KENTO ™

Product Specification Report

Product name: 5050 full-color SMD LED cathode

Product number: KT-5050RGB(FJ)

Customer ’s name:

Customer Type:

version number: A.2

Date: 2018-11-13

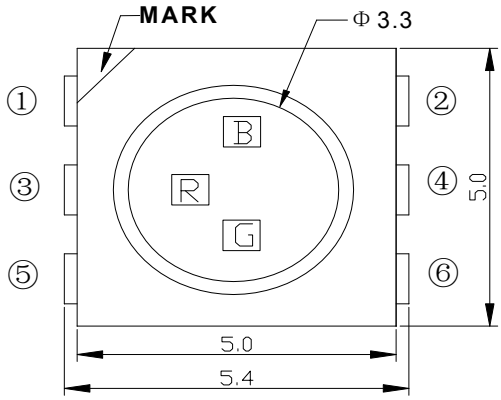
Customer recognition column		

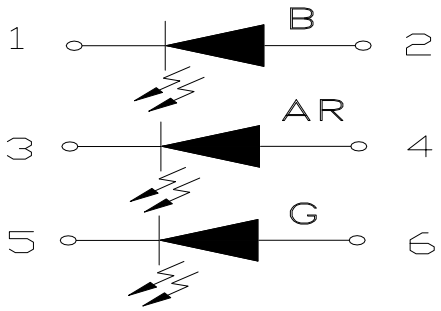
formulate: liyong Reviewer: luojing 核 准: LEO

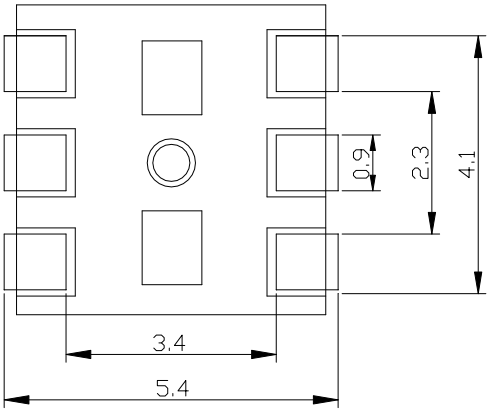
一、 Product description ：

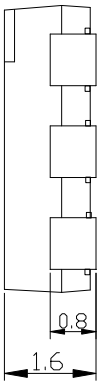
- Dimensions (L/W/H): 5.0×5.4×1.6mm
- Color: high brightness green, red, blue
- Colloid: transparent flat colloid
- EIA standard packaging
- Environmentally friendly products, in line with ROHS requirements
- Suitable for automatic placement machines
- Suitable for infrared reflow soldering process

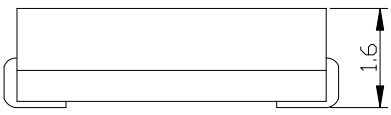
二、 Dimensions and recommended pad size ：

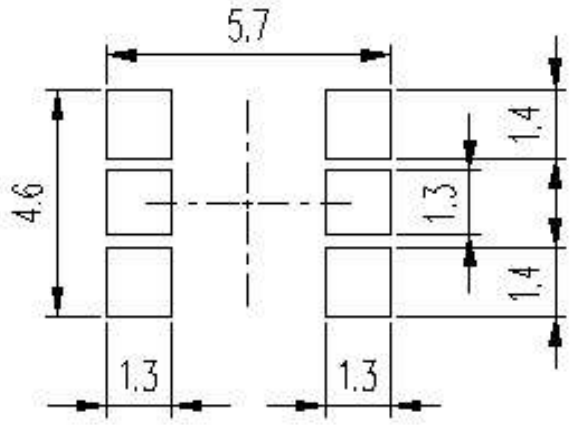










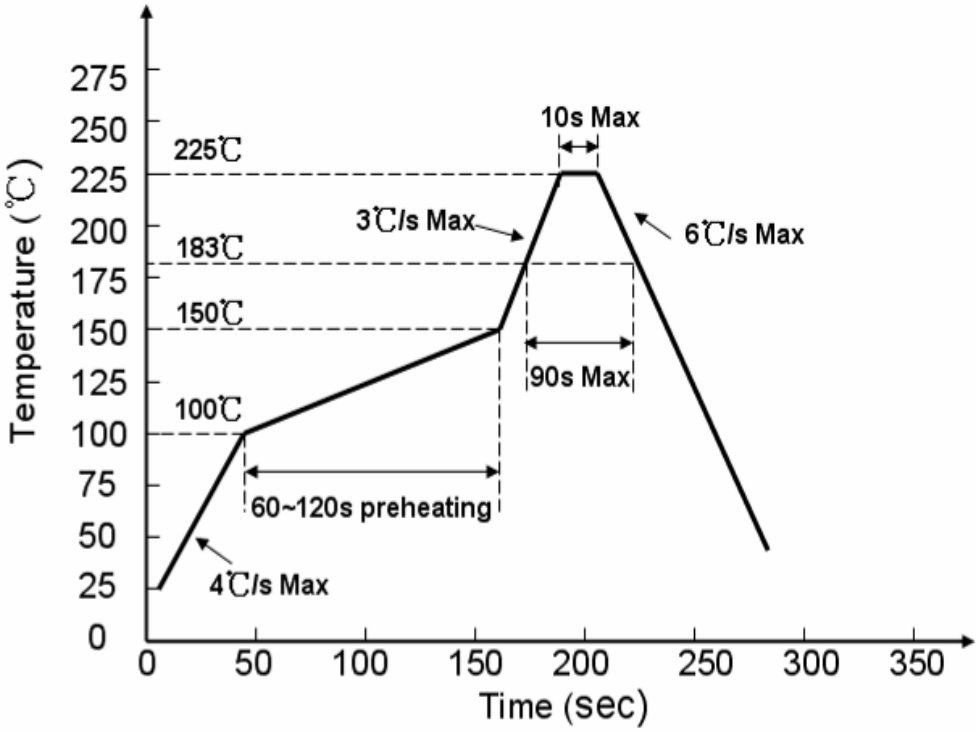


Note: 1. Unit: millimeter (mm);

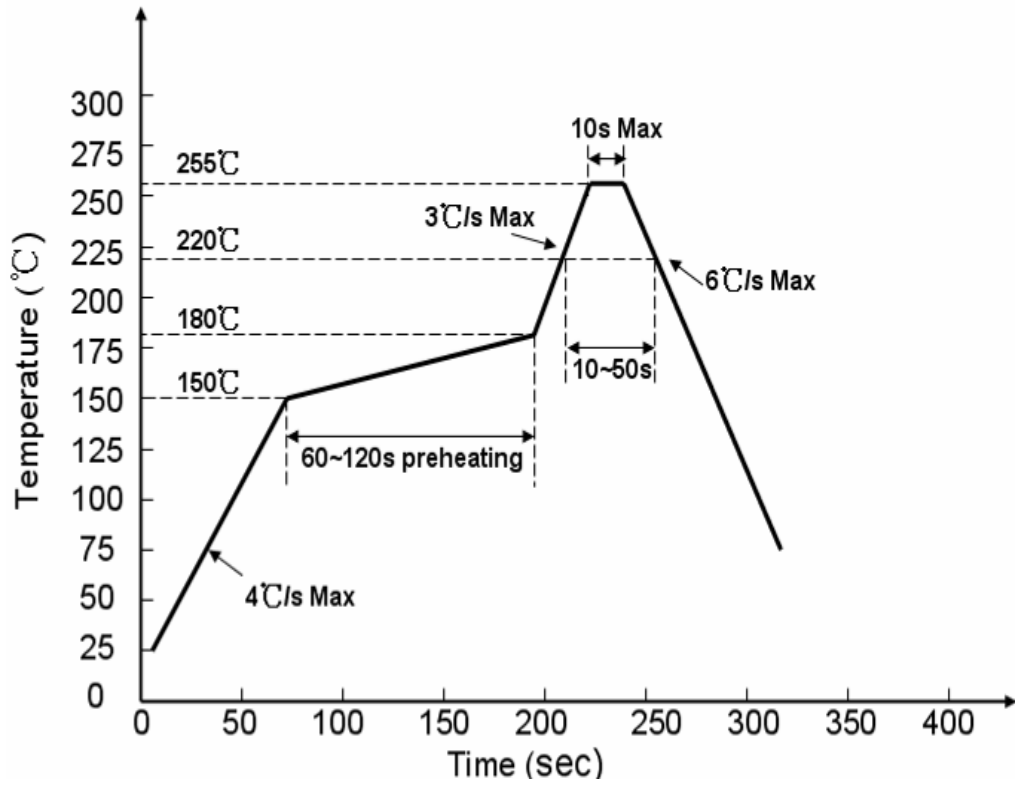
2. Tolerance: ± 0.10 mm unless otherwise noted;

三. Recommended welding temperature curve:

Lead soldering:



Lead-free soldering:



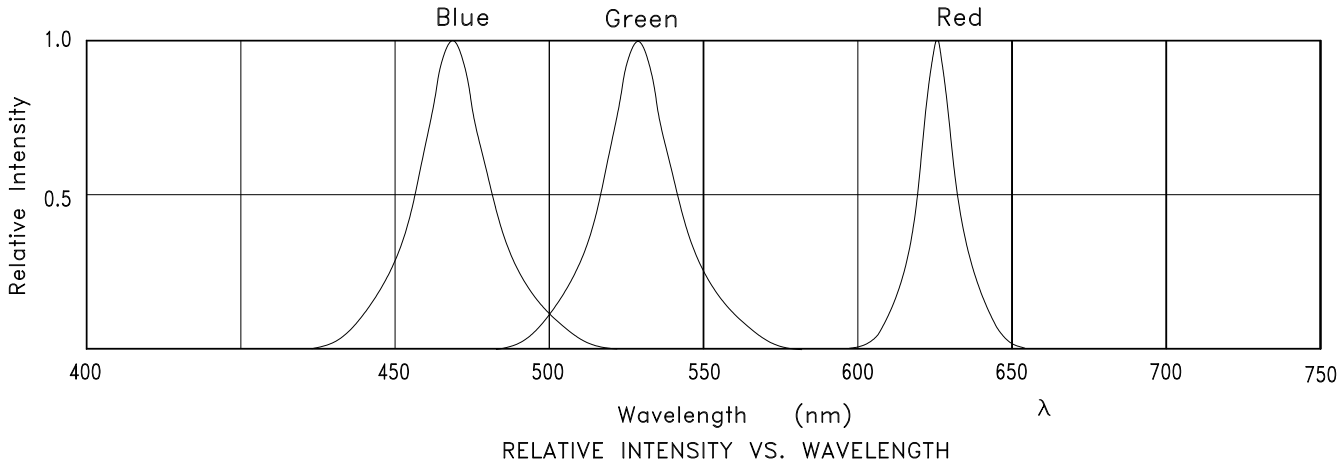
四、 Maximum absolute rating （Ta=25℃）:

Parameter	Symbol	Maximum rating		Unit
Power consumption	Pd		90	mW
		AR	90	mW
		G	90	mW
Maximum pulse current (1/10 duty cycle, 0.1ms pulse width)	I_{FP}	**B**	80	mA
		AR	100	mA
		G	100	mA
Forward DC working current	I_F	30		mA
Reverse voltage	V_R	5		**V**
Working temperature	Topr	-30°C ~ +85°C		
Storage temperature	Tstg	-40°C ~ +90°C		
Welding condition	Tsol	回流焊 :260°C ， 10s 手动焊 :300°C ， 3s		
Antistatic ability	ESD	2000		V

五、 Optical parameters （Ta=25℃）:

Parameter	symbol		MIN	代表值	MAX	UNIT	Test
Light intensity	IV	B	--490-		--686-	mcd	IF = 20mA
		AR	--650-		--910-	mcd	IF = 20mA
		G	-1350-		--1890-	mcd	IF = 20mA
Half light angle	2θ1/2			120	--	deg	IF = 20mA
Peak wavelength	λP	B	---	470	---	nm	IF = 20mA
		AR	---	630	---		
		G	---	524	---		
Dominant wavelength	λD	B	465		469	nm	IF = 20mA
		AR	620		625		
		G	517		521		
Half wave width	Δλ	B	--	5	---	nm	IF=20mA
		AR	---	30	---		
		G	---	18	---		
Forward Voltage	VF	B	2.9	---	3.4	V	IF=20mA
		AR	1.8	---	2.4		
		G	2.9	---	3.4		
Reverse current	IR	B	---	---	5	uA	VR=5V
		AR	---	---	5		
		G	---	---	5		

六、 Characteristic curve of photoelectric parameter representative value ：



RELATIVE INTENSITY VS. WAVELENGTH

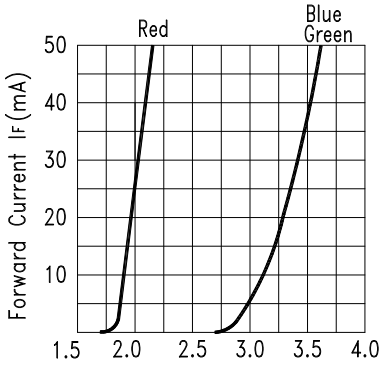


Fig.2 Forward Current vs. Forward Voltage

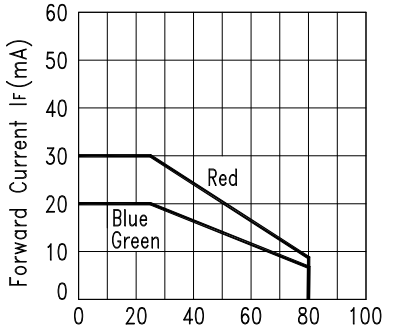


Fig.3 Forward Current Derating Curve

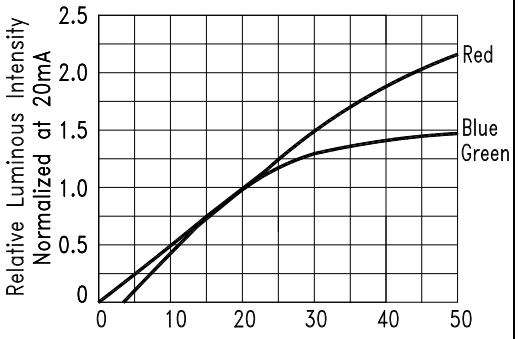


Fig.4 Relative Luminous Intensity vs. Forward Current

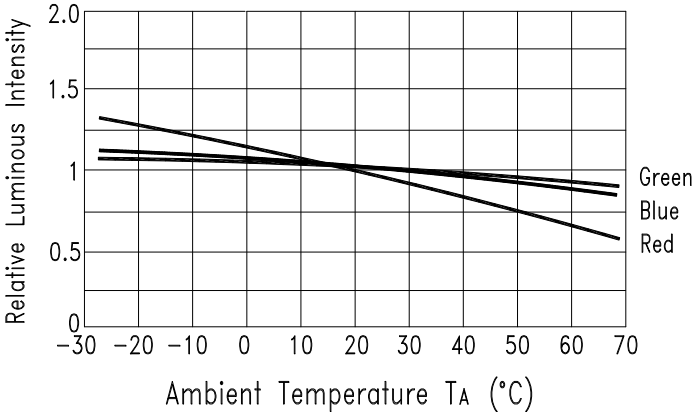


Fig.5 Luminous Intensity vs.Ambient Temperature

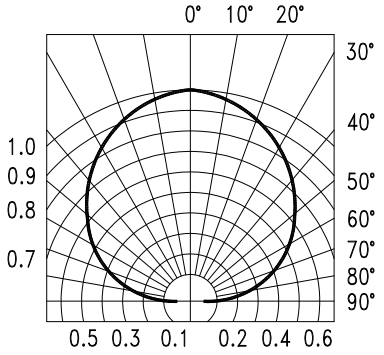


Fig.6 Spatial Distribution

Note: Unless otherwise noted, the test environment temperature is 25 ± 3°C

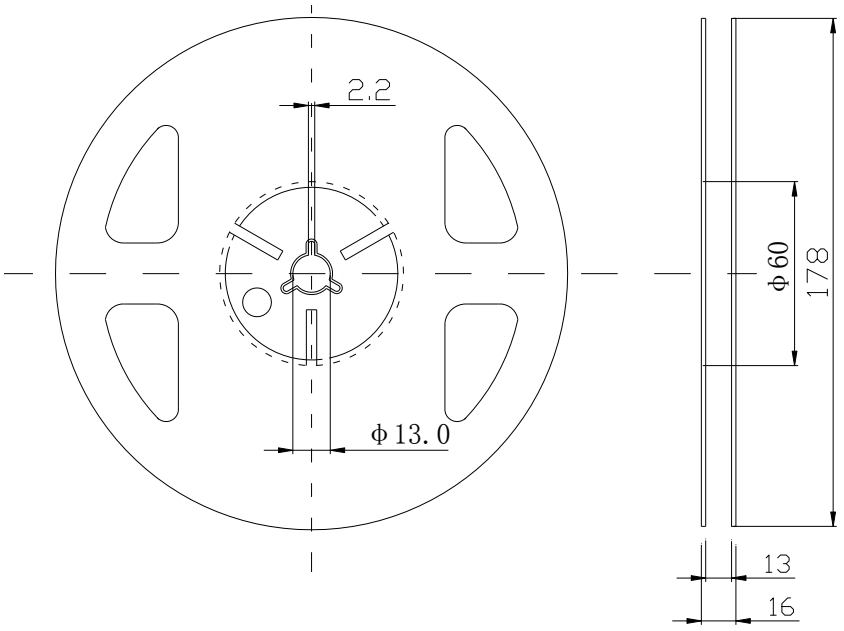
七、 label identification:

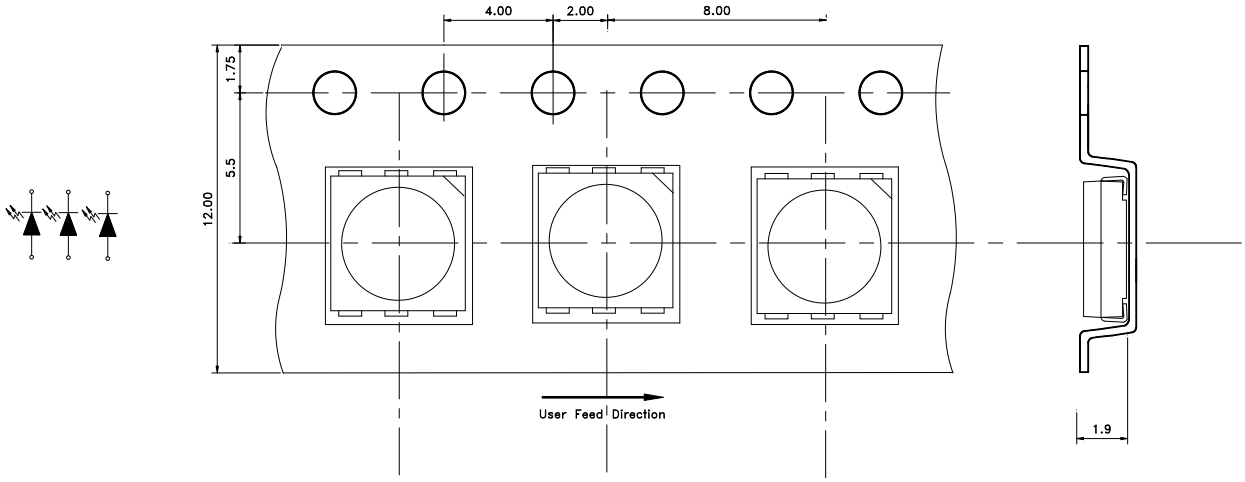
CAT: Light intensity (unit (mcd))

HUE: Wavelength (unit (nm))

REF: Voltage (Unit (V))

八、 Packing tape and disc size：

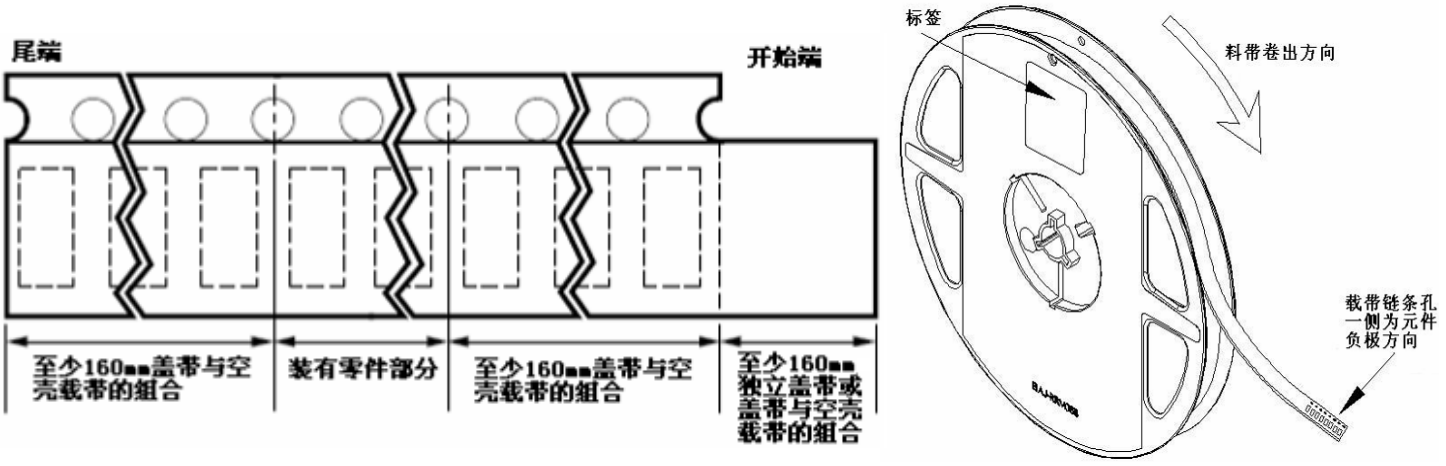




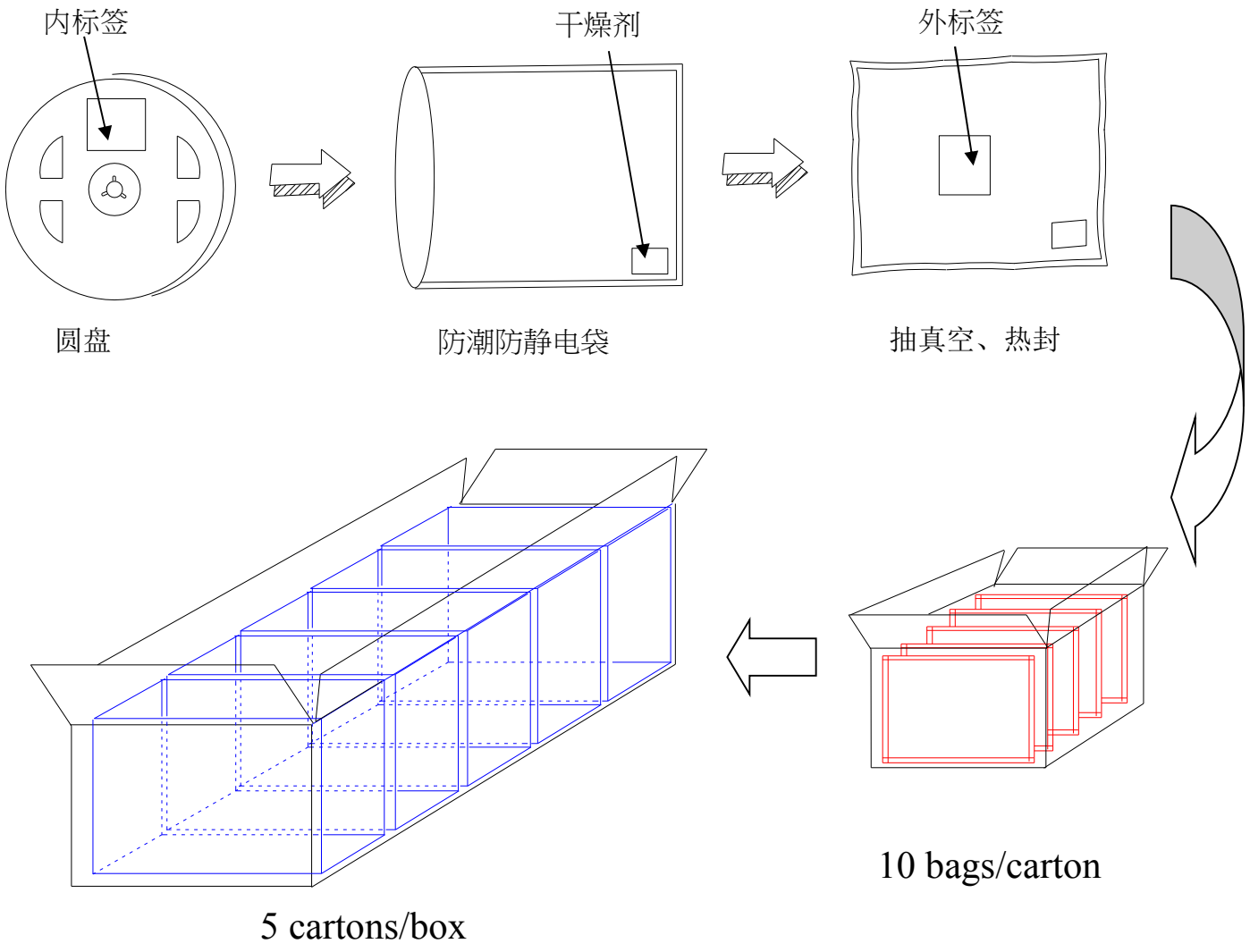
Note: 1. The size unit is millimeter (mm);

2. The size tolerance is ±0.15mm;

九. Disc and carrier tape unwinding direction and cavity specifications:



十. Inner packaging and outer packaging:

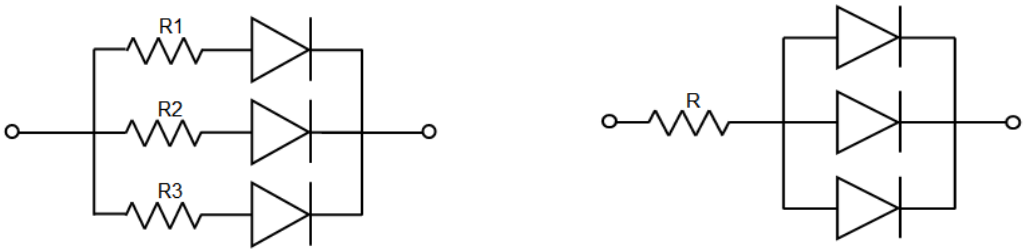


十一、 Precautions for use:

Use:

1. The LED is a current-driven component, and a small change in voltage will produce a large current fluctuation, which will damage the component. Customers should use resistors in series for current limiting protection.

2. In order to ensure the same light color when multiple LEDs are used in parallel, it is recommended to use a separate resistor for each branch, as shown in mode A in the figure below; If the circuit shown in mode B in the figure below is used, the light color of the LED may be different due to the different volt-ampere characteristics of each LED.



1. Too high ambient temperature will affect the brightness and other performance of the LED, so in order to make the LED have better performance, keep it away from the heat source.
2. Tolerance of photoelectric parameters:

   Forward voltage REF / VF: + 0.02V

   Brightness CAT / IV: + 11%

   Wavelength HUE / WLD: + 1nm

storage:

1. Without opening the original packaging, the recommended storage environment is: Temperature: 5℃~30℃; Humidity: 85%RH or less; when the stock is more than 2 months, it should be dehumidified before use (60℃/8 hours).
2. After opening the original packaging, the recommended storage environment is: temperature 5~30° C; humidity below 60%.
3. LED is a humidity sensitive element. To avoid moisture absorption, it is recommended to store it in a closed container with desiccant or in a nitrogen moisture-proof cabinet after opening the package.
4. After opening the package, the components should be used within 48 hours (2 days); and soldering should be done as soon as possible after mounting.
5. If the desiccant fails or the element is exposed to the air for more than 48 hours (2 days), it should be dehumidified.

Baking conditions: 60° C, 24 hours.

ESD protection

LEDs (especially blue, emerald, purple, white, and pink LEDs with InGaN structure) are electrostatic sensitive components, and static electricity or current overload will destroy the LED structure. LED damage by static electricity or current overload may cause abnormal performance, such as excessive leakage current, low VF, or failure to light up, etc. So please note the following:

1. Wear an anti-static wrist strap or anti-static gloves when touching LEDs.
2. All machinery and equipment, tools, work tables, material racks, etc., should be properly grounded (the grounding impedance is within 10Ω).
3. Use anti-static bags, anti-static boxes, and anti-static turnover boxes to store or transport LEDs. Ordinary plastic products are strictly prohibited.
4. It is recommended to use ion fans to suppress the generation of static electricity during operation.
5. The electrostatic field voltage is less than 100V within an environmental range of 1 foot away from the LED element.

Cleaning

It is recommended to use alcohol solutions such as isopropanol to clean the LED, and it is strictly prohibited to use corrosive solutions.

Welding

1. For reflow soldering conditions, refer to the temperature curve on the first page.
2. The number of reflow soldering should not exceed twice.
3. It is only recommended to use manual welding in the case of repair and heavy work; the maximum welding temperature should not exceed 300 degrees and must be completed within 3 seconds. The maximum power of the soldering iron should not exceed 30W.
4. During the welding process, it is strictly forbidden to touch the colloid at high temperature.
1. 5. After soldering, it is forbidden to apply external force to the colloid, and it is forbidden to bend the PCB to avoid impact on the components.