

**DL-4039-011****Index Guided AlGaInP Laser Diode****Overview**

DL-4039-011 is 675 nm (Typ.) index guided AlGaInP laser diode with low threshold current and 10 mW high power.

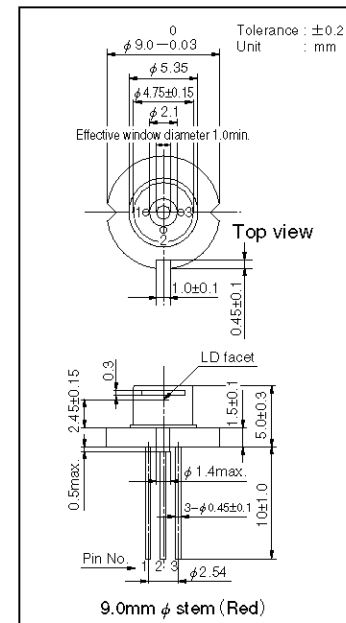
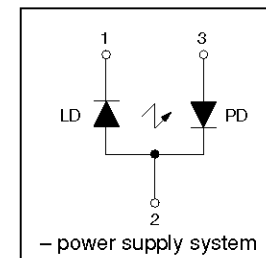
The low threshold current and short wavelength are achieved by the use of a strained multiple quantum well active layer. DL-4039-011 is suitable for applications such as bar-code scanners, laser pointers and other optical information systems.

**Features**

- Short wavelength : 675 nm (Typ.)
- Output power : 10 mW CW
- Low threshold current :  $I_{th} = 40$  mA (Typ.)
- High operating temperature : 50°C at 10 mW

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

Parameter	Symbol	Ratings	Unit
Light Output	Po	10	mW
Reverse Voltage	Laser PIN	VR	2
			30
Operating Temperature	Topr	-10 to +50	°C
Storage Temperature	Tstg	-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	—	40	70	mA	
Operating Current	$I_{op}$	$P_o=10\text{mW}$	—	60	90	mA	
Operating Voltage	$V_{op}$	$P_o=10\text{mW}$	—	2.3	2.6	V	
Lasing Wavelength	$\lambda_p$	$P_o=10\text{mW}$	665	675	685	nm	
Beam Divergence ※)	Perpendicular	$\theta_{\perp}$	$P_o=10\text{mW}$	25	30	40	deg.
	Parallel	$\theta_{\parallel}$	$P_o=10\text{mW}$	6	8	10	deg.
Off Axis Angle	Perpendicular	$\Delta\theta_{\perp}$	—	—	±3	deg.	
	Parallel	$\Delta\theta_{\parallel}$	—	—	±3	deg.	
Differential Efficiency	$dP_o/dI_{op}$	—	0.2	0.5	—	mW/mA	
Monitoring Output Current	$I_m$	$P_o=10\text{mW}$	0.05	0.15	0.4	mA	
Astigmatism	$A_s$	$P_o=10\text{mW}$	—	8	—	$\mu\text{m}$	

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

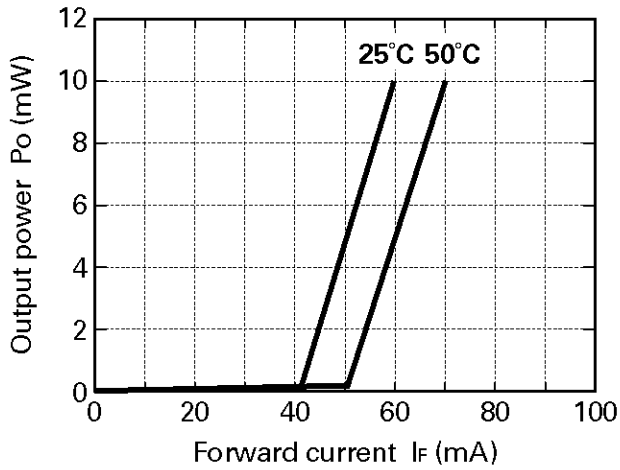
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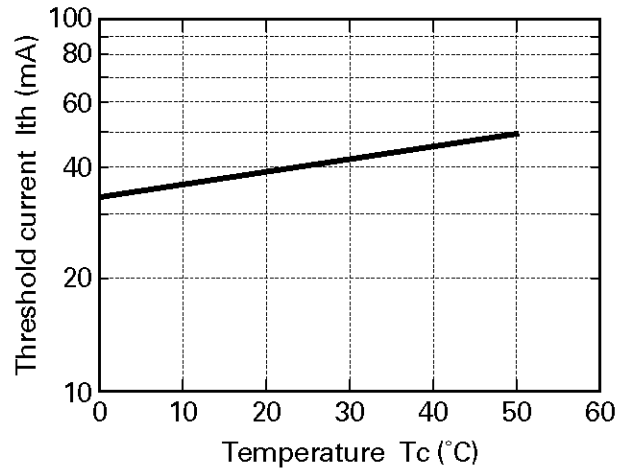
N2897 GI, (IM) No.5866 1/3

## Characteristics

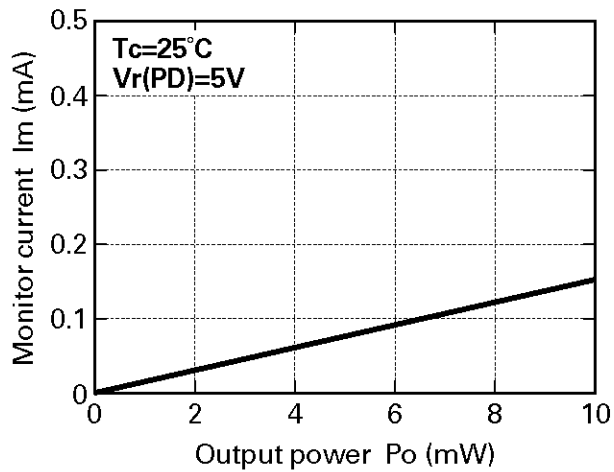
### Output power vs. Forward current



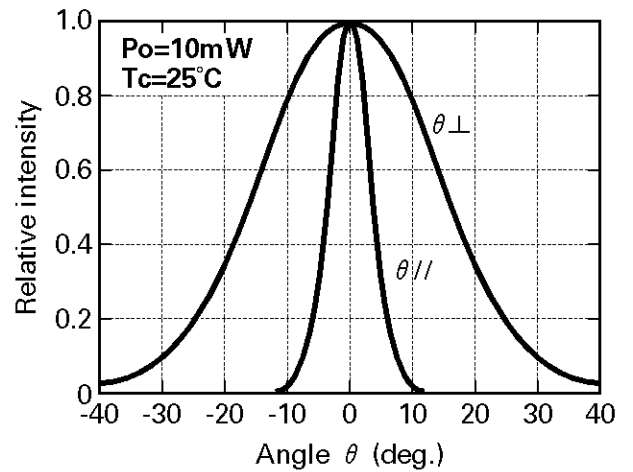
### Threshold current vs. Temperature



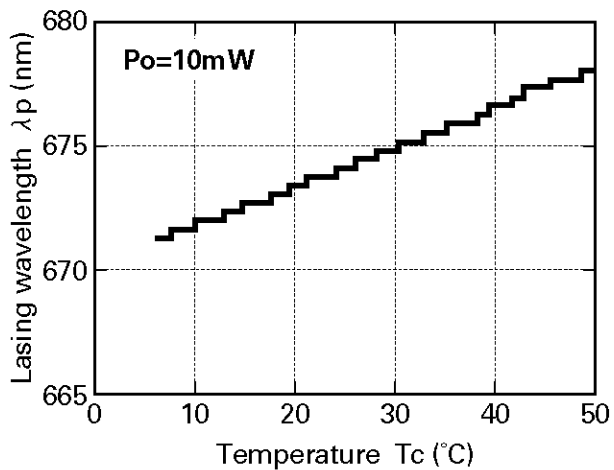
### Monitor current vs. Output power



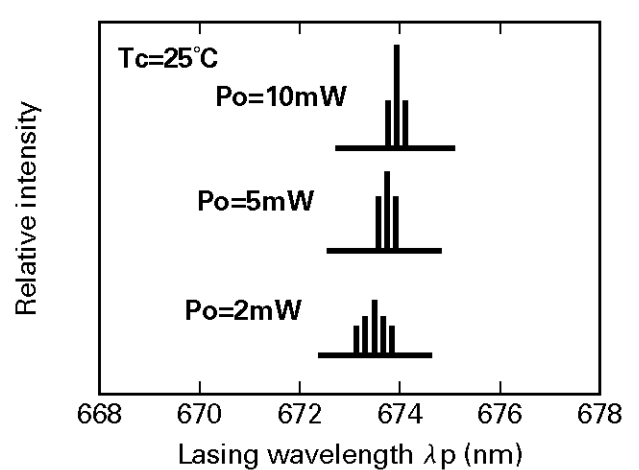
### Beam divergence



### 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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