0.65X0.35mm SMD CHIP LED LAMP (0.2mm Height)

Part Number: KPG-0603SEC-E-TT  Hyper-Red

Features
- 0.65mmX0.35mm SMT LED, 0.2mm thickness.
- Low power consumption.
- Wide viewing angle.
- Compatible with automatic placement equipment.
- Package: 4000pcs/reel.
- Moisture sensitivity level: level 2.
- RoHS compliant.

Description
The Hyper-Red source color devices are made with Al-GaInP on GaAs substrate Light Emitting Diode.

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

<table>
<thead>
<tr>
<th>Part No.</th>
<th>Dice</th>
<th>Lens Type</th>
<th>Iv (mcd) [2] @ 10mA</th>
<th>Viewing Angle [1]</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td></td>
<td>Min.</td>
<td>Typ.</td>
</tr>
<tr>
<td>KPG-0603SEC-E-TT</td>
<td>Hyper-Red (AlGaInp)</td>
<td>Water Clear</td>
<td>45</td>
<td>120</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>*15</td>
<td>*40</td>
</tr>
</tbody>
</table>

Notes:
1. 81/2 is the angle from optical centerline where the luminous intensity is 1/2 of the optical peak value.
2. Luminous intensity/ luminous Flux: +/-15%.
3. Luminous intensity value is traceable to the CIE127-2007 compliant national standards.

### 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>Δλpeak</td>
<td>Peak Wavelength</td>
<td>Hyper-Red</td>
<td>632</td>
<td>nm</td>
<td>I$_F$=10mA</td>
<td></td>
</tr>
<tr>
<td>ΔD [1]</td>
<td>Dominant Wavelength</td>
<td>Hyper-Red</td>
<td>624</td>
<td>nm</td>
<td>I$_F$=10mA</td>
<td></td>
</tr>
<tr>
<td>ΔΔλ/2</td>
<td>Spectral Line Half-width</td>
<td>Hyper-Red</td>
<td>20</td>
<td>nm</td>
<td>I$_F$=10mA</td>
<td></td>
</tr>
<tr>
<td>V$_F$ [2]</td>
<td>Forward Voltage</td>
<td>Hyper-Red</td>
<td>1.94</td>
<td>2.4</td>
<td>V</td>
<td>I$_F$=10mA</td>
</tr>
<tr>
<td>I$_R$</td>
<td>Reverse Current</td>
<td>Hyper-Red</td>
<td>10</td>
<td>μA</td>
<td>V$_R$=5V</td>
<td></td>
</tr>
</tbody>
</table>

Notes:
1. Wavelength: +/-1nm.
2. Forward Voltage: +/-0.1V.
3. Wavelength value is traceable to the CIE127-2007 compliant national standards.
4. Excess driving current and/or operating temperature higher than recommended conditions may result in severe light degradation or premature failure.

### Absolute Maximum Ratings at TA=25°C

<table>
<thead>
<tr>
<th>Parameter</th>
<th>Hyper-Red</th>
<th>Units</th>
</tr>
</thead>
<tbody>
<tr>
<td>Power dissipation</td>
<td>48</td>
<td>mW</td>
</tr>
<tr>
<td>DC Forward Current</td>
<td>20</td>
<td>mA</td>
</tr>
<tr>
<td>Peak Forward Current [1]</td>
<td>100</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.
Hyper-Red

KPG-0603SEC-E-TT

- **Relative Radiant Intensity** vs. **Wavelength**

- **Forward Current (mA)** vs. **Forward Voltage (V)**

- **Luminous Intensity (mA)** vs. **Forward Current (mA)**

- **Forward Current (mA)** vs. **Ambient Temperature TA (°C)**

- **Luminous Intensity vs. Ambient Temperature**

- **Spectral Distribution**
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.

### Reel Dimension

- Reel Diameter: 58 ± 0.1
- Core: 3.0 ± 0.1
- Package: 5.0 ± 0.1
- TAPE: 0.03 ± 0.02

### Tape Dimensions

- Width: 0.25 ± 0.05
- Length: 172 ± 0.1

### Recommended Soldering Pattern

- (Units: mm; Tolerance: ± 0.1)

### Notes:

1. We recommend the reflow temperature 245°C (±5°C). The maximum soldering temperature should be limited to 260°C.
2. Don't apply stress to the epoxy resin while it is exposed to high temperature.
3. Number of reflow process shall be 2 times or less.
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