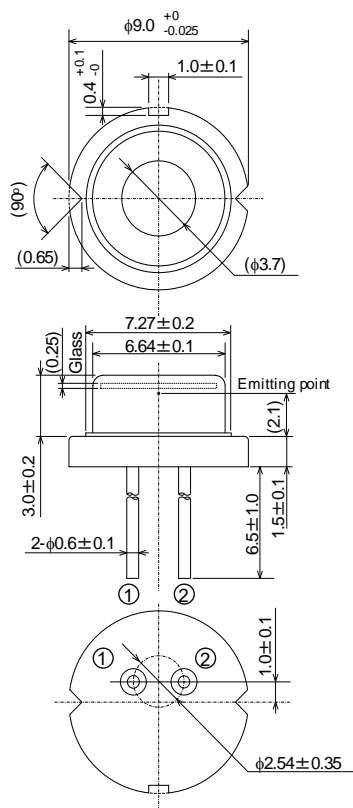


HL63680HD

638nm / 3W (CW) / 4.2W (Pulse)

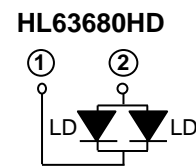
AlGaInP Laser Diode

Outline



(Unit: mm)

Internal Circuit



Features

- Dual emitters
- Optical output power: 3W (CW)
4.2W (Pulse)
- Shorter wavelength: 638nm
- High wall plug efficiency: 45% (Pulse)
- High heat dissipation $\phi 9$ mm CAN package
- Multi transverse mode
- TM mode oscillation

Application

- Laser Projector
- Laser TV
- Smart projector
- Light source of optical equipments

Absolute Maximum Ratings (Tc=25°C)

| Item | Symbol | Ratings | Unit |
|--|-------------------------|-----------|------|
| Operating current ^{Note1)} | I _{op} | 3 | A |
| Pulse operating current ^{Note1) Note2)} | I _{op} (Pulse) | 3.8 | A |
| LD reverse voltage | V _{R(LD)} | 2 | V |
| Operating temperature ^{Note1)Note3)} | T _{opr} | -10 ~ +55 | °C |
| Storage temperature | T _{stg} | -40 ~ +85 | °C |

Note1) The relation of operating temperature vs operating current and typical optical output power are based on Fig.1, 2.

Note2) Pulse condition: Pulse frequency ≥ 240Hz, duty ≤ 40%

Note3) Operating temperature is defined by Case temperature "Tc". High increase in temperature of LD chip itself is expected during operation due to high current density. Thus, without proper heat dissipation, it is observed that no specific output power is achieved or it results to LD degradation. It is advised that sufficient measure of heat dissipation should be taken so that LD's maximum operating temperature is not exceeded during actual operation.

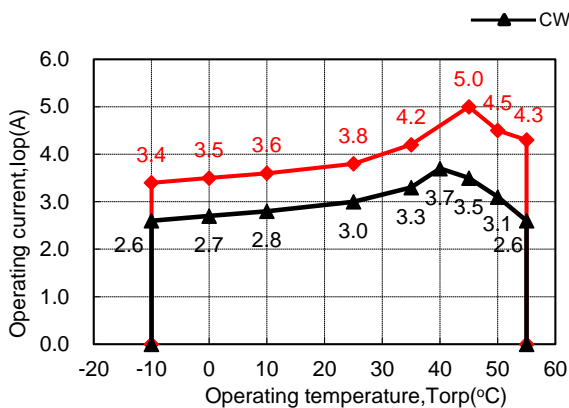


Fig.1 The relation of operating temperature vs maximum operating current

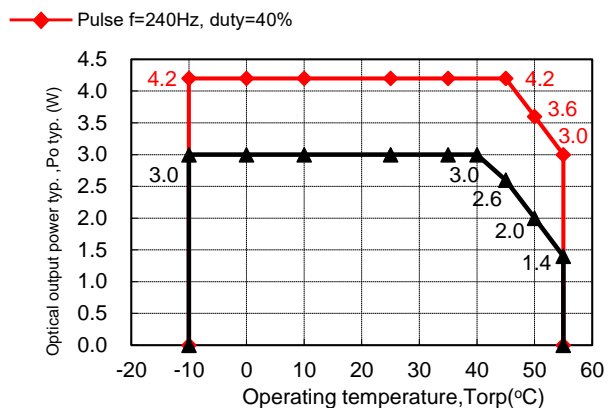


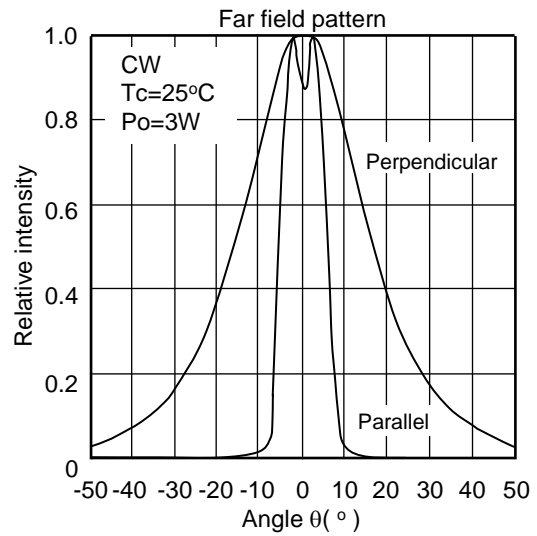
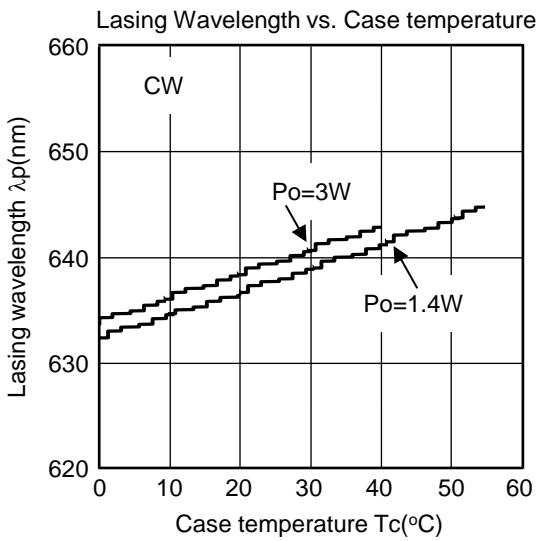
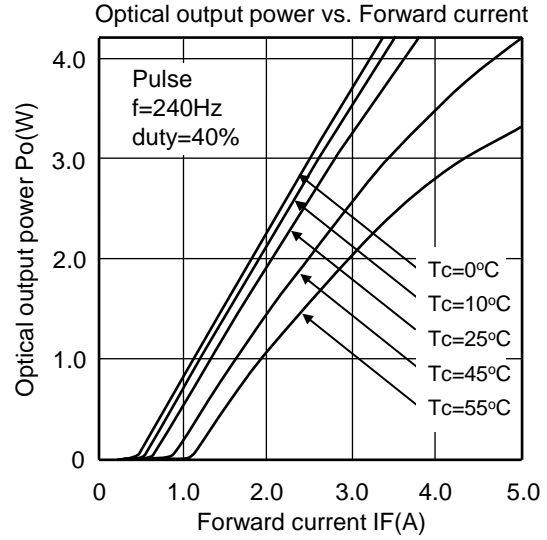
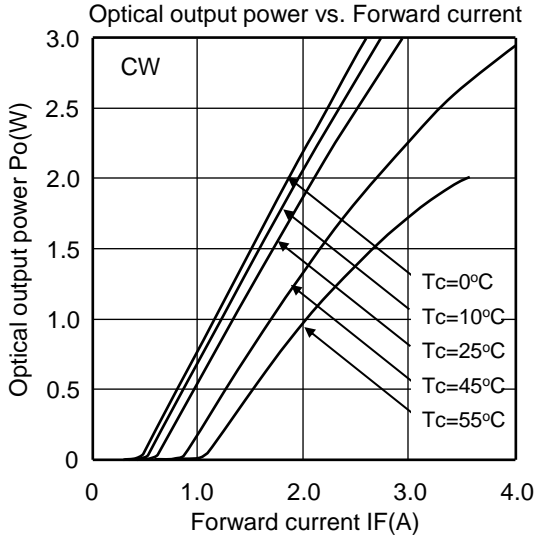
Fig.2 The relation of operating temperature vs optical output power

Optical and Electrical Characteristics (Tc=25°C)

| Parameter | Symbol | Min | Typ | Max | Unit | Test Condition |
|--|------------------------|-----|-----|-----|------|---|
| Optical output power | P _o | - | 3 | - | W | I _{op} =3A |
| Pulse optical output power | P _o (Pulse) | - | 4.2 | - | W | I _{op} (Pulse)=3.8A, f=240Hz, duty=40% |
| Threshold current | I _{th} | - | 570 | 850 | mA | - |
| Operating voltage | V _{op} | - | 2.5 | 3.0 | V | P _o =3W |
| Beam divergence ^{Note4)} Parallel to the junction | θ _{//} | 3 | 12 | 20 | ° | P _o =3W, FWHM |
| Beam divergence ^{Note4)} Perpendicular to the junction | θ _⊥ | 20 | 30 | 40 | ° | P _o =3W, FWHM |
| Lasing Wavelength | λ _p | 632 | 638 | 644 | nm | P _o =3W |

Note4) Designed value

Typical Characteristic Curves



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