



## Data Sheet

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Customer: \_\_\_\_\_

Part No: \_\_\_\_\_

CL-SP0201DBW-10K-02

Sample No: \_\_\_\_\_

Description: \_\_\_\_\_

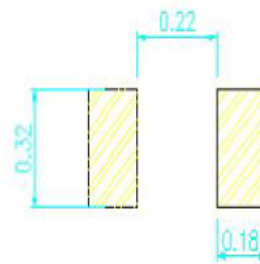
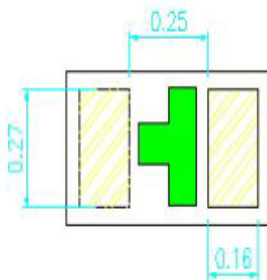
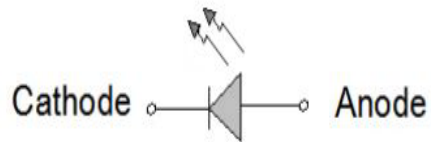
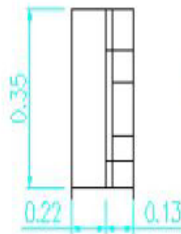
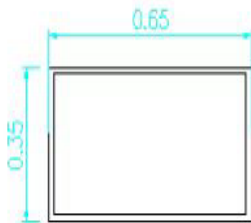
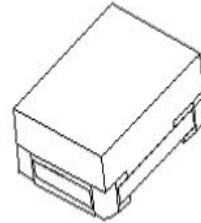
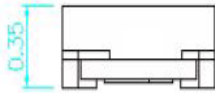
0603 SMD White Color

Item No: \_\_\_\_\_

Customer			
Check	Inspection	Approval	Date

# 1. Dimensions

Units:mm



建议焊盘尺寸

All dimensions area in mm tolerance is  $\pm 0.05\text{mm}$  unless otherwise noted. tes:

## 2. Electrical/Optical characteristics

### (1) Absolute Maximum Ratings (TA=25°C)

Item	Symbol	Absolute Maximum Rating	Unit
		White	
Forward Current	IF	10	mA
Pulse Forward Current	IFP	30	mA
Reverse Voltage	VR	5	V
Power Dissipation	PD	30	mW
Operating Temperature	Topr	-40°C To +85°C	° C
Storage Temperature	Topr	-20°C To +60°C	° C
Soldering Temperature	Tslid	Reflow Soldering回流焊接:245°C	for 10sec.
		Hand Soldering手工焊接 : 350°C	for 3sec

IFP Conditions : 1/10 Duty Cycle, 0.1 msec Pulse Width

### (2) Electrical/Optical Characteristics (TA=25°C)

Symbol	Item	Units	Device	Min	Typ.	Max.	Test Conditions
VF	Forward Voltage	V	White	2.6	-	3.0	IF=5mA
IR	Reverse Current	uA	-	-	-	10	VR=5V
$\Delta \lambda 1/2$	Viewing Angle	°	-	-	130	-	IF=5mA
Iv	Luminous Intensity	lm	White	0.8	-	1.2	IF=5mA
TC	color temperature	K	White	8000k	-	10000k	IF=5mA
Ra	Color Rendering Index	-	White	70	-	-	IF=5mA

### 3. Characteristic curve

Fig.1 正向电压与正向电流特性曲线

Forward Voltage vs. Forward Current

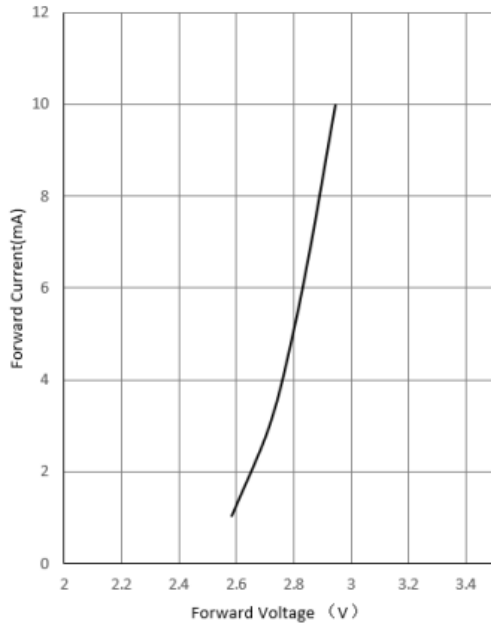


Fig.2 正向电流与相对光强特性曲线

Forward Current vs. Luminous Intensity

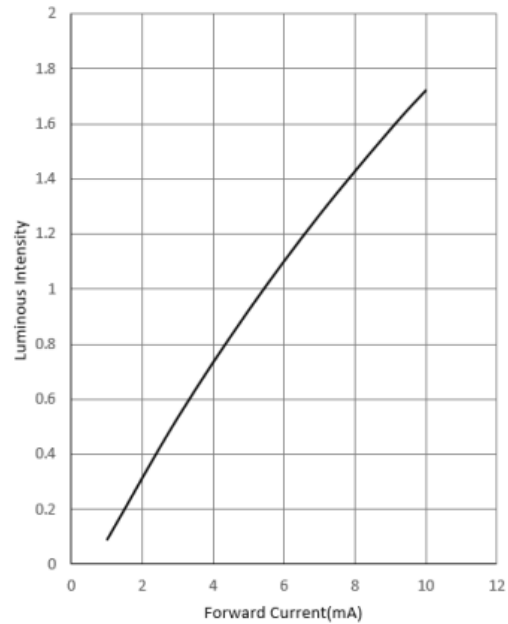


Fig.3 焊盘温度与正向电流特性曲线

Soldering Temperature vs. Forward Current

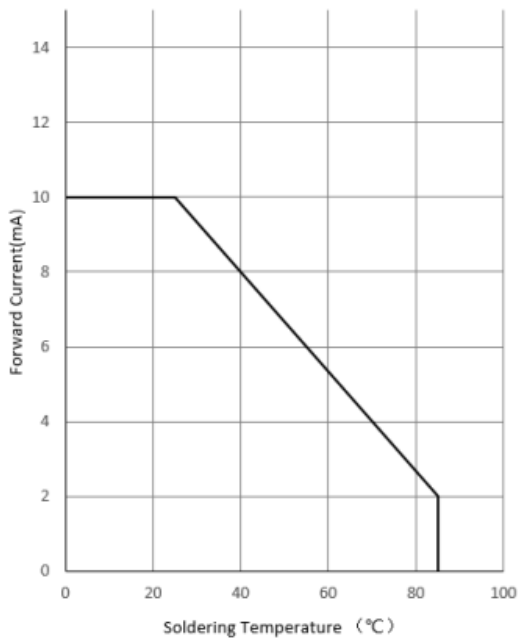


Fig.4 焊盘温度与相对光强特性曲线

Soldering Temperature vs. Luminous Intensity

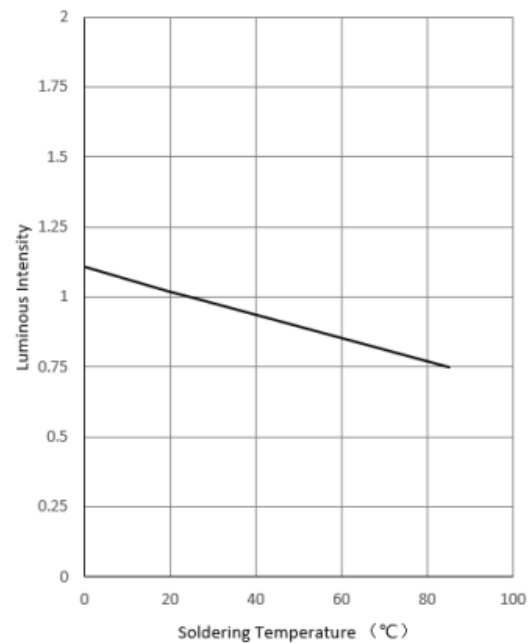


Fig.5 相对光谱分布曲线  
Relative Intensity Vs. CIE Wavelength

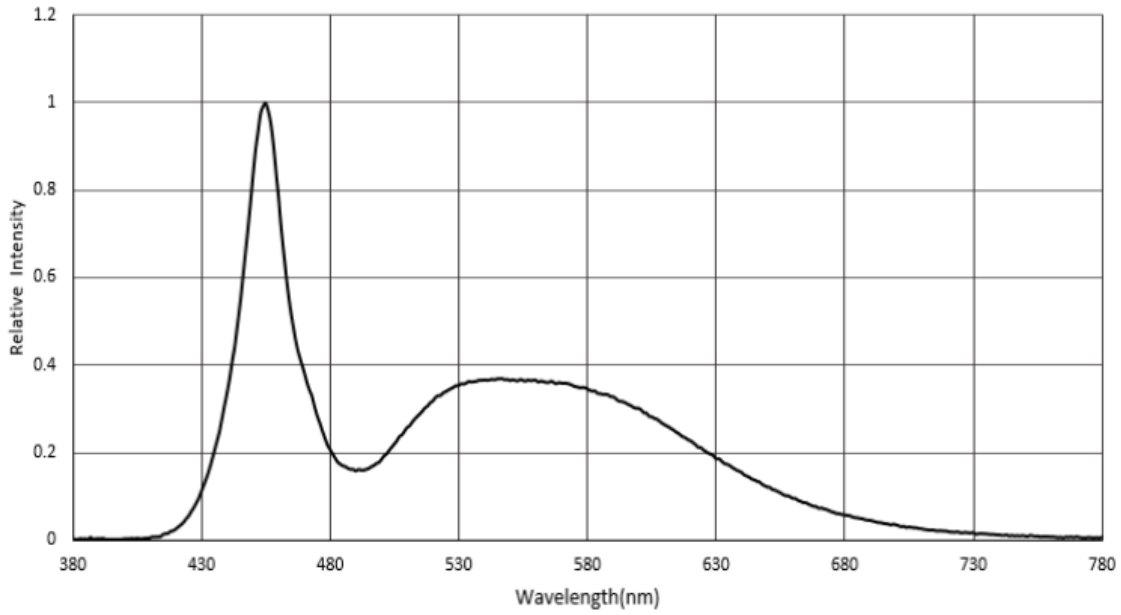
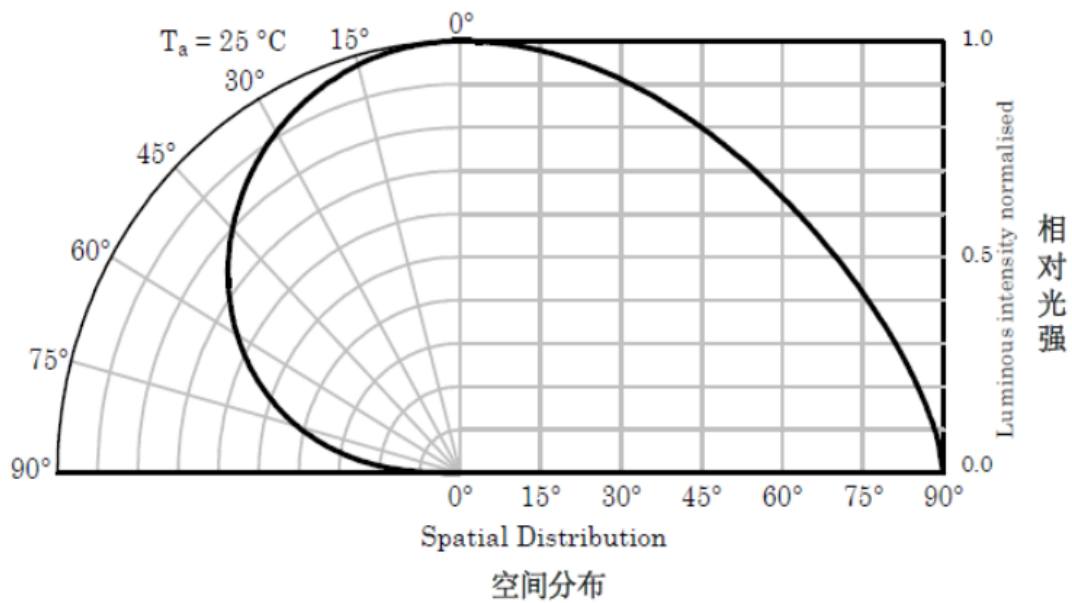
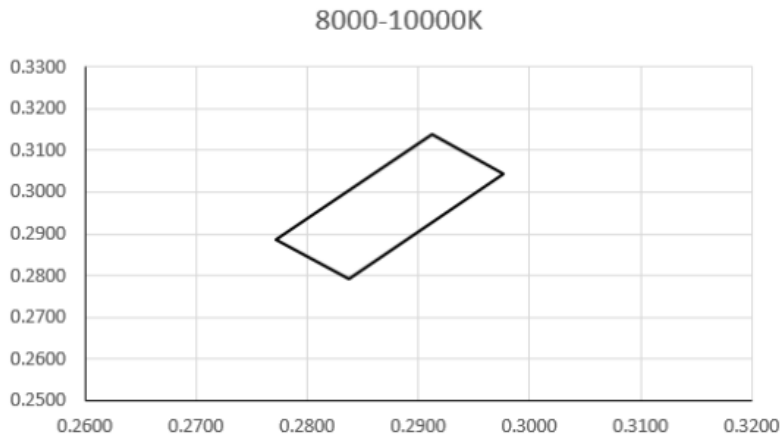


Fig.6 相对光强分布特性曲线  
The intensity distribution curve



4.

 Chromaticity coordinate specification (Tolerance range  $\pm 0.005$  @  $I_f=5\text{mA}$ )


Groups	色区代码	x1	y1	x2	y2	x3	y3	x4	y4
8000-10000K	-	0.2772	0.2886	0.2912	0.3138	0.2977	0.3043	0.2837	0.2791

### 分BIN表 Sorting Bins

 (1) 正向电压组  $I_f=5\text{mA}$ 

#### Forward Voltage Groups $I_f=5\text{mA}$

Groups	Forward Voltage (V)	
	$V_{f_{\text{MIN}}}$	$V_{f_{\text{MAX}}}$
VA	2.6	2.7
VB	2.7	2.8
VC	2.8	2.9
VD	2.9	3.0

 (2) 亮度组  $I_f=5\text{mA}$ 

#### Brightness Groups $I_f=5\text{mA}$

Groups	FLUX (lm)	
	$I_{v_{\text{MIN}}}$	$I_{v_{\text{MAX}}}$
F5	0.8	1.2

## 5. RELIABILITY

### (1) Test Items and Results

Symbol	Item	Guideline	Test conditions	Duration	Sample QTY	A poor amount/sampling
1	Temperature cycle	JEITA ED-4701	-40 °C ~ 25 °C ~ 100 °C ~25 °C 30 minutes 5 minutes 30 minutes 5 minutes	cycle 100 round	50	0/50
2	Thermal shock	MIL-STD-202G	-40 °C ~ 100 °C 15 minutes 15 minutes	cycle 200 round	50	0/50
3	High temperature storage	JEITA ED-4701 200 201	Ta=100 °C	100 hours	50	0/50
4	Low temperature storage	JEITA ED-4701 200 201	Ta=-40 °C	1000 hours	50	0/50
5	Normal temperature test		Ta=25 ± 5 °C	1000 hours	50	0/50
6	High temperature and humidity test		Ta=60 °C RH=85%	1000 hours	50	0/50
7	Solderability (reflow soldering)	JEITA ED-4701 300 303	Tsol=235 °C ± 5 °C, 5 seconds use flux	Solder once, 5 seconds	10	0/10
8	Solder resistance (reflow soldering)	JEITA ED-4701 300 301	Tsol=250 °C, 10 seconds Pretreatment: 35 °C 95% RH 96 Hour	welding two times , every 10 seconds	10	0/10

The above test items such as differences or special customer specific requirements according to the actual situation in accordance with the requirements of customers to try the requirements with the customer, the customer is not required by our test standard test. Different products using different current test

Recommendation: use blue light or white light for a long time, the current use conditions are designed below 5MA, to extend the decay life

## 6. Cautions

### (1) Soldering Conditions

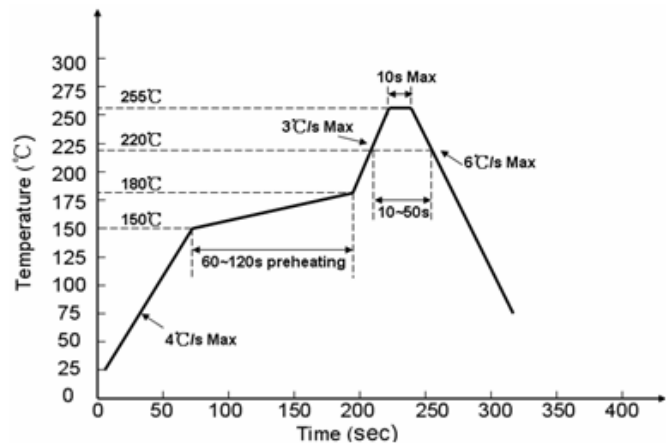
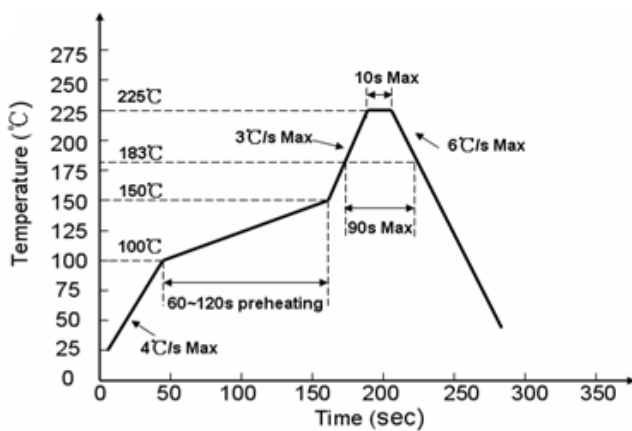
Number of reflow process shall be less than 2 times and cooling process to normal temperature is required between first and Second soldering process.

(Recommended soldering conditions)

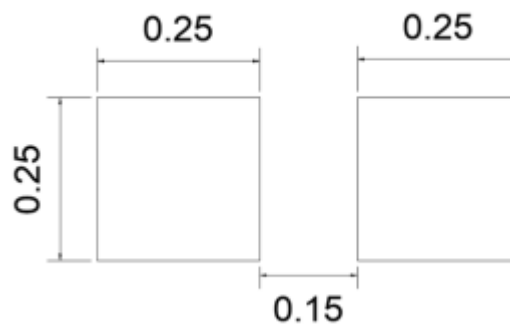
Reflow soldering			Hand welding	
	Lead Solder	Lead-free Solder	Temperature	350° C Max.
Pre-heat	140 ~ 160° C	180 ~ 200° C	Soldering time	3 sec. Max. (onetime only)
Pre-heat time	120 sec. Max.	120 sec. Max.		
Peak temperature	230° C Max.	260° C Max.		
Soldering time	10 sec. Max.	10 sec. Max.		
Condition	Refer to the picture below	Refer to the picture below		

(Lead Solder)

(Lead-Free Solder)



(Recommended Soldering Pattern) (Units:mm)





## (2) Static Electricity

It is recommended that a wrist band or an anti-electrostatic glove be used when handling the LEDs.

All devices, equipment and machinery must be properly grounded.  
Damaged LEDs will show some unusual characteristics such as the forward voltage becomes lower, or the LEDs do not light at the low current. Criteria : (VF > 2.0V at IF=0.5mA)

## (3) Moisture Proof Package

It is recommended that moisture proof package be used .

## (4) Storage

Before opening the package ,The LEDs should be kept at 30° C or less and 70%RH or less.  
The LEDs should be used within a year.

## (5)

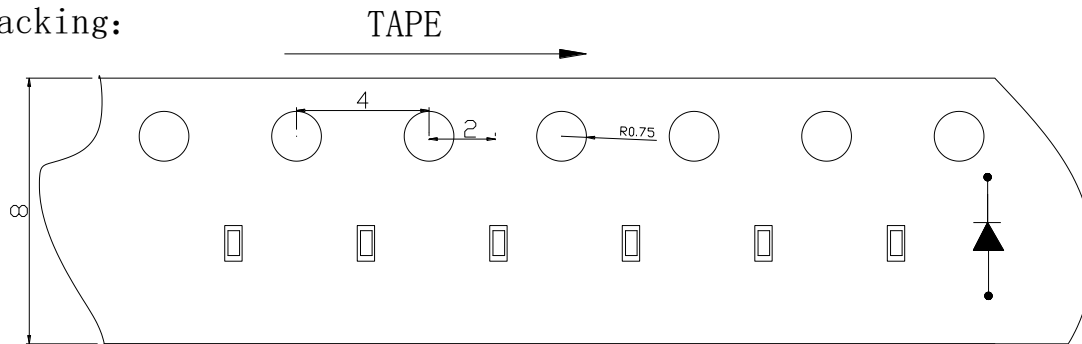
After opening the package, The LEDs should be soldered within 24 hours (1days) after opening the package. If unused LEDs remain, they should be stored in moisture proof packages, such as sealed containers with packages of moisture absorbent material (silica gel).

If the moisture absorbent material (silica gel) has faded away or the LEDs have exceeded the storage time, baking treatment should be performed using the following conditions Baking treatment : more than 12 hours at  $60 \pm 5^{\circ}$  C.

## 7. PACKAGING

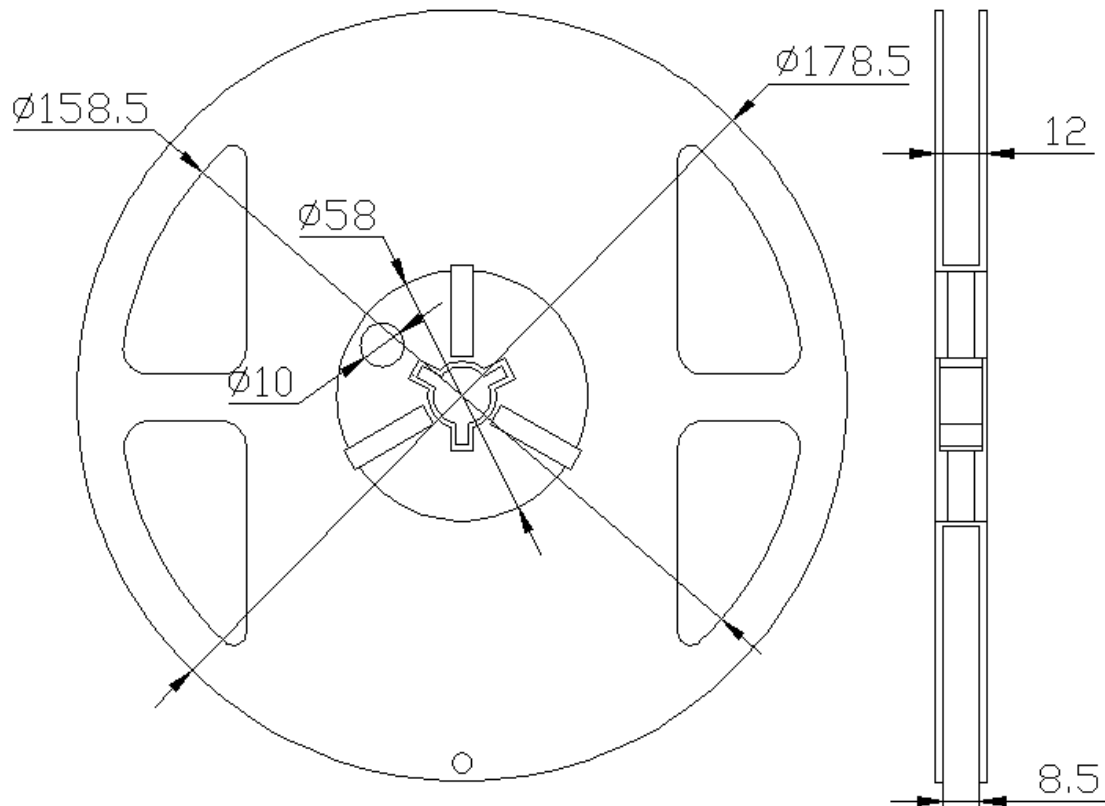
- (1) The LEDs are packed in cardboard boxes after taping.
- (2) Taping Specifications (Units:mm)
- (3) Manner of packing

Packing:



Package: 5000PCS/reel

(4) Reel Dimensions



Note: The quantity of each reel is 3000pcs/roll PACKAGE: 3000Pcs/Reel

(5)

The label on the minimum packing unit shows ; Part Number, Lot Number, Ranking, Quantity.

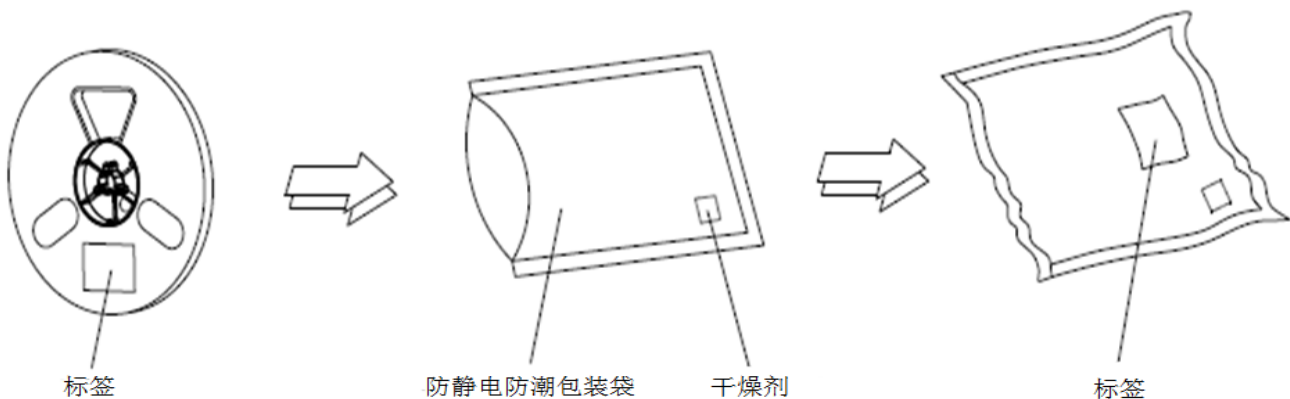
(6)

Keep away from water, moisture in order to protect the LEDs.

(7)

The LEDs may be damaged if the boxes are dropped or receive a strong impact against them. so precautions must be taken to prevent any damage.

## 8. Moisture Resistant Packaging



Note: The tolerances unless mentioned is  $\pm 0.1\text{mm}$ , Unit: mm

Surface mount LED is packed in reels, LED is packed in plain or antistatic bags and then packed in cartons. Cartons are used to protect the LED from mechanical shocks during shipping. Cartons are not waterproof, so please be waterproof