HL63101MG/102MG

AlGaInP Laser Diode

Features:
- Optical output power: 5mW (CW)
- Visible light output: 637nm Typ.
- Low operating current: 20mA Typ.
- Low operating voltage: 2.2V Typ.
- Operating temperature: +60°C
- TE mode oscillation
- Single transverse mode

Applications
- Laser leveler
- Laser pointer
- Distance meter
- Light source of optical equipment

Internal Circuit

Outline
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>7</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 ~ +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>I_{th}</td>
<td>-</td>
<td>15</td>
<td>20</td>
<td>mA</td>
<td>-</td>
</tr>
<tr>
<td>Operating current</td>
<td>I_{op}</td>
<td>-</td>
<td>20</td>
<td>25</td>
<td>mA</td>
<td>Po=5mW</td>
</tr>
<tr>
<td>Operating voltage</td>
<td>V_{op}</td>
<td>-</td>
<td>2.2</td>
<td>2.4</td>
<td>V</td>
<td>Po=5mW</td>
</tr>
<tr>
<td>Lasing Wavelength</td>
<td>\lambda_p</td>
<td>630</td>
<td>637</td>
<td>640</td>
<td>nm</td>
<td>Po=5mW</td>
</tr>
<tr>
<td>Beam divergence Parallel to the junction</td>
<td>\theta/\</td>
<td>5</td>
<td>8</td>
<td>11</td>
<td>°</td>
<td>Po=5mW</td>
</tr>
<tr>
<td>Beam divergence Perpendicular to the junction</td>
<td>\theta_</td>
<td>28</td>
<td>34</td>
<td>40</td>
<td>°</td>
<td>Po=5mW</td>
</tr>
<tr>
<td>Monitor current</td>
<td>I_{s}</td>
<td>0.1</td>
<td>0.2</td>
<td>0.5</td>
<td>mA</td>
<td>Po=5mW, V_{R(PD)} = 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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