HL8337MG/38MG
830nm / 50mW GaAlAs Laser Diode

Features
• Operation temperature: -10~+60°C
• Optical output power: 50mW(CW)
• Infrared lasing: 830nm Typ.
• Low operating voltage: 2.4V Max.
• Package: φ5.6mm
• Single transverse mode
• TE mode oscillation

Application
• Sensor application
• Night vision
• Machine vision
• Light source of optical equipments

Outline

Internal Circuit
### 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>50</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>20</td>
<td>40</td>
<td>mA</td>
<td>-</td>
</tr>
<tr>
<td>Operating current</td>
<td>Iop</td>
<td>-</td>
<td>75</td>
<td>100</td>
<td>mA</td>
<td>Po=50mW</td>
</tr>
<tr>
<td>Operating voltage</td>
<td>Vop</td>
<td>-</td>
<td>1.9</td>
<td>2.4</td>
<td>V</td>
<td>Po=50mW</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=50mW, FWHM</td>
</tr>
<tr>
<td>Beam divergence Perpendicular to the junction</td>
<td>θ⊥</td>
<td>18</td>
<td>22</td>
<td>26</td>
<td>°</td>
<td>Po=50mW, FWHM</td>
</tr>
<tr>
<td>Lasing Wavelength</td>
<td>λp</td>
<td>820</td>
<td>830</td>
<td>840</td>
<td>nm</td>
<td>Po=50mW</td>
</tr>
<tr>
<td>Monitor Current</td>
<td>Is</td>
<td>0.10</td>
<td>0.25</td>
<td>0.50</td>
<td>mA</td>
<td>Po=50mW, VR(PD)=5V</td>
</tr>
</tbody>
</table>

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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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