

# PLCC2 SMD Side View Package LED SMS1105RC, RED



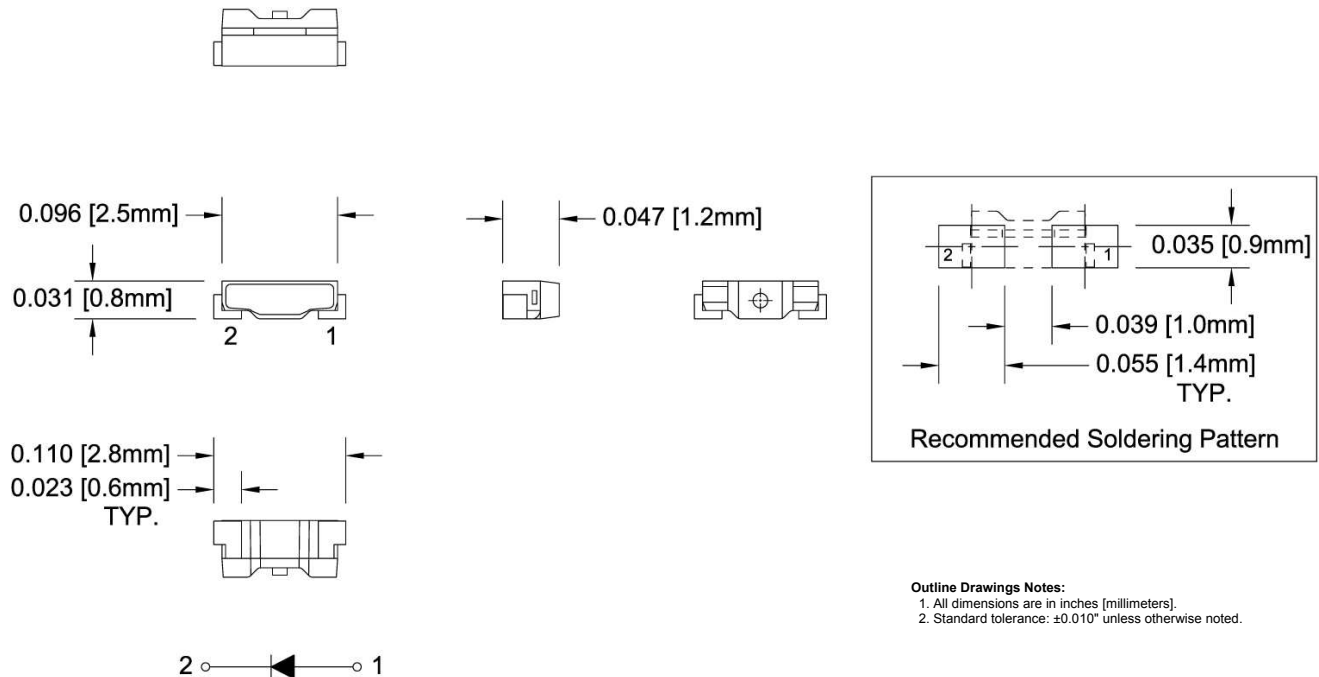
## SMS1105RC

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

Bivar SMS1105 LED is offered in a side viewing PLCC2 package exhibiting high luminous intensity and wide viewing angles. The miniature package is ideal for small scale applications such as displays, general indication, and backlighting. Low power consumption and excellent long life reliability are suitable for battery powered equipment where minimal maintenance is required. Wide variety of color and intensity combinations are available to meet any illumination needs. Bivar SMS1105 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 |
|-------------|----------|---------------|----------------|-------------|---------------|
| SMS1105RC   | InGaN    | Red           | 250            | Water Clear | 120°          |

## Outline Dimensions



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>            | 100 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

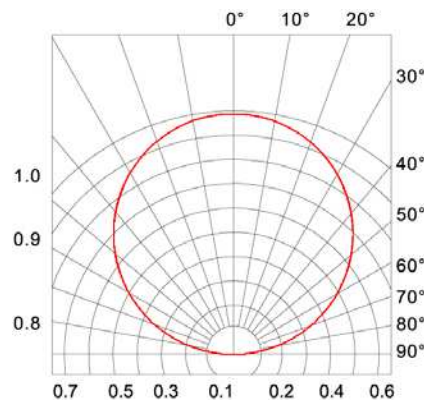
$T_A = 25^\circ\text{C}$  &  $I_F = 20$  mA unless otherwise noted

| Emitting Color | Forward Voltage (V) <sup>1</sup> |     |     | Recommend Forward Current (mA) | Reverse Current ( $\mu\text{A}$ )<br>$V_R=5\text{V}$ | Dominant Wavelength (nm) <sup>2</sup> |     | Luminous Intensity (mcd) <sup>3</sup> |     | Viewing Angle<br>$2\theta_{1/2}$ (deg) |
|----------------|----------------------------------|-----|-----|--------------------------------|--|---------------------------------------|-----|---------------------------------------|-----|--|
|                | MIN                              | TYP | MAX | TYP                            | MAX  | MIN                                   | MAX | MIN                                   | MAX | TYP                                    |
| Red            | 1.8                              | 2.2 | 2.6 | 20                             | 10   | 620                                   | 632 | 100                                   | 400 | 120                                    |

- Notes: 1. Tolerance of Forward Voltage :  $\pm 0.05\text{V}$ .  
2. Tolerance of Dominant Wavelength :  $\pm 0.1\text{nm}$ .  
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  $I_{rel} = f(\lambda)$ ,  $T_A = 25^\circ\text{C}$ ,  $I_F = 20\text{ mA}$   
 $V(\lambda) =$  Standard eye response curve

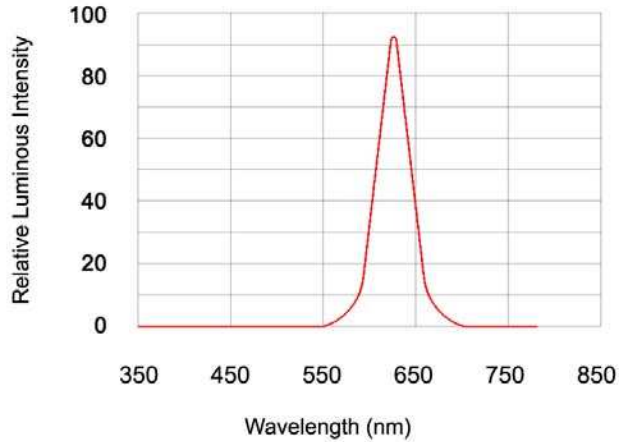


Fig.1 Relative Luminous Intensity vs. Wavelength

Forward Current  $I_F = f(V_F)$   
 $T_A = 25^\circ\text{C}$

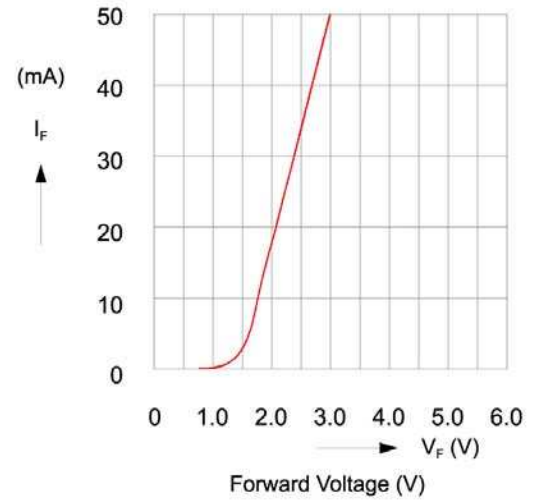


Fig.2 Forward Current vs. Forward Voltage

Relative Luminous Intensity  $I_v/I_v(20\text{mA}) = f(I_F)$   
 $T_A = 25^\circ\text{C}$

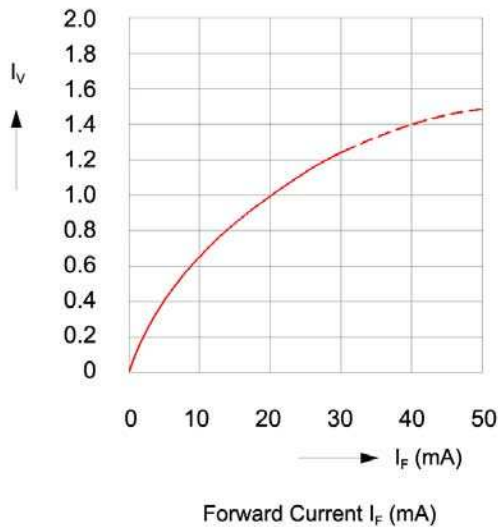


Fig.3 Relative Luminous Intensity vs. Forward Current

Ambient Temperature vs. Allowable Forward Current

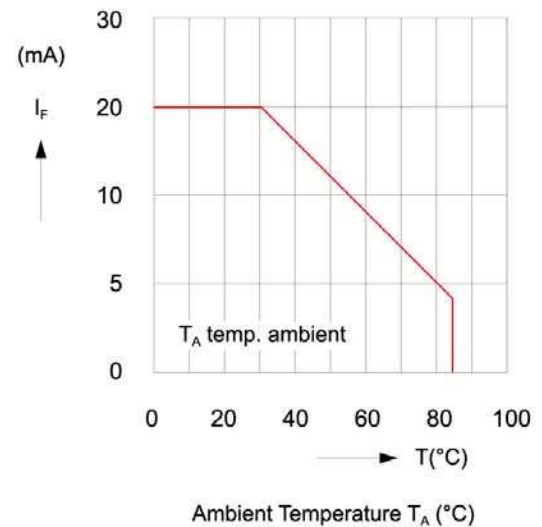


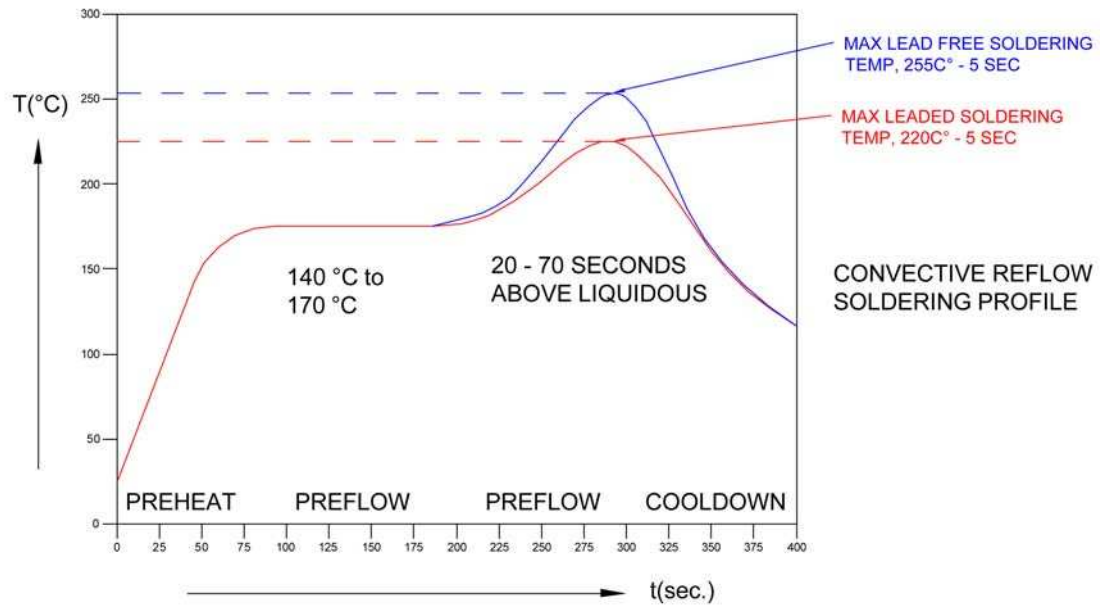
Fig.4 Forward Current vs. Ambient Temperature

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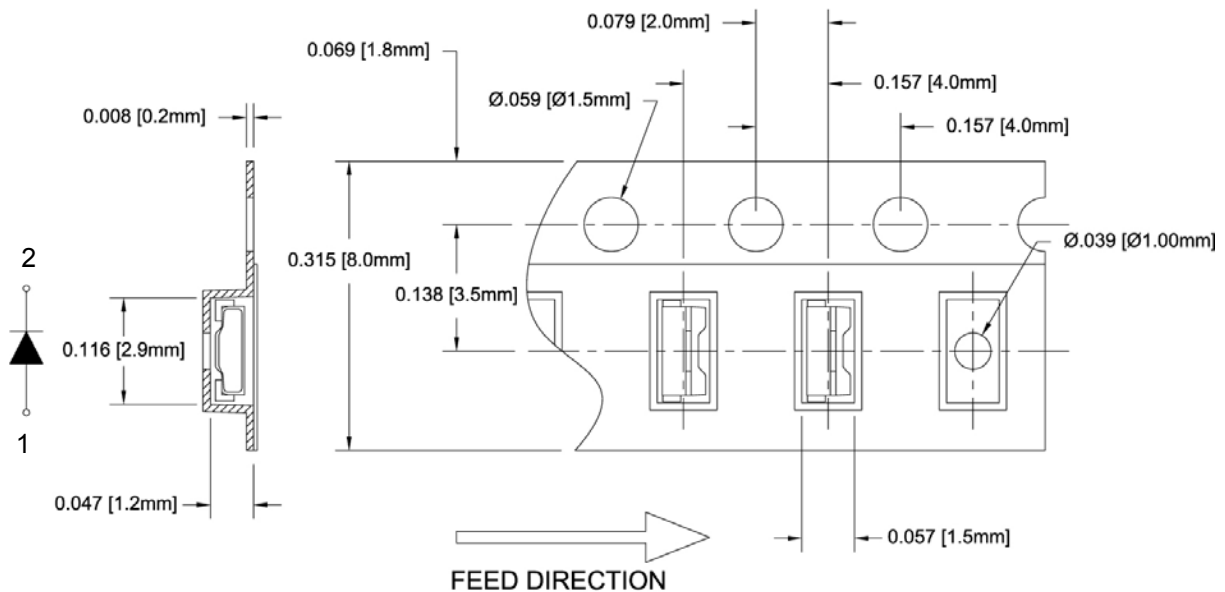


## Recommended Soldering Conditions



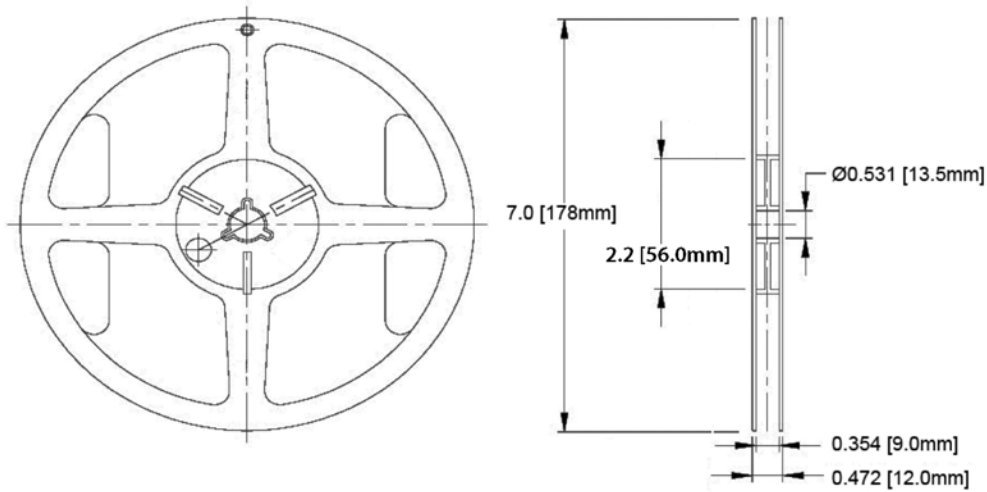
## Tape and Reel Dimensions

Note: 3000 pcs/Reel



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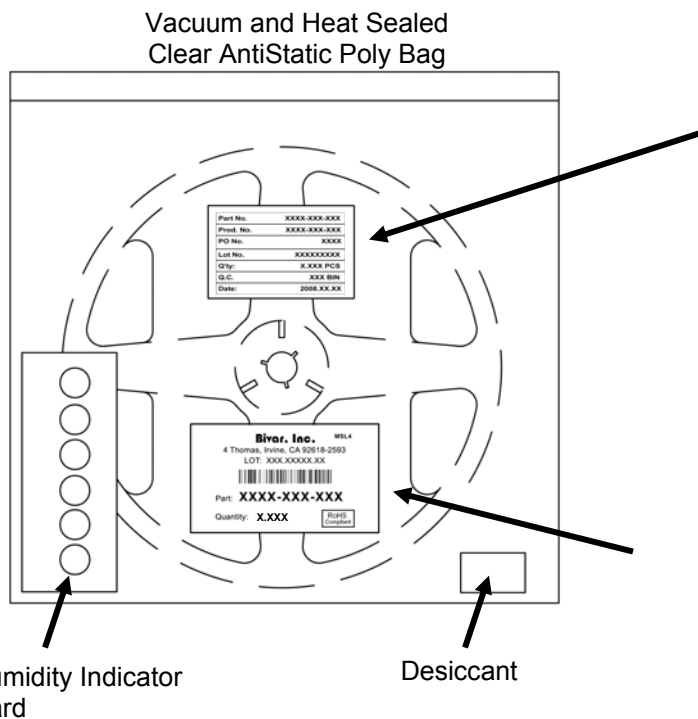


#### Outline Drawings Notes:

- All dimensions are in inches [millimeters].
- 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, Inc.** MSL4

4 Thomas, Irvine, CA 92618-2593  
LOT: XXX.XXXXX.XX



Part: **XXXX-XXX-XXX**

Quantity: **X.XXX**

RoHS Compliant

Bivar Standard Packaging Label

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