SPECIFICATION FOR APPROVAL

Customer ：

Customer Part No ：

Xmbrightek Part No： 1SC3014W31A0WEL1

Specification ： 3014 白光

Time ： 2020.06.17

Customer Confirmation	Approval	Audit	Production
	Lewis	Jelly	MARK
Parameter confirmation:			

1SC3014W31A0WEL1

- **3.0mm×1.4mm** SMT LED ,**0.7mm** THICKNESS
- Low flux efficiency & Energy conservation
- Good thermal dissipation & Optical uniformity

Table of Contents

Features

- Forward current: **≦30mA**
- Typical viewing angle 50% Iv: **120˚**
- RoHS and REACH-compliant
- Lens color: **Yellow**
- Qualified according to JEDEC moisturevity Level **5a**
- ESD level **1kV**

Applications

- Indoor signage display applications
- Indoor decorating and entertainment design
- Flat backlight for LCD. Switch and symbol
- Indicator and backlighting for all consumer electronics
- Others applications

● Absolute Maximum Ratings（Ta=25℃）

Characteristics	Symbol	Value	Unit
Power Dissipation	PD	100	mW
DC Forward Current	IF	30	mA
Pulsed Forward Current	IFP	100	mA
Reverse Voltage	VR	5	V
Operating Temperature Range	Topr	-40~ +85°	℃
Storage Temperature Range	Tstg	-40 ~ +100°	℃
Soldering Temperature	Tsol	250for5sec△	℃

Notes：

1: For other ambient, limited setting of current will be depended on de-rating curves.

2: Duty 1/10, pulse width 0.1ms

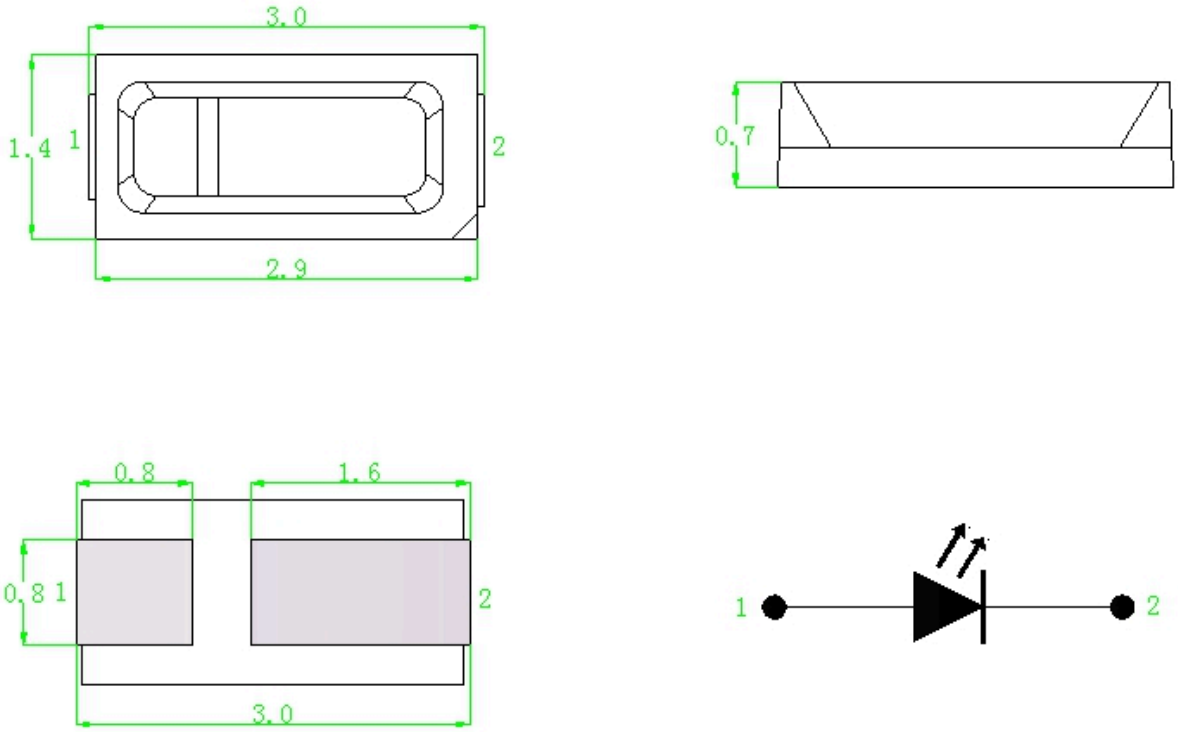
● Electrical-Optical Characteristics（Ta=25℃）

Characteristics	Symbol	Value			Unit	Test condition
		Min.	Typ.	Max.		
Forward Voltage	Vf	2.8	---	3.4	V	If=30mA
Luminous intensity	Iv	8	12	---	Lm	If=30mA
Color Temperature	λ d	5500	---	6500	k	If=30mA
Reverse Current	Ir	---	---	10	μA	Vr=5V
Color Rendering Index	CRI	80	---	---		If=30mA
Viewing angle	2θ 1/2	---	120	---	Deg	If=30mA

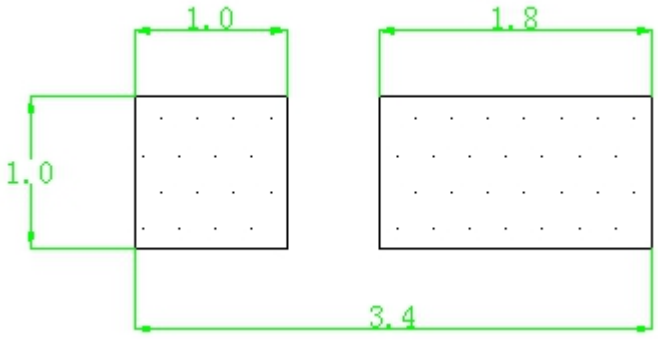
Notes:

1. Measurement Errors:Forward Voltage: ±0.1V；Luminous Intensity: ±15%；Iv: Dominant Wavelength ±1.0nm；Color Coordinate: ±0.006；Viewing Angle (2θ 1/2) ±5%

Outline Dimensions



Recommended Soldering Pattern



- All dimensions are in millimeters（inches）.
- Tolerance is ±0.15 ㎜ unless otherwise noted.
- Specifications are subject to change without notice.

● Electrical-Optical Characteristics

Fig.1 Electrical Characteristics

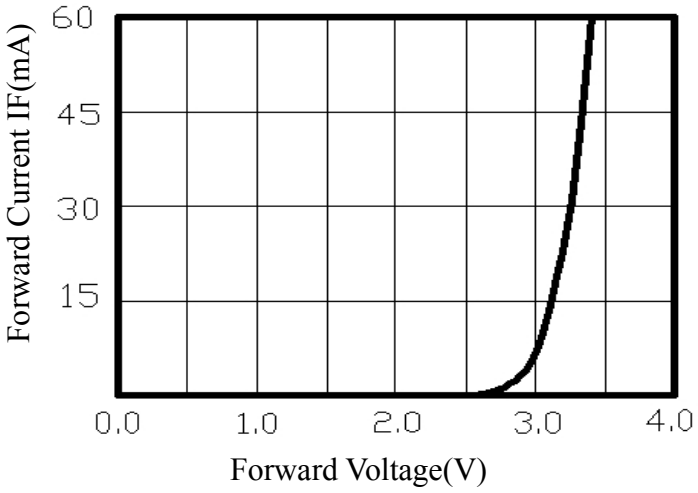


Fig.2 Relative Luminous Flux（%)-Current

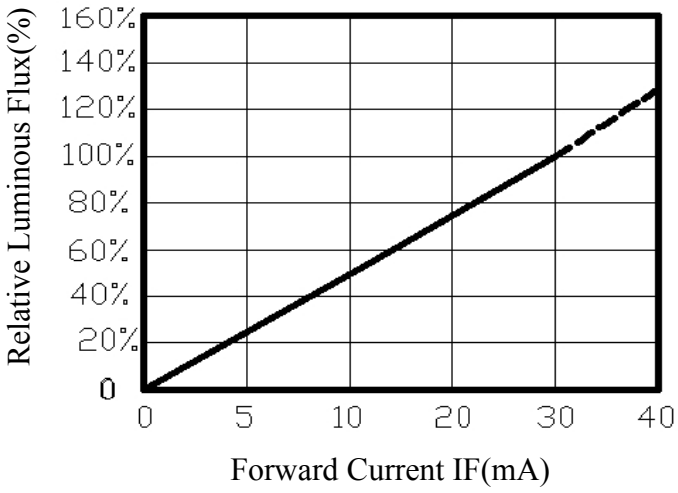


Fig.3 Relative Spectral Distribution

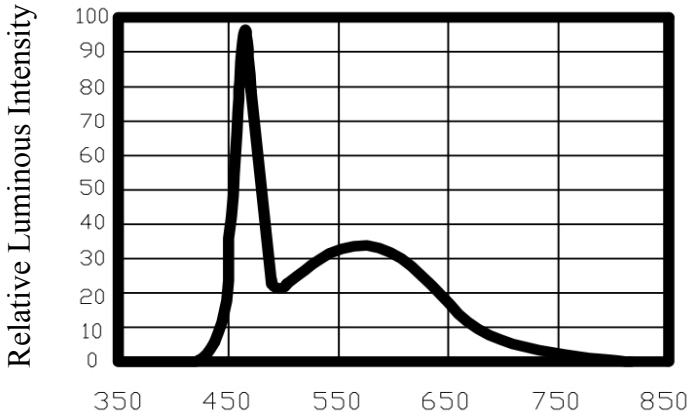


Fig.4 Relative Luminous Flux-Ta

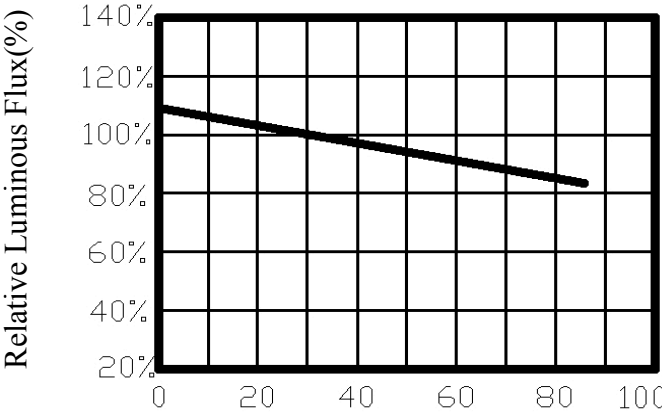


Fig.5 Thermal Design

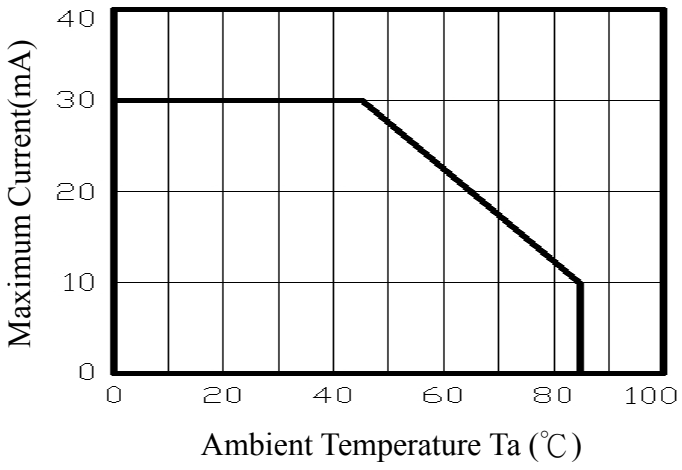
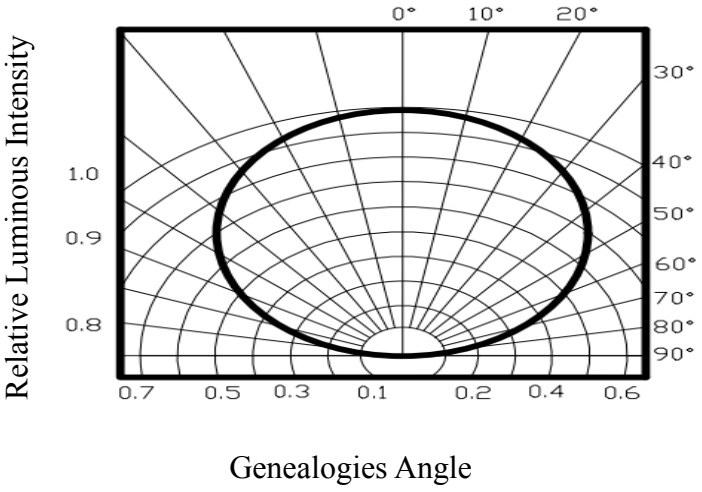


Fig.6 Typical Spatial Distribution



Rang of Bins

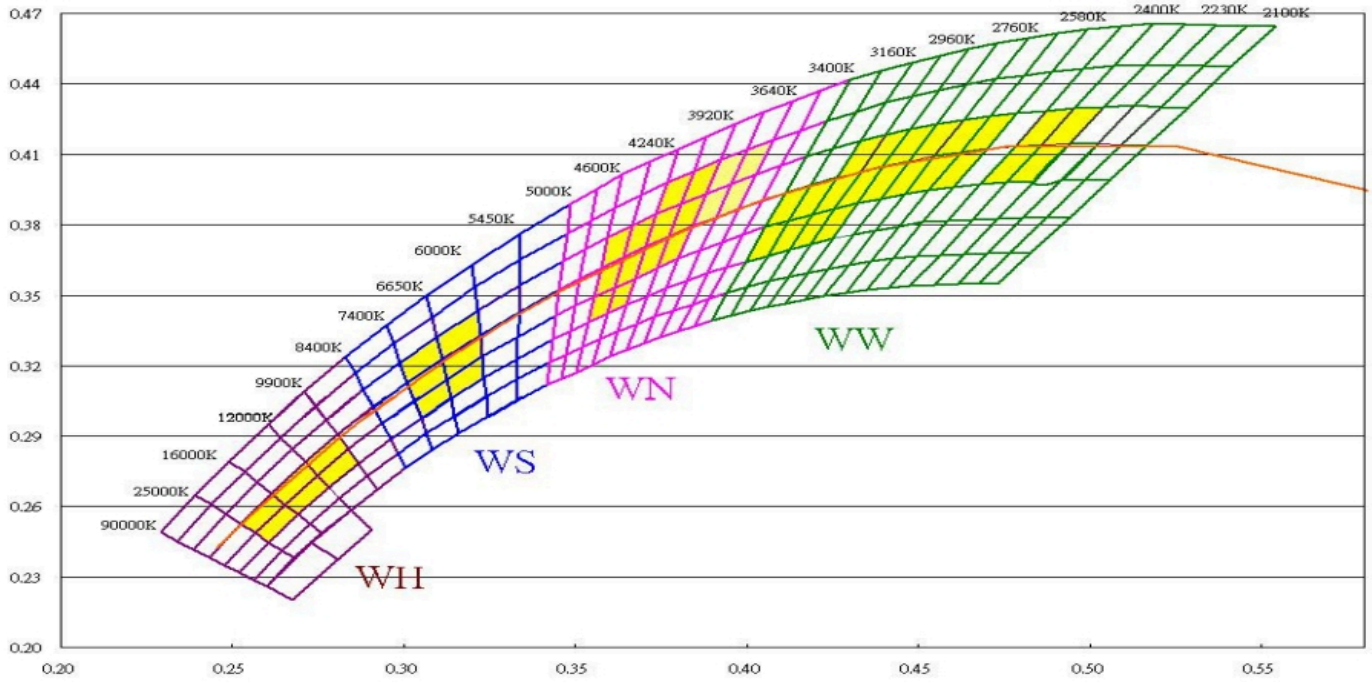
Forward Voltage Bins(V)

Bin Code	Min	Max	Test Condition
E2	2.8	2.9	IF=30mA
E3	2.9	3.0	
E4	3.0	3.1	
E5	3.1	3.2	
E6	3.2	3.3	
E7	3.3	3.4	

Luminous Intensity Bins(Lm)

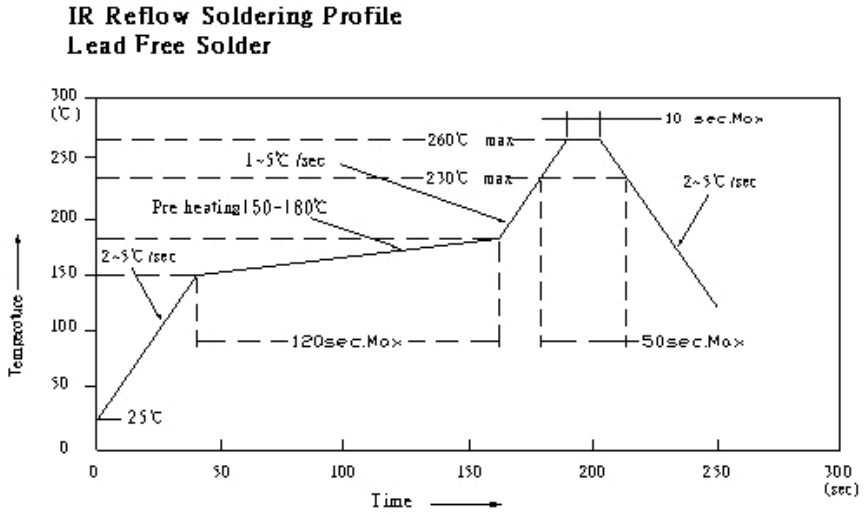
Bin Code	Min	Max	Test Condition
A4	6	8	IF=30mA
A5	8	10	
A6	10	12	

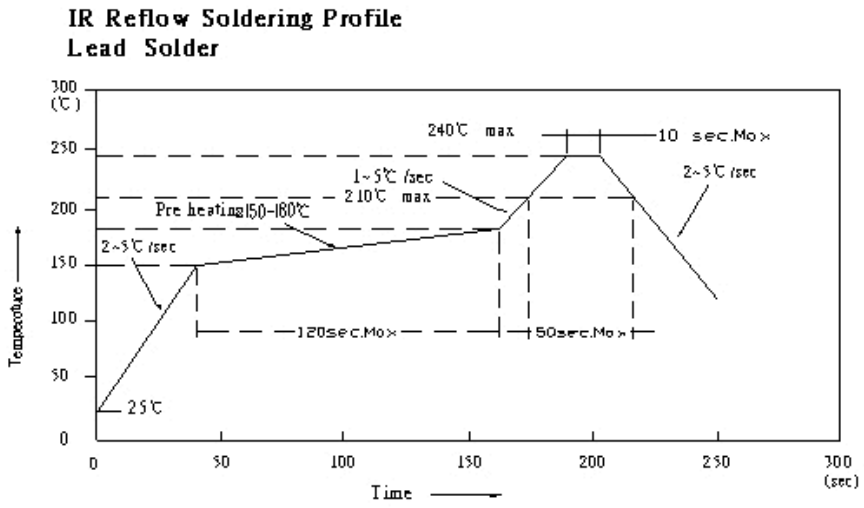
Dominant Wavelength Bins



● Reflow Profile

■ Reflow Temp/Time





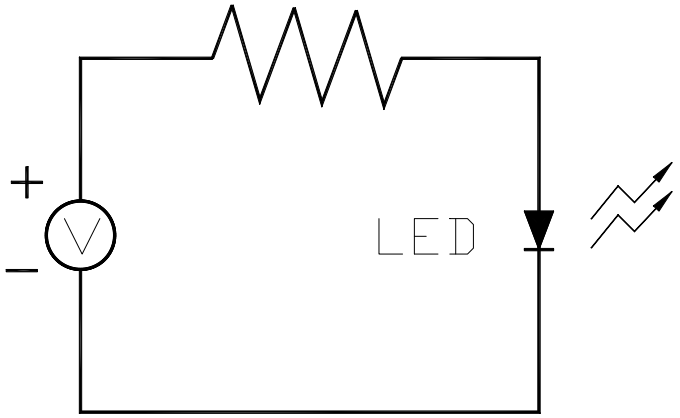
NOTES:

We recommend the reflow temperature 245℃(±5℃).the maximum soldering temperature should be limited to 260℃.

Don’ t cause stress to the epoxy/silicone resin while it is exposed to high temperature. Number of reflow process shall be 2 times or less.

● Test circuit and handling precautions

■ Test circuit



■ Handling precautions

1. Over-current-proof

Customer must apply resistors for protection; otherwise slight voltage shift will cause big current change (Burn out will happen).

2.Storage

2.1 It is recommended to store the products in the following conditions:

Humidity: 60% R.H. Max.

Temperature : 5℃~30℃(41°F~86°F)

Shelf life in sealed bag: 6 month at ＜5℃~30℃ and ＜30% R.H. after the package is Opened, the products should be used within 24hrs or they should be keeping to stored at ≦20 R.H. with zip-lock sealed.

2.3. Baking

It is recommended to baking before soldering when the pack is unsealed after 24hrs. The Conditions are as followings:

1). 60±3℃ X 48hrs and ＜5%RH, for reel

2). 100±3℃ X 4hrs, for single LED

3). 130±3℃ X 1hrs, for single LED

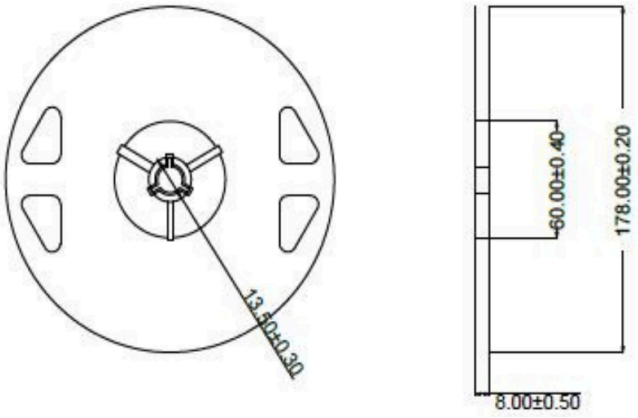
It shall be normal to see slight color fading of carrier (light yellow) after baking in process.

● Test items and results of reliability

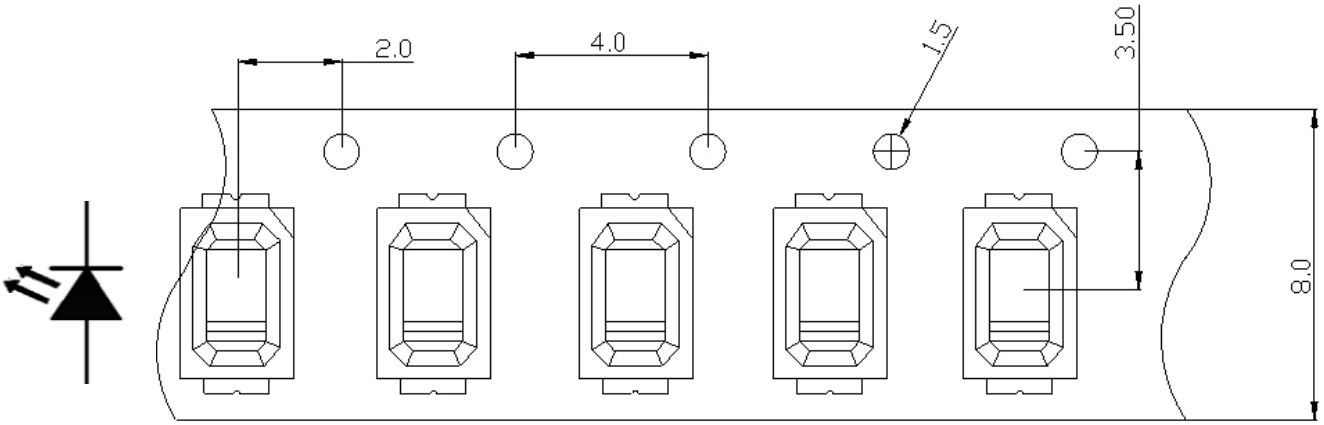
Type	Test Item	Test Conditions	Note	Number of Damaged
Environmental Sequence	Temperature shock	-45℃ 30min ↑↓20 min 105℃ 30min	1008 hrs	0/22
	High Temperature Storage	Ta=100℃	1008 hrs	0/22
	High Humidity Heat Storage	Ta=85℃ RH=85%	1008 hrs	0/22
	Low Temperature Storage	Ta=-40℃	1008 hrs	0/22
Operation Sequence	Normal Temperature Life	Ta=23℃(±5℃) IF=30mA	1008 hrs	0/22
	High Humidity Heat Life	Ta=85℃(±5℃) RH=85% IF=30mA	1008 hrs	0/22
	High Temperature Life	Ta=85℃(±5℃) IF=30mA	1008 hrs	0/22

● Packing

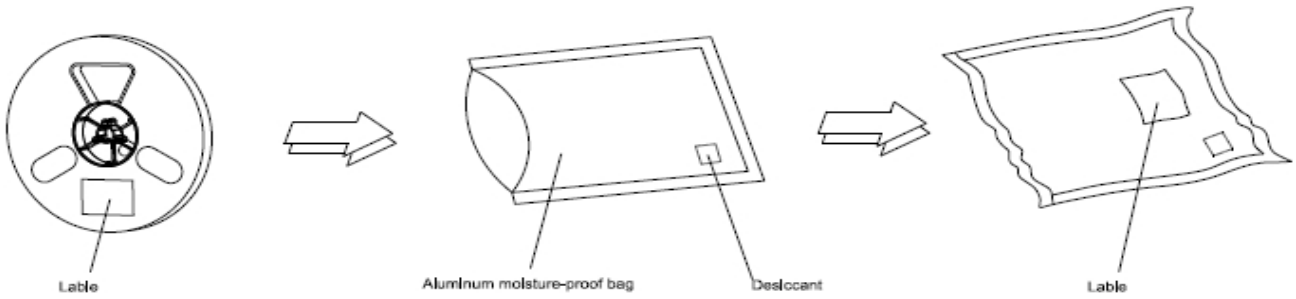
■ Dimensions of Reel (Unit: mm)



■ Dimensions of Tape (Unit: mm)



■ Moisture Resistant Packaging



Precautions

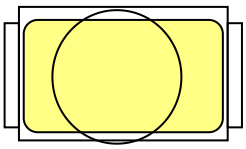
1、Abnormal situation caused by improper setting of collet

To choose the right collet is the key issue in improving the product's quality. LED is different from other electronic components, which is not only about electrical output but also for optical output. This characteristic made LED more fragile in the process of SMT. If the collet's lowering down height is not well set, it will bring damage to the gold wire at the time of collet's picking up and loading which will cause the LED fail to light up, light up now and then or other quality problems

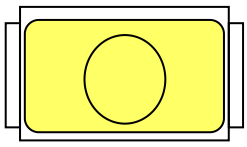
2、How to choose the collet

During SMT, please choose the collet that has larger outer diameter than the lighting area of lens, in case that improper position of collet will damage the gold wire inside the LED. Different collets fit for different products, please refer to the following pictures cross out

Outer diameter of collet should be larger than the lighting area



Picture 1(√)



Picture 2(X)

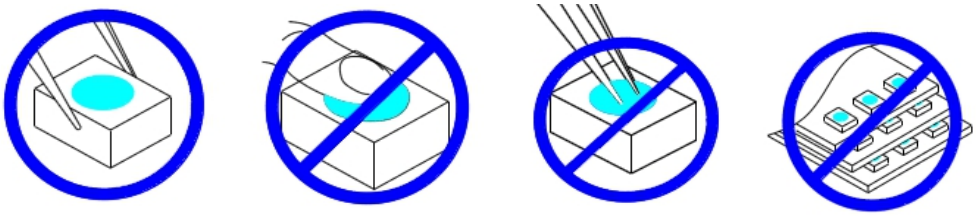
3、Other points for attention

A. No pressure should be exerted to the epoxy shell of the SMD under high temperature.

B. Do not scratch or wipe the lens since the lens and gold wire inside are rather fragile and cross out easy to break.

C. LED should be used as soon as possible when being taken out of the original package, and should be stored in anti-moisture and anti-ESD package.

D.Do not stack together assembled PCBs containing LEDs. Impact may scratch the silicone lens or damage the internal circuitry



4、This usage and handling instruction is only for your reference.

● Content revision

NO	Date	Content revision	Maker	Audit	Approved