Features

- 0.3 INCH DIGIT HEIGHT.
- LOW CURRENT OPERATION.
- EXCELLENT CHARACTER APPEARANCE.
- EASY MOUNTING ON P.C. BOARDS OR SOCKETS.
- I.C. COMPATIBLE.
- MECHANICALLY RUGGED.
- STANDARD : BLACK FACE, RED SEGMENT.

Description

The Bright Red source color devices are made with Gallium Phosphide Red 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. Specifications are subjected to change without notice.
# Selection Guide

<table>
<thead>
<tr>
<th>Part No.</th>
<th>Dice</th>
<th>( I_V ) (\text{ucd}) @ 10 mA</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>SA03-12HDB</td>
<td>BRIGHT RED (GaP)</td>
<td>480 1200</td>
<td>Common Anode, Left Hand Decimal</td>
</tr>
</tbody>
</table>

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

<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>Bright Red</td>
<td>700</td>
<td></td>
<td>nm</td>
<td>IF=20mA</td>
</tr>
<tr>
<td>( \Delta \lambda_{1/2} )</td>
<td>Spectral Line Width</td>
<td>Bright Red</td>
<td>45</td>
<td></td>
<td>nm</td>
<td>IF=20mA</td>
</tr>
<tr>
<td>C</td>
<td>Capacitance</td>
<td>Bright Red</td>
<td>40</td>
<td></td>
<td>pF</td>
<td>VF=0V,f=1MHz</td>
</tr>
<tr>
<td>( V_F )</td>
<td>Forward Voltage</td>
<td>Bright Red</td>
<td>2.0</td>
<td>2.5</td>
<td>V</td>
<td>IF=20mA</td>
</tr>
<tr>
<td>( I_R )</td>
<td>Reverse Current</td>
<td>All</td>
<td>10</td>
<td></td>
<td>uA</td>
<td>VR = 5V</td>
</tr>
</tbody>
</table>

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

<table>
<thead>
<tr>
<th>Parameter</th>
<th>Bright Red</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>25</td>
<td>mA</td>
</tr>
<tr>
<td>Peak Forward Current [1]</td>
<td>150</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>
<tr>
<td>Lead Soldering Temperature [2]</td>
<td>260°C For 5 Seconds</td>
<td></td>
</tr>
</tbody>
</table>

Notes:
1. 1/10 Duty Cycle, 0.1ms Pulse Width.
2. 4mm below package base.
Bright Red SA03-12HDB

BRIGHT RED

TA = 25°C

RELATIVE INTENSITY Vs. WAVELENGTH

Wavelength λ (nm)

500 550 600 650 700 750 800

0.0 0.5 1.0

Relative Radiant Intensity

FORWARD CURRENT Vs. FORWARD VOLTAGE

Forward Voltage (V)

0 10 20 30 40 50

Forward Current (mA)

1.2 1.6 2.0 2.4 2.8 3.0

FORWARD CURRENT DERATING CURVE

Ambient Temperature T A (°C)

0 10 20 30 40 50 60 70 80 90 100

Forward Current (mA)

LUMINOUS INTENSITY Vs. FORWARD CURRENT

Relative Luminous Intensity

0.1 0.2 0.5 1.0

Relative Value at I = 10mA

0 10 20 30 40 50

Luminous Intensity Relas

1I-Forward Current (mA)