

GH04020B2A

Blue violet Laser Diode

Low Power Blue violet Laser Diode

■ Features

- (1) Wavelength : 406 nm(Typ.)
- (2) Optical power output :
CW 20mW
- (3) Φ 5.6mm CAN package

■ Applications

- (1) Barcode scanner
- (2) Laser sensor
- (3) other application

■ Absolute Maximum Ratings

(T_c=25°C^{※1})

Parameter	Symbol	Ratings	unit
※2 Optical power output(CW)	P _o	25	mW
Reverse voltage	Laser	V _{rl}	2 V
	Photo diode	V _{rd}	30 V
Operatings temperature(case temp.)	T _{opc(c)}	-10~+70	°C
Storage temperature	T _{stg}	-40~+85	°C
※3 Soldering temperature	T _{sld}	350	°C

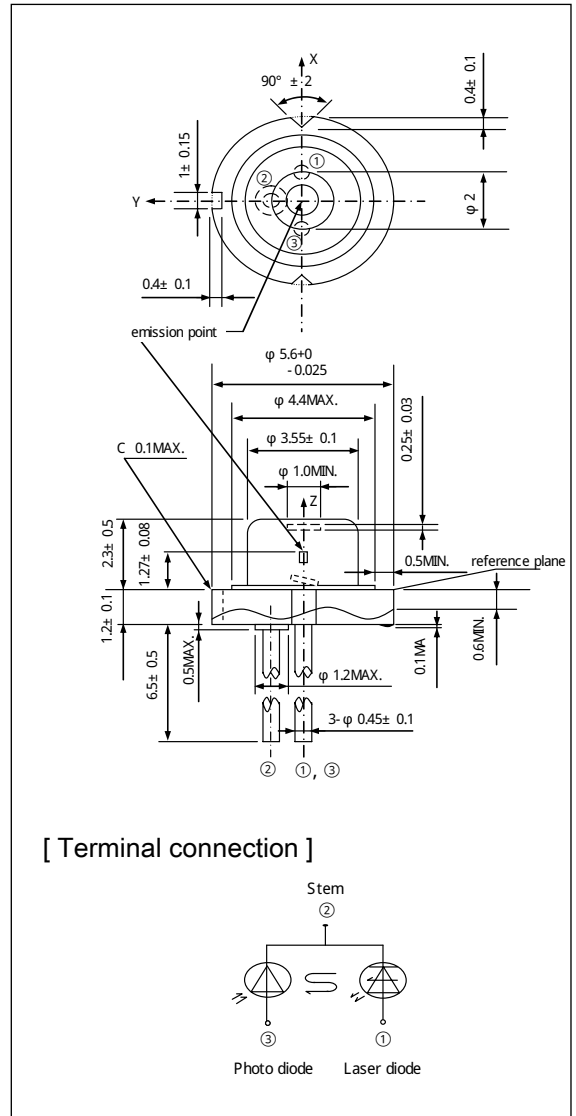
※1 T_c : Case temperature

※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_c=25°C^{※1 ※2})

Parameter	Symbol	Conditions	MIN.	TYP.	MAX.	unit	
Threshold current	I _{th}	-	-	23	50	mA	
Operating current	I _{op}	P _o =20mW	-	38	60	mA	
Operating voltage	V _{op}		-	4.9	5.8	V	
Wavelength	λ _p		400	406	413	nm	
Half intensity angle ※3 ※4	Parallel		θ	6	9.5	12	°
	Perpendicular		θ _⊥	15	20	24	°
Misalignment angle ※4	Parallel		Δθ	-2.5	-	2.5	°
	Perpendicular		Δθ _⊥	-3.0	-	3.0	°
Differential efficiency	η _d	$\frac{12mW}{I(20mW)-I(8mW)}$	0.7	1.1	1.6	mW/mA	
Monitor Photo diode current	I _m	P _o =20mW, V _{rd} =5V	0.3	0.6	0.9	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)

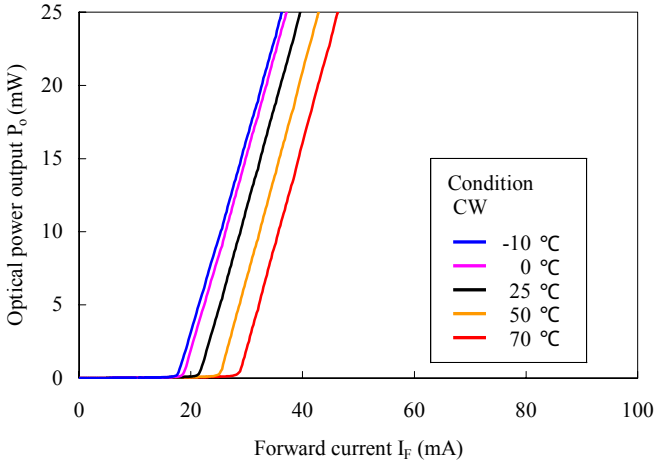
Perpendicular to the junction plane.(Y-Z plane)

(Notice)

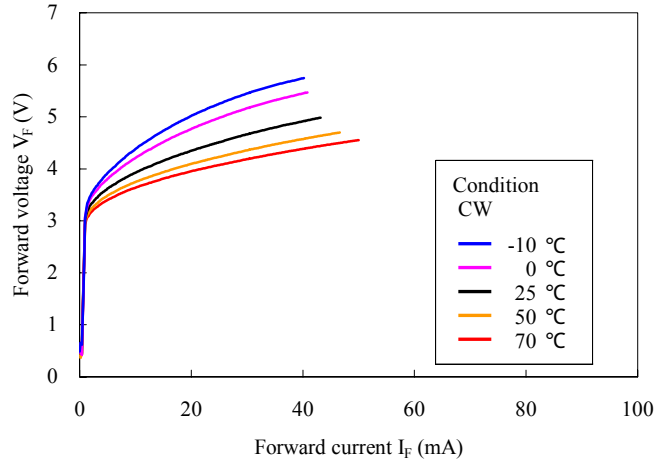
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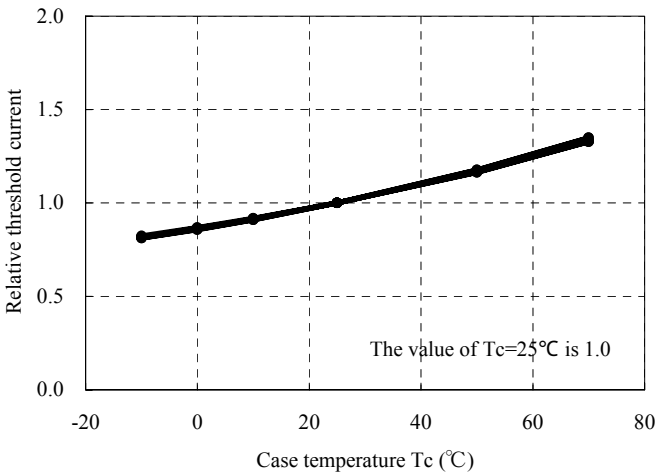
■ Optical power output – Forward current



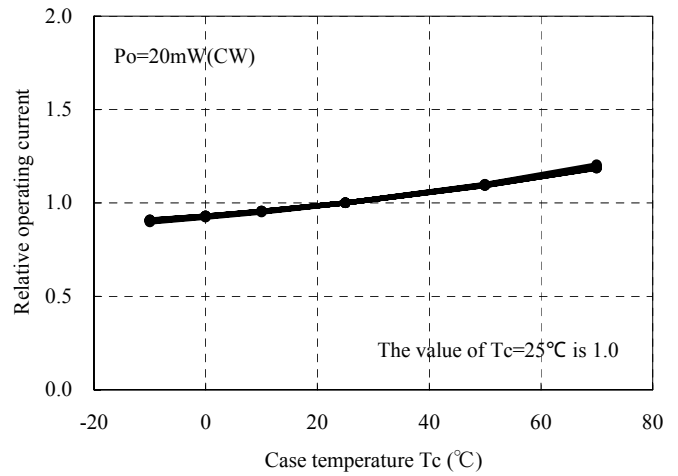
■ Forward voltage – Forward current



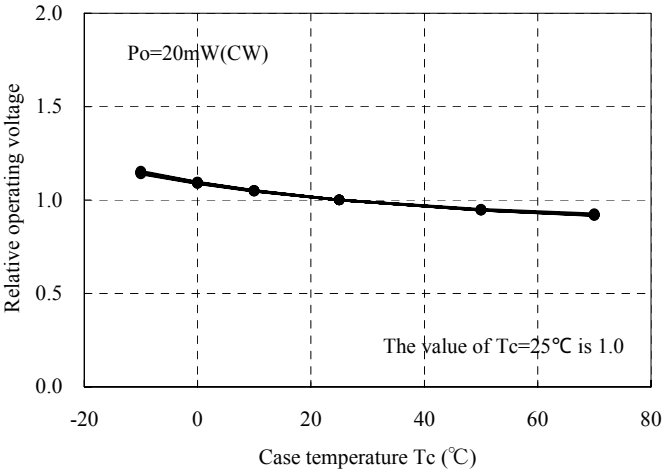
■ Case temperature dependence of threshold current(I_{th})



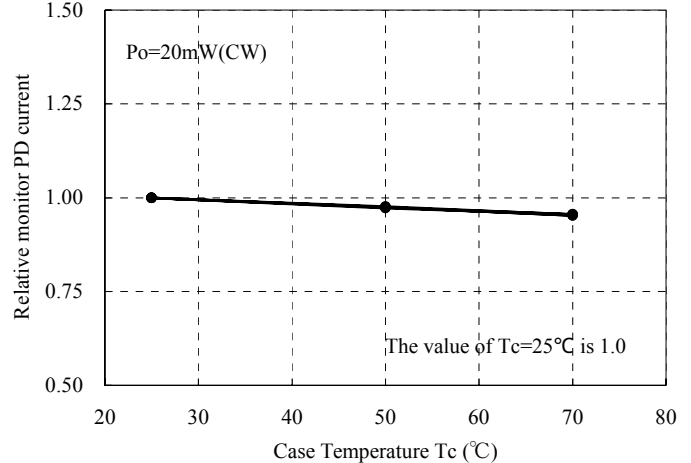
■ Case temperature dependence of operating current(I_{op})



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

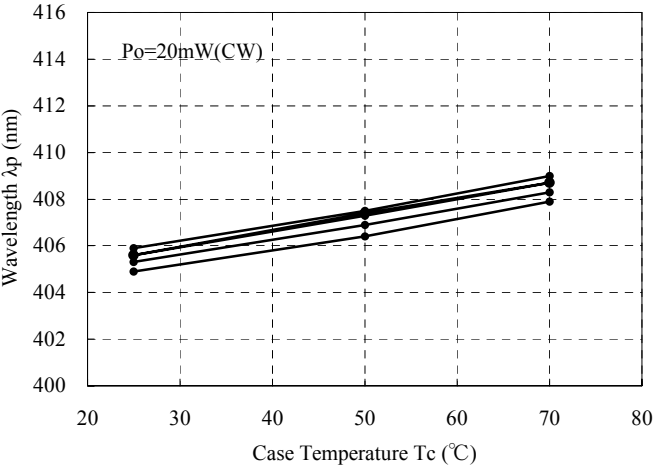


■ Case temperature dependence of monitor PD current(I_m)

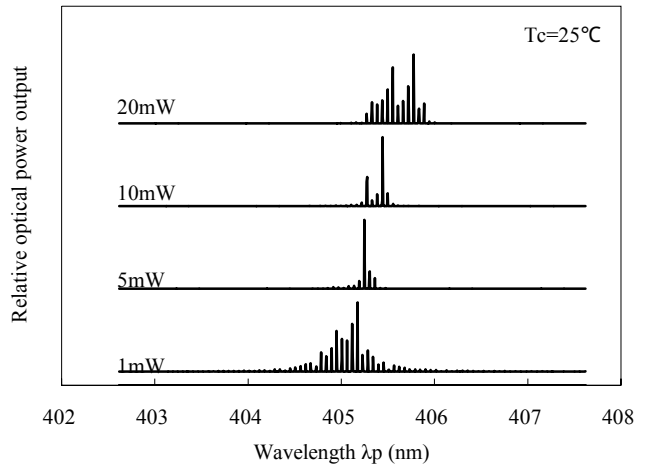


Note) Characteristics shown in diagrams are typical values.(not assurance value)

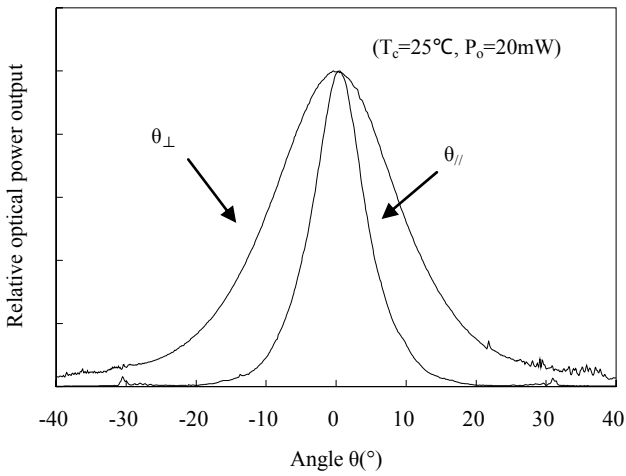
■ Case temperature dependence of wavelength



■ 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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