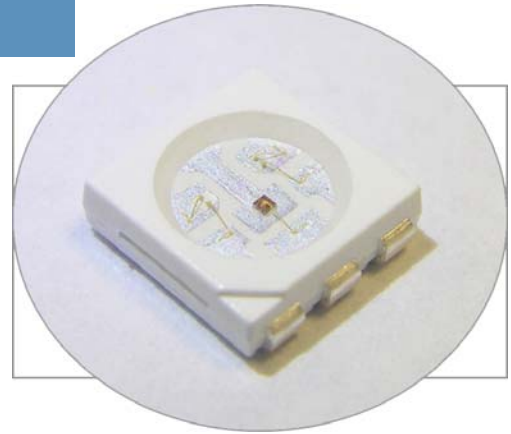


PLCC6 SMD Top View Package LED SMP6-RGB, RED/GREEN/BLUE



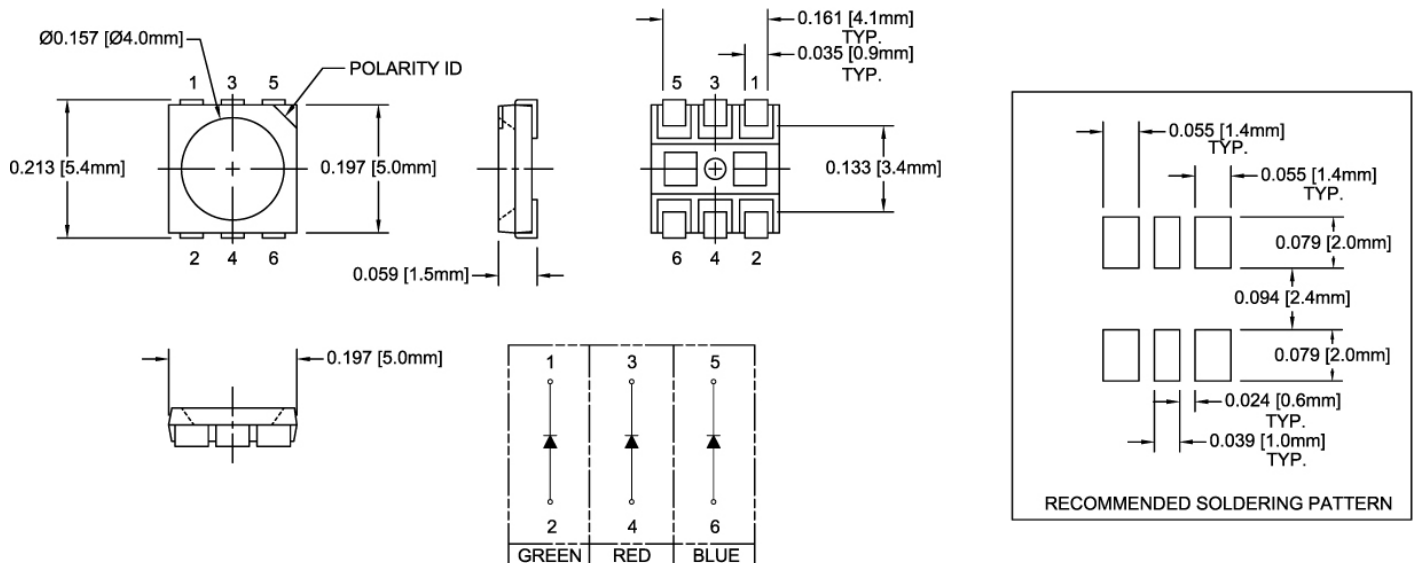
SMP6-RGB

- ◆ Industry Standard PLCC6 Footprint
- ◆ 3 Chips in One Low Profile Package
- ◆ High Luminous Intensity
- ◆ Wide Viewing Angle
- ◆ High Power Efficiency

Bivar SMP6 RGB LED is offered in an industry standard PLCC6 package with high luminous intensity and wide viewing angles. The miniature package is ideal for small scale applications such as illumination, general indication, and backlighting. Low power consumption and excellent long life reliability are suitable for battery powered equipment. The flexible three chip design allows for a wide variety of lighting options where the chips can be individually driven or mixed to create numerous color and intensity combinations. Bivar SMP6 LED is packaged in standard tape and reels for pick and place assemblies.

| Emitted Color | Material | Emitted Color | Lumen Typ. mcd | Lens Color | Viewing Angle |
|---------------|----------|---------------|----------------|-------------|---------------|
| SMP6-RGB | AlGaInP | Red | 600 | Water Clear | 140° |
| | InGaN | Green | 800 | | |
| | InGaN | Blue | 350 | | |

Outline Dimensions



Outline Drawings Notes:
 1. All dimensions are in inches [millimeters].
 2. Standard tolerance: $\pm 0.010''$ unless otherwise noted.



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

PLCC6 SMD Top View Package LED SMP6-RGB, RED/GREEN/BLUE



Absolute Maximum Ratings

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

| | |
|--|--------------|
| Power Dissipation | 100 mW |
| Continuous Forward Current | 30 mA |
| Peak Forward Current ¹ | 100 mA |
| Electrostatic Discharge Classification (HBM) | 2000 V |
| Reverse Voltage | 5 V |
| Derating Linear From 25°C | 0.4 mA/°C |
| Operating Temperature Range | -30 ~ +85°C |
| Storage Temperature Range | -40 ~ +100°C |
| Soldering Temperature | 260°C |

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

Electrical Characteristics

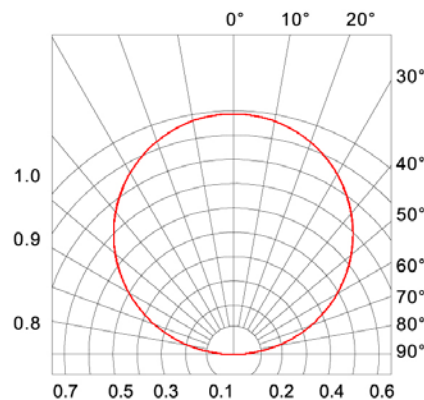
$T_A = 25^\circ\text{C}$ & $I_F = 20$ mA unless otherwise noted

| Emitting Color | Forward Voltage (V) ¹ | | | Recommend Forward Current (mA) | Reverse Current (μA) $V_R=5\text{V}$ | Dominant Wavelength (nm) ² | | Luminous Intensity (mcd) ³ | | Viewing Angle $2\theta_{1/2}$ (deg) |
|----------------|----------------------------------|-----|-----|--------------------------------|--|---------------------------------------|-----|---------------------------------------|-----|--|
| | MIN | TYP | MAX | TYP | MAX | MIN | MAX | MIN | MAX | TYP |
| Red | 1.8 | 2.1 | 2.4 | 20 | 10 | 620 | 632 | 500 | 700 | 140 |
| Green | 3.0 | 3.3 | 3.6 | 20 | 10 | 520 | 532 | 700 | 900 | 140 |
| Blue | 3.0 | 3.3 | 3.6 | 20 | 10 | 465 | 477 | 200 | 500 | 140 |

- Notes: 1. Tolerance of Forward Voltage : $\pm 0.05\text{V}$.
2. Tolerance of Dominant Wavelength : $\pm 0.1\text{nm}$.
3. Tolerance of Luminous Intensity : $\pm 15\%$.

Directivity Radiation

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



Radiation Diagram

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

PLCC6 SMD Top View Package LED SMP6-RGB, RED/GREEN/BLUE



Typical Electrical / Optical Characteristics Curves

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

Relative Spectrum Emission $I_{rel} = f(\lambda)$, $T_A = 25^\circ\text{C}$, $I_F = 20\text{ mA}$
 $V(\lambda)$ = Standard eye response curve

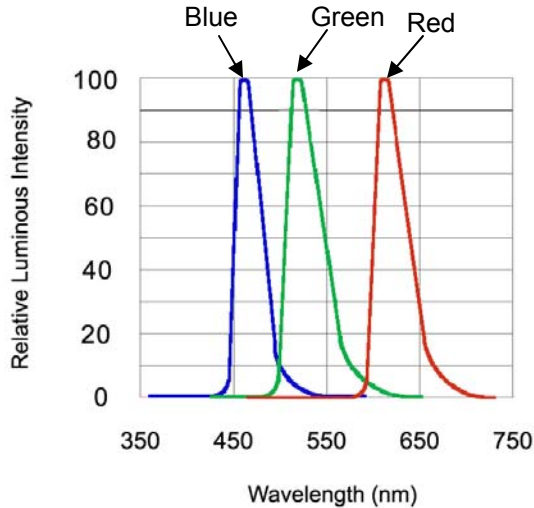


Fig.1 Relative Luminous Intensity vs. Wavelength

Forward Current $I_F = f(V_F)$
 $T_A = 25^\circ\text{C}$

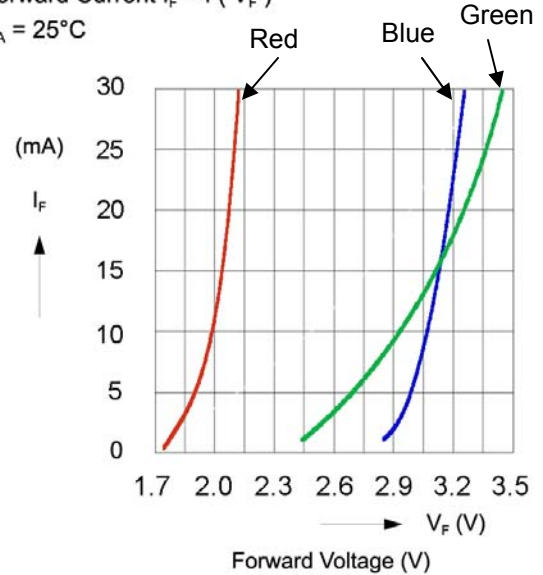


Fig.2 Forward Current vs. Forward Voltage

Relative Luminous Intensity $I_V/I_V(20\text{mA}) = f(I_F)$
 $T_A = 25^\circ\text{C}$

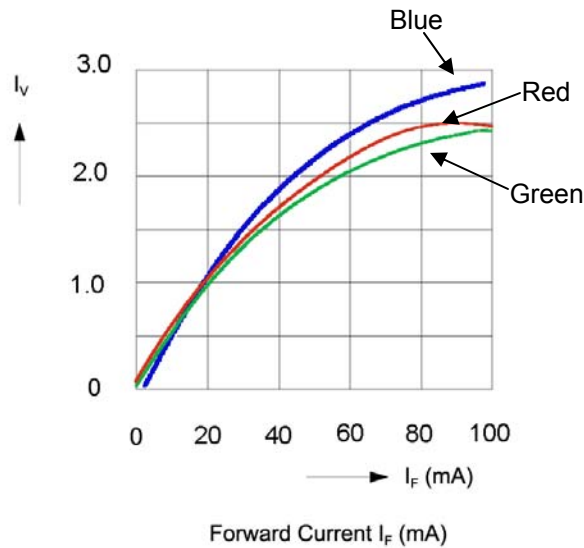


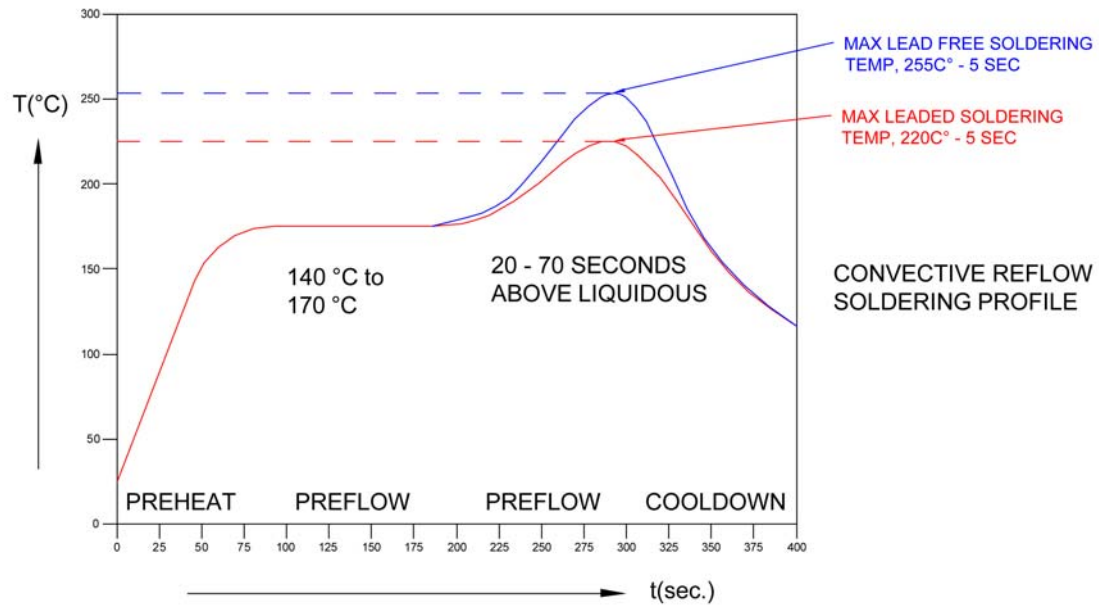
Fig.3 Relative Luminous Intensity vs. Forward Current

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

PLCC6 SMD Top View Package LED SMP6-RGB, RED/GREEN/BLUE

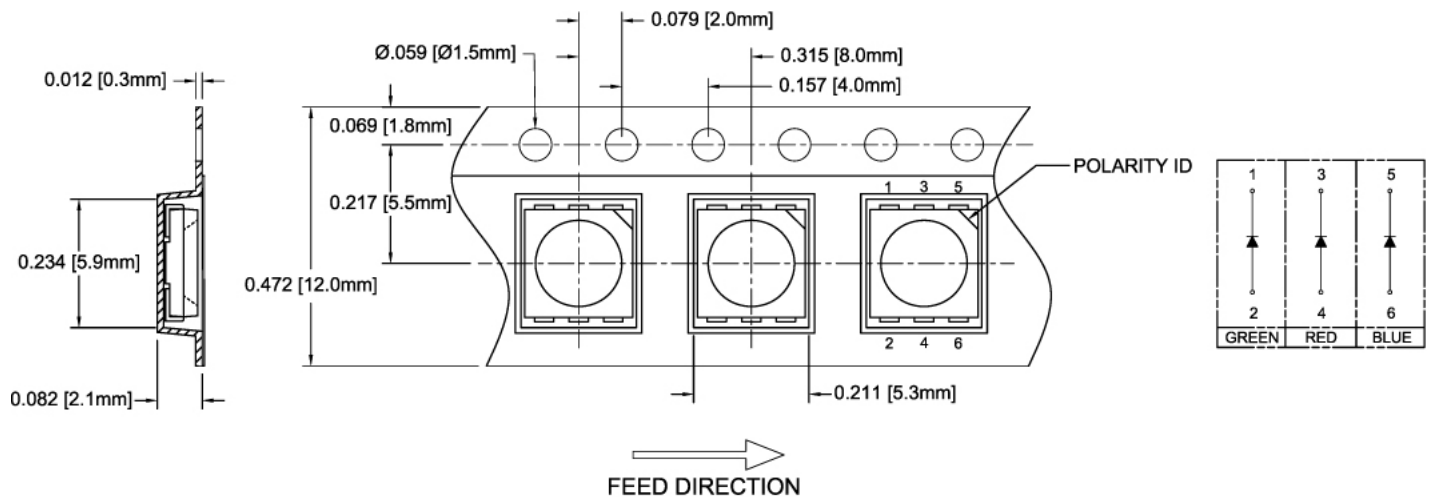


Recommended Soldering Conditions



Tape and Reel Dimensions

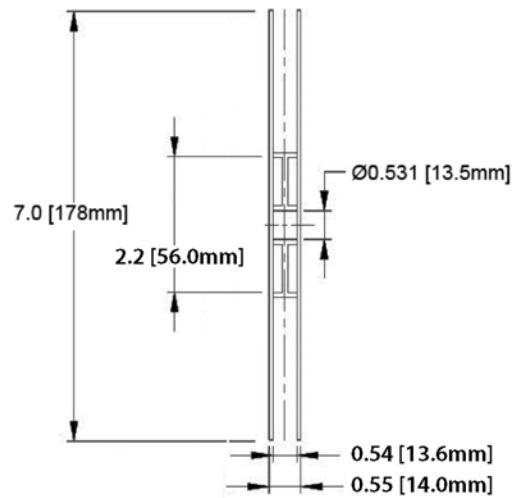
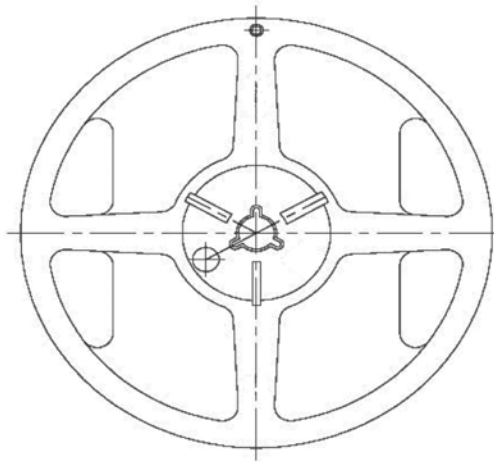
Note: 1000 pcs/Reel



Outline Drawings Notes:
 1. All dimensions are in inches [millimeters].
 2. Standard tolerance: ±0.010" unless otherwise noted.

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

PLCC6 SMD Top View Package LED SMP6-RGB, RED/GREEN/BLUE

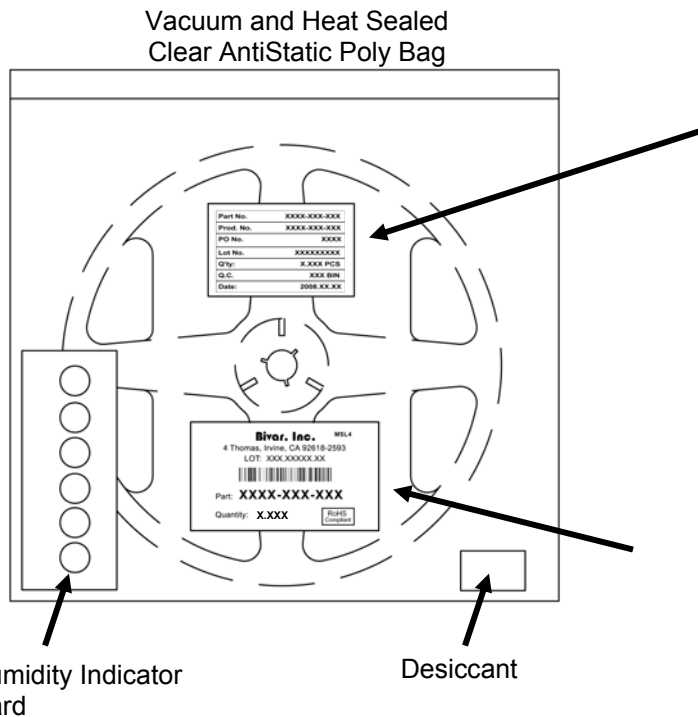


Outline Drawings Notes:

1. All dimensions are in inches [millimeters].
2. Standard tolerance unless otherwise noted: X.XXX ± 0.010"
X.X ± 0.1"

Packaging and Labeling Plan

Note: 1 Reel / Bag



| | |
|-----------|--------------|
| Part No. | XXXX-XXX-XXX |
| Prod. No. | XXXX-XXX-XXX |
| PO No. | XXXX |
| Lot No. | XXXXXXXXXX |
| Q'ty: | X.XXX PCS |
| Q.C. | XXX BIN |
| Date: | 2008.XX.XX |

Internal Quality Control Label

Bivar, Inc. MSL4

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



Part: **XXXX-XXX-XXX**

Quantity: **X.XXX**

RoHS
Compliant

Bivar Standard Packaging Label

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