PLCC2 SMD Side View Package LED
SMS1105RC, RED

SMS1105RC
✦ Industry Standard Footprint
✦ Side Viewing, Low Profile Package
✦ High Luminous Intensity
✦ Wide Viewing Angle
✦ High Power Efficiency

Bivar SMS1105 LED is offered in a side viewing PLCC2 package exhibiting high luminous intensity and wide viewing angles. The miniature package is ideal for small scale applications such as displays, general indication, and backlighting. Low power consumption and excellent long life reliability are suitable for battery powered equipment where minimal maintenance is required. Wide variety of color and intensity combinations are available to meet any illumination needs. Bivar SMS1105 LED is packaged in standard tape and reels for pick and place assemblies.

<table>
<thead>
<tr>
<th>Part Number</th>
<th>Material</th>
<th>Emitted Color</th>
<th>Lumen Typ. mcd</th>
<th>Lens Color</th>
<th>Viewing Angle</th>
</tr>
</thead>
<tbody>
<tr>
<td>SMS1105RC</td>
<td>InGaN</td>
<td>Red</td>
<td>250</td>
<td>Water Clear</td>
<td>120°</td>
</tr>
</tbody>
</table>

Outline Dimensions

Outline Drawings Notes:
1. All dimensions are in inches [millimeters].
2. Standard tolerance: ±0.010" unless otherwise noted.

Bivar reserves the right to make changes at any time without notice.
Absolute Maximum Ratings
T<sub>A</sub> = 25°C unless otherwise noted

<table>
<thead>
<tr>
<th>Parameter</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Power Dissipation</td>
<td>100 mW</td>
</tr>
<tr>
<td>Continuous Forward Current</td>
<td>30 mA</td>
</tr>
<tr>
<td>Peak Forward Current&lt;sup&gt;1&lt;/sup&gt;</td>
<td>100 mA</td>
</tr>
<tr>
<td>Electrostatic Discharge Classification (HBM)</td>
<td>2000 V</td>
</tr>
<tr>
<td>Reverse Voltage</td>
<td>5 V</td>
</tr>
<tr>
<td>Derating Linear From 25°C</td>
<td>0.4 mA/°C</td>
</tr>
<tr>
<td>Operating Temperature Range</td>
<td>-30 ~ +85°C</td>
</tr>
<tr>
<td>Storage Temperature Range</td>
<td>-40 ~ +100°C</td>
</tr>
<tr>
<td>Soldering Temperature</td>
<td>260°C</td>
</tr>
</tbody>
</table>

Notes:
1. 10% Duty Cycle, Pulse Width ≤ 0.1 msec.
2. Solder time less than 5 seconds at temperature extreme.

Electrical Characteristics
T<sub>A</sub> = 25°C & I<sub>F</sub> = 20 mA unless otherwise noted

<table>
<thead>
<tr>
<th>Emitting Color</th>
<th>Forward Voltage (V)&lt;sup&gt;1&lt;/sup&gt;</th>
<th>Recommend Forward Current (mA)</th>
<th>Reverse Current (µA) V&lt;sub&gt;R&lt;/sub&gt;=5V</th>
<th>Dominant Wavelength (nm)&lt;sup&gt;2&lt;/sup&gt;</th>
<th>Luminous Intensity (mcd)&lt;sup&gt;3&lt;/sup&gt;</th>
<th>Viewing Angle 2 θ ½ (deg)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Red</td>
<td>MIN 1.8</td>
<td>TYP 2.2</td>
<td>MAX 2.6</td>
<td>MIN 10</td>
<td>MAX 620</td>
<td>MIN 100</td>
</tr>
<tr>
<td></td>
<td></td>
<td>TYP 20</td>
<td>MAX</td>
<td>MAX 632</td>
<td>MAX 400</td>
<td>TYP 120</td>
</tr>
</tbody>
</table>

Notes:
1. Tolerance of Forward Voltage : ±0.05V.
2. Tolerance of Dominant Wavelength : ±0.1nm.
3. Tolerance of Luminous Intensity : ±15%.

Directivity Radiation
T<sub>A</sub> = 25°C unless otherwise noted

[ Radiation Diagram ]
Typical Electrical / Optical Characteristics Curves

\[ T_A = 25^\circ C \] unless otherwise noted

Relative Spectrum Emission \( I_{rel} = f(I), T_A = 25^\circ C \), \( I_f = 20 \text{ mA} \)
\[ V(I) = \text{Standard eye response curve} \]

![Graph of Relative Luminous Intensity vs. Wavelength](image1)

Forward Current \( I_f = f(V_f) \)
\[ T_A = 25^\circ C \]

![Graph of Forward Current vs. Forward Voltage](image2)

Relative Luminous Intensity \( I_V/I_f \) (20mA) = \( f(I_f) \)
\[ T_A = 25^\circ C \]

![Graph of Relative Luminous Intensity vs. Forward Current](image3)

Ambient Temperature vs. Allowable Forward Current

![Graph of Ambient Temperature vs. Allowable Forward Current](image4)
Recommended Soldering Conditions

![Graph showing recommended soldering conditions with labels for preheat, preflow, preflow, cooldown, and time (t) axis.](image)

**MAX LEAD FREE SOLDERING TEMP, 255°C - 5 SEC**

**MAX LEADED SOLDERING TEMP, 220°C - 5 SEC**

**CONVECTIVE REFLOW SOLDERING PROFILE**

140°C to 170°C

20 - 70 SECONDS ABOVE LIQUIDOUS

**Tape and Reel Dimensions**

*Note: 3000 pcs/Reel*

![Diagram showing tape and reel dimensions with measurements labeled.](image)
Packaging and Labeling Plan

Note: 1 Reel / Bag

Vacuum and Heat Sealed
Clear AntiStatic Poly Bag

Humidity Indicator Card
Desiccant

Internal Quality Control Label

Outline Drawings Notes:
1. All dimensions are in inches [millimeters].
2. Standard tolerance unless otherwise noted: X.XXX ± 0.010
   X.X ± 0.1

Part No.  XXXX-XXX-XXX
Prod. No.  XXXX-XXX-XXX
PO No.  XXXX
Lot No.  XXXXXXXXXX
Q'ty:  X.XXX PCS
Q.C.  XXXX BIN
Date:  2008.XX.XX

Bivar Standard Packaging Label