

# GH06507B1A/GH06507B1B

## Red Laser Diode for DVD-ROM Drive(654nm-7mW)

### ■ Features

- (1) Maximum optical power output : 7mW (CW)
- (2) Wavelength : TYP. 654nm
- (3) Operating temperature : MAX. 70°C
- (4)  $\phi$ 5.6 mm open package
- (5) Reasonable price

### ■ Model No.

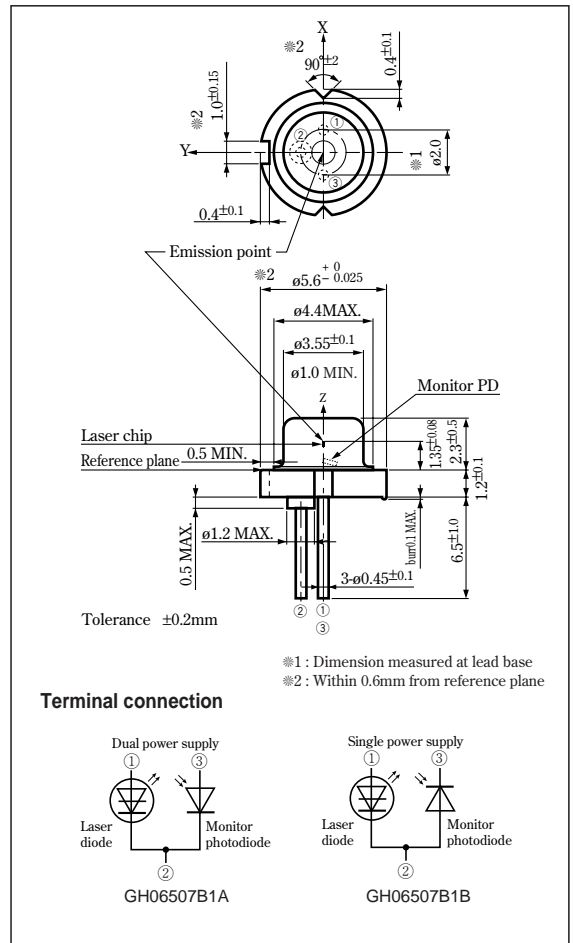
- (1) GH06507B1A....Dual power supply
- (2) GH06507B1B....Single power supply

### ■ Applications

- (1) DVD-ROM drives
- (2) DVD video players

### ■ Outline Dimensions

(Unit : mm)



### ■ Absolute Maximum Ratings

(T<sub>C</sub>=25°C)

| Parameter                | Symbol             | Rating          | Unit |
|--------------------------|--------------------|-----------------|------|
| ※3 Optical power output  | P <sub>O</sub>     | 7               | mW   |
| Reverse voltage          | Laser              | V <sub>rl</sub> | 2    |
|                          | Monitor photodiode | V <sub>rd</sub> | 30   |
| ※1 Operating temperature | T <sub>op(e)</sub> | -10 to +70      | °C   |
| ※1 Storage temperature   | T <sub>stg</sub>   | -40 to +85      | °C   |
| ※2 Soldering temperature | T <sub>slid</sub>  | 300             | °C   |

※1 Case temperature

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

※3 CW (Continuous Wave) drive

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## ■ Electro-optical Characteristics<sup>\*1</sup>

(T<sub>c</sub>=25°C)

| Parameter                      |               | Symbol          | Conditions                                         | MIN. | TYP. | MAX. | Unit  |
|--------------------------------|---------------|-----------------|----------------------------------------------------|------|------|------|-------|
| Threshold current              |               | I <sub>th</sub> | -                                                  | -    | 23   | 35   | mA    |
| Operating current              |               | I <sub>op</sub> | P <sub>o</sub> =5mW                                | -    | 33   | 45   | mA    |
| Operating voltage              |               | V <sub>op</sub> | P <sub>o</sub> =5mW                                | -    | 2.2  | 2.5  | V     |
| Wavelength                     |               | λ <sub>p</sub>  | P <sub>o</sub> =5mW                                | 640  | 654  | 660  | nm    |
| *2 Half intensity angle        | Parallel      | θ//             | P <sub>o</sub> =5mW                                | 7    | 8.5  | 10   | °     |
|                                | Perpendicular | θ⊥              | P <sub>o</sub> =5mW                                | 24   | 29   | 33   | °     |
| *4 Ripple                      |               | R <sub>i</sub>  | P <sub>o</sub> =5mW                                | -20  | -    | +20  | %     |
| Misalignment angle             | Parallel      | Δθ//            | P <sub>o</sub> =5mW                                | -2   | -    | +2   | °     |
|                                | Perpendicular | Δθ⊥             | P <sub>o</sub> =5mW                                | -3   | -    | +3   | °     |
| Interference pattern intensity |               | α               | P <sub>o</sub> =5mW                                | -    | -    | 1    | -     |
| Differential efficiency        |               | η <sub>d</sub>  | $\frac{3\text{mW}}{I(5\text{mW}) - I(2\text{mW})}$ | 0.3  | 0.55 | 0.8  | mW/mA |

\*1 Initial value, CW (Continuous Wave) drive

\*2 Angle at 50% peak intensity (full-width at half-maximum)

\*3 Parallel to the junction plane (X-Z plane), Perpendicular to the junction plane (Y-Z plane)

\*4 R<sub>i</sub>=ΔP/P ΔP : the maximum deviation of the far field pattern from its approximate curve P : the peak of the approximate curve

## ■ Electrical Characteristics of Photodiode (GH06507B1A)

(T<sub>c</sub>=25°C)

| Parameter            | Symbol         | Conditions                               | MIN. | TYP. | MAX. | Unit |
|----------------------|----------------|------------------------------------------|------|------|------|------|
| Output current       | I <sub>m</sub> | P <sub>o</sub> =5mW, V <sub>rd</sub> =5V | 0.2  | 0.55 | 1.0  | mA   |
| Dark current         | I <sub>D</sub> | V <sub>rd</sub> =5V                      | -    | -    | 150  | nA   |
| Terminal capacitance | C <sub>t</sub> | V <sub>rd</sub> =5V, f=1MHz              | -    | 3.5  | -    | pF   |

### (GH06507B1B)

(T<sub>c</sub>=25°C)

| Parameter            | Symbol         | Conditions                               | MIN. | TYP. | MAX. | Unit |
|----------------------|----------------|------------------------------------------|------|------|------|------|
| Output current       | I <sub>m</sub> | P <sub>o</sub> =5mW, V <sub>rd</sub> =5V | 0.07 | 0.2  | 0.50 | mA   |
| Dark current         | I <sub>D</sub> | V <sub>rd</sub> =5V                      | -    | -    | 150  | nA   |
| Terminal capacitance | C <sub>t</sub> | V <sub>rd</sub> =5V, f=1MHz              | -    | 3.5  | -    | pF   |

• Please refer to the chapter "Handling Precautions"

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