

**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 ϕ

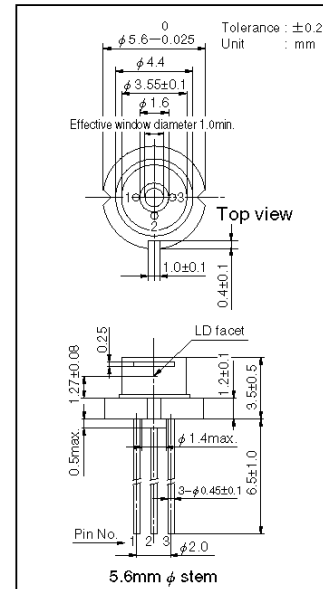
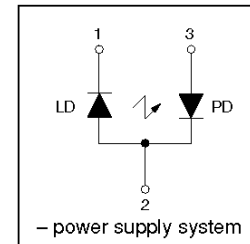
Absolute Maximum Ratings at $T_c=25^\circ\text{C}$

Parameter	Symbol	Ratings	Unit
Light Output	P_o	3	mW
Reverse Voltage	Laser	2	V
	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	—	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	λ_p	$P_o=3\text{mW}$	—	635	640	nm
Beam Divergence ※)	Perpendicular	θ_{\perp}	25	35	40	deg.
	Parallel	θ_{\parallel}	6	8	10	deg.
Off Axis Angle	Perpendicular	$\Delta\theta_{\perp}$	—	—	± 3	deg.
	Parallel	$\Delta\theta_{\parallel}$	—	—	± 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	—	μm

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

Package Dimensions**Electrical Connection**

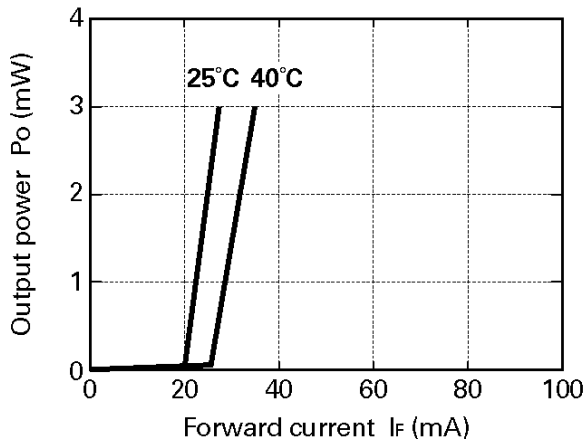
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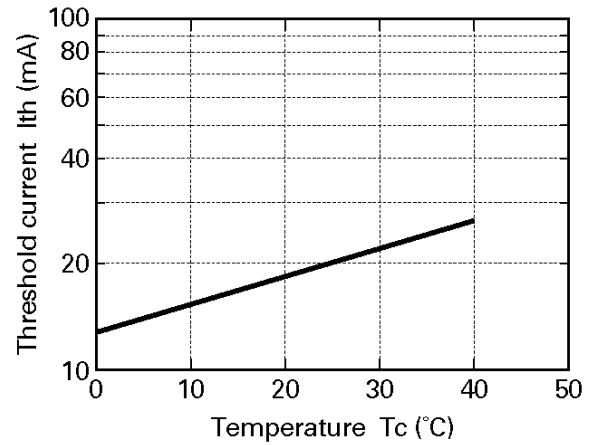
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Characteristics

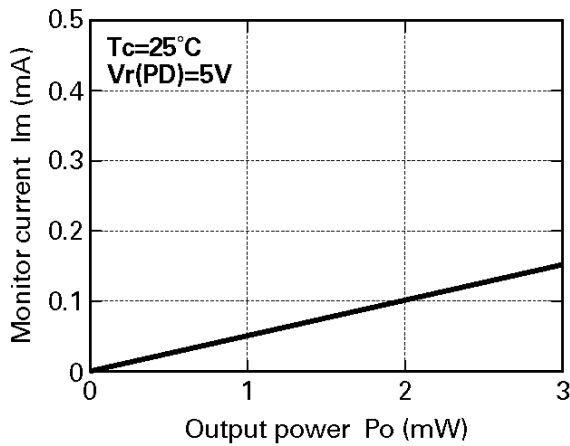
Output power vs. Forward current



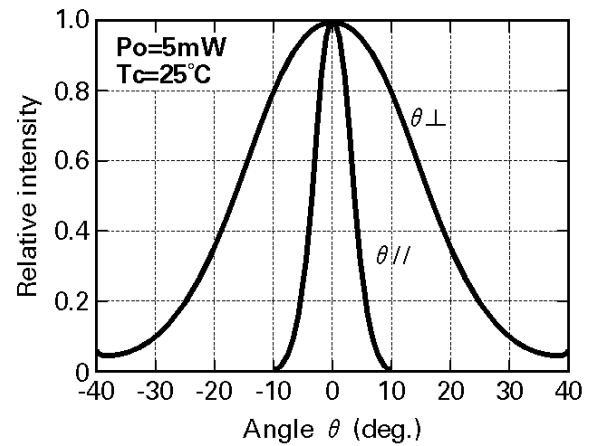
Threshold current vs. Temperature



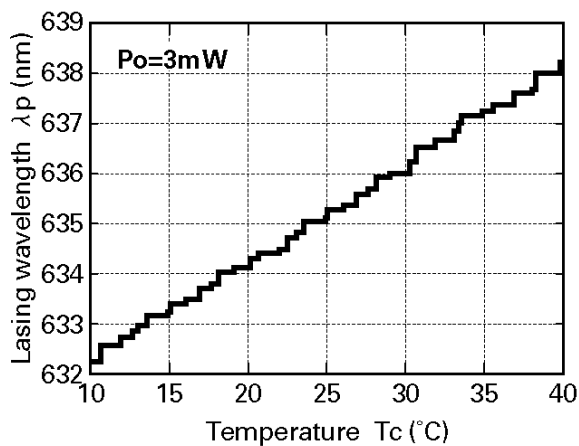
Monitor current vs. Output power



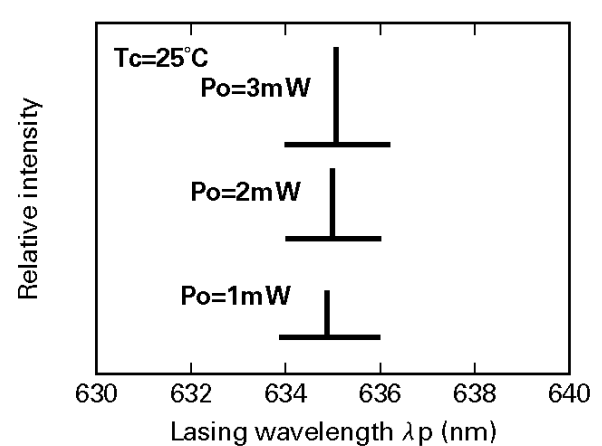
Beam divergence



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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