



DL-4038-021

High Power AlGaInP Laser Diode

Overview

DL-4038-021 is a high power 635 nm (Typ.) AlGaInP laser diode with low threshold current. High output power and low threshold current are achieved by use of a strained quantum well active layer. The lasing wavelength is the same as that of the He-Ne gas lasers. DL-4038-021 is suitable for applications such as laser printers, line markers and other optical information systems.

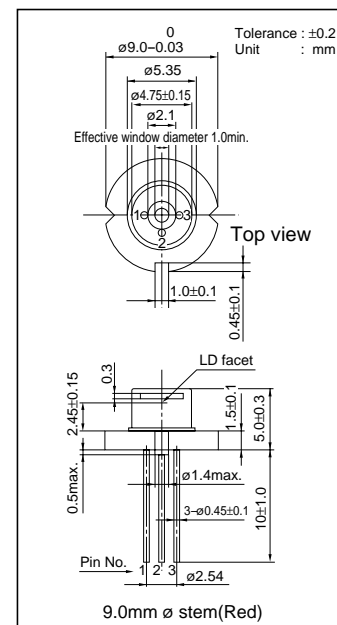
Features

- Short wavelength : 635 nm (Typ.)
- High output power : 10mW CW
- Low threshold current : $I_{th} = 35$ mA (Typ.)
- Low operating voltage : $V_{op} = 2.2$ V (Typ.)

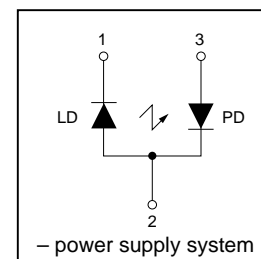
Absolute Maximum Ratings at $T_c=25^\circ\text{C}$

Parameter	Symbol	Ratings	Unit
Light Output	P_o	10	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	$^\circ\text{C}$

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	-	35	60	mA
Operating Current	I_{op}	$P_o=10\text{mW}$	-	55	80	mA
Operating Voltage	V_{op}	$P_o=10\text{mW}$	-	2.2	2.4	V
Lasing Wavelength	λ_p	$P_o=10\text{mW}$	-	635	645	nm
Beam Divergence	Perpendicular	θ_{\perp}	25	30	35	deg.
	Parallel	$\theta_{//}$	6	8	10	deg.
Off Axis Angle	Perpendicular	$\Delta\theta_{\perp}$	-	-	± 3	deg.
	Parallel	$\Delta\theta_{//}$	-	-	± 3	deg.
Differential Efficiency	dP_o/dI_{op}	-	-	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	-	μm

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

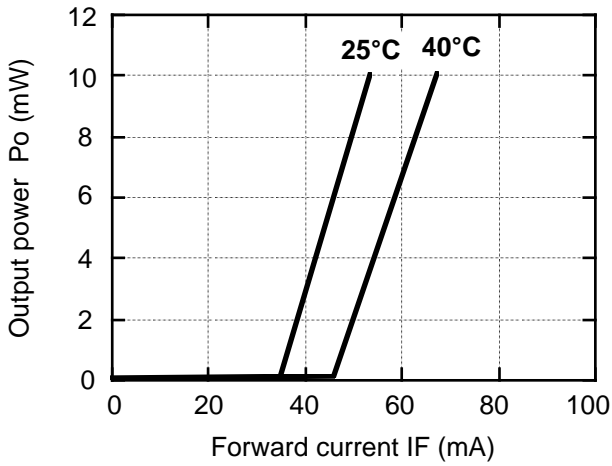
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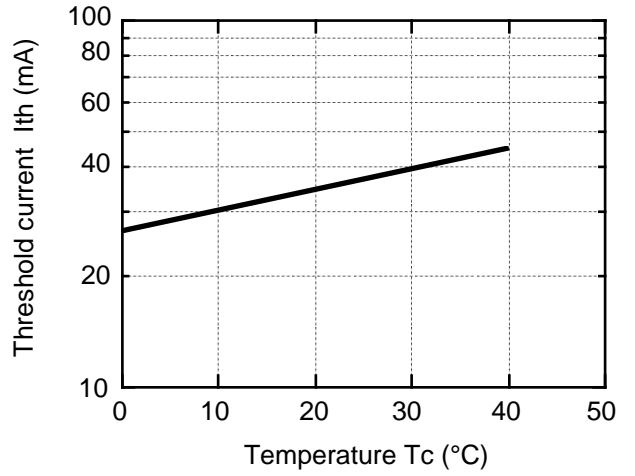
N2898 GI / N2897 GI, (IM) No.5857 1/3

Characteristics

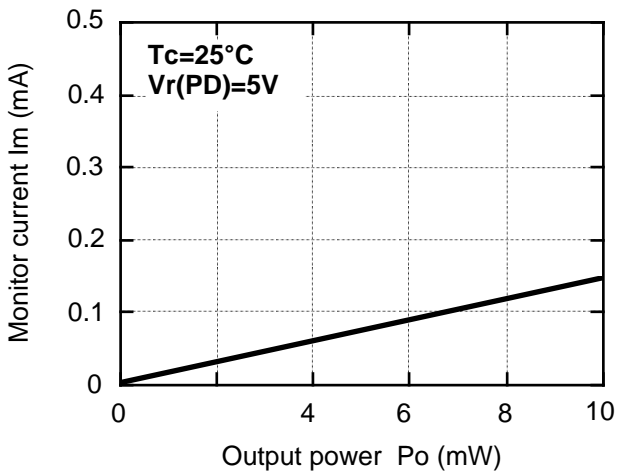
Output power vs. Forward current



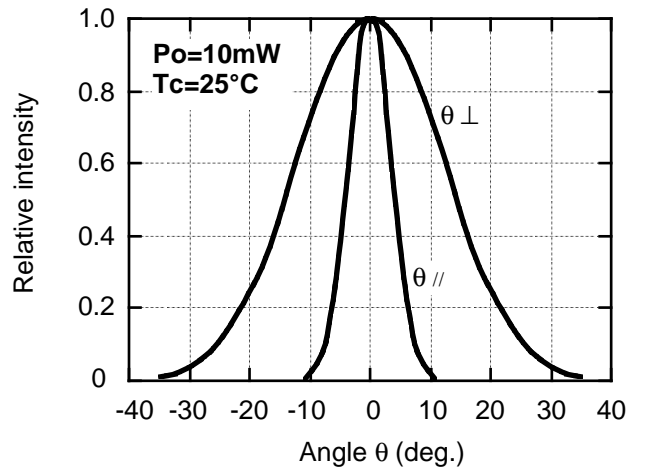
Threshold current vs. Temperature



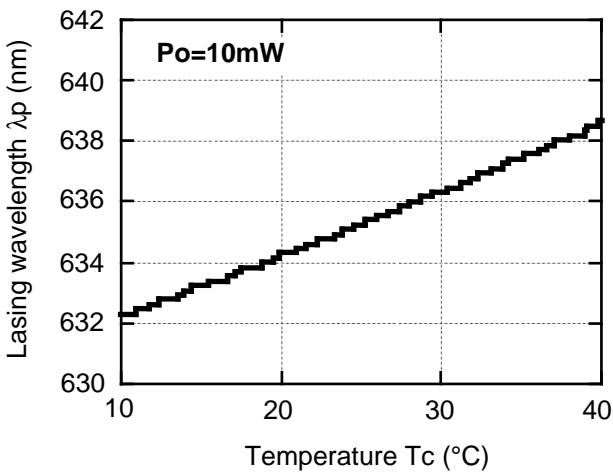
Monitor current vs. Output power



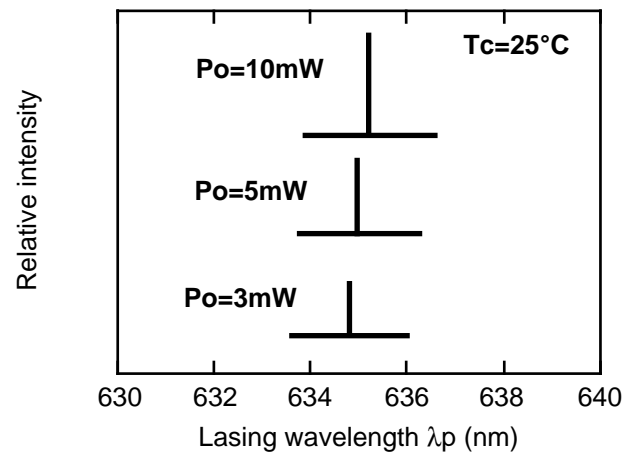
Beam divergence



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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