

Specification for approval

CUSTOMER NAME: _____

DIRECTOR: _____ TITLE: _____

CUSTOMER PART NO.: _____

PART NUMBER: **IE-3210RGB-ST-L-D** REVISION: **2.0**

ISSUE DATE: **2014/01/08** RETURN DATE: ____/____/____

REASON _____

CUSTOMER SIGNATURE: _____



Features

3.2mmx1.0mm SMT LED, 1.5 mm THICKNESS.

_ LOW POWER CONSUMPTION.

_ WIDE VIEWING ANGLE.

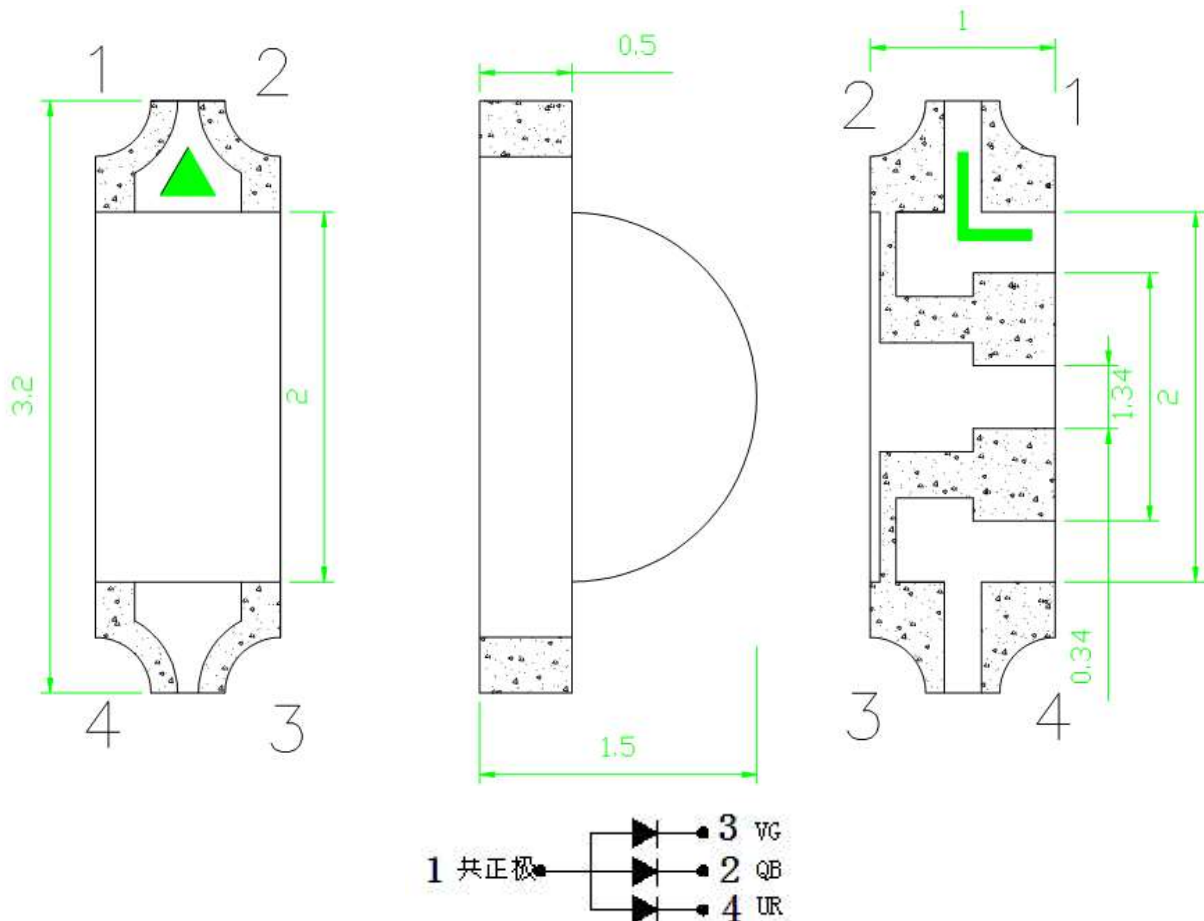
_ IDEAL FOR BACKLIGHT AND INDICATOR.

_ VARIOUS COLORS AND LENS TYPES AVAILABLE.

_ PACKAGE : 2000PCS / REEL.

_ RoHS COMPLIANT.

Package Dimensions



Description

The Blue source color devices are made with GaN on Sapphire Light Emitting Diode.

The Green source color devices are made with InGaN on SiC Light Emitting Diode.

The Hyper Orange source color devices are made with DH InGaAlP on GaAs substrate Light Emitting Diode.

Static electricity and surge damage the LEDs.

It is recommended to use a wrist band or anti-electrostatic glove when handling the LEDs.

All devices, equipment and machinery must be electrically grounded.

Emitting Diode.

Notes:

1. All dimensions are in millimeters (inches).

2. Tolerance is ± 0.1 (0.004") unless otherwise noted.

3. Specifications are subject to change without notice.

Selection Guide

Part No.	Dice	Lens Type	Iv (mcd) @ 20mA		Viewing Angle
			Min.	Typ.	2 θ 1/2
<u>IE-3210RGB</u> <u>L-ST-D</u>	BLUE (GaN)	DIFFUSED	100	150	120
	GREEN (InGaN)		300	450	
	RED (InGaAlP)		100	200	

Note:

1. θ 1/2 is the angle from optical centerline where the luminous intensity is 1/2 the optical centerline value.

Electrical / Optical Characteristics at T_A=25°C

Symbol	Parameter	Device	Typ.	Max.	Units	Test Conditions
λ_{peak}	Peak Wavelength	Blue Green Red			nm	IF=20mA
λ_D	Dominant Wavelength	Blue Green Red	466 518 620	468 522 625	nm	IF=20mA
$\Delta\lambda_{1/2}$	Spectral Line Half-width	Blue Green Red	25 38 20		nm	IF=20mA
C	Capacitance	Blue Green Red	100 45 25		pF	VF=0V;f=1MHz
VF	Forward Voltage	Blue Green Red	3.0 3.0 1.9	3.4 3.4 2.1	V	IF=20mA
IR	Reverse Current	Blue Green Red		5 5 5	uA	VR = 5V

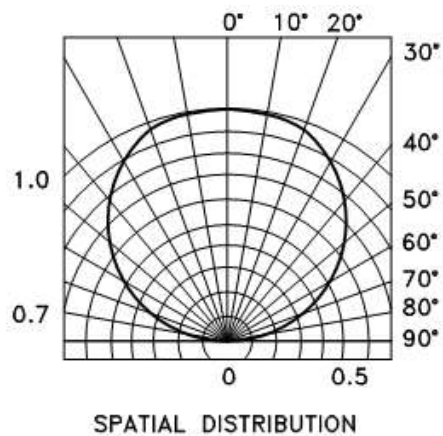
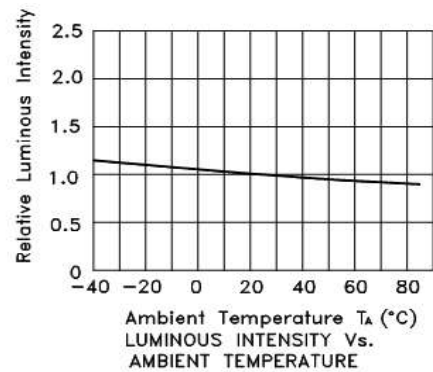
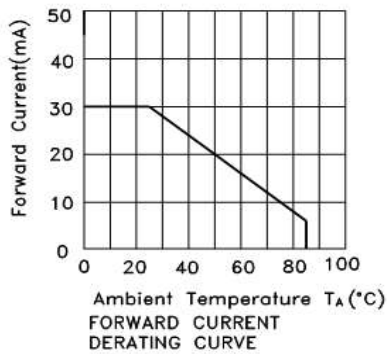
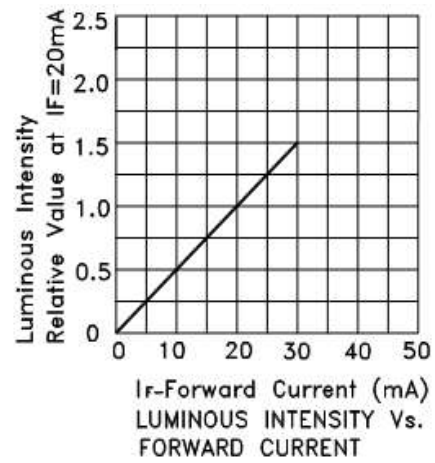
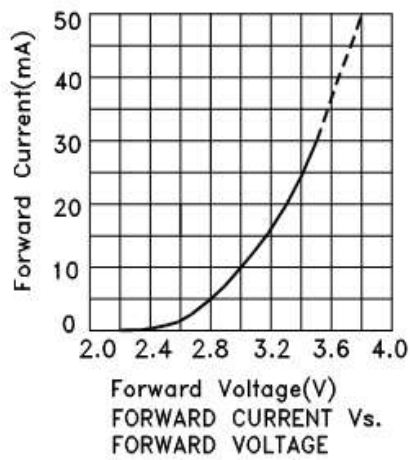
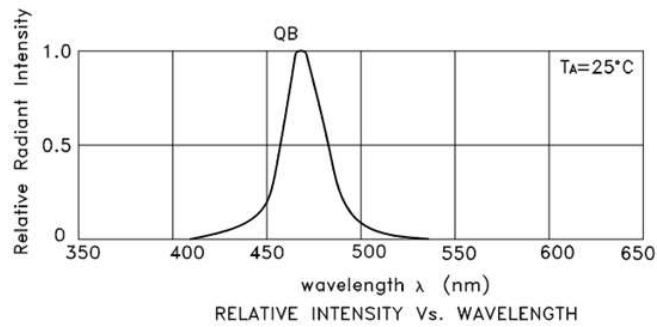
Absolute Maximum Ratings at T_A=25°C

Parameter	Blue	Green	Red	Units
Power dissipation	135	135	75	mW
DC Forward Current	30	30	30	mA
Peak Forward Current [1]	135	135	80	mA
Reverse Voltage	5	5	5	V
Operating/Storage Temperature	-40°C To +85°C			

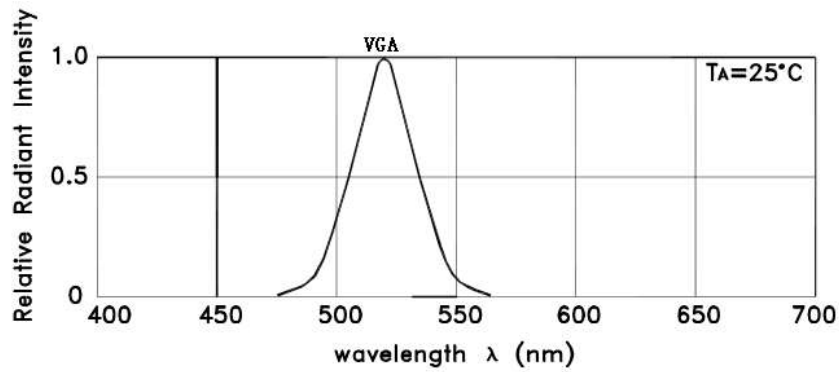
Note:

1. 1/10 Duty Cycle, 0.1ms Pulse Width.

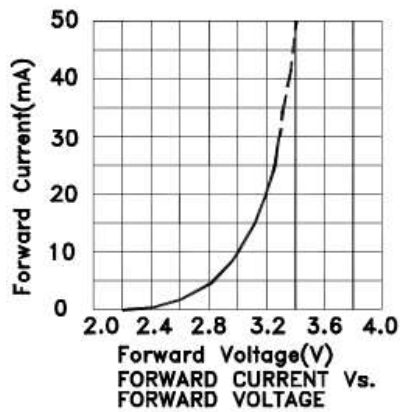
Blue



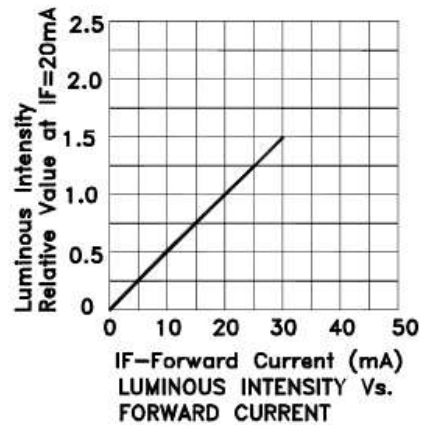
Green



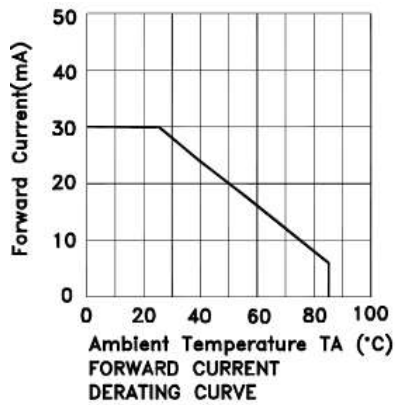
RELATIVE INTENSITY Vs. WAVELENGTH



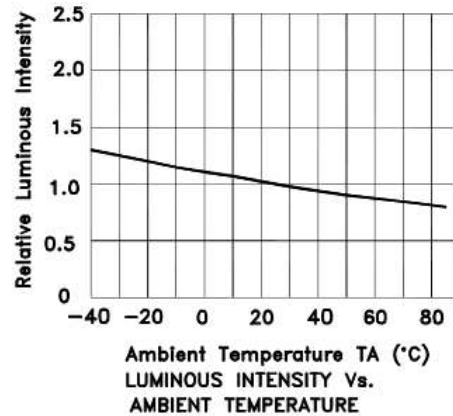
FORWARD CURRENT Vs. FORWARD VOLTAGE



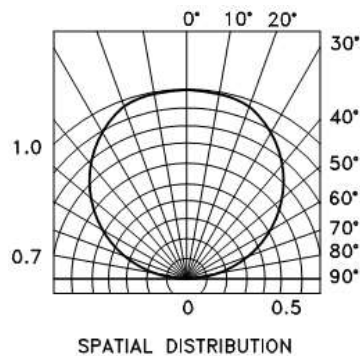
LUMINOUS INTENSITY Vs. FORWARD CURRENT



FORWARD CURRENT DERATING CURVE

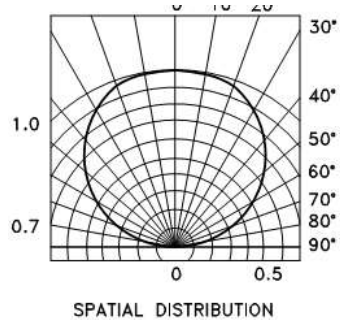
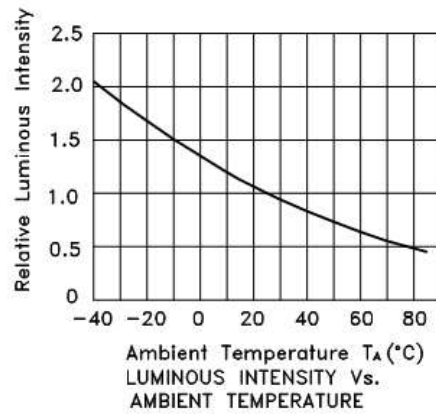
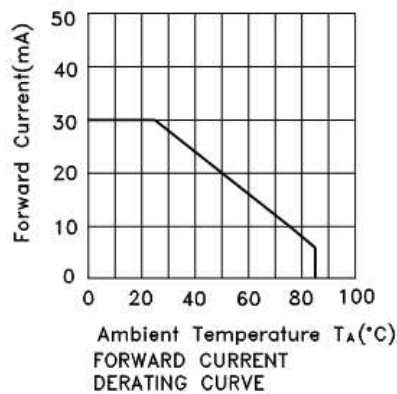
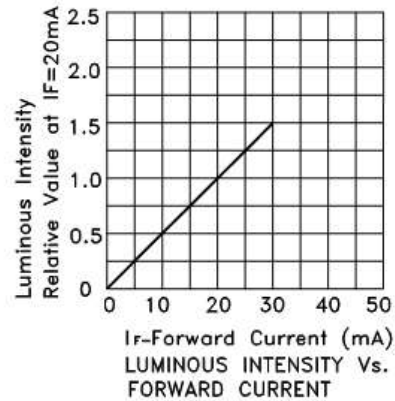
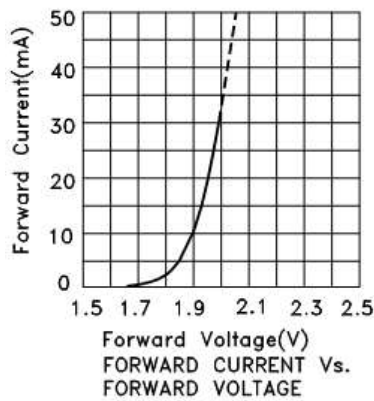
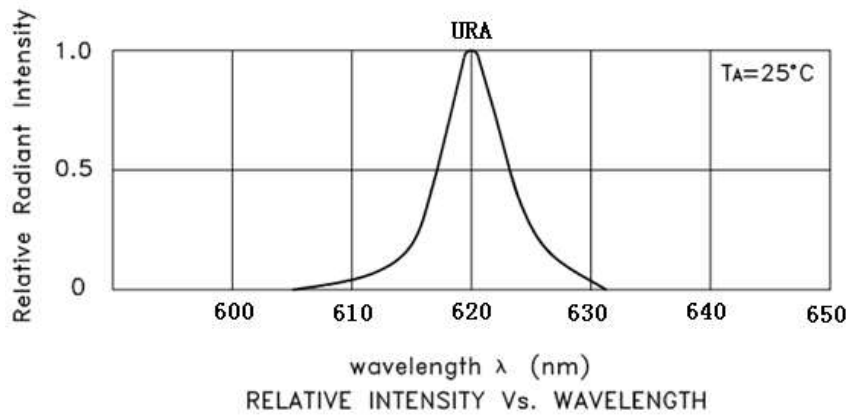


LUMINOUS INTENSITY Vs. AMBIENT TEMPERATURE



SPATIAL DISTRIBUTION

Red



RELIABILITY

Test Items and Results

序号	试验项目	参考标准	试验条件	持续时间	取样数	接收水准 (不合格数量/抽样总数)
1	温度循环	JEITA ED-4701	-40°C ~25°C ~100°C ~ 25°C 30 分钟 5 分钟 30 分 钟 5 分钟	循环 100 回 合	50	0/50
2	冷热冲击	MIL-STD-202G	-40°C ~100°C 15 分钟 15 分钟	循环 500 回 合	50	0/50
3	高温储存	JEITA ED-4701 200 201	T _a =100°C	1000 小 时	50	0/50
4	低温储存	JEITA ED-4701 200 201	T _a =-40°C	1000 小 时	50	0/50
5	常温寿命 试验		T _a =25±5°C I _F =20mA	1000 小 时	50	0/50
6	高温高湿 寿命试验		T _a =60°C RH=85% I _F =20mA	1000 小 时	50	0/50
7	可焊性 (回流焊)	JEITA ED-4701 300 303	T _{sol} =235°C±5°C, 5 秒 使用助焊剂	焊接一 次, 5 秒	10	0/10
8	耐焊性 (回流焊)	JEITA ED-4701 300 301	T _{sol} =260°C, 10 秒 预处理: 35°C 95%RH 96 小时	焊接二 次, 每次 10 秒	10	0/10
备注	以上试验项目如与客户试验要求存在差异的或者特殊客户特殊要求的可根据实际情况按照客					
	户的要素进行试作, 客户未要求的按我司试验标准试作, 不同产品使用不同电流进行测试					

5. Cautions

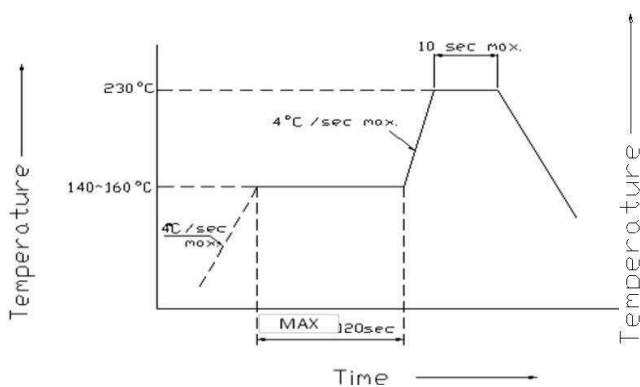
(1) Soldering Conditions

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

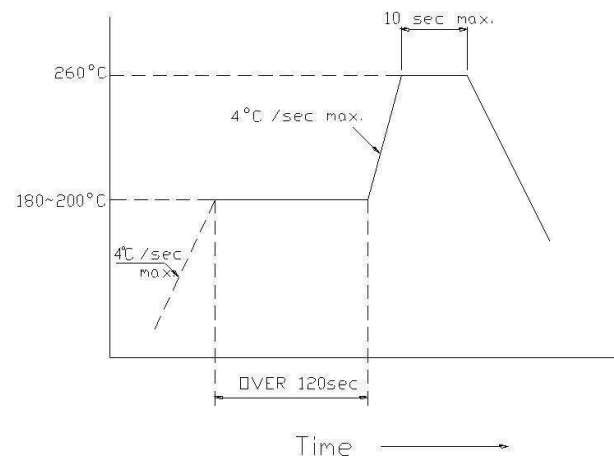
(Recommended soldering conditions)

回流焊接 Reflow Soldering			手工焊接	
预热温度 Pre-heat	有铅 Lead Solder	无铅 Lead-free Solder	温度 Temperature	350° C Max.
预热时间 Pre-heat time	140 ~ 160° C 120 sec. Max.	180 ~ 200° C 120 sec. Max.	焊接时间 Soldering time	3 sec. Max. (one time only)
峰值温度 Peak temperature	230° C Max. 10 sec. Max.	260° C Max. 10 sec. Max.		
焊接时间 Soldering time	参考下图	参考下图		
条件 Condition				

(Lead Solder)

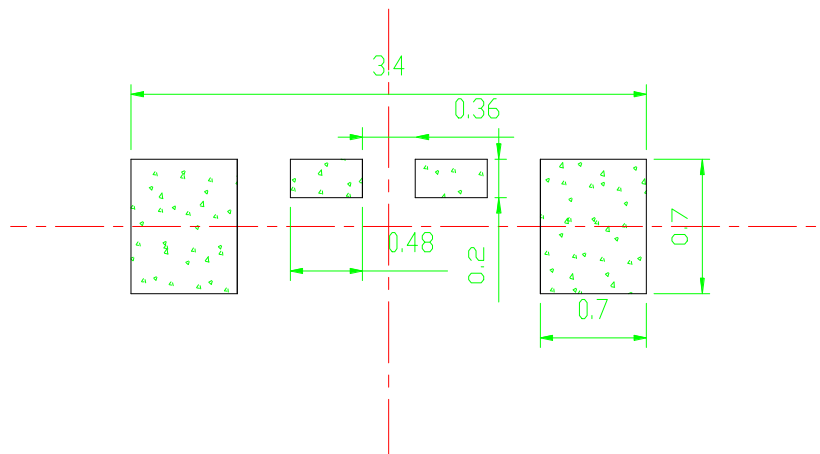


(Lead-Free Solder)



Recommended Soldering Pattern

(Units : mm)



(2) Static Electricity

LED

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.

2.0V 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 : ($V_F > 2.0V$ at $I_F=0.5mA$)

(3) Moisture Proof Package

It is recommended that moisture proof package be used .

(4) Cautions:

4.1. Please check if there is air leak before opening the package, if so, please return the goods back

to take drying process for later using.

4.2. Products can be used within 15days after packaging, after that, they must be:

4.2.1 Soldered within 24 hrs

4.2.2 Used in the condition: $30^{\circ}C$ within and 60%RH
below

4.2.3 Stored in 30%RH for moisture below.

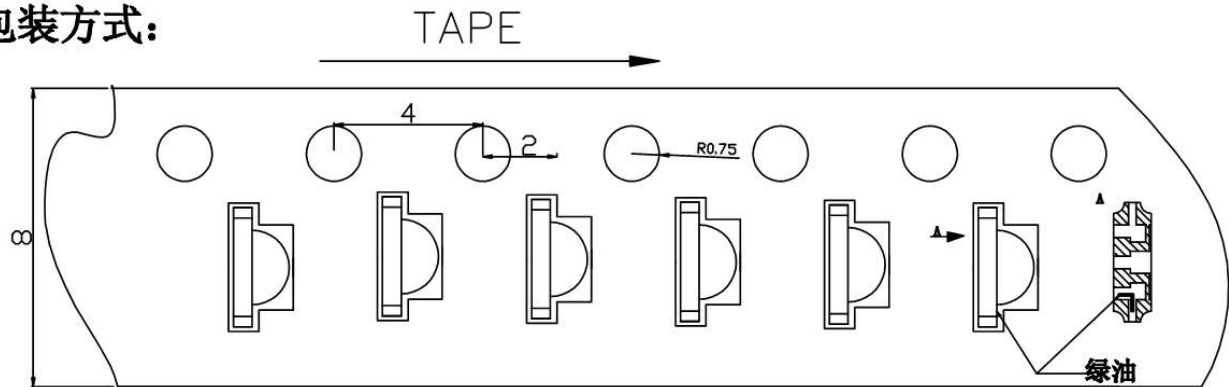
4.3. Products cannot be used for and over 15days after being packaged unless opening the package and take drying our process in $85^{\circ}C/6H$.

4.4. Products not be used for or over 60days after being packaged please return back to take drying out and packaging process for forward using.

PACKAGING

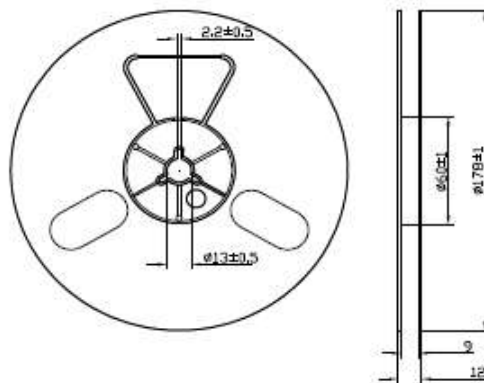
The LEDs are packed in cardboard boxes after taping.

包装方式:

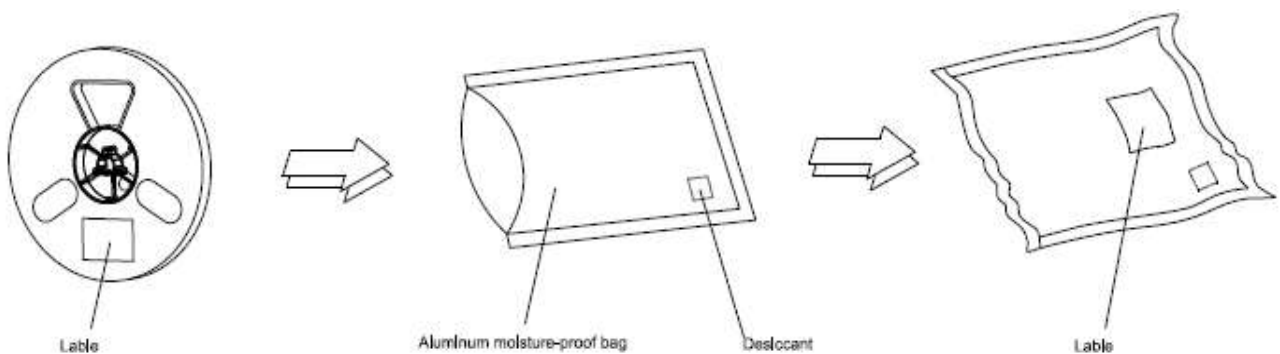


Package: 3000PCS/reel

Reel Dimensions



Moisture Resistant Packaging



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