HL63253MG
637nm/450mW AlGaInP Laser Diode

Features
- Shorter wavelength: 637nm Typ.
- High optical output power: 450mW
- Low operating current: 600mA Typ.
- Small package: 5.6mm
- Multi transverse mode
- TM mode oscillation

Application
- Bio & Medical
- Measurement
## 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>450</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>Topr</td>
<td>-10 ~ +40</td>
<td>°C</td>
</tr>
<tr>
<td>Storage Temperature</td>
<td>Tstg</td>
<td>-40 ~ +85</td>
<td>°C</td>
</tr>
</tbody>
</table>

Note1) Operating temperature is defined by Case temperature "Tc". High increase in temperature of LD chip itself is expected during operation due to high current density. Thus, without proper heat dissipation, it is observed that no specific output power is achieved or it results to LD degradation. It is advised that sufficient measure of heat dissipation should be taken so that LD’s maximum operating temperature is not exceeded during actual operation.

## 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>200</td>
<td>250</td>
<td>mA</td>
<td>-</td>
</tr>
<tr>
<td>Operating current</td>
<td>I_{op}</td>
<td>-</td>
<td>600</td>
<td>700</td>
<td>mA</td>
<td>Po=450mW</td>
</tr>
<tr>
<td>Operating voltage</td>
<td>V_{op}</td>
<td>-</td>
<td>2.2</td>
<td>2.6</td>
<td>V</td>
<td>Po=450mW</td>
</tr>
<tr>
<td>Beam divergence Parallel to the junction</td>
<td>\theta_{//}</td>
<td>1</td>
<td>8.5</td>
<td>20</td>
<td>°</td>
<td>Po=450mW, FWHM</td>
</tr>
<tr>
<td>Beam divergence Perpendicular to the junction</td>
<td>\theta_{⊥}</td>
<td>25</td>
<td>33</td>
<td>40</td>
<td>°</td>
<td>Po=450mW, FWHM</td>
</tr>
<tr>
<td>Lasing Wavelength</td>
<td>\lambda_{p}</td>
<td>632</td>
<td>637</td>
<td>642</td>
<td>nm</td>
<td>Po=450mW</td>
</tr>
</tbody>
</table>
Typical Characteristic Curves

Optical Output Power vs. Forward Current

Threshold Current vs. Case temperature

Slope Efficiency vs. Case Temperature

Far Field Pattern

Lasing Wavelength vs. Case Temperature

Optical output power Po(mW)

Forward current If(mA)

Case temperature Tc(°C)

Tc=0°C

Tc=10°C

Tc=25°C

Tc=40°C

Tc=0°C

Tc=10°C

Tc=25°C

Tc=40°C

Threshold current Ith(mA)

Po(mW)

Forward current If(mA)

0 200 400 600 800 1000

500

400

300

200

100

0

Tc=0°C

Tc=10°C

Tc=25°C

Tc=40°C

Slope efficiency hs(mW/mA)

Case temperature Tc(°C)

Tc=0°C

Tc=10°C

Tc=25°C

Tc=40°C

Lasing wavelength λp(nm)

Case temperature Tc(°C)

Tc=0°C

Tc=10°C

Tc=25°C

Tc=40°C
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