SPECIFICATIONS
Laser Diode
GH1631AA8C

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(Precautions)

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(2) This Sharp product is designed for use in the following application areas;
- Computers
- OA equipment
- Telecommunication equipment (Terminal)
- Measuring equipment
- Tooling machines
- Audio visual equipment
- Home appliances
- Tooling machines
- Audio visual equipment
- Home appliances
- Tooling machines
- Audio visual equipment
- Home appliances

If the use of the Sharp product in the above application areas is for equipment listed in paragraphs (3) or (4), please be sure to observe the precautions given in those respective paragraphs.

(3) Appropriate measures, such as fail-safe design and redundant design considering the safety design of the overall system and equipment, should be taken to ensure reliability and safety when Sharp product is used for equipment in responsibility of customer which demands high reliability and safety in function and precision; such as
- Transportation control and safety equipment (aircraft, train, automobile etc.)
- Traffic signals
- Gas leakage sensor breakers
- Rescue and security equipment
- Other safety equipment

(4) Sharp product is designed for consumer goods and controlled as consumer goods in production and quality. Please do not use this product for equipment which require extremely high reliability and safety in function and precision; such as
- Space equipment
- Telecommunication equipment (for trunk lines)
- Nuclear power control equipment
- Medical equipment

(5) Please contact and consult with a Sharp sales representative if there are any question regarding interpretation of the above four paragraphs.

3. Disclaimer

The warranty period for Sharp product is one (1) year (or six (6) months in case of generalized product) after shipment. During the period, if there are any products problem, Sharp will repair (if applicable), replace or refund. Except the above, both parties will discuss to cope with the problems.

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Sharp will not be responsible for the Sharp product due to the malfunction or failures thereof which are caused by:
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- intentional act, negligence or wrong/poor handling.
- equipment which Sharp products are connected to or mounted in.
- disassembling, reforming or changing Sharp products.
- installation problem.
- act of God or other disaster (natural disaster, fire, flood, etc.)
- external factors (abnormal voltage, abnormal electromagnetic wave, fire, etc.)
- special environment (factory, coastal areas, hot spring area, etc.)
- phenomenon which cannot be foreseen based on the practical technologies at the time of shipment.
- the factors not included in the product specification sheet.

4. Please contact and consult with a Sharp sales representative for any questions about Sharp product.
**Outline dimensions and Terminal connections**

**Note 1)** Dimension of the bottom of lead pins.
**Note 2)** 0.3±0.1(mm) thickness lead frame board is used.
**Note 3)** Cutting section of lead frame is no Ag plating.

**GENERAL TOLERANCES** : ±0.2
**UNIT** : mm
( ) : Reference values
### Ratings and Characteristics

#### Absolute Maximum Ratings

<table>
<thead>
<tr>
<th>Parameter</th>
<th>Symbol</th>
<th>Value</th>
<th>Unit</th>
</tr>
</thead>
<tbody>
<tr>
<td>Optical power output (CW)</td>
<td>Po</td>
<td>100</td>
<td>mW</td>
</tr>
<tr>
<td>-10℃ ≤ Tc ≤ 50℃</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>50℃ &lt; Tc ≤ 60℃</td>
<td></td>
<td>90</td>
<td>mW</td>
</tr>
<tr>
<td>Reverse voltage</td>
<td>Vrl</td>
<td>2</td>
<td>V</td>
</tr>
<tr>
<td>Operating temperature (Case temperature)</td>
<td>Top (c)</td>
<td>-10 ~ +60</td>
<td>℃</td>
</tr>
<tr>
<td>Storage temperature</td>
<td>Tstg</td>
<td>-40 ~ +85</td>
<td>℃</td>
</tr>
<tr>
<td>Soldering temperature (Note 2)</td>
<td>Tstd</td>
<td>350</td>
<td>℃</td>
</tr>
</tbody>
</table>

(Note 1) Tc : Case temperature (Frame heat radiation part temperature)
(Note 2) Soldering temperature means soldering iron tip temperature while soldering.
(The Power of soldering iron must be 50W or below.)
Soldering position is 2mm apart from bottom edge of the case.(Immersion time: 5s)

#### Electro-optical Characteristics of laser diode (Note 1)

<table>
<thead>
<tr>
<th>Parameter</th>
<th>Symbol</th>
<th>Conditions</th>
<th>Min.</th>
<th>Typ.</th>
<th>Max.</th>
<th>Unit</th>
</tr>
</thead>
<tbody>
<tr>
<td>Threshold current</td>
<td>Ith</td>
<td></td>
<td>-</td>
<td>50</td>
<td>70</td>
<td>mA</td>
</tr>
<tr>
<td>Operating current</td>
<td>Iop</td>
<td></td>
<td>-</td>
<td>130</td>
<td>155</td>
<td>mA</td>
</tr>
<tr>
<td>Operating voltage</td>
<td>Vop</td>
<td>Po = 100 mW</td>
<td>2.45</td>
<td>3.0</td>
<td></td>
<td>V</td>
</tr>
<tr>
<td>Wavelength (Note 4)</td>
<td>λp</td>
<td>Po = 100 mW</td>
<td>633</td>
<td>638</td>
<td>643</td>
<td>nm</td>
</tr>
<tr>
<td>Half Intensity Angle (Parallel) (Note 2,3)</td>
<td>Θ''</td>
<td></td>
<td>4</td>
<td>8</td>
<td>12</td>
<td>°</td>
</tr>
<tr>
<td>Half Intensity Angle (Perpendicular) (Note 2,3)</td>
<td>Θ⊥</td>
<td></td>
<td>10</td>
<td>15</td>
<td>20</td>
<td>°</td>
</tr>
<tr>
<td>Beam Tilt Angle (Parallel) (Note 3)</td>
<td>ΔΘ''</td>
<td></td>
<td>-5</td>
<td>-</td>
<td>+5</td>
<td>°</td>
</tr>
<tr>
<td>Beam Tilt Angle (Perpendicular) (Note 3)</td>
<td>ΔΘ⊥</td>
<td>70mW - I(100mW) - I(30mW)</td>
<td>0.8</td>
<td>1.20</td>
<td>-</td>
<td>mW/mA</td>
</tr>
</tbody>
</table>

(Note 1) Initial value, Continuous Wave Operation
(Note 2) Angle of 50% peak intensity (Full angle at half-maximum)
(Note 3) Parallel to the junction plane(X-Z plane)
Perpendicular to the junction plane(Y-Z plane)
(Note 4) It is based on method for measurement of light spectrum analyzer Q8344A made by Advantest Corp. of Sharp Corp. property.
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