

# SMTL4-RYB Datasheet



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DiGi Electronics Part Number	SMTL4-RYB-DG
Manufacturer	<a href="#">Bivar Inc.</a>
Manufacturer Product Number	SMTL4-RYB
Description	LED BLUE/RED/YL CLR 4PLCC SMD
Detailed Description	Blue, Red, Yellow 466nm Blue, 640nm Red, 585nm Yellow LED Indication - Discrete 3.3V Blue, 1.85V Red, 1.9V Yellow 4-PLCC



Tel: +00 852-30501935

RFQ Email: [Info@DiGi-Electronics.com](mailto:Info@DiGi-Electronics.com)

DiGi is a global authorized distributor of electronic components.

## Purchase and inquiry

Manufacturer Product Number:

SMTL4-RYB

Series:

-

Color:

Blue, Red, Yellow

Lens Color:

Colorless

Millicandela Rating:

50mcd Blue, 36mcd Red, 16mcd Yellow

Lens Size:

2.40mm Dia

Current - Test:

20mA Blue, 20mA Red, 20mA Yellow

Mounting Type:

Surface Mount

Wavelength - Peak:

-

Package / Case:

4-PLCC

Size / Dimension:

3.20mm L x 2.80mm W

Base Product Number:

SMTL4

Manufacturer:

Bivar Inc.

Product Status:

Active

Configuration:

Common Anode

Lens Transparency:

Clear

Lens Style:

Round with Flat Top

Voltage - Forward (Vf) (Typ):

3.3V Blue, 1.85V Red, 1.9V Yellow

Viewing Angle:

120°

Wavelength - Dominant:

466nm Blue, 640nm Red, 585nm Yellow

Features:

-

Supplier Device Package:

4-PLCC

Height (Max):

2.05mm

## Environmental & Export classification

RoHS Status:

ROHS3 Compliant

ECCN:

EAR99

Moisture Sensitivity Level (MSL):

4 (72 Hours)

HTSUS:

8541.41.0000

# PLCC4 SMD Top View Package LED SMTL4-RYB, RED/YELLOW/BLUE

# BIVAR

## SMTL4-RYB

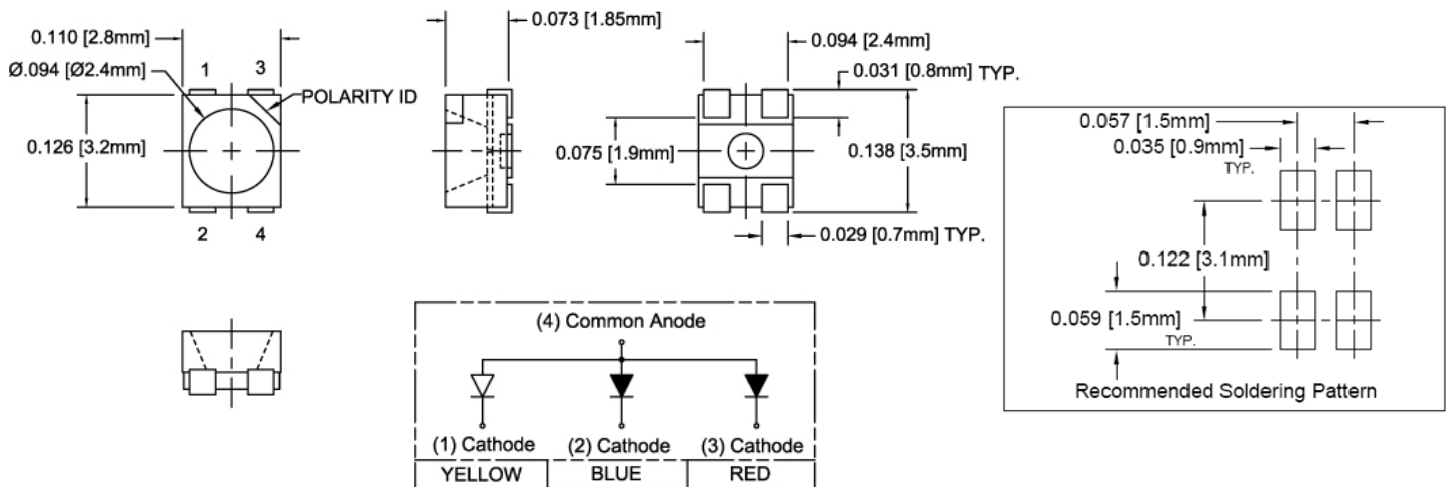
- ◆ Industry Standard PLCC4 Footprint
- ◆ 3 Chips in One Low Profile Package
- ◆ High Luminous Intensity
- ◆ Wide Viewing Angle
- ◆ High Power Efficiency



Bivar SMTL4 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 small scale applications such as illumination, general indication, and backlighting. 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	Lumen Typ. mcd	Lens Color	Viewing Angle
SMTL4-RYB	AlGaAs	Red	36	Water Clear	120°
	GaAsP	Yellow	16		
	GaN	Blue	50		

## 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.

# PLCC4 SMD Top View Package LED SMTL4-RYB, RED/YELLOW/BLUE



## Absolute Maximum Ratings

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

Power Dissipation	Red, Yellow - 72 mW Blue - 100 mW
Continuous Forward Current	Red, Yellow - 30 mA Blue - 25mA
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 ~ +100°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.

## Electrical Characteristics

$T_A = 25^\circ\text{C}$  &  $I_F = 20\text{ mA}$  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	TYP	MIN	TYP	TYP
Red	1.85	2.3	20	10	640	18	36	120
Yellow	1.9	2.4	20	10	585	10	16	
Blue	3.3	4.2	20	10	466	20	50	

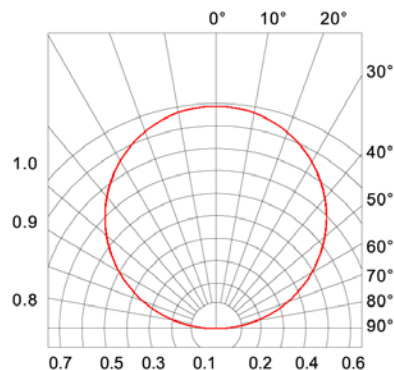
Notes: 1. Tolerance of Forward Voltage :  $\pm 0.05\text{V}$ .

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.

# PLCC4 SMD Top View Package LED SMTL4-RYB, RED/YELLOW/BLUE



## Typical Electrical / Optical Characteristics Curves

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

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

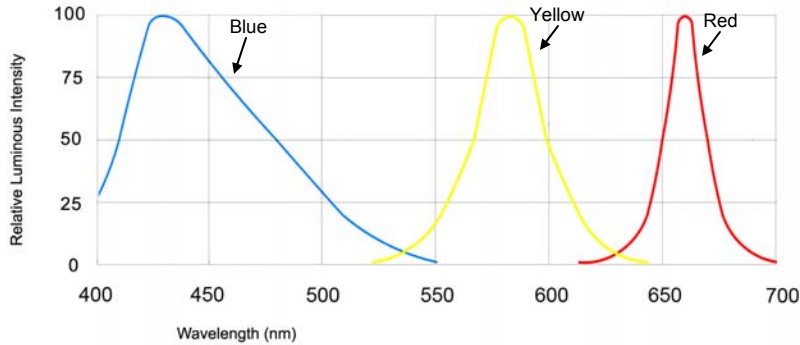


Fig.1 Relative Luminous Intensity vs. Wavelength

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

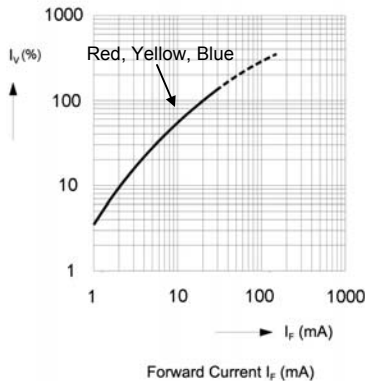


Fig.2 Relative Luminous Intensity vs. Forward Current

Ambient Temperature vs. Allowable Forward Current

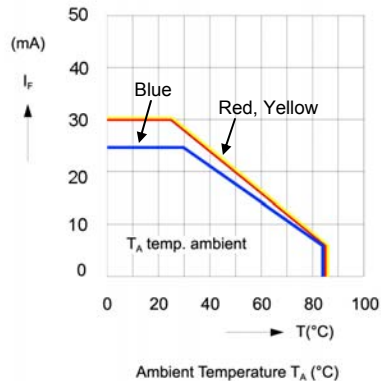


Fig.3 Forward Current vs. Ambient Temperature

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

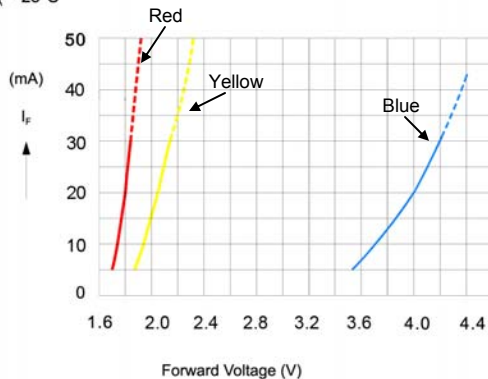


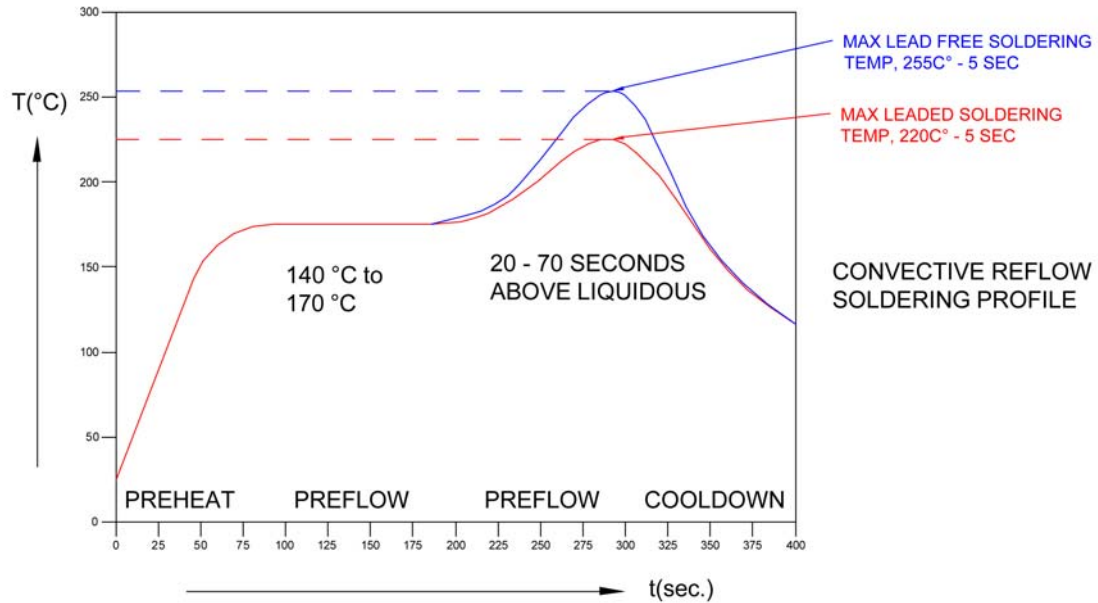
Fig.4 Forward Current vs. Forward Voltage

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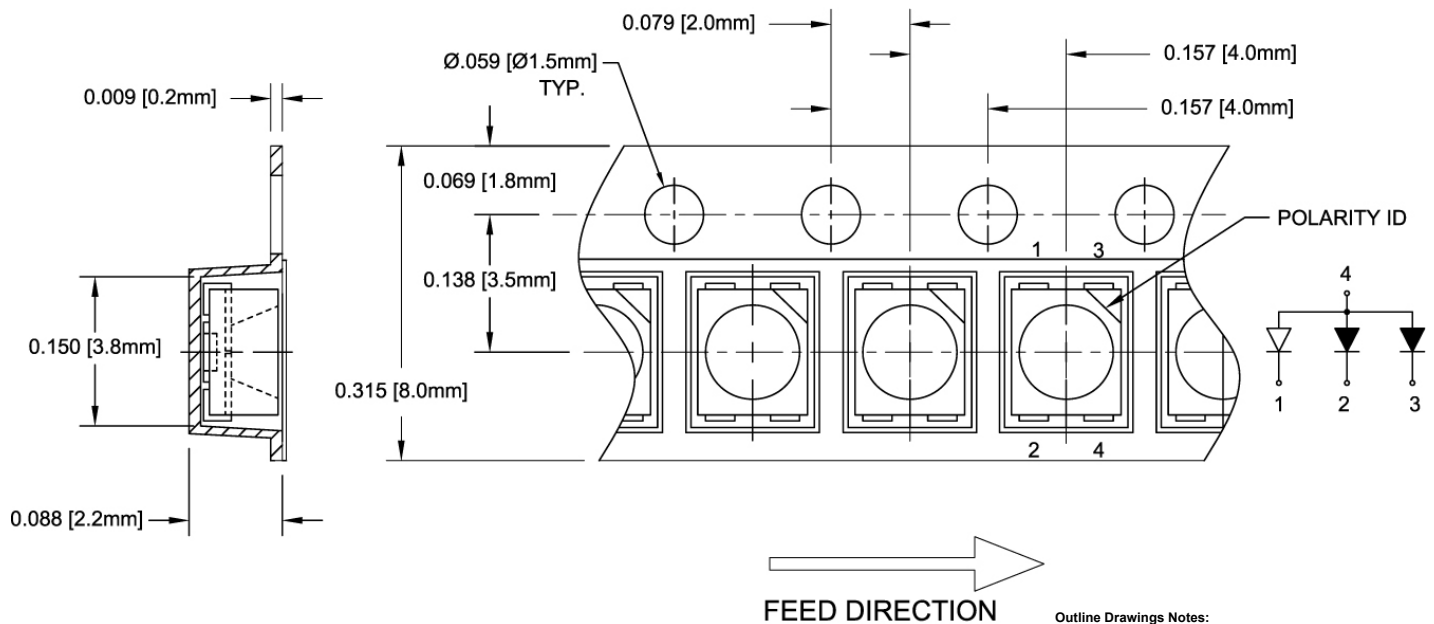


## Recommended Soldering Conditions



## Tape and Reel Dimensions

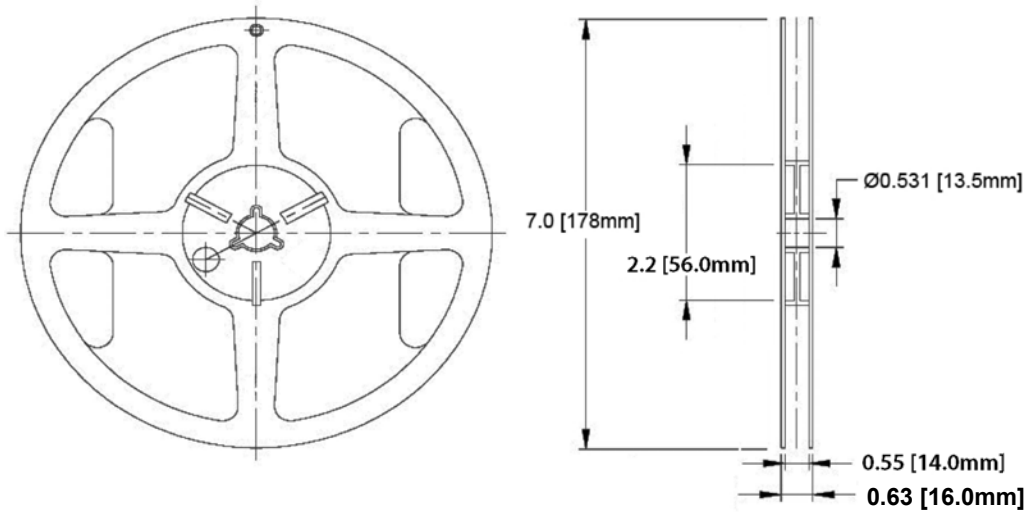
Note: 2000 pcs/Reel



Outline Drawings Notes:  
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 2. Standard tolerance:  $\pm 0.010$  unless otherwise noted.

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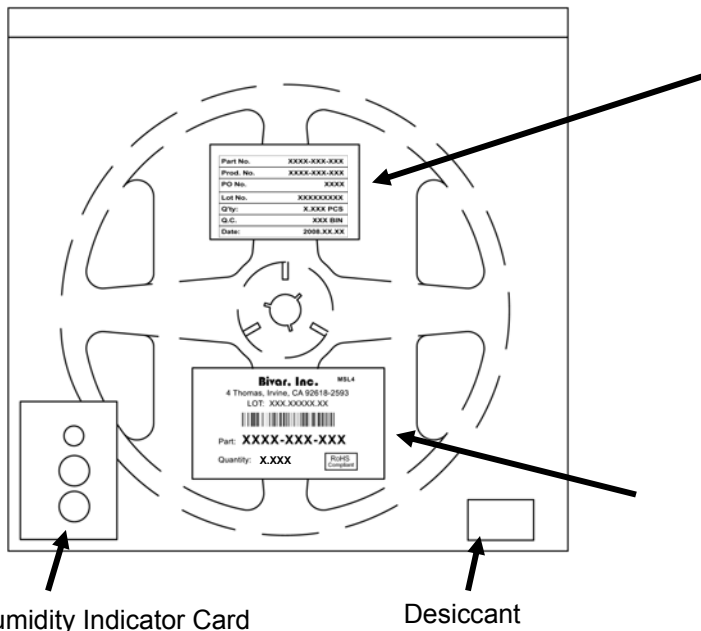
**Outline Drawings Notes:**

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