C5847RGBWC-12W

5.8*4.7mm,3W Multi Color LEDs

5847 Surface Mount LEDs Light Source

Technical Data Sheet

Features:

- SMT ceramic package with high efficiency.
- Optical indicator.
- Colorless clear window.
- Ideal for backlight and light pipe application.
- Wide viewing angle.
- Suitable for automatic placement equipment.
- Available on tape and reel (12mm Tape).
- The product itself will remain within RoHS compliant Version

Descriptions:

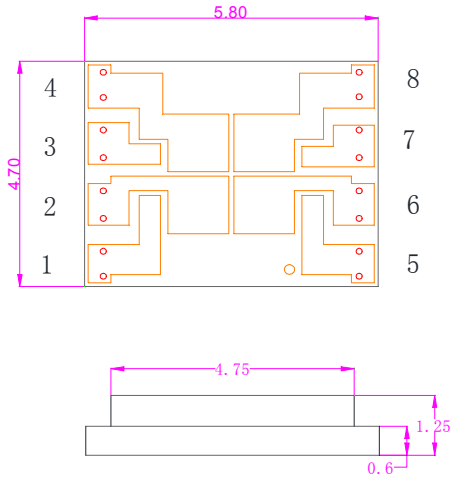
- The C5847 series is available in soft red, orange, yellow, green, blue and white. Due to the package design, the LED has wide viewing angle and optimized light coupling by inter reflector. This feature makes the SMT TOP LED ideal for light pipe application. The low current requirement makes this device ideal for portable equipment or any other application where power is at a premium.

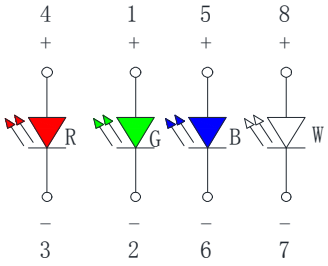
Applications:

- business lighting
- Stage atmosphere light
- Decorative lighting
- Garden lighting

Part No.	Emitting Color
C5847RGBWC-12W	Multi Color

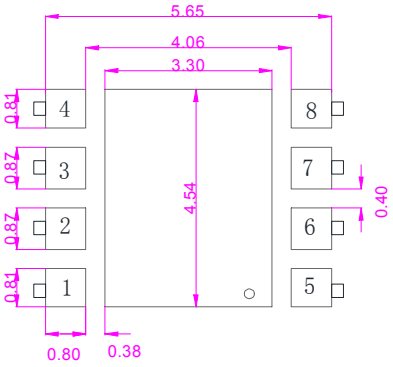
Package Dimension:





Polarity

Recommended Soldering Patter



Notes:

1. All dimensions are in millimeters (inches).
2. Tolerance is ± 0.25 mm (.010″) unless otherwise noted.

Absolute Maximum Ratings at Ta=25℃

Parameters	Symbol		MAX	Unit
Power Dissipation	PD	Hyper Red	1820	mW
		Pure Green	2380	
		Blue	2520	
		Warm White	2520	
Peak Forward Current[a]	IFP	Hyper Red	1000	mA
		Pure Green	1000	
		Blue	1000	
		Warm White	1000	
Continuous Forward Current[b]	IF	Hyper Red	700	mA
		Pure Green	700	
		Blue	700	
		Warm White	700	
Reverse Voltage	VR		5	V
Operating Temperature Range	Topr		-40℃ to +85℃	
Storage Temperature Range	Tstg		-40℃ to +85℃	

Notes:
a. Duty Factor = 10%, Frequency = 1 kHz
b. Derate linearly as shown in derating curve.

Electrical Optical Characteristics at Ta=25℃

Parameters	Symbol	Emitting Color	Min.	Typ.	Max.	Unit	Test Condition
Luminous Flux [a]	Φv	Hyper Red	80	110	---	lm	IF=700mA
		Pure Green	140	170	---		
		Blue	40	45	---		
		Warm White	220	240			
Viewing Angle	2θ1/2	Hyper Red	---	120	---	Deg	IF=700mA
		Pure Green	---	120	---		
		Blue	---	120	---		
		Warm White	---	120	---		
Peak Emission Wavelength	λp	Hyper Red	---	632	---	nm	IF=700mA
		Pure Green	---	520	---		
		Blue	---	460	---		
ominant Wavelength[b]	λd	Hyper Red	---	624	---	nm	IF=700mA
		pure Green	---	525	---		
		Warm Blue	---	463	---		
Color Temperature	CCT	Warm White	6000	---	7000	K	
Spectral Line Half-Width	△λ	Hyper Red	---	20	---	nm	IF=700mA
		Pure Green	---	35	---		
		Blue	---	25	---		
Forward Voltage[C]	VF	Hyper Red	2.00	2.40	2.60	V	IF=700mA
		Pure Green	2.80	3.20	3.40		
		Blue	3.00	3.20	3.60		
		Warm White	3.00	3.20	3.60		
Reverse Current	IR	Hyper Red	---	---	50	μA	VR=5V
		Pure Green			50		
		Blue			50		
		Warm White			50		

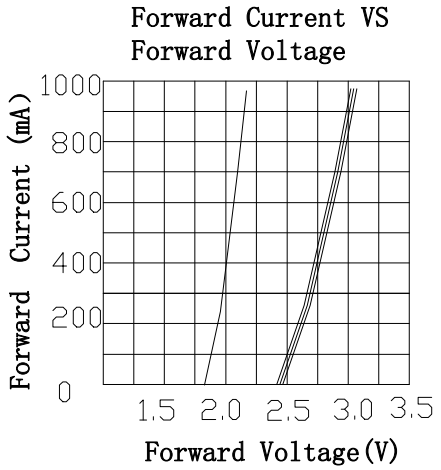
Notes:

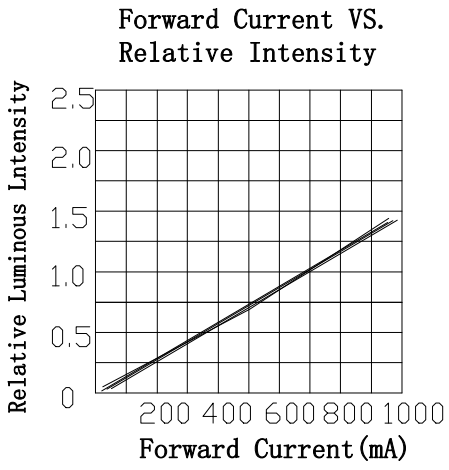
a. Luminous flux measurement tolerance: ±10%.

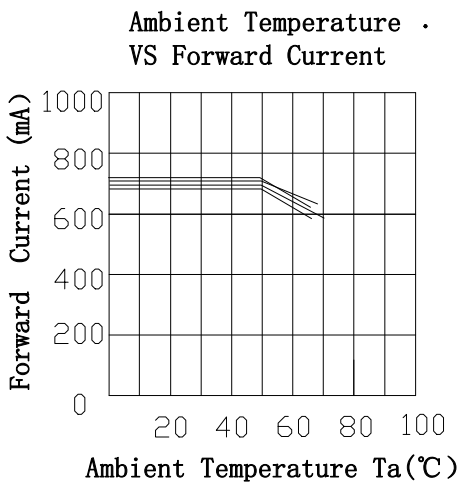
b. Color coordinates measurement tolerance: ±0.015 Wavelength measurement tolerance: ±1nm

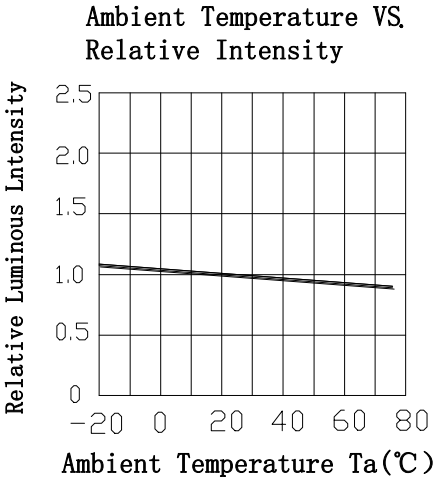
c. Forward voltage measurement tolerance: ±0.1V

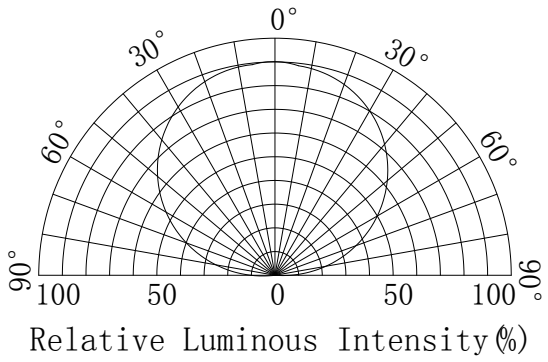
Typical Electrical / Optical Characteristics Curves
(25℃ Ambient Temperature Unless Otherwise Noted)



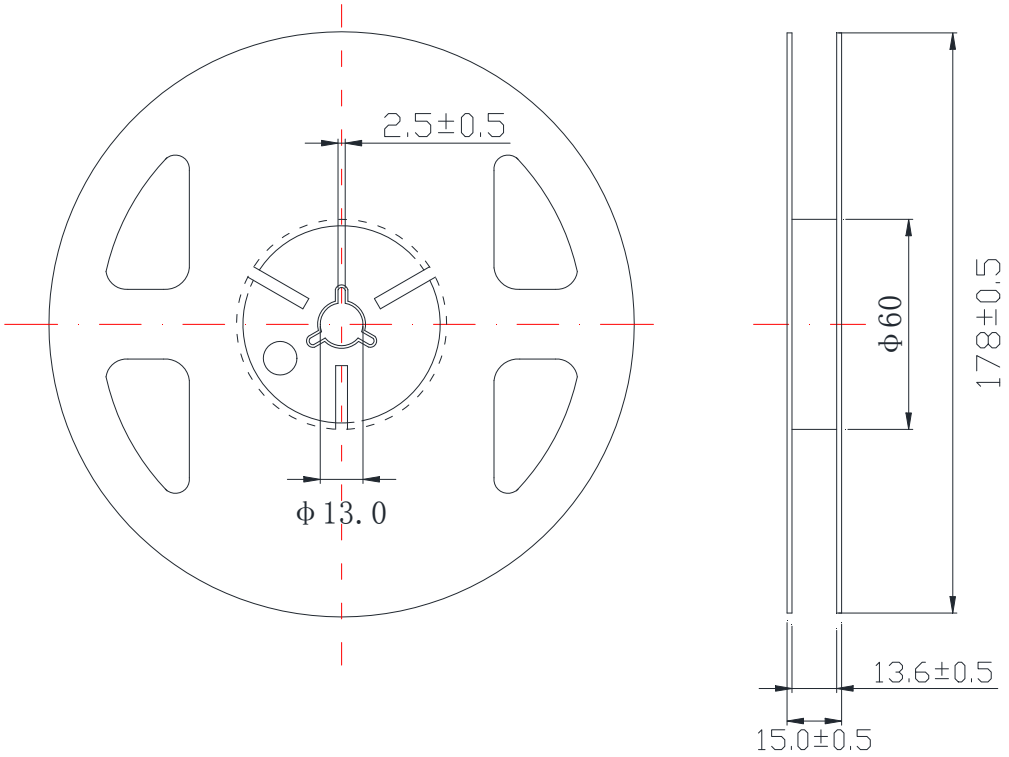






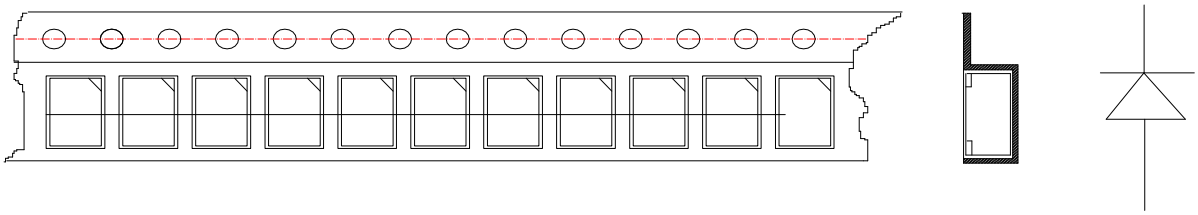


Reel Dimensions:



Carrier Tape Dimensions:

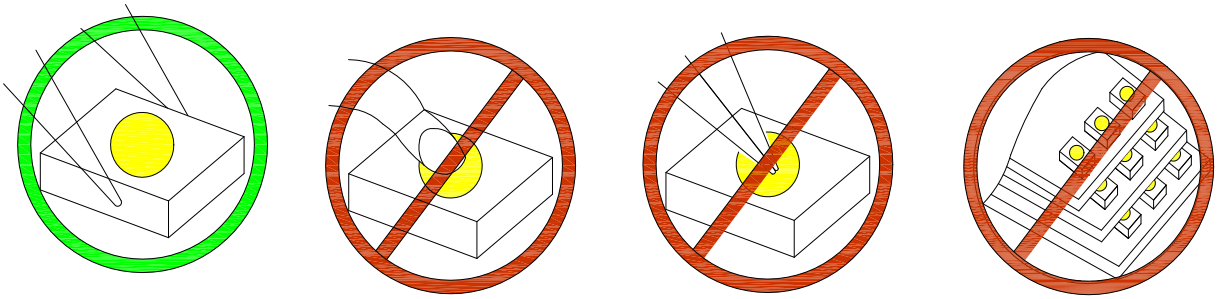
Loaded quantity 1000 pcs per reel.



CAUTIONS

1. Handling Precautions:

1.1. Handle the component along the side surfaces by using forceps or appropriate tools.
1.2. Do not directly touch or handle the silicone lens surface. It may damage the internal circuitry.
1.3. Do not stack together assembled PCBs containing exposed LEDs. Impact may scratch the silicone lens or damage the internal circuitry.



Compare to epoxy encapsulant that is hard and brittle, silicone is softer and flexible. Although its characteristic significantly reduces thermal stress, it is more susceptible to damage by external mechanical force. As a result, special handling precautions need to be observed during assembly using silicone encapsulated LED products. Failure to comply might lead to damage and premature failure of the LED.

2. Storage

2.1. Do not open moisture proof bag before the products are ready to use.
2.2. Before opening the package, the LEDs should be kept at 30°C or less and 60%RH or less.
2.3. The LEDs should be used within a year.
2.4. After opening the package, the LEDs should be kept at 30°C or less and 60%RH or less.
2.5. The LEDs should be used within 24 hours after opening the package.
2.6. If the moisture adsorbent material has fabled away or the LEDs have exceeded the storage time, baking treatment should be performed using the following conditions. Baking treatment: 65±5°C for 24 hours

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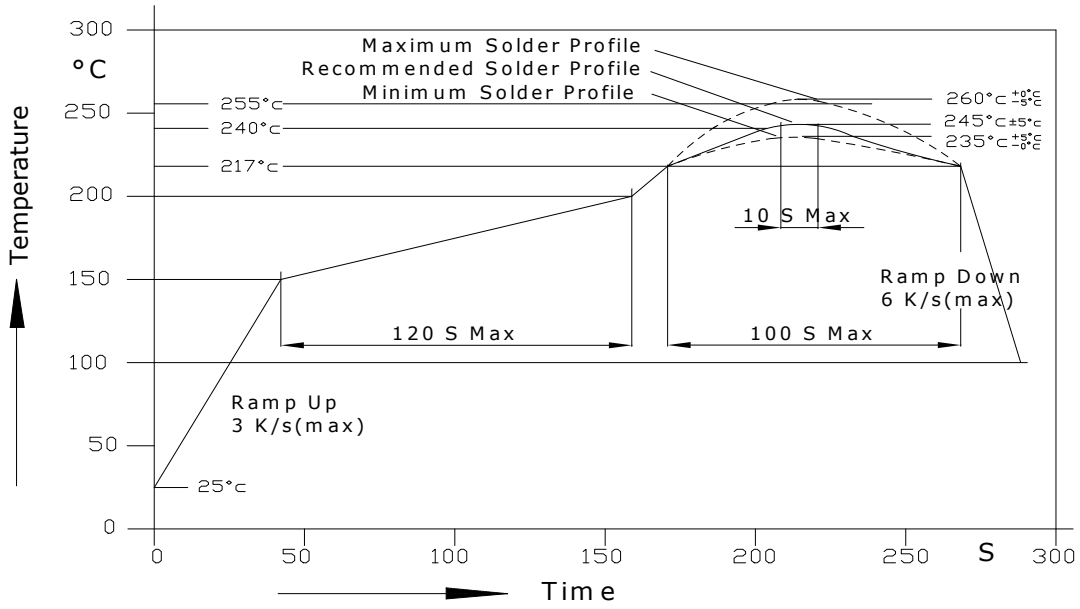
3. Soldering Condition

3.1. Pb-free solder temperature profile



3.2. Reflow soldering should not be done more than two times.

3.3. When soldering, do not put stress on the LEDs during heating.

3.4. After soldering, do not warp the circuit board.

3.5. Recommended soldering conditions:

Reflow soldering		Soldering iron	
Pre-heat	150~200°C	Temperature	300°C Max.
Pre-heat time	120 sec. Max.	Soldering time	3 sec. Max.
Peak temperature	260°C Max.		(one time only)
Soldering time	10 sec. Max.(Max. two times)		

3.6. Because different board designs use different number and types of devices, solder pastes, reflow ovens, and circuit boards, no single temperature profile works for all possible combinations.

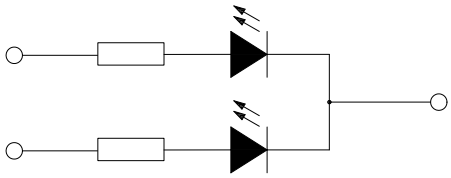
However, you can successfully mount your packages to the PCB by following the proper guidelines and PCB-specific characterization.

4. **Drive Method**

4.1. An LED is a current-operated device. In order to ensure intensity uniformity on multiple LEDs connected in parallel in an application, it is recommended that a current limiting resistor be incorporated in the drive circuit, in series with each LED as shown in Circuit A below.

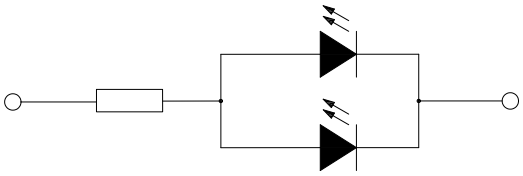
Circuit model A

LED



Circuit model B

LED



a. Recommended circuit.

b. The brightness of each LED might appear different due to the differences in the I-V characteristics of those LEDs.

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