

3mm (T1) Package Discrete LED RED, 12V



3H~~X~~12V-~~X~~

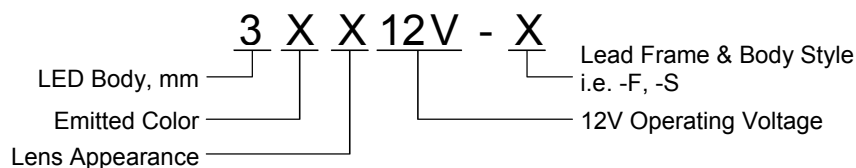
- ◆ Industry Standard 3mm (T1) Package
- ◆ RoHS Compliant
- ◆ Water Clear (C) and Diffused (D) Lenses
- ◆ Available in Flange (F) and Shouldered (S) Lead Frame styles
- ◆ 12V Operating Voltage
- ◆ Ideal for Status Indication and Display



Bivar 3mm T1 Package 12V LED is ideal for applications equipped with regular 12V power supplies such as servers and computer peripherals, and applications operated by 12V batteries such as automobiles and boats. Bivar offers water clear LED lens for maximum light output and diffused LED lens for uniform light output. The Flanged LED is ideal for Panel Mount Clip & Ring assemblies. The Shouldered Lead frame LED is ideal for vertical spacer assemblies without lead bends and also has a built in strain relief feature which is ideal for right angle holder assemblies that require lead bends.

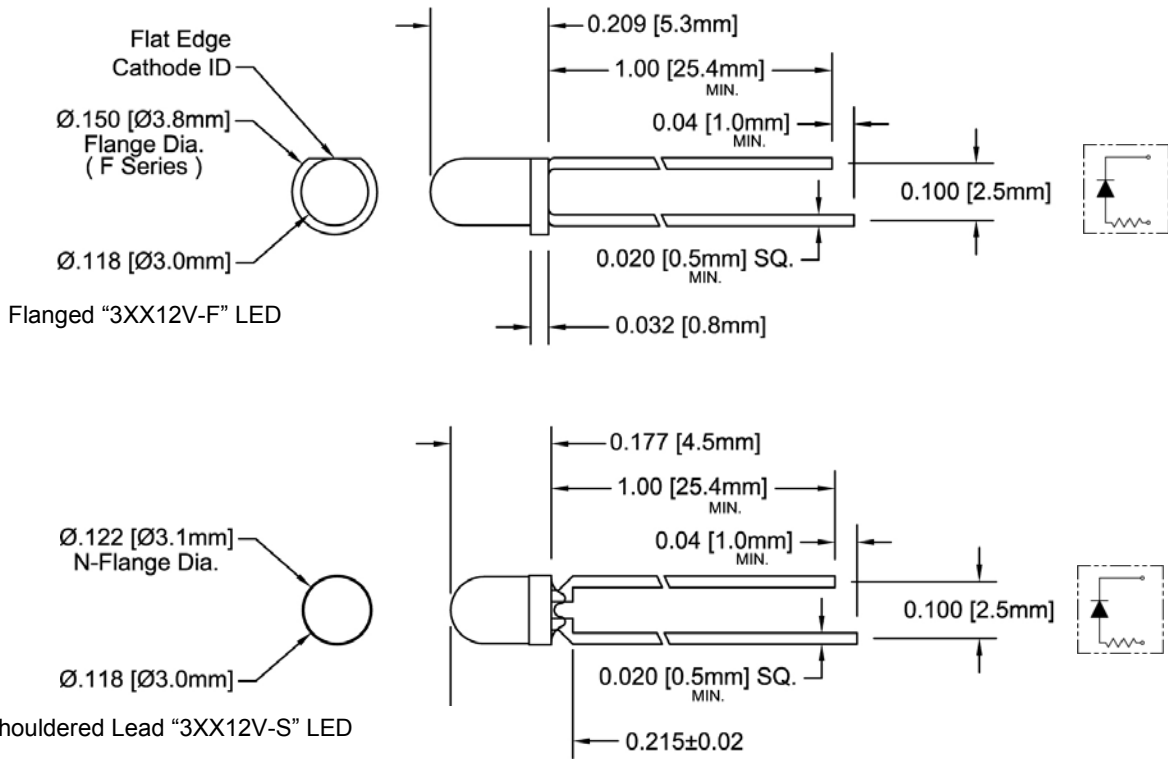
Part Number	Material	Emitted Color	Peak. Wavelength λ_p (nm) TYP.	Lens Appearance	Viewing Angle
3HC12V-F	GaP/GaP	RED	625nm	Water Clear	20°
3HD12V-F				Red Diffused	35°
3HC12V-S				Water Clear	30°
3HD12V-S				Red Diffused	40°

Part Number Designation



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

Outline Dimensions



Recommended Mounting
Hole Size = $\text{Ø}0.032^{+.003}_{-.002}$

Outline Drawings Notes:

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

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Absolute Maximum Ratings

T_A = 25°C unless otherwise noted

Power Dissipation	/ mW
Forward Current (DC)	10mA
Peak Forward Current ¹	12 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) ²	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_A = 25°C & V_f = 12V unless otherwise noted

Part Number	Forward Voltage (V) ¹			Recommend Forward Current (mA)			Reverse Current (μA)	Dominant Wavelength (nm) ²			Luminous Intensity I _v (mcd)			Viewing Angle 2 Θ ½ (deg)
	MIN	TYP	MAX	MIN	TYP	MAX	MAX	MIN	TYP	MAX	MIN	TYP	MAX	TYP
3HC12V-F	/	/	12	/	/	/	100	/	/	/	/	50	/	20
3HD12V-F	/	/	12	/	/	/	100	/	/	/	/	30	/	35
3HC12V-S	/	/	12	/	/	/	100	/	/	/	/	50	/	30
3HD12V-S	/	/	12	/	/	/	100	/	/	/	/	30	/	40

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

Typical Electrical / Optical Characteristics

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

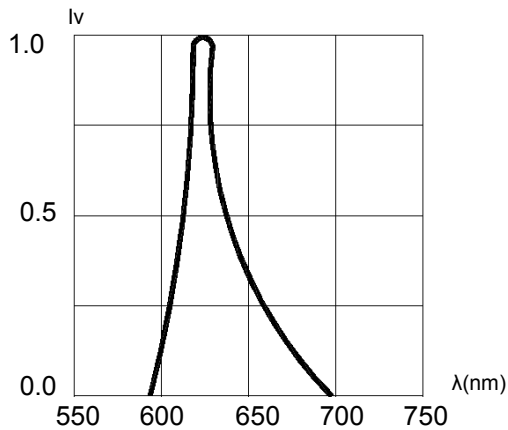


Fig. 1 Relative Luminous Intensity vs. Wavelength

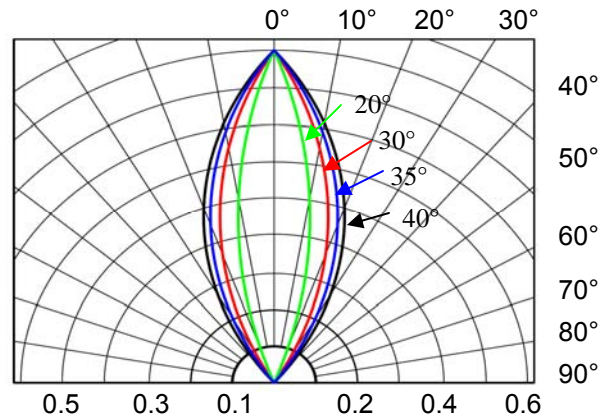


Fig. 2 Directivity Radiation Diagram

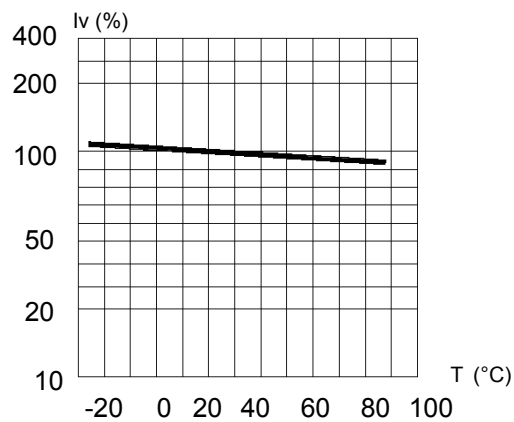


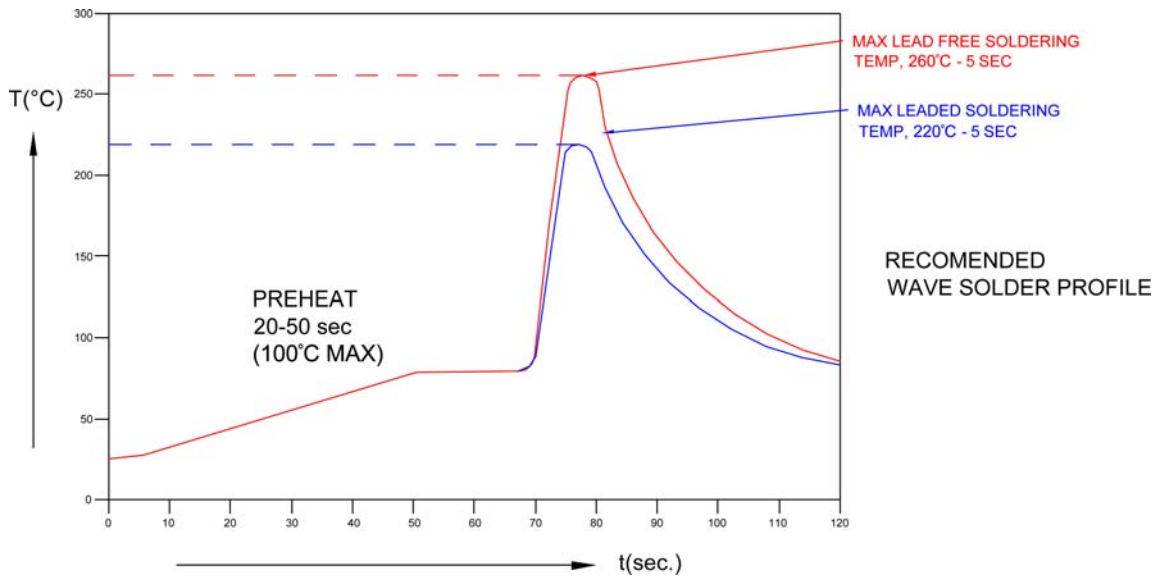
Fig. 3 Relative Intensity (%) vs. Temperature

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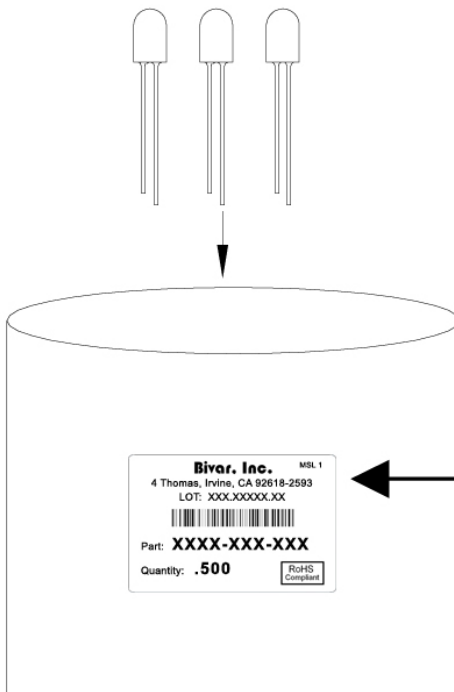


Recommended Soldering Conditions



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



Bivar, Inc. MSL 1

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



Part: **XXXX-XXX-XXX**

Quantity: **.500** RoHS
Compliant

**Anti-Static Poly Bag with Desiccant
(500 pcs Max. per Bag)**

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