Data Sheet

HL6364DG/65DG
642nm / 65mW AlGaInP Laser Diode

Features
- Visible light output: 642nm Typ.
- Optical output power: 60mW (CW)
- Single transverse mode
- Low operating current: 125mA Typ.
- Low operating voltage: 2.7V Max.
- Operating temperature: +50°C
- TE mode oscillation

Application
- Laser leveler
- Laser scanner
- Light source of optical equipments
### Absolute Maximum Ratings (Tc=25°C)

<table>
<thead>
<tr>
<th>Item</th>
<th>Symbol</th>
<th>Ratings</th>
<th>Unit</th>
</tr>
</thead>
<tbody>
<tr>
<td>Optical output power</td>
<td>Po</td>
<td>65</td>
<td>mW</td>
</tr>
<tr>
<td>LD Reverse Voltage</td>
<td>$V_{R(LD)}$</td>
<td>2</td>
<td>V</td>
</tr>
<tr>
<td>PD Reverse Voltage</td>
<td>$V_{R(PD)}$</td>
<td>30</td>
<td>V</td>
</tr>
<tr>
<td>Operating Temperature</td>
<td>$Topr$</td>
<td>-10 ~ +50</td>
<td>°C</td>
</tr>
<tr>
<td>Storage Temperature</td>
<td>$Tstg$</td>
<td>-40 ~ +85</td>
<td>°C</td>
</tr>
</tbody>
</table>

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

<table>
<thead>
<tr>
<th>Parameter</th>
<th>Symbol</th>
<th>Min</th>
<th>Typ</th>
<th>Max</th>
<th>Unit</th>
<th>Test Condition</th>
</tr>
</thead>
<tbody>
<tr>
<td>Threshold current</td>
<td>$I_{th}$</td>
<td>-</td>
<td>65</td>
<td>80</td>
<td>mA</td>
<td>-</td>
</tr>
<tr>
<td>Operating current</td>
<td>$I_{op}$</td>
<td>-</td>
<td>125</td>
<td>155</td>
<td>mA</td>
<td>$Po=60mW$</td>
</tr>
<tr>
<td>Operating voltage</td>
<td>$V_{op}$</td>
<td>-</td>
<td>2.5</td>
<td>2.7</td>
<td>V</td>
<td>$Po=60mW$</td>
</tr>
<tr>
<td>Beam divergence Parallel to the junction</td>
<td>$\theta//$</td>
<td>7</td>
<td>10</td>
<td>13</td>
<td>°</td>
<td>$Po=60mW$, FWHM</td>
</tr>
<tr>
<td>Beam divergence Perpendicular to the junction</td>
<td>$\theta\perp$</td>
<td>16</td>
<td>21</td>
<td>24</td>
<td>°</td>
<td>$Po=60mW$, FWHM</td>
</tr>
<tr>
<td>Lasing Wavelength</td>
<td>$\lambda_p$</td>
<td>635</td>
<td>642</td>
<td>645</td>
<td>nm</td>
<td>$Po=60mW$</td>
</tr>
<tr>
<td>Monitor Current</td>
<td>$I_{s}$</td>
<td>0.2</td>
<td>0.4</td>
<td>0.8</td>
<td>mA</td>
<td>$Po=60mW$, $V_{R(PD)}=5V$</td>
</tr>
</tbody>
</table>
Typical Characteristic Curves

- **Optical Output Power vs. Forward Current**
  - Optical output power, $P_o$ (mW)
  - Forward current, $I_F$ (mA)
  - Temperature labels: $T_C = 0^\circ C$, $25^\circ C$, $50^\circ C$

- **Threshold Current vs. Case Temperature**
  - Threshold current, $I_{th}$ (mA)
  - Case temperature, $T_C$ ($^\circ C$)

- **Slope Efficiency vs. Case Temperature**
  - Slope efficiency, $\eta_s$ (mW/mA)
  - Case temperature, $T_C$ ($^\circ C$)

- **Monitor Current vs. Case Temperature**
  - Monitor current, $I_M$ (mA)
  - Case temperature, $T_C$ ($^\circ C$)
  - Conditions: $P_o = 80$ mW, $V_{R(PD)} = 5$ V

- **Wavelength vs. Case Temperature**
  - Lasing Wavelength, $\lambda_p$ (nm)
  - Case temperature, $T_C$ ($^\circ C$)
  - Condition: $P_o = 60$ mW

- **Far Field Pattern**
  - Relative intensity
  - Angle, $\theta$ ($^\circ$)
  - Conditions: $P_o = 60$ mW, $T_C = 25^\circ C$
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