2.1x0.6mm RIGHT ANGLE SURFACE LED LAMP

Part Number: APA2106SURCK    Hyper Red

Features
- 2.1mmX0.6mm right angle SMT LED, 1.0mm thickness.
- Low power consumption.
- Wide viewing angle.
- Ideal for backlight and indicator.
- Various colors and lens types available.
- Moisture sensitivity level : level 3.
- Tinned pads for improved solderability.
- 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>$I_v$ (mcd) @ 20mA</th>
<th>Viewing Angle</th>
</tr>
</thead>
<tbody>
<tr>
<td>APA2106SURCK</td>
<td>Hyper Red (AlGaInP)</td>
<td>Water Clear</td>
<td>120</td>
<td>281/2</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>*40</td>
<td>*80</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>120°</td>
<td></td>
</tr>
</tbody>
</table>

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%.
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>$\lambda_{\text{peak}}$</td>
<td>Peak Wavelength</td>
<td>Hyper Red</td>
<td>645 nm</td>
<td></td>
<td></td>
<td>$I_f=20mA$</td>
</tr>
<tr>
<td>$\lambda_D$ [1]</td>
<td>Dominant Wavelength</td>
<td>Hyper Red</td>
<td>630 nm</td>
<td></td>
<td></td>
<td>$I_f=20mA$</td>
</tr>
<tr>
<td>$\Delta\lambda_{1/2}$</td>
<td>Spectral Line Half-width</td>
<td>Hyper Red</td>
<td>28 nm</td>
<td></td>
<td></td>
<td>$I_f=20mA$</td>
</tr>
<tr>
<td>C</td>
<td>Capacitance</td>
<td>Hyper Red</td>
<td>35 pF</td>
<td></td>
<td></td>
<td>$V_f=0V; f=1MHz$</td>
</tr>
<tr>
<td>$V_f$ [2]</td>
<td>Forward Voltage</td>
<td>Hyper Red</td>
<td>1.95 V</td>
<td>2.5</td>
<td>V</td>
<td>$I_f=20mA$</td>
</tr>
<tr>
<td>$I_r$ [2]</td>
<td>Reverse Current</td>
<td>Hyper Red</td>
<td>10 μA</td>
<td></td>
<td></td>
<td>$V_r=5V$</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.

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>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>185</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 APA2106SURCK

- **Relative Radiant Intensity vs. Wavelength**
  - Ta=25°C

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

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

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

- **Spatial Distribution**
  - Spatial Intensity Relative to 0°
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.

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

Reel Dimension

Tape Dimensions  
(Units : mm)
All design applications should refer to Kingbright application notes available at http://www.KingbrightUSA.com/ApplicationNotes