HL63520HD
638nm / 2.4W (CW) / 3.5W (Pulse)
AlGaInP Laser Diode

Features
- Dual emitters
- Optical output power: 2.4W (CW)
  3.5W (Pulse)
- Shorter wavelength: 638nm
- High wall plug efficiency: 43%
- High heat dissipation φ9mm CAN package
- Multi transverse mode
- TM mode oscillation

Application
- Laser Projector
- Laser TV
- Light source of optical equipments
### 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>Operating current Note1)</td>
<td>Iop</td>
<td>2.4</td>
<td>A</td>
</tr>
<tr>
<td>Pulse operating current Note1) Note2)</td>
<td>Iop(Pulse)</td>
<td>3.3</td>
<td>A</td>
</tr>
<tr>
<td>LD reverse voltage</td>
<td>Vr(LD)</td>
<td>2</td>
<td>V</td>
</tr>
<tr>
<td>Operating temperature Note1) Note3)</td>
<td>Topr</td>
<td>-10 ~ +55</td>
<td>°C</td>
</tr>
<tr>
<td>Storage temperature</td>
<td>Tstg</td>
<td>-40 ~ +85</td>
<td>°C</td>
</tr>
</tbody>
</table>

Note1) The relation of operating temperature vs operating current and typical optical output power are based on Fig.1, 2.

Note2) Pulse condition: Pulse frequency ≥ 120Hz, duty ≤ 30%

Note3) 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.

![Graph 1: Operating Temperature vs Maximum Operating Current](image1)

![Graph 2: Operating Temperature vs Optical Output Power](image2)

### Optical and Electrical Characteristics (Tc=25°C,CW)

<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>Optical output power</td>
<td>Po</td>
<td>-</td>
<td>2.4</td>
<td>-</td>
<td>W</td>
<td>Iop=2.4A</td>
</tr>
<tr>
<td>Pulse optical output power</td>
<td>Po(Pulse)</td>
<td>-</td>
<td>3.5</td>
<td>-</td>
<td>W</td>
<td>Iop(Pulse)=3.3A, f=120Hz,duty=30%</td>
</tr>
<tr>
<td>Threshold current</td>
<td>Itth</td>
<td>-</td>
<td>570</td>
<td>750</td>
<td>mA</td>
<td></td>
</tr>
<tr>
<td>Operating voltage</td>
<td>Vop</td>
<td>-</td>
<td>2.4</td>
<td>2.8</td>
<td>V</td>
<td>Po=2.2W</td>
</tr>
<tr>
<td>Beam divergence Note4) Parallel to the junction</td>
<td>θ//</td>
<td>3</td>
<td>10</td>
<td>20</td>
<td>°</td>
<td>Po=2.2W, FWHM</td>
</tr>
<tr>
<td>Beam divergence Note4) Perpendicular to the junction</td>
<td>θ⊥</td>
<td>23</td>
<td>33</td>
<td>43</td>
<td>°</td>
<td>Po=2.2W, FWHM</td>
</tr>
<tr>
<td>Lasing Wavelength</td>
<td>λp</td>
<td>632</td>
<td>638</td>
<td>644</td>
<td>nm</td>
<td>Po=2.2W</td>
</tr>
</tbody>
</table>

Note4) Designed value
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