



# THE DATASHEET OF SMTL2-BWC



# PLCC2 SMD Top View Package LED SMTL2-BWC, BLUE



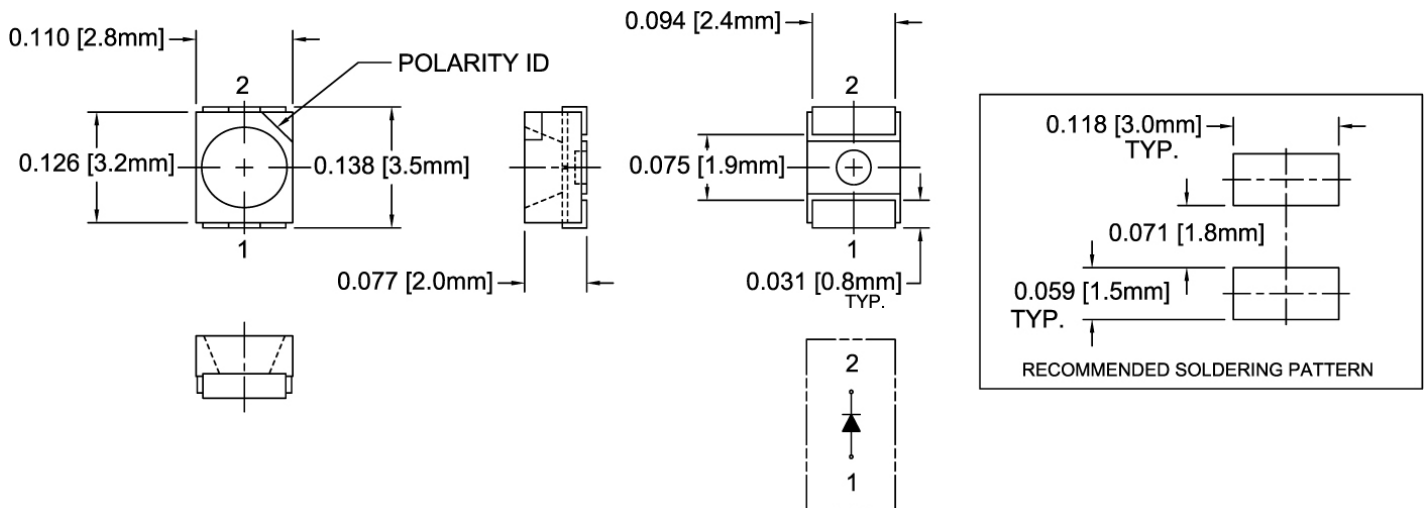
## SMTL2-BWC

- ◆ Industry Standard PLCC2 Footprint
- ◆ Low Profile Package
- ◆ High Luminous Intensity
- ◆ Wide Viewing Angle
- ◆ High Power Efficiency

Bivar SMTL2 LED is offered in an industry standard PLCC2 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 robust package is ideal for harsh working environments and can be used in clusters for high luminous applications. Wide variety of color and intensity combinations are available to meet any illumination needs. Bivar SMTL2 LED is packaged in standard tape and reels for pick and place assemblies.

| Part Number | Material | Emitted Color | Lumen Typ. mcd | Lens Color  | Viewing Angle |
|-------------|----------|---------------|----------------|-------------|---------------|
| SMTL2-BWC   | GaN      | Blue          | 50             | Water Clear | 120°          |

## 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.

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## Absolute Maximum Ratings

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

|  |              |
|--|--------------|
| Power Dissipation  | 80 mW        |
| Continuous Forward Current                                   | 25 mA        |
| Peak Forward Current <sup>1</sup>                            | 100 mA       |
| Reverse Voltage  | 5 V          |
| Derating Linear From 25°C                                    | 0.4 mA/°C    |
| Operating Temperature Range                                  | -40 ~ +85°C  |
| Storage Temperature Range                                    | -40 ~ +100°C |
| Lead Soldering Temperature ( 1.6 mm from body ) <sup>2</sup> | 260°C        |
| Electrostatic Discharge (HBM)                                | 2000 V       |

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

## Electrical Characteristics

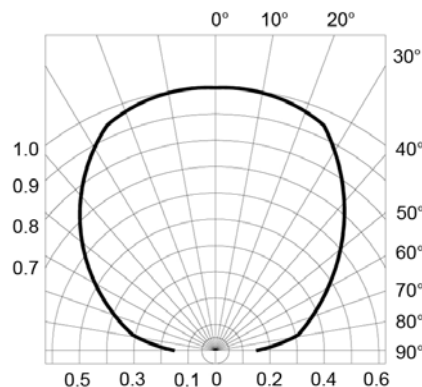
$T_A = 25^\circ\text{C}$  &  $I_F = 20$  mA unless otherwise noted

| Emitting Color | Forward Voltage (V) <sup>1</sup> |     | Recommend Forward Current (mA) | Reverse Current ( $\mu\text{A}$ )<br>$V_R=5\text{V}$ | Dominant Wavelength (nm) <sup>2</sup> |     |     | Luminous Intensity (mcd) <sup>3</sup> |     | Viewing Angle<br>$2\theta_{1/2}$ (deg) |
|----------------|----------------------------------|-----|--------------------------------|--|---------------------------------------|-----|-----|---------------------------------------|-----|--|
|                | TYP                              | MAX | TYP                            | MAX  | MIN                                   | TYP | MAX | MIN                                   | TYP | TYP                                    |
| Blue           | 3.3                              | 4.2 | 20                             | 10   | 461                                   | 466 | 471 | 20                                    | 50  | 120                                    |

- 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

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## Typical Electrical / Optical Characteristics Curves

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

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

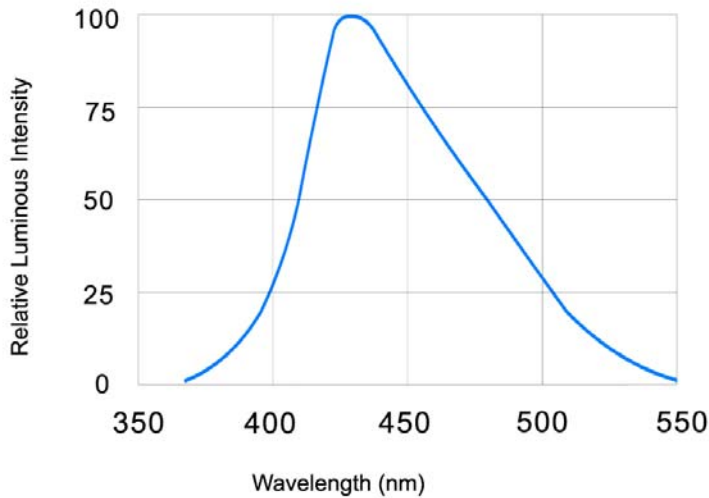


Fig.1 Relative Luminous Intensity vs. Wavelength

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

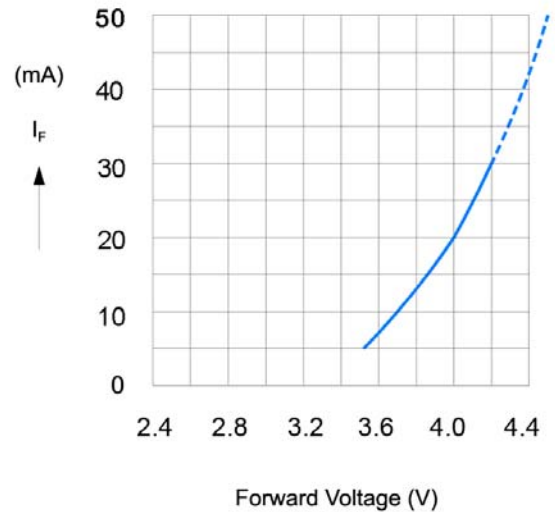


Fig.2 Forward Current vs. Forward Voltage

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

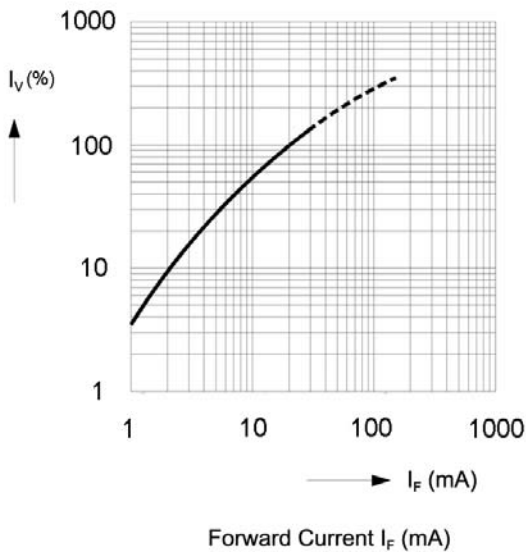


Fig.3 Relative Luminous Intensity vs. Forward Current

Ambient Temperature vs. Allowable Forward Current

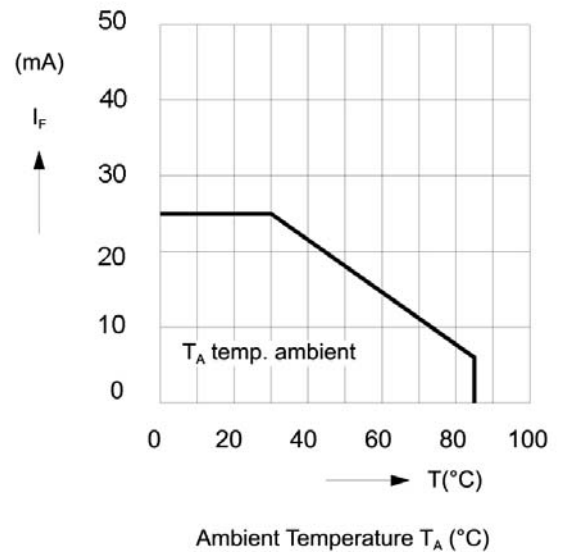


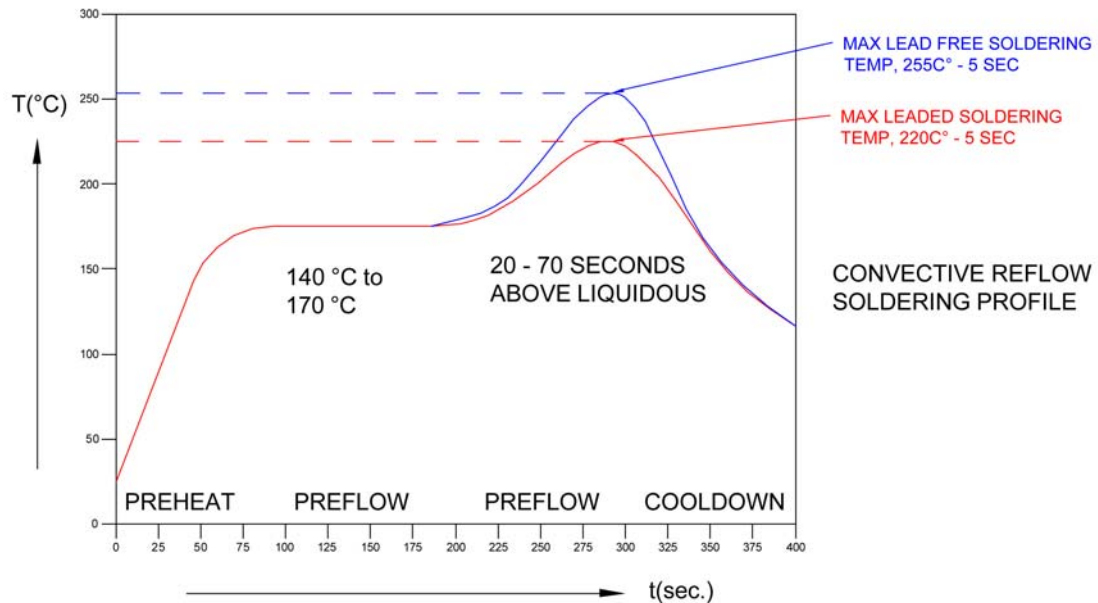
Fig.4 Forward Current vs. Ambient Temperature

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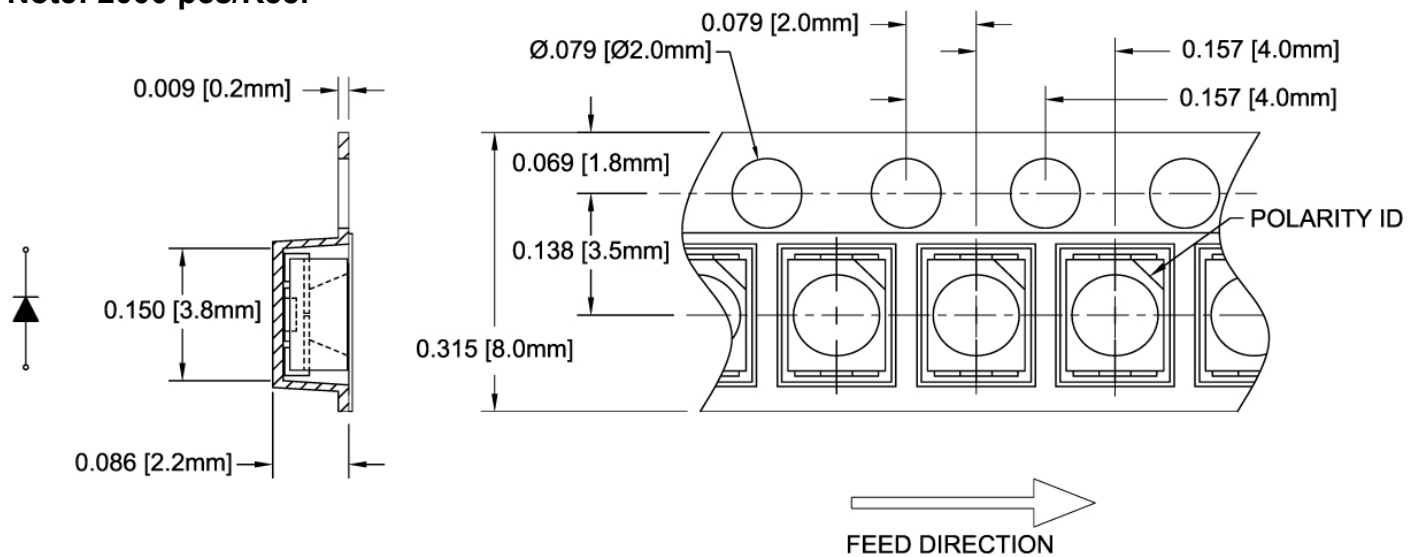


## Recommended Soldering Conditions



## Tape and Reel Dimensions

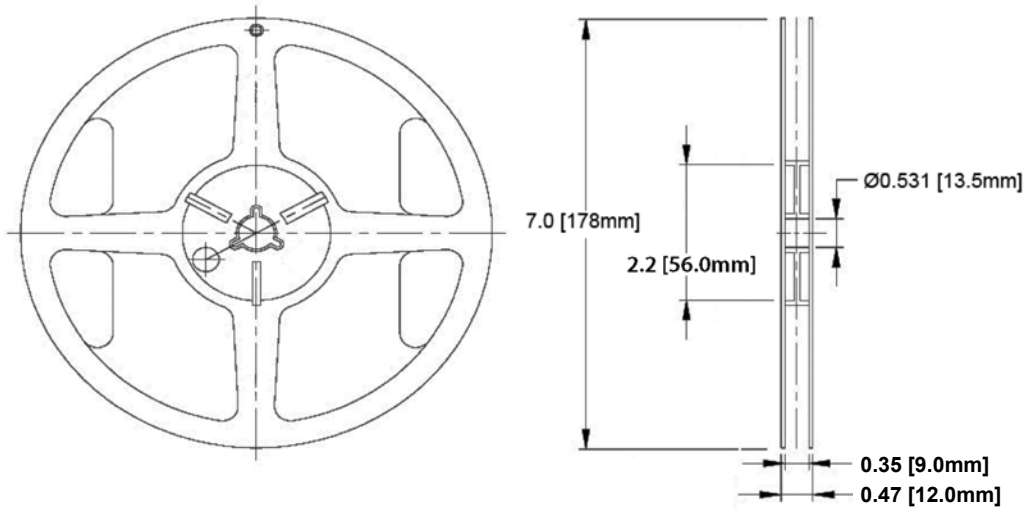
Note: 2000 pcs/Reel



**Outline Drawings Notes:**  
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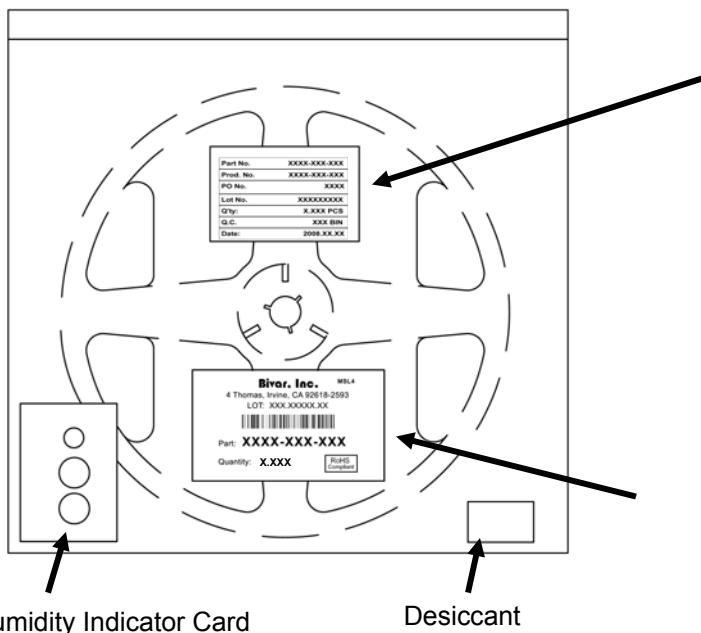
### Outline Drawings Notes:

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

Sealed ESD and Moisture Barrier 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 Standard Packaging Label

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-  Shortage Management
-  Alternative Solution
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