Ordering number : EN5861

Red Laser Diode

# DL-3147-021

## Index Guided AlGaInP Laser Diode

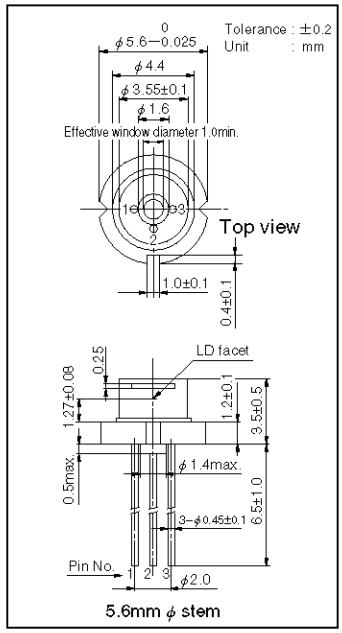
### Overview

DL-3147-021 is index guided 645 nm (Typ.) AlGaInP laser diode with low threshold current. The low threshold current is achieved by a strained multiple quantum well active layer. DL-3147-021 is suitable for laser pointer.

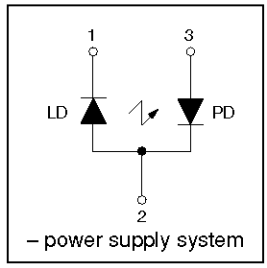
### Features

- Short wavelength : 645 nm (Typ.)
- Low threshold current : Ith = 30 mA (Typ.)
- Low operating voltage : Vop = 2.3 V (Typ.)
- Small package : 5.6 mm $\phi$

### Package Dimensions




### Electrical Connection




### Absolute Maximum Ratings at Tc=25℃

| Parameter | | Symbol | Ratings | Unit |
|---|---|---|---|---|
| Light Output | | Po | 5 | mW |
| Reverse Voltage | Laser | $V_R$ | 2 | V |
| | PIN | | 30 | |
| Operating Temperature | | Topr | –10 to +40 | ℃ |
| Storage Temperature | | Tstg | –40 to +85 | ℃ |

### Electrical and Optical Characteristics at Tc=25℃

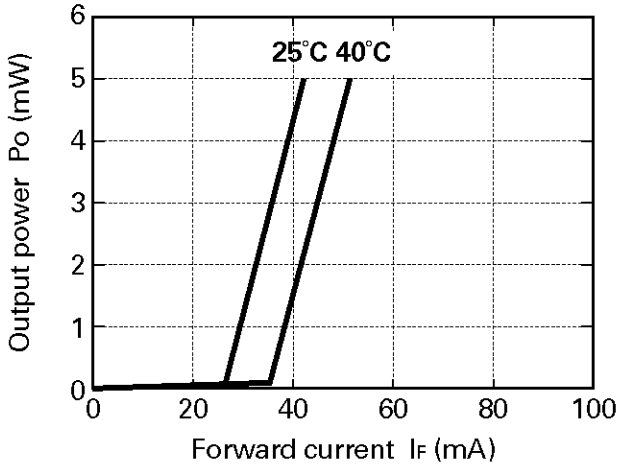
| Parameter | | Symbol | Condition | Min. | Typ. | Max. | Unit |
|---|---|---|---|---|---|---|---|
| Threshold Current | | Ith | CW | – | 30 | 50 | mA |
| Operating Current | | Iop | Po=5mW | – | 45 | 60 | mA |
| Operating Voltage | | Vop | Po=5mW | – | 2.3 | 2.6 | V |
| Lasing Wavelength | | $\lambda$ p | Po=5mW | – | 645 | 660 | nm |
| Beam Divergence ※) | Perpendicular | $\theta\perp$ | Po=5mW | 25 | 30 | 40 | deg. |
| | Parallel | $\theta$ // | Po=5mW | 6 | 7.5 | 10 | deg. |
| Off Axis Angle | Perpendicular | $\Delta\theta\perp$ | – | – | – | ±3 | deg. |
| | Parallel | $\Delta\theta$ // | – | – | – | ±3 | deg. |
| Differential Efficiency | | dPo/dIop | – | 0.2 | 0.4 | 0.8 | mW/mA |
| Monitoring Output Current | | Im | Po=5mW | 0.15 | 0.4 | 0.75 | mA |
| Astigmatism | | As | Po=5mW | – | 8 | – | μm |

※) Full angle at half maximum note : The above product specifications are subject to change without notice.

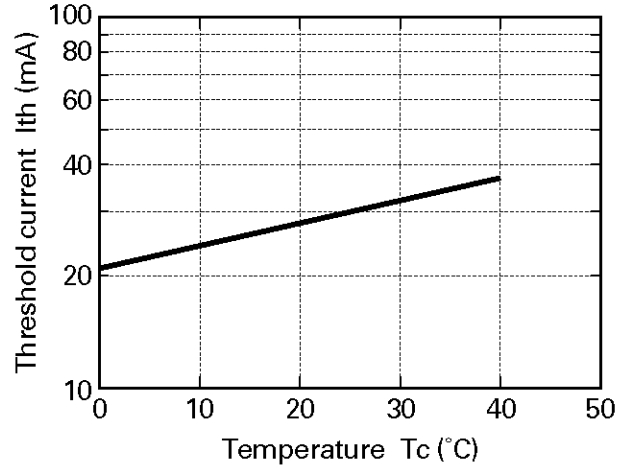

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## Characteristics

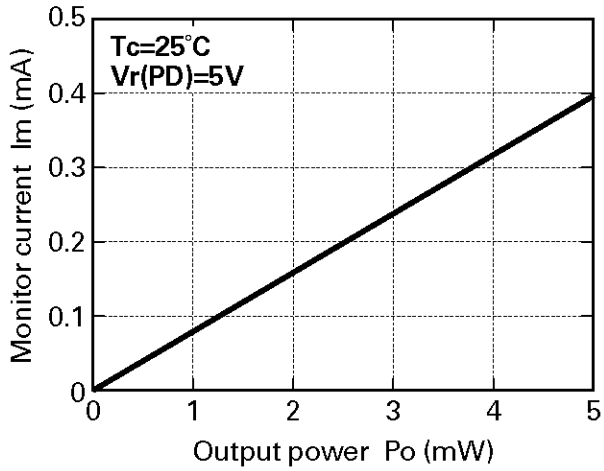
**Output power vs. Forward current**



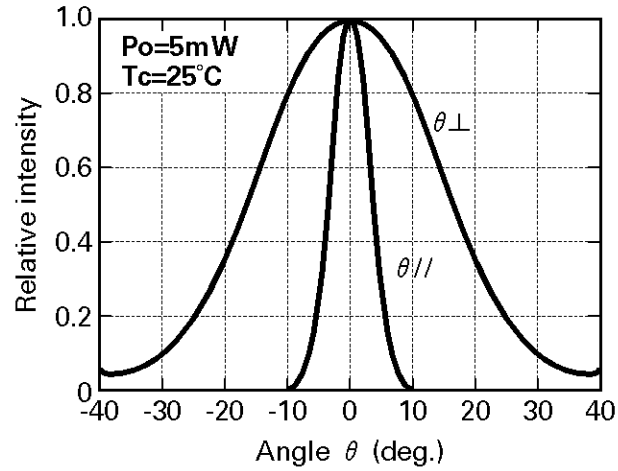

**Threshold current vs. Temperature**



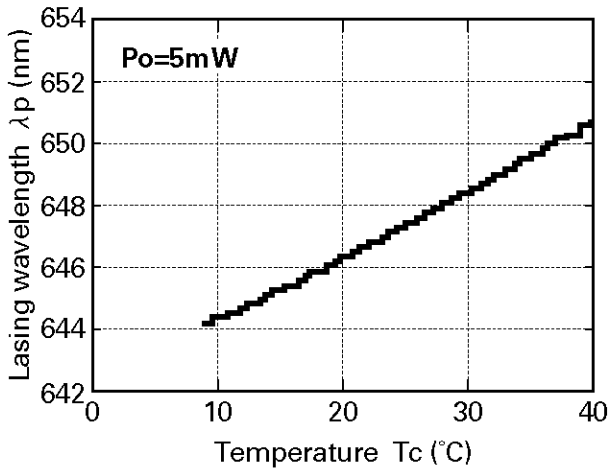

**Monitor current vs. Output power**



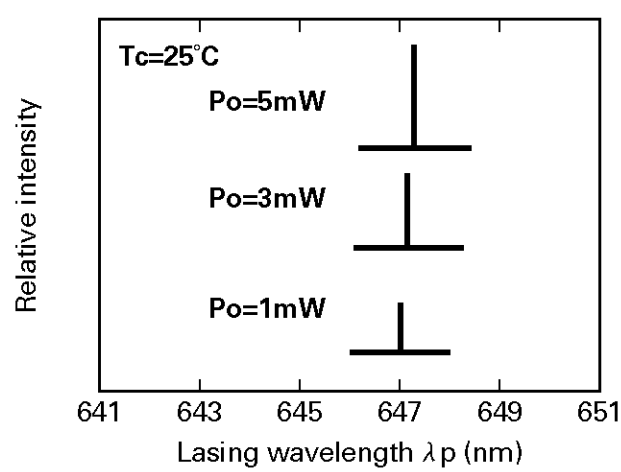

**Beam divergence**




**Lasing wavelength vs. Temperature**




**Output power vs. Lasing wavelength**



# ⚠ CAUTION

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## Precautionary instructions in handling gallium arsenic products

Special precautions must be taken in handling this product because it contains, gallium arsenic, which is designated as a toxic substance by law. Be sure to adhere strictly to all applicable laws and regulations enacted for this substance, particularly when it comes to disposal.

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