

**DL-3148-033****Index Guided AlGaInP Laser Diode****Overview**

The DL-3148-033 is index guided 635 nm (Typ.) AlGaInP laser diode with low threshold current and high operating temperature. The low threshold current and short wavelength are achieved by a strained multiple quantum well active layer. The lasing wavelength is 635nm which is 8 times brighter than that of 670nm lasers. The DL-3148-033 is suitable for applications such as bar-code scanners, laser printer, and other optical information systems.

**Features**

- Short wavelength : 635 nm (Typ.)
- Low threshold current :  $I_{th} = 40$  mA (Typ.)
- High operating temperature :  $50^{\circ}\text{C}$  at 5 mW
- Small package : 5.6 mm  $\phi$

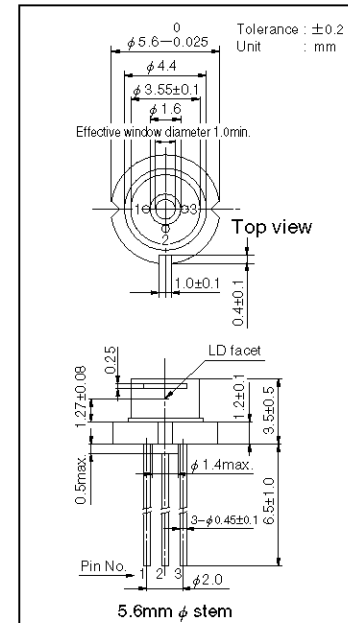
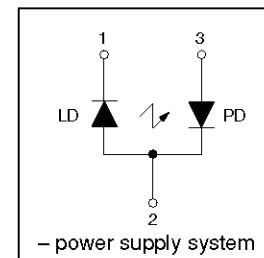
**Absolute Maximum Ratings at  $T_c=25^{\circ}\text{C}$** 

Parameter	Symbol	Ratings	Unit
Light Output	$P_o$	5	mW
Reverse Voltage	Laser PIN $V_R$	2	V
		30	
Operating Temperature	$T_{opr}$	-10 to +50	$^{\circ}\text{C}$
Storage Temperature	$T_{stg}$	-40 to +85	$^{\circ}\text{C}$

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

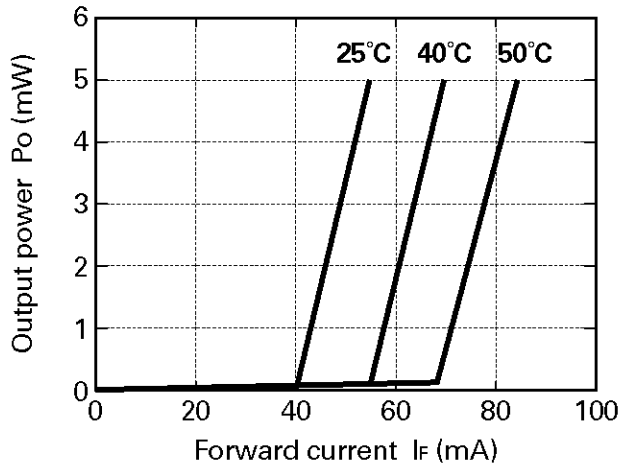
Parameter	Symbol	Condition	Min.	Typ.	Max.	Unit
Threshold Current	$I_{th}$	CW	—	40	60	mA
Operating Current	$I_{op}$	$P_o=5\text{mW}$	—	55	75	mA
Operating Voltage	$V_{op}$	$P_o=5\text{mW}$	—	2.2	2.4	V
Lasing Wavelength	$\lambda_p$	$P_o=5\text{mW}$	—	635	640	nm
Beam Divergence ※)	Perpendicular	$\theta_{\perp}$	25	35	40	deg.
	Parallel	$\theta_{\parallel}$	6	8	10	deg.
Off Axis Angle	Perpendicular	$\Delta\theta_{\perp}$	—	—	$\pm 3$	deg.
	Parallel	$\Delta\theta_{\parallel}$	—	—	$\pm 3$	deg.
Differential Efficiency	$dP_o/dI_{op}$	—	—	0.4	—	mW/mA
Monitoring Output Current	$I_m$	$P_o=5\text{mW}$	0.1	0.2	0.5	mA
Astigmatism	$A_s$	$P_o=5\text{mW}$	—	8	—	$\mu\text{m}$

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

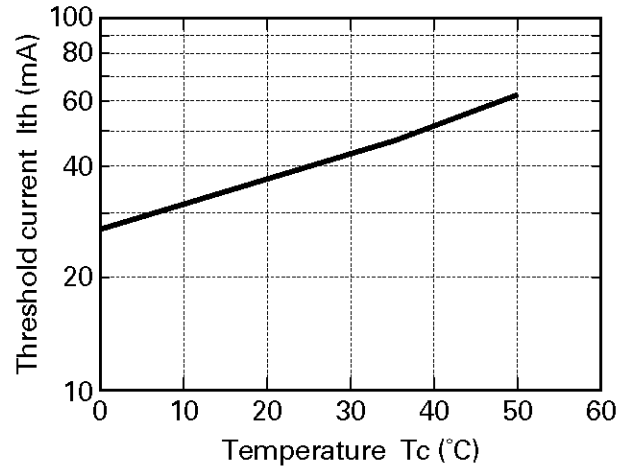
**Package Dimensions****Electrical Connection**

## Characteristics

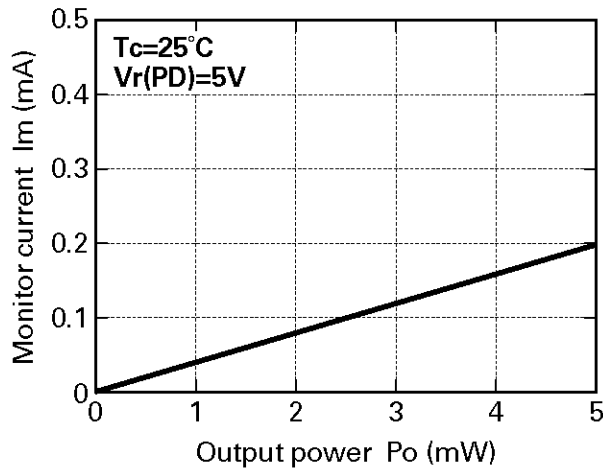
### Output power vs. Forward current



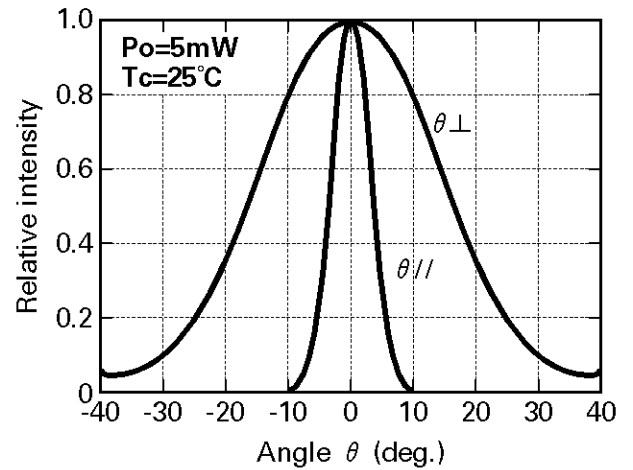
### Threshold current vs. Temperature



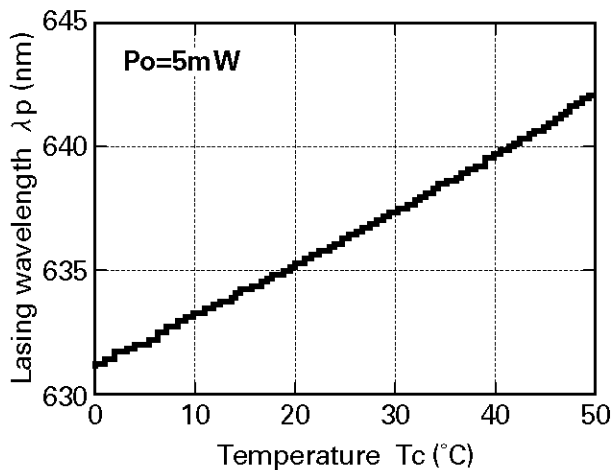
### Monitor current vs. Output power



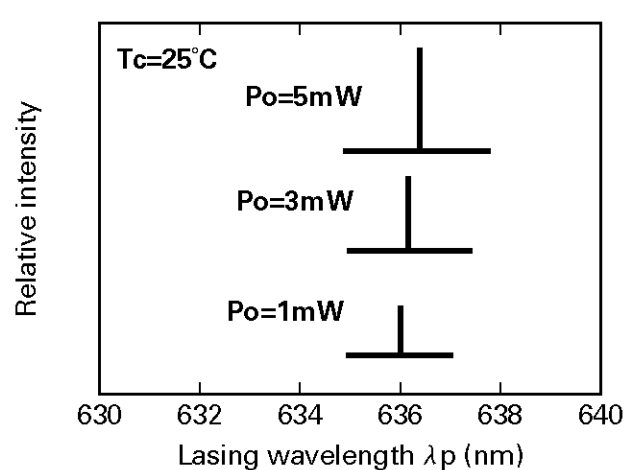
### Beam divergence



### 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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