--|-------------|-----------|------------|------|
| Optical output power | P_o | CW | 35 | mW |
| Reverse voltage (LD) | V_{RL} | - | 2 | V |
| Reverse voltage (PD) | V_{RD} | - | 30 | V |
| Operating temperature (Case temperature) | $T_{op(c)}$ | CW | -10 to +60 | °C |
| Storage temperature | T_{stg} | - | -40 to +85 | °C |
| Soldering temperature ⁽²⁾ | T_{sld} | - | 350 | °C |

Notes:

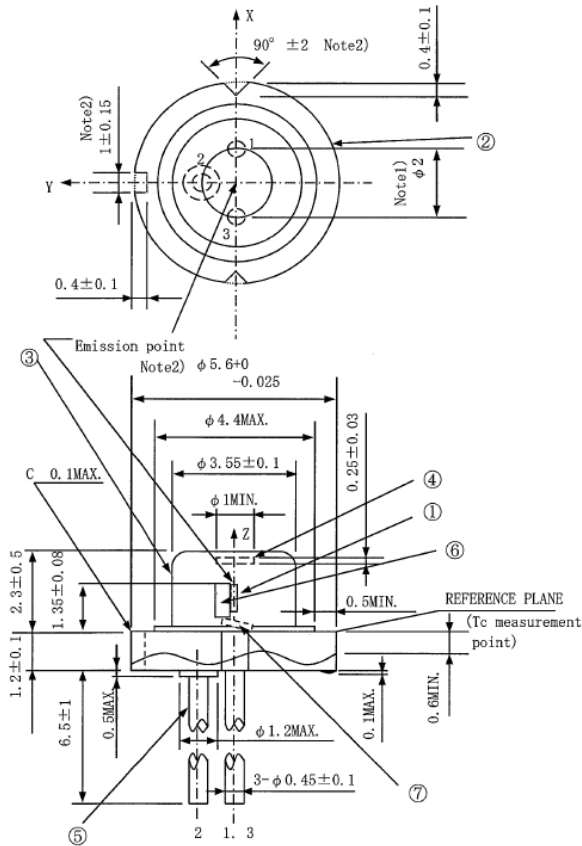
1. T_C : Case temperature (T_C measurement point is referenced to P3 drawing).
2. Soldering temperature means soldering iron tip temperature while soldering. Soldering position is 1.6mm apart from bottom edge of the case (Immersion time: $\leq 3s$).

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

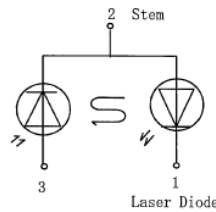
| Parameter | Symbol | Min. | Typ. | Max. | Unit | Conditions |
|--------------------------------------|-------------------------|------|------|------|-------|----------------------------------|
| Threshold current | I_{th} | - | 50 | 80 | mA | |
| Operating current | I_{op} | - | 150 | 185 | mA | $P_o = 80mW$ |
| Operating voltage | V_{op} | - | 6.5 | 7 | V | $P_o = 80mW$ |
| Wavelength | λ_p | 515 | 520 | 530 | nm | $P_o = 80mW$ |
| Half Intensity Angle (Parallel) | $\Theta_{//}$ | 5 | 7 | 9 | deg | $P_o = 80mW$ |
| Half Intensity Angle (Perpendicular) | Θ_{\perp} | 20.5 | 23 | 25.5 | deg | $P_o = 80mW$ |
| Ripple | RI2 | - | - | 30 | % | $P_o = 80mW$ |
| Misalignment angle (Parallel) | $\Delta \Theta_{//}$ | -3 | 0 | +3 | deg | $P_o = 80mW$ |
| Misalignment angle (Perpendicular) | $\Delta \Theta_{\perp}$ | -3 | 0 | +3 | deg | $P_o = 80mW$ |
| Differential Efficiency | η_d | 0.55 | 0.80 | - | mW/mA | $\frac{70mW}{I(80mW) - I(10mW)}$ |
| Kink | K-LI | 0 | - | 20 | % | $P_1=17mW, P_2=51mW, P_3=85mW$ |
| Monitor current | I_m | 0.2 | 0.5 | 0.8 | mA | $P_o = 80mW, V_{rd}=5V$ |

Mechanical Outline (unit: mm)

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



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 |
| 6 | Submount/Solder | AlN/AuSn or Ag paste | Gold-plated |
| 7 | Photodiode | Si | - |

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.

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 specifications by contacting us prior to purchase or use of the product.