Bivar SMP6 LED is offered in an industry standard PLCC6 package with high luminous intensity and wide viewing angles. The miniature package is ideal for small scale applications such as illumination, general indication, and backlighting. Low power consumption and excellent long life reliability are suitable for battery powered equipment. The flexible three chip design allows for a wide variety of lighting options where the chips can be individually driven or in combinations. Bivar SMP6 LED is packaged in standard tape and reels for pick and place assemblies.

### SMP6-UWDW
- Industry Standard PLCC6 Footprint
- Low Profile Package
- High Luminous Intensity
- Wide Viewing Angle
- High Power Efficiency
- Equipped with Protective Zener Diode

<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>SMP6-UWDW</td>
<td>InGaN</td>
<td>Warm White</td>
<td>4000</td>
<td>Diffused</td>
<td>140°</td>
</tr>
</tbody>
</table>

### Outline Dimensions

Outline Drawings Notes:
1. All dimensions are in inches [millimeters].
2. Standard tolerance: ±0.010" unless otherwise noted.
PLCC6 SMD Top View Package LED
SMP6-UWDW, WARM WHITE

Absolute Maximum Ratings
$T_A = 25^\circ\text{C}$ unless otherwise noted

<table>
<thead>
<tr>
<th>Parameter</th>
<th>Specification</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 $^1$</td>
<td>75 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
$T_A = 25^\circ\text{C}$ & $I_F = 60$ mA unless otherwise noted

<table>
<thead>
<tr>
<th>Emitting Color</th>
<th>Forward Voltage (V)$^1$</th>
<th>Recommend Forward Current (mA)</th>
<th>Reverse Current (µA) $V_R=5$V</th>
<th>Chromaticity Coordinates (XY)$^2$ / CCT (Kelvin)</th>
<th>Luminous Intensity (mcd)$^3$</th>
<th>Viewing Angle 2 $\Theta$ ½ (deg)</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>MIN</td>
<td>TYP</td>
<td>MAX</td>
<td>TYP</td>
<td>MAX</td>
<td>TYP</td>
</tr>
<tr>
<td>Warm White</td>
<td>3.0</td>
<td>3.3</td>
<td>3.6</td>
<td>60</td>
<td>10</td>
<td>X=0.34 , Y=0.34 4500K</td>
</tr>
</tbody>
</table>

Notes: 1. Tolerance of Forward Voltage : ±0.05V.
2. Tolerance of Chromaticity Coordinates : ±0.02.
3. Tolerance of Luminous Intensity : ±15%.

Directivity Radiation
$T_A = 25^\circ\text{C}$ unless otherwise noted

![Radiation Diagram](image)
Typical Electrical / Optical Characteristics Curves

\( T_A = 25^\circ C \) unless otherwise noted

\[ \text{Relative Spectrum Emission } I_{rel} = f(I), \quad T_A = 25^\circ C, \quad I_F = 60 \text{ mA} \]

\[ V(I) = \text{Standard eye response curve} \]

**Fig. 1 Relative Luminous Intensity vs. Wavelength**

**Fig. 2 Forward Current vs. Forward Voltage**

\[ \text{Relative Luminous Intensity } I_R/I_R ( \leq 60 \text{ mA}) = f(I_F) \]

\( T_A = 25^\circ C \)

**Fig. 3 Relative Luminous Intensity vs. Forward Current**

**Fig. 4 Forward Current vs. Ambient Temperature**

\( T_A = 25^\circ C \)
Recommended Soldering Conditions

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: 1000 pcs/Reel

Outline Drawing Notes:
1. All dimensions are in inches [millimeters].
2. Standard tolerance: ±0.010” unless otherwise noted.
PLCC6 SMD Top View Package LED
SMP6-UWDW, WARM WHITE

Packaging and Labeling Plan

Note: 1 Reel / Bag

- Vacuum and Heat Sealed
- Clear AntiStatic Poly Bag

Humidity Indicator Card
Desiccant

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

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

Internal Quality Control Label

Bivar Standard Packaging Label