5mm (T1 ¾) Package Discrete LED RED, Low Current

5HDL-X

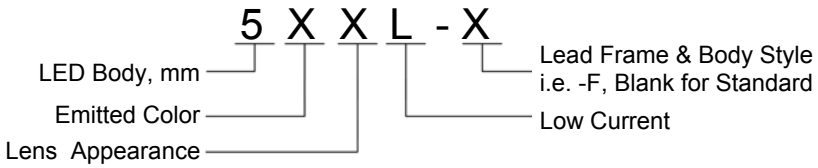
- **Industry Standard 5mm (T1 ¾) Package**
- **RoHS Compliant**
- **Diffused Lens**
- **Available in Flange (F) and Standard (Blank) Lead Frame styles**
- **2 mA Low Operating Current**
- **Ideal for Status Indication and Display**



Bivar 5mm T1 ¾ Package 2 mA Low Current LED is special binned at 2 mA and is ideal for those applications where lower power budget is required such as solar panel or battery-powered portable devices. Bivar offers diffused LED lens for uniform light output. The Flanged LED is ideal for Panel Mount Clip & Ring assemblies and the Standard Lead frame LED is ideal for vertical spacer assemblies without lead bends.

Part Number	Material	Emitted Color	Peak. Wavelength λp(nm) TYP.	Lens Appearance	Viewing Angle
5HDL-F	GaAsP/GaP	RED	625nm	Red Diffused	40°
5HDL				Red Diffused	45°

Part Number Designation



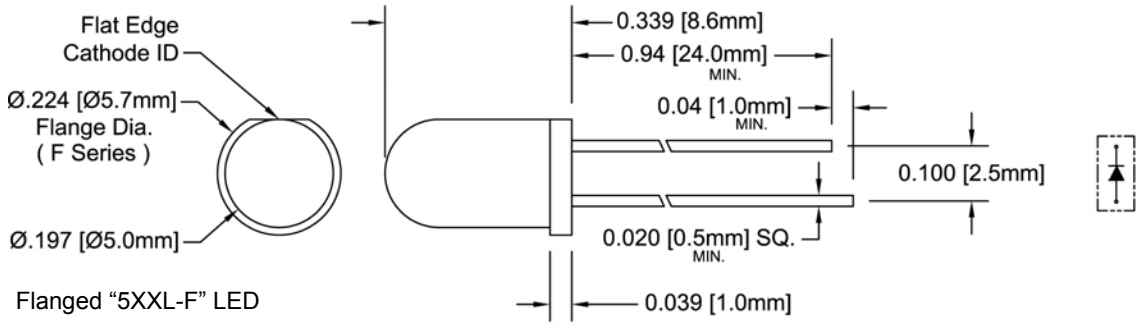
ATTENTION OBSERVE PRECAUTIONS FOR HANDLING ELECTROSTATIC SENSITIVE DEVICES

RoHS Compliant

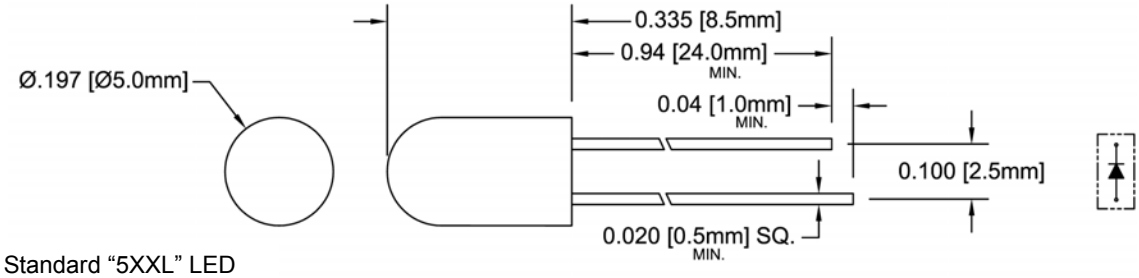
Moisture Sensitivity Levels 1

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

Outline Dimensions



Flanged “5XXL-F” LED



Standard “5XXL” LED

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

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	10 mW
Forward Current (DC)	7 mA
Peak Forward Current [1]	/ 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 & I_F = 2 mA unless otherwise noted

Part Number	Forward Voltage (V)[1]			Recommend Forward Current (mA)			Reverse Current (μA)	Dominant Wavelength (nm)[2]			Luminous Intensity Iv (mcd)			Viewing Angle 2 Θ ½ (deg)
	MIN	TYP	MAX	MIN	TYP	MAX	MAX	MIN	TYP	MAX	MIN	TYP	MAX	TYP
5HDL-F	/	2.0	2.6	/	2	/	100	/	/	/	/	5	/	40
5HDL								/	/	/	/	5	/	45

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

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Typical Electrical / Optical Characteristics

T_A = 25°C unless otherwise noted

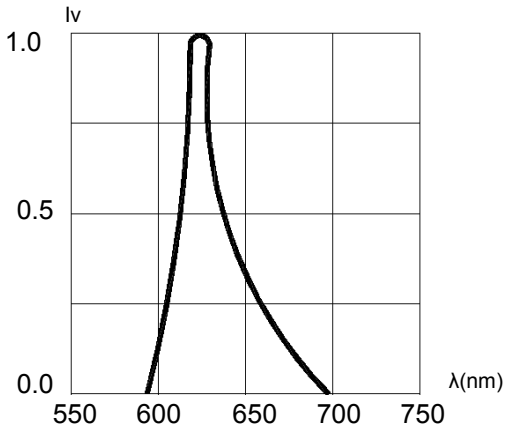

Fig. 1 Relative Luminous Intensity vs. Wavelength

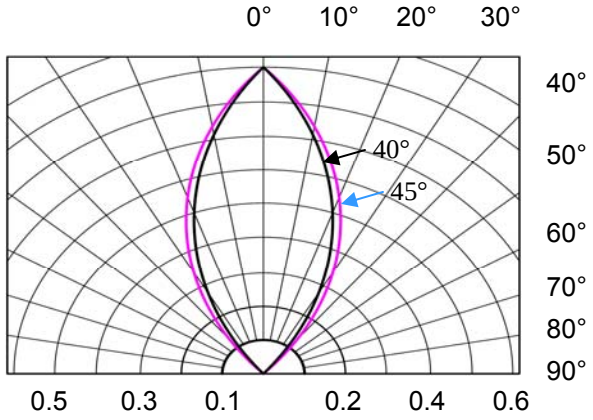

Fig. 2 Directivity Radiation Diagram

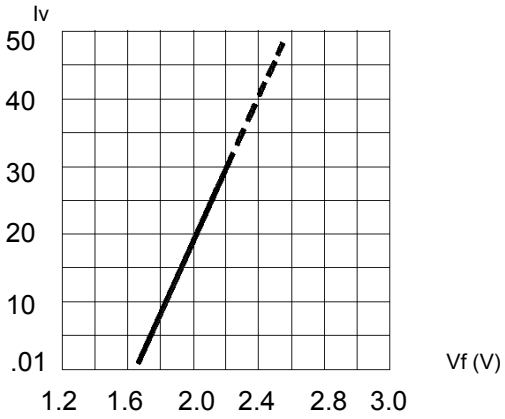

Fig. 3 Relative Intensity vs. Forward Voltage

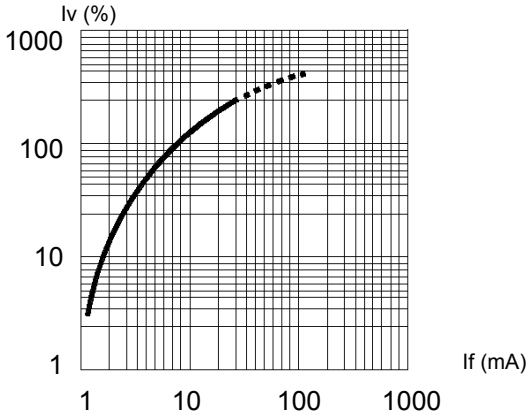

Fig. 4 Relative Luminous Intensity (%) vs. Forward Current

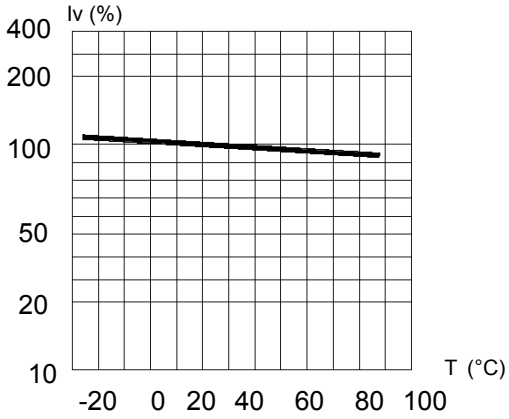

Fig. 5 Relative Intensity (%) vs. Temperature

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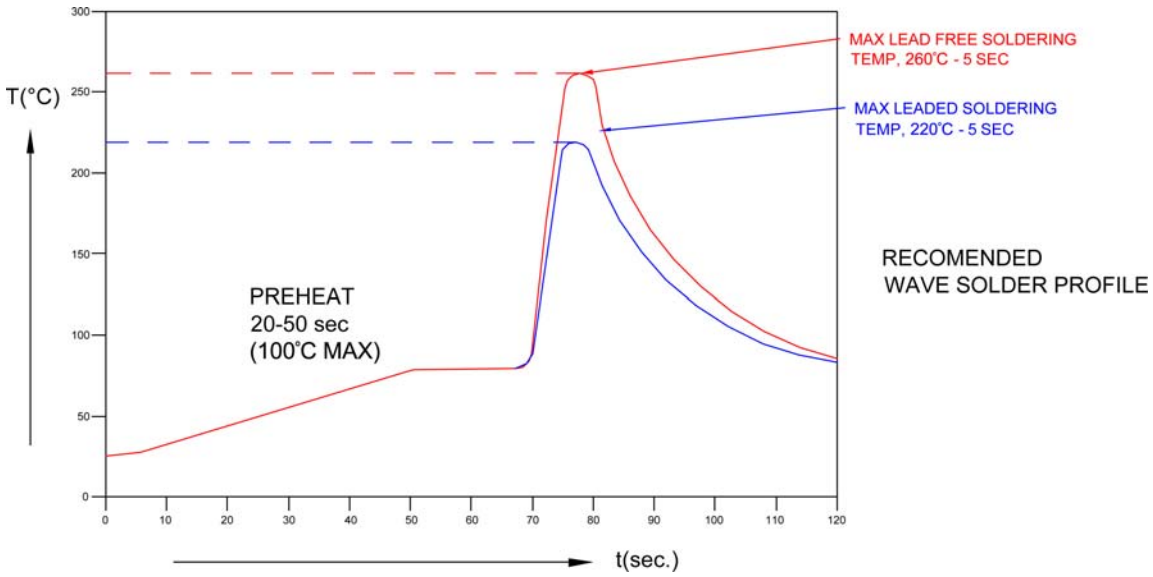
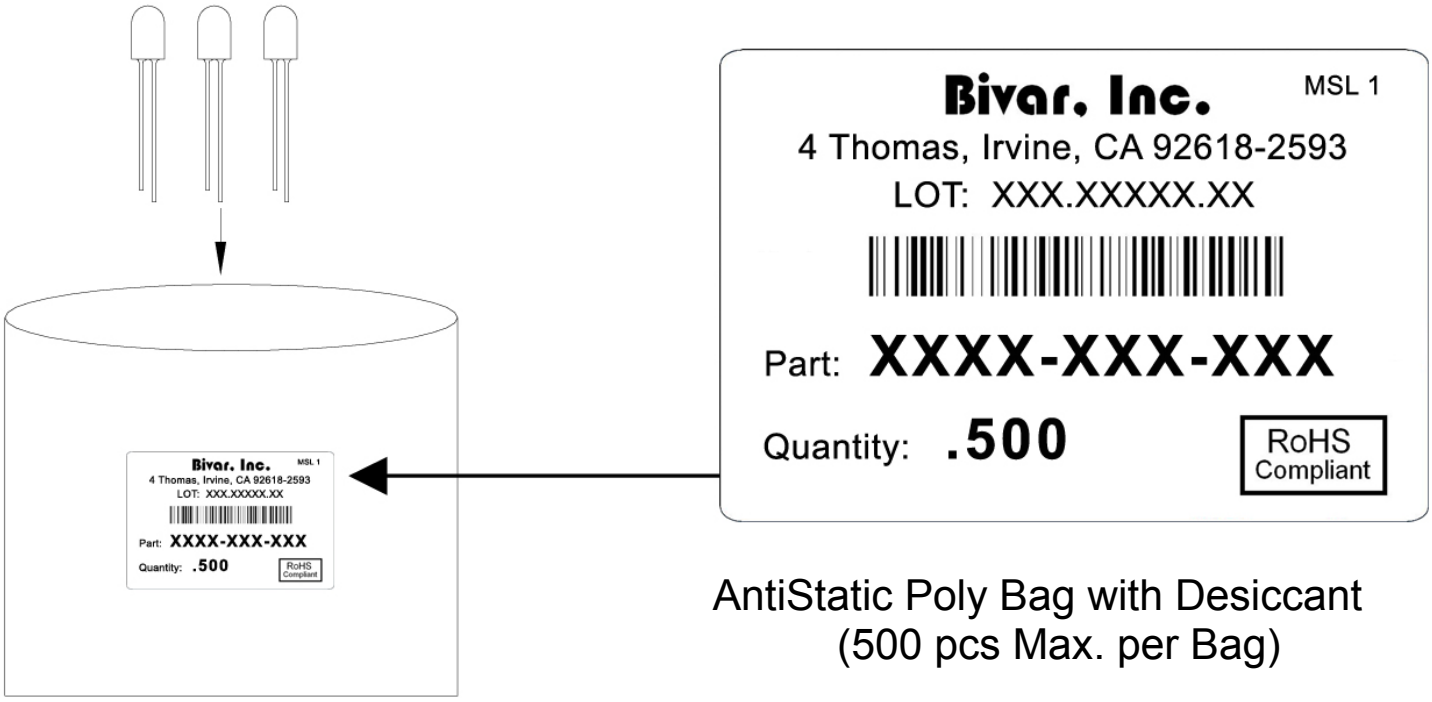
Recommended Soldering Conditions



Recommended Lead Free Wave Soldering Profile	
Preheat Temperature: 100ºC Max.	Peak Temperature: 260ºC Max.
Preheat Time: 20 ~ 50 Seconds	Solder Time Above 217ºC: 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



AntiStatic Poly Bag with Desiccant
(500 pcs Max. per Bag)