

# Rectangular Package Discrete LED RED/GREEN, 2 x 3 mm, Bi-Color

# BIVAR

## R3BC

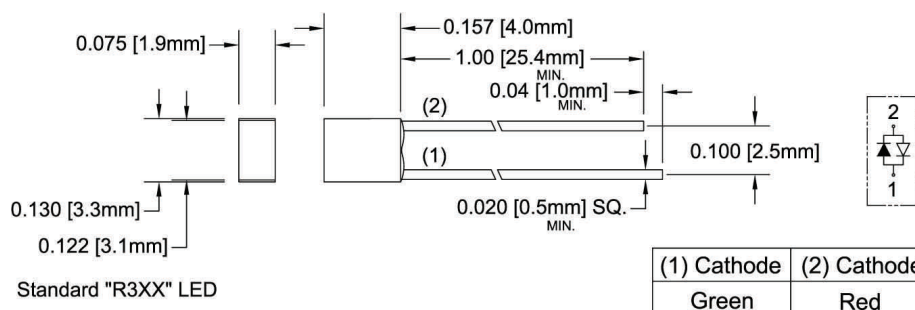
- ◆ Rectangular Package
- ◆ RoHS Compliant
- ◆ White Diffused Lens
- ◆ Available in Standard Lead Frame style
- ◆ 2-Lead Bi-Color LED
- ◆ Ideal for Status Indication and Bar Graph Displays
- ◆ Recommended for Bivar H-480C holder assemblies



Bivar Rectangular 2 x 3mm Package Bi-Color LED is ideal for those applications where dual signals need to be displayed at the same locations such as standby-on indication on server and computer peripherals. The rectangular package makes it ideal for creating bar graph displays when arranged in linear LED arrays. Bivar offers white diffused LED lens for uniform light output and the 2-lead package will simplify circuitry design where a reverse voltage is available. The Standard Lead frame LED is ideal for vertical spacer assemblies and Right Angle Holder assemblies that require lead bends.

| Part Number | Material  | Emitted Color | Peak. Wavelength<br>$\lambda_p$ (nm) TYP. | Lens Appearance | Viewing Angle |
|-------------|-----------|---------------|-------------------------------------------|-----------------|---------------|
| R3BC        | GaAsP/GaP | RED           | 625nm                                     | White Diffused  | 120°          |
|             | GaP/GaP   | GREEN         | 568nm                                     |                 |               |

## Outline Dimensions



Recommended Mounting  
Hole Size =  $\varnothing.032^{+.003}_{-.002}$

**Outline Drawings Notes:**  
 1. All dimensions are in inches [millimeters].  
 2. Standard tolerance:  $\pm 0.010$ " unless otherwise noted.  
 3. Tolerance of overall epoxy outline:  $\pm 0.020$ " unless otherwise noted.  
 4. Epoxy meniscus may extend to 0.060" max.

## Part Number Designation

R 3 B C - X X  
 LED Body, mm ————  
 Bi-Color ————  
 2<sup>nd</sup> Emitted Color ————  
 1<sup>st</sup> Emitted Color ————



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

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## Absolute Maximum Ratings

T<sub>A</sub> = 25°C unless otherwise noted

|                                                                                  |              |
|----------------------------------------------------------------------------------|--------------|
| Power Dissipation                                                                | 80 mW        |
| Forward Current ( DC )                                                           | 30 mA        |
| Peak Forward Current <sup>1</sup>                                                | 150 mA       |
| Reverse Voltage                                                                  | 5 V          |
| Operating Temperature Range                                                      | -25 ~ +85°C  |
| Storage Temperature Range                                                        | -30 ~ +100°C |
| Lead Soldering Temperature ( 3 mm from the base of the epoxy bulb ) <sup>2</sup> | 260°C        |

Notes: 1. 10% Duty Cycle, Pulse Width ≤ 0.1 msec.      2. Solder time less than 5 seconds at temperature extreme.

## Electrical / Optical Characteristics

T<sub>A</sub> = 25°C & I<sub>F</sub> = 20 mA unless otherwise noted

| Part Number | Emitted Color | Forward Voltage (V) <sup>1</sup> |     |     | Recommend Forward Current (mA) |     |     | Reverse Current (μA) | Dominant Wavelength (nm) <sup>2</sup> |     |     | Luminous Intensity I <sub>v</sub> (mcd) |     |     | Viewing Angle 2 Θ ½ (deg) |
|-------------|---------------|----------------------------------|-----|-----|--------------------------------|-----|-----|----------------------|---------------------------------------|-----|-----|-----------------------------------------|-----|-----|---------------------------|
|             |               | MIN                              | TYP | MAX | MIN                            | TYP | MAX | MAX                  | MIN                                   | TYP | MAX | MIN                                     | TYP | MAX | TYP                       |
| R3BC        | Red           | /                                | 2.0 | 2.8 | /                              | 20  | /   | 100                  | /                                     | /   | /   | /                                       | 3   | /   | 120                       |
|             | Green         | /                                | 2.1 | 2.8 |                                |     |     |                      | /                                     | /   | /   | /                                       | 2.5 | /   |                           |

Notes: 1. Tolerance of forward voltage : ±0.05V.      2. Tolerance of dominant wavelength : ±1.0nm.

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## Typical Electrical / Optical Characteristics - Red

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

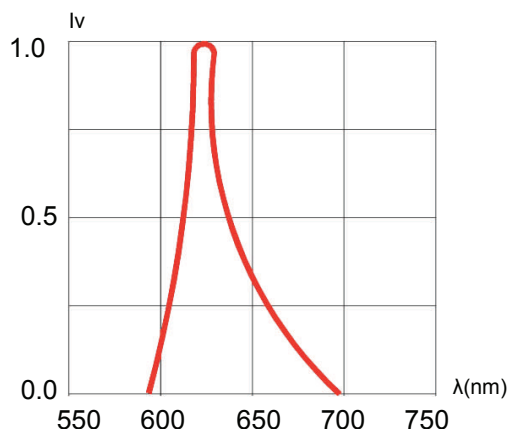


Fig. 1 Relative Luminous Intensity vs. Wavelength  
@ 20mA

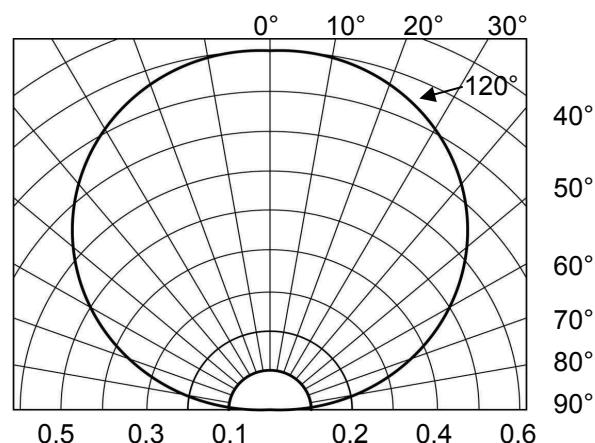


Fig. 2 Directivity Radiation Diagram

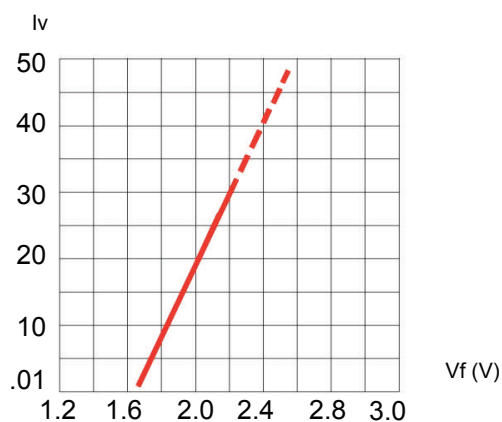


Fig. 3 Relative Intensity (10mA) vs.  
Forward Voltage

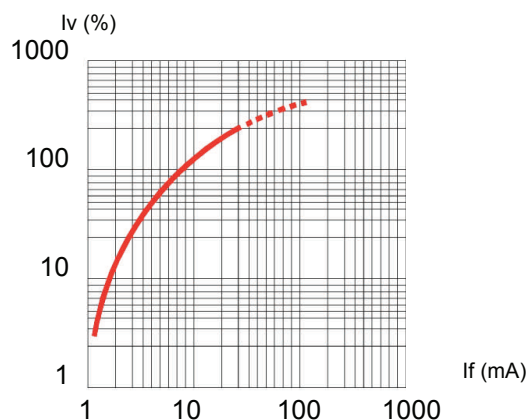


Fig. 4 Relative Luminous Intensity (%) vs.  
Forward Current

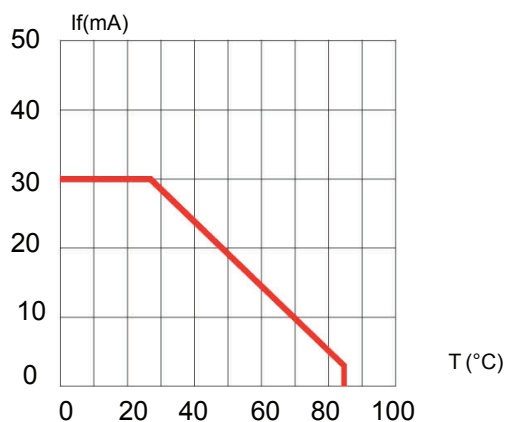


Fig. 5 Forward Current vs. Temperature

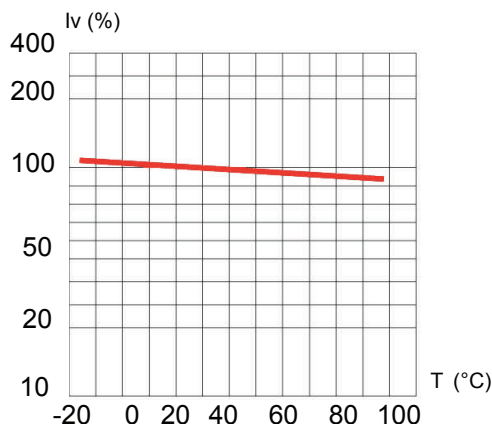


Fig. 6 Relative Intensity (%) vs. Temperature  
@ 20 mA

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## Typical Electrical / Optical Characteristics - Green

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

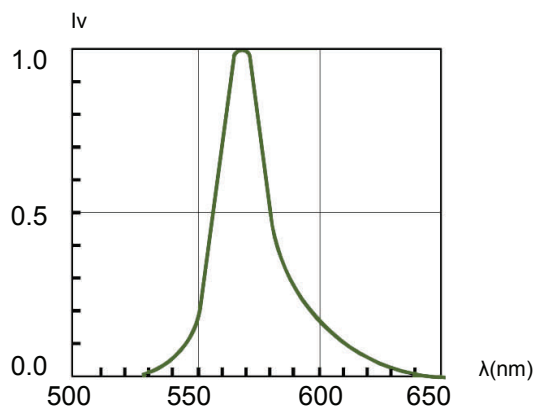


Fig. 1 Relative Luminous Intensity vs. Wavelength  
@ 20mA

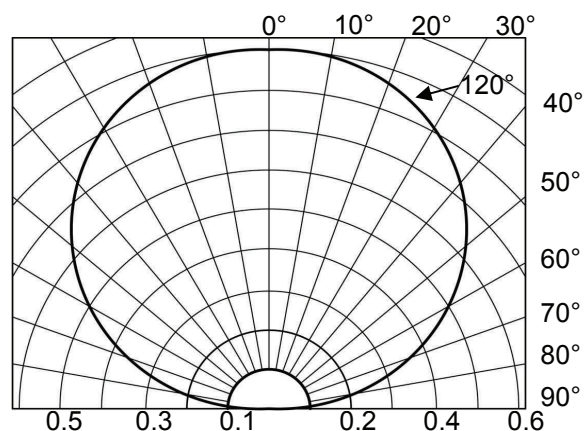


Fig. 2 Directivity Radiation Diagram

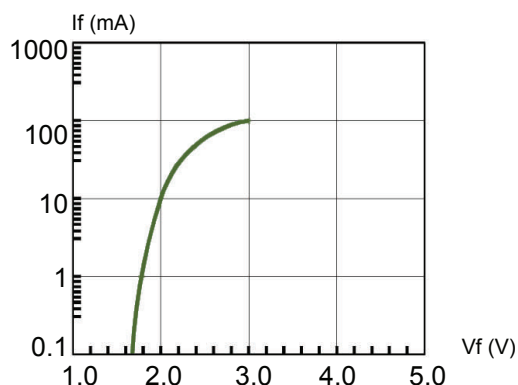


Fig. 3 Forward Current vs. Forward Voltage

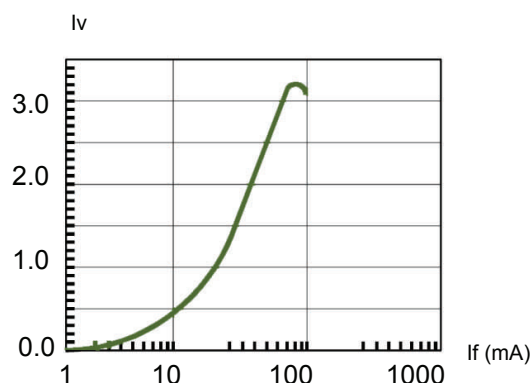


Fig. 4 Relative Luminous Intensity vs. Forward Current  
Normalize @ 20 mA

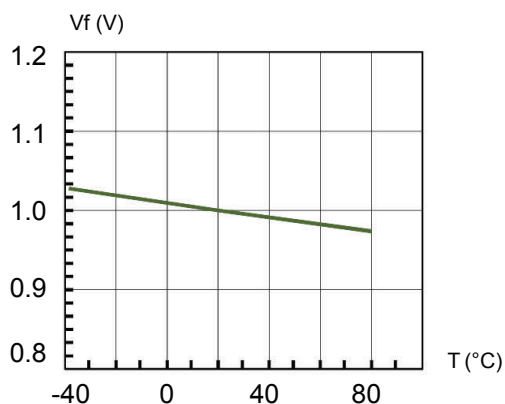


Fig. 5 Forward Voltage vs. Temperature

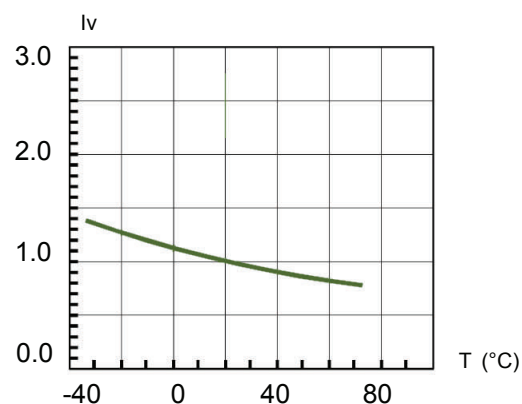


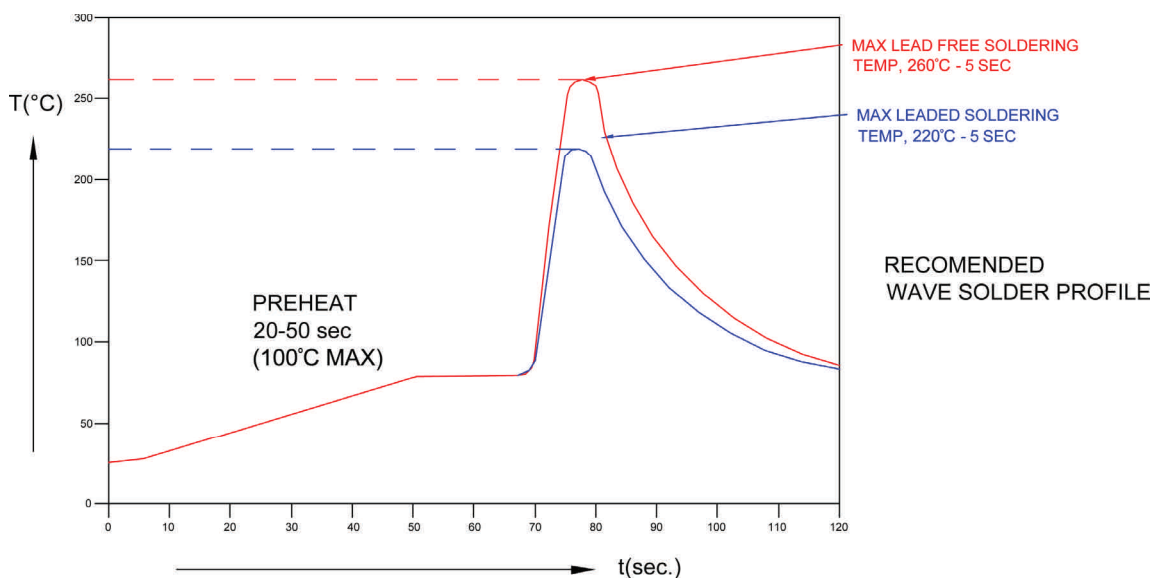
Fig. 6 Relative Luminous Intensity vs. Temperature

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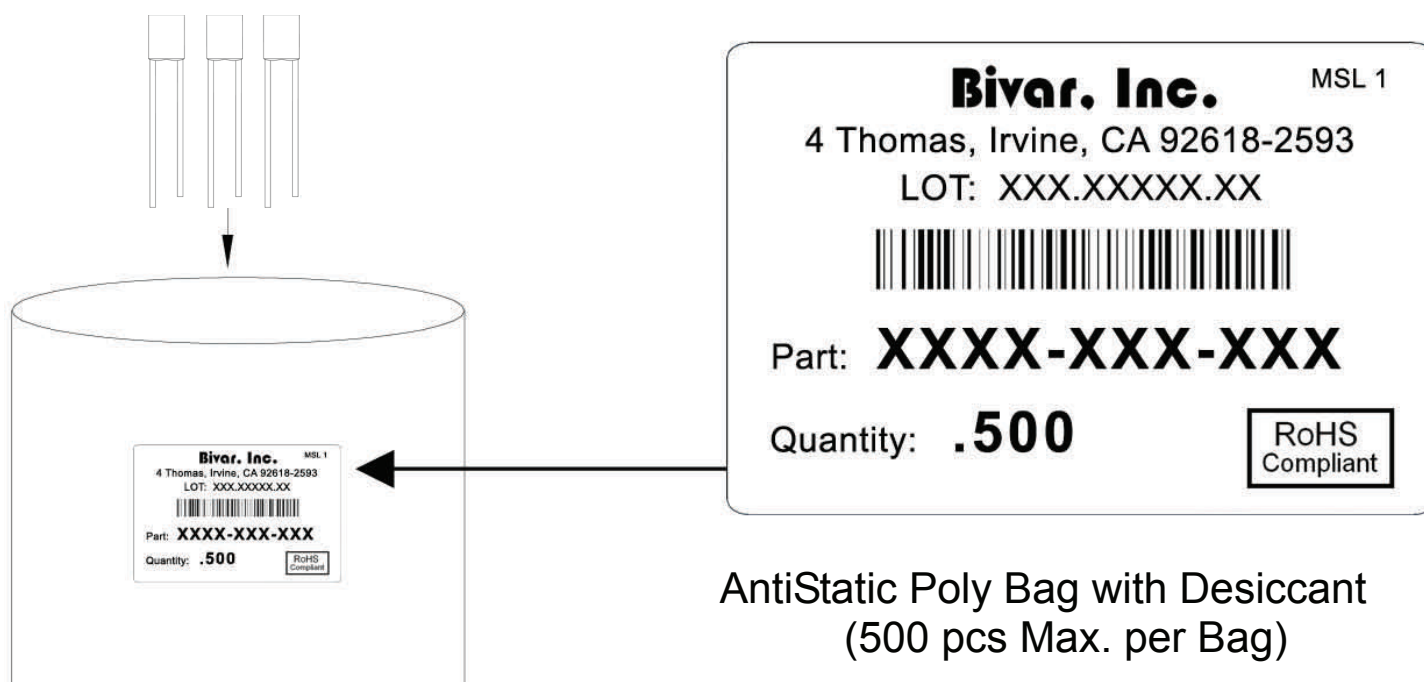
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## Recommended Soldering Conditions



| Recommended Lead Free Wave Soldering Profile                                                       |                                         |
|----------------------------------------------------------------------------------------------------|-----------------------------------------|
| Preheat Temperature: 100°C Max.                                                                    | Peak Temperature: 260°C Max.            |
| Preheat Time: 20 ~ 50 Seconds                                                                      | Solder Time Above 217°C: 5 Seconds Max. |
| Note: Turn off top heater at preheat to prevent the lamp body directly exposed to the heat source. |                                         |

## Packaging and Labeling Plan



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