1.6X0.8mm SMD CHIP LED LAMP

Part Number: KPT-1608SECK
Super Bright Orange

Features
- 1.6mmX0.8mm SMT LED, 0.75mm thickness.
- Low power consumption.
- Wide viewing angle.
- Ideal for backlight and indicator.
- Various colors and lens types available.
- Moisture sensitivity level: level 3.
- RoHS compliant.

Description
The Super Bright Orange device is made with AlGaInP (on GaAs substrate) light emitting diode chip.

Package Dimensions

Notes:
1. All dimensions are in millimeters (inches).
2. Tolerance is ±0.1(0.004") unless otherwise noted.
3. The specifications, characteristics and technical data described in the datasheet are subject to change without prior notice.
4. The device has a single mounting surface. The device must be mounted according to the specifications.
Selection Guide

Notes:
1. $\theta_{1/2}$ is the angle from optical centerline where the luminous intensity is 1/2 of the optical peak value.
2. Luminous intensity/ luminous Flux: +/-15%.
* Luminous intensity value is traceable to the CIE127-2007 compliant national standards.

<table>
<thead>
<tr>
<th>Part No.</th>
<th>Dice</th>
<th>Lens Type</th>
<th>Iv (mcd) [2] @ 20mA</th>
<th>Viewing Angle [1]</th>
</tr>
</thead>
<tbody>
<tr>
<td>KPT-1608SECK</td>
<td>Super Bright Orange (AlGaInP)</td>
<td>Water Clear</td>
<td>120</td>
<td>281/2</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>*80</td>
<td>*180</td>
</tr>
</tbody>
</table>

Electrical / Optical Characteristics at TA=25°C

<table>
<thead>
<tr>
<th>Symbol</th>
<th>Parameter</th>
<th>Device</th>
<th>Typ.</th>
<th>Max.</th>
<th>Units</th>
<th>Test Conditions</th>
</tr>
</thead>
<tbody>
<tr>
<td>$\lambda_{\text{peak}}$</td>
<td>Peak Wavelength</td>
<td>Super Bright Orange</td>
<td>610</td>
<td>nm</td>
<td>I=20mA</td>
<td></td>
</tr>
<tr>
<td>$\lambda_D$ [1]</td>
<td>Dominant Wavelength</td>
<td>Super Bright Orange</td>
<td>601</td>
<td>nm</td>
<td>I=20mA</td>
<td></td>
</tr>
<tr>
<td>$\Delta \lambda_{1/2}$</td>
<td>Spectral Line Half-width</td>
<td>Super Bright Orange</td>
<td>29</td>
<td>nm</td>
<td>I=20mA</td>
<td></td>
</tr>
<tr>
<td>C</td>
<td>Capacitance</td>
<td>Super Bright Orange</td>
<td>15</td>
<td>pF</td>
<td>V=0V; f=1MHz</td>
<td></td>
</tr>
<tr>
<td>$V_F$ [2]</td>
<td>Forward Voltage</td>
<td>Super Bright Orange</td>
<td>2.1</td>
<td>2.5</td>
<td>V</td>
<td>I=20mA</td>
</tr>
<tr>
<td>$I_R$</td>
<td>Reverse Current</td>
<td>Super Bright Orange</td>
<td>10</td>
<td>uA</td>
<td>V=5V</td>
<td></td>
</tr>
</tbody>
</table>

Notes:
1. Wavelength: +/-1nm.
2. Forward Voltage: +/-0.1V.
* Wavelength value is traceable to the CIE127-2007 compliant national standards.

Absolute Maximum Ratings at TA=25°C

<table>
<thead>
<tr>
<th>Parameter</th>
<th>Super Bright Orange</th>
<th>Units</th>
</tr>
</thead>
<tbody>
<tr>
<td>Power dissipation</td>
<td>75</td>
<td>mW</td>
</tr>
<tr>
<td>DC Forward Current</td>
<td>30</td>
<td>mA</td>
</tr>
<tr>
<td>Peak Forward Current [1]</td>
<td>195</td>
<td>mA</td>
</tr>
<tr>
<td>Reverse Voltage</td>
<td>5</td>
<td>V</td>
</tr>
<tr>
<td>Operating Temperature</td>
<td>-40°C To +85°C</td>
<td></td>
</tr>
<tr>
<td>Storage Temperature</td>
<td>-40°C To +85°C</td>
<td></td>
</tr>
</tbody>
</table>

Note:
1. 1/10 Duty Cycle, 0.1ms Pulse Width.
Super Bright Orange  
KPT-1608SECK

**Relative Intensity vs. Wavelength**

- **Graph 1:** 
  - **X-axis:** Wavelength (nm)
  - **Y-axis:** Relative Radiant Intensity

- **Graph 2:** 
  - **X-axis:** Forward Current (mA)
  - **Y-axis:** Forward Voltage (V)

- **Graph 3:** 
  - **X-axis:** Luminous Intensity (Relative Value at 1mA)
  - **Y-axis:** Forward Current (mA)

- **Graph 4:** 
  - **X-axis:** Ambient Temperature (°C)
  - **Y-axis:** Forward Current Derating Curve

- **Graph 5:** 
  - **X-axis:** Ambient Temperature (°C)
  - **Y-axis:** Luminous Intensity

- **Graph 6:** 
  - **X-axis:** Spatial Distribution
  - **Y-axis:** 0° to 30°
KPT-1608SECK

Reflow soldering is recommended and the soldering profile is shown below. Other soldering methods are not recommended as they might cause damage to the product.

Reflow Soldering Profile For Lead-free SMT Process.

NOTES:
1. We recommend the reflow temperature 245°C(±3°C). The maximum soldering temperature should be limited to 200°C.
2. Don’t expose parts to the epoxy resin while it is exposed to high temperature.
3. Number of reflow process shall be 2 times or less.

Recommended Soldering Pattern  
(Units : mm; Tolerance: ± 0.1)

Reel Dimension

Tape Dimensions  
(Units : mm)

SMD LED