201-1-18

SMD LED Product Specifications

- ◆ Product Size: 2.8*3.5mm
- ◆ Half-power angle: 120°
- ◆ Colloid surface color: Yellow
- ◆ IP level: (IPX5*)
- ◆ Illuminate Color: White
- ◆ Chip material: InGaN

Product name: 2835 Pure white

Product No.: KT-2835W-01

Page : Total 12 pages

Client suggestions:

Made By: **Check By:** **Approve By:**

Main photoelectric characteristics (T = 25° C)

ITEM	Test Condition	Sym.	Min.	Ave.	Max.	Unit
Forward voltage	60mA	V_F	3.0	3.16	3.3	V
Reverse current	9V	I_R	---	---	1	μA
Color coordinates	60mA	x	---	0.31	---	---
	60mA	y	---	0.33	---	---
Light intensity	60mA	Iv	5300	5610	6000	mcd
luminous flux	60mA	Φv	26	27	28	lm
Colour temperature	60mA	---	6000	6250	6500	K
Color rendering index	60mA	CRI	80	82		Ra
Color tolerance	60mA	SDCM	0	1	5	---

Maximum performance parameters (T = 25° C)

ITEM	Sym.	Maximum value	Unit
Forward current	I_F	100	mA
Reverse voltage	V_R	5	V
power	P_D	228	mW
Working temperature	T_{opr}	-40 ~ + 100	° C
Storage temperature	Tstg	-40 ~ + 100	° C
Virtual junction temperature	Tj	105	° C
Contact and environment single chip thermal resistance	$R_{th\ JA}$	450	° C/W
Single chip thermal resistance of contact and solder joint	$R_{th\ JS}$	300	° C/W

Remarks

1. The luminous intensity measurement tolerance is ±10%

1. The main wavelength measurement tolerance is ±1nm。

NO.	IV(mcd)		FLUX(lm)	
	MIN	MAX	MIN	MAX
FC	1500	1850	5	6
FD	1850	2350	6	7
FE	2350	2650	7	8
FG	2650	3350	8	10
FH	3350	4000	10	12
FI	4000	4650	12	14
FJ	4650	5300	14	16
FK	5300	6000	16	18
FL	6000	6650	18	20
FM	6650	7300	20	22
FN	7300	7950	22	24
FO	7950	8650	24	26
FP	8650	9300	26	28
FQ	9300	9950	28	30
FR	9950	11600	30	35
FS	11600	13250	35	40
FT	13250	14900	40	45
FU	14900	16600	45	50
FV	16600	18300	50	55
FW	18300	19800	55	60

Voltage remedy allowance ±0.05V

brightness IV remedy allowance ±10%

Brightness IV=flux*330

2. The voltage measurement tolerance is±0.05V。

Voltage(V)	Voltage code
VA	2.8-2.9
VB	2.9-3.0
VC	3.0-3.1
VD	3.1-3.2
VE	3.2-3.3
VF	3.3-3.4

3. 色区坐标 x,y 值测量公差为±0.005。

4. 由于我们在不断的改善和提高 LED 的性能，规格如有变更，恕不另行通知。

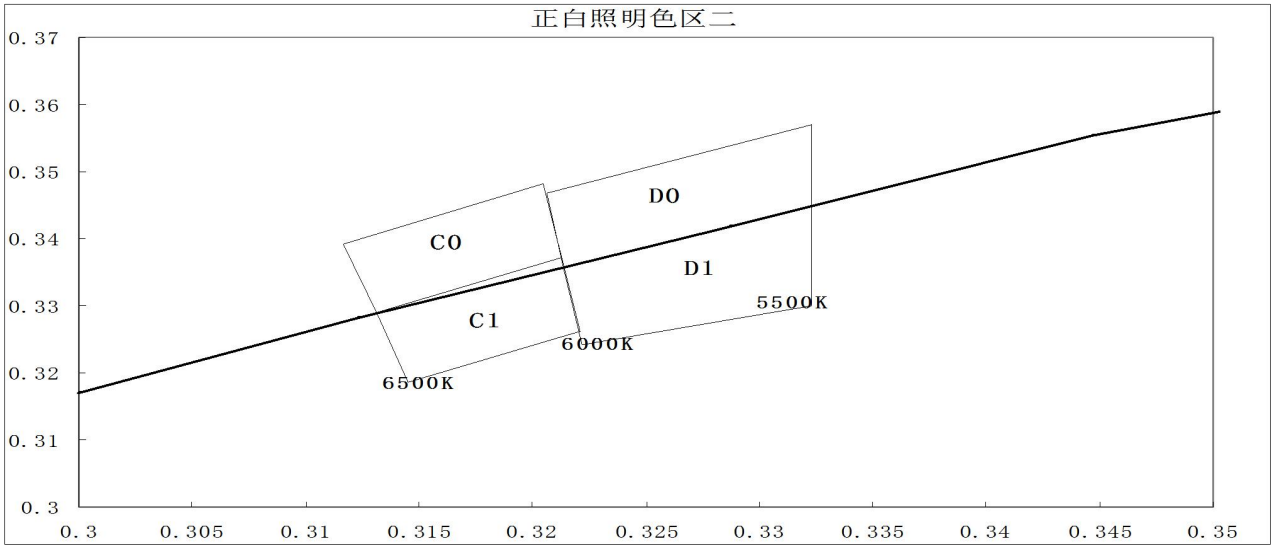
Lamp bead Classification standard as below:

luminous intensity and flux parameter classification

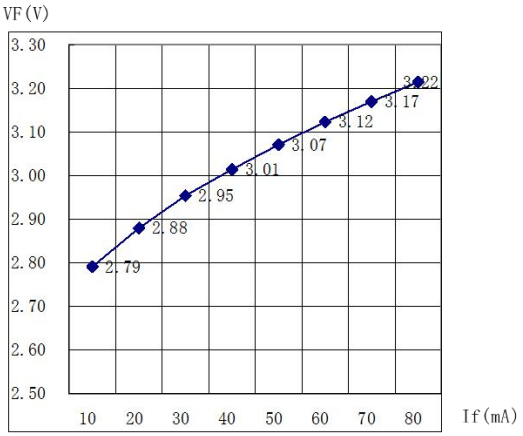
Voltage classification

Remarks ：

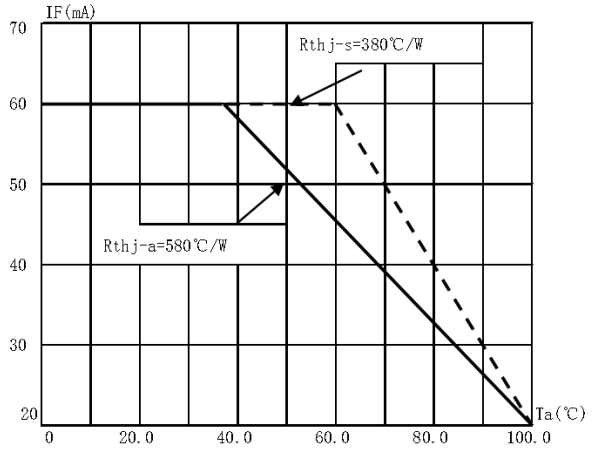
typical region of pure white lightning



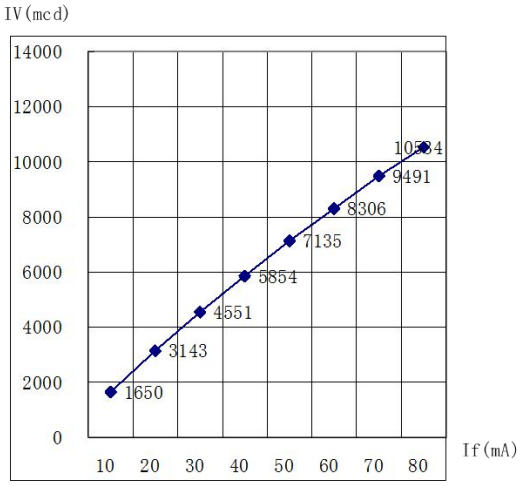
Typical electrical characteristic curve



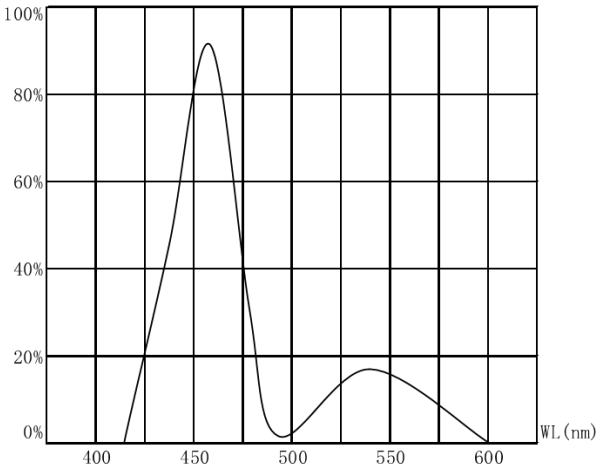
电流与电压关系曲线图



电流与焊接点温度关系曲线图

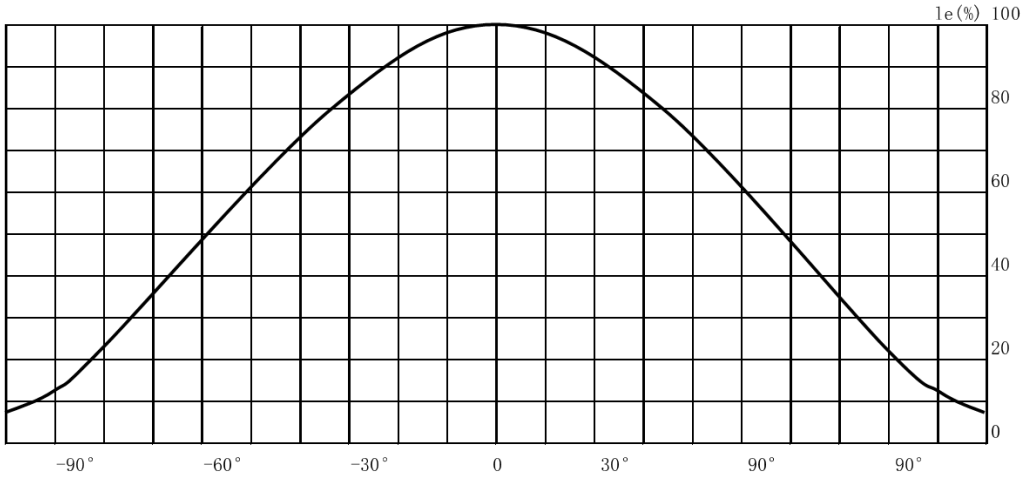


光强的相对值与电流的关系曲线图



光强的相对值与波长的关系曲线图

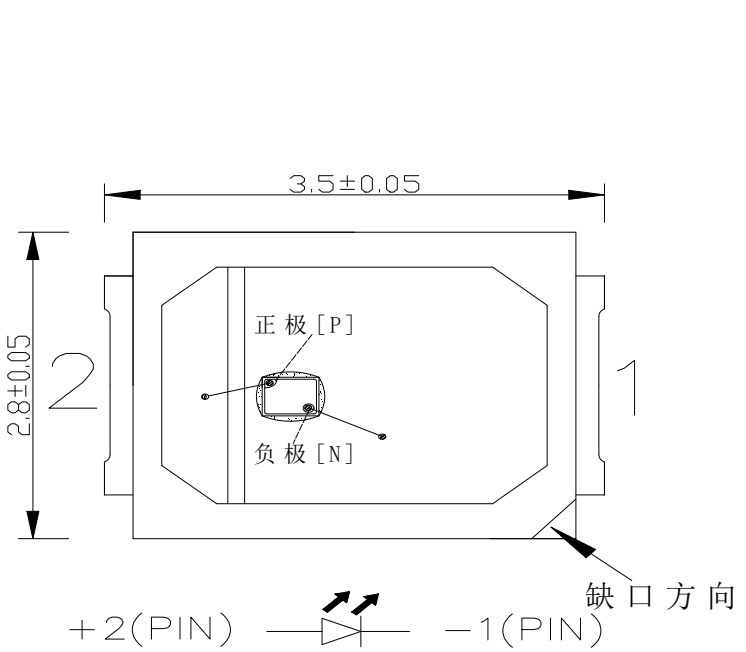
半功率视角120度

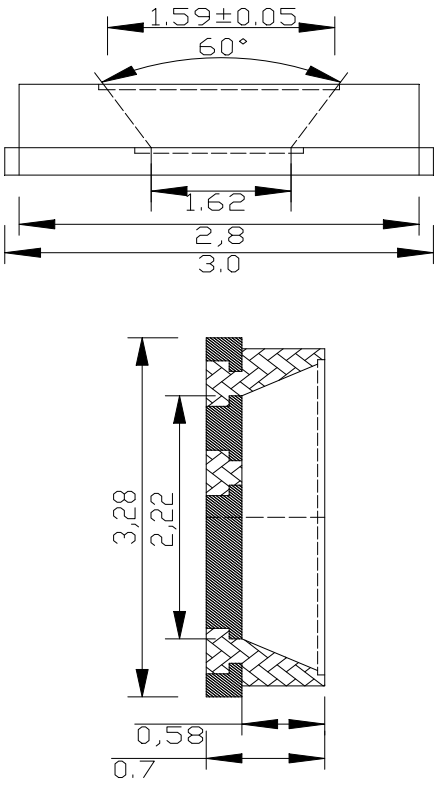


角度曲线图

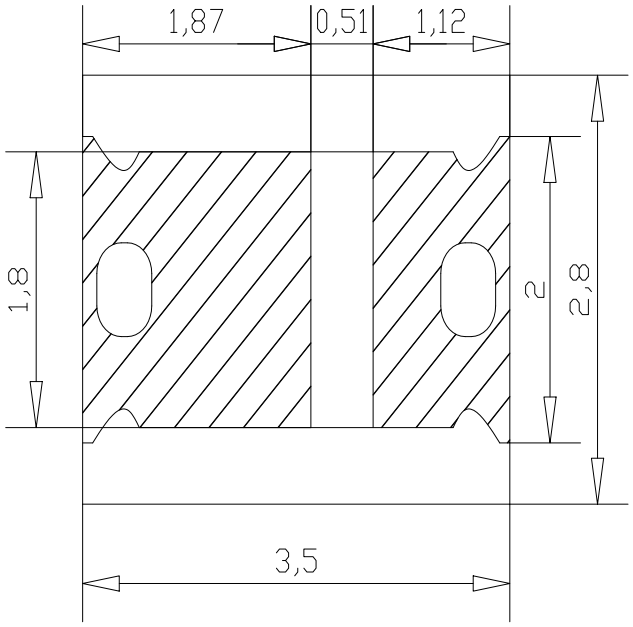
	PAPER NO.	KT-D003-001	MADE TIME	2016-1-18
KT 2835W-01	VERSION	A/01	MA	

Finished product size picture（unit: mm）F

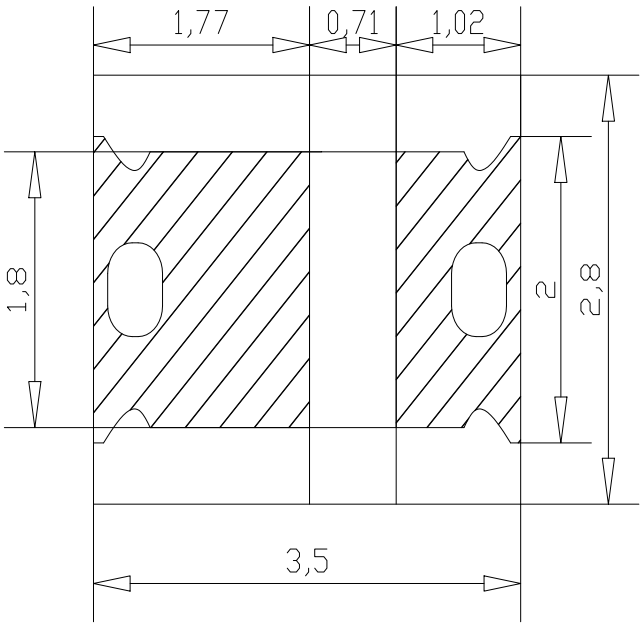




Solder pad size picture（unit: mm）



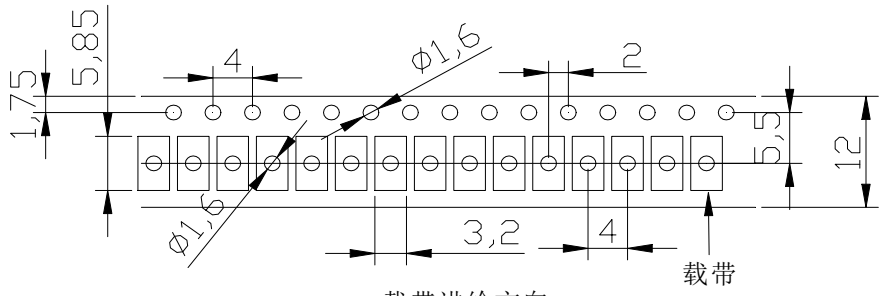
solder pad pic

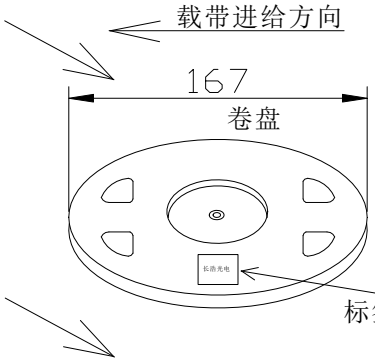


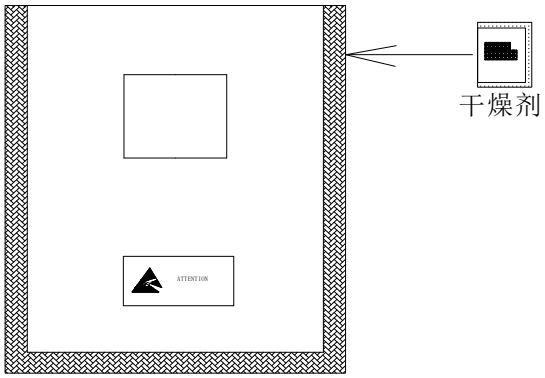
Recommended steel mesh pic

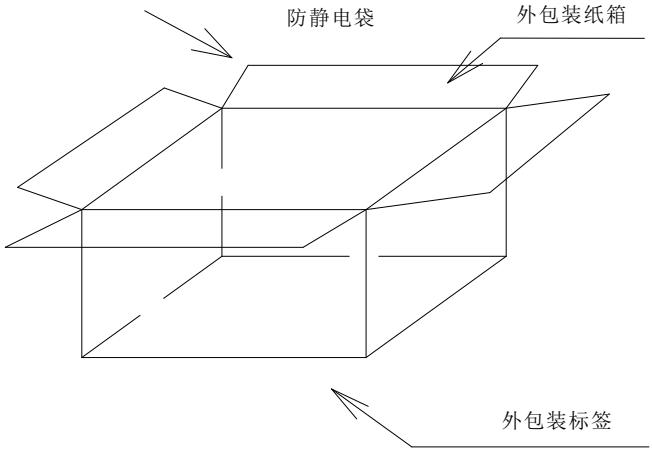
	PAPER NO.	KT-D003-001	MADE TIME	2016-1-18
KT 2835W-01	VERSION	A/01	MA	

Product package （unit: mm）









ATTENTIONS:

1. **Recommended current：**60mA

2. Moisture proof packaging

In order to prevent moisture from entering the SMD-LED during transportation and storage, the SMD-LED must be sealed and packaged in a moisture-proof bag. A desiccant must be placed in the package. The humidity display on the humidity card can provide the humidity level in the packaging bag.

3. **Storage**

The storage environment for unopened products with original packaging is: the storage time is not more than 12 months under the environment of temperature <40℃ and humidity <70%, when the storage time exceeds the specified 12 months, it must be re-baked.

Please check whether the packaging bag is leaking before opening the package

After unpacking, SMD-LED products must be stored in an environment with temperature <30℃ and humidity <50%, and in this environment, SMD-LED products must be used within 24 hours after unpacking <reflow soldering>, such as If the use time exceeds 24 hours, it must be re-baked before use.

The baking mentioned above is to put the SMD LED in an oven and bake it for 24 hours at a temperature of 65±5℃ and a relative humidity of <=10%.

4. **Cleaning**

Do not use unknown chemicals to clean the SMD-LED; unknown chemicals may damage the SMD-LED. When cleaning is necessary, soak the SMD-LED in alcohol for less than 1 minute at normal room temperature and let it dry naturally. For 15 minutes before you can start using

SMD-LED ultrasonic cleaning depends on the factors: ultrasonic energy and SMD-LED assembly method. The ultrasonic cleaning method must be pre-evaluated and guaranteed to not cause damage to SMD-LED.

5. Electrostatic discharge and surge current

Electrostatic discharge (ESD) or impulse current (EOS) will damage SMD-LED

Preventive measures：Wear static wrist guards, static shoes, and anti-static gloves when handling SMD-LEDs all the times

All devices, equipment and instruments must be completely grounded.

In the final inspection, it is recommended to conduct electrical tests on the products to screen out the defective products.

The most important thing is to eliminate the circuit design that is likely to exist inrush current.

6. Heat treatment

Heat treatment must consider the application place of SMD-LED, and the current should be appropriately changed according to the current application curve provided in the product specification

7. Soldering

Manual soldering with a soldering iron：

The recommended electric soldering iron for soldering is less than 25W. When soldering the product, the temperature of the soldering iron should be kept below 315℃ and the soldering must be completed within 3 seconds.

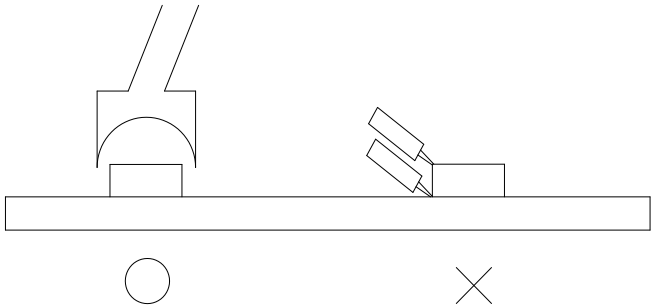
Do not touch the tip of the soldering iron to the epoxy resin part of the SMD-LED during soldering.

Do not put any mechanical pressure on the top of the epoxy resin of the product during welding.

After the product is soldered, the subsequent treatment can only be carried out when the product temperature drops below 40°C. This is to prevent the product from failing due to the mechanical thermal pressure of the subsequent work.

8. Remedy

Led after reflow soldering should not remedy, but when remedy is unavoidable, must use double head soldering iron(as pic below),besides first need make sure such way would not cause damage to led beads.



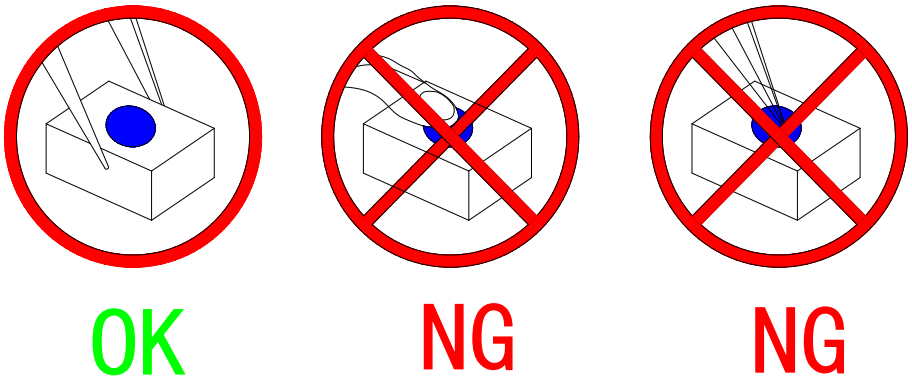
Attention:

Press hard on glue surface would affect reliability of led as led package glue is silicon glue which is very soft, so need preventive measure to avoid high pressure onto the package devices. When using suction nozzle please make sure the pressure on glue should be proper strength.

Handling Precautions:

Compared to hard and brittle epoxy resin, silicon package is soft and elastic, even though this character significantly reduced the thermal stress, but also make it more easily harmed by external mechanical force, so while processing by hand need some protection measure to silicon package material, otherwise may cause damage to led and cause broken and light decay.

1. use proper tools take form side of led, not tough by hand or sharp metal took on surface of led, which may hurt the internal circuit,



2、In order to prevent air pressure leakage, the outer diameter of the SMD nozzle should not exceed the size of the LED, and the inner diameter of the nozzle should be as large as possible. The tip of the nozzle should be made of soft material to prevent scratching or damaging the surface of the LED gel during suction. The size of the component must be It is programmed accurately in the pick-and-place

machine to ensure accurate absorption and avoid damage in the production process.

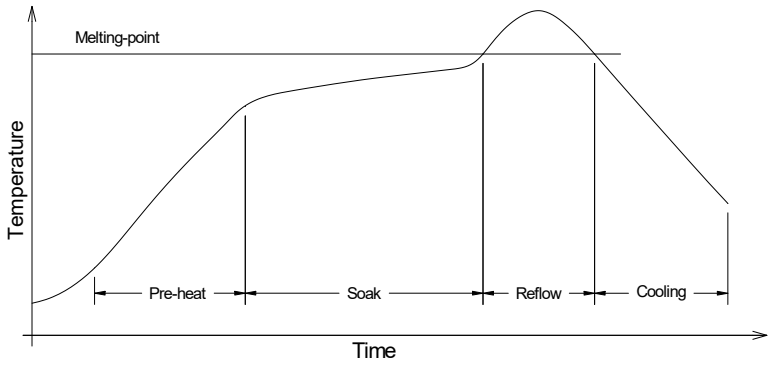
3、Do not pile the module materials together, it may damage the internal circuit

4、Cannot be used in acidic places with PH<7

Reflow soldering

The recommended reflow soldering temperature curve is as follows:

:



Solder (tin 63 and lead 37)	Solder (lead-free solder)
The ave. speed of peak rise: the fastest 4℃/s	The ave. speed of wave crest rise: the fastest 3℃/s
Preheating temperature: 100~150℃	Preheating temperature: 130~170℃
Warm-up time: up to 100 seconds	Warm-up time: up to 100 seconds
Ave. speed of wave crest fall: the fastest 6℃/s	Ave. speed of wave crest drop: the fastest 6℃/s
Peak temperature: up to 220℃	Peak temperature: up to 240℃
Time within 5℃ at the top of the wave: up to 10	Time within 3℃ at the top of the wave: up to 10

seconds	seconds
On temperature 183℃ last longest time is 80 seconds	temperature 200℃ lasts longest time 40 seconds

✧ After solder finish, remedy is not permitted. If unavoidable remedy, must make sure the remedy is 100% good, avoid smd lamp damaged by remedy.

✧ Reflow soldering can do most one time.

✧ While soldering not make any pressure on led body

✧ After soldering, do not package pcb immediately, let pcd and smd-led cool naturally.

Reliability test standard

type	Test items	Reference standard	Test condition	Last time	Receive standard
Environment test	Temperature cycle	JESD22-A104-A	-40℃～25℃～100℃～25℃ 30minutes,5minutes,30 minutes, minutes	recycle 100 times	0/50
	Thermal shock	JESD22-A106	-40℃～100℃ 30 minutes ,30 minutes	Recycle 100 times	0/50
	High temperature life test	JIS C 7021 (1977)B-11	Ta=60℃ RH=90%	1000 小时	0/50

Life test	Room temperature life test	JESD22-A108-A	Ta=25℃ 试验条件:R=20mA,G=15mA,B=15mA	1000 小时	0/50
	High temperature and humidity life test	JESD22-A101	Ta =85℃ RH=85% Test conditions:R=20mA,G=20mA,B=20mA	1000hours	0/64
Destructive test	Solder resistance test	JESD22-A113	Tsol=245℃,t=10sec.	10seconds	0/20
Static test	Electrostatic discharge test	AEC(Q101-002)	Human body model 1000V	--	0/10
Mechanical vibration test	Mechanical vibration	MIL-STD-883 Method 2007	20Gminutes ,20 to 2000Hz 4recycles ,4minutes .Each,X,Y,Z	--	0/50