

Red Laser Diode

**DL-3038-033**



## Index Guided AlGaInP Laser Diode

### Overview

DL-3038-033 is index guided 635 nm (Typ.) AlGaInP laser diode with low threshold current and high operating temperature.

Low threshold current and short wavelength are achieved by a strained multiple quantum well active layer. The lasing wavelength is 635 nm which is 8 times brighter than that of 670 nm lasers. DL-3038-033 is suitable for applications such as bar-code scanners, laser pointers and other optical information systems.

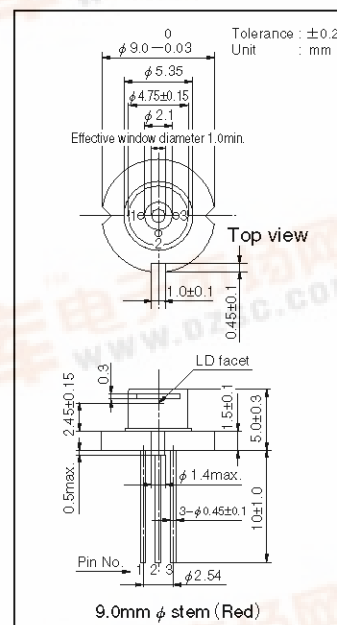
### Features

- Short wavelength : 635 nm (Typ.)
- Low threshold current :  $I_{th} = 30$  mA (Typ.)
- High operating temperature : 50°C at 5 mW
- Low operating voltage :  $V_{op} = 2.2$  V (Typ.)

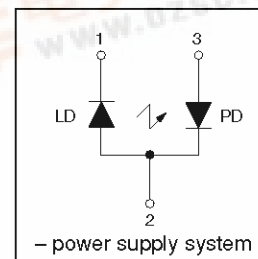
### Absolute Maximum Ratings at $T_c=25^\circ\text{C}$

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	°C
Storage Temperature	$T_{stg}$	-40 to +85	°C

### Package Dimensions



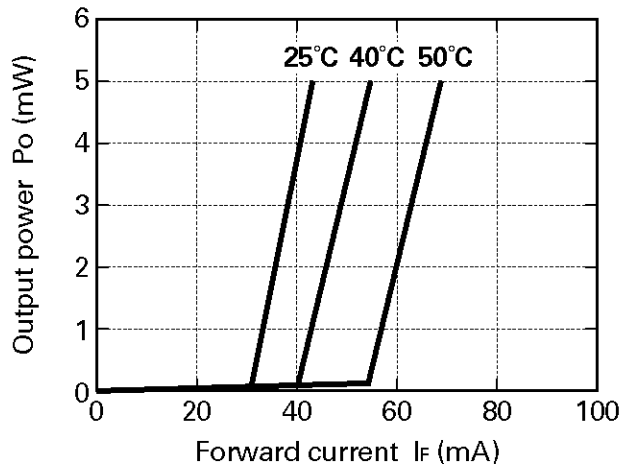
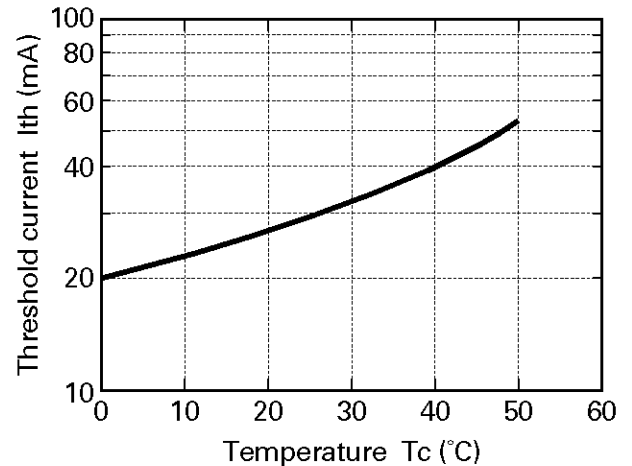
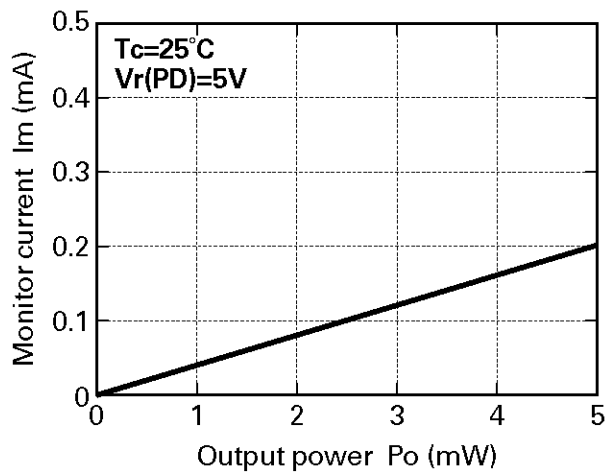
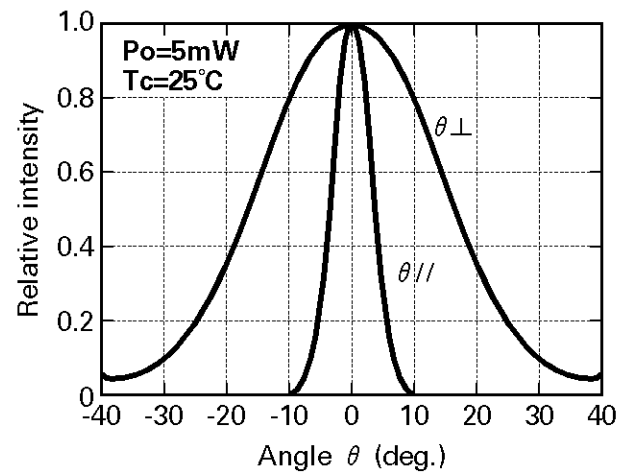
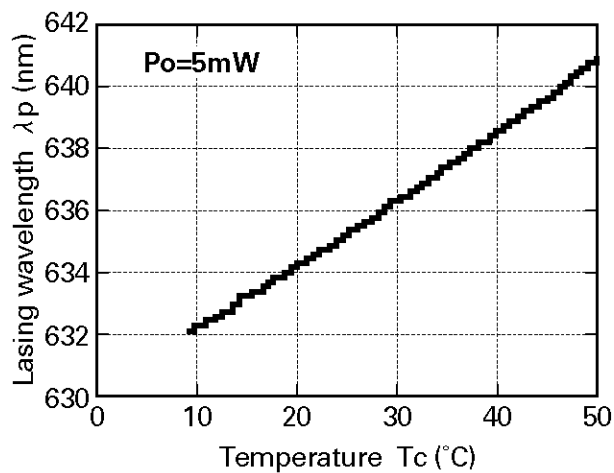
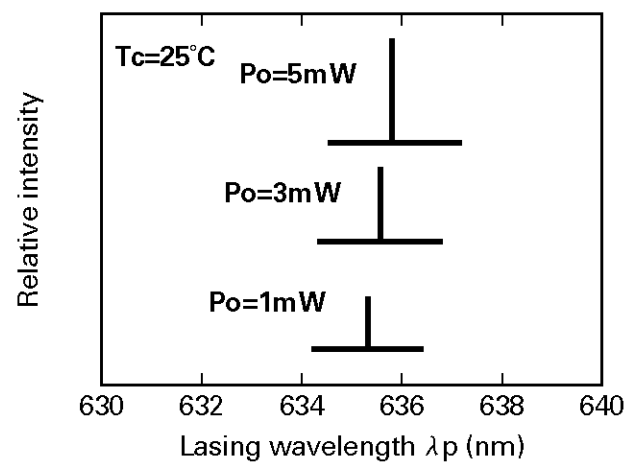
### Electrical Connection



### 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	$I_{op}$	$P_o=5\text{mW}$	—	40	60	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 Angle	Perpendicular	$\theta_\perp$	$P_o=5\text{mW}$	25	35	deg.
	Parallel	$\theta_\parallel$	$P_o=5\text{mW}$	6	8	deg.
	Perpendicular	$\Delta\theta_\perp$	—	—	±3	deg.
	Parallel	$\Delta\theta_\parallel$	—	—	±3	deg.
Differential Efficiency	$dP_o/dI_{op}$	—	—	0.4	—	mW/mA
Monitoring Output Current	$I_m$	$P_o=5\text{mW}$	0.10	0.20	0.50	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.

**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.

Manufactured by ; **Tottori SANYO Electric Co., Ltd.**

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