



深圳匡通电子有限公司

SHENZHEN KENTO ELECTRONICCO.,LTD

SPECIFICATION FOR APPROVAL

Product Name: LED 0603 Green color

Product number: KT-0603-G

Customer Name: _____

Version number: A.2

Date Prepared: 2017-1-10

APPROVED SIGNATURES			

1、characteristic:

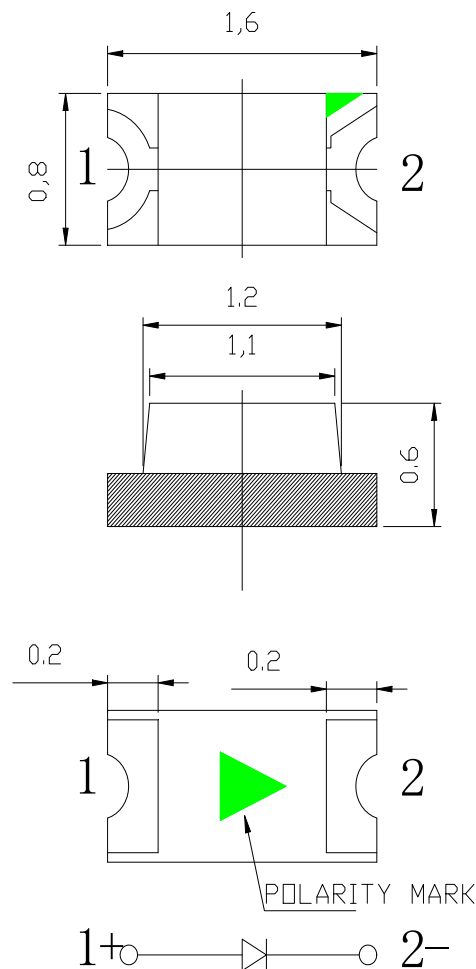
1.1 Package size: 1.6*0.8*0.6mm

1.2 Luminous color: Green

1.3 Luminous type: single type

1.4 Soldering method: reflow soldering

1.5 RoHS compliant



Remarks::

- 1.All dimensions are in mm;
2. Unless clearly marked, the tolerances are all ± 0.1 mm.

3、The maximum absolute nominal value (ambient temperature=25°C)



Product Specification Book

Part No. : **KT-0603-G**

Version	A.2	Release date	2017.1.0	Page number	3 of 9
---------	-----	--------------	----------	-------------	--------

Parameter	Abbreviation	Nominal value	Unit
Forward current	I _F	5	mA
Forward peak current*1	I _{FP}	100	mA
Reverse voltage	VR	5	V
Welding temperature	Tsol	回流焊: 250 °C, 8sec. 手工焊: 300 °C, 3sec.	
Operating temperature	Topr	-40°C~+85	
Storage temperature	Tstg	-40°C~+85	

*IFP conditions: pulse width ≤0.1msec, period ≤1/10

4、光电特性参数 Photoelectric characteristic parameters (环境温度 ambient temperature=25°C) :

Parameter	Abbreviation	MIN	TYP	MAX	Unit	Condition
Forward voltage	V _f	2.7		3.2	V	IF=5mA
Brightness	I _v	144	-	249	mcd	IF=5mA
wavelength	WLD	510		531	nm	IF=20mA
Beam angle	2θ1/2	-	120	-	deg	
Reverse current	IR	-	-	2	μA	VR=5V

Remarks:

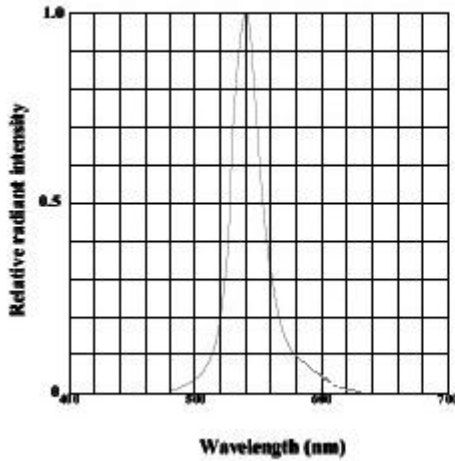
1. Brightness deviation: ±5%

2. Voltage deviation: ±0.03V

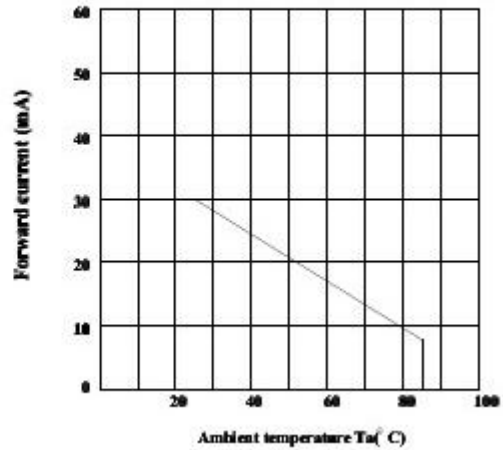
3. Wavelength deviation: ±1nm

5、Optical parameter curve:

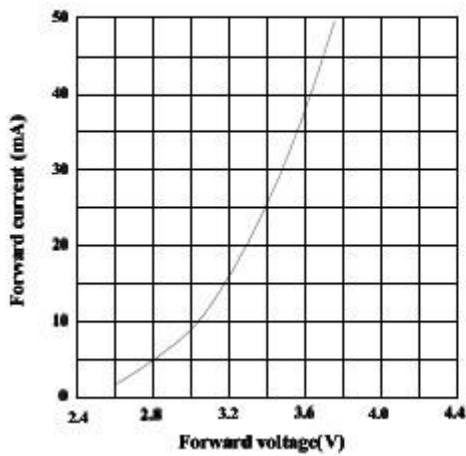
Relative intensity vs. wavelength(Ta=25)



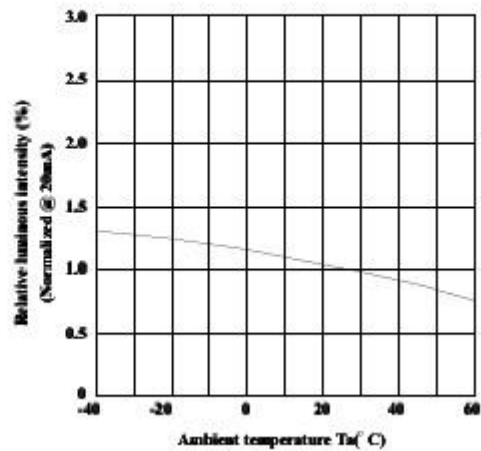
Forward current derating curve vs. ambient temperature



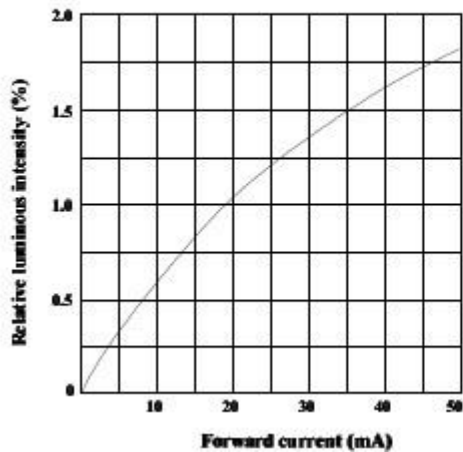
Forward current vs. forward voltage(Ta=25)



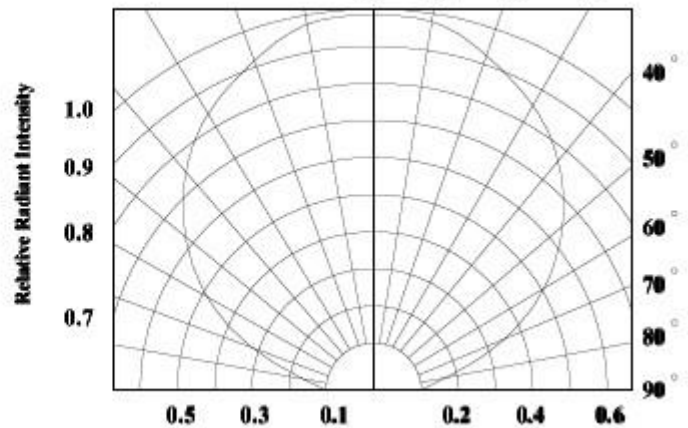
Luminous intensity vs. ambient temperature



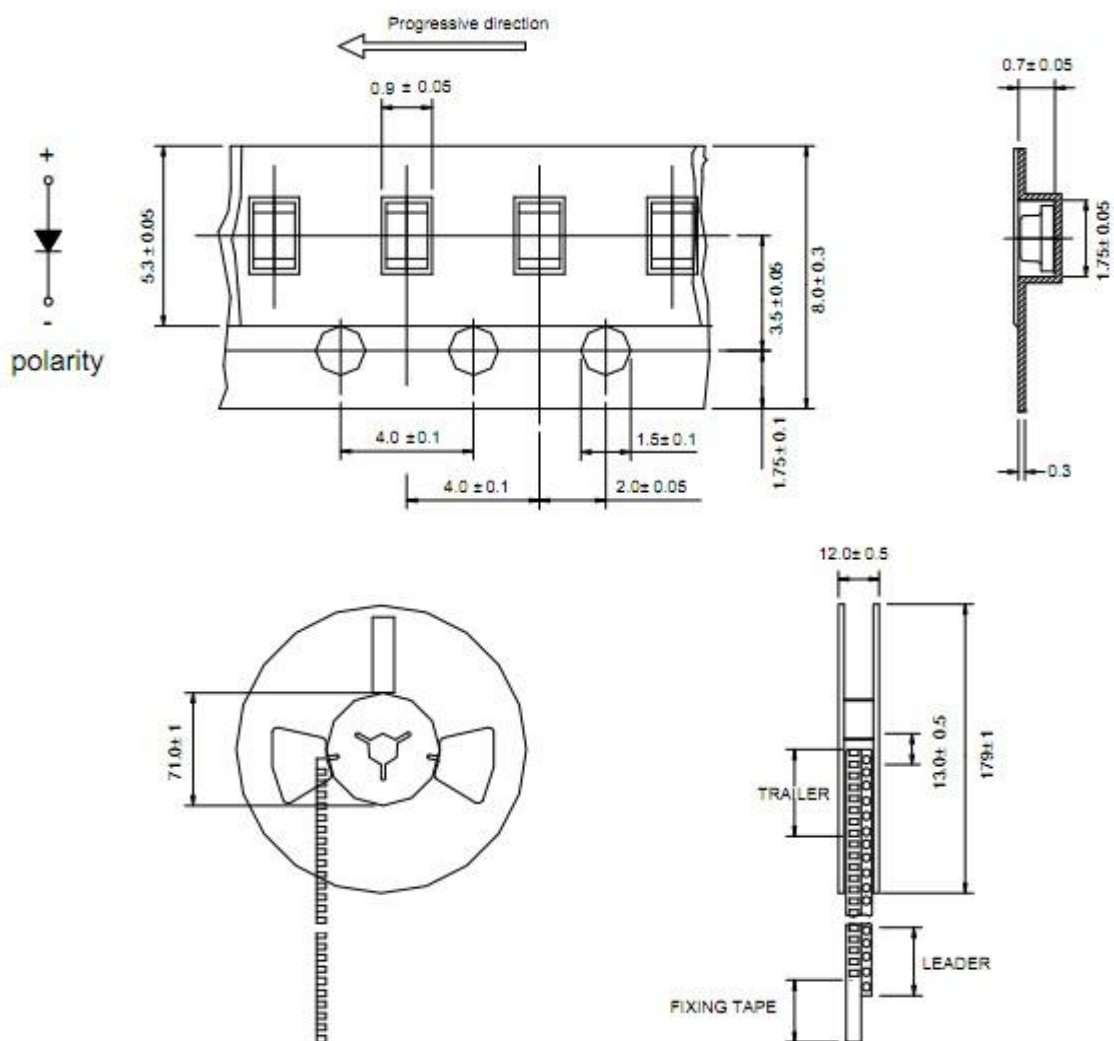
Relative luminous intensity vs. forward current



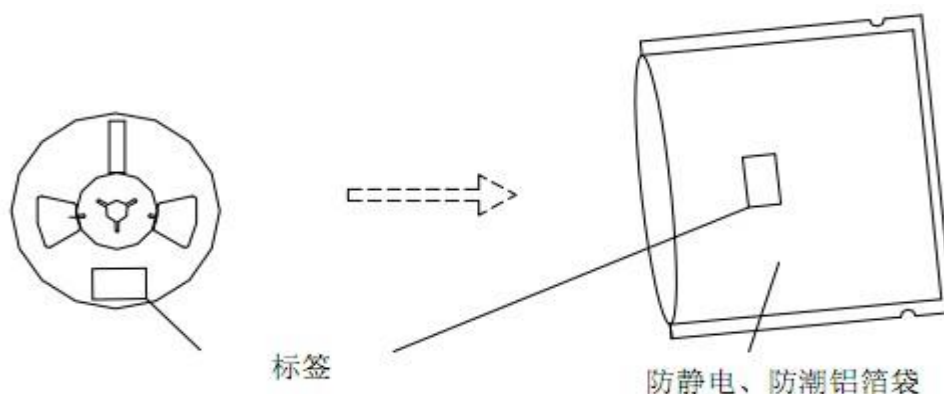
Radiation diagram
0° 10° 20° 30°



包装数量: 4000 pcs/卷 Packing quantity: 4000 pcs/roll



6、包装方式(Packing method): (单位 Unit: mm)



7、Reliability test items and conditions:

NO.	Test Items	Test Conditions	Number of samples	Accept/Reject
1	Life test	Test current: 20mA Temperature: 25° C Test time: 1000 hours	20	0/1
2	High temperature and humidity (Static experiment)	Temperature: equal to 65° C Humidity: RH90% Test time: 240 hours	20	0/1
3	Thermal shock	-40° C~+100° C 20min 10s 20min Test time: 100 cycles	20	0/1
4	High temperature storage	High temperature: +100° C Test time: 1000 hours	20	0/1
5	Low temperature storage	Low temperature: -40° C Test time: 1000 hours	20	0/1
6	Temperature cycle	-40° C~+100° C 30min 5min 30min Test time: 20 cycles	20	0/1
7	Reflow soldering	260° C (Max.), no more than 10 seconds	20	0/1

Criteria for unqualified reliability test:

IV: Attenuation exceeds 50%

Vf: Change more than 20%

Remarks: 1. The test of the same experiment result needs to be completed within 2 hours;

2. The test can only be carried out after each experiment is completed and the material returns to normal environmental conditions.

8、Precautions for use:

8.1 Welding

SMD LED potting glue is soft, and the light-emitting surface and plastic shell are easily damaged by external force. Please handle with care when soldering.

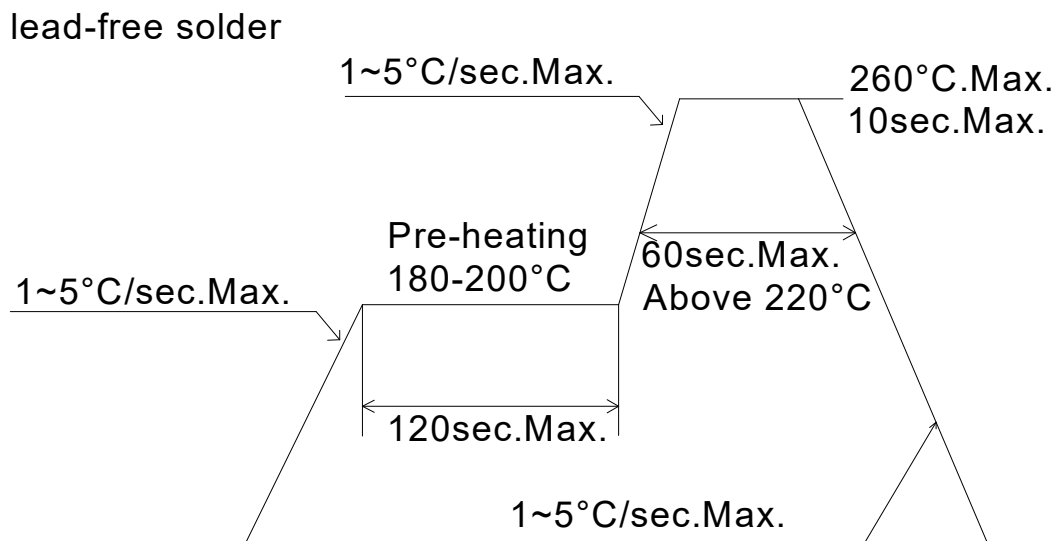
a. It is recommended to use tin-washed flux, reflow soldering in accordance with the reflow profile conditions, and reflow times at most twice to ensure that the LED light-emitting surface is clean, and foreign matter will affect the light-emitting color.

b. Only perform manual soldering when repairing. It is recommended to use a 25W anti-static soldering iron. The iron and soldering iron head should not touch the luminous surface and plastic parts. The soldering time should not exceed 3 seconds.

c. During the welding and experiment process, the LED should not be twisted forcefully, otherwise, the LED will die easily.

d. Please do not use LEDs of different BIN levels on the same product, otherwise it may cause serious color difference of the product.

e. The temperature curve of lead-free reflow soldering can refer to the following figure:



8.2 Cleaning

a. Do not use ultrasonic cleaning. It is recommended to use isopropyl alcohol or pure alcohol to wipe or soak, do not exceed 1 minute, and leave it at room temperature for 15 minutes before use. After cleaning, make sure the LED light-emitting surface is clean, foreign matter will affect the light-emitting color.

b. Avoid contact with or pollute the water, trichloroethylene, acetone, sulfide, nitride, acid, alkali, salt, these substances will damage the LED.

8.3 Potting

a. Sodium ions and sulfides will make the color of the fluorescent tube lighter (poisoned). When potting, avoid using potting glue containing sodium ions and sulfides.

b. When using normal potting glue, it is recommended to perform a small amount of test first and light up for 168 hours at room temperature, and then work after confirming that there is no problem.

8.4 Save

- Before opening the package, the LED should be stored at a temperature of 30°C or below, and a relative humidity of RH60% or less, and used within one year.
- After opening the package, the LED should be used for 7 days at a temperature of 30°C or below and a relative humidity of RH30-35% or below. After the LED absorbs moisture, the glue may crack during reflow soldering, which will affect the luminous color. For unused parts, please de-moisture treatment (for rolled products: baking at 60°C±5°C, 12 hours; for bulk products: baking at 105°C±5°C, 1 hour), and then seal with aluminum foil bags Save later.
- Avoid acid, alkali and corrosive gas in the storage environment, and avoid strong vibration and strong magnetic field.

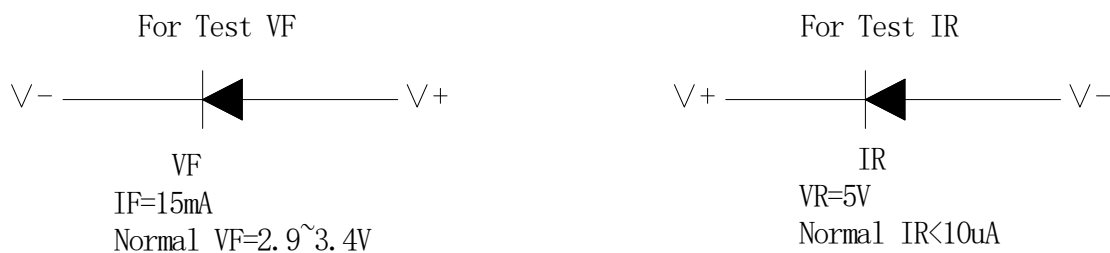
8.5 Static electricity

- Static electricity or peak surge voltage will damage the LED, avoid transient voltage when turning on and off the light.
- It is recommended to wear an anti-static wrist strap, anti-static gloves, and anti-static shoes when using LEDs. The equipment and instruments used are properly grounded. After the LED is damaged, the leakage current is obviously increased, the low-current forward voltage becomes lower, and the low-current point does not light up.

8.6 Testing

- The LED must be driven under the rated current, and the circuit needs to be protected by a current-limiting resistor. Otherwise, a slight voltage change will cause a larger current change, which will damage the LED.
- When the circuit is on or off, avoid the generation of instantaneous surge voltage, otherwise, the LED will be burned out.

Please refer to the following figure to detect the LED:



If the forward voltage VF is too high or the reverse voltage VR is too high, the LED will be damaged.

- When lighting or testing the LED, the reverse voltage applied to the two ends of the LED must not be higher than 5V, otherwise it is easy to damage the LED.



Product Specification Book

Part No. : **KT-0603-G**

Version

A.2

Release date

2017.1.0

Page number

9 of 9

8.7 Other

The color of the LED will change slightly with different operating currents. It is recommended to consider the use of resistors in series with the LED when designing. When lighting, be careful not to look directly at the LED light-emitting surface, the light intensity of the LED will burn your eyes.

Antistatic level: ESD-2C (above 2000V)