Data Sheet

HL40033G (PRELIMINALY)
405nm / 1,000mW Violet Laser Diode

Features
- Optical output power: 1,000mW (CW)
- Violet Lasing: 405nm Typ.
- Low operating current: 900mA Typ.
- Low operating voltage: 5.0V Max.
- Package: Ø9.0mm
- Multiple transverse mode
- TE mode oscillation

Application
- Direct imaging for PCB
- Industry
- Display
- Bio & Medical

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>$P_o$</td>
<td>1,100</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>$T_{opr}$</td>
<td>0 ~ +30</td>
<td>°C</td>
</tr>
<tr>
<td>Storage Temperature</td>
<td>$T_{stg}$</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>150</td>
<td>230</td>
<td>400</td>
<td>mA</td>
<td>-</td>
</tr>
<tr>
<td>Operating current</td>
<td>$I_{op}$</td>
<td>700</td>
<td>900</td>
<td>1,200</td>
<td>mA</td>
<td>$P_o=1,000$ mW</td>
</tr>
<tr>
<td>Operating voltage</td>
<td>$V_{op}$</td>
<td>-</td>
<td>5.0</td>
<td>5.5</td>
<td>V</td>
<td>$P_o=1,000$ mW</td>
</tr>
<tr>
<td>Beam divergence Parallel to the junction</td>
<td>$\theta_{//}$</td>
<td>5</td>
<td>13</td>
<td>25</td>
<td>°</td>
<td>$P_o=1,000$ mW, Full angle $1/e^2$</td>
</tr>
<tr>
<td>Beam divergence Perpendicular to the junction</td>
<td>$\theta_{\perp}$</td>
<td>30</td>
<td>45</td>
<td>60</td>
<td>°</td>
<td>$P_o=1,000$ mW, Full angle $1/e^2$</td>
</tr>
<tr>
<td>Lasing Wavelength</td>
<td>$\lambda_p$</td>
<td>400</td>
<td>405</td>
<td>410</td>
<td>nm</td>
<td>$P_o=1,000$ mW</td>
</tr>
</tbody>
</table>
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