

GH04P21A2GE

Blue violet Laser Diode

High Power Blue violet Laser Diode

■ Features

- (1) Wavelength : 406 nm(Typ.)
- (2) Optical power output :
 - CW 105mW (Max)
 - Pulse 210mW (Max)
- (3) 5.6mm CAN package

■ Applications

- (1) Blu-ray Disc/HD DVD drive
- (2) other new application

■ Absolute Maximum Ratings

(T_c=25°C^{※1})

Parameter	Symbol	Ratings	unit
² Optical power output(CW)	P _o	105	mW
³ Optical power output(Pulse)	P _p	210	mW
Reverse voltage	V _{rl}	2	V
Operatings temperature (case temp.)	CW ^{※2} T _{opc(c)}	-10~+70	°C
	Pulse ^{※3} T _{opp(c)}	-10~+70	°C
Storage temperature(case temp.)	T _{sig}	-40~+85	°C
⁴ Soldering temperature	T _{sld}	350	°C

※1 T_c : Case temperature

※2 CW :Continuous Wave Operation

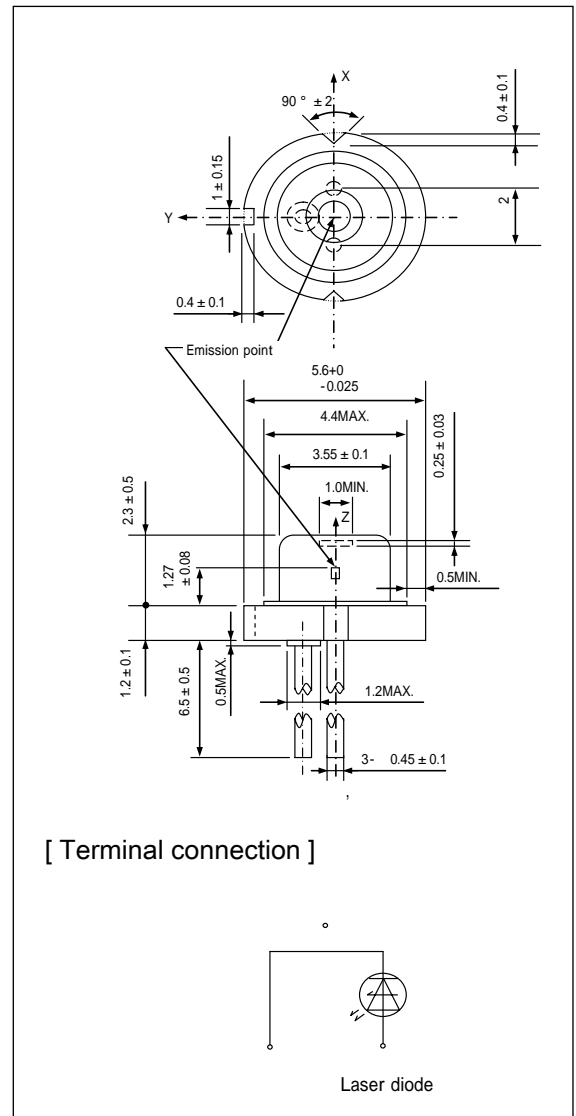
※3 Pulse :Pulse Operation(Pulse Width 50ns Duty:50%)

※4 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 are subject to change without notice for improvement.

■ Specifications

(T_c=25°C^{※1 ※2})

Parameter	Symbol	Conditions	MIN.	TYP.	MAX.	unit
Threshold current	I _{th}	-	-	40	60	mA
Operating current	I _{op}	P _o =105mW	-	120	150	mA
Operating voltage	V _{op}		-	5.4	6.5	V
Wavelength	λ _p		400	406	413	nm
Half intensity angle ※3 ※4	Parallel	θ _∥	6	9	12	°
	Perpendicular	θ _⊥	16	19	22	°
Half intensity angle ※3 ※4	Parallel	θ _∥	5.5	8.5	11.5	°
	Perpendicular	θ _⊥	16	19	22	°
Misalignment angle ※4	Parallel	Δθ _∥	-2.5	-	2.5	°
	Perpendicular	Δθ _⊥	-3.0	-	3.0	°
Differential efficiency	η _d	$\frac{95mW}{I(105mW)-I(10mW)}$	0.9	1.3	-	mW/mA
Kink (Pulse) ※5 ※6	K-LI	P1=42mW P2=126mW P3=210mW	-10	-	10	%

※1 T_c : Case temperature

※6 Definition of Kink

※2 Initial value, Continuous Wave Operation.

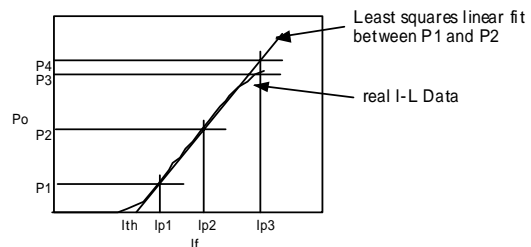
:K-LI= (P4-P3)/P3

※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)

※5 Pulse :Pulse Operation(Pulse Width 50ns Duty:50%)

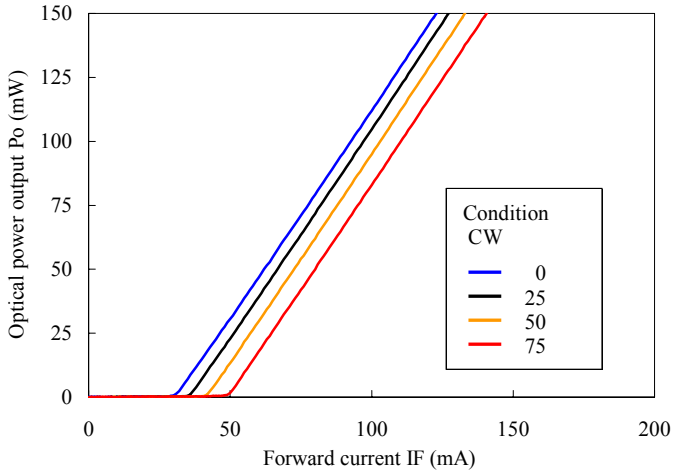


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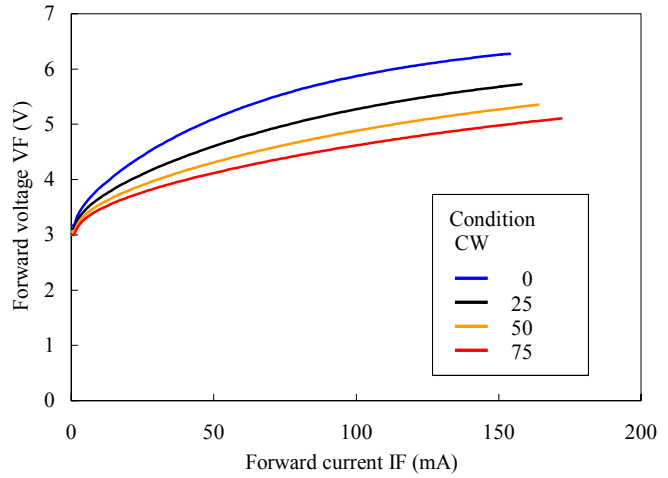
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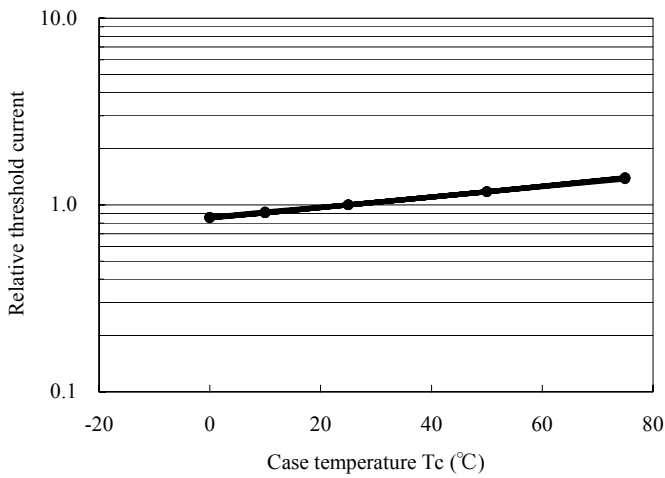
Optical power output – Forward current



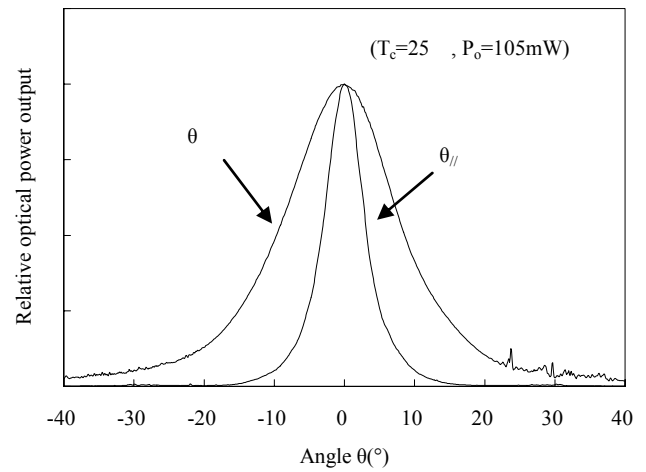
Forward voltage – Forward current



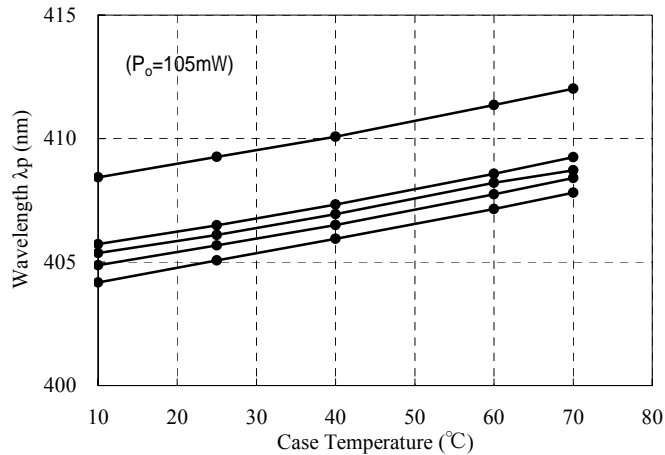
Case temperature dependence of threshold current



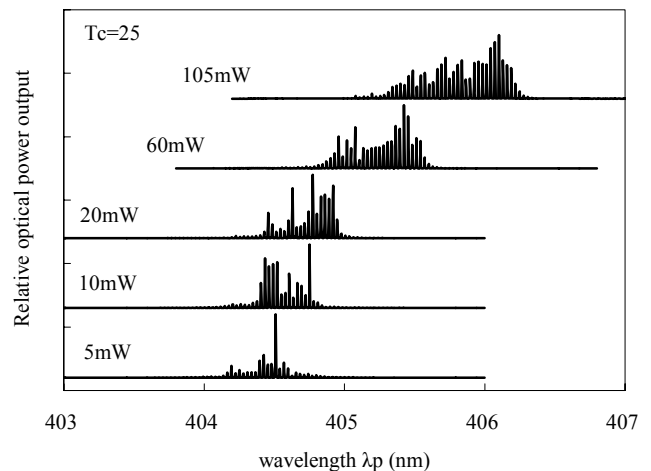
Far field pattern (FFP)



Case temperature dependence of wavelength



Optical power dependence of Lasing spectrum



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

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* Tooling machines * Computers

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* Transportation control and safety equipment (aircraft, train, automobile etc.)
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* Other safety equipment

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* Nuclear power control equipment * Medical equipment

- (4) Please contact and consult with a Sharp sales representative if there are any questions regarding interpretation of the above three paragraphs.

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