

# AlGaAs Infrared Laser Diode

## ADL-83Z01TL

6-2D-LD85-017\_REV.01

### 830nm 100mW High Power Operation

#### • Features

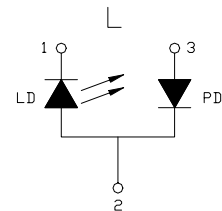
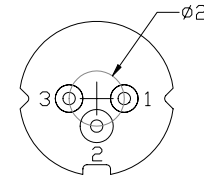
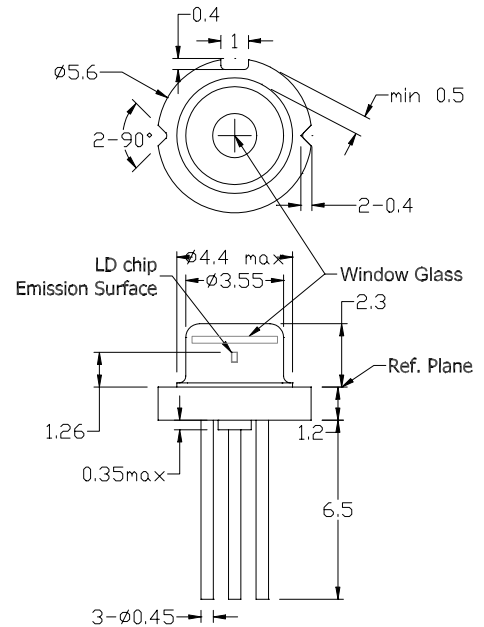
1. High temperature operation
2. Small far field angle

#### • Applications

1. Light source for sensor
2. Industry

#### • Absolute maximum ratings

| Parameter            | Symbol   | Condition | Rating  | Unit |
|----------------------|----------|-----------|---------|------|
| Light output power   | $P_O$    | CW        | 110     | mW   |
| Reverse voltage (LD) | $V_{RL}$ | -         | 2       | V    |
| Reverse voltage (PD) | $V_{RD}$ | -         | 30      | V    |
| Forward current (PD) | $I_{FD}$ | -         | 10      | mA   |
| Case temperature     | $T_C$    | -         | -10~+60 | °C   |
| Storage temperature  | $T_S$    | -         | -40~+85 | °C   |



#### • Electrical and optical characteristics ( $T_c=25^\circ\text{C}$ )

| Parameter                         | Symbol                       | Min. | Typ. | Max. | Unit  | Conditions (CW)                      |
|-----------------------------------|------------------------------|------|------|------|-------|--------------------------------------|
| Peak wavelength                   | $\lambda$                    | 820  | 830  | 840  | nm    |                                      |
| Threshold current                 | $I_{th}$                     | -    | 70   | 90   | mA    |                                      |
| Operating current                 | $I_{op}$                     | -    | 180  | 200  | mA    | $P_o=100\text{mW}$                   |
| Operating voltage                 | $V_{op}$                     | -    | 1.8  | 2.4  | V     |                                      |
| Differential efficiency           | $\eta$                       | 0.7  | 0.9  | -    | mW/mA |                                      |
| Monitor current                   | $I_m$                        | -    | 0.8  | -    | mA    | $P_o=100\text{mW}, V_{RD}=0\text{V}$ |
| Parallel divergence angle         | $\theta_{  }$                | 5    | 8    | 12   | deg   | $P_o=100\text{mW}$                   |
| Perpendicular divergence angle    | $\theta_{\perp}$             | -    | 15   | 20   | deg   |                                      |
| Parallel FFP deviation angle      | $\Delta\theta_{  }$          | -3   | 0    | +3   | deg   | $P_o=100\text{mW}$                   |
| Perpendicular FFP deviation angle | $\Delta\theta_{\perp}$       | -3   | 0    | +3   | deg   |                                      |
| Emission point accuracy           | $\Delta x \Delta y \Delta z$ | -80  | 0    | +80  | um    |                                      |

#### • Precautions

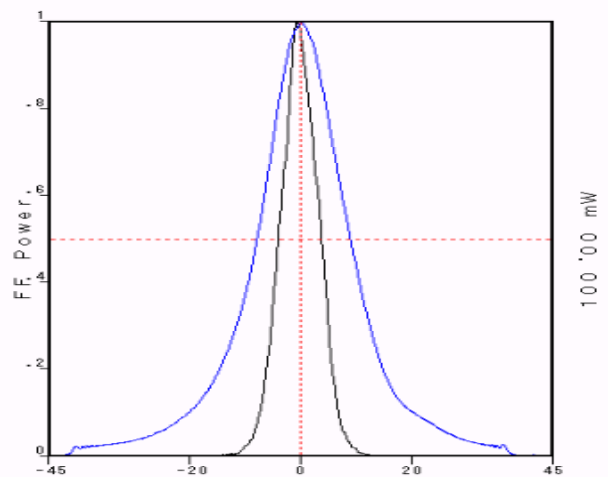
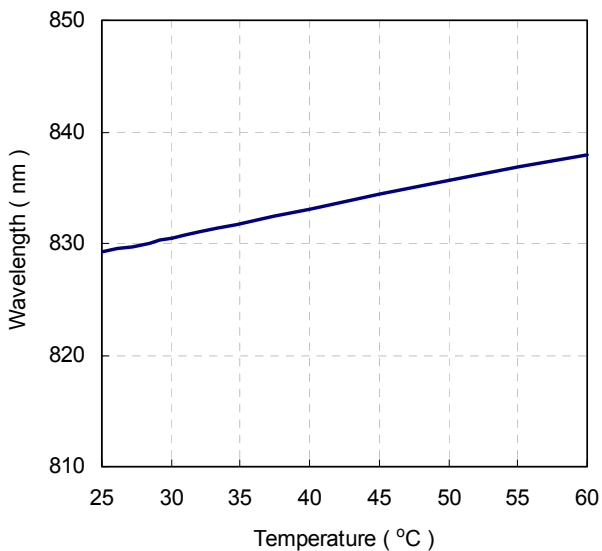
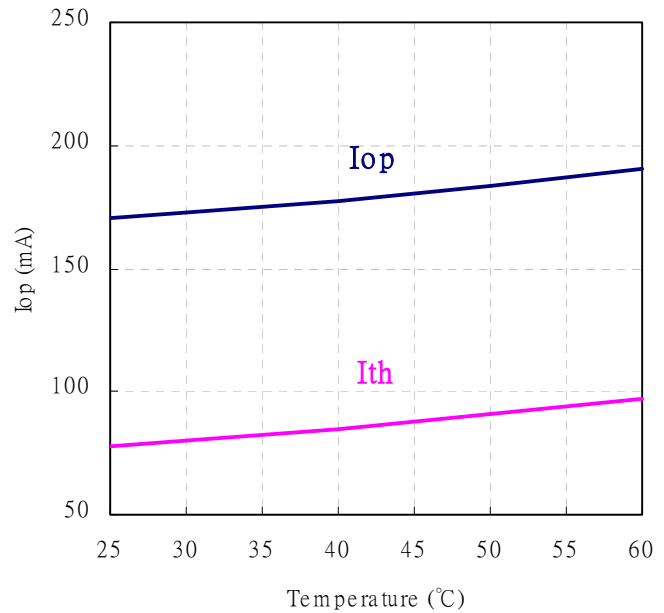
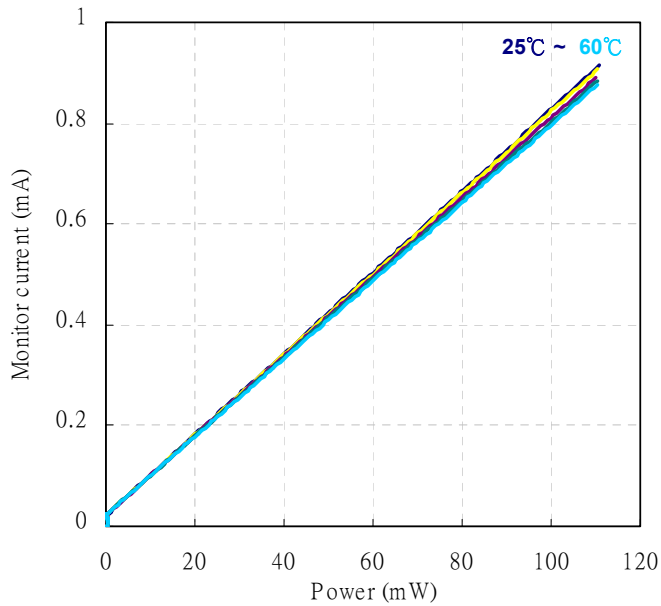
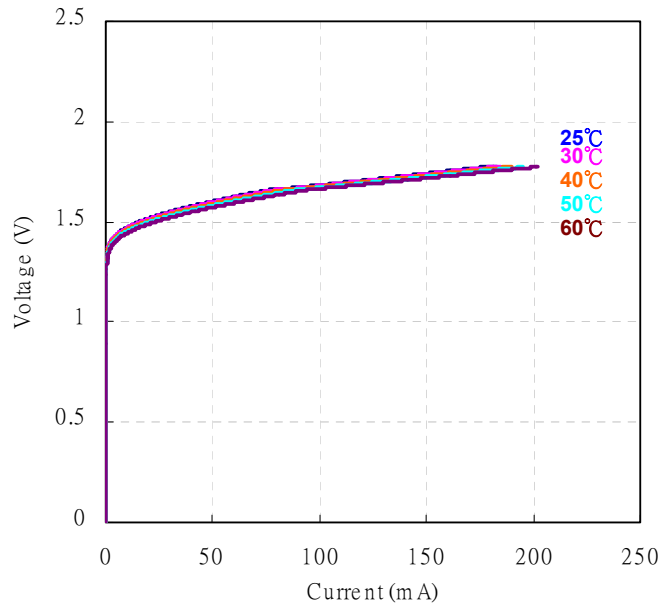
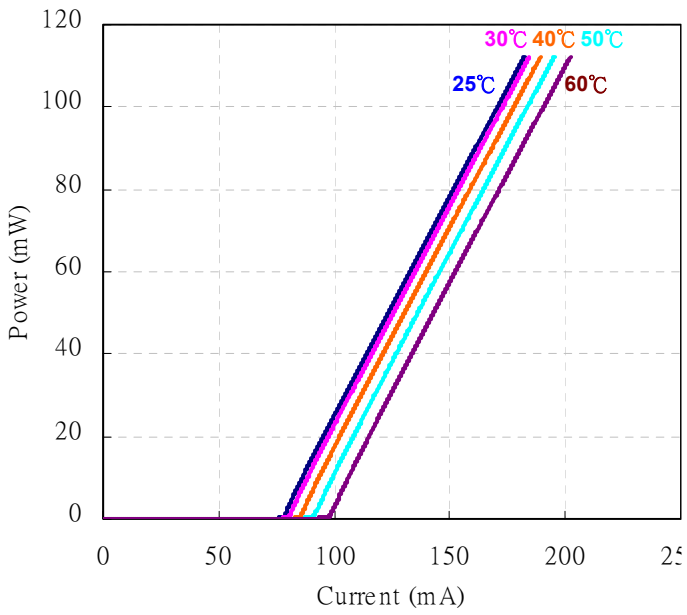
- \* Do not operate the device above maximum ratings. Doing so may cause unexpected and permanent damage to the device.
- \* Take precautions to avoid electrostatic discharge and/or momentary power spikes. A change in the characteristics of the laser or premature failure may result.
- \* Proper heat sinking of the device assures stability and lifetime. Always ensure that maximum operating temperatures are not exceeded.
- \* Observing visible or invisible laser beams with the 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 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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