SPECIFICATION

PART NO. : MT0380-UV-A
5.0mm ROUND LED LAMP
**Description**

This purple lamp is made with InGaN chip and water clear epoxy resin.

**Notes:**
1. All dimensions are in mm.
2. Tolerance is ± 0.25mm unless otherwise noted.

**Description**

<table>
<thead>
<tr>
<th>Part No.</th>
<th>LED Chip</th>
<th>Lens Color</th>
</tr>
</thead>
<tbody>
<tr>
<td>MT0380-UV-A</td>
<td>InGaN</td>
<td>Water Clear</td>
</tr>
</tbody>
</table>
### Absolute Maximum Ratings at Ta=25°C

<table>
<thead>
<tr>
<th>Parameter</th>
<th>Symbol</th>
<th>Rating</th>
<th>Unit</th>
</tr>
</thead>
<tbody>
<tr>
<td>Power Dissipation</td>
<td>( P_d )</td>
<td>120</td>
<td>mW</td>
</tr>
<tr>
<td>Reverse Voltage</td>
<td>( V_r )</td>
<td>5</td>
<td>V</td>
</tr>
<tr>
<td>D.C. Forward Current</td>
<td>( I_f )</td>
<td>30</td>
<td>mA</td>
</tr>
<tr>
<td>Reverse (Leakage) Current</td>
<td>( I_r )</td>
<td>50</td>
<td>( \mu A )</td>
</tr>
<tr>
<td>Peak Current(1/10 Duty Cycle, 0.1ms Pulse Width.)</td>
<td>( I_f(Peak) )</td>
<td>100</td>
<td>mA</td>
</tr>
<tr>
<td>Operating Temperature Range</td>
<td>( T_{opr} )</td>
<td>-25 to +85</td>
<td>°C</td>
</tr>
<tr>
<td>Storage Temperature Range</td>
<td>( T_{stg} )</td>
<td>-40 to +100</td>
<td>°C</td>
</tr>
<tr>
<td>Soldering Temperature (1.6mm from body)</td>
<td>( T_{sol} )</td>
<td>Dip Soldering: 260°C for 5 sec. Hand Soldering: 350°C for 3 sec.</td>
<td></td>
</tr>
<tr>
<td>Electrostatic discharge</td>
<td>ESD</td>
<td>6000</td>
<td>V</td>
</tr>
</tbody>
</table>

### Electrical and Optical Characteristics:

<table>
<thead>
<tr>
<th>Parameter</th>
<th>Symbol</th>
<th>Condition</th>
<th>Min.</th>
<th>Typ.</th>
<th>Max.</th>
<th>Unit</th>
</tr>
</thead>
<tbody>
<tr>
<td>Luminous Intensity</td>
<td>( I_V )</td>
<td>If=20mA</td>
<td>20.0</td>
<td>40.0</td>
<td></td>
<td>mcd</td>
</tr>
<tr>
<td>Forward Voltage</td>
<td>( V_f )</td>
<td>If=20mA</td>
<td>3.2</td>
<td>4.0</td>
<td></td>
<td>V</td>
</tr>
<tr>
<td>Peak Wavelength</td>
<td>( \lambda_p )</td>
<td>If=20mA</td>
<td>400</td>
<td></td>
<td></td>
<td>nm</td>
</tr>
<tr>
<td>Reverse (Leakage) Current</td>
<td>( I_r )</td>
<td>( V_r=5V )</td>
<td></td>
<td>50</td>
<td>( \mu A )</td>
<td></td>
</tr>
<tr>
<td>Viewing Angle</td>
<td>2 ÷ 1/2</td>
<td>If=20mA</td>
<td>30</td>
<td></td>
<td></td>
<td>deg</td>
</tr>
<tr>
<td>Spectrum Line Halfwidth</td>
<td>( \Delta\lambda )</td>
<td>If=20mA</td>
<td>15</td>
<td></td>
<td></td>
<td>nm</td>
</tr>
</tbody>
</table>

Notes:
1. The datas tested by IS tester.
2. Customer’s special requirements are also welcome.
Typical Electrical / Optical Characteristics Curves:

**FORWARD CURRENT VS. APPLIED VOLTAGE**

- Applied Voltage (V)
- Forward Current (mA)

**FORWARD CURRENT VS. LUMINOUS INTENSITY**

- Relative Luminous Intensity
- Forward Current (mA)

**FORWARD CURRENT VS. AMBIENT TEMPERATURE**

- Temperature (°C)
- Forward Current (mA)

**RADIATION DIAGRAM**

- Relative Luminous Intensity
- Temperature (°C)
- Angular Distribution
Precautions:

TAKE NOTE OF THE FOLLOWING IN USE OF LED

1. Temperature in use
   Since the light generated inside the LED needs to be emitted to outside efficiently, a resin with high light transparency is used; therefore, additives to improve the heat resistance or moisture resistance (silica gel, etc) which are used for semiconductor products such as transistors cannot be added to the resin.
   Consequently, the heat resistant ability of the resin used for LED is usually low; therefore, please be careful on the following during use.

   Avoid applying external force, stress, and excessive vibration to the resins and terminals at high temperature. The glass transition temperature of epoxy resin used for the LED is approximately 120-130 °C.
   At a temperature exceeding this limit, the coefficient of liner expansion of the resin doubles or more compared to that at normal temperature and the resin is softened.
   If external force or stress is applied at that time, it may cause a wire rupture.

2. Soldering
   Please be careful on the following at soldering.
   After soldering, avoided applying external force, stress, and excessive vibration until the products go to cooling process (normal temperature), <Same for products with terminal leads>
   (1) Soldering measurements:
       Distance between melted solder side to bottom of resin shall be 1.6mm or longer.
   (2) Dip soldering :
       Pre-heat: 90 °C max. (Backside of PCB), Within 60 seconds.
       Solder bath: 260 5 °C (Solder temperature), Within 5 seconds.
   (3) Hand soldering: 350 °C max. (Temperature of soldering iron tip), Within 3 seconds.

3. Insertion
   Pitch of the LED leads and pitch of mounting holes need to be same.

4. Others
   Since the heat resistant ability of the LED resin is low, SMD components are used on the same PCB, please mount the LED after adhesive baking process for SMD components. In case adhesive baking is done after LED lamp insertion due to a production process reason, make sure not to apply external force, stress, and excessive vibration to the LED and follow the conditions below.
   Baking temperature: 120 °C max.  Baking time: Within 60 seconds.
   If soldering is done sequentially after the adhesive baking, please perform the soldering after cooling down the LED to normal temperature.
1. LEDs emit very strong UV radiation during operation.
2. Don’t look directly into the LED light when in operation as UV radiation can harm your eyes.
3. To prevent even inadequate exposure, wear protective eyewear.
4. If LEDs are embedded in devices, please indicate warning labels against the UV LED used.
5. Avoid prolonged exposure to skin or other tissue during operation.
7. Take appropriate precautions around pets and other living organisms to avoid UV exposure.
8. Specification and dimension are subject to change without notice.