Data Sheet

HL6545MG
660nm / 130mW AlGaInP Laser Diode

Features                        Application
• Visible light output: 660nm Typ.     • Sensor application
• Optical output power: 300mW (Pulse)  • Light source of optical equipments
• Low operating current:
  175mA Typ. (120mW (CW))
  350mA Typ. (300mW (Pulse))
• Operating temperature: +75°C
• Single transverse mode
• TE mode oscillation

Outline

(Unit: mm)

Internal Circuit

• HL6545MG

(Unit: mm)
### 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>130</td>
<td>mW</td>
</tr>
<tr>
<td>Pulse optical output power</td>
<td>Po(_{\text{pulse}})</td>
<td>300(^{\circ})</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>Operating Temperature</td>
<td>Top(_{\text{(CW)}})</td>
<td>-10 (\sim) +75</td>
<td>(^\circ)C</td>
</tr>
<tr>
<td>Operating Temperature</td>
<td>Top(_{\text{(pulse)}})</td>
<td>-10 (\sim) +75</td>
<td>(^\circ)C</td>
</tr>
<tr>
<td>Storage Temperature</td>
<td>Tstg</td>
<td>-40 (\sim) +85</td>
<td>(^\circ)C</td>
</tr>
</tbody>
</table>

Note: Pulse condition: Pulse width = 30nsec, duty = 35%

### 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(_{\text{th}})</td>
<td>-</td>
<td>60</td>
<td>75</td>
<td>mA</td>
<td>-</td>
</tr>
<tr>
<td>Operating current</td>
<td>I(_{\text{op}})</td>
<td>-</td>
<td>175</td>
<td>210</td>
<td>mA</td>
<td>Po=120mW</td>
</tr>
<tr>
<td>Operating current (Pulse)</td>
<td>I(<em>{\text{op}})(</em>{\text{(pulse)}})</td>
<td>-</td>
<td>350</td>
<td>-</td>
<td>mA</td>
<td>Po=300mW (Pulse(^{\circ}))</td>
</tr>
<tr>
<td>Operating voltage</td>
<td>V(_{\text{op}})</td>
<td>-</td>
<td>2.5</td>
<td>3.3</td>
<td>V</td>
<td>Po=120mW</td>
</tr>
<tr>
<td>Beam divergence Parallel to the junction</td>
<td>(\theta_{//})</td>
<td>7.5</td>
<td>10</td>
<td>12</td>
<td>(^\circ)</td>
<td>Po=120mW, FWHM</td>
</tr>
<tr>
<td>Beam divergence Perpendicular to the junction</td>
<td>(\theta_{\perp})</td>
<td>15</td>
<td>17</td>
<td>19</td>
<td>(^\circ)</td>
<td>Po=120mW, FWHM</td>
</tr>
<tr>
<td>Lasing Wavelength</td>
<td>(\lambda_{p})</td>
<td>652</td>
<td>660</td>
<td>664</td>
<td>nm</td>
<td>Po=120mW</td>
</tr>
</tbody>
</table>

Note: Pulse condition: Pulse width = 30nsec, duty = 35%
Typical Characteristic Curves

- Optical Output Power vs. Forward Current
- Pulse Optical Output Power vs. Forward Current
- Threshold Current vs. Case Temperature
- Slope Efficiency vs. Case Temperature
- Wavelength vs. Case Temperature
- Far Field Pattern
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