**Data Sheet**

**HL6397MG/98MG**

639nm / 25mW AlGaInP Laser Diode

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**Features**

- Visible light output: 639nm Typ.
- Optical output power: 20mW (CW)
- Single transverse mode
- Low operating current: 65mA Typ.
- Low operating voltage: 2.5V Max.
- Operating temperature: +60°C
- TE mode oscillation

**Application**

- Laser leveler
- Laser scanner
- Light source of optical equipments

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**Outline**

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**Internal Circuit**

- HL6397MG
  - PD
  - LD
  - (flange)

- HL6398MG
  - PD
  - LD
  - (flange)

(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>25</td>
<td>mW</td>
</tr>
<tr>
<td>LD Reverse Voltage</td>
<td>VR(LD)</td>
<td>2</td>
<td>V</td>
</tr>
<tr>
<td>PD Reverse Voltage</td>
<td>VR(PD)</td>
<td>30</td>
<td>V</td>
</tr>
<tr>
<td>Operating Temperature</td>
<td>Topr</td>
<td>-10 ~ +60</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>Ith</td>
<td>-</td>
<td>45</td>
<td>60</td>
<td>mA</td>
<td>-</td>
</tr>
<tr>
<td>Operating current</td>
<td>Iop</td>
<td>-</td>
<td>65</td>
<td>80</td>
<td>mA</td>
<td>Po=20mW</td>
</tr>
<tr>
<td>Operating voltage</td>
<td>Vop</td>
<td>-</td>
<td>2.3</td>
<td>2.5</td>
<td>V</td>
<td>Po=20mW</td>
</tr>
<tr>
<td>Beam divergence Parallel to the junction</td>
<td>θ//</td>
<td>6</td>
<td>9</td>
<td>12</td>
<td>°</td>
<td>Po=20mW, FWHM</td>
</tr>
<tr>
<td>Beam divergence Perpendicular to the junction</td>
<td>θ⊥</td>
<td>16</td>
<td>21</td>
<td>24</td>
<td>°</td>
<td>Po=20mW, FWHM</td>
</tr>
<tr>
<td>Lasing Wavelength</td>
<td>λp</td>
<td>630</td>
<td>639</td>
<td>643</td>
<td>nm</td>
<td>Po=20mW</td>
</tr>
<tr>
<td>Monitor Current</td>
<td>Is</td>
<td>0.1</td>
<td>0.2</td>
<td>0.4</td>
<td>mA</td>
<td>Po=20mW, V&lt;sub&gt;R(PD)&lt;/sub&gt;=5V</td>
</tr>
</tbody>
</table>
Typical Characteristic Curves

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