# GH17805B2AS/GH17805B2BS

## Insert Frame Structure, Resin Type Laser Diode for CD Audio/CD-ROM Drive(780nm-5mW)

### ■ Features

(1) ϕ5.6mm open type insert lead frame structure
(Optically compatible with the conventional ϕ5.6mm package)
(2) Maximum optical power output : 5mW (CW)
(3) Wavelength : TYP. 780nm

### ■ Model No.

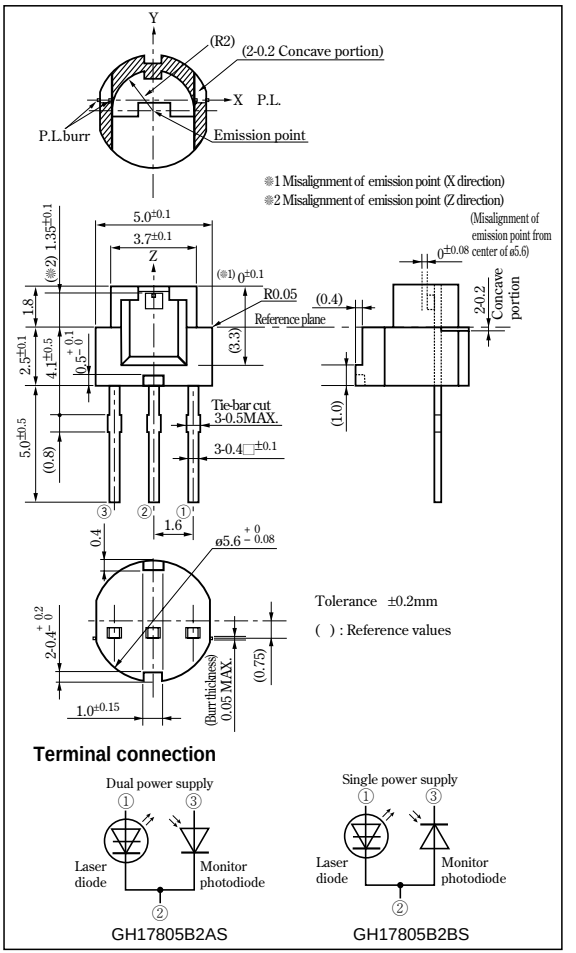
(1) GH17805B2AS ....Dual power supply
(2) GH17805B2BS ....Single power supply

### ■ Applications

(1) CD audio players
(2) CD-ROM drives

### ■ Outline Dimensions

(Unit : mm)




### ■ Absolute Maximum Ratings

(Tc=25°C ※1)

| Parameter | | Symbol | Rating | Unit |
|---|---|---|---|---|
| ※3 Optical power output | | Po | 5 | mW |
| Reverse voltage | Laser | Vrl | 2 | V |
| | Monitor photodiode | Vrd | 30 | |
| ※1 Operating temperature | | Top(c) | -10 to +70 | °C |
| Storage temperature | | Tstg | -40 to +85 | °C |
| ※2 Soldering temperature | | Tsld | 260 | °C |

※1 Case temperature
※2 At the position of 0.6mm or more from the lead base (5s)
※3 CW (Continuous Wave) drive

## ■ Electro-optical Characteristics※1

(Tc=25°C)

| Parameter | | Symbol | Conditions | MIN. | TYP. | MAX. | Unit |
|---|---|---|---|---|---|---|---|
| Threshold current | | $I_{th}$ | – | - | (35) | 45 | mA |
| Operating current | | $I_{op}$ | Po=3mW | - | (42) | 52 | mA |
| Operating voltage | | $V_{op}$ | | - | (1.9) | 2.3 | V |
| Wavelength | | $\lambda_p$ | | 770 | (780) | 795 | nm |
| Half intensity angle | ※2※3 Parallel | θ// | | 8 | (11) | 15 | ° |
| | ※2※3 Perpendicular | θ⊥ | | 29 | (37) | 49 | ° |
| ※4 Ripple | | $R_I$ | | -20 | - | +20 | % |
| Misalignment angle | ※3 Parallel | Δθ// | | -2 | - | +2 | ° |
| | ※3 Perpendicular | Δθ⊥ | | -3 | - | +3 | ° |
| Differential efficiency | | $\eta_d$ | $\frac{2mW}{I(3mW)-I(1mW)}$ | 0.15 | (0.35) | 0.6 | mW/mA |
| Interference pattern intensity | | α | Po=3mW | - | - | 0.97 | - |
| Kink | | K-LI | – | - | - | 10 | % |

※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 $R_I=\Delta P/P$ ΔP : the maximum deviation of the far field pattern from its approximate curve P : the peak of the approximate curve

## ■ Electrical Characteristics of Photodiode

**(GH17805B2AS)**

(Tc=25°C)

| Parameter | Symbol | Conditions | MIN. | TYP. | MAX. | Unit |
|---|---|---|---|---|---|---|
| Output current | $I_m$ | Po=3mW, $V_{rd}$=5V | 0.1 | (0.28) | 0.45 | mA |
| Dark current | $I_D$ | $V_{rd}$=5V | - | - | 150 | nA |

**(GH17805B2BS)**

(Tc=25°C)

| Parameter | Symbol | Conditions | MIN. | TYP. | MAX. | Unit |
|---|---|---|---|---|---|---|
| Output current | $I_m$ | Po=3mW, $V_{rd}$=5V | 0.05 | (0.17) | 0.5 | mA |
| Dark current | $I_D$ | $V_{rd}$=5V | - | - | 150 | nA |

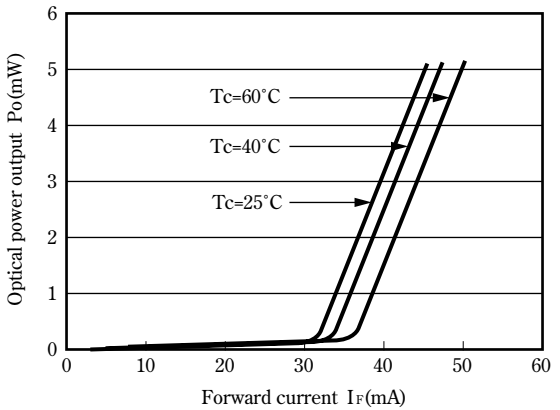
● Operating and handling precautions

(1) This product employs open type package. Be careful not to touch gold wires, laser chips, or monitor sub-mount chips directly, or characteristics may be damaged.

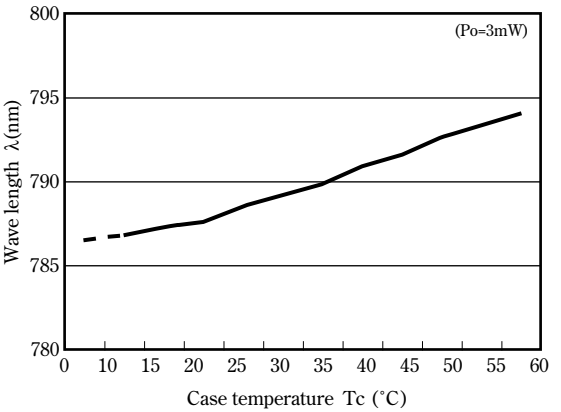
(2) The lead pins of this product consist of silver-plating.
Do not operate under the conditions of freezing or dew formation. The use in such conditions may cause short circuits due to silver migration.

(3) Please finish soldering within 7 days, or keep the products in the $N_2$-purged box after opening the package to prevent silver oxidization or damage to solderability.

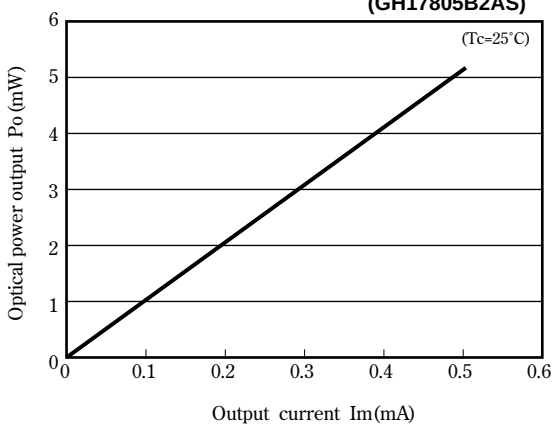
### Optical power output - Forward current



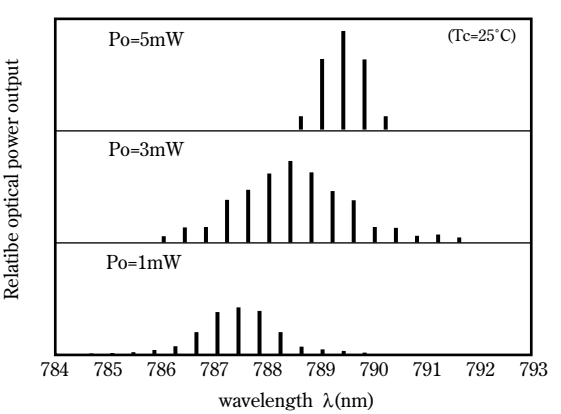

### Case temperature dependence of wavelength



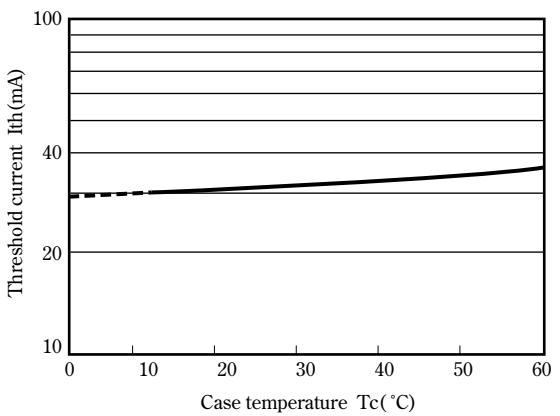

### Optical power output - Output current (GH17805B2AS)



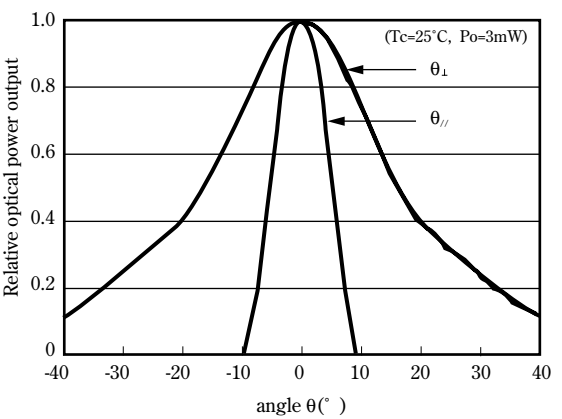

### Optical power output dependence of wavelength




### Case temperature dependence of threshold current




### Far field pattern (FFP)




**Note) Characteristics shown in diagrams are typical values. (not assurance value)**

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