

GH04125A2A

Blue violet Laser Diode

High Power Blue violet Laser Diode

■ Features

- (1) Wavelength : 406 nm(Typ.)
- (2) Optical power output :
CW 125mW
- (3) Φ 5.6mm CAN package

■ Applications

- (1) 406nm band light source
- (2) Laser sensor
- (3) other application

■ Absolute Maximum Ratings

($T_c=25^\circ\text{C}^{*\text{1}}$)

Parameter	Symbol	Ratings	unit
\times^2 Optical power output(CW)	P_o	150	mW
Reverse voltage	Laser	V_{rl}	2 V
	Photo diode	V_{rd}	30 V
Operatings temperature(case temp.)	$T_{opc(c)}$	-10~+70	$^\circ\text{C}$
Storage temperature	T_{stg}	-40~+85	$^\circ\text{C}$
\times^3 Soldering temperature	T_{sld}	350	$^\circ\text{C}$

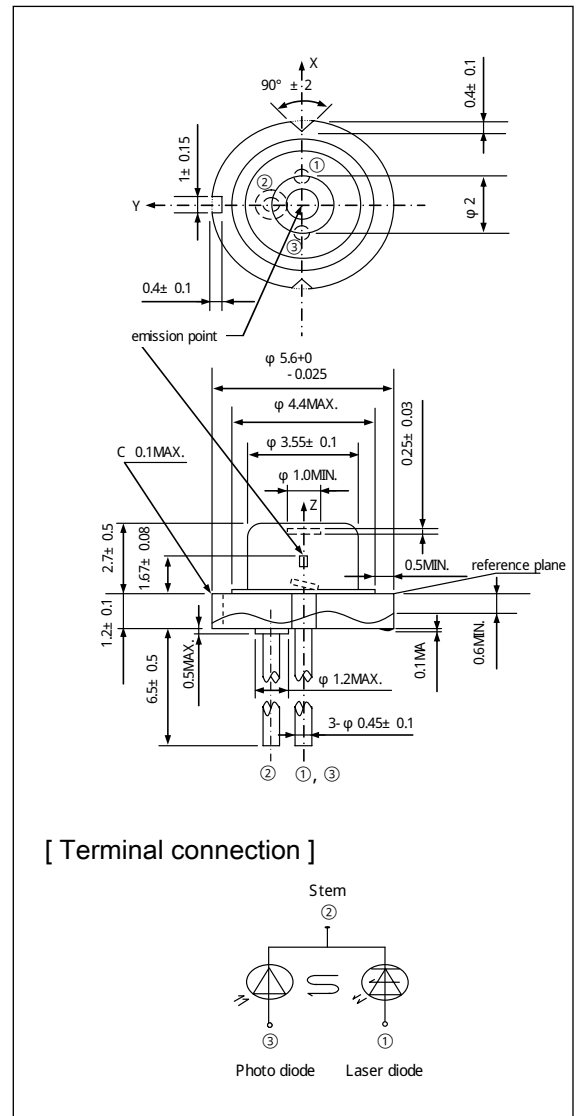
\times^1 T_c : Case temperature

\times^2 CW :Continuous Wave Operation

\times^3 Soldering position is 1.6mm apart from bottom edge of the case.
(Immersion time: 3s)

■ Outline Dimensions

(Unit :mm)



(Notice)

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■ Specifications

(T_c=25°C^{※1 ※2})

Parameter	Symbol	Conditions	MIN.	TYP.	MAX.	unit	
Threshold current	I _{th}	-	-	35	50	mA	
Operating current	I _{op}	P _o =125mW	-	125	155	mA	
Operating voltage	V _{op}		-	5.4	6.4	V	
Wavelength	λ _p		400	406	413	nm	
Half intensity angle ※3 ※4	Parallel		θ	6	9.5	12	°
	Perpendicular		θ _⊥	16	19	24.5	°
Misalignment angle ※4	Parallel		Δθ	-2.5	-	2.5	°
	Perpendicular		Δθ _⊥	-3.0	-	3.0	°
Differential efficiency	η _d		$\frac{115mW}{I(125mW)-I(10mW)}$	0.9	1.3	-	mW/mA
Monitor Photo diode current	I _m	P _o =125mW, V _{rd} =5V	0.1	0.3	0.5	mA	

※1 T_c : Case temperature

※2 Initial value, Continuous Wave Operation. Initial value is measured by the standard Laser tester of the sharp possession.

※3 Angle of 50% peak intensity.(Full angle at half-maximum)

※4 Parallel to the junction plane.(X-Z plane)

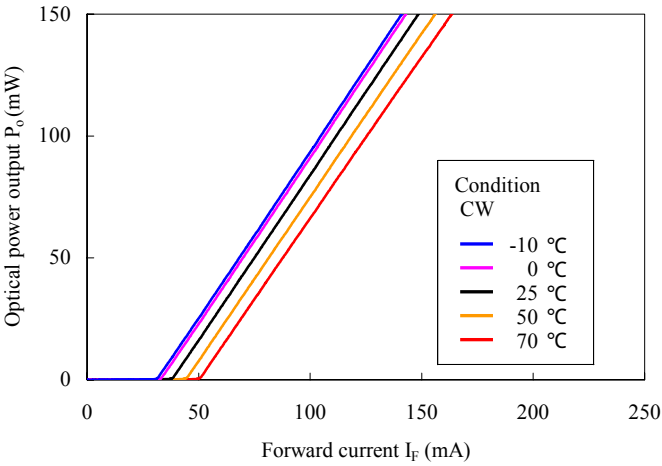
Perpendicular to the junction plane.(Y-Z plane)

(Notice)

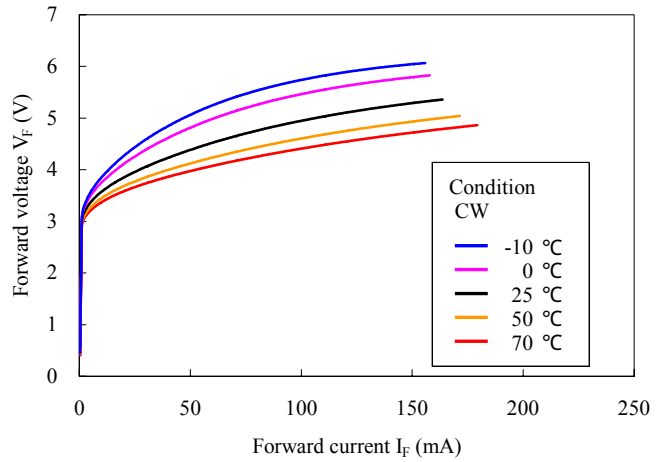
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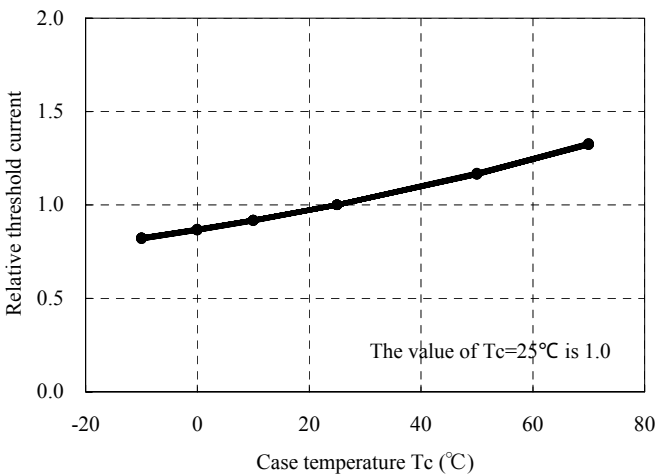
■ Optical power output – Forward current



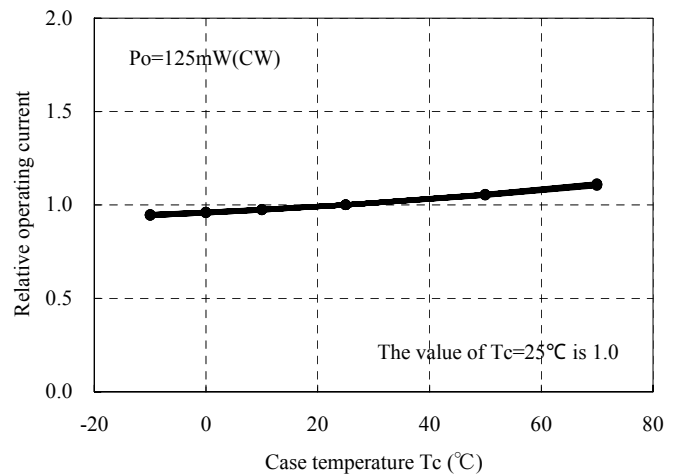
■ Forward voltage – Forward current



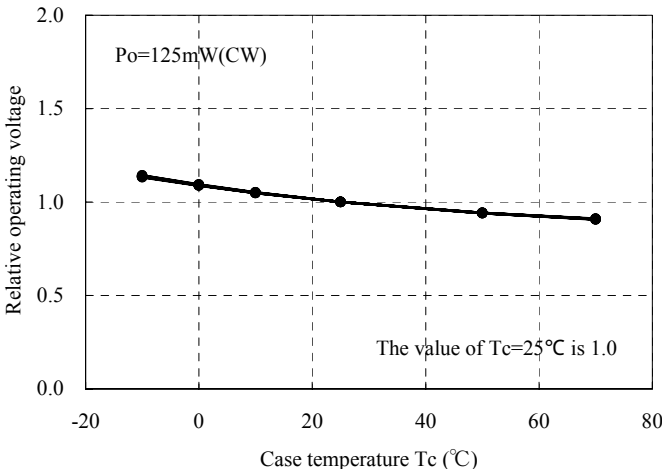
■ Case temperature dependence of threshold current(I_{th})



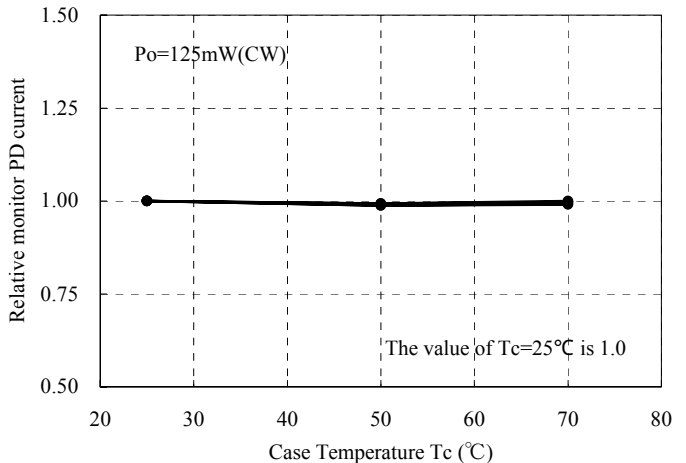
■ Case temperature dependence of operating current(I_{op})



■ Case temperature dependence of operating voltage(V_{op})

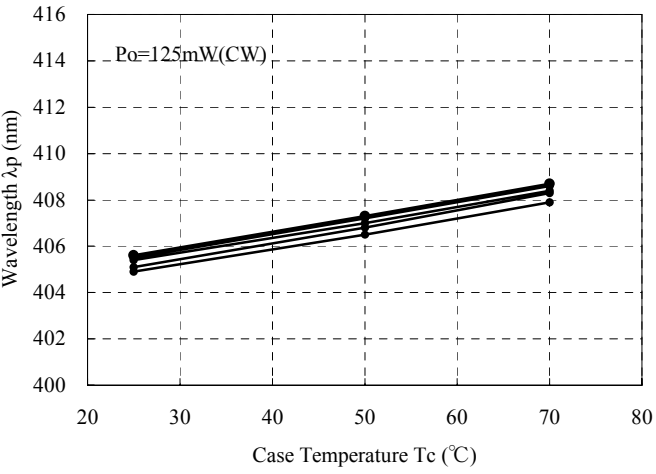


■ Case temperature dependence of monitor PD current(I_m)

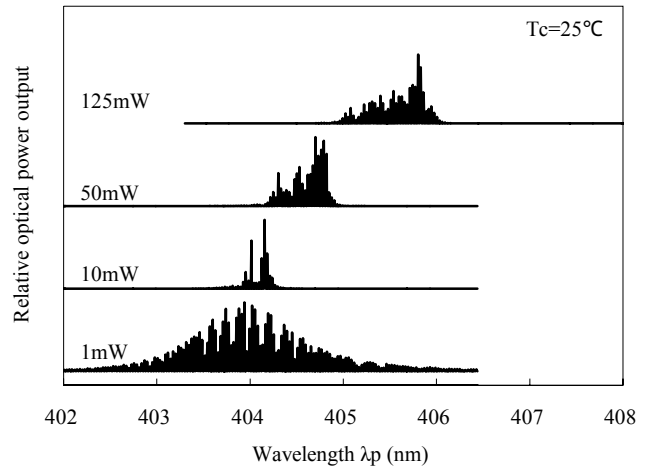


Note) Characteristics shown in diagrams are typical values.(not assurance value)

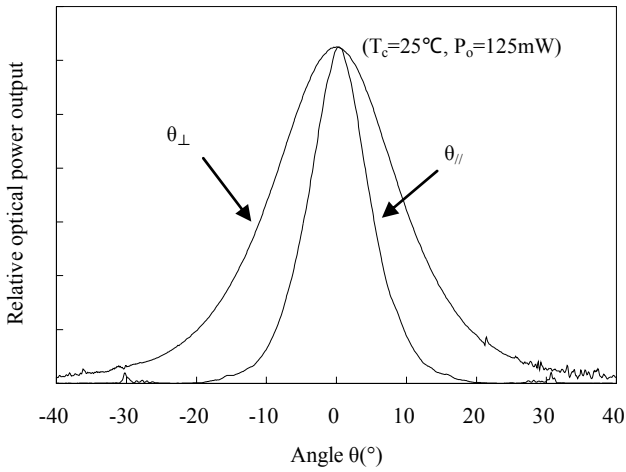
■ Case temperature dependence of wavelength



■ Optical power dependence of Lasing spectrum



■ Far field pattern (FFP)



Note) Characteristics shown in diagrams are typical values.(not assurance value)

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* Telecommunication equipment (Terminal)	* Measuring equipment	
* Tooling machines	* Computers	

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* Traffic signals * Gas leakage sensor breakers * Rescue and security equipment
* Other safety equipment

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