

## GH04125A2A

## Blue violet Laser Diode

### High Power Blue violet Laser Diode

#### ■ Features

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

#### ■ Applications

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

#### ■ Absolute Maximum Ratings

(T<sub>c</sub>=25°C<sup>※1</sup>)

Parameter	Symbol	Ratings	unit
<sup>2</sup> Optical power output(CW)	P <sub>o</sub>	150	mW
Reverse voltage	Laser	V <sub>rl</sub>	2 V
	Photo diode	V <sub>rd</sub>	30 V
Operatings temperature(case temp.)	T <sub>opc(c)</sub>	-10~+70	°C
Storage temperature	T <sub>stg</sub>	-40~+85	°C
<sup>3</sup> Soldering temperature	T <sub>slid</sub>	350	°C

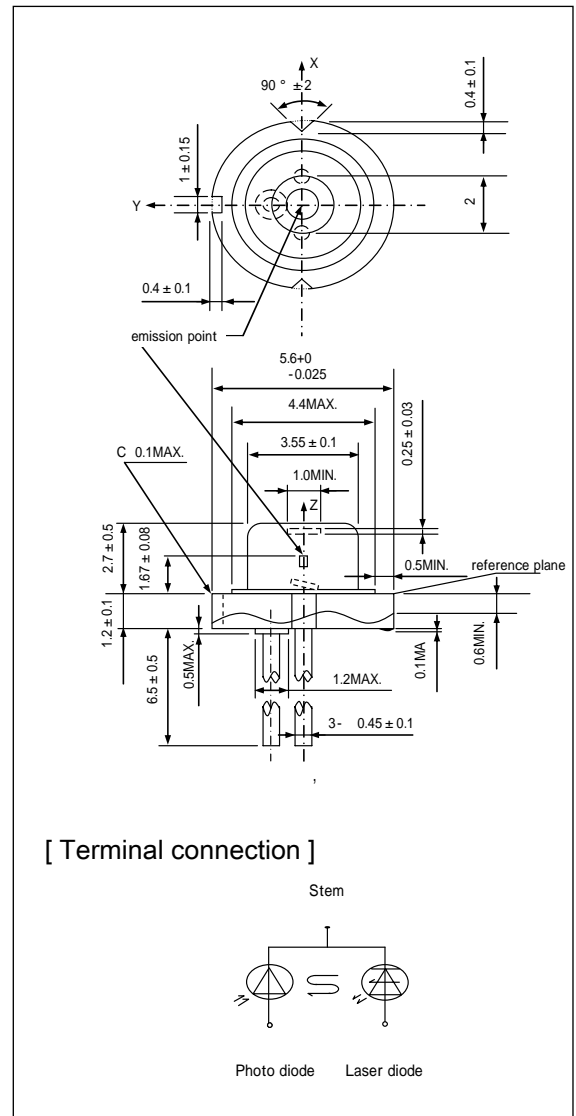
※1 T<sub>c</sub> : Case temperature

※2 CW :Continuous Wave Operation

※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<sub>c</sub>=25°C<sup>※1 ※2</sup>)

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

※1 T<sub>c</sub> : 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)

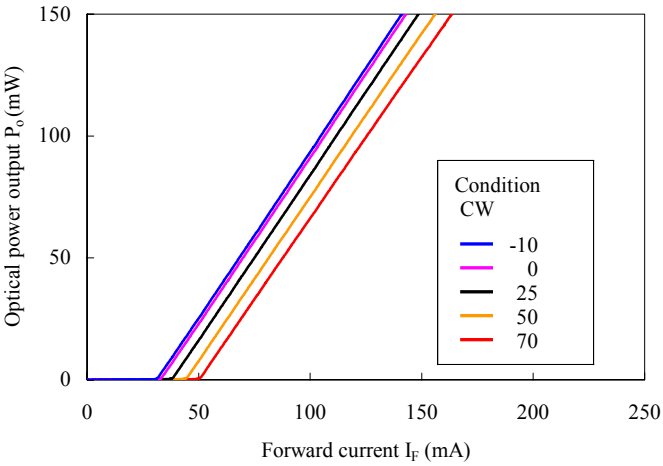
Perpendicular to the junction plane.(Y-Z plane)

(Notice)

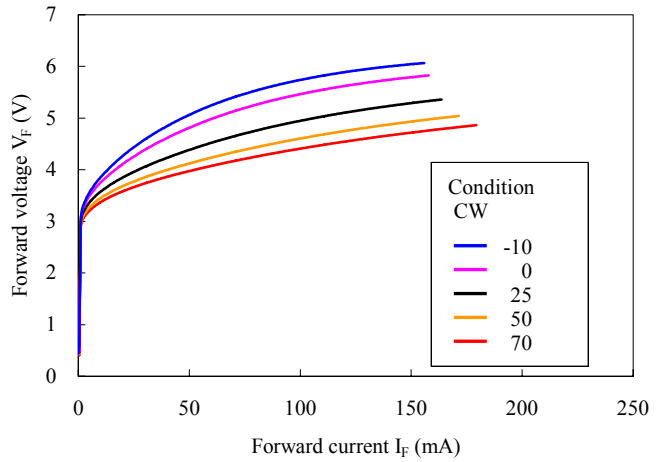
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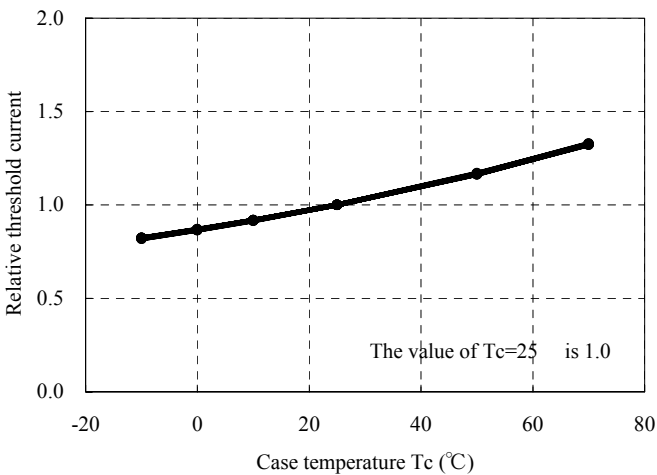
■ Optical power output – Forward current



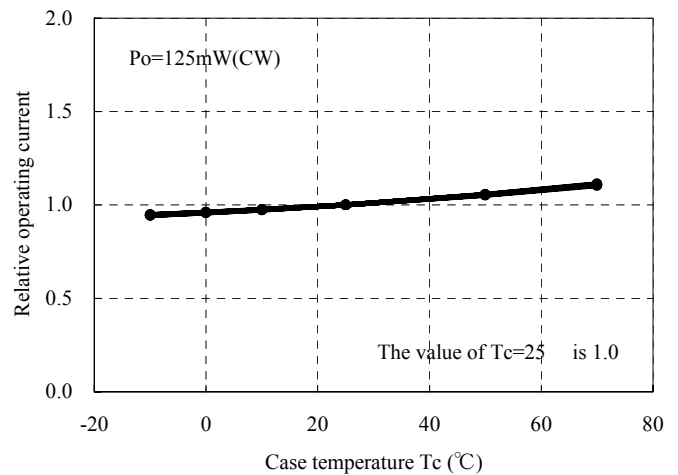
■ Forward voltage – Forward current



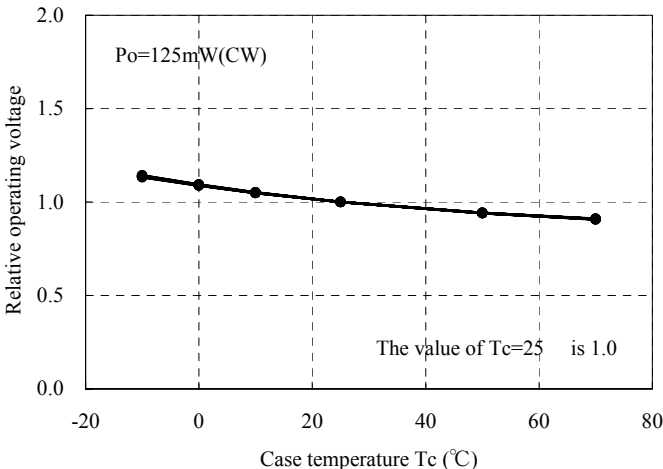
■ Case temperature dependence of threshold current( $I_{th}$ )



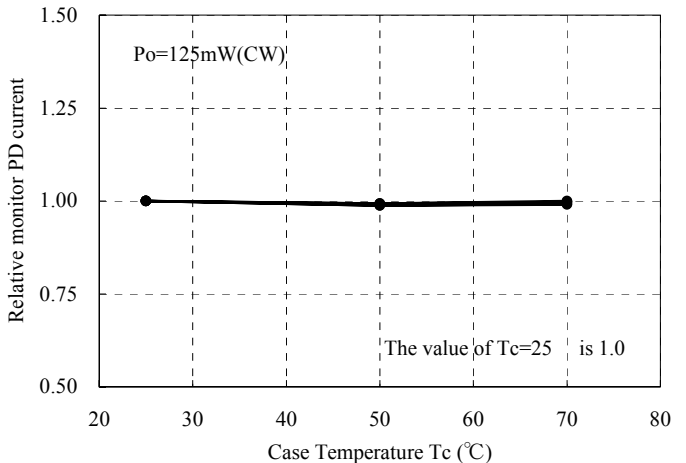
■ Case temperature dependence of operating current( $I_{op}$ )



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

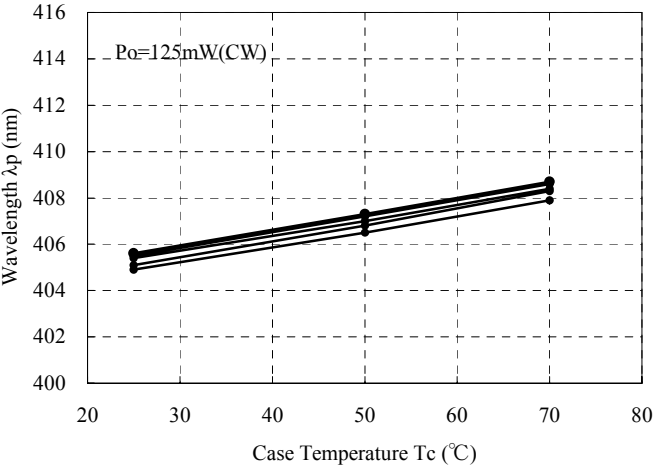


■ Case temperature dependence of monitor PD current( $I_m$ )

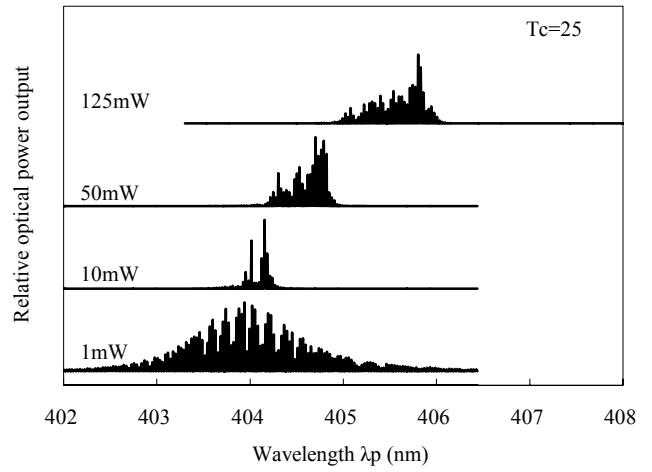


Note) Characteristics shown in diagrams are typical values.(not assurance value)

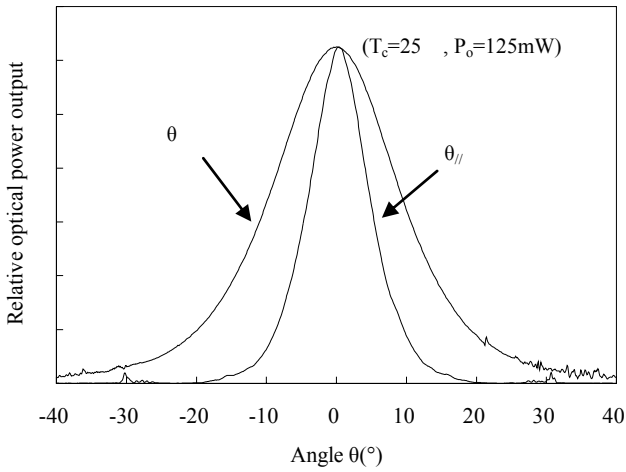
## Case temperature dependence of wavelength



## 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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