Data Sheet

HL65213HD (PRELIMINALY)

659nm / 1.2W (CW) / 1.5W (Pulse)
AlGaInP Laser Diode

Outline

Internal Circuit

( unit:mm )

Features

- Single emitter
- Optical output power: 1.2W (CW) 1.5W (Pulse)
- Wavelength: 659nm Typ.
- High wall plug efficiency: 39% Typ.
- High heat dissipation φ9mm CAN package
- Multi transverse mode
- TE mode oscillation

Application

- Medical
- Laser module
- Sensing
- 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>Optical output power Note3)</td>
<td>Po</td>
<td>1.2</td>
<td>W</td>
</tr>
<tr>
<td>Pulse optical output power Note2) Note3)</td>
<td>Po(Pulse)</td>
<td>1.5</td>
<td>W</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 ~ +45</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.

Note2) Pulse condition: Pulse frequency ≥ 50Hz, duty = 33%

Note3) The relation of optical output power vs operating temperature is based on Fig.1.

![Graph showing the relation of optical output power vs operating temperature](image)

Fig.1 The relation of optical output power vs operating temperature

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>450</td>
<td>600</td>
<td>mA</td>
<td>-</td>
</tr>
<tr>
<td>Operating current</td>
<td>Iop</td>
<td>-</td>
<td>1350</td>
<td>1600</td>
<td>mA</td>
<td>Po = 1.2W</td>
</tr>
<tr>
<td>Operating voltage</td>
<td>Vop</td>
<td>-</td>
<td>2.3</td>
<td>2.7</td>
<td>V</td>
<td>Po = 1.2W</td>
</tr>
<tr>
<td>Beam divergence Note4) Parallel to the junction</td>
<td>(\theta//)</td>
<td>3</td>
<td>10</td>
<td>20</td>
<td>°</td>
<td>Po = 1.2W, FWHM</td>
</tr>
<tr>
<td>Beam divergence Note4) Perpendicular to the junction</td>
<td>(\theta\perp)</td>
<td>23</td>
<td>33</td>
<td>43</td>
<td>°</td>
<td>Po = 1.2W, FWHM</td>
</tr>
<tr>
<td>Lasing Wavelength</td>
<td>(\lambda_p)</td>
<td>654</td>
<td>659</td>
<td>664</td>
<td>nm</td>
<td>Po = 1.2W</td>
</tr>
</tbody>
</table>

Note4) Designed value
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