

**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

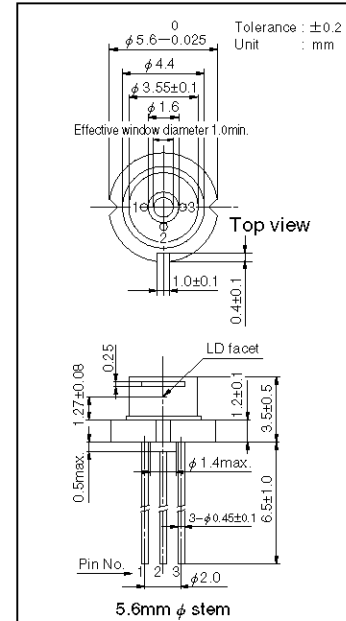
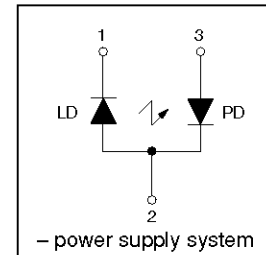
Absolute Maximum Ratings at $T_c=25^\circ\text{C}$

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

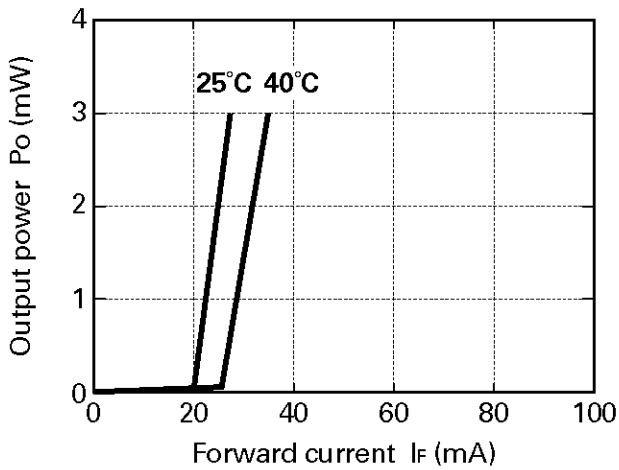
Parameter	Symbol	Condition	Min.	Typ.	Max.	Unit
Threshold Current	I_{th}	CW	—	20	40	mA
Operating Current	I_{op}	$P_o=3\text{mW}$	—	25	45	mA
Operating Voltage	V_{op}	$P_o=3\text{mW}$	—	2.2	2.4	V
Lasing Wavelength	λ_p	$P_o=3\text{mW}$	—	635	640	nm
Beam Divergence ※)	Perpendicular	θ_{\perp}	25	35	40	deg.
	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.

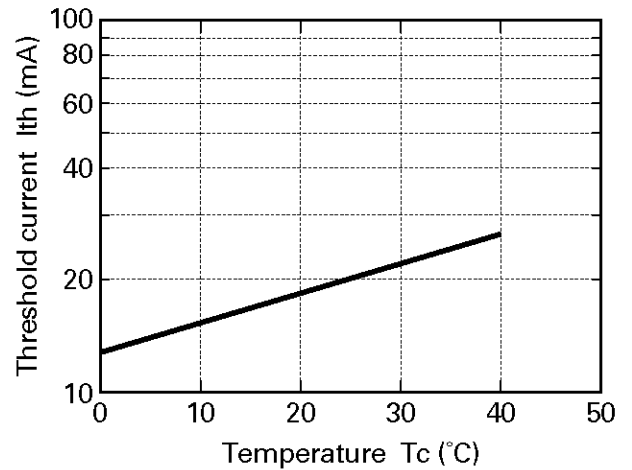
Package Dimensions**Electrical Connection**

Characteristics

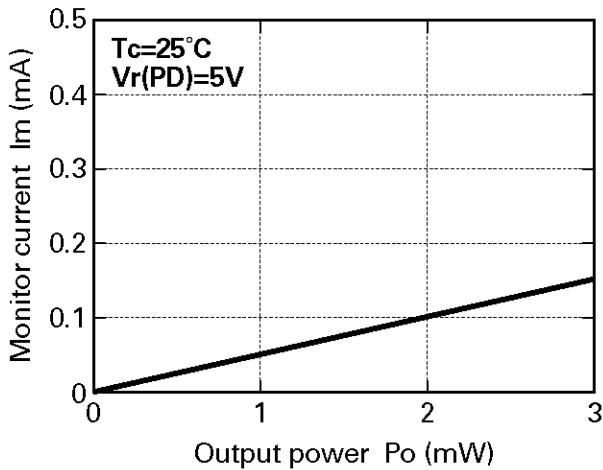
Output power vs. Forward current



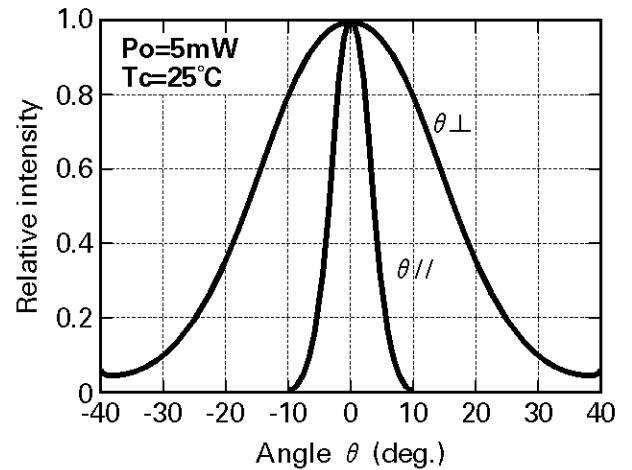
Threshold current vs. Temperature



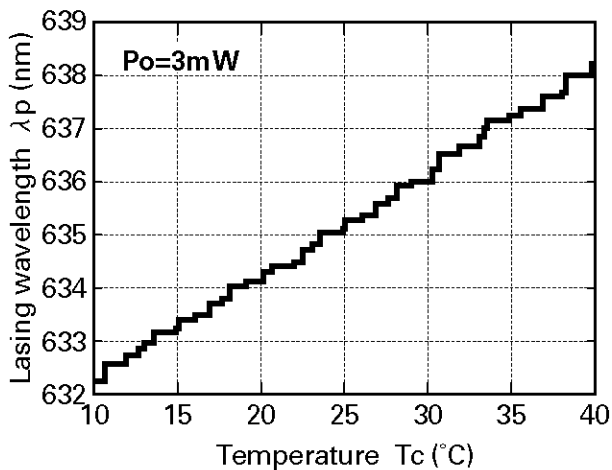
Monitor current vs. Output power



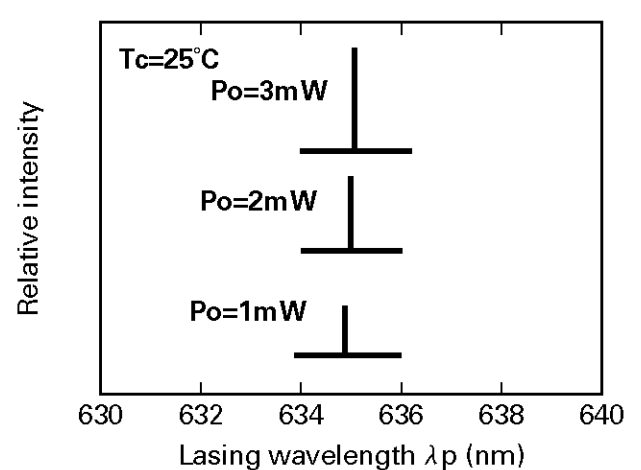
Beam divergence



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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