

# Cree® PLCC2 1 in 1 SMD LED

## CLM1B-RKW/AKW

### Data Sheet

SMD LEDs are packaged in the industry-standard package. These LEDs have high reliability performance and are designed to work under a wide range of environmental conditions. This high-reliability feature makes them ideally suited to be used under architectural lighting application conditions.

Their wide viewing angle makes these LEDs ideally suited for channel-letter or architectural-lighting applications. The flat-top emitting surface makes it easy for these LEDs to mate with light pipes.



#### FEATURES

- Size (mm): 3.2 x 2.7
- Color and Typical Dominant Wavelength (nm):
  - » Red(624)
  - » Amber(591)
- Luminous Intensity (mcd)
  - » CLM1B-RKW(450-1120)
  - » CLM1B-AKW(355-900)
- Viewing Angle: 120 degree
- Lead-Free
- RoHS-Compliant

#### APPLICATIONS

- Light Strip
- Architectural Lighting
- Channel Letter



## Absolute Maximum Ratings ( $T_A = 25^\circ\text{C}$ )

Items	Symbol	Absolute Maximum Rating	Unit
		RKW/AKW	
Forward Current	$I_F$	50	mA
Peak Forward Current <sup>Note</sup>	$I_{FP}$	200	mA
Reverse Voltage	$V_R$	5	V
Power Dissipation	$P_D$	130	mW
Operation Temperature	$T_{opr}$	-40 ~ +100	$^\circ\text{C}$
Storage Temperature	$T_{stg}$	-40 ~ +100	$^\circ\text{C}$
Junction Temperature	$T_J$	110	$^\circ\text{C}$
Junction/Ambient	$R_{THJA}$	450	$^\circ\text{C}/\text{W}$
Junction/Solder Point	$R_{THJS}$	300	$^\circ\text{C}/\text{W}$
Electrostatic Discharge Classification(MIL-STD-883E)	ESD	Class 2	

**Note:** Pulse width  $\leq 10$  msec, duty cycle  $\leq 10\%$ .

## Typical Electrical & Optical Characteristics ( $T_A = 25^\circ\text{C}$ )

Characteristics	Color	Symbol	Condition	Unit	Minimum	Typical	Maximum
Forward Voltage	RKW/AKW	$V_F$	$I_F = 20$ mA	V		2.1	2.6
Reverse Current	RKW/AKW	$I_R$	$V_R = 5$ V	$\mu\text{A}$			10
Dominant Wavelength	RKW	$\lambda_D$	$I_F = 20$ mA	nm	618	624	630
	AKW	$\lambda_D$	$I_F = 20$ mA	nm	584	591	596
Luminous Intensity	RKW	$I_v$	$I_F = 20$ mA	mcd	450	650	
	AKW	$I_v$	$I_F = 20$ mA	mcd	355	600	
50% Power Angle	RKW/AKW	$2\theta_{1/2}$	$I_F = 20$ mA	deg		120	



## Intensity Bin Limit ( $I_F = 20 \text{ mA}$ )

Red (CLM1B-RKW)

Bin Code	Min. (mcd)	Max. (mcd)
Ua	450	560
Ub	560	710
Va	710	900
Vb	900	1120

Amber (CLM1B-AKW)

Bin Code	Min. (mcd)	Max. (mcd)
Tb	355	450
Ua	450	560
Ub	560	710
Va	710	900

Tolerance of measurement of luminous Intensity is  $\pm 10\%$ .

## Color Bin Limit ( $I_F = 20 \text{ mA}$ )

Red (CLM1B-RKW)

Bin Code	Min. (nm)	Max. (nm)
RA	618	630

Amber (CLM1B-AKW)

Bin Code	Min. (nm)	Max. (nm)
A2	584	587
A3	587	590
A4	590	593
A5	593	596

Tolerance of measurement of dominant wavelength is  $\pm 1 \text{ nm}$ .

# Graphs

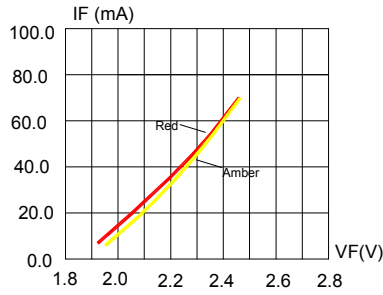


FIG.1 FORWARD CURRENT VS.

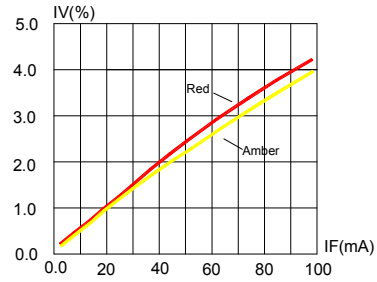


FIG.2 RELATIVE LUMINOUS INTENSITY VS. FORWARD CURRENT

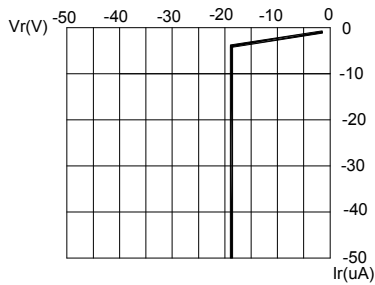


FIG.3 RED&AMBER REVERSE CURRENT VS. REVERSE VOLTAGE.

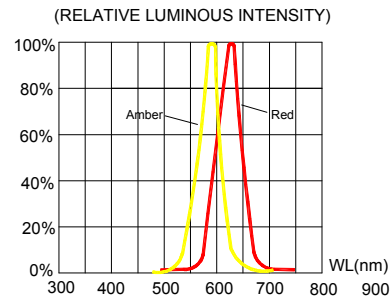


FIG.4 RELATIVE LUMINOUS INTENSITY VS. WAVELENGTH.

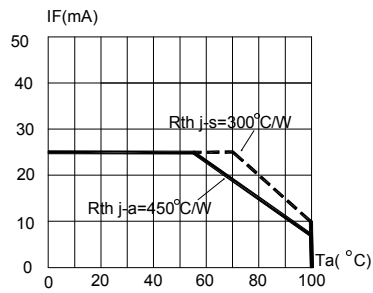


FIG.5 RED&AMBER MAXIMUM FORWARD DCCURRENT VS AMBIENT TEMPERATURE ( $T_{jmax}=110^{\circ}C$ )

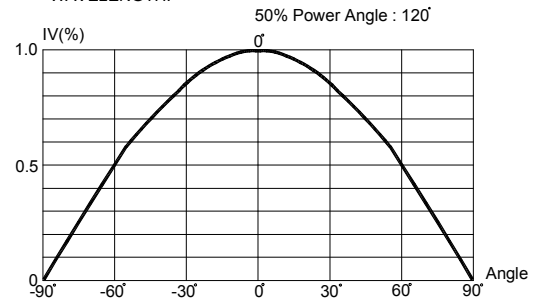
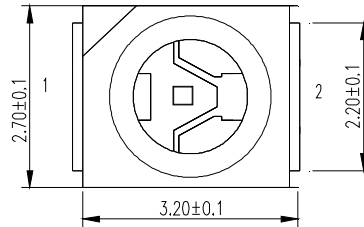
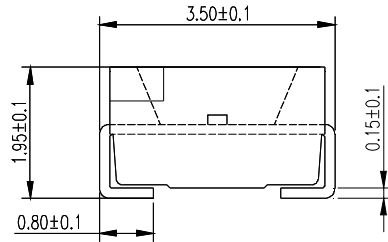



FIG.6 FAR FIELD PATTERN

## Mechanical Dimensions

All dimensions are in mm.



ANODE ①  CATHODE ②

## Notes

### RoHS Compliance

The levels of environmentally sensitive, persistent biologically toxic (PBT), persistent organic pollutants (POP), or otherwise restricted materials in this product are below the maximum concentration values (also referred to as the threshold limits) permitted for such substances, or are used in an exempted application, in accordance with EU Directive 2002/95/EC on the restriction of the use of certain hazardous substances in electrical and electronic equipment (RoHS), as amended through April 21, 2006.

### Vision Advisory Claim

Users should be cautioned not to stare at the light of this LED product. The bright light can damage the eye.

## Packaging

- The boxes are not water-resistant, and they must be kept away from water and moisture.
- The LEDs are packed in cardboard boxes after packaging in normal or anti-electrostatic bags.
- Cardboard boxes will be used to protect the LEDs from mechanical shocks during transportation.
- The reel pack is applied in SMD LED.
- Max 2000 pcs per reel.

