



# THE DATASHEET OF SMTL4-SRGB



# PLCC4 SMD Top View Package LED SMTL4-SRGB, RED/GREEN/BLUE



## SMTL4-SRGB

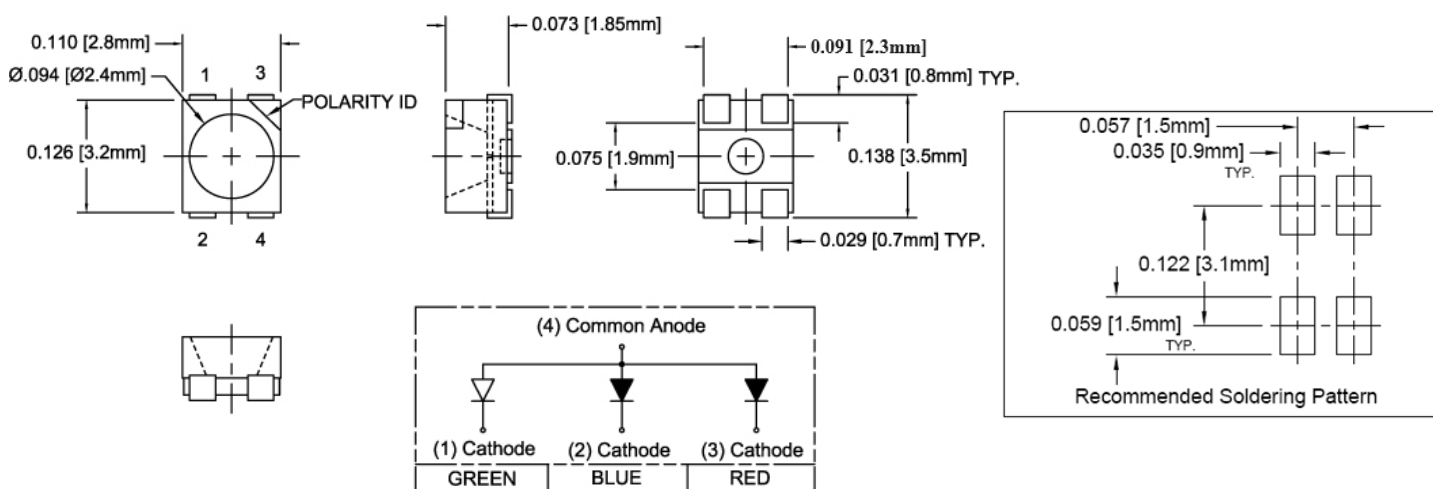
- ◆ Industry Standard PLCC4 Footprint
- ◆ 3 Super Bright Chips in One Low Profile Package
- ◆ High Luminous Intensity
- ◆ Wide Viewing Angle
- ◆ High Power Efficiency



Bivar SMTL4 Super Bright Tri-Color LED combines three chips in a single package and is offered in an industry standard PLCC4 footprint. The SMTL4 LED has a water clear lens for high luminous intensity and wide viewing angle making them ideal for outdoor illumination applications where higher ambient lighting conditions exist. The flexible three chip design allows for a wide variety of lighting options where the chips can be individually driven or mixed to create different color combinations. The robust package is ideal for harsh working environments and can be clustered in LED arrays for high luminous applications. Low power consumption and excellent long life reliability are suitable for battery powered equipment. Bivar SMTL4 LED is packaged in standard tape and reels for pick and place assemblies.

Part Number	Material	Emitted Color	Luminous Intensity Typ. mcd	Lens Color	Viewing Angle
SMTL4-SRGB	AlGaInP	Red	180	Water Clear	120°
	InGaN	Green	1450		
	InGaN	Blue	285		

## 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	Red - 78 mW Green, Blue - 100 mW
Continuous Forward Current	Red - 30 mA Green, Blue - 25 mA
Peak Forward Current <sup>1</sup>	100 mA
Reverse Voltage	5 V
Electrostatic Discharge Classification (HBM)	2000 V
Derating Linear From 25°C	0.4 mA/°C
Operating Temperature Range	-40 ~ +85°C
Storage Temperature Range	-40 ~ +85°C
Soldering Temperature <sup>2</sup>	260°C

Notes: 1. 10% Duty Cycle, Pulse Width  $\leq 0.1$  msec.

2. Solder time less than 5 seconds at temperature extreme.

**Handling:** Reflow soldering must not be performed more than twice. Hand soldering must not be performed more than once.

Sensitive to static electricity or surge voltage. Proper handling required to avoid ESD damage and impair LED reliability.

## 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 ( $\mu\text{A}$ ) $V_R=5\text{V}$		Dominant Wavelength (nm) <sup>2</sup>	Luminous Intensity (mcd) <sup>3</sup>		Viewing Angle $2\theta_{1/2}$ (deg)
	TYP	MAX		TYP	MAX		MIN	TYP	
Red	1.9	2.4	20	10	631	115	180	120	
Green	3.0	3.5	20	10	525	1050	1450		
Blue	3.0	3.5	20	10	470	115	285		

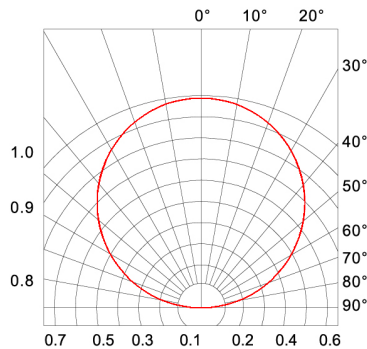
Notes: 1. Tolerance of Forward Voltage :  $\pm 0.05\text{V}$ .

2. Tolerance of Dominant Wavelength :  $\pm 2.5\text{nm}$ .

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

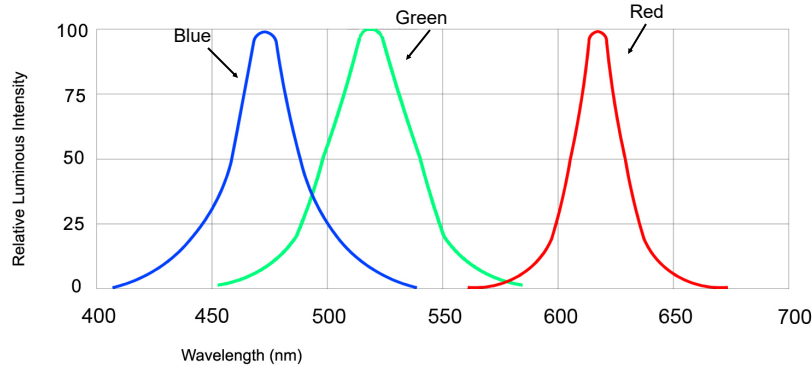


Fig.1 Relative Luminous Intensity vs. Wavelength

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

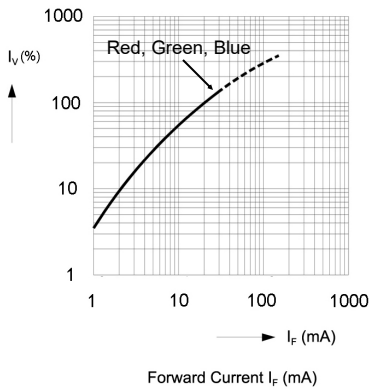


Fig.2 Relative Luminous Intensity vs. Forward Current

Ambient Temperature vs. Allowable Forward Current

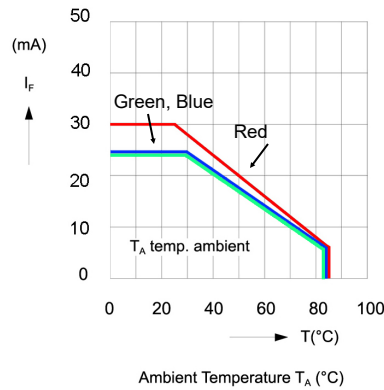


Fig.3 Forward Current vs. Ambient Temperature

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

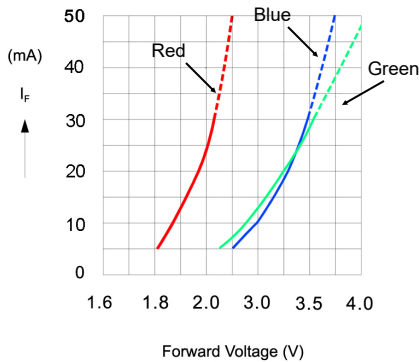


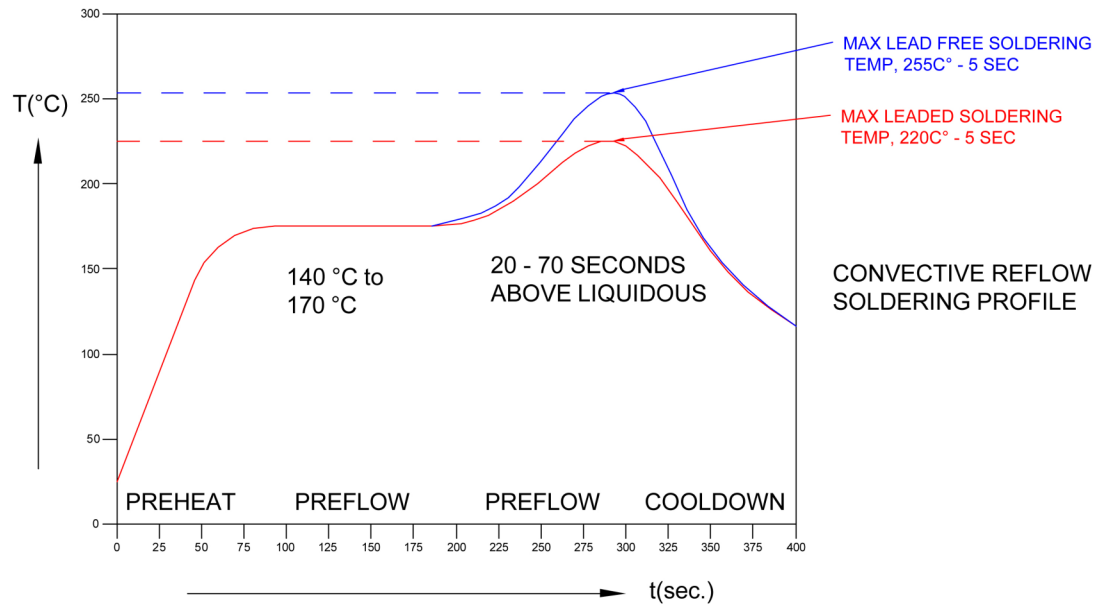
Fig.4 Forward Current vs. Forward Voltage

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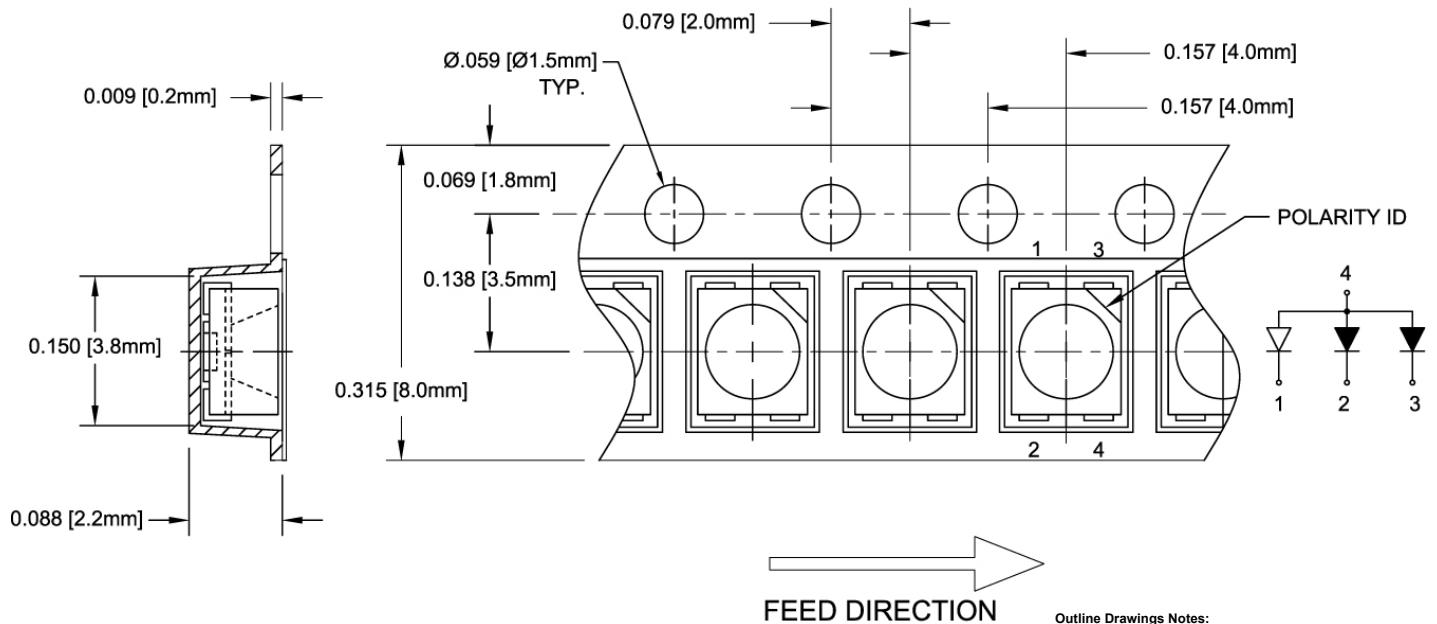


## Recommended Soldering Conditions



## Tape and Reel Dimensions

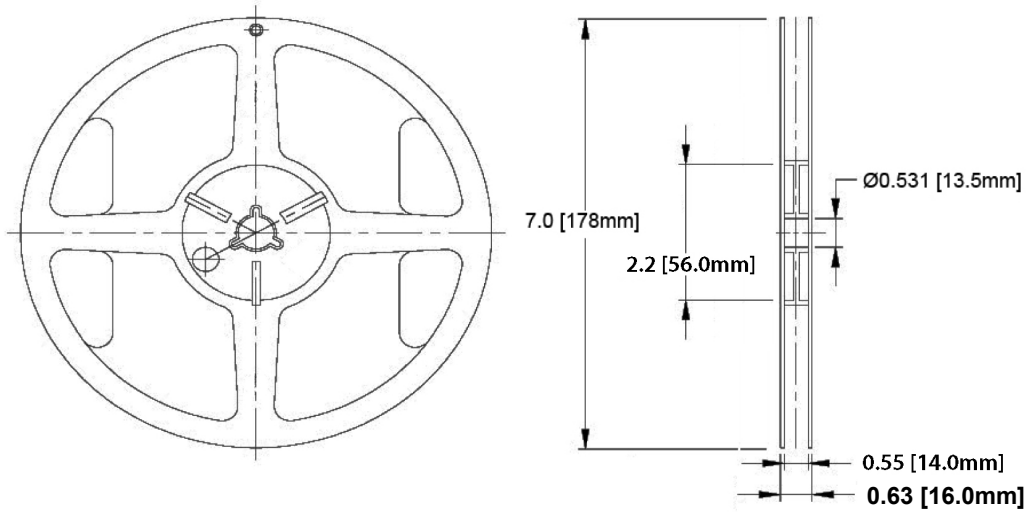
Note: 2000 pcs/Reel



Outline Drawings Notes:  
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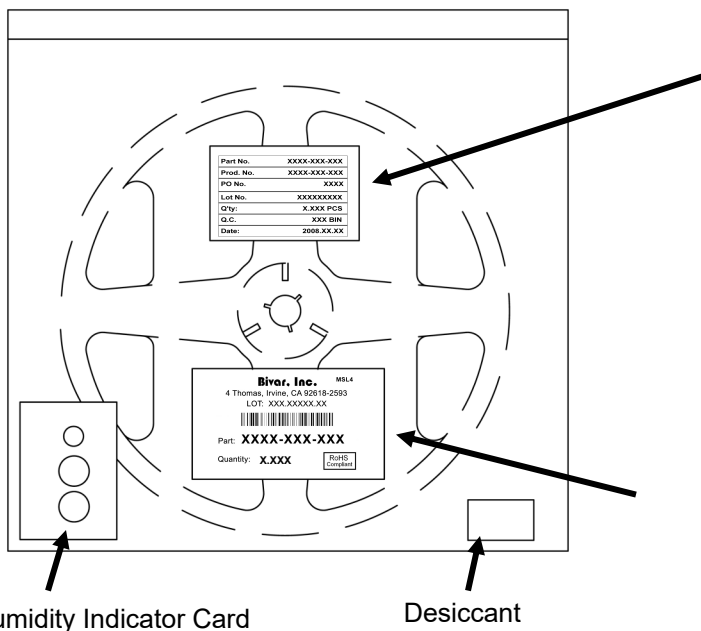
### Outline Drawings Notes:

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, 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

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## REVISION HISTORY

Rev	Description	Date	Approved
A	Engineering Release	02/26/16	Jeffrey Chiang
B	Updated Dimensions and Properties	05/23/24	Ricardo Pereyra

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-  Alternative Solution
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