SURFACE MOUNT DISPLAY

Part Number: ACSA56-51PBWA/A       Blue

ATTENTION
OBSERVE PRECAUTIONS
FOR HANDLING
ELECTROSTATIC
DISCHARGE
SENSITIVE
DEVICES

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.

Descriptions
- The Blue source color devices are made with InGaN on SiC Light Emitting Diode.
- Electrostatic discharge and power surge could damage the LEDs.
- It is recommended to use a wrist band or anti-electrostatic glove when handling the LEDs.
- All devices, equipments and machineries must be electrically grounded.

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]</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>ACA56-51PBWA/A</td>
<td>Blue (InGaN)</td>
<td>White Diffused</td>
<td>1400</td>
<td>4000</td>
</tr>
</tbody>
</table>

Notes:
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>Blue</td>
<td>468</td>
<td>nm</td>
<td></td>
<td>If=20mA</td>
</tr>
<tr>
<td>ΔλD [1]</td>
<td>Dominant Wavelength</td>
<td>Blue</td>
<td>465</td>
<td>nm</td>
<td></td>
<td>If=20mA</td>
</tr>
<tr>
<td>Δλ1/2</td>
<td>Spectral Line Half-width</td>
<td>Blue</td>
<td>21</td>
<td>nm</td>
<td></td>
<td>If=20mA</td>
</tr>
<tr>
<td>C</td>
<td>Capacitance</td>
<td>Blue</td>
<td>100</td>
<td>pF</td>
<td></td>
<td>Vf=0V; f=1MHz</td>
</tr>
<tr>
<td>Vf [2]</td>
<td>Forward Voltage</td>
<td>Blue</td>
<td>3.2</td>
<td>4.0</td>
<td>V</td>
<td>If=20mA</td>
</tr>
<tr>
<td>Ir</td>
<td>Reverse Current</td>
<td>Blue</td>
<td>10</td>
<td>uA</td>
<td></td>
<td>Vr=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>Blue</th>
<th>Units</th>
</tr>
</thead>
<tbody>
<tr>
<td>Power dissipation</td>
<td>120</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>100</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 Set-up](image1.png)    ![invalid Set-up](image2.png)
Reflow Soldering Profile for Lead-free SMT Process.

**NOTES:**
1. We recommend the reflow temperature 245°C (+/-1°C). The maximum soldering temperature should be limited to 300°C.
2. Do not expose the tape 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

**Reel Dimension**

**Tape Specifications**
**Units:** mm

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**AACA56-51PBWA/A**

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**PAGE: 4 OF 5**

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