

GH04020A2GE

Blue violet Laser Diode

Low Power Blue violet Laser Diode

■ Features

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

■ Applications

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

■ Absolute Maximum Ratings

($T_c=25$ ¹⁾)

Parameter	Symbol	Rating	Unit
² Optical power output (CW)	P_o	20	mW
Reverse voltage	V_{rl}	2	V
² Operating temperature (CW)	$T_{opc}(c)$	0 ~ +70	
Storage temperature	T_{stg}	-40 ~ +85	
³ Soldering temperature	T_{sld}	300	

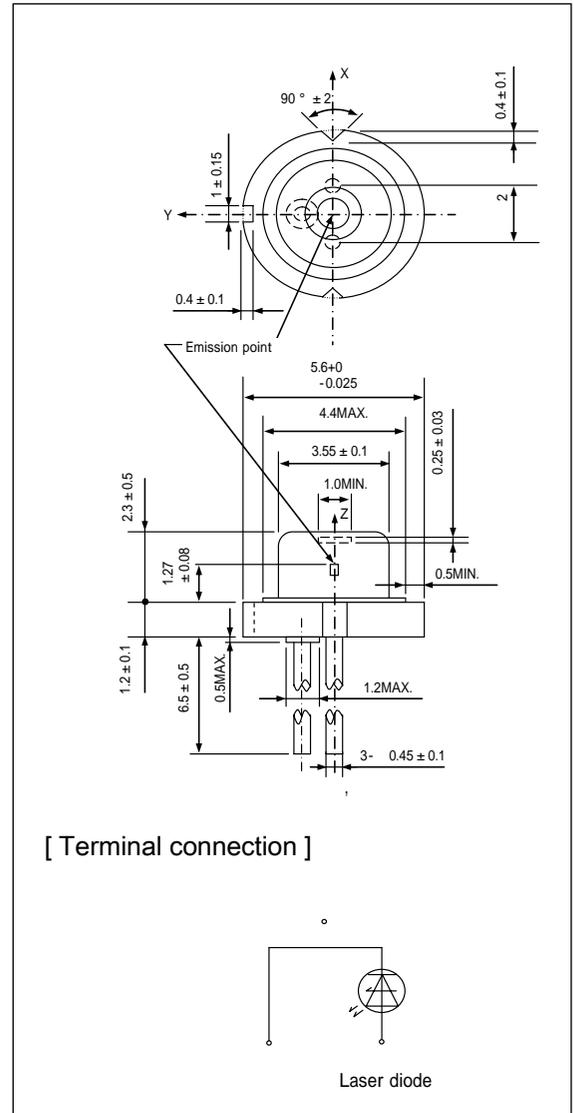
¹ T_c : Case temperature

² CW(Continuous Wave) drive

³ At the position of 1.6mm or more from the lead base (3s)

■ Outline Dimensions

(Unit : mm)



(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.

■ Specifications

(T_c=25 °C¹)

Parameter	Symbol	Conditions	MIN.	TYP.	MAX.	Unit	
Threshold current	I _{th}	-	-	25	50	mA	
Operating current	I _{op}	P _o =10mW	-	35	60	mA	
Operating voltage	V _{op}		-	4.8	5.8	V	
Wavelength	λ _p		400	406	415	nm	
Differential efficiency	η _d	$\frac{6mW}{I(10mW)-I(4mW)}$	0.7	1.1	1.6	mW/mA	
Half intensity angle ³ ⁴	Parallel	P _o = 5mW	θ _{//}	6.0	9.5	12.0	°
	Perpendicular		θ	15	20	24	°
Misalignment angle ⁴	Parallel		Δθ _{//}	-2.5	-	2.5	°
	Perpendicular		Δθ	-3.0	-	3.0	°

¹ T_c : Case temperature

² Initial value, CW (Continuous Wave) drive

³ Angle at 50% peak intensity (full-width at half-maximum)

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

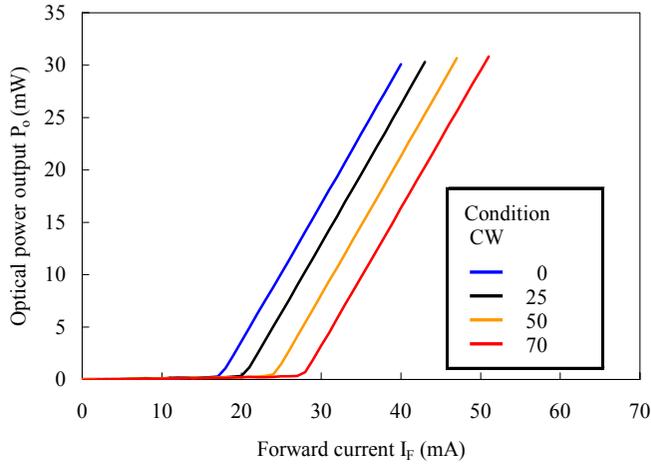
Perpendicular to the junction plane (Y-Z plane)

(Notice)

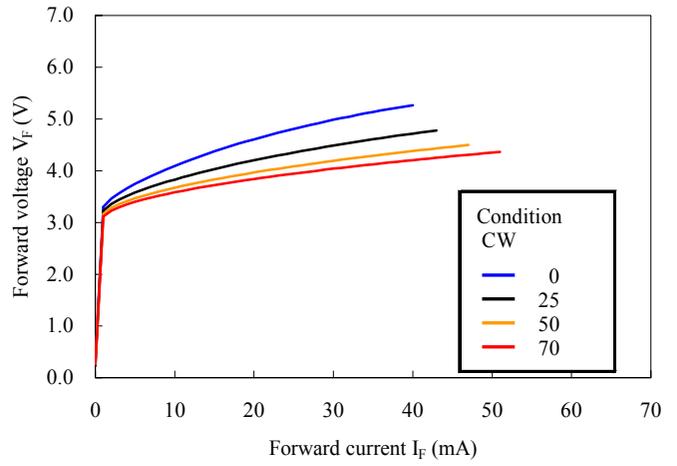
• In the absence of confirmation by device specification sheets, SHARP takes no responsibility for any defects that may occur in equipment using any SHARP devices shown in catalogs, data books, etc. Contact SHARP in order to obtain the latest device specification sheets before using any SHARP device.

• Specifications are subject to change without notice for improvement.

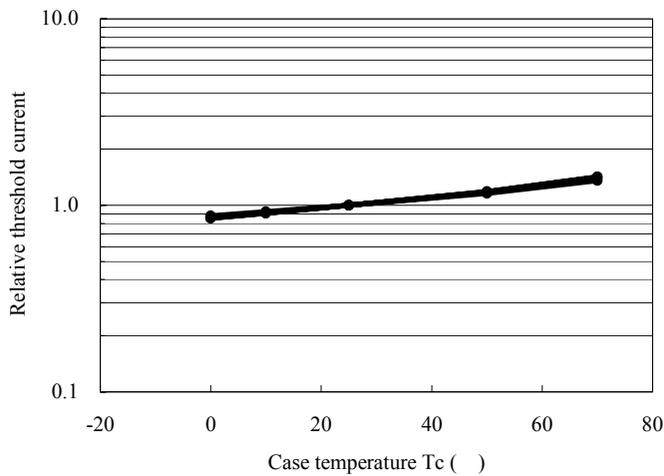
Optical power output – Forward current



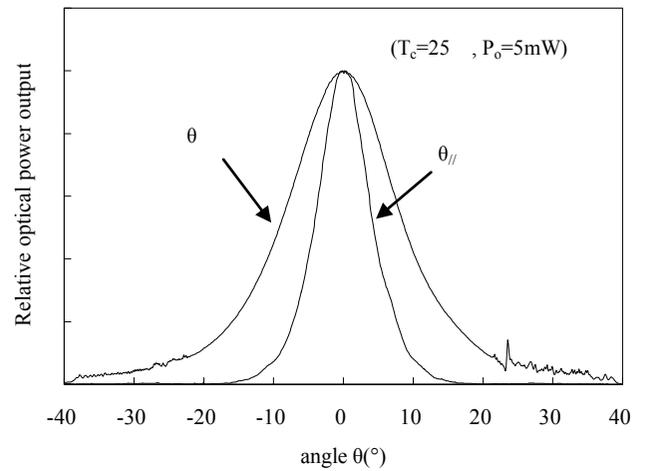
Forward voltage – Forward current



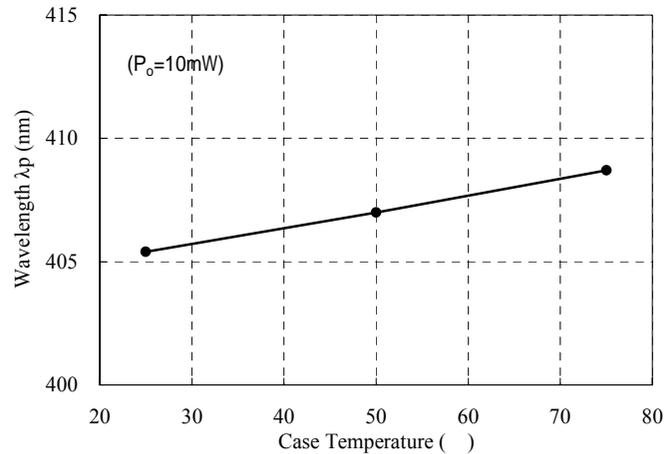
Case temperature dependence of threshold current



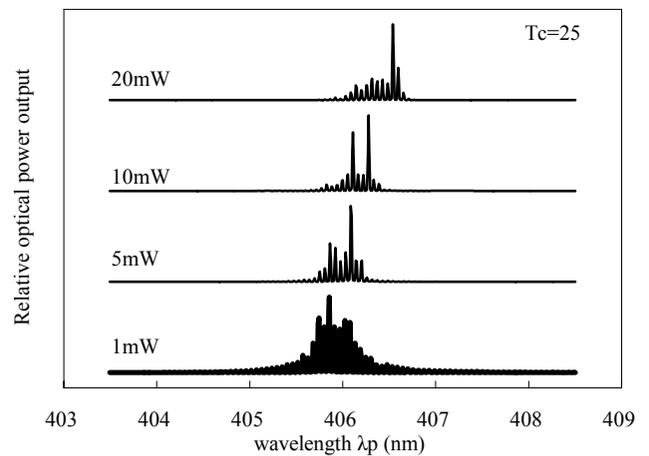
Far field pattern (FFP)



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.