**SURFACE MOUNT DISPLAY**

**Features**
- 0.2 INCH DIGIT HEIGHT.
- LOW CURRENT OPERATION.
- EXCELLENT CHARACTER APPEARANCE.
- I.C. COMPATIBLE.
- MECHANICALLY RUGGED.
- PACKAGE: 300PCS / REEL.
- GRAY FACE, WHITE SEGMENT.
- MOISTURE SENSITIVITY LEVEL: LEVEL 4.
- RoHS COMPLIANT.

**Description**
The Hyper Red source color devices are made with InGaAlP on GaAs substrate Light Emitting Diode.

**Package Dimensions & Internal Circuit Diagram**

1. All dimensions are in millimeters (inches), Tolerance is ±0.25(0.01") unless otherwise noted.
2. Specifications are subject to change without notice.
3. The gap between the reflector and PCB shall not exceed 0.25mm.
## Selection Guide

<table>
<thead>
<tr>
<th>Part No.</th>
<th>Dice</th>
<th>Lens Type</th>
<th>( I_v \text{ (ucd)} [1] @ 10mA )</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>KCDA02-105</td>
<td>HYPER RED (InGaAlP)</td>
<td>WHITE DIFFUSED</td>
<td>Min. 8000 Typ. 30400</td>
<td>Common Anode, Rt. Hand Decimal.</td>
</tr>
</tbody>
</table>

Notes:
1. Luminous Intensity / Luminous Flux: +/-15%.

## Electrical / Optical Characteristics at \( T_A=25^\circ C \)

### Symbol | Parameter | Device | Typ. | Max. | Units | Test Conditions |
<table>
<thead>
<tr>
<th></th>
<th></th>
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<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>( \lambda_{\text{peak}} )</td>
<td>Peak Wavelength</td>
<td>Hyper Red</td>
<td>650</td>
<td>nm</td>
<td>( I_F=20mA )</td>
<td></td>
</tr>
<tr>
<td>( \lambda_D [1] )</td>
<td>Dominant Wavelength</td>
<td>Hyper Red</td>
<td>635</td>
<td>nm</td>
<td>( I_F=20mA )</td>
<td></td>
</tr>
<tr>
<td>( \Delta \lambda_{1/2} )</td>
<td>Spectral Line Half-width</td>
<td>Hyper Red</td>
<td>28</td>
<td>nm</td>
<td>( I_F=20mA )</td>
<td></td>
</tr>
<tr>
<td>C</td>
<td>Capacitance</td>
<td>Hyper Red</td>
<td>35</td>
<td>pF</td>
<td>( V_F=0V; f=1MHz )</td>
<td></td>
</tr>
<tr>
<td>( V_F [2] )</td>
<td>Forward Voltage</td>
<td>Hyper Red</td>
<td>1.95</td>
<td>2.5</td>
<td>V</td>
<td>( I_F=20mA )</td>
</tr>
<tr>
<td>( I_R )</td>
<td>Reverse Current</td>
<td>Hyper Red</td>
<td>10</td>
<td>uA</td>
<td>( V_R = 5V )</td>
<td></td>
</tr>
</tbody>
</table>

Notes:
1. Wavelength: +/-1nm.
2. Forward Voltage: +/-0.1V.

## Absolute Maximum Ratings at \( T_A=25^\circ C \)

<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 / 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.
KCDA02-105

Reflow Soldering Profile for Lead-free SMT Process.

NOTES:
1. We recommend the reflow temperature 245°C(+/-5°C). The maximum soldering temperature should be limited to 260°C.
2. Don't cause stress 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: ±0.15)

Tape Specifications
(Units : mm)

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