



DL-3147-141(-241)

Index Guided AlGaInP Laser Diode

Overview

DL-3147-141(-241) is index guided 645 nm (Typ.) AlGaInP laser diode with low threshold current and high operating temperature. The low threshold current and high operating temperature are achieved by a strained multiple quantum well active layer. DL-3147-141(-241) is suitable for applications such as bar-code scanners, optical disc systems and other optical information systems.

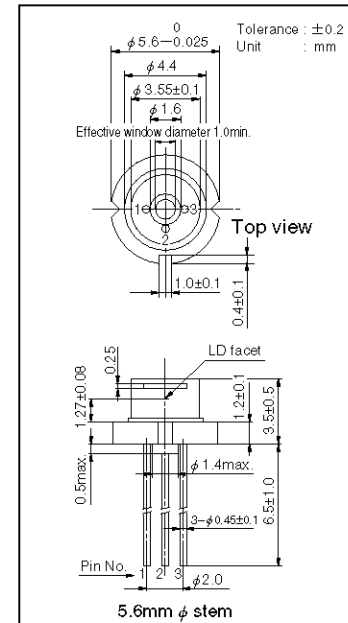
Features

- Short wavelength : 645 nm (Typ.)
- Low threshold current : $I_{th} = 45$ mA (Typ.)
- High operating temperature : 60°C at 5 mW
- TE mode

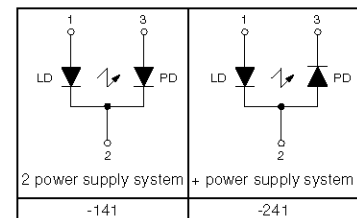
Absolute Maximum Ratings at $T_c=25^\circ\text{C}$

| Parameter | Symbol | Ratings | Unit |
|-----------------------|-----------|------------|------|
| Light Output | P_o | 7 | mW |
| Reverse Voltage | Laser | 2 | V |
| | PIN | 30 | |
| Operating Temperature | T_{opr} | -10 to +60 | °C |
| Storage Temperature | T_{stg} | -40 to +85 | °C |

Package Dimensions



Electrical Connection



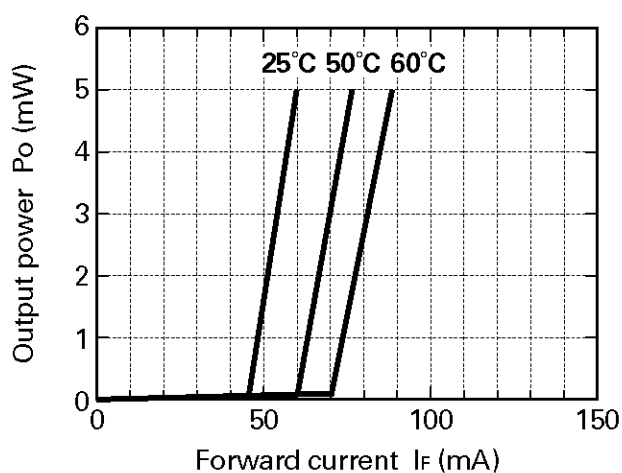
Electrical and Optical Characteristics at $T_c=25^\circ\text{C}$

| Parameter | Symbol | Condition | Min. | Typ. | Max. | Unit |
|---------------------------|----------------|----------------------------|------|------|------|-------|
| Threshold Current | I_{th} | CW | — | 45 | 65 | mA |
| Operating Current | I_{op} | $P_o=5\text{mW}$ | — | 60 | 80 | mA |
| Operating Voltage | V_{op} | $P_o=5\text{mW}$ | — | 2.2 | 2.5 | V |
| Lasing Wavelength | λ_p | $P_o=5\text{mW}$ | — | 645 | 655 | nm |
| Beam Divergence | Perpendicular | θ_{\perp} | 25 | 30 | 40 | deg. |
| | Parallel | θ_{\parallel} | 6 | 7.5 | 10 | deg. |
| Off Axis Angle | Perpendicular | $\Delta\theta_{\perp}$ | — | — | ±3 | deg. |
| | Parallel | $\Delta\theta_{\parallel}$ | — | — | ±2 | deg. |
| Differential Efficiency | dP_o/dI_{op} | — | 0.15 | 0.35 | — | mW/mA |
| Monitoring Output Current | I_m | $P_o=5\text{mW}$ | 0.05 | 0.15 | — | mA |
| Astigmatism | A_s | $P_o=5\text{mW}$ | — | 8 | — | μm |

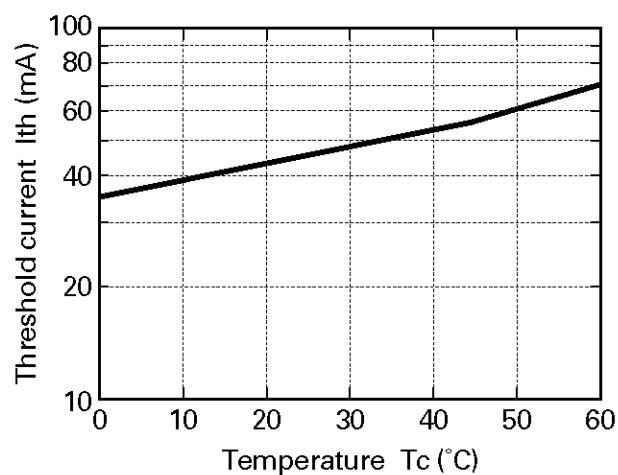
※) Full angle at half maximum note : The above product specifications are subject to change without notice.

Characteristics

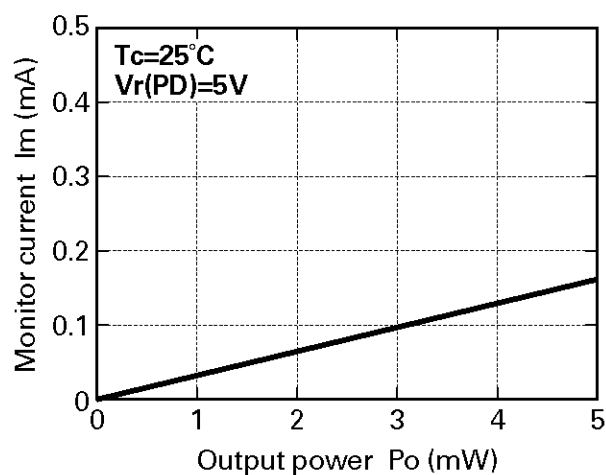
Output power vs. Forward current



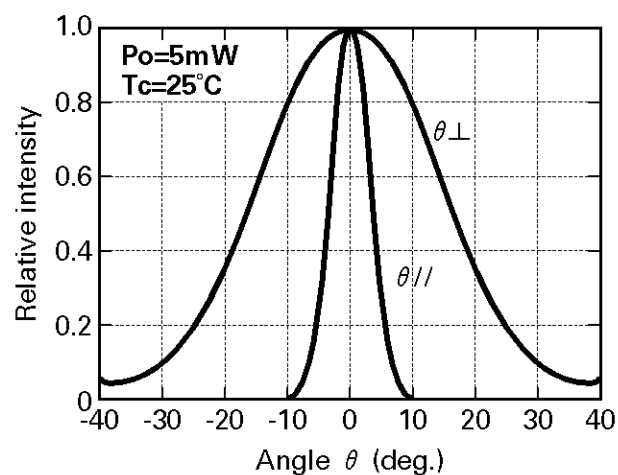
Threshold current vs. Temperature



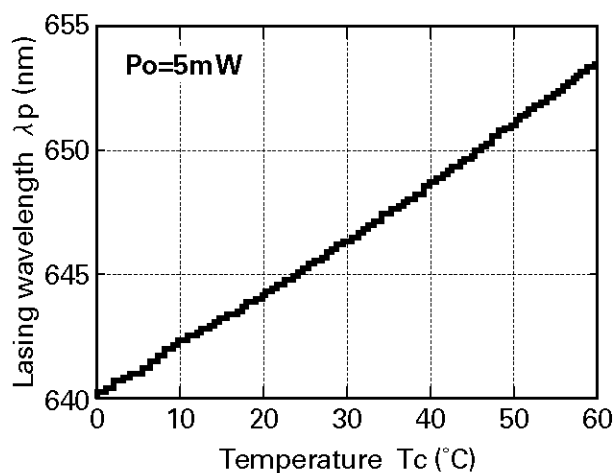
Monitor current vs. Output power



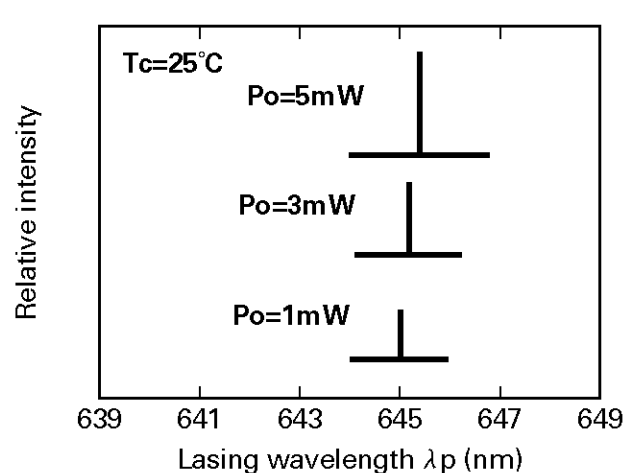
Beam divergence



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.

Manufactured by ; **Tottori SANYO Electric Co., Ltd.**
Electronics Device Bussiness Headquarters LED Division
5-318, Tachikawa-cho, Tottori City, 680 Japan
TEL: +81-857-21-2137 FAX: +81-857-21-2161