



Chipsmall Limited consists of a professional team with an average of over 10 year of expertise in the distribution of electronic components. Based in Hongkong, we have already established firm and mutual-benefit business relationships with customers from,Europe,America and south Asia,supplying obsolete and hard-to-find components to meet their specific needs.

With the principle of “Quality Parts,Customers Priority,Honest Operation,and Considerate Service”,our business mainly focus on the distribution of electronic components. Line cards we deal with include Microchip,ALPS,ROHM,Xilinx,Pulse,ON,Everlight and Freescale. Main products comprise IC,Modules,Potentiometer,IC Socket,Relay,Connector.Our parts cover such applications as commercial,industrial, and automotives areas.

We are looking forward to setting up business relationship with you and hope to provide you with the best service and solution. Let us make a better world for our industry!



## Contact us

Tel: +86-755-8981 8866 Fax: +86-755-8427 6832

Email & Skype: [info@chipsmall.com](mailto:info@chipsmall.com) Web: [www.chipsmall.com](http://www.chipsmall.com)

Address: A1208, Overseas Decoration Building, #122 Zhenhua RD., Futian, Shenzhen, China



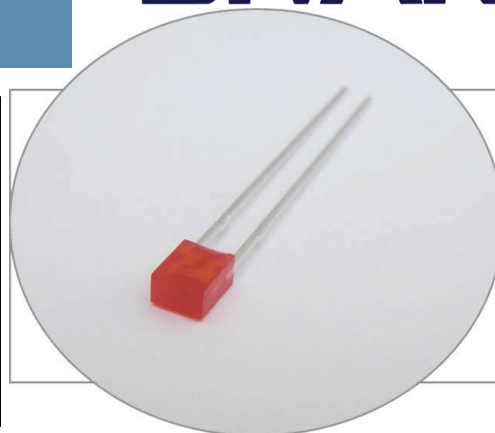
# Rectangular Package Discrete LED

## RED, 2 x 3 mm

# BIVAR

### R3H~~X~~

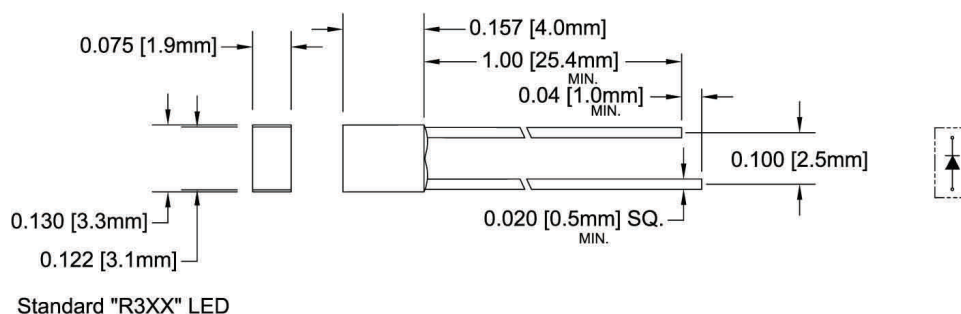
- ◆ Rectangular Package
- ◆ RoHS Compliant
- ◆ Water Clear (**C**), Diffused (**D**), and Tinted (**T**) Lenses
- ◆ Available in Standard Lead Frame style
- ◆ Ideal for Status Indication and Bar Graph Displays
- ◆ Recommended for Bivar H-480C holder assemblies



Bivar Rectangular 2 x 3mm Package LED may be used in almost any application and is ideal for creating bar graph displays when arranged in linear LED arrays. Bivar offers water clear LED lens for maximum light output, diffused LED lens for uniform light output, and tinted lens to identify the color of the LED. 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 $\lambda_p$ (nm) TYP.	Lens Appearance	Viewing Angle
R3HC	GaAsP/GaP	RED	625nm	Water Clear	80°
R3HD				Red Diffused	100°
R3HT				Red Tinted	80°

## Outline Dimensions

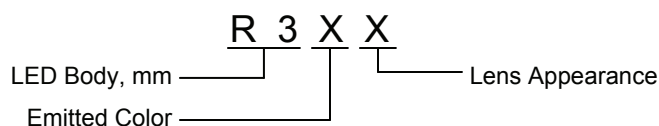


Recommended Mounting  
Hole Size =  $\varnothing.032^{+.003}_{-.002}$

#### 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



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

# Rectangular Package Discrete LED RED, 2 x 3 mm



## 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	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
R3HC	/	2.0	2.8	/	20	/	100	/	/	/	/	8	/	80
R3HD								/	/	/	/	6	/	100
R3HT								/	/	/	/	8	/	80

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

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



# Rectangular Package Discrete LED RED, 2 x 3 mm



## Typical Electrical / Optical Characteristics

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

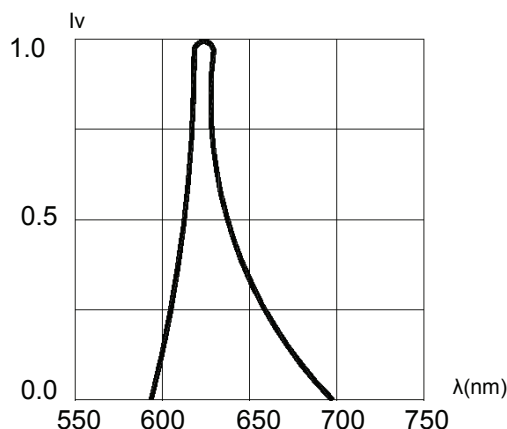


Fig. 1 Relative Luminous Intensity vs. Wavelength  
@ 20mA

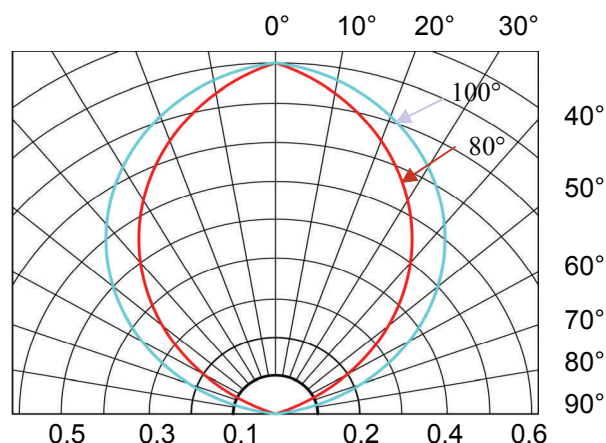


Fig. 2 Directivity Radiation Diagram

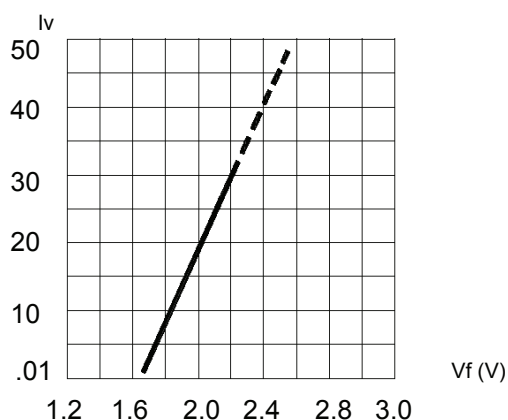


Fig. 3 Relative Intensity (10mA) vs.  
Forward Voltage

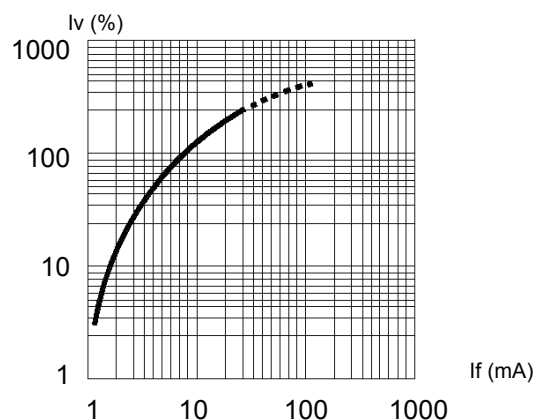


Fig. 4 Relative Luminous Intensity (%) vs.  
Forward Current

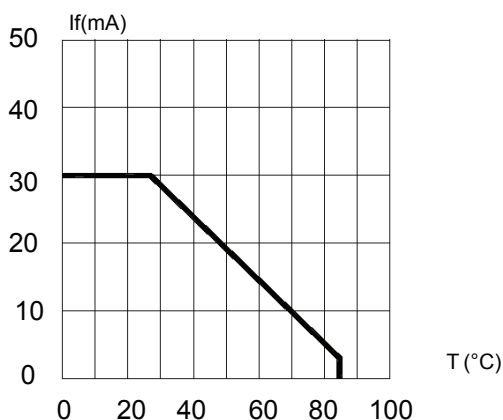


Fig. 5 Forward Current vs. Temperature

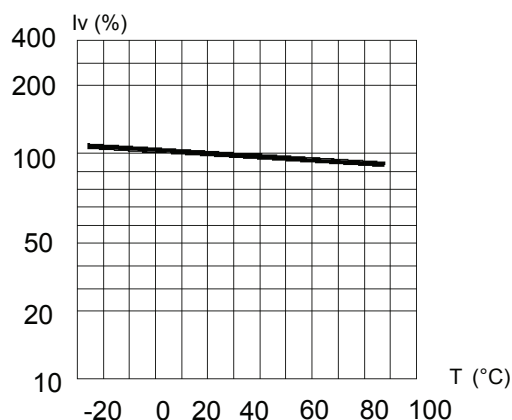


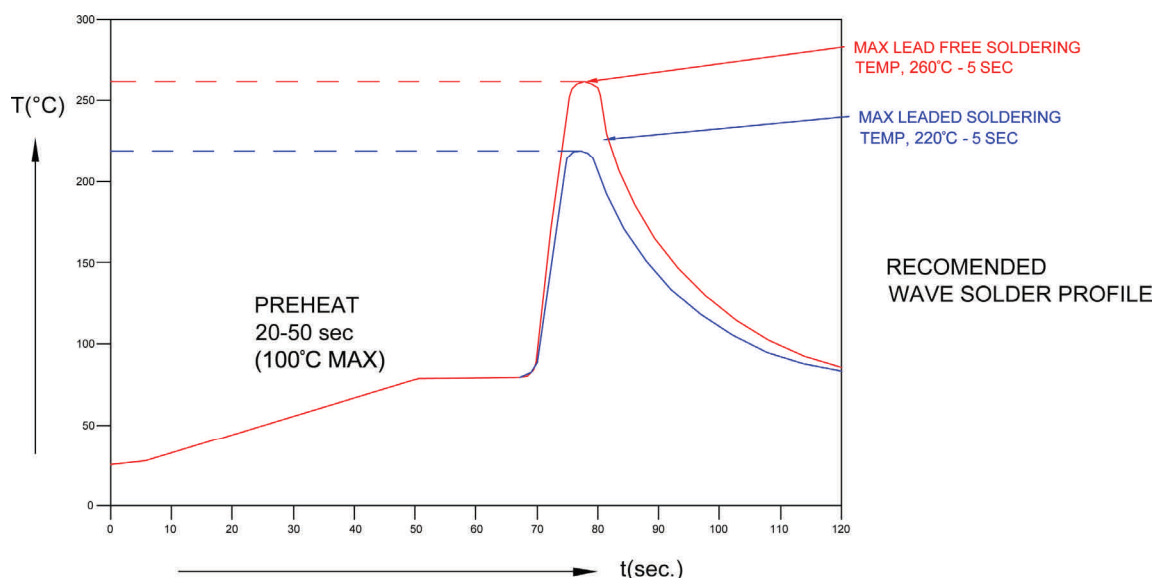
Fig. 6 Relative Intensity (%) vs. Temperature  
@ 20 mA

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

# Rectangular Package Discrete LED RED, 2 x 3 mm

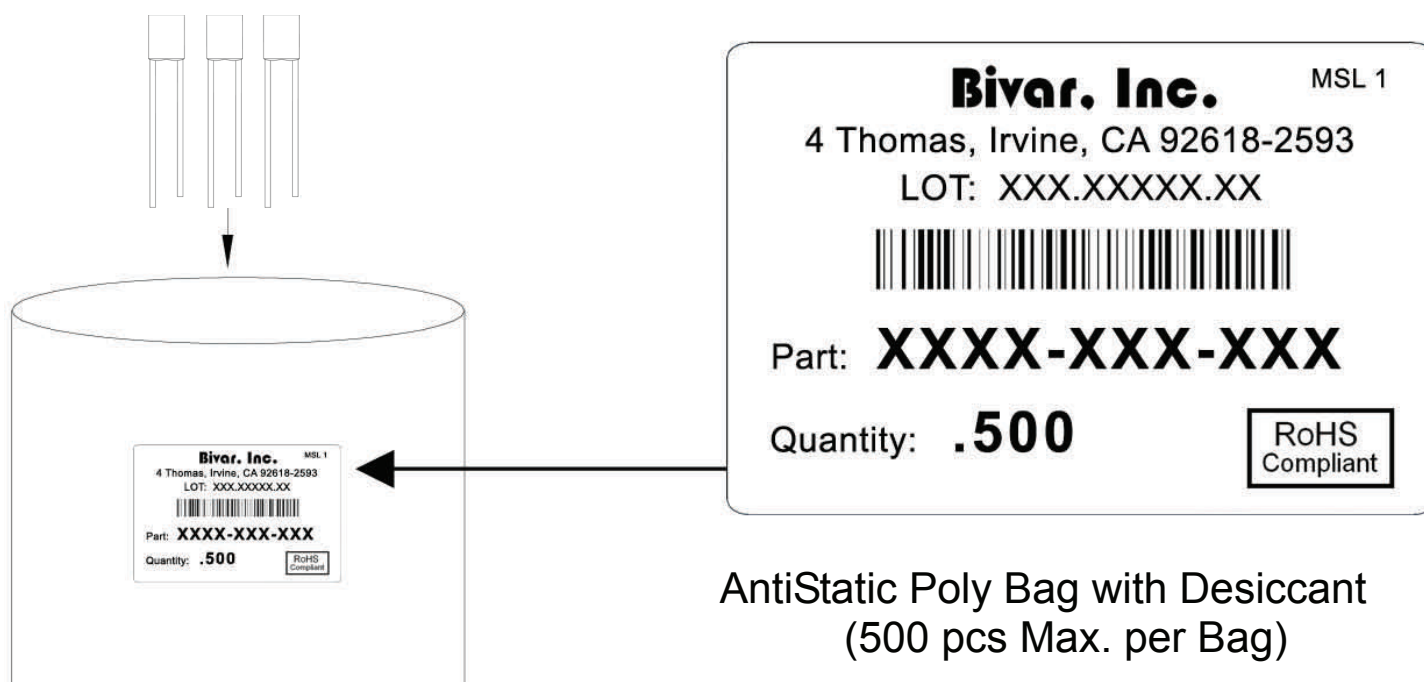


## Recommended Soldering Conditions



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



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