



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.

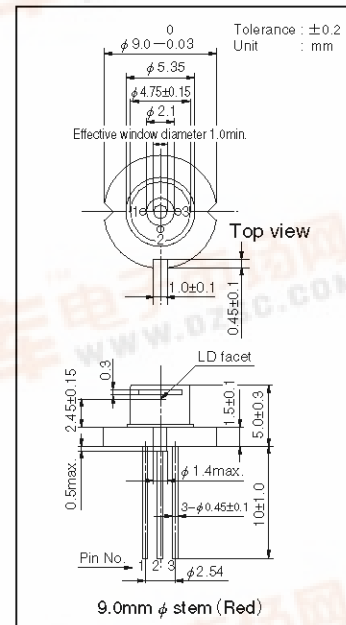
Features

- 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

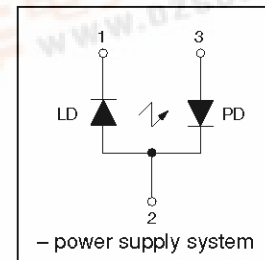
Absolute Maximum Ratings at Tc=25°C

Parameter	Symbol	Ratings	Unit
Light Output	P _o	10	mW
Reverse Voltage	Laser	2	V
	PIN	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 Tc=25°C

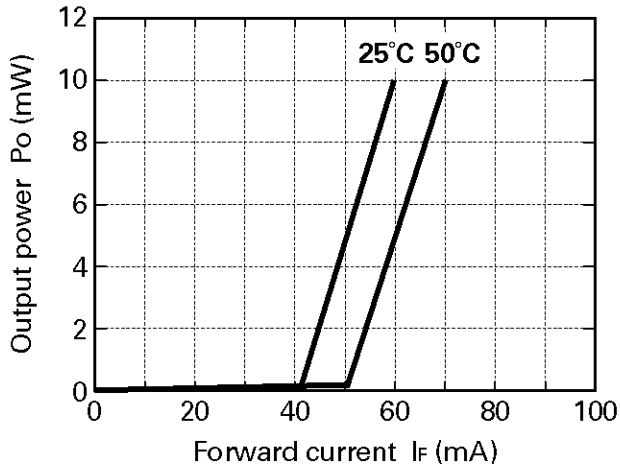
Parameter	Symbol	Condition	Min.	Typ.	Max.	Unit
Threshold Current	I _{th}	CW	-	40	70	mA
Operating Current	I _{op}	P _o =10mW	-	60	90	mA
Operating Voltage	V _{op}	P _o =10mW	-	2.3	2.6	V
Lasing Wavelength	λ _p	P _o =10mW	665	675	685	nm
Beam Divergence ※)	Perpendicular	θ _⊥	25	30	40	deg.
	Parallel	θ _∥	6	8	10	deg.
Off Axis Angle	Perpendicular	Δθ _⊥	-	-	±3	deg.
	Parallel	Δθ _∥	-	-	±3	deg.
Differential Efficiency	dP _o /dI _{op}	-	0.2	0.5	-	mW/mA
Monitoring Output Current	I _m	P _o =10mW	0.05	0.15	0.4	mA
Astigmatism	A _s	P _o =10mW	-	8	-	μm

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

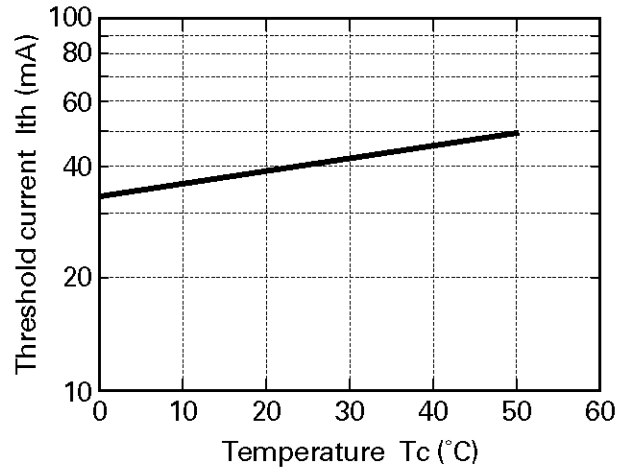


Characteristics

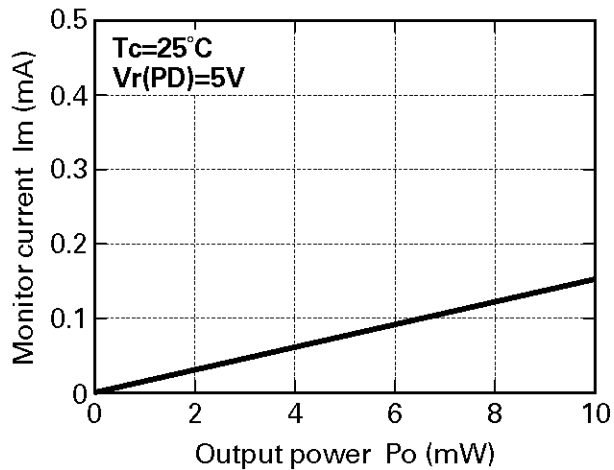
Output power vs. Forward current



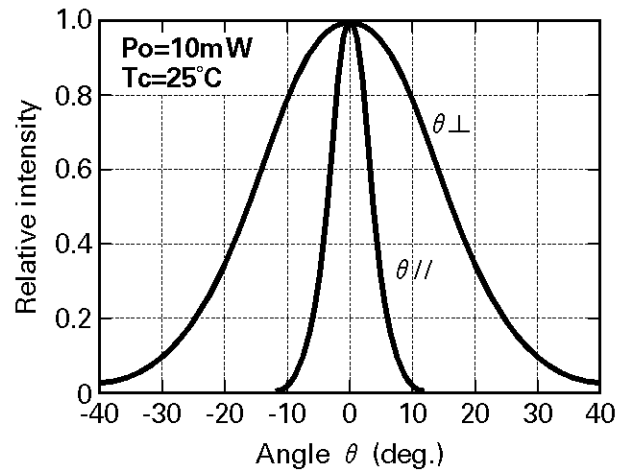
Threshold current vs. Temperature



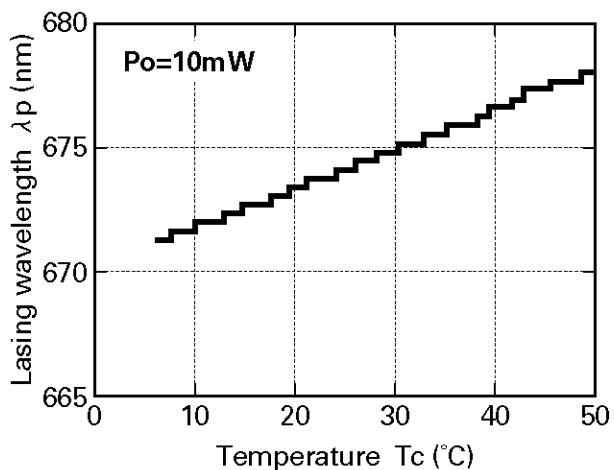
Monitor current vs. Output power



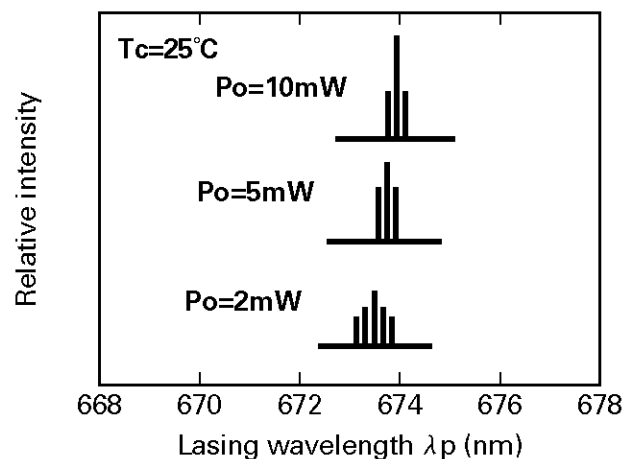
Beam divergence



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.
2. Anyone purchasing any products described or contained herein for an above-mentioned use shall:
 - 1) Accept full responsibility and indemnify and defend SANYO ELECTRIC CO.,LTD., it's affiliates, subsidiaries and distributors or any of their officers and employees, jointly and severally, against any and all claims and litigation and all damages, costs and expenses associated with such use.
 - 2) Not impose any responsibility for any fault or negligence which may be cited in any such claim or litigation on SANYO ELECTRIC CO., LTD., it's affiliates, subsidiaries and distributors or any of their officers and employees jointly or severally.
3. Information (including circuit diagrams and circuit parameters) disclosed herein is for example only; it is not guaranteed for mass production, SANYO believes the information disclosed herein is accurate and reliable, but no guarantees are made or implied regarding it's use or any infringements of intellectual property rights or other rights of third parties.

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.**

Electronics Device Bussiness Headquarters LED Division
5-318, Tachikawa-cho, Tottori City, 680 Japan
TEL: +81-857-21-2137 FAX: +81-857-21-2161