Under development	
New product	●

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)

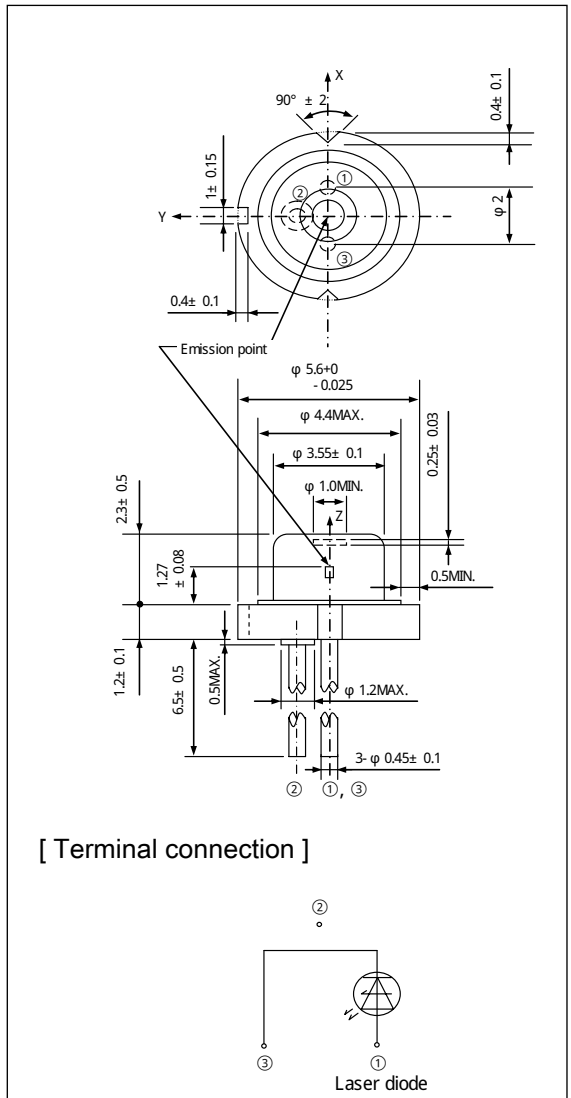
(3) Φ 5.6mm CAN package

■ Applications

(1) Blu-ray Disc/HD DVD drive

(2) other new application

■ Outline Dimensions (Unit :mm)



[Terminal connection]

■ Absolute Maximum Ratings

(Tc=25℃※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	CW ※2	$T_{opc(c)}$	-10～+70	℃
	(case temp.)	Pulse ※3	$T_{opp(c)}$	-10～+70	℃
	Storage temperature(case temp.)		T_{stg}	-40～+85	℃
※4	Soldering temperature		T_{sld}	350	℃

※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)

■ Specifications

(Tc=25℃※1 ※2)

Parameter		Symbol	Conditions	MIN.	TYP.	MAX.	unit
Threshold current		Ith	-	-	40	60	mA
Operating current		Iop	Po=105mW	-	120	150	mA
Operating voltage		Vop		-	5.4	6.5	V
Wavelength		λp		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 ∥	Po=5mW	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		ηd	$\frac{95mW}{I(105mW)-I(10mW)}$	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

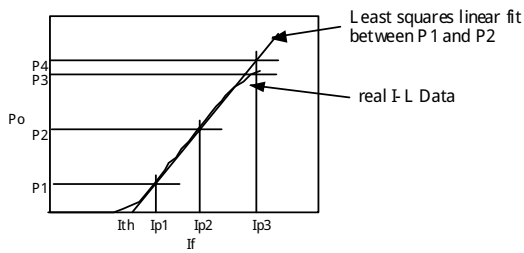
※2 Initial value, Continuous Wave Operation.

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

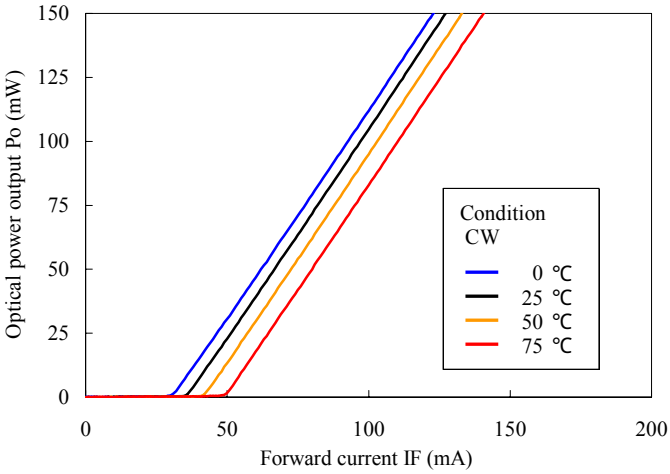
※4 Paralel to the junction plane.(X-Z plane)
Perpendicular to the junction plane.(Y-Z plane)

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

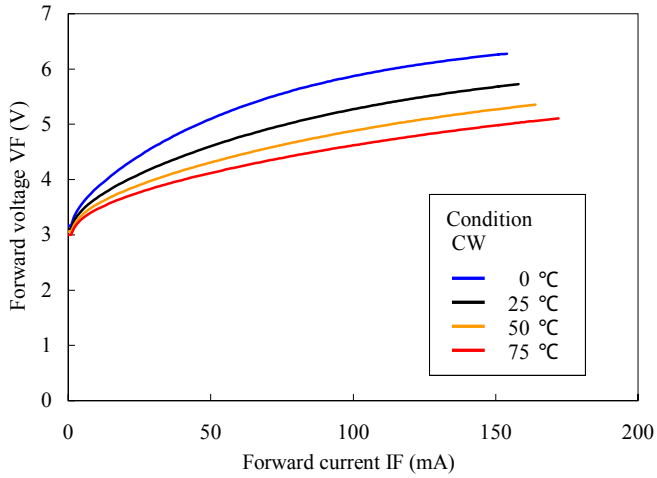
※6 Definition of Kink
:K-LI= (P4-P3)/P3



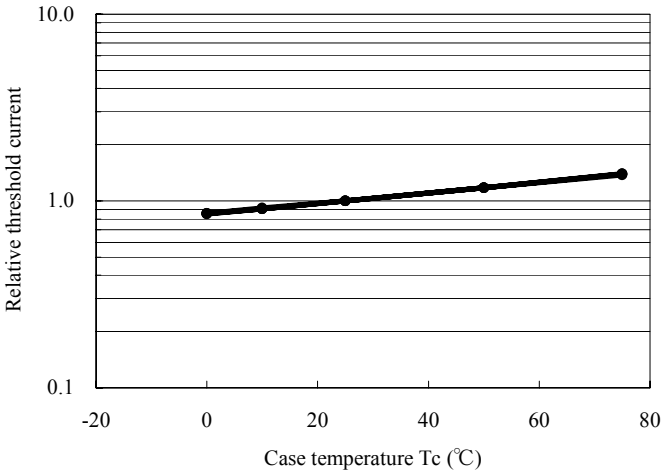
■ Optical power output – Forward current



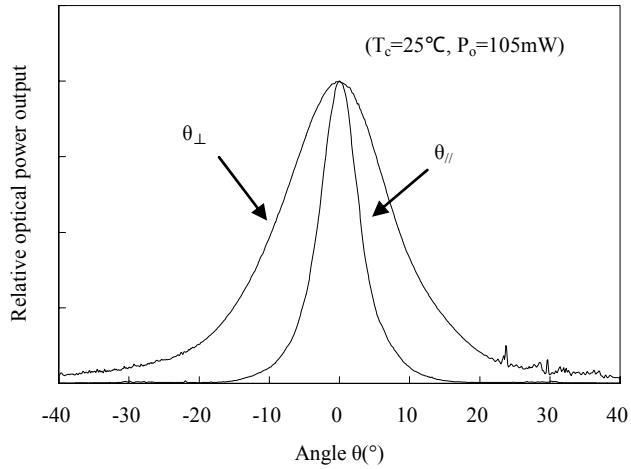
■ Forward voltage – Forward current



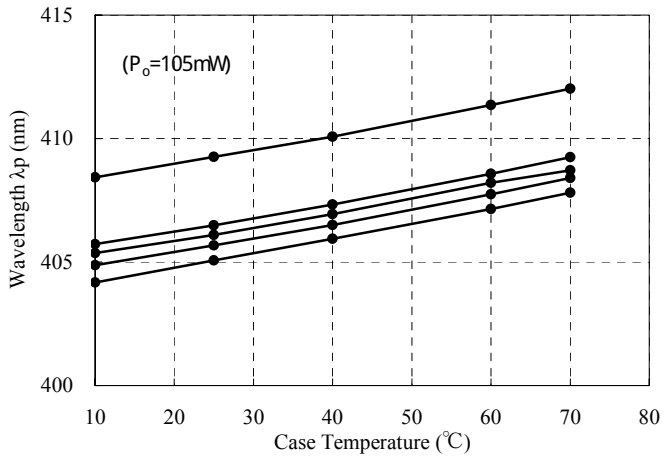
■ Case temperature dependence of threshold current



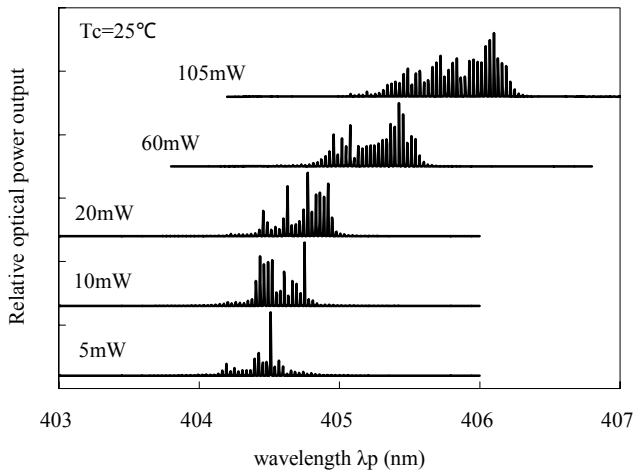
■ Far field pattern (FFP)



■ Case temperature dependence of wavelength



■ Optical power dependence of Lasing spectrum



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

■ CAUTION

1. These technical sheets include materials protected under the copyright of Sharp Corporation ("Sharp"). Please do not reproduce or cause anyone to reproduce them without Sharp's consent.
2. When using this product, please observe the absolute maximum ratings and the instructions for use outlined in these technical sheets, as well as the precautions mentioned below. Sharp assumes no responsibility for any damage resulting from use of the product which does not comply with the absolute maximum ratings and the instructions included in these technical sheets, and the precautions mentioned below.

   (Precautions)

   (1) This products is designed for use in the following application areas;

   [* OA equipment * Audio visual equipment * Home appliance
   * Telecommunication equipment (Terminal) * Measuring equipment
   * Tooling machines * Computers]

   If the use of the product in the above application areas is for equipment listed in paragraphs (2) or (3), please be sure to observe the precautions given in those respective paragraphs.

   (2) Appropriate measures, such as fail-safe design and redundant design considering the safety design of the overall system and equipment, should be taken to ensure reliability and safety when this product is used for equipment which demands high reliability and safety in function and precision, such as ;

   [* Transportation control and safety equipment (aircraft, train, automobile etc.)
   * Traffic signals * Gas leakage sensor breakers * Rescue and security equipment
   * Other safety equipment]

   (3) Please do not use this product for equipment which require extremely high reliability and safety in function and precision, such as ;

   [* Space equipment * Telecommunication equipment (for trunk lines)
   * 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.

3. Please contact and consult with a Sharp sales representative for any questions about this product.

(Notice)
・In the absence of confirmation by device specification sheets. SHARP takes no responsibility for any defects that may occur in equipment using any SHARP devices shown in catalogs, data books, etc. Contact SHARP in order to obtain the latest device specification sheets before using any SHARP device.
・Specifications are subject to change without notice for improvement.