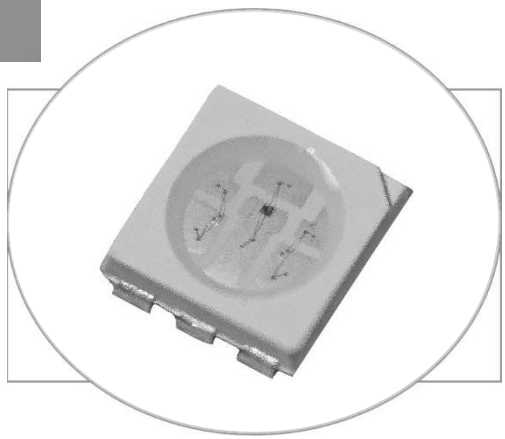
PLCC6 SMD Top View Package LED
SMTL6-RGB-1, RED/GREEN/BLUE

SMTL6-RGB-1

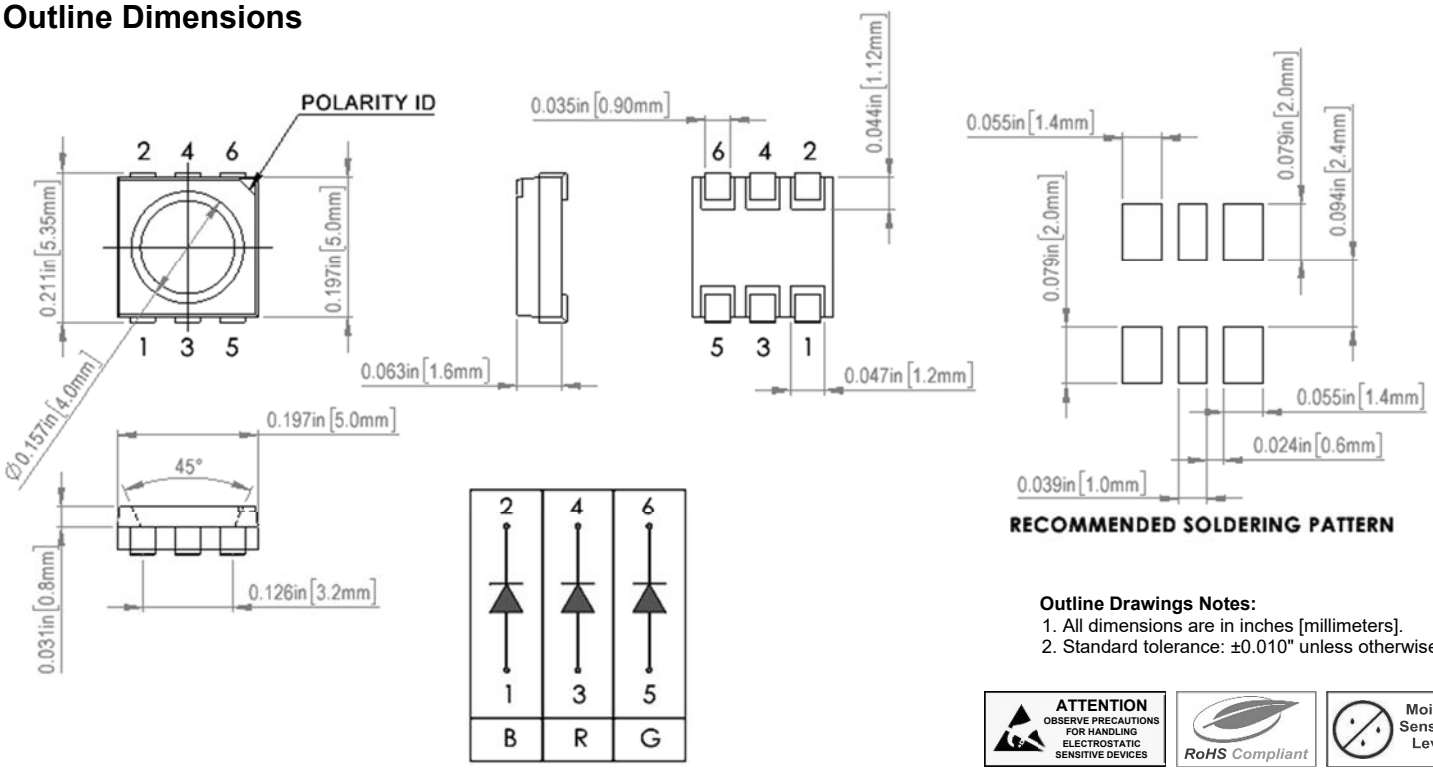
- ♦ Industry Standard PLCC6 Package
- ♦ 3 Chips in One Low Profile Package
- ♦ High Luminous Intensity
- ♦ Wide Viewing Angle
- ♦ High Power Efficiency



Bivar SMTL6-RGB-1 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 SMTL6 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
SMTL6-RGB-1	AlGaInP	Red	900	Water Clear	120°
	InGaN	Green	1500		
	InGaN	Blue	300		

Outline Dimensions



RECOMMENDED SOLDERING PATTERN

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

ATTENTION OBSERVE PRECAUTIONS FOR HANDLING ELECTROSTATIC SENSITIVE DEVICES

RoHS Compliant

Moisture Sensitivity Level 3

Absolute Maximum Ratings

T_A = 25°C unless otherwise noted

Power Dissipation	70 mW
Continuous Forward Current	(R) 30 mA; (G) 20mA; (B) 20mA
Peak Forward Current [1]	100 mA
Electrostatic Discharge Classification (HBM)[2]	2000 V
Reverse Voltage (<10uA)	5 V
Derating Linear from 25°C	0.4 mA/°C
Operating Temperature Range	-40C - +105°C
Storage Temperature Range	-40C - +105°C

Notes: 1. 10% Duty Cycle, Pulse Width ≤ 0.1 msec. 2. HBM EST Test, Pass Rate >85%

Electrical / Optical Characteristics

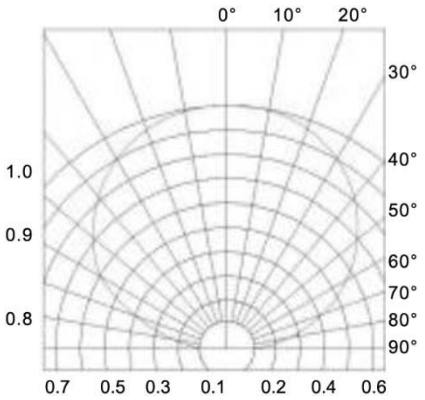
T_A = 25°C & I_F = 20 mA unless otherwise noted

Emitting Color	Forward Voltage (V)[1]			Recommend Forward Current (mA)			Reverse Current (μA)	Dominant Wavelength (nm)[2]			Luminous Intensity Iv (mcd)[3]			Viewing Angle 2 Θ ½ (deg)
	MIN	TYP	MAX	MIN	TYP	MAX	MAX	MIN	TYP	MAX	MIN	TYP	MAX	TYP
Red	1.8	2.2	2.4	/	20	/	10	618	/	630	800	/	1400	120
Green	2.8	3.0	3.4	/	20	/	10	520	/	530	1400	/	2000	120
Blue	2.8	3.0	3.4	/	20	/	10	465	/	475	200	/	600	120

Notes: 1. Tolerance of forward voltage : ±0.1V. 2. Tolerance of dominant wavelength : ±1.0nm. 3. Tolerance of luminous intensity : ±10%

Directivity Radiation

T_A = 25°C unless otherwise noted



Radiation Diagram

Typical Electrical / Optical Characteristics

T_A = 25°C unless otherwise noted

Relative Spectrum Emission I_{rel} = f (I), T_A = 25°C , I_F **= 5 mA**
V(I) = Standard eye response curve

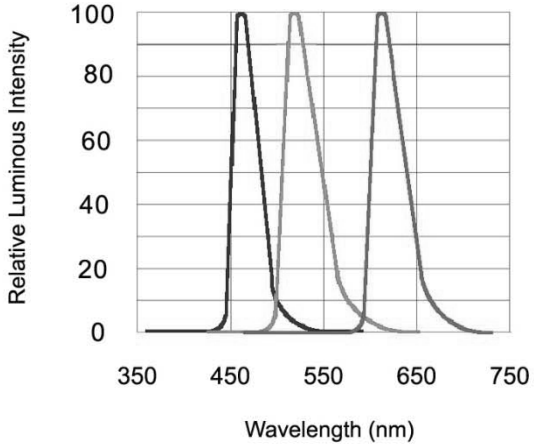


Fig.1 Relative Luminous Intensity vs. Wavelength

Forward Current I_F = f (V_F)
T_A = 25°C

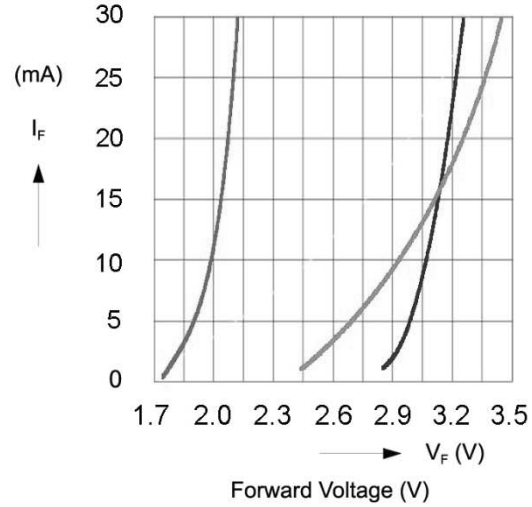


Fig.2 Forward Current vs. Forward Voltage

Relative Luminous Intensity I_V/I_V (20mA) = f (I_F)
T_A = 25°C

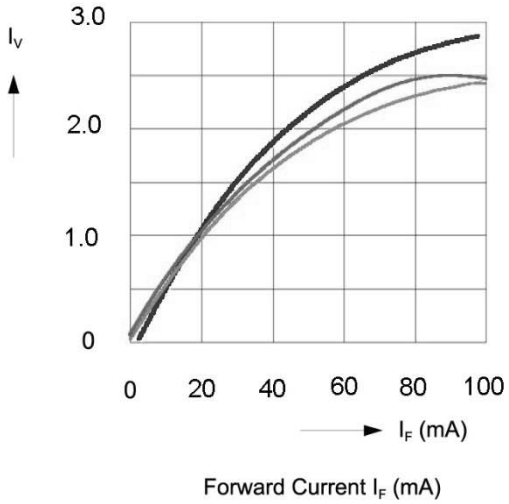
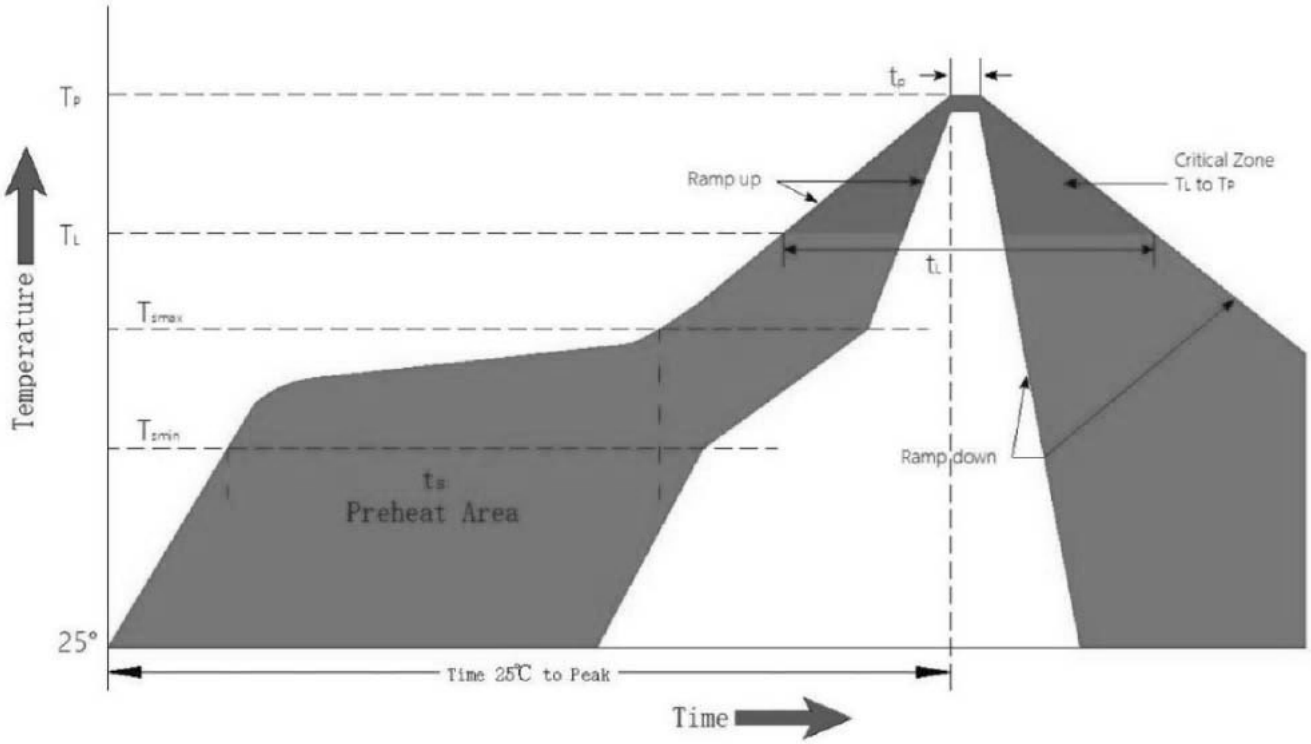


Fig.3 Relative Luminous Intensity vs. Forward Current

Recommended Soldering Conditions

Reflow Soldering



T_P = 250 ℃	t_P: 2 - 4 sec
T_L = 217 ℃	t_L: 150 sec max
T_{SMAX} = 200 ℃	
T_{SMIN} = 150 ℃	t_S: 120 sec min
Time 25 ℃ to Peak:	8 minutes max.
Ramp up:	4 ℃/sec max.
Ramp down:	4 ℃/sec max.

We recommend the reflow temperature of 245℃ (± 5℃). The maximum soldering temperature should be limited to 260℃. Stress on the LED should be avoided during heating in the soldering process. After soldering, do not deal with the product before its temperature drops down to room temperature.

Soldering Iron

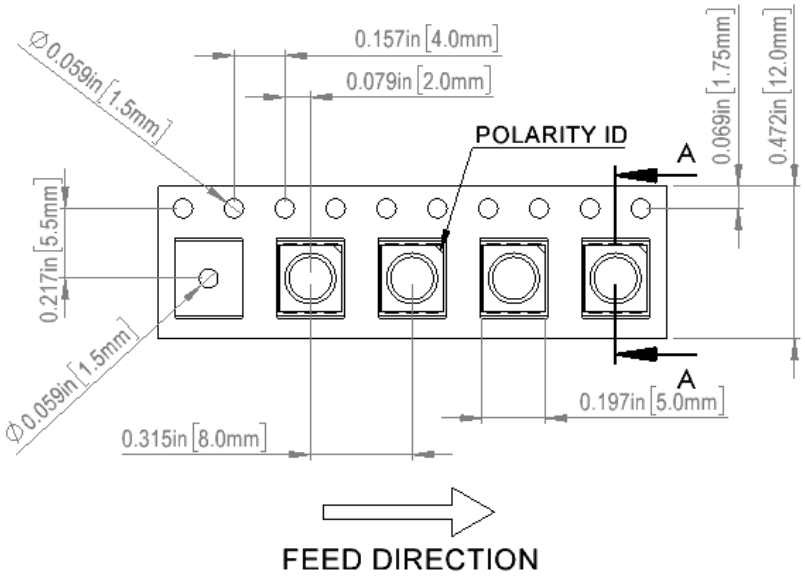
1. Temperature at tip of iron: 360 ℃ Max. (20W Max.)
2. Soldering time: 3 sec ± 1. (One Time Only)

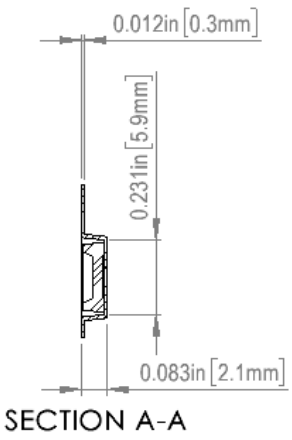
Caution: Damage to product often starts at the time of hand soldering.

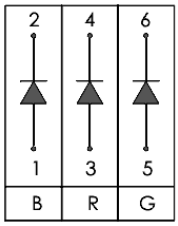
Storage

1. The storage temperature and R.H. are 5℃ ~30℃, R.H. 60% Max.
2. Once the package is opened, the products should be used within 24 hrs. Otherwise, they should be kept in a dampproof box with a desiccating agent.
3. It is recommended to bake at 60℃ ± 3℃ for 48 hrs before soldering them after the package is unsealed for 24 hrs.

Tape and Reel Dimensions
Note: 1000 pcs/Reel







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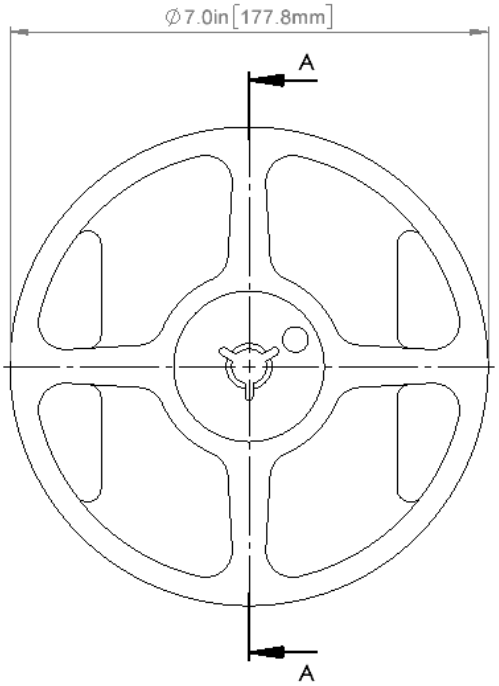
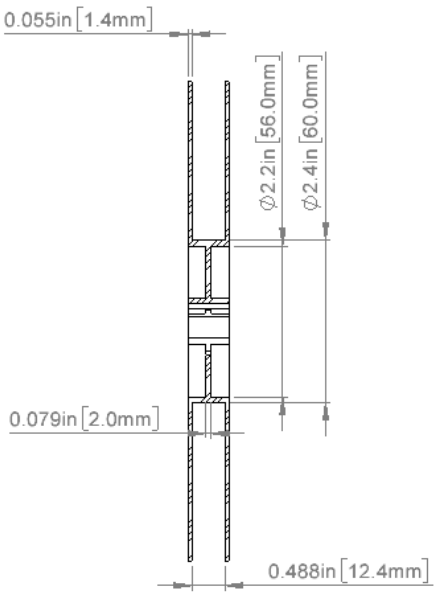




SECTION A-A

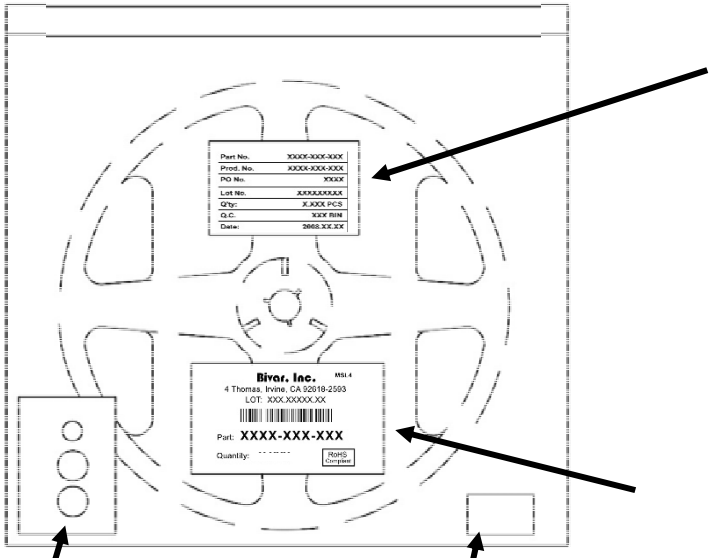
Outline Drawing Notes:
All Dimensions are in inches [millimeters]
Standard tolerance unless otherwise noted:

X.XXX	±.010”
X.XX	±.020”
X.X	±.1”

Packaging and Labeling Plan

Note: 1 Reel / Bag

Sealed ESD and Moisture Barrier Bag



Humidity Indicator Card

Desiccant

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

Internal Quality Control Label

Bivar Standard Packaging Label

Mouser Electronics

Authorized Distributor

Click to View Pricing, Inventory, Delivery & Lifecycle Information:

BIVAR:

SMTL6-RGB-1