# 5mm (T1 ¾) Package Discrete LED BLUE

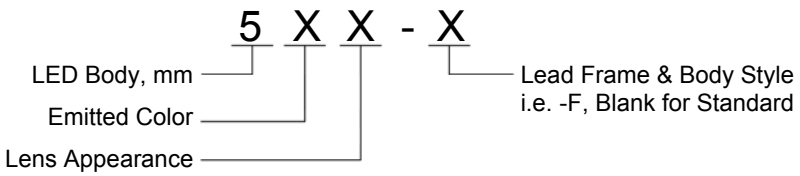
**5BWX-X**

- **Industry Standard 5mm (T1 ¾) Package**
- **RoHS Compliant**
- **Water Clear (C), Diffused (D), and Tinted (T) Lenses**
- **Available in Flange (F) and Standard (Blank) Lead Frame styles**
- **Ideal for Status Indication and Display**

Bivar 5mm T1 ¾ Package LED may be used in almost any application. 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 Flange 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 |
|---|---|---|---|---|---|
| 5BWC-F | GaN/SiC | BLUE | 430nm | Water Clear | 25° |
| 5BWD-F | | | | Blue Diffused | 40° |
| 5BWT-F | | | | Blue Tinted | 25° |
| 5BWC | | | | Water Clear | 20° |
| 5BWD | | | | Blue Diffused | 45° |
| 5BWT | | | | Blue Tinted | 20° |

## Part Number Designation

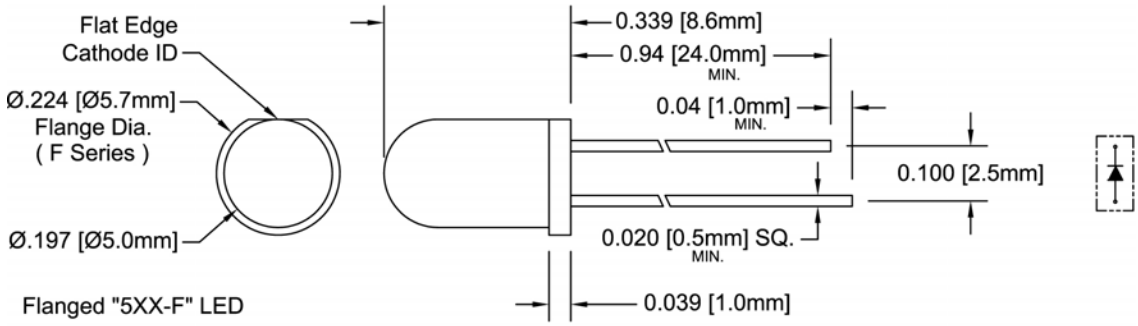



ATTENTION OBSERVE PRECAUTIONS FOR HANDLING ELECTROSTATIC SENSITIVE DEVICES

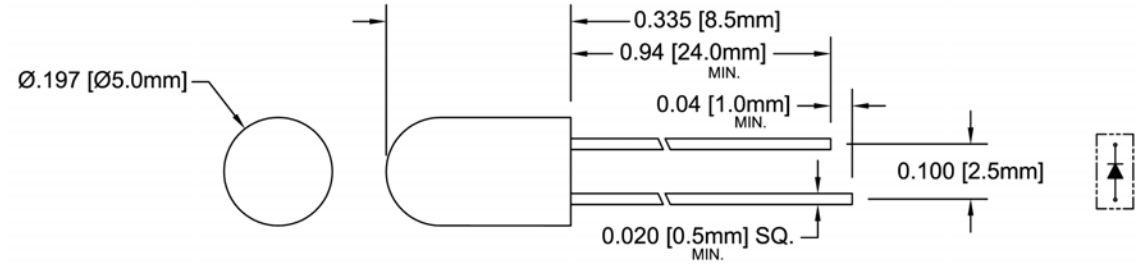
RoHS Compliant

Moisture Sensitivity Levels 1

# Outline Dimensions




Flanged "5XX-F" LED




Standard "5XX" 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.

## Absolute Maximum Ratings

$T_A$ = 25°C unless otherwise noted

| | |
|---|---|
| Power Dissipation | 150 mW |
| Forward Current ( DC ) | 25 mA |
| Peak Forward Current [1] | 70 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 & $I_F$ = 20 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 |
| 5BWC-F | / | 4.0 | 4.5 | / | 20 | / | 100 | / | / | / | / | 30 | / | 25 |
| 5BWD-F | | | | | | | | / | / | / | / | 15 | / | 40 |
| 5BWT-F | | | | | | | | / | / | / | / | 30 | / | 25 |
| 5BWC | / | 4.0 | 4.5 | / | 20 | / | 100 | / | / | / | / | 30 | / | 20 |
| 5BWD | | | | | | | | / | / | / | / | 15 | / | 45 |
| 5BWT | | | | | | | | / | / | / | / | 30 | / | 20 |

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

# Typical Electrical / Optical Characteristics

$T_A$ = 25°C unless otherwise noted

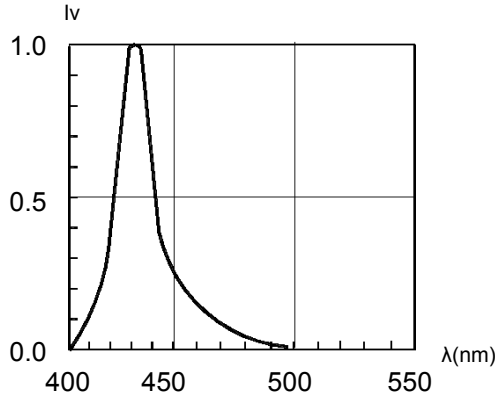



Fig. 1 Relative Luminous Intensity vs. Wavelength @ 20mA

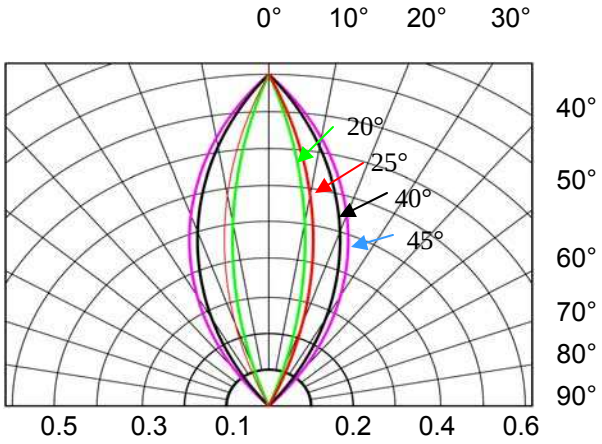



Fig. 2 Directivity Radiation Diagram

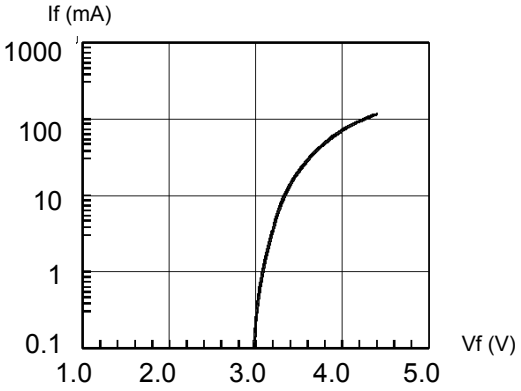



Fig. 3 Forward Current vs. Forward Voltage

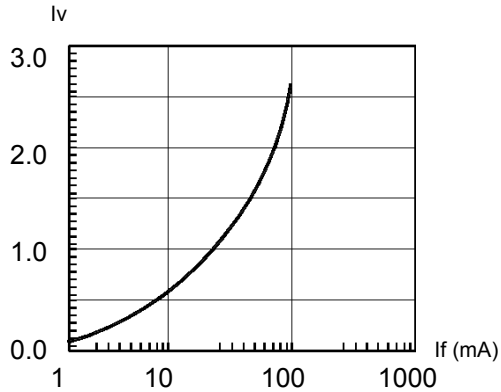



Fig. 4 Relative Luminous Intensity vs. Forward Current Normalize @ 20 mA

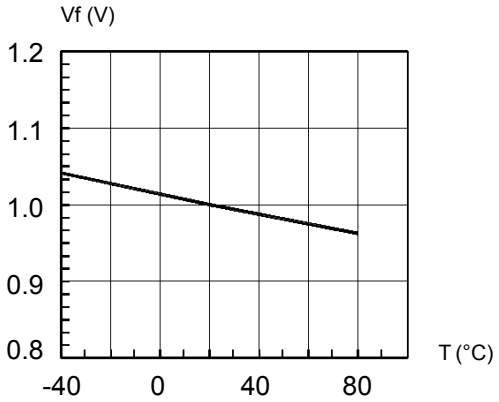



Fig. 5 Forward Voltage vs. Temperature

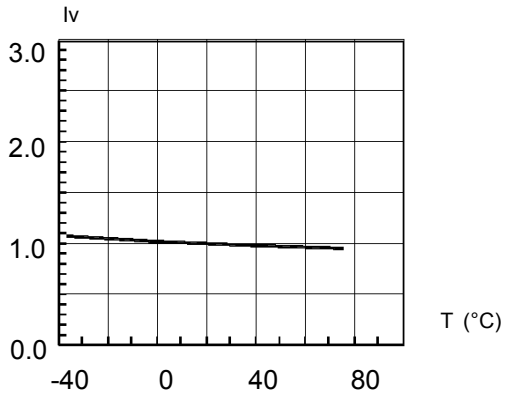
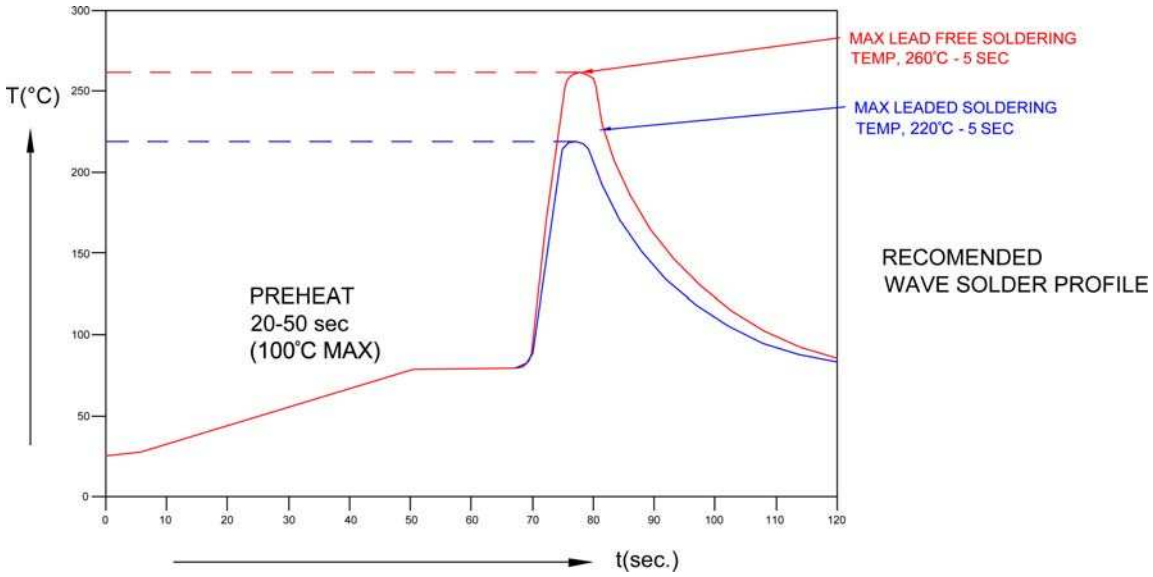


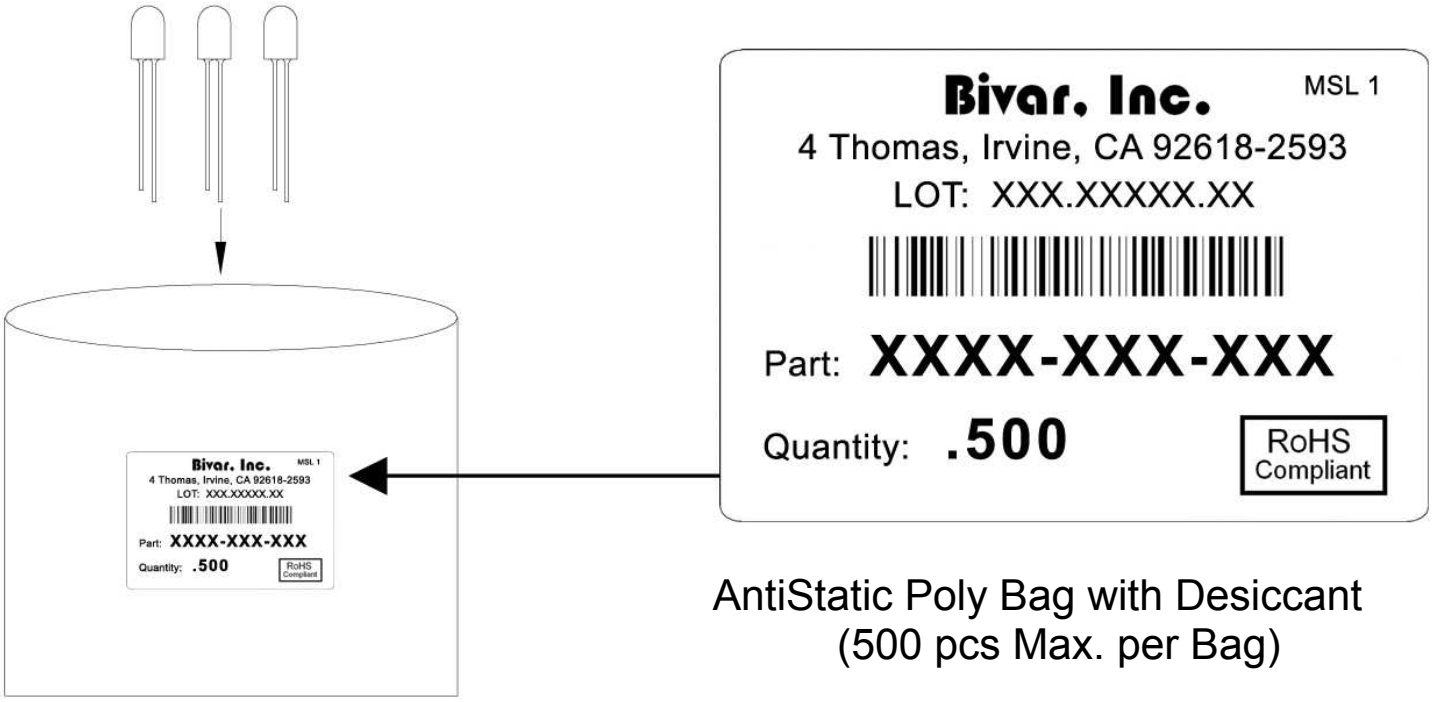

Fig. 6 Relative Luminous Intensity vs. Temperature

## 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)