

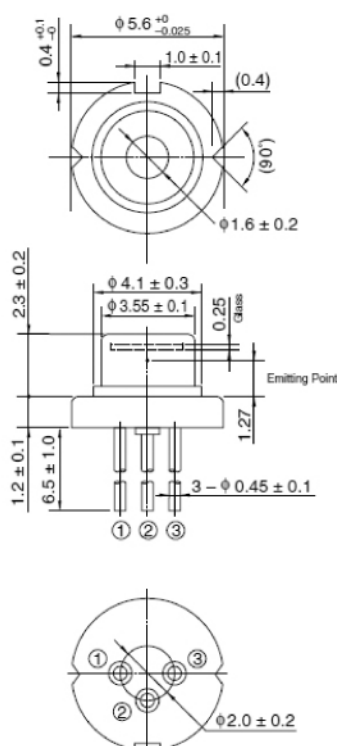
## Data Sheet

# HL8342MG/43MG

852nm / 50mW GaAlAs Laser Diode

USHIO

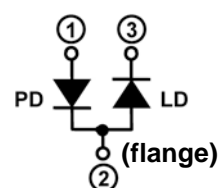
### Outline



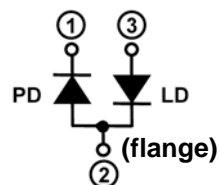
(Unit:mm)

### Internal Circuit

#### •HL8342MG



#### •HL8343MG



### Features

- Operation temperature: -10~+60°C
- Optical output power: 50mW(CW)
- Infrared lasing: 852nm Typ.
- Low operating voltage: 2.4V Max.
- Package:  $\phi$ 5.6mm
- Single transverse mode
- TE mode oscillation

### Application

- Sensor application
- Night vision
- Machine vision
- Light source of optical equipments

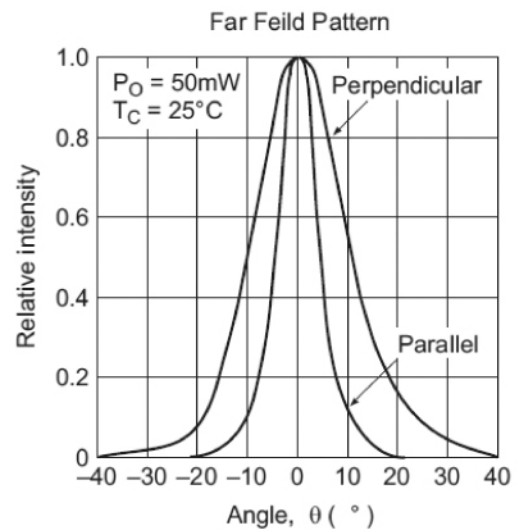
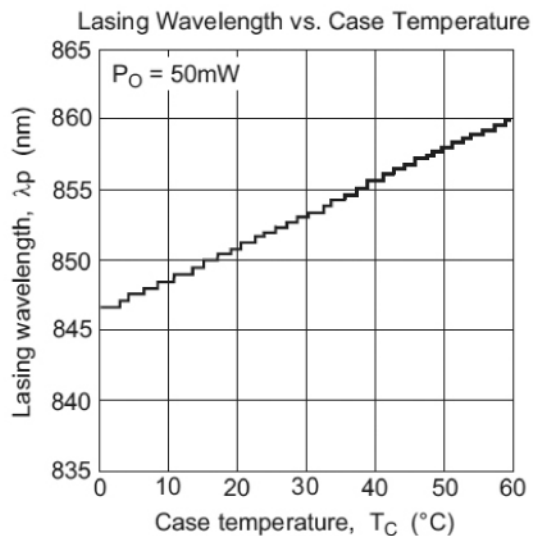
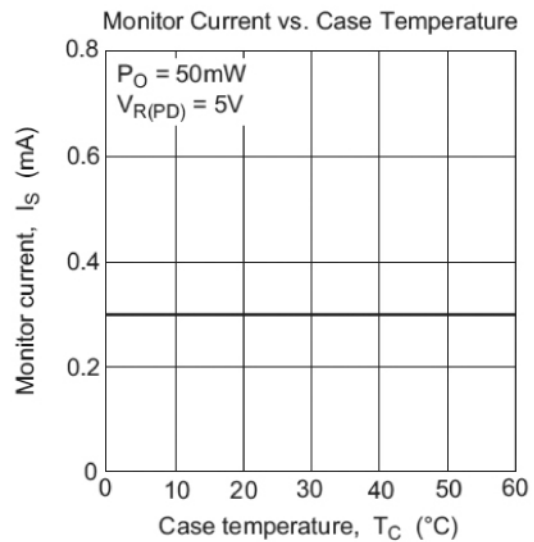
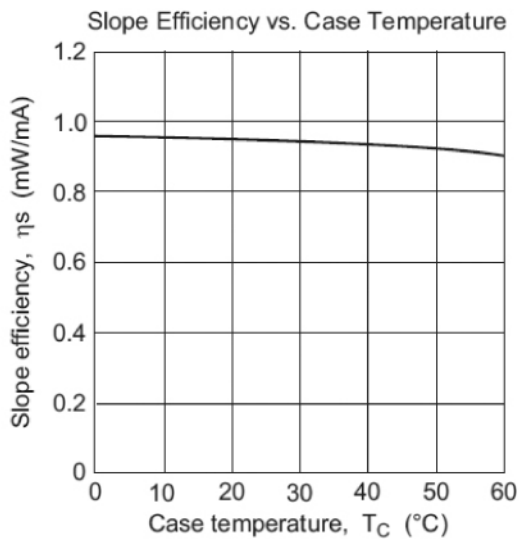
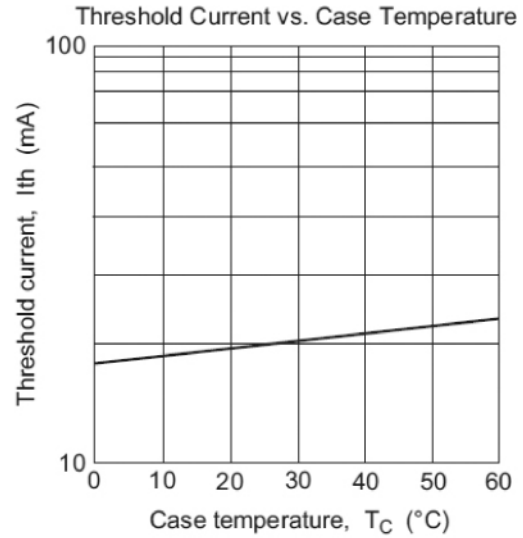
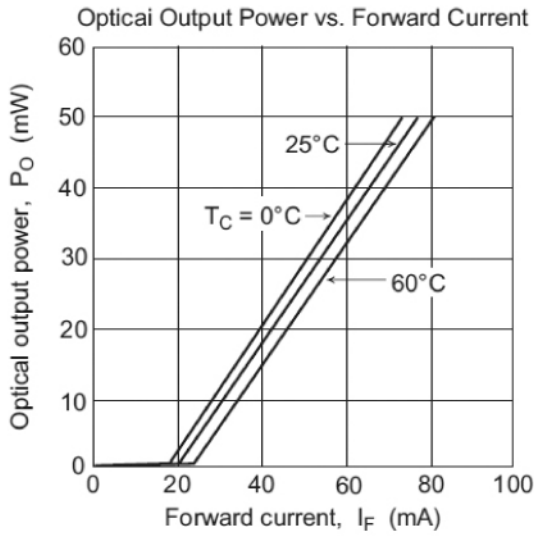
### Absolute Maximum Ratings (Tc=25°C)

| Item                  | Symbol             | Ratings   | Unit |
|-----------------------|--------------------|-----------|------|
| Optical output power  | Po                 | 50        | mW   |
| LD Reverse Voltage    | V <sub>R(LD)</sub> | 2         | V    |
| PD Reverse Voltage    | V <sub>R(PD)</sub> | 30        | V    |
| Operating Temperature | Topr               | -10 ~ +60 | °C   |
| Storage Temperature   | Tstg               | -40 ~ +85 | °C   |

### Optical and Electrical Characteristics (Tc=25°C)

| Parameter  | Symbol          | Min  | Typ  | Max  | Unit | Test Condition                     |
|--|-----------------|------|------|------|------|------------------------------------|
| Threshold current                                | I <sub>th</sub> | -    | 20   | 40   | mA   | -                                  |
| Operating current                                | I <sub>op</sub> | -    | 75   | 100  | mA   | Po=50mW                            |
| Operating voltage                                | V <sub>op</sub> | -    | 1.9  | 2.4  | V    | Po=50mW                            |
| Beam divergence<br>Parallel to the junction      | θ <sub>//</sub> | 6    | 9    | 12   | °    | Po=50mW,<br>FWHM                   |
| Beam divergence<br>Perpendicular to the junction | θ <sub>⊥</sub>  | 18   | 22   | 26   | °    | Po=50mW,<br>FWHM                   |
| Lasing Wavelength                                | λ <sub>p</sub>  | 848  | 852  | 856  | nm   | Po=50mW                            |
| Monitor Current                                  | I <sub>s</sub>  | 0.10 | 0.25 | 0.50 | mA   | Po=50mW,<br>V <sub>R(PD)</sub> =5V |

## Typical Characteristic Curves



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