Features

- Optical output power: 1,000mW (CW)
- Violet Lasing: 405nm Typ.
- Low operating current: 1,000mA Typ.
- Low operating voltage: 5.0V Max.
- Built-in Monitor PD
- Package: φ9.0mm
- Multiple transverse mode
- TE mode oscillation

Application

- Direct imaging for PCB
- Industry
- Display
- Bio & Medical
### 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>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>PD Reverse Voltage</td>
<td>( V_{R(PD)} )</td>
<td>20</td>
<td>V</td>
</tr>
<tr>
<td>Operating Temperature</td>
<td>Topr</td>
<td>0 ~ +30</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>( I_{th} )</td>
<td>250</td>
<td>320</td>
<td>400</td>
<td>mA</td>
<td>-</td>
</tr>
<tr>
<td>Operating current</td>
<td>( I_{op} )</td>
<td>-</td>
<td>1,000</td>
<td>1,300</td>
<td>mA</td>
<td>( Po=1,000\text{mW} )</td>
</tr>
<tr>
<td>Operating voltage</td>
<td>( V_{op} )</td>
<td>-</td>
<td>-</td>
<td>5.0</td>
<td>V</td>
<td>( Po=1,000\text{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>( Po=1,000\text{mW} ), Full angle 1/e²</td>
</tr>
<tr>
<td>Beam divergence Perpendicular to the junction</td>
<td>( \theta_{\perp} )</td>
<td>30</td>
<td>42</td>
<td>50</td>
<td>°</td>
<td>( Po=1,000\text{mW} ), Full angle 1/e²</td>
</tr>
<tr>
<td>Lasing Wavelength</td>
<td>( \lambda_{p} )</td>
<td>400</td>
<td>405</td>
<td>410</td>
<td>nm</td>
<td>( Po=1,000\text{mW} )</td>
</tr>
<tr>
<td>Monitor Current (*1)</td>
<td>Is</td>
<td>0.5</td>
<td>1.3</td>
<td>2.5</td>
<td>mA</td>
<td>( Po=1,000\text{mW}, V_{R(PD)}=5\text{V} )</td>
</tr>
</tbody>
</table>

*1 for only initial checking
**Typical Characteristic Curves**

- **Optical output power vs. Forward current**
  - Plot shows the relationship between optical output power (Po) in mW and forward current (IF) in mA.
  - Curves are labeled for case temperatures of 10°C, 25°C, and 30°C.

- **Monitor Current vs. Case Temperature**
  - Plot shows the relationship between monitor current (Im) in mA and case temperature (Tc°C).
  - Curve is labeled for an optical output power (Po) of 1,000 mW and a reverse voltage (VR) of 5 V.

- **Threshold current vs. Case temperature**
  - Plot shows the relationship between threshold current (Ith) in mA and case temperature (Tc°C).

- **Slope efficiency vs. Case temperature**
  - Plot shows the relationship between slope efficiency (ηs) in mW/mA and case temperature (Tc°C).

- **Lasing wavelength vs. Case temperature**
  - Plot shows the relationship between lasing wavelength (λp) in nm and case temperature (Tc°C).
  - Curves are labeled for an optical output power (Po) of 1,000 mW.

- **Far field pattern**
  - Plot shows the relative intensity as a function of angle (θ) for both parallel and perpendicular orientations.
  - Curves are labeled for an optical output power (Po) of 1,000 mW and a case temperature (Tc) of 25°C.
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