SPECIFICATIONS
Laser Diode
GH0942WA2G

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LIGHTING BUSINESS UNIT
ELECTRONIC COMPONENTS AND DEVICES BU
SHARP CORPORATION

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(Precautions)

(1) Please do verify the validity of this part after assembling it in customer' s products, when customer wants to make catalogue and instruction manual based on the specification sheet of this part.

(2) This product is designed for use in the following application areas ;

· OA equipment Audio visual equipment · Home appliances
· 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 (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 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

(4) 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 four are any questions regarding interpretation of the above four paragraphs.

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

Operating and handling precautions

(1) This product has its life. The product life which is described in "Reliability" should be taken into account when using it.

(2) This product will be damaged by electrostatic discharge(ESD). Following precautions should be taken to avoid ESD damage.
⇒ Workers, workbenches and other equipment should always be grounded. Workers should always wear an antistatic wrist strap and an antistatic smock on them.
⇒ When handling this product, workers should always wear antistatic gloves or finger covers.
⇒ A stable DC power supply which is free from electrical transients should always be used when operating this product. A slow starter circuit should always be inserted between the power supply and this product in order to protect it from DC power surges.
⇒ Optical power output of this product should be set with a highly reliable and high quality variable resistance.
⇒ This product should always be connected to the driving circuit by soldering directly or through highly reliable connectors.
⇒ While this product is being operated, be sure to avoid touching the driving circuit or the terminals of this product with electrical probes from a synchroscope or a voltmeter.
⇒ An antistatic package should be used when storing this product.
⇒ This product should be processed in the rooms where relative humidity is kept at 50-70%RH.

(3)This product doesn't do the design that intends use in the following, special environment. Please use it after confirming the performance and reliability, etc. enough in your company before use in the following special environment.
⇒Use in place where a lot of moisture, be dewys, sea breezes, or causticity gases (Cl, H2S, NH3, SO2, and NOX, etc.) exist.
⇒Use under direct sunshine, in out-of-door exposure, or in dust.
⇒Use in atmosphere such as water, oil, drug solutions, or organic solvents.
⇒Use in environment with strong static electricity or electromagnetic radiation.
⇒Use in state installed near generation of heat parts or in state to arrange combustible near this product.

(4)Because the adhesion of garbage and dust to the window glass might disarrange an optical characteristic of this product, maintain the work room to cleanness so as not generate dust, please.

(5)In this Product,generation of heat happens in the laser chip because of operating. The case temperature rises by this generation of heat. Because the rise of the case temperature becomes a factor to shorten the lifetime of this product, a sufficient heat sink should be attached to this product when operating so that its case temperature is to be maintained at the same level as that of the surrounding.

(6) Even if the drive current supply has an automatic power control (APC), automatic current control (ACC), or both, be sure to monitor the optical power output with an optical power meter while setting it. Never estimate the optical power output only from the drive current because it is likely to be decreased by temperature rise

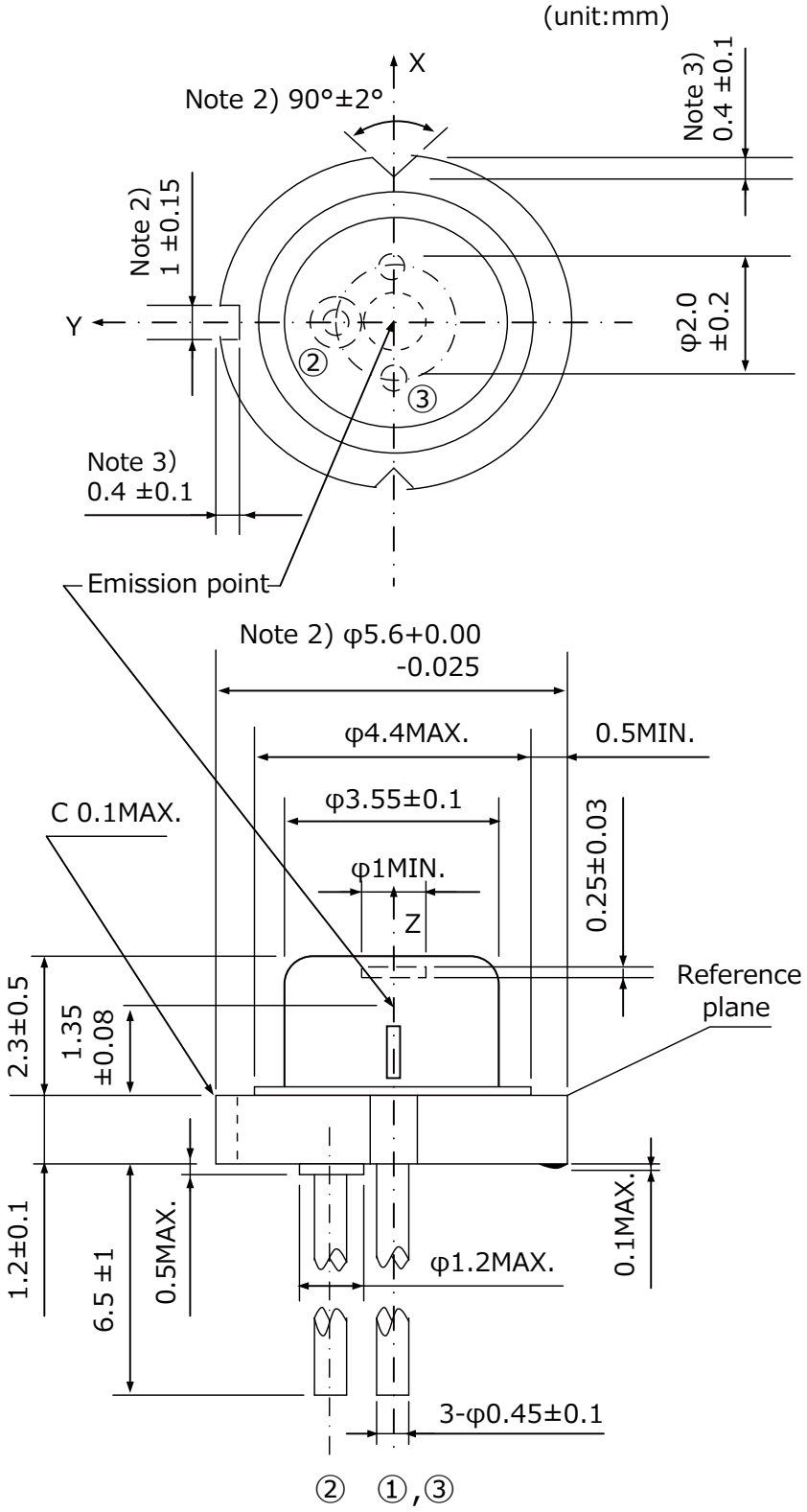
(7)When dirt adheres to the window glass of this product, please wipe lightly with the cotton bud that adheres the ethanol. of the surrounding.

(8)The window glass cracks easily because it is thin. Therefore, please avoid putting the load on the cap, for example clumping, tightens, or fixing to the treatment device hard.

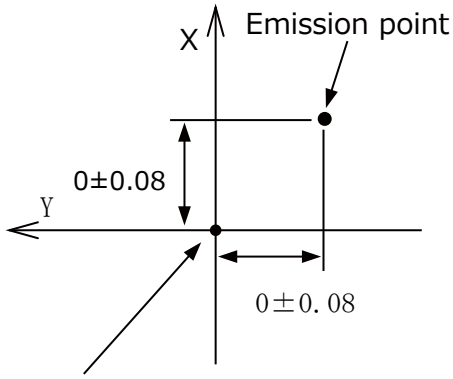
(9) Since laser beam from this product will be harmful to the human eyes, the following precautions should be taken.
⇒ When this product is being operated, the emitting surface of a chip should not be viewed either directly or through a lens, microscope or optical fibers.
⇒ When operating this product, wear safety glasses.

■ Outline dimensions and Terminal connections

(unit:mm)

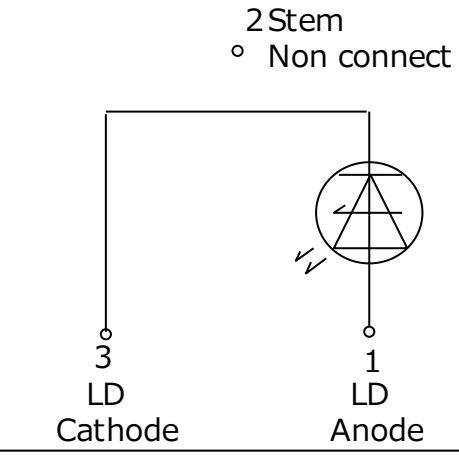


Enlarged drawing
around the emission point



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

Terminal connections



General Tolerances: ±0.2
Unit: mm
Mass of the product:
0.32g (reference value)

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

■ Ratings and Characteristics

Absolute Maximum Ratings

(Tc=25℃(Note 1))

Parameter	Symbol	Value	Unit
Optical power output (CW) (Note 2)	P_o	500	mW
Optical power output (Pulse) (Note 3)	P_p	2 000	mW
Reverse voltage	Vrl	2	V
Operating temperature (Case temperature)	Top（c）	-10 ～ +70	℃
Storage temperature	Tstg	-40 ～ +85	℃
Soldering temperature (Note 4)	Tsld	350	℃

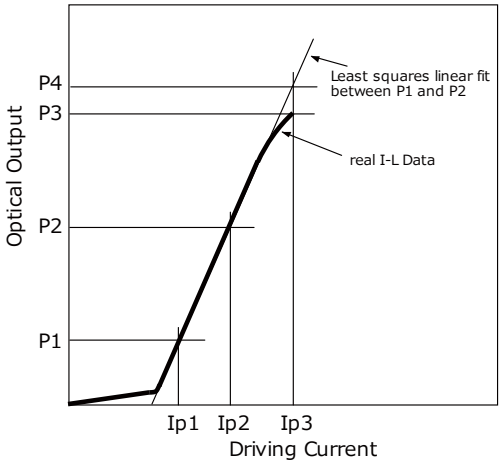
(Note 1) Tc : Case temperature
(Note 2) CW : Continuous Wave Operation
(Note 3) Pulse : Pulse Operation (Pulse Width:1μs Duty:10%)
(Note 4) Soldering temperature means soldering iron tip temperature（The power 20W) while soldering.
Soldering position is 1.6mm apart from bottom edge of the case.(Immersion time: ≦3s)

■ Electro-optical Characteristics

(Tc=25℃(Note 1))

Parameter	Symbol	Conditions	Min.	Typ.	Max.	Unit
Threshold current	I_{th}	-	-	315	TBD	mA
Operating current	I_{op}	Po = 500 mW	-	800	TBD	mA
Operating voltage	Vop		-	1.8	TBD	V
Wavelength	λp		930	940	950	nm
1/e2 Intensity Angle(Parallel)(Note 2,3,4)	Θ〃		TBD	10	TBD	°
1/e2 Intensity Angle(Perpendicular)(Note 2,3)	Θ⊥		TBD	35	TBD	°
Misalignment angle (Parallel) (Note 3)	ΔΘ〃		-5	-	+5	°
Misalignment angle (Perpendicular) (Note 3)	ΔΘ⊥		-5	-	+5	°
Differential efficiency	ηd	$\frac{600mW}{I(700mW)-I(100mW)}$	0.7	1.0	1.3	mW/mA
Kink (Note 5)	K-LI	P1=140mW, P2=420mW P3=700mW	-10	-	10	%

(Note 1) Initial value, Continuous Wave Operation
(Note 2) Full angle of 13.5%(≒1/e2) peak intensity
(Note 3) Parallel to the junction plane(X-Z plane)
Perpendicular to the junction plane(Y-Z plane)
(Note 4) This laser is multi-mode laser.
Parallel (Horizontal) FFP does not become Gaussian distribution.
(Note 5) Definition of K-LI
K-LI = (P4 - P3) / P3



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http://www.sharp-world.com/products/device/

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