

PLCC2 SMD Top View Package LED SMP2-UWD, WHITE

BIVAR

SMP2-UWD

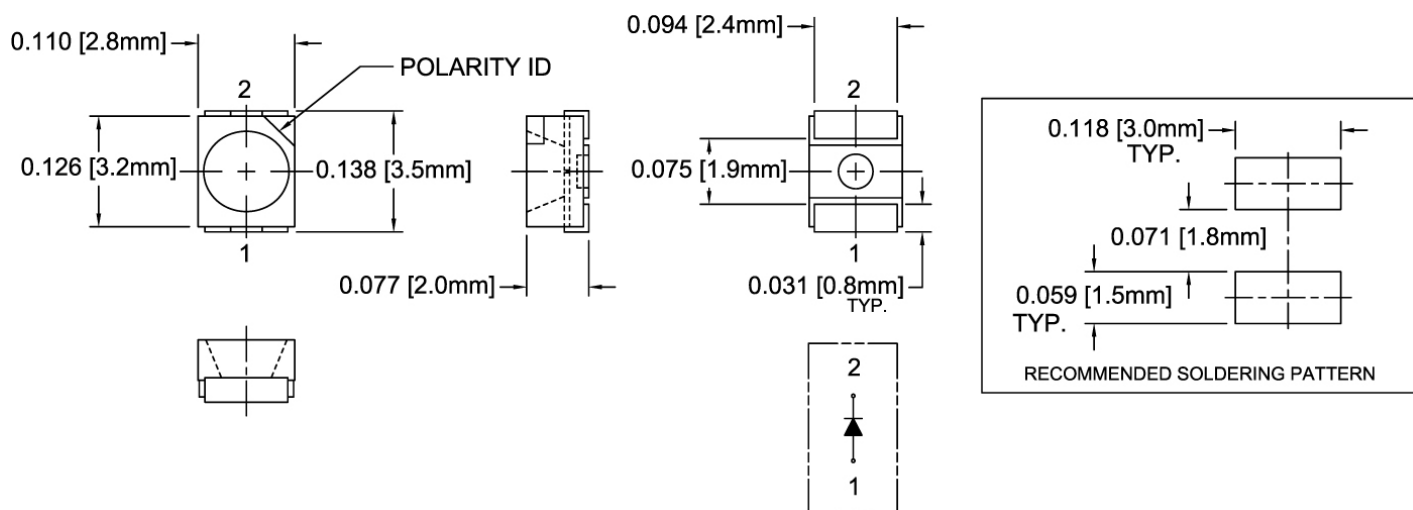
- ◆ Industry Standard PLCC2 Footprint
- ◆ Low Profile Package
- ◆ High Luminous Intensity
- ◆ Wide Viewing Angle
- ◆ High Power Efficiency



Bivar SMP2 LED is offered in an industry standard PLCC2 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 robust package is ideal for harsh working environments and can be used in clusters for high luminous applications. Wide variety of color and intensity combinations are available to meet any illumination needs. Bivar SMP2 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
SMP2-UWD	InGaN/GaN	White	1050	Diffused	120°

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.

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Absolute Maximum Ratings

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

Power Dissipation	80 mW
Continuous Forward Current	25 mA
Peak Forward Current ¹	100 mA
Reverse Voltage	5 V
Derating Linear From 25°C	0.4 mA/ $^\circ\text{C}$
Operating Temperature Range	$-40 \sim +85^\circ\text{C}$
Storage Temperature Range	$-40 \sim +100^\circ\text{C}$
Lead Soldering Temperature (1.6 mm from body) ²	260°C
Electrostatic Discharge (HBM)	2000 V

Notes: 1. 10% Duty Cycle, Pulse Width ≤ 0.1 msec.

2. Solder time less than 5 seconds at temperature extreme.

Electrical Characteristics

$T_A = 25^\circ\text{C}$ & $I_F = 20$ mA unless otherwise noted

Emitting Color	Forward Voltage (V) ¹		Recommend Forward Current (mA)	Reverse Current (μA) $V_R=5\text{V}$	Chromaticity Coordinates (XY) ²	Luminous Intensity (mcd) ³		Viewing Angle $2\theta_{1/2}$ (deg)
	TYP	MAX	TYP	MAX	TYP	MIN	TYP	TYP
White	3.2	3.6	20	10	X=0.30 , Y=0.30	900	1050	120

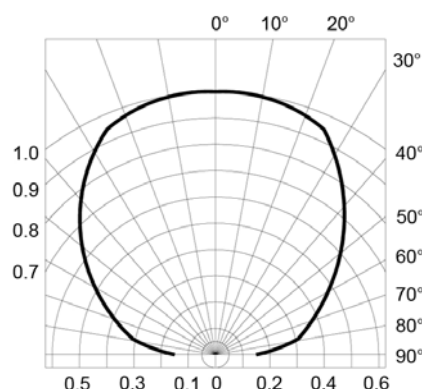
Notes: 1. Tolerance of Forward Voltage : $\pm 0.05\text{V}$.

2. Tolerance of Chromaticity Coordinates : ± 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 $I_{\text{rel}} = f(\lambda)$, $T_A = 25^\circ\text{C}$, $I_F = 20\text{ mA}$

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

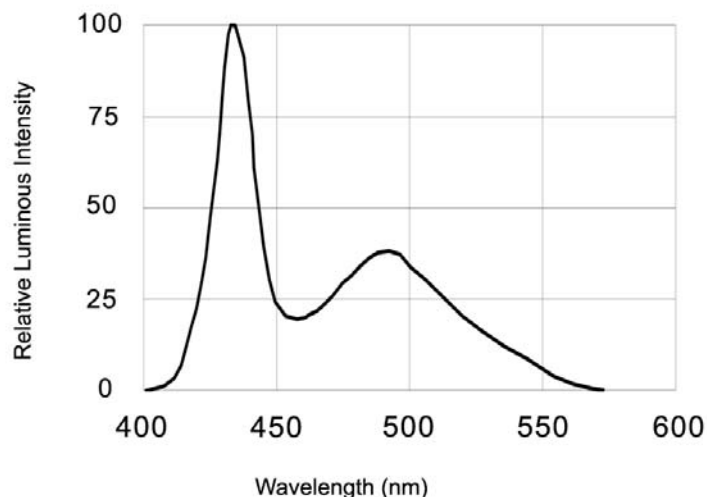


Fig.1 Relative Luminous Intensity vs. Wavelength

Forward Current $I_F = f(V_F)$

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

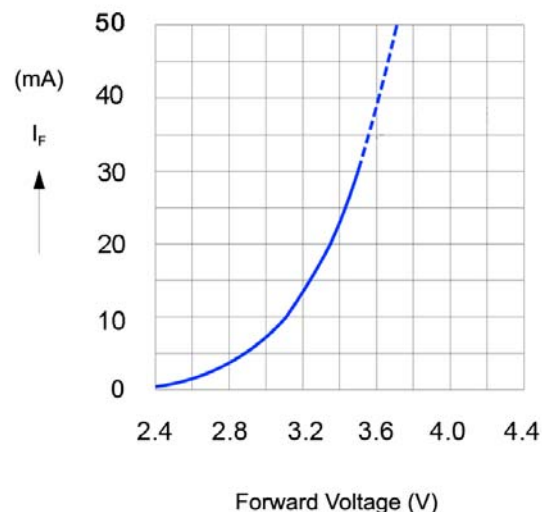


Fig.2 Forward Current vs. Forward Voltage

Relative Luminous Intensity $I_V/I_V(20\text{ mA}) = f(I_F)$

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

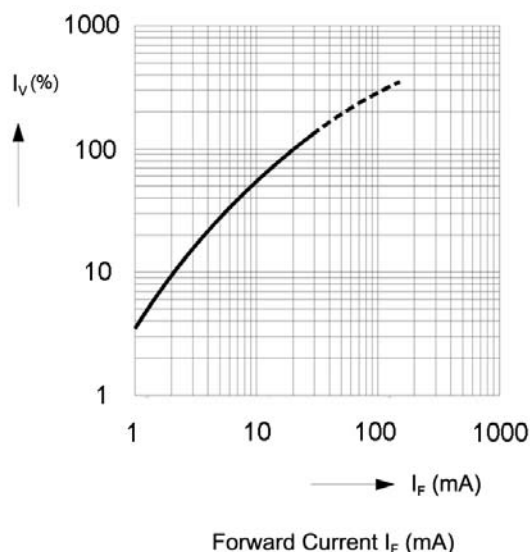


Fig.3 Relative Luminous Intensity vs. Forward Current

Ambient Temperature vs. Allowable Forward Current

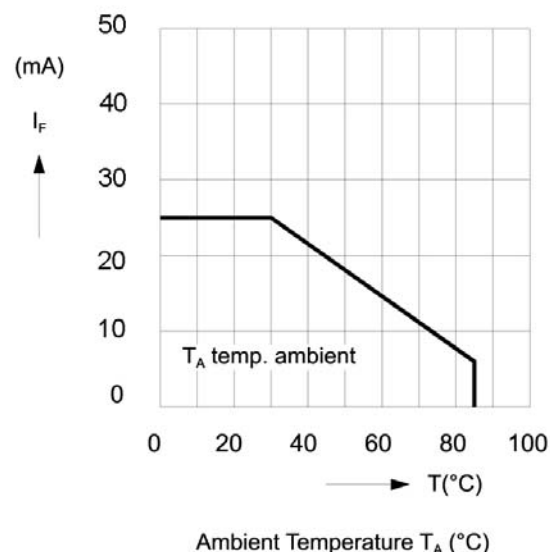


Fig.4 Forward Current vs. Ambient Temperature

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The graph illustrates the temperature profile for convective reflow soldering. The y-axis represents Temperature $T(^{\circ}\text{C})$ from 0 to 300, and the x-axis represents time $t(\text{sec.})$ from 0 to 400. The profile is divided into three main phases: PREHEAT (0 to 75 seconds), PREFLOW (75 to 175 seconds), and COOLDOWN (300 to 400 seconds). A red curve shows the profile for MAX LEADED SOLDERING (220°C peak), and a blue curve shows the profile for MAX LEAD FREE SOLDERING (255°C peak). Both curves show a preheat ramp, a preflow dwell at 175°C, and a reflow peak. The lead-free profile has a higher peak temperature and a longer dwell time above the liquidus temperature (20-70 seconds) compared to the leaded profile.

Phase	Time (sec.)	Temperature (°C) - Leaded	Temperature (°C) - Lead-Free
PREHEAT	0 - 75	0 - 175	0 - 175
PREFLOW	75 - 175	175 - 175	175 - 175
REFLOW	175 - 300	175 - 220	175 - 255
COOLDOWN	300 - 400	220 - 120	255 - 120

Technical drawing of a 4-pin connector showing side and top views with dimensions in inches and millimeters.

Side View Dimensions:

- Pin thickness: 0.009 [0.2mm]
- Pin height: 0.150 [3.8mm]
- Pin width: 0.086 [2.2mm]

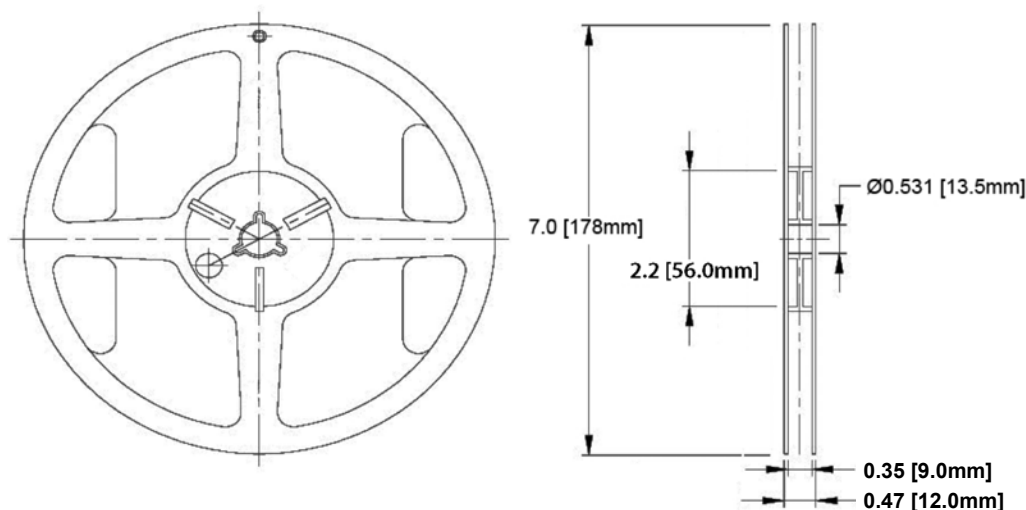
Top View Dimensions:

- Pin diameter: $\varnothing 0.079$ [$\varnothing 2.0\text{mm}$]
- Pin pitch: 0.157 [4.0mm]
- Pin height: 0.069 [1.8mm]
- Pin width: 0.138 [3.5mm]
- Pin depth: 0.315 [8.0mm]
- Feature: POLARITY ID

FEED DIRECTION is indicated by an arrow pointing right.

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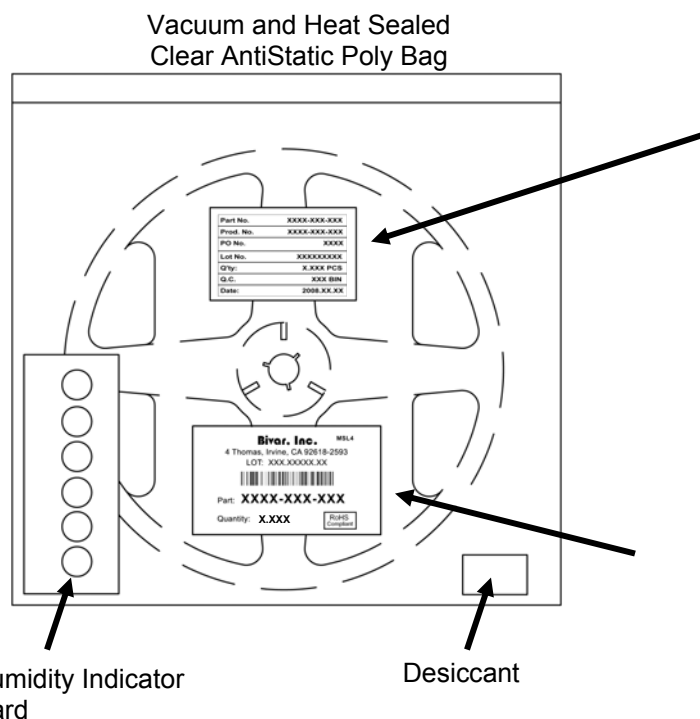


Outline Drawings Notes:

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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