

SPECIFICATIONS

Laser Diode

GH06510F4A



Notice

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LIGHTING BUSINESS UNIT
ELECTRONIC COMPONENTS AND DEVICES BU
SHARP CORPORATION

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2. When using this product, please observe the absolute maximum ratings and the instructions for use outlined in these specification 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 specification sheets, and the precautions mentioned below.

(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 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.

- (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 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

4. 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.

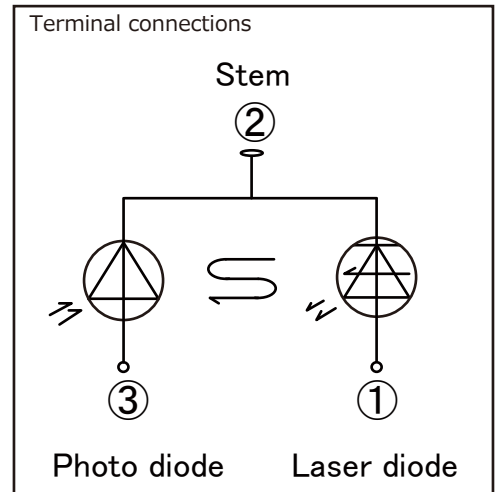
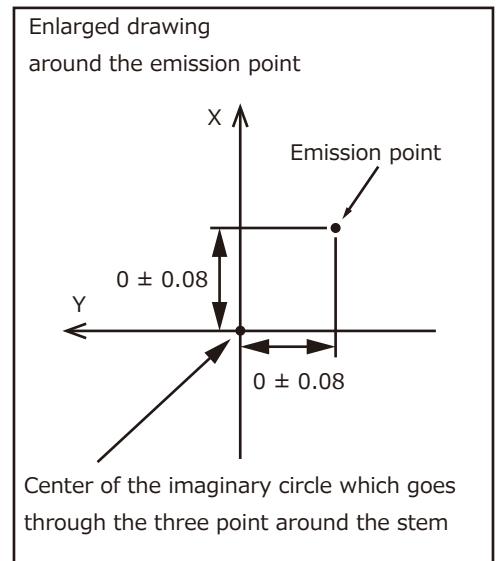
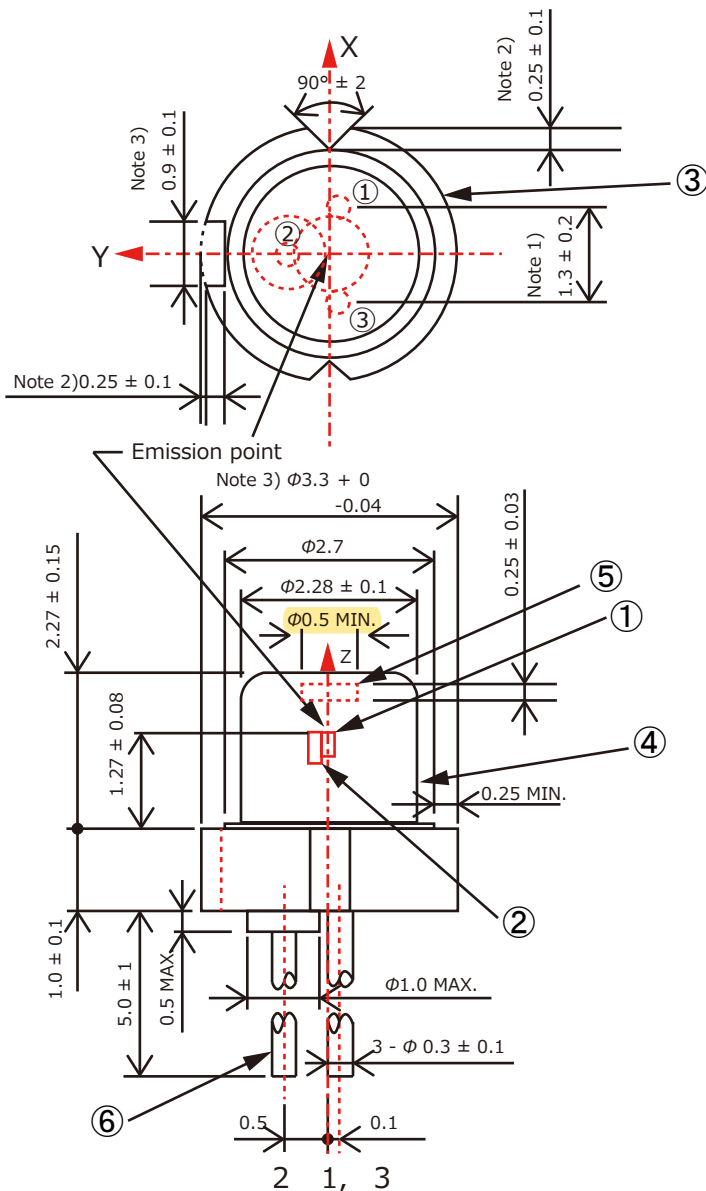
The warranty described herein is only for Sharp product itself which are purchased by or delivered to customer. Damages arising from Sharp product malfunction or failure shall be excepted.

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, hot spring 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 technical sheet.

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

■ Outline dimensions and Terminal connections



Mass of the product : 0.095g(reference value)

Marking

Position : top of a cap

Printed contents : □□fn□□

Note 1) Dimension of the bottom of leads.

Note 2) These dimensions are defined from the imaginary circle which goes through the three points around the stem to the bottom of cut off parts.

Note 3) These dimensions are valid only in the range of 0 ~ 0.5mm below from the reference plane.

GENERAL TOLERANCES ± 0.2

Unit : mm

No.	Component	Material	Finish
1	Laser Diode Chip	AlGaInP	-
2	Photo Diode Chip	Si	-
3	Stem	Fe	Gold-plated
4	Cap	45 alloy	Nickel + Pd plated
5	Window glass	Borosilicated glass	-
6	Lead pins	Kovar	Gold-plated

■ Ratings and Characteristics

Absolute Maximum Ratings

(Tc=25°C(Note 1))

Parameter	Symbol	Value	Unit
Optical power output (CW)	Po	10	mW
Reverse voltage	Laser diode Vrl	2	V
	Photo diode Vrd	30	V
Operating temperature (Case temperature)	Top (c)	-10 ~ +70	°C
Storage temperature	Tstg	-40 ~ +85	°C
Soldering temperature (Note 2)	Tsld	350	°C

(Note 1) Tc : Case temperature

(Note 2) Soldering temperature means soldering iron tip temperature (The power 30W) while soldering.

Soldering position is 1.0mm apart from bottom edge of the case. (Immersion time: ≤ 3s)

Electro-optical Characteristics

(Tc=25°C(Note 1))

Parameter	Symbol	Conditions	Min.	Typ.	Max.	Unit
Threshold current	Ith	-	12	17	22	mA
Operating current	Iop	Po = 7 mW	-	26	41	mA
Operating voltage	Vop		-	2.2	2.5	V
Wavelength	λp		654	660	666	nm
Half Intensity Angle (Parallel) (Note 2,3)	θ"		10	13	16	°
Half Intensity Angle (Perpendicular) (Note 3)	θ⊥		24	28	32	°
Ripple (Note 3,4)	RI		-20	-	20	%
Misalignment angle (Parallel) (Note 3)	Δθ"		-2.0	-	2.0	°
Misalignment angle (Perpendicular) (Note 3)	Δθ⊥		-3.0	-	3.0	°
Differential efficiency	ηd	$\frac{5\text{mW}}{I(7\text{mW})-I(2\text{mW})}$	0.55	0.85	1.1	mW/mA
Visibility	α	Po = 7 mW	-	-	1	-
Monitor current	Im	Po = 7 mW, Vrd = 5V	0.06	0.12	0.26	mA

(Note 1) Initial value, Continuous Wave Operation

(Note 2) Angle of 50% peak intensity (Full angle at half-maximum)

(Note 3) Parallel to the junction plane (X-Z plane)

Perpendicular to the junction plane(Y-Z plane)

(Note 4) RI ≡ ΔP/P

ΔP: the maximum deviation of the far field pattern from its approximate curve

P: the peak of the approximate curve

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

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