

**DL-3147-021****Red Laser Diode****Features**

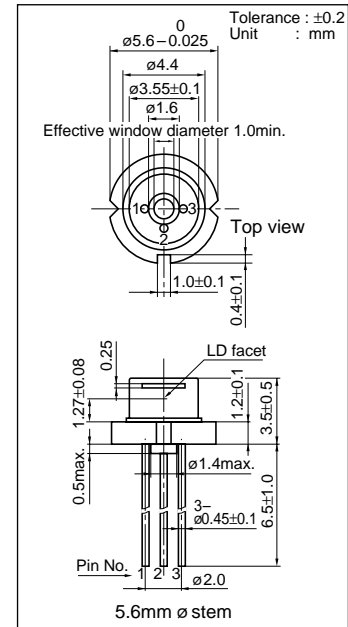
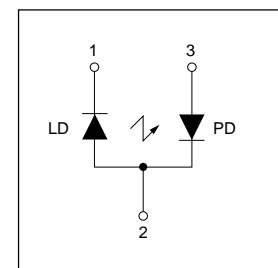
- Short wavelength : 645 nm (Typ.)
- Low threshold current : $I_{th} = 30$ mA (Typ.)
- Low operating voltage : $V_{op} = 2.3$ V (Typ.)
- Small package : $\phi 5.6$ mm

Applications

- Laser pointer

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

Parameter		Symbol	Ratings	Unit
Light Output	CW	P_o	5	mW
Reverse Voltage	Laser	V_R	2	V
	PD		30	
Operating Temperature		T_{opr}	-10 to +40	$^\circ\text{C}$
Storage Temperature		T_{stg}	-40 to +85	$^\circ\text{C}$

Package Dimensions**Pin Connection****Electrical and Optical Characteristics 1) 2) 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}	$P_o=5\text{mW}$	-	45	60	mA
Operating Voltage		V_{op}	$P_o=5\text{mW}$	-	2.3	2.6	V
Lasing Wavelength		λ_p	$P_o=5\text{mW}$	-	645	660	nm
Beam 3)	Perpendicular	$\theta \perp$	$P_o=5\text{mW}$	25	30	40	$^\circ$
	Parallel	$\theta //$	$P_o=5\text{mW}$	6	7.5	10	$^\circ$
Off Axis Angle	Perpendicular	$\Delta \theta \perp$	-	-	-	± 3	$^\circ$
	Parallel	$\Delta \theta //$	-	-	-	± 3	$^\circ$
Differential Efficiency		dP_o/dI_{op}	-	0.2	0.4	0.8	mW/mA
Monitoring Output Current		I_m	$P_o=5\text{mW}$	0.15	0.4	0.75	mA
Astigmatism		A_s	$P_o=5\text{mW}$	-	8	-	μm

1) Initial values 2) All the above values are evaluated with Tottori Sanyo's measuring apparatus

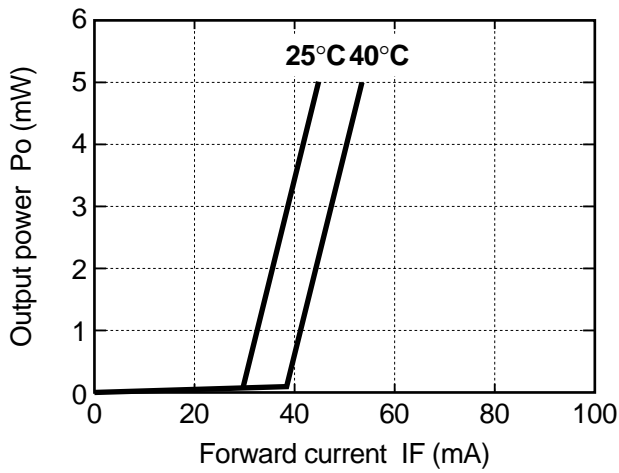
3) Full angle at half maximum Note : The above product specification are subject to change without notice.

SANYO Electric Co., Ltd. Semiconductor Company

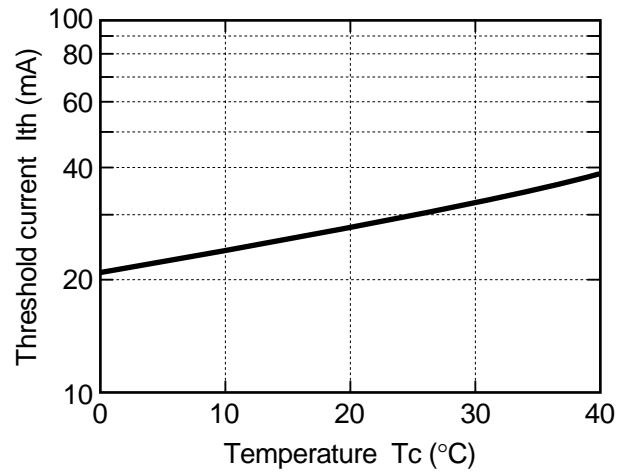
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Characteristics

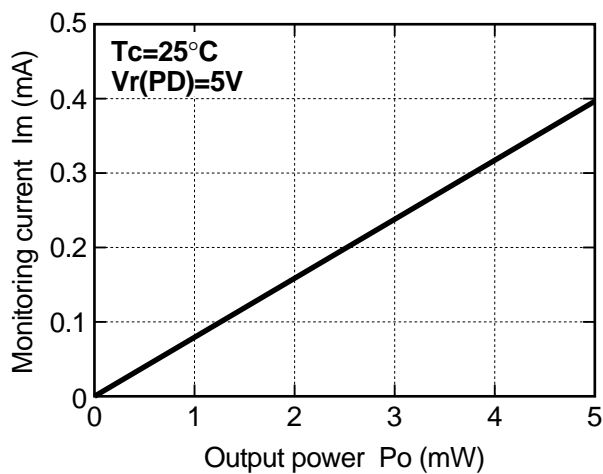
Output power vs. Forward current



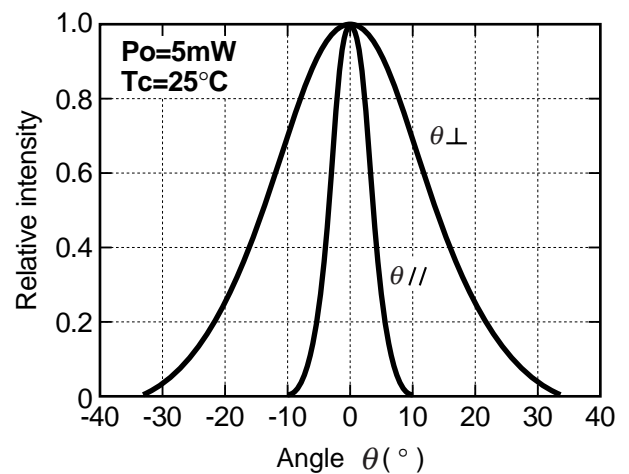
Threshold current vs. Temperature



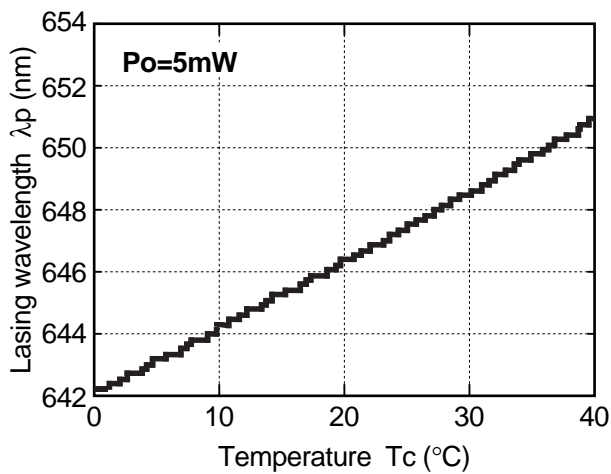
Monitoring current vs. Output power



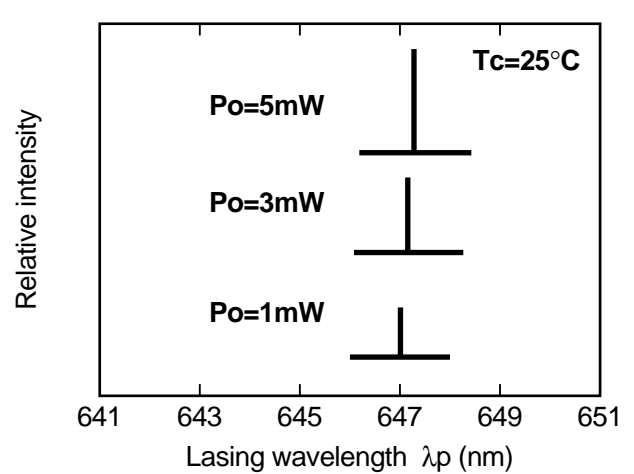
Beam divergence



Lasing wavelength vs. Temperature



Lasing wavelength vs. Output power





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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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