

SPECIFICATIONS

Infrared Eye-safe Laser Diode

GH4945A1TG



Notice
Contents in this technical document be changed without any notice due to the product modification.
In the absence of confirmation by device specification sheets, SHARP takes no responsibility for any defects that may occur in wquipment using any SHARP devices shown in catalogs, data books, etc.

■ Notice

1. These specification 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 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.

Infrared Eye-safe Laser Diode

■ Features

- (1) Wavelength : 940 nm (Typ.)
- (2) Optical power output :
CW 500 mW
- (3) Φ 5.6 mm CAN package
- (4) IEC 60825-1 Class1

■ Applications

- (1) Laser sensor
- (2) other application

■ Absolute Maximum Ratings

(Tc = 25 °C)※1

Parameter	Symbol	Ratings	Unit
Forward Current(CW)	Iop	1	A
Reverse voltage	Vrl	2	V
Operating temperature (※1)	Top (C)	-10 ~ +70	°C
Storage temperature	Tstg	-40 ~ +85	°C
Soldering temperature (※2)	Tsld	350	°C

※1 Tc : Case temperature

※2 Soldering temperature means soldering iron tip temperature.
Soldering position is 1.6mm apart from bottom edge of the case.
(Immersion time: ≤3s)

■ technicals

(Tc = 25 °C)※1,※2

Parameter	Symbol	Conditions	TYP.	Unit	
Threshold current	Ith	-	315	mA	
Optical Power output	Φ e	Iop = 790 mA	350	mW	
Operating voltage	Vop		1.78	V	
Peak wavelength	λ p		940	nm	
Center wavelength	λ c		940	nm	
Half intensity angle (※3, ※4)	Parallel		θ ''	21	°
	Perpendicular		θ ⊥	25	°
Wall Plug Efficiency	WPE			25	%

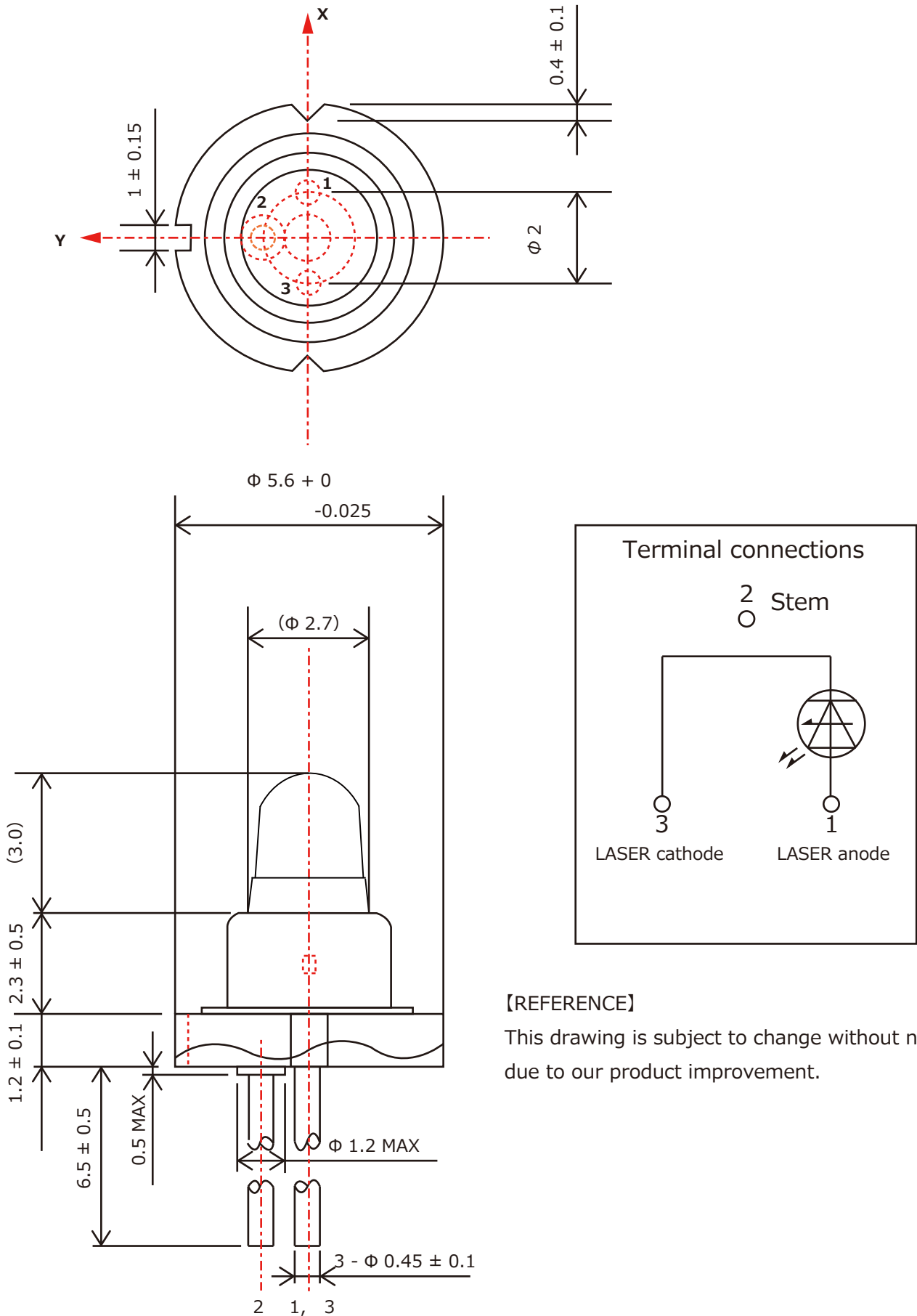
※1 Tc : Case temperature

※2 Initial value, Continuous Wave Operation

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

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

■ Connections and outline dimensions



【REFERENCE】

This drawing is subject to change without notice due to our product improvement.

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

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