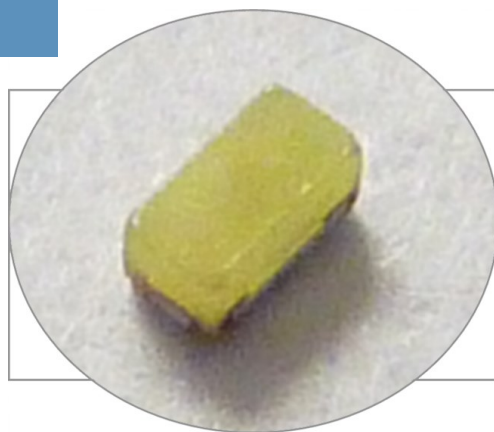


SURFACE MOUNT LED WHITE, 0402 PACKAGE

BIVAR

SM0402UWC

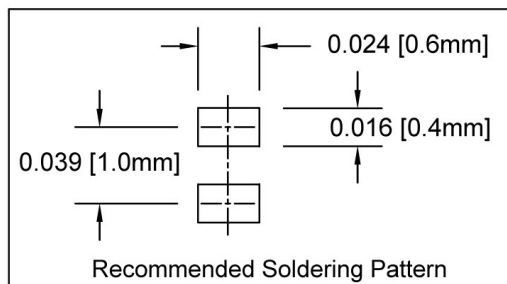
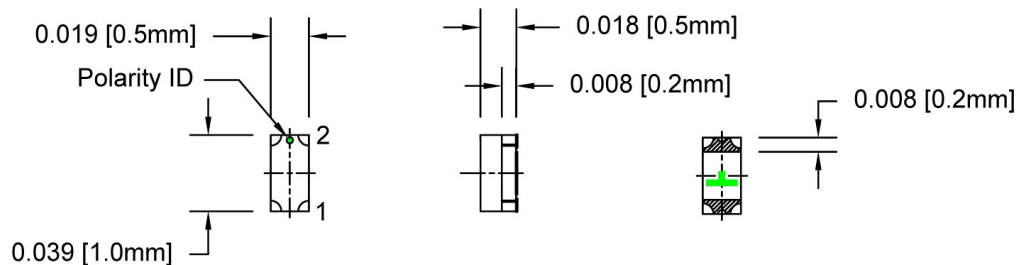
- ◆ Industry Standard 0402 Package
- ◆ RoHS Compliant
- ◆ Small Package and Footprint
- ◆ Diffused Lens
- ◆ Wide Viewing Angle
- ◆ Ideal for Status Indication, Display, and Backlighting



Bivar Surface Mount 0402 package LED can be used in nearly any indication application. It's ultra-miniature packaging makes it ideal for smaller handheld devices, small back panel displays, and any other size constraint applications. Low power consumption and excellent long life reliability makes it excellent for battery powered equipment and applications. The SM0402 LED is packaged in standard tape and reels for pick and place assemblers.

Part Number	Material	Emitted Color	Chromaticity Coordinates	Lens Appearance	Luminous Intensity (mcd) TYP.	Viewing Angle
SM0402UWC	InGaN	WHITE	X = .30, Y = .30	Diffused	600	130°

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.

SURFACE MOUNT LED WHITE, 0402 PACKAGE



Absolute Maximum Ratings

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

Power Dissipation	100 mW
Continuous Forward Current	25 mA
Peak Forward Current ¹	100 mA
Reverse Voltage	5 V
Derating Linear From 25°C	0.4 mA/°C
Electrostatic Discharge (HBM)	2000 V
Operating Temperature Range	-30 ~ +80°C
Storage Temperature Range	-40 ~ +85°C
Lead Soldering Temperature ²	260°C

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

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

Electrical / Optical Characteristics

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

Part Number	Forward Voltage (V)			Recommend Forward Current (mA)			Reverse Current (μA)	Dominant Wavelength (nm)			Luminous Intensity I_v (mcd)			Viewing Angle $2\theta_{1/2}$ (deg)
	MIN	TYP	MAX	MIN	TYP	MAX	MAX	MIN	TYP	MAX	MIN	TYP	MAX	TYP
SM0402UWC	/	3.1	4.0	/	20	/	10	n/a	n/a	n/a	450	600	/	130

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

SURFACE MOUNT LED WHITE, 0402 PACKAGE



Typical Electrical / Optical Characteristics

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

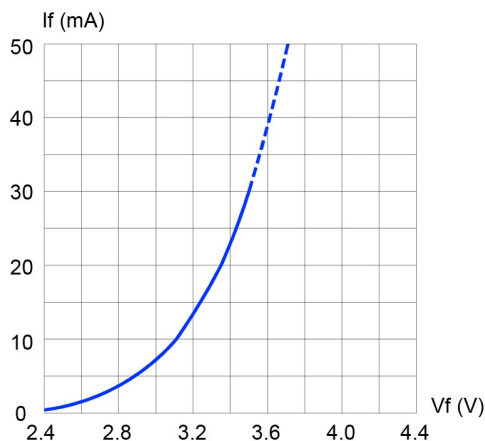


Fig. 1 Forward Current vs. Forward Voltage

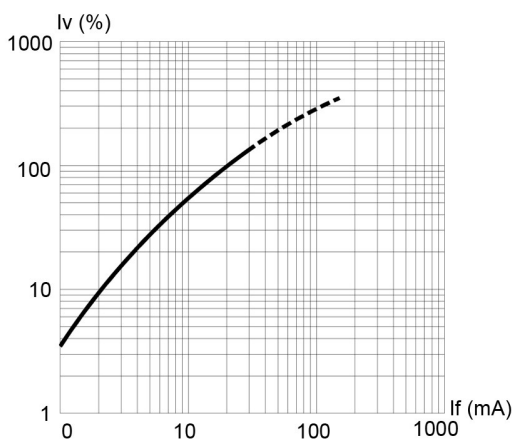


Fig. 2 Relative Luminous Intensity vs. Forward Current

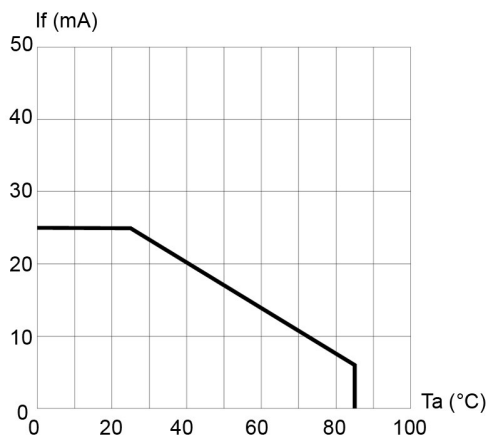


Fig. 3 Forward Current vs. Temperature

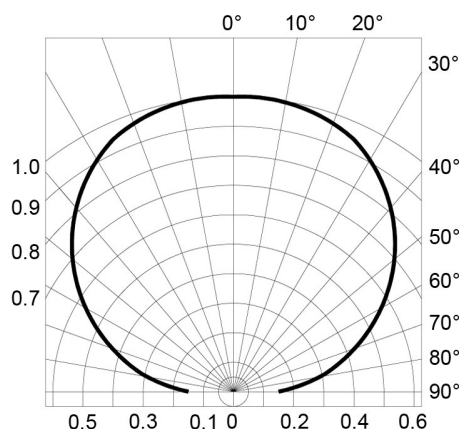


Fig. 4 Directivity Radiation Diagram

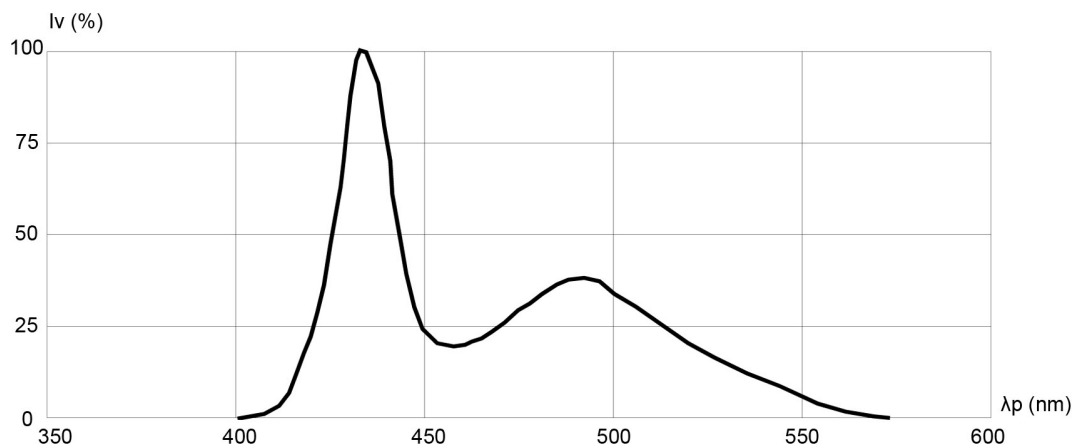


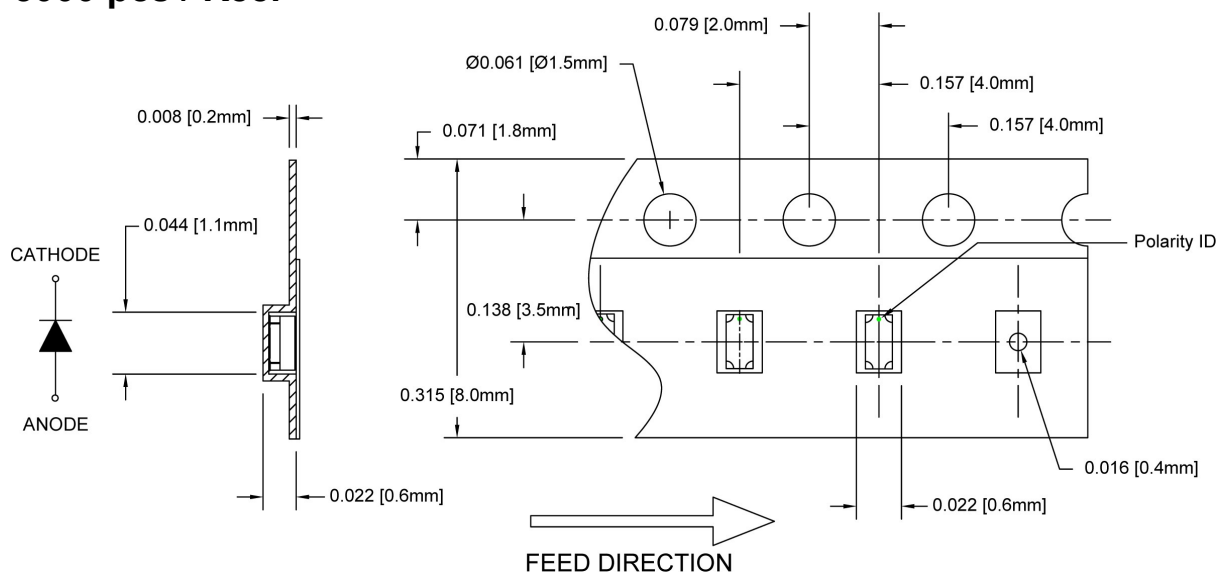
Fig. 5 Relative Luminous Intensity vs. Peak Wavelength

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

The graph illustrates the temperature profile for a convective reflow soldering process. 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 four stages: PREHEAT, PREFLOW, PREFLOW, and COOLDOWN. Two curves are shown: a blue curve for lead-free soldering and a red curve for leaded soldering. The lead-free curve peaks at 255°C, while the leaded curve peaks at 220°C. Both curves show a plateau at 170°C for 20-70 seconds above the liquidous temperature.

Time (sec.)	Lead-free Temp (°C)	Leaded Temp (°C)
0	25	25
25	100	100
50	150	150
75	170	170
100	170	170
125	170	170
150	170	170
175	170	170
200	180	180
225	200	200
250	230	210
275	250	220
300	255	220
325	200	200
350	150	150
375	120	120
400	110	110

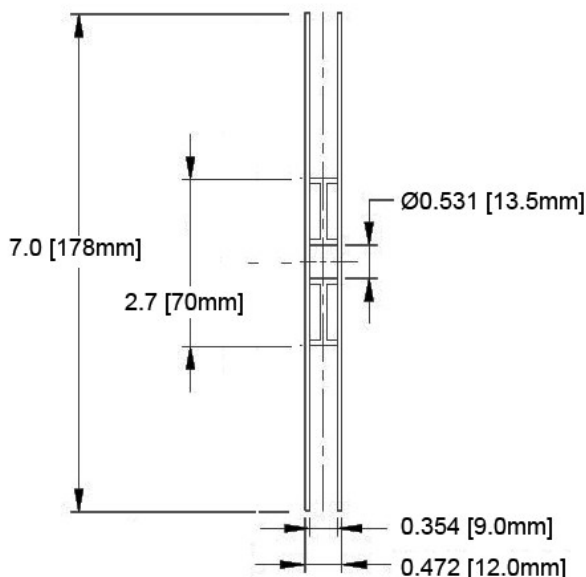
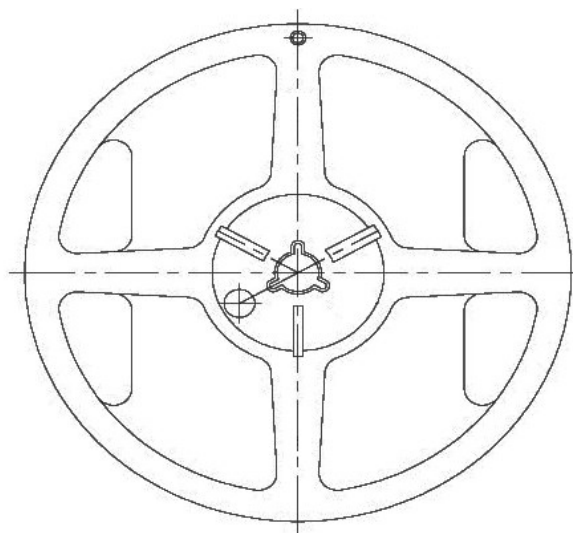
Note: 5000 pcs / Reel



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

SURFACE MOUNT LED WHITE, 0402 PACKAGE

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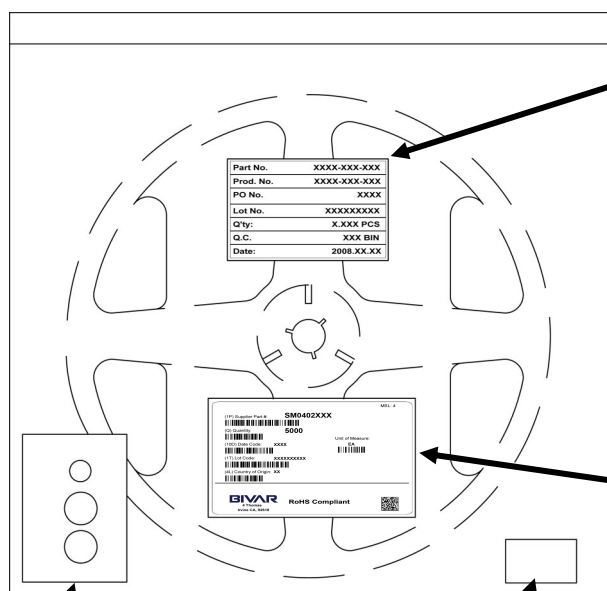
Outline Drawings Notes:

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

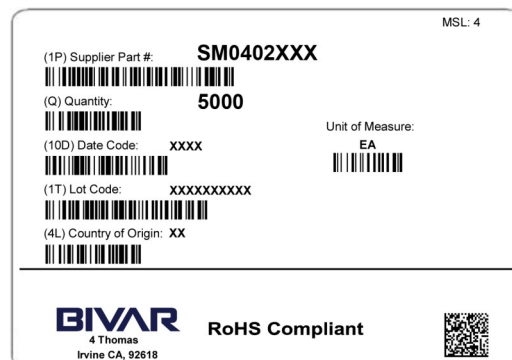
Note: 1 Reel / Bag

Vacuum and Heat Sealed
ESD/MBB 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

Humidity Indicator Card

Desiccant

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