SHARP

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SPEC. No.	LH24103A
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TECHNICAL LITERATURE

Product Name: Laser Diode

Model No.: GH04C01C2G (GH0DA10504)

◆ This technical literature is subject to change without notice. ◆

Development Div. I
Laser Business Unit
Sharp Fukuyama Laser Co.,Ltd

SHARP

SPEC. No. LH24103A

Product Type	Laser diode
Model No.	GH04C01C2G

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2. When using this Sharp product, please observe the absolute maximum ratings, other conditions and instructions for use described in the specification sheets, as well as the precautions mentioned below.
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(Precautions)
(1) In making catalogue or instruction manual based on the specification sheets, please verify the validity of the catalogue or instruction manuals after assembling Sharp products in customer's products at the responsibility of customer.

(2) This Sharp product is designed for use in the following application areas ;
• Computers • OA equipment • Telecommunication equipment (Terminal) • Measuring equipment
• Tooling machines • Audio visual equipment • Home appliances
If the use of the Sharp product in the above application areas is for equipment listed in paragraphs (3) or (4), please be sure to observe the precautions given in those respective paragraphs.

(3) 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 Sharp product is used for equipment in responsibility of customer 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

(4)Sharp product is designed for consumer goods and controlled as consumer goods in production and quality.
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

(5) Please contact and consult with a Sharp sales representative if there are any question regarding interpretation of the above four paragraphs.

3. Disclaimer
The warranty period for Sharp product is one (1) year (or six (6) months in case of generalized product) after shipment.
During the period, if there are any products problem, Sharp will repair (if applicable), replace or refund.
Except the above, both parties will discuss to cope with the problems.

The failed Sharp product after the above one (1) year (or six (6) month for generalized product) period will be coped with by Sharp, provided that both parties shall discuss and determine on sharing responsibility based on the analysis results thereof subject to the above scope of warranty.

The warranty described herein is only for Sharp product itself which are purchased by or delivered to customer.
Damages arising from Sharp product malfunction or failure shall be excepted.

Sharp will not be responsible for the Sharp product due to the malfunction or failures thereof which are caused by:
(1) storage keep trouble during the inventory in the marketing channel.
(2) intentional act, negligence or wrong/poor handling.
(3) equipment which Sharp products are connected to or mounted in.
(4) disassembling, reforming or changing Sharp products.
(5) installation problem.
(6) act of God or other disaster (natural disaster, fire, flood, etc.)
(7) external factors (abnormal voltage, abnormal electromagnetic wave, fire, etc.)
(8) special environment (factory, coastal areas, hotspring area, etc.)
(9) phenomenon which cannot be foreseen based on the practical technologies at the time of shipment.
(10) the factors not included in the product specification sheet.

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

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1. Scope

This specification covers the appearance and characteristics of blue Laser Diode,
Model No. GH04C01C2G

【Outline of this product】

This product is equipped with an InGaN multiple quantum well blue laser diode .
Oscillating transverse mode of this model is TE.
Oscillating transverse mode of this model is multi-mode.

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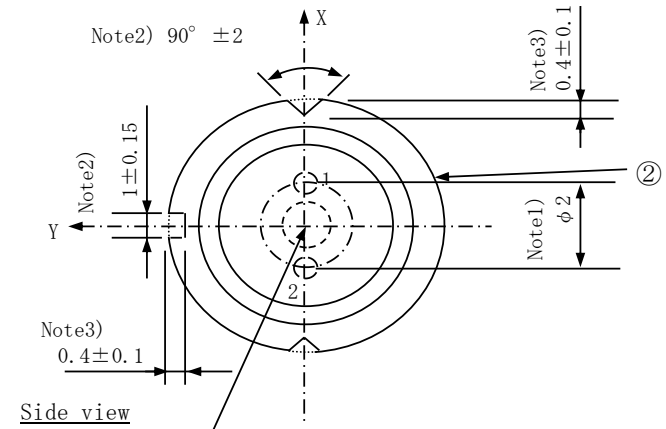
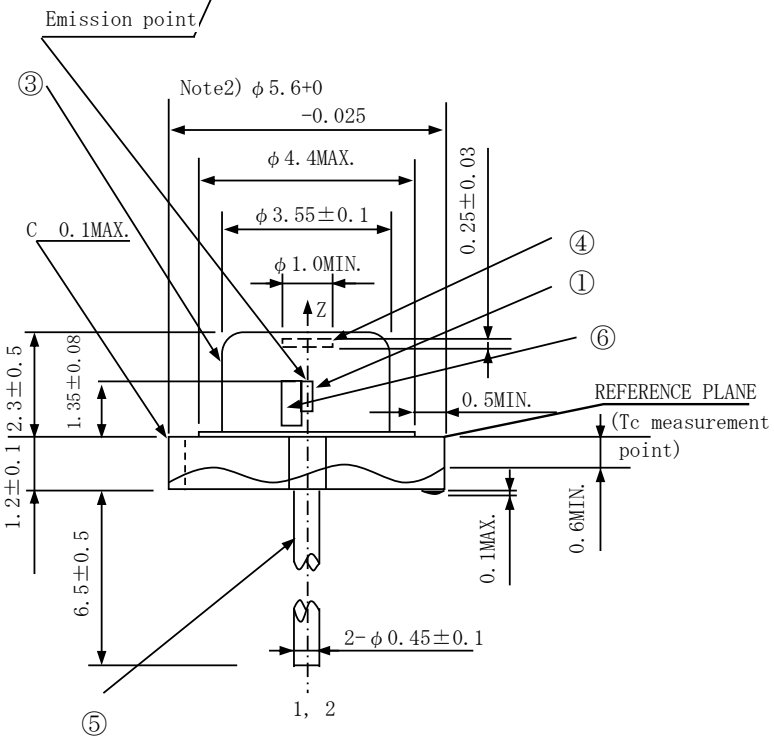
2. Outline dimensions and Terminal connections

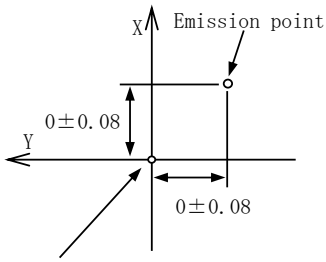
Top view



Side view

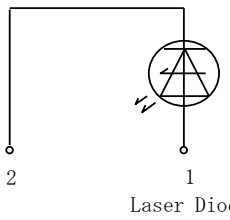


Enlarged drawing around the emission point



Center of the imaginary circle which goes through the three point around the stem

Terminal connections



Mass of the product : 0.31g (reference value)

Marking

Position : top or side of a cap

Printed contents :

SB59□□□□□

Note 1) Dimension of the bottom of leads.

Note 2) These dimensions are valid only in the range of 0 ～ 0.6mm below from the reference plane.

Note 3) These dimensions are defined from the imaginary circle which goes through the three points around the stem to the bottom of cut off parts.

GENERAL TOLERANCES ±0. 2

UNIT:mm

No.	Component	Material	Finish
①	Laser Diode Chip	InAlGaN	-
②	Stem	Fe,Cu	Gold-plated
③	Cap	alloy of Fe and Ni	Nickel+Pd plated or Nickel-plated
④	Window glass	Borosilicated glass	-
⑤	Lead pins	Kovar	Gold-plated
⑥	Submount / Solder	AlN / AuSn or Ag paste	Gold-plated

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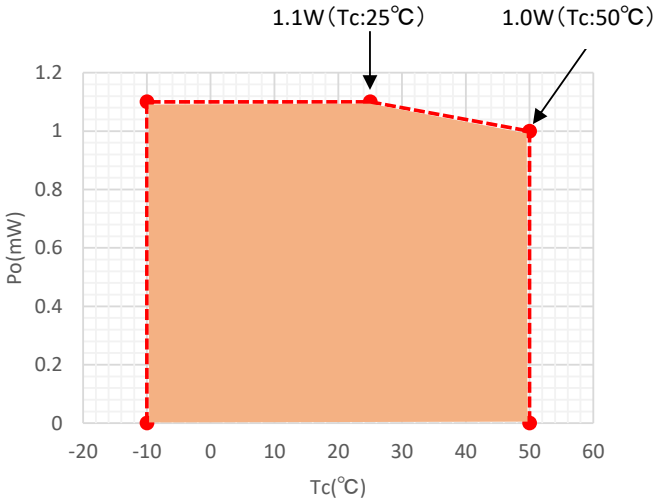
3. Ratings and Characteristics

3-1 Absolute Maximum Ratings (Tc=25℃(Note 1))

Parameter			Symbol	Value	Unit
Optical power output	CW	Tc=-10～25℃	Po	1.1	W
	CW	Tc=50℃	Po	1.0	W
Reverse voltage		Laser diode	Vrl	2	V
Operating temperature (Case temperature)			Top(c)	-10 ～ +50	℃
Storage temperature			Tstg	-40 ～ +85	℃
Soldering temperature (Note 2)			Tsld	350	℃

(Note 1) Tc : Case temperature (Tc measurement point is refer to P2 drawing.)

(Note 2) Soldering temperature means soldering iron tip temperature (The power 20W) while soldering.
Soldering position is 1.6mm apart from bottom edge of the case.(Immersion time: ≦3s)



3-2 Electro-optical Characteristics (Note 1) (Tc=25℃(Note 1))

Parameter	Symbol	Conditions	Min.	Typ.	Max.	Unit
Threshold current	Ith	-	-	(100)	(200)	mA
Operating current	Iop	Po=1W	-	(680)	(850)	mA
Operating voltage	Vop		-	(4.3)	(5.6)	V
Wavelength	λp		440	450	465	nm
1/e2 Intensity Angle(Parallel) (Note 3,5)	θ //		-	(10)	-	°
1/e2 Intensity Angle(Perpendicular) (Note 3,5)	θ ⊥		(39)	(45)	(51)	°
Misalignment angle (Parallel) (Note 4,5)	Δθ //		-5	0	5	°
Misalignment angle (Perpendicular) (Note 4,5)	Δθ ⊥		-5	0	5	°

(Note 1) Initial value, Continuous Wave Operation

(Note 2) Tc:Case temperature

(Note 3) Full angle of 13.5%(≒$1/e^2$) peak intensity

(Note 4) Misalignment angle of 13.5%(≒$1/e^2$) peak intensity

(Note 5) Parallel to the junction plane(X-Z plane)
Perpendicular to the junction plane(Y-Z plane)