SURFACE MOUNT DISPLAY

Part Number: ACSA56-51SURKWA     Hyper Red

Features
- 0.56 inch digit height.
- Low current operation.
- Excellent character appearance.
- Mechanically rugged.
- Gray face, white segment.
- Package: 400pcs/ reel.
- Moisture sensitivity level: level 2a.
- RoHS compliant.

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

Package Dimensions & Internal Circuit Diagram

Notes:
1. All dimensions are in millimeters (inches). Tolerance is ±0.25(0.01") unless otherwise noted.
2. The specifications, characteristics and technical data described in the datasheet are subject to change without prior 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>Iv (ucd) [1] @ 10mA</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>ACSA56-51SURKWA</td>
<td>Hyper Red (AlGaNp)</td>
<td>White Diffused</td>
<td>21000 76000</td>
<td>Common Anode</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>*9000 *22000</td>
<td></td>
</tr>
</tbody>
</table>

**Note:**
1. Luminous intensity/ luminous Flux: +/-15%.
2. 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>λpeak</td>
<td>Peak Wavelength</td>
<td>Hyper Red</td>
<td>645</td>
<td>nm</td>
<td></td>
<td>Ir=20mA</td>
</tr>
<tr>
<td>λD [1]</td>
<td>Dominant Wavelength</td>
<td>Hyper Red</td>
<td>630</td>
<td>nm</td>
<td></td>
<td>Ir=20mA</td>
</tr>
<tr>
<td>Δλ1/2</td>
<td>Spectral Line Half-width</td>
<td>Hyper Red</td>
<td>28</td>
<td>nm</td>
<td></td>
<td>Ir=20mA</td>
</tr>
<tr>
<td>C</td>
<td>Capacitance</td>
<td>Hyper Red</td>
<td>35</td>
<td>pF</td>
<td></td>
<td>V=0V; f=1MHz</td>
</tr>
<tr>
<td>VF [2]</td>
<td>Forward Voltage</td>
<td>Hyper Red</td>
<td>1.95</td>
<td>2.5</td>
<td>V</td>
<td>Ir=20mA</td>
</tr>
<tr>
<td>IR</td>
<td>Reverse Current</td>
<td>Hyper Red</td>
<td>10</td>
<td>uA</td>
<td></td>
<td>Vi=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.
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>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.
Circuit Design Notes

1. Protective current-limiting resistors may be necessary to operate the Displays.

2. LEDs mounted in parallel should each be placed in series with its own current-limiting resistor.
Recommended Soldering Pattern
(Units: mm; Tolerance: ±0.15)

Tape Specifications
(Units: mm)

NOTES:
1. We recommend the reflow temperature 245°C(±5°C). The maximum soldering temperature should be limited to 300°C.
2. Don’t expose 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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