

**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 : $I_{th} = 30$ mA (Typ.)
- Low operating voltage : $V_{op} = 2.3$ V (Typ.)
- Small package : 5.6 mm ϕ

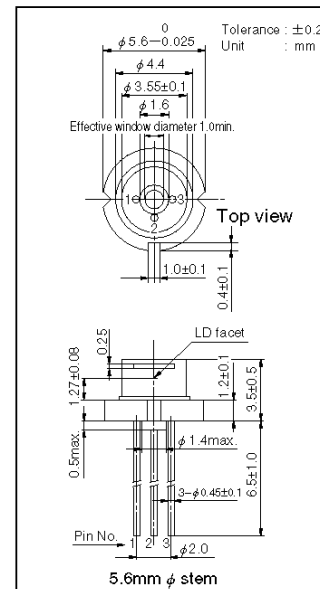
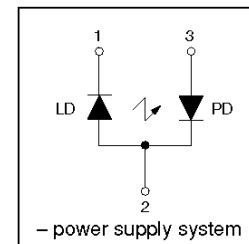
Absolute Maximum Ratings at $T_c=25^\circ\text{C}$

Parameter	Symbol	Ratings	Unit
Light Output	P_o	5	mW
Reverse Voltage	V_R	Laser	2
		PIN	30
Operating Temperature	T_{opr}	-10 to +40	$^\circ\text{C}$
Storage Temperature	T_{stg}	-40 to +85	$^\circ\text{C}$

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

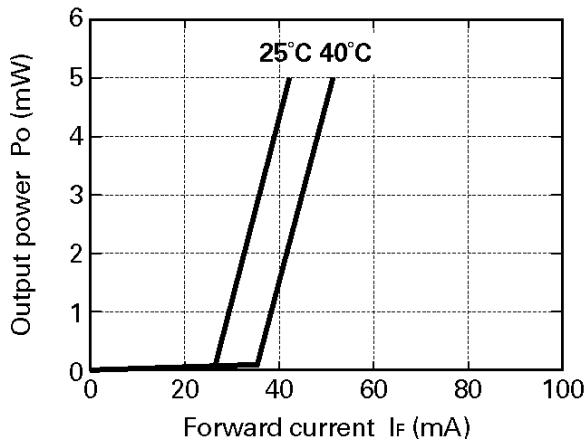
Parameter	Symbol	Condition	Min.	Typ.	Max.	Unit	
Threshold Current	I_{th}	CW	—	30	50	mA	
Operating Current	I_{op}	$P_o=5\text{mW}$	—	45	60	mA	
Operating Voltage	V_{op}	$P_o=5\text{mW}$	—	2.3	2.6	V	
Lasing Wavelength	λ_p	$P_o=5\text{mW}$	—	645	660	nm	
Beam Divergence ※)	Perpendicular	θ_{\perp}	$P_o=5\text{mW}$	25	30	40	deg.
	Parallel	θ_{\parallel}	$P_o=5\text{mW}$	6	7.5	10	deg.
Off Axis Angle	Perpendicular	$\Delta\theta_{\perp}$	—	—	—	± 3	deg.
	Parallel	$\Delta\theta_{\parallel}$	—	—	—	± 3	deg.
Differential Efficiency	dP_o/dI_{op}	—	0.2	0.4	0.8	mW/mA	
Monitoring Output Current	I_m	$P_o=5\text{mW}$	0.15	0.4	0.75	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.

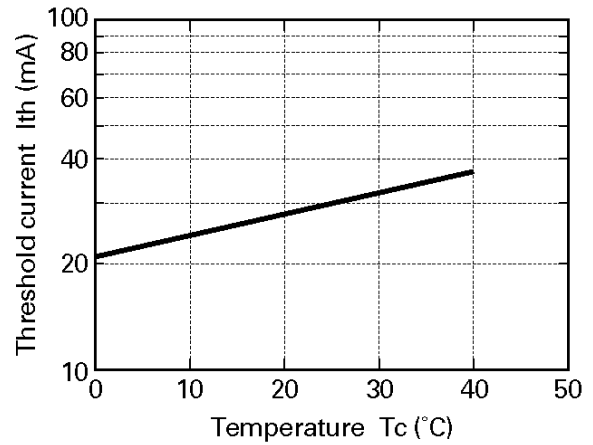
Package Dimensions**Electrical Connection**

Characteristics

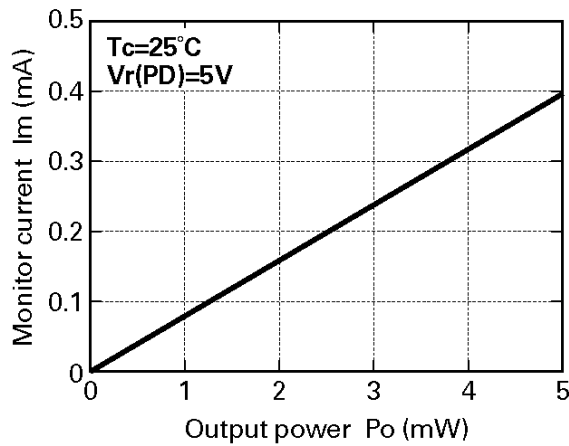
Output power vs. Forward current



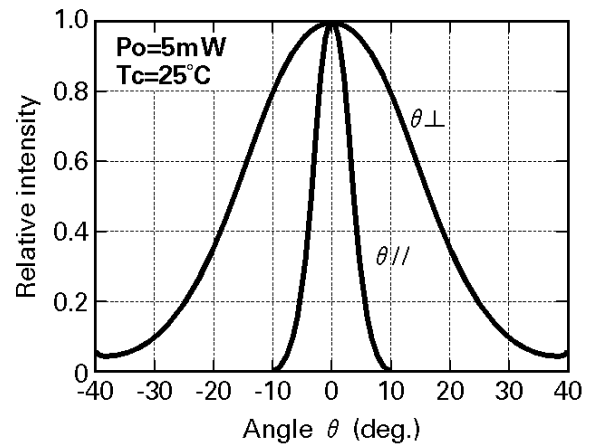
Threshold current vs. Temperature



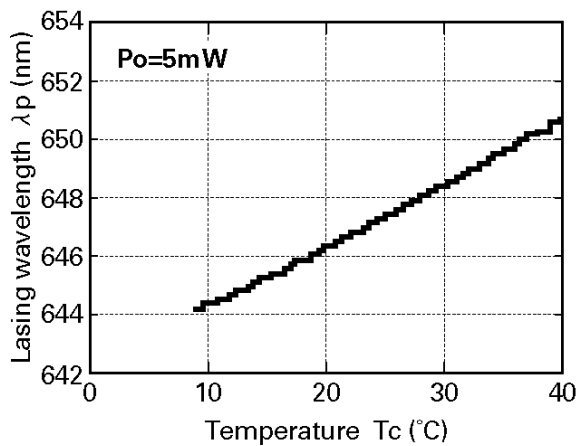
Monitor current vs. Output power



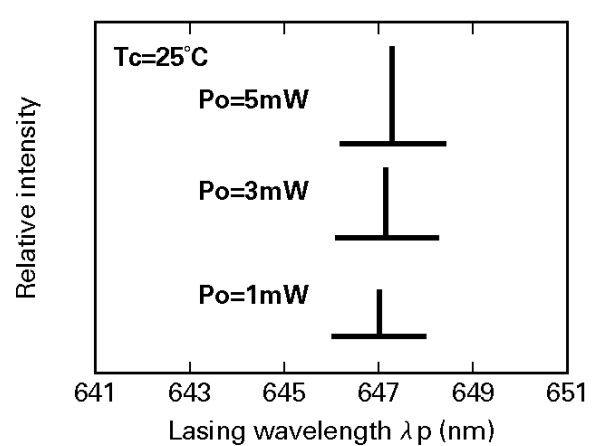
Beam divergence



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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