

SURFACE MOUNT LED RED, 0402 PACKAGE

BIVAR

SM0402RC

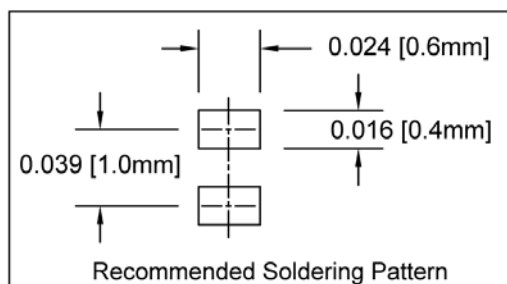
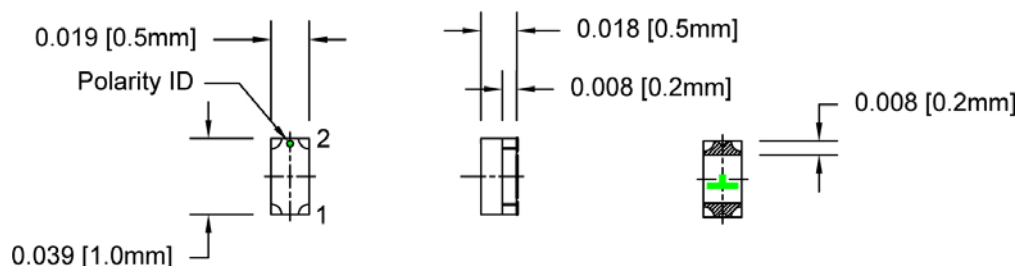
- ◆ Industry Standard 0402 Package
- ◆ RoHS Compliant
- ◆ Small Package and Footprint
- ◆ Water Clear Lens
- ◆ Wide Viewing Angle
- ◆ Ideal for Status Indication, Display, and Backlighting



Bivar Surface Mount 0402 package LED can be used in nearly any lighting or 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. Bivar offers water clear LED lens for maximum luminous intensity. The SM0402 LED is packaged in standard tape and reels for pick and place assemblers.

Part Number	Material	Emitted Color	Peak Wavelength λ_p (nm) TYP.	Lens Appearance	Luminous Intensity (mcd) TYP.	Viewing Angle
SM0402RC	AlGaInP	RED	645	Water Clear	90	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.

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Absolute Maximum Ratings

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

Power Dissipation	78 mW
Continuous Forward Current	30 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
SM0402RC	/	2.1	2.6	/	20	/	10	/	631	/	57	90	/	130

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Typical Electrical / Optical Characteristics

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

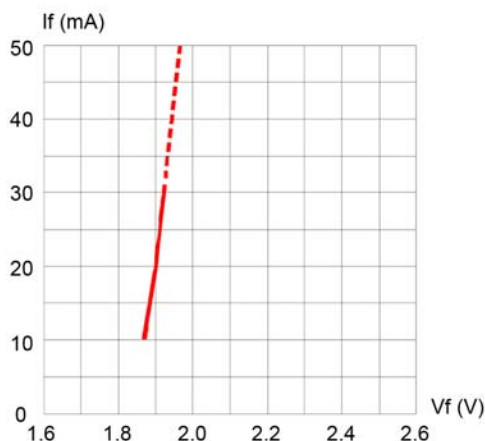


Fig. 1 Forward Current vs. Forward Voltage

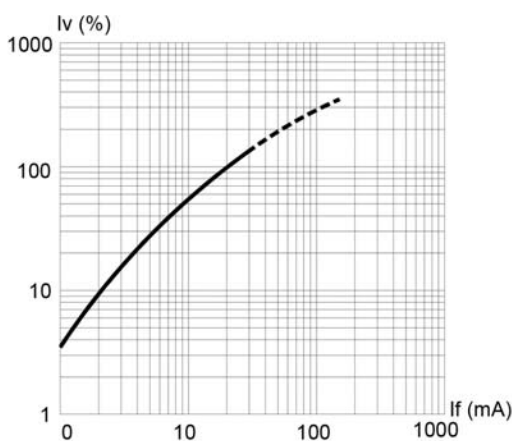


Fig. 2 Relative Luminous Intensity vs. Forward Current

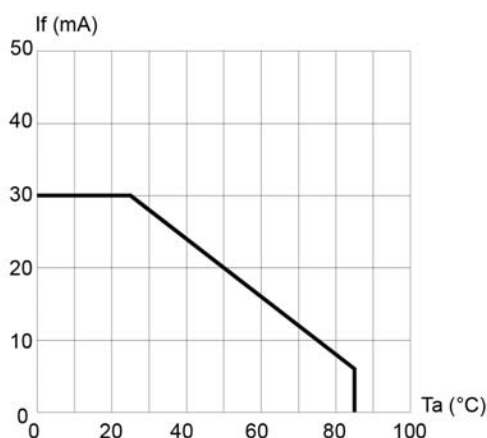


Fig. 3 Forward Current vs. Temperature

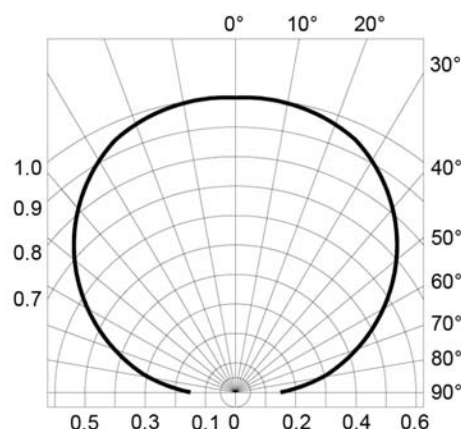


Fig. 4 Directivity Radiation Diagram

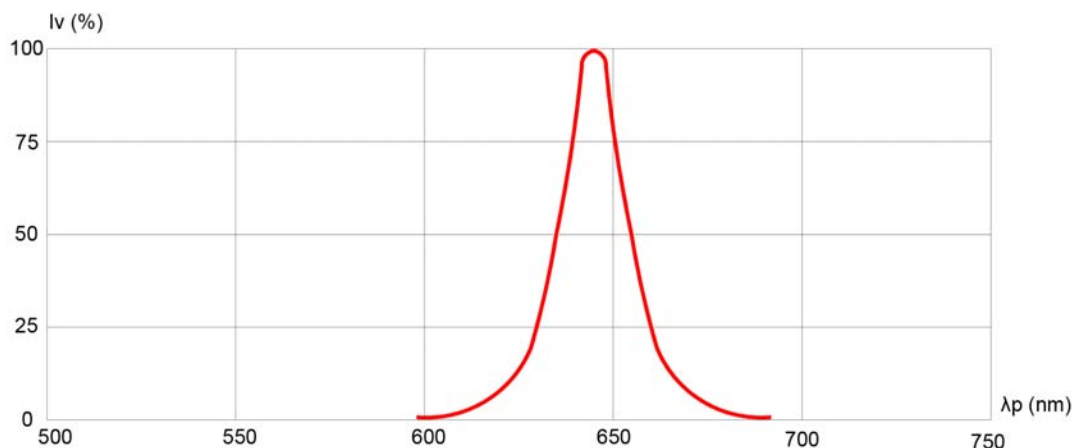


Fig. 5 Relative Luminous Intensity vs. Peak Wavelength

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CONVECTIVE REFLOW SOLDERING PROFILE

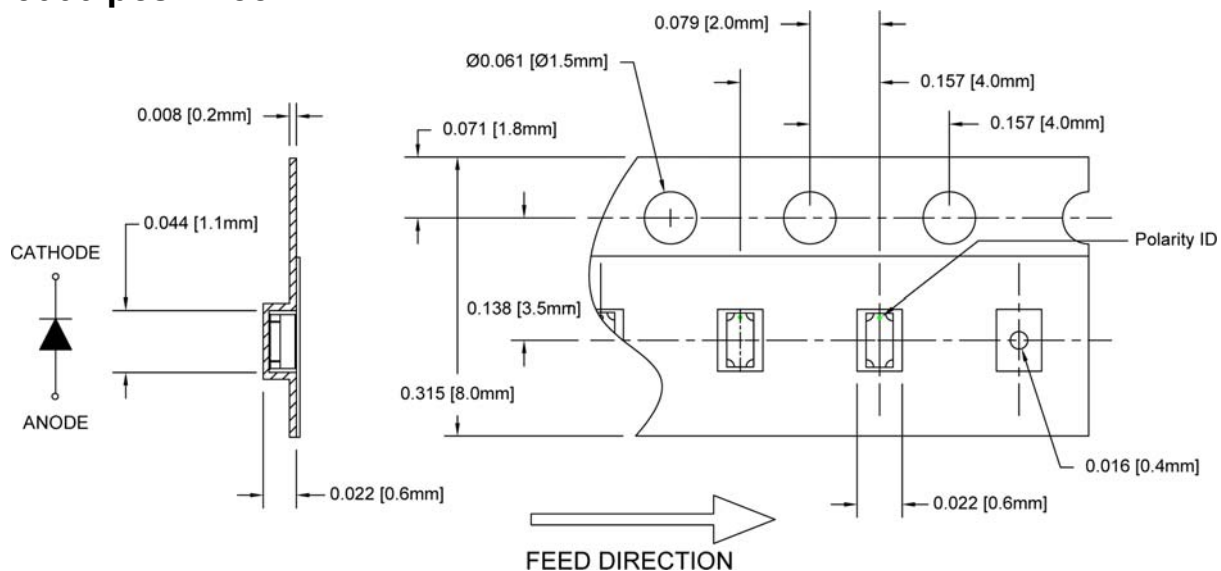
Y-axis: $T(^{\circ}\text{C})$ (0 to 300)
X-axis: $t(\text{sec.})$ (0 to 400)

Stages: PREHEAT, PREFLOW, PREFLOW, COOLDOWN

Annotations:

- 140 °C to 170 °C
- 20 - 70 SECONDS ABOVE LIQUIDOUS
- MAX LEAD FREE SOLDERING TEMP, 255°C - 5 SEC
- MAX LEADED SOLDERING TEMP, 220°C - 5 SEC

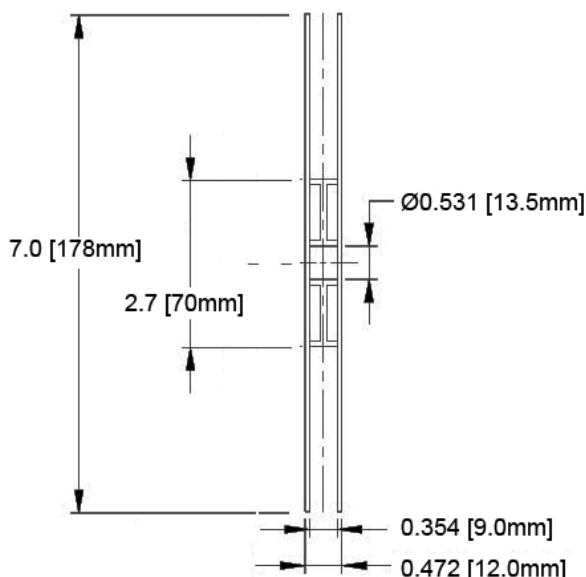
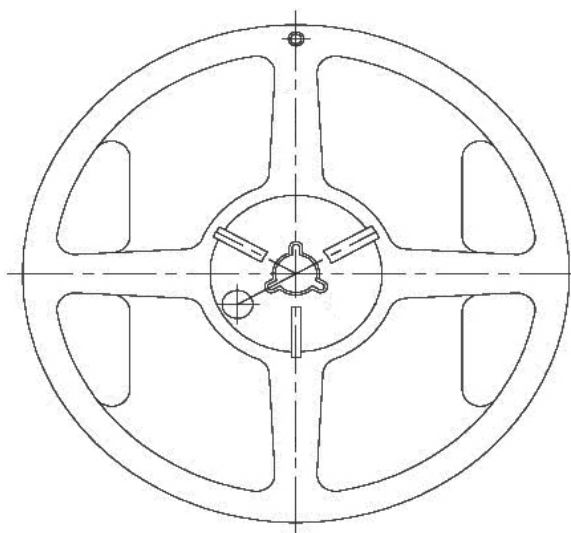
Note: 5000 pcs / Reel



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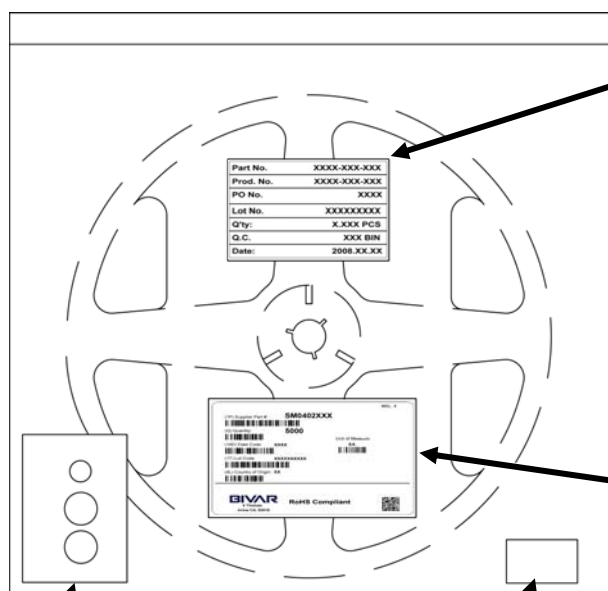
Outline Drawings Notes:

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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