

**DL-3148-023****AlGaInP Laser Diode****Overview**

DL-3148-023 is 635 nm (Typ.) AlGaInP laser diode with low threshold current. The low threshold current and short wavelength are achieved by the use of a strained multiple quantum well active layer. The lasing wavelength is 635 nm (Typ.) which is 8 times brighter than that of 670 nm lasers. DL-3148-023 is suitable for battery powered laser pointers due to its low operating current and voltage.

**Features**

- Short wavelength : 635 nm (Typ.)
- Low threshold current :  $I_{th} = 20$  mA (Typ.)
- Output power : 3 mW CW
- Low operating voltage :  $V_{op} = 2.2$  V (Typ.)
- Small package : 5.6 mm  $\phi$

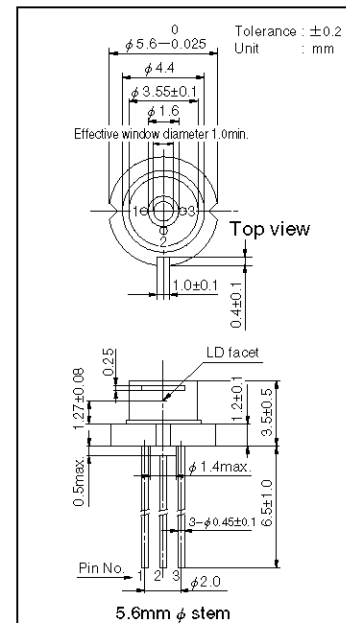
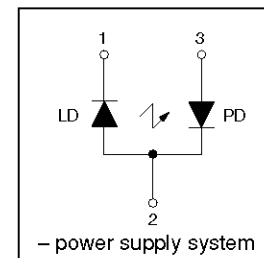
**Absolute Maximum Ratings at  $T_c=25^\circ\text{C}$** 

Parameter	Symbol	Ratings	Unit	
Light Output	$P_o$	3	mW	
Reverse Voltage	Laser PIN	$V_R$	2	V
			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  $T_c=25^\circ\text{C}$** 

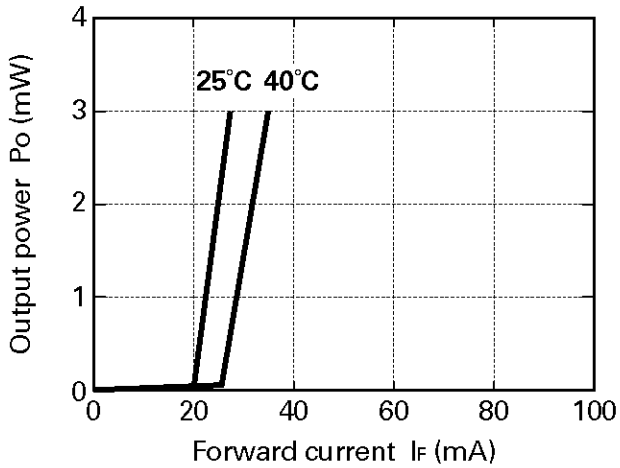
Parameter	Symbol	Condition	Min.	Typ.	Max.	Unit
Threshold Current	$I_{th}$	CW	—	20	40	mA
Operating Current	$I_{op}$	$P_o=3\text{mW}$	—	25	45	mA
Operating Voltage	$V_{op}$	$P_o=3\text{mW}$	—	2.2	2.4	V
Lasing Wavelength	$\lambda_p$	$P_o=3\text{mW}$	—	635	640	nm
Beam Divergence ※)	Perpendicular	$\theta_{\perp}$	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	$dP_o/dI_{op}$	—	—	0.5	—	mW/mA
Monitoring Output Current	$I_m$	$P_o=3\text{mW}$	0.03	0.15	0.5	mA
Astigmatism	$A_s$	$P_o=3\text{mW}$	—	8	—	$\mu\text{m}$

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

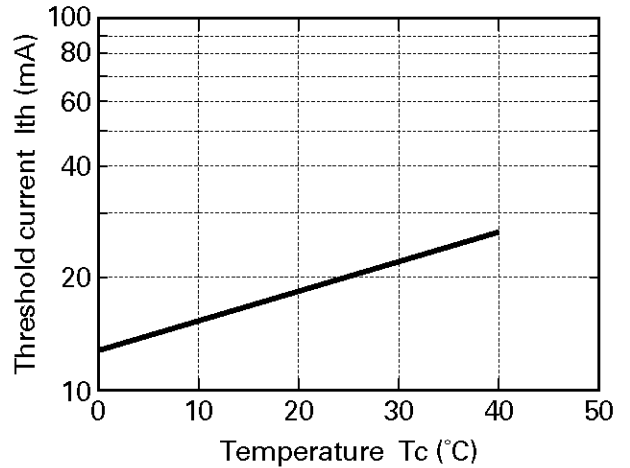
**Package Dimensions****Electrical Connection**

## Characteristics

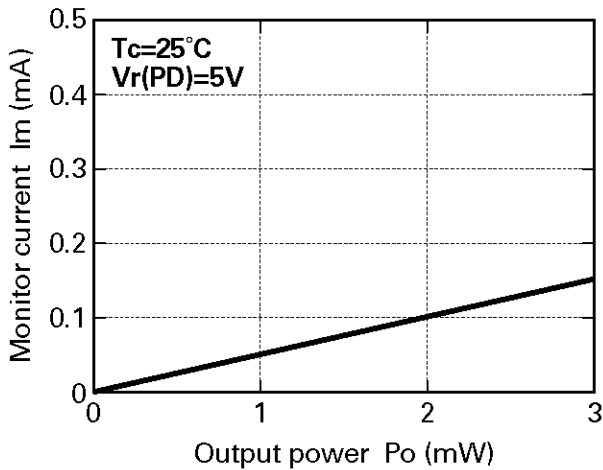
### Output power vs. Forward current



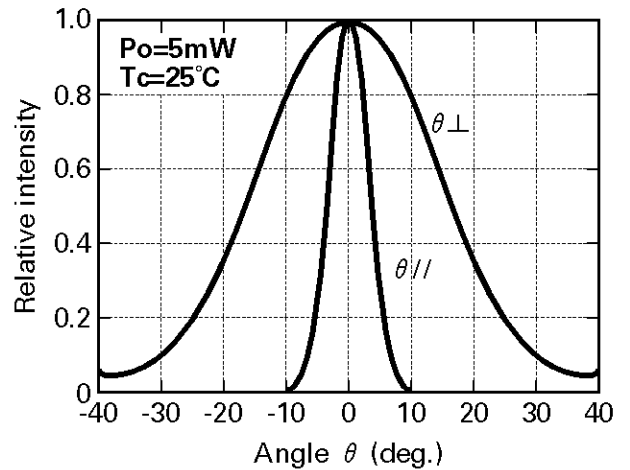
### Threshold current vs. Temperature



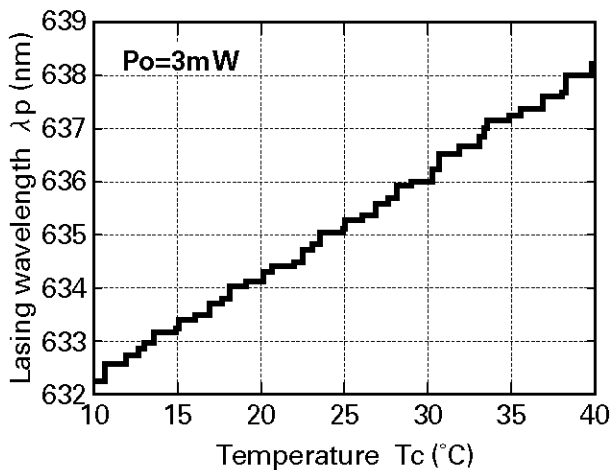
### Monitor current vs. Output power



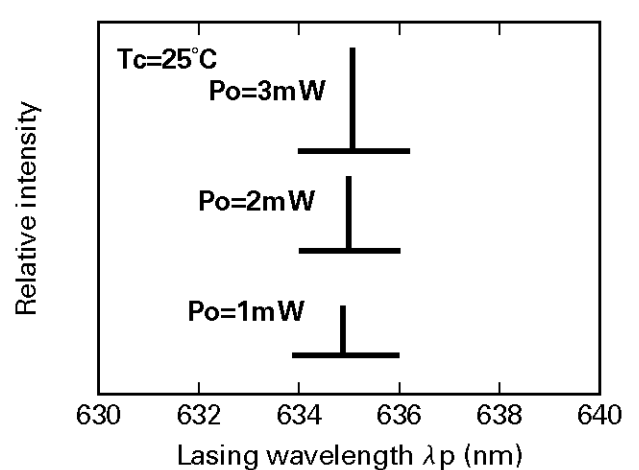
### Beam divergence



### 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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