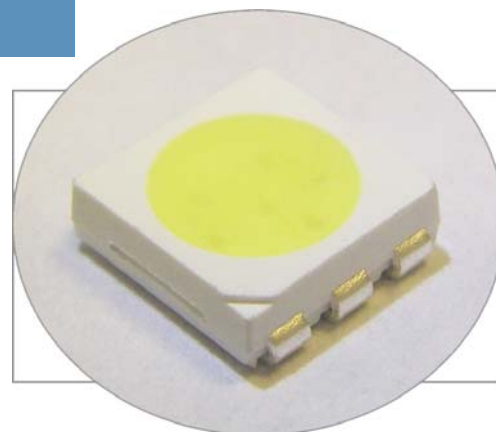


# PLCC6 SMD Top View Package LED SMP6-UWDN, NEUTRAL WHITE

# BIVAR

## SMP6-UWDN

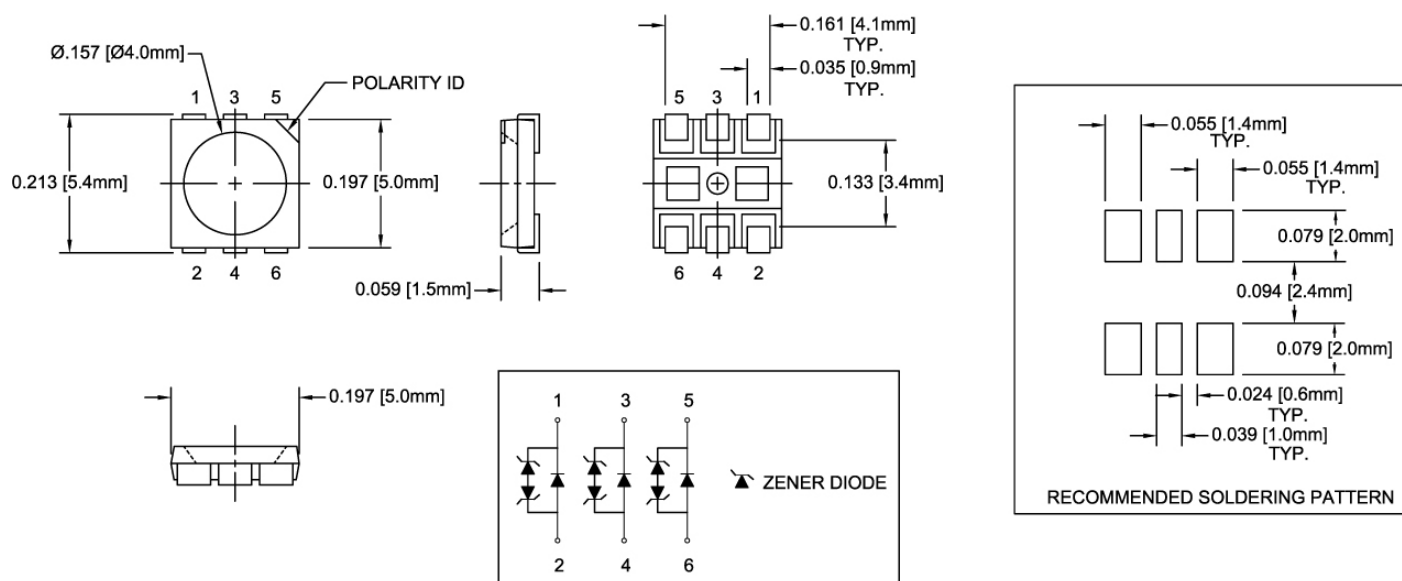
- ◆ Industry Standard PLCC6 Footprint
- ◆ Low Profile Package
- ◆ High Luminous Intensity
- ◆ Wide Viewing Angle
- ◆ High Power Efficiency
- ◆ Equipped with Protective Zener Diode



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.

| Part Number | Material | Emitted Color | Lumen Typ. mcd | Lens Color | Viewing Angle |
|-------------|----------|---------------|----------------|------------|---------------|
| SMP6-UWDN   | InGaN    | Neutral White | 4000           | Diffused   | 140°          |

## Outline Dimensions



Outline Drawings Notes:  
 1. All dimensions are in inches [millimeters].  
 2. Standard tolerance:  $\pm 0.010''$  unless otherwise noted.



Bivar reserves the right to make changes at any time without notice.

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## Absolute Maximum Ratings

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

|                                              |                               |
|----------------------------------------------|-------------------------------|
| Power Dissipation                            | 100 mW                        |
| Continuous Forward Current                   | 30 mA                         |
| Peak Forward Current <sup>1</sup>            | 75 mA                         |
| Electrostatic Discharge Classification (HBM) | 2000 V                        |
| Reverse Voltage                              | 5 V                           |
| Derating Linear From $25^\circ\text{C}$      | 0.4 mA/ $^\circ\text{C}$      |
| Operating Temperature Range                  | $-30 \sim +85^\circ\text{C}$  |
| Storage Temperature Range                    | $-40 \sim +100^\circ\text{C}$ |
| Soldering Temperature                        | 260 $^\circ\text{C}$          |

Notes: 1. 10% Duty Cycle, Pulse Width  $\leq 0.1$  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

| Emitting Color | Forward Voltage (V) <sup>1</sup> |     |     | Recommend Forward Current (mA) | Reverse Current ( $\mu\text{A}$ )<br>$V_R=5\text{V}$ | Chromaticity Coordinates (XY) <sup>2</sup> /<br>CCT (Kelvin) | Luminous Intensity (mcd) <sup>3</sup> |      | Viewing Angle<br>$2\theta_{1/2}$ (deg) |
|----------------|----------------------------------|-----|-----|--------------------------------|------------------------------------------------------|--------------------------------------------------------------|---------------------------------------|------|----------------------------------------|
|                | MIN                              | TYP | MAX | TYP                            | MAX                                                  | TYP                                                          | MIN                                   | MAX  | TYP                                    |
| Neutral White  | 3.0                              | 3.3 | 3.6 | 60                             | 10                                                   | X=0.30, Y=0.30<br>5500K                                      | 3000                                  | 5000 | 140                                    |

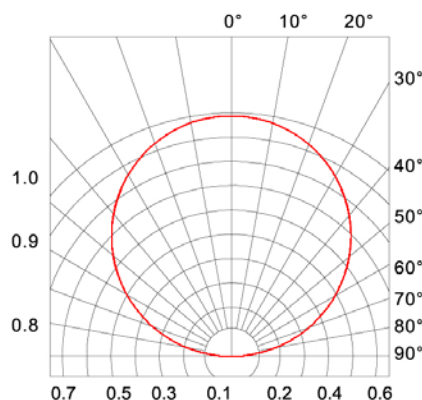
Notes: 1. Tolerance of Forward Voltage :  $\pm 0.05\text{V}$ .

2. Tolerance of Chromaticity Coordinates :  $\pm 0.02$ .

3. Tolerance of Luminous Intensity :  $\pm 15\%$ .

## Directivity Radiation

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



Radiation Diagram

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## Typical Electrical / Optical Characteristics Curves

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

Relative Spectrum Emission  $I_{rel} = f(\lambda)$ ,  $T_A = 25^\circ\text{C}$ ,  $I_F = 60\text{ mA}$

$V(\lambda)$  = Standard eye response curve

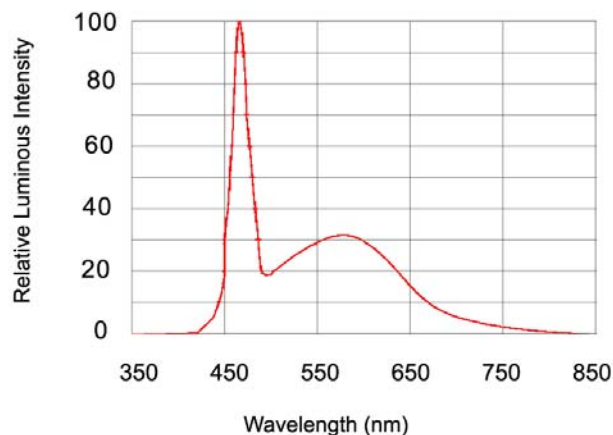


Fig.1 Relative Luminous Intensity vs. Wavelength

Forward Current  $I_F = f(V_F)$

$T_A = 25^\circ\text{C}$

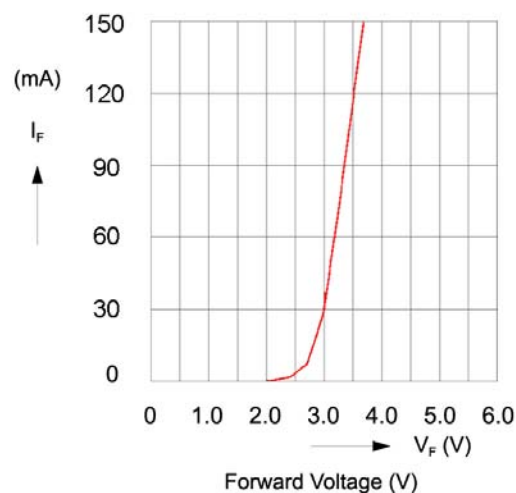


Fig.2 Forward Current vs. Forward Voltage

Relative Luminous Intensity  $I_V/I_V(60\text{ mA}) = f(I_F)$

$T_A = 25^\circ\text{C}$

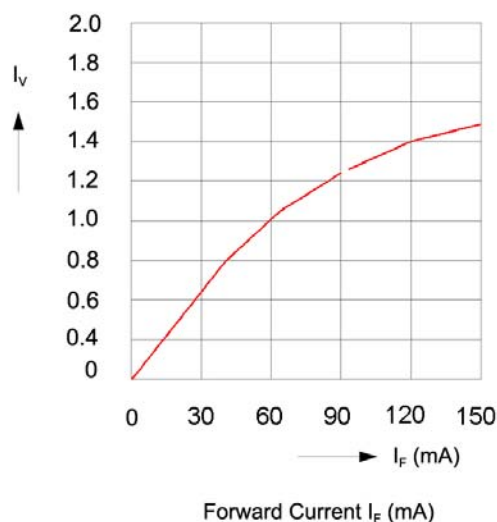


Fig.3 Relative Luminous Intensity vs. Forward Current

Ambient Temperature vs. Allowable Forward Current

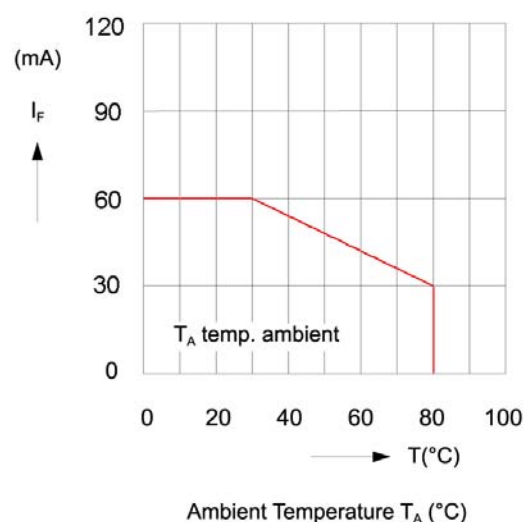


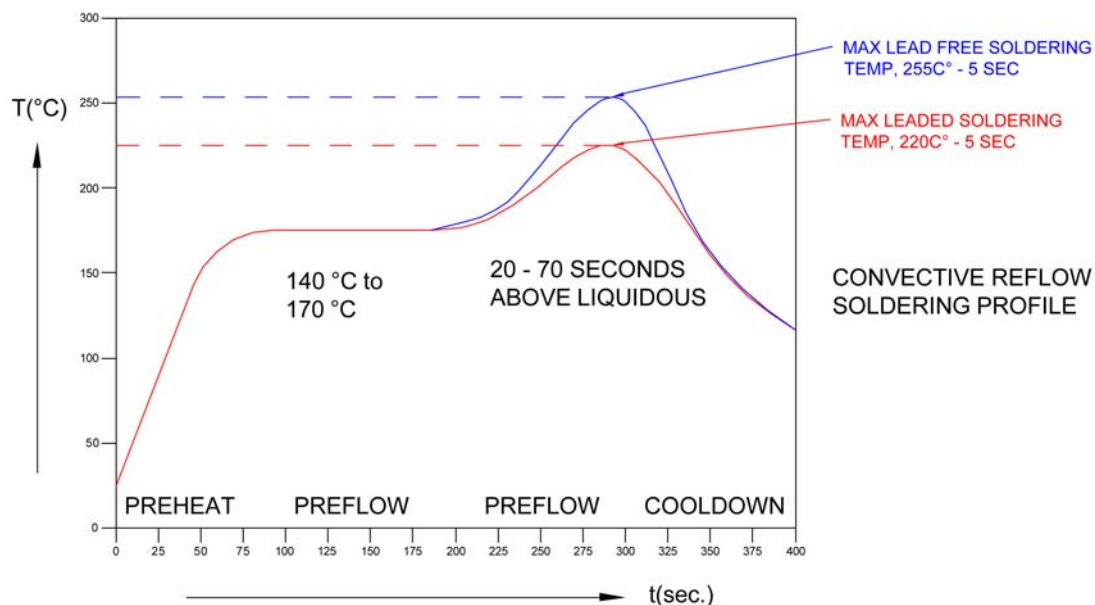
Fig.4 Forward Current vs. Ambient Temperature

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# PLCC6 SMD Top View Package LED SMP6-UWDN, NEUTRAL WHITE

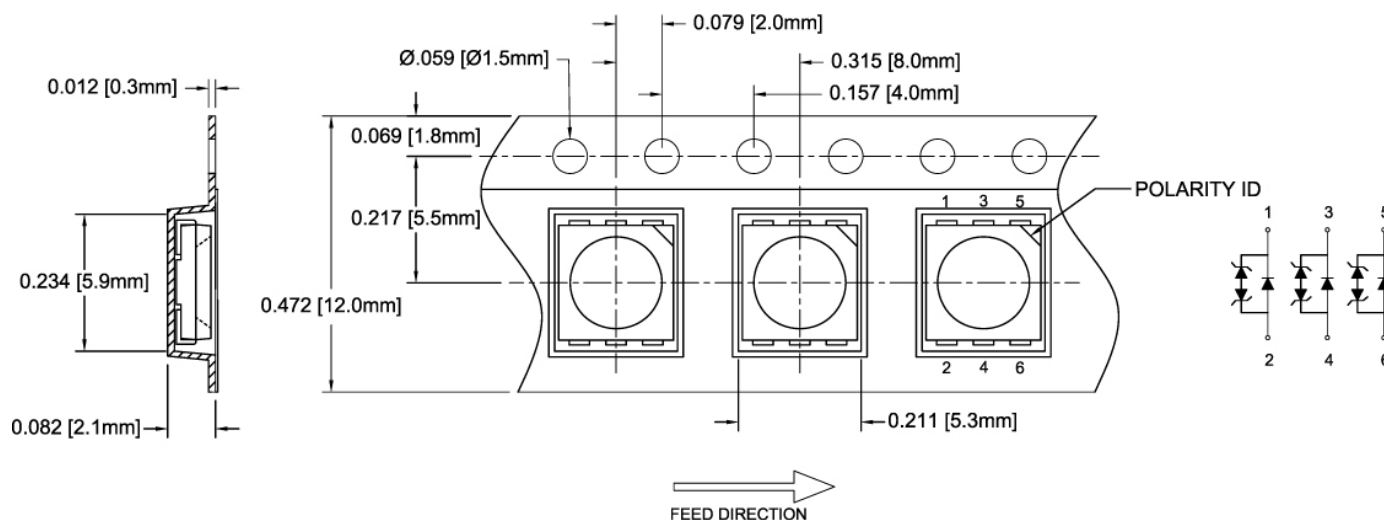


## Recommended Soldering Conditions



## Tape and Reel Dimensions

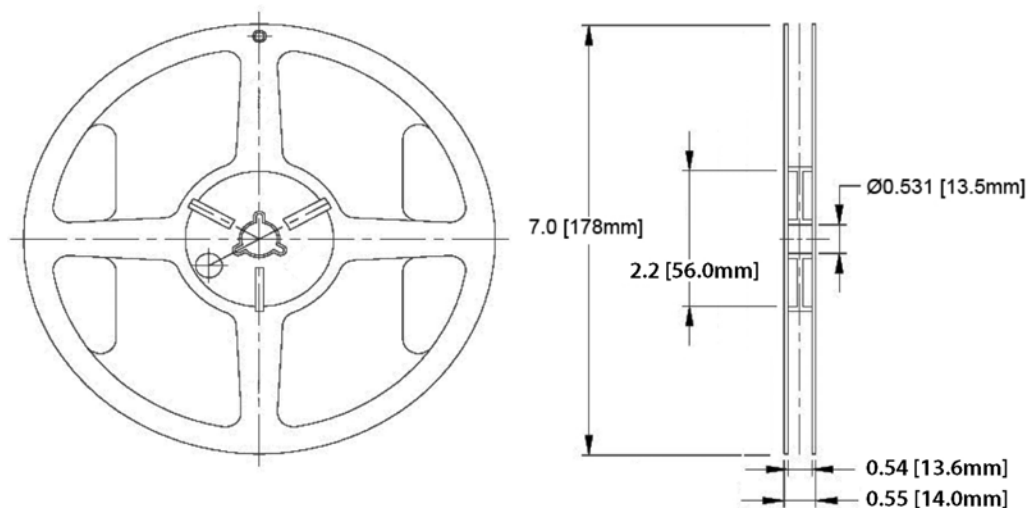
Note: 1000 pcs/Reel



Outline Drawings Notes:  
1. All dimensions are in inches [millimeters].  
2. Standard tolerance:  $\pm 0.010^{\circ}$  unless otherwise noted.

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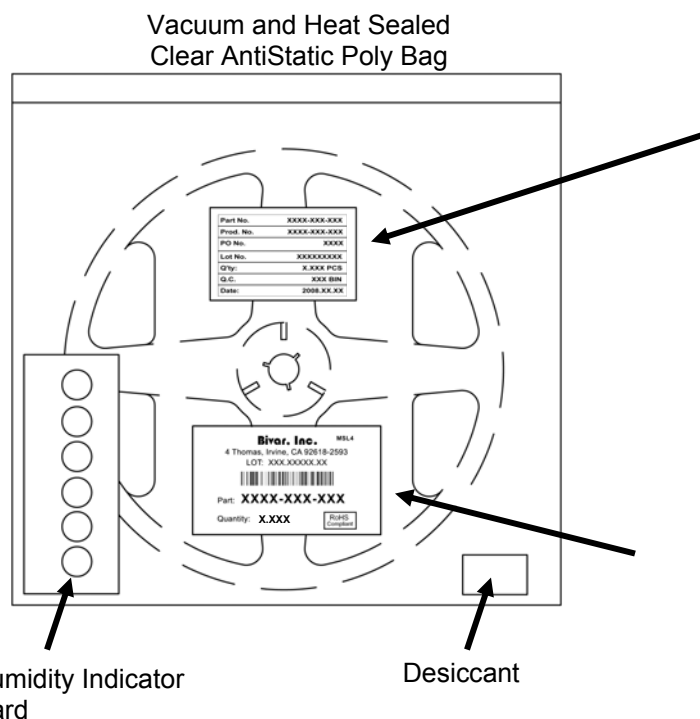


## Outline Drawings Notes:

1. All dimensions are in inches [millimeters].
2. Standard tolerance unless otherwise noted: X.XXX  $\pm$  0.010"  
X.X  $\pm$  0.1"

## Packaging and Labeling Plan

Note: 1 Reel / Bag



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

Internal Quality Control Label



Bivar Standard Packaging Label

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