Features

- Operation temperature: -10~+60°C
- Optical output power: 50mW(CW)
- Infrared lasing: 830nm Typ.
- Low operating voltage: 2.4V Max.
- Package: φ5.6mm
- Single transverse mode
- TE mode oscillation

Application

- Sensor application
- Night vision
- Machine vision
- 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</td>
<td>Po</td>
<td>50</td>
<td>mW</td>
</tr>
<tr>
<td>LD Reverse Voltage</td>
<td>VR(LD)</td>
<td>2</td>
<td>V</td>
</tr>
<tr>
<td>Operating Temperature</td>
<td>Topr</td>
<td>-10 ~ +60</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>Ith</td>
<td>-</td>
<td>20</td>
<td>40</td>
<td>mA</td>
<td>-</td>
</tr>
<tr>
<td>Operating current</td>
<td>Iop</td>
<td>-</td>
<td>75</td>
<td>100</td>
<td>mA</td>
<td>Po=50mW</td>
</tr>
<tr>
<td>Operating voltage</td>
<td>Vop</td>
<td>-</td>
<td>1.9</td>
<td>2.4</td>
<td>V</td>
<td>Po=50mW</td>
</tr>
<tr>
<td>Beam divergence Parallel to the junction</td>
<td>/</td>
<td>6</td>
<td>9</td>
<td>12</td>
<td>°</td>
<td>Po=50mW, FWHM</td>
</tr>
<tr>
<td>Beam divergence Perpendicular to the junction</td>
<td>⊥</td>
<td>18</td>
<td>22</td>
<td>26</td>
<td>°</td>
<td>Po=50mW, FWHM</td>
</tr>
<tr>
<td>Lasing Wavelength</td>
<td>λp</td>
<td>820</td>
<td>830</td>
<td>840</td>
<td>nm</td>
<td>Po=50mW</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
Cautions

1. USHIO INC. (UI) neither warrants nor grants licenses of any our lights or any third party’s patent, copyright, trademark, or other intellectual property rights for information contained in this document. UI bears no responsibility for problems that may arise with third party’s right, including intellectual property rights, in connection with use of the information contained in this document.

2. Products and product specifications may be subject to change without notice. Confirm that you have received the latest product standards or specifications before final design, purchase or use.

3. UI makes every attempt to ensure that its products are of high quality and reliability. However, contact our sales office before using the product in an application that demands especially high quality and reliability or where its failure or malfunction may directly threaten human life or cause risk of bodily injury, such as aerospace, aeronautics, nuclear power, combustion control, transportation, traffic safety equipment or medical equipment for life support.

4. Design your application so that the products is used within the ranges guaranteed by UI. particularly for maximum rating, operating supply voltage range, heat radiation characteristics, installation conditions and other characteristics. UI. bears no responsibility for failure or damage when used beyond the guaranteed ranges. Even within the guaranteed ranges, consider normally foreseeable failure rates or failure modes in semiconductor devices and employ systemic measures such as fail-safes, so that the equipment incorporating UI product does not cause bodily injury, fire or other consequential damage due to operation of the UI product.

5. This product is not designed to be radiation resistant.

6. No one is permitted to reproduce or duplicate, in any form, the whole or part of this document without written approval from UI.

7. Contact our sales office for any questions regarding this document or UI products.

---

Important Notice

Performance figures, data and any illustrative material provided in this data sheet are typical and must be specifically confirmed in writing by UI before they become applicable to any particular order or contract. In accordance with the UI policy of continuous improvement specifications may change without notice. Further details are available from any UI sales representative.

---

Caution - use of controls or adjustments or performance of procedures other than those specified herein may result in hazardous radiation exposure.