



# 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.

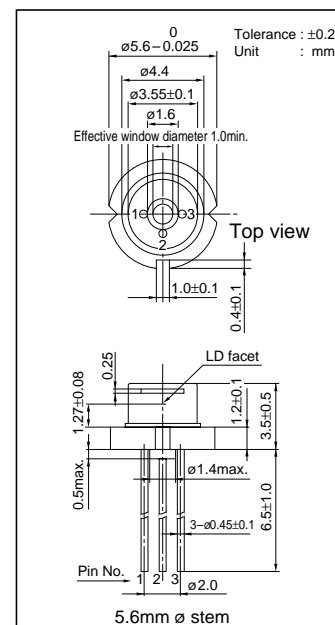
### Features

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

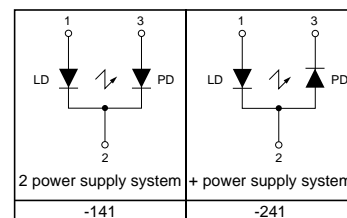
### Absolute Maximum Ratings at $T_c=25^\circ\text{C}$

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



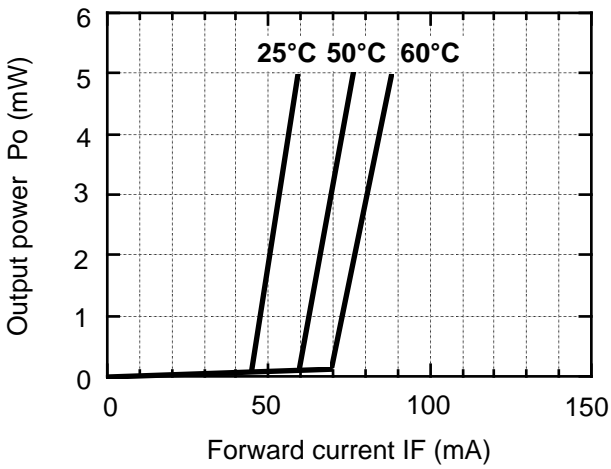
### Electrical and Optical Characteristics at $T_c=25^\circ\text{C}$

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	$\lambda_p$	$P_o=5\text{mW}$	-	645	655	nm
Beam Divergence	Perpendicular	$\theta_{\perp}$	25	30	40	deg.
	Parallel	$\theta_{\parallel}$	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	-	mm

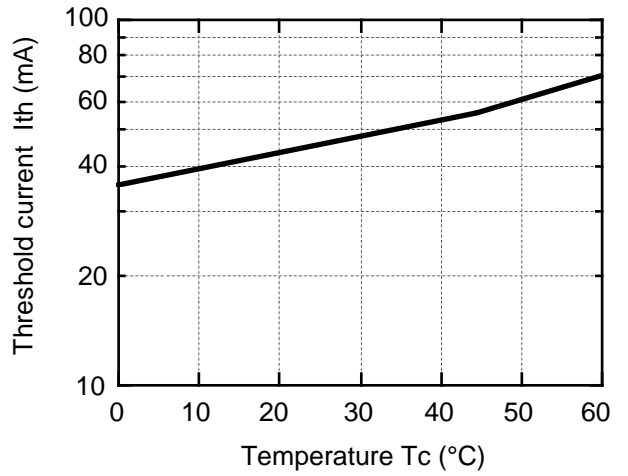
\*) Full angle at half maximum note : The above product specifications are subject to change without notice.

**Characteristics**

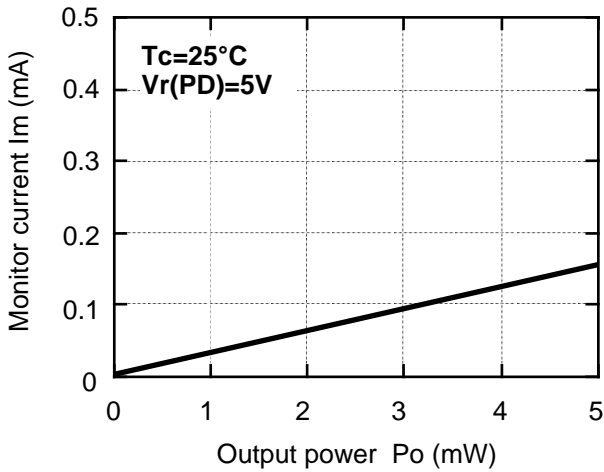
**Output power vs. Forward current**



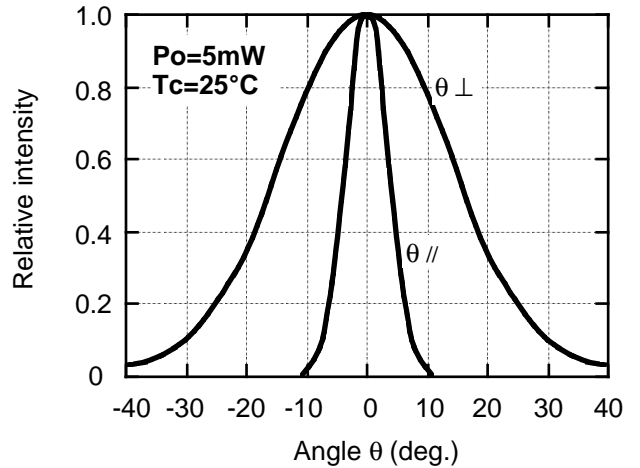
**Threshold current vs. Temperature**



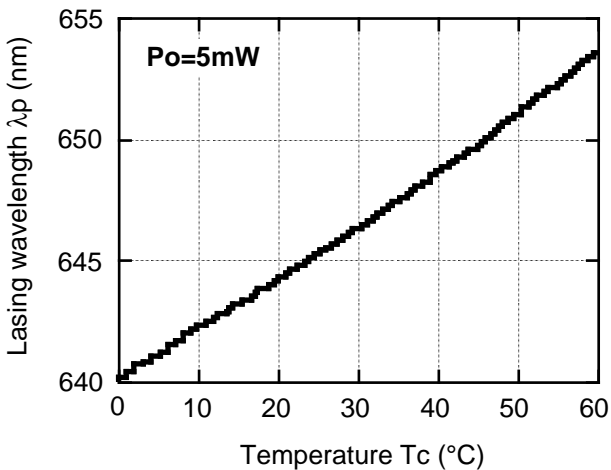
**Monitor current vs. Output power**



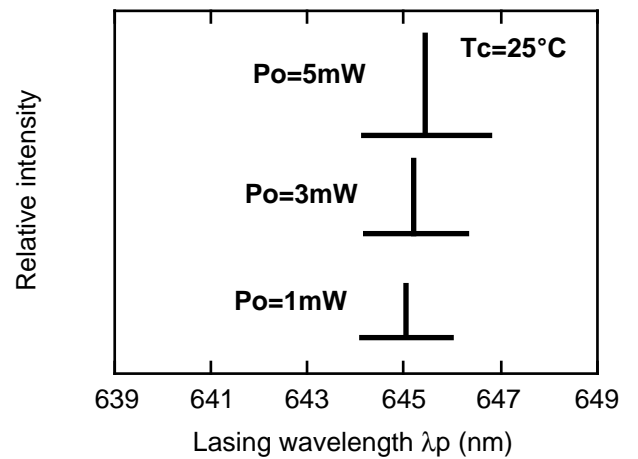
**Beam divergence**



**Lasing wavelength vs. Temperature**



**Output power vs. Lasing wavelength**



 **CAUTION**

1. No products described or contained herein are intended for use in surgical implants, life-support systems, aerospace equipment, nuclear power control systems, vehicles, disaster / crime-prevention equipment or the like, and the failure of which may directly or indirectly cause injury, death or property loss.
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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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