BEELED

СВЕТОДИОДЫ BEELED – ТЕХНИЧЕСКОЕ ОПИСАНИЕ

Product type: Chip LED	
Product name: 1206 Green LED	
Part No.: 1206UGS-001	
Sample No.:	

签核（Signatures）		
核准(Approved)	审核(Checked)	制定(Drawn)
王娟	周宏	阮国成

客户（Customer）		
公司名称(Corporation):		
物料编码(Material No.):		
物料名称(Part No.):		
客户确认（Customer Signatures）		

BEELED

Part No. 1206UGS-001

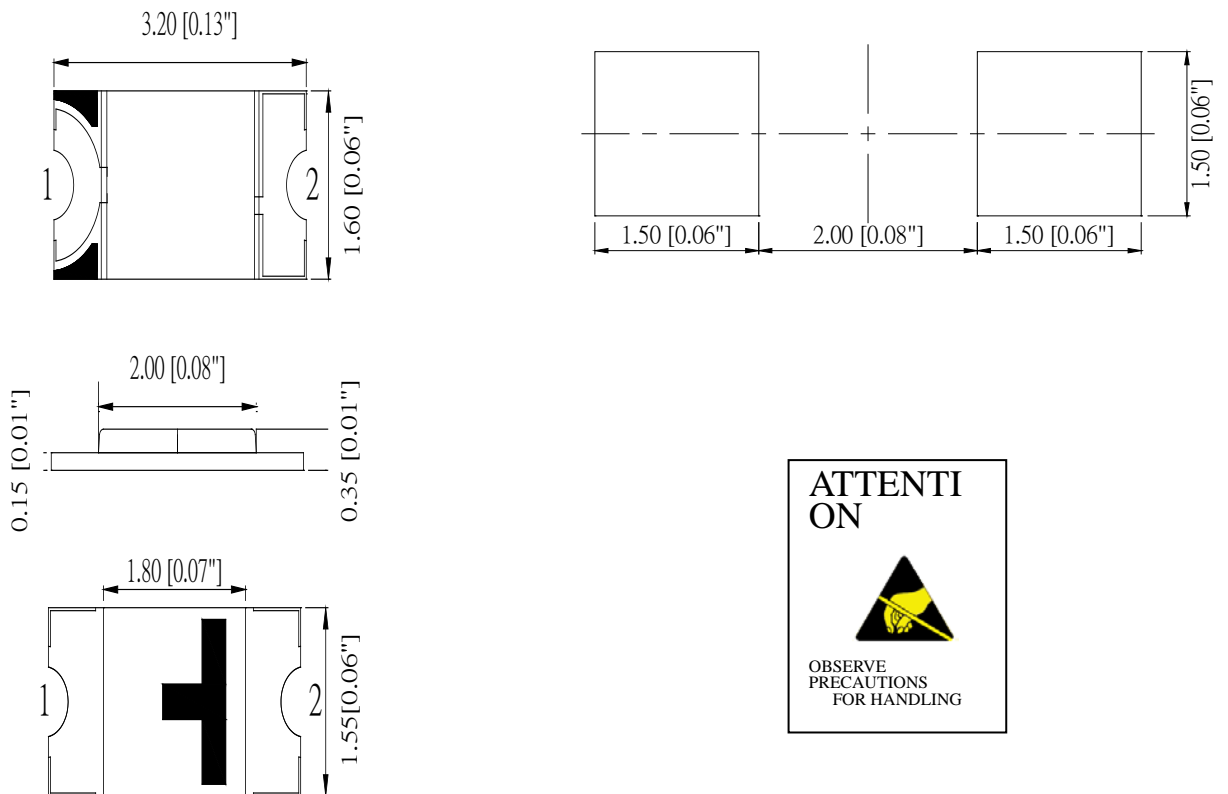**Feature**   特征

*Low power consumption   *低能耗
*Long life-solid state reliability   *寿命长
*Available on tape and reel   *易于装贴
*RoHS compliant   *符合 RoHS 要求

Package outline dimensions（产品外型尺寸）

3.20 [0.13"]

1.60 [0.06"]

1

2

1.50 [0.06"]

1.50 [0.06"]   2.00 [0.08"]   1.50 [0.06"]

1.50 [0.06"]

2.00 [0.08"]

0.15 [0.01"]

0.35 [0.01"]

1.80 [0.07"]

1

2

1.55[0.06"]

ATTENTION

OBSERVE
PRECAUTIONS
FOR HANDLING

Note:

1. All dimensions are in millimeters (mm);

2. X.X is +/-0.1mm,X.XX is +/- 0.05mm unless otherwise noted;

3. The device has a single mounting surface, the device must be mounted according to the specifications.

BEEL=D

Electrical characteristics data sheet

Selection Guide（选用指示）

Part No. （产品型号）	Emitted Color （发光颜色）	Resin color （胶体颜色）	Viewing Angle （发光角度）$2\theta_{1/2}$
1206UGS-001	**Green**	**Water transparent**	**130°**

Absolute Maximum Ratings at Ta=25℃（极限参数）

Parameter（项目）	Symbol（符号）	Value（数值）	Unit（单位）
Power dissipation（功率消耗）	**Pd**	**70**	**mW**
DC Forward Current（正向电流）	**If**	**30**	**mA**
Peak Forward Current[1]（峰值电流）	**Ifp**	**70**	**mA**
Reverse Voltage（反向电压）	**Vr**	**5**	**V**
Electro-Static-Discharge[2]（HBM）	**ESD**	**1000**	**V**
Operating Temperature（工作环境温度）	**Topr**	**-25to+85**	**℃**
Storage Temperature（储存温度）	**Tstg**	**-40to+100**	**℃**
Lead Solder Temperature（焊接温度）	**Tsol**	**250 for 5sec**	**℃**

Notes:

1. 1/10 duty cycle,0.1ms pulse width

2. The products are sensitive to static electricity and must be carefully taken when handling products.

Electrical/Optical Characteristics Ta=25℃（电子光学特性）

Parameter（参数）	Symbol （符号）	Condition （条件）	Value（数值）			Unit
			Min.	Typ.	Max.	
Forward voltage（正向电压）	**VF**	**If=20mA**	**2.8**	**--**	**3.6**	**V**
Luminous intensity（发光强度）	**IV**	**If=20mA**	**400**	**550**	**--**	**mcd**
Dominant wavelength（主波长）	**WLD**	**If=20mA**	**520**	**--**	**530**	**nm**
Peak wavelength（峰值波长）	**WLP**	**If=20mA**	**---**	**516**	**---**	**nm**
Reverse current(反向电流)	**Ir**	**Vr=5V**	**---**	**---**	**10**	**μA**

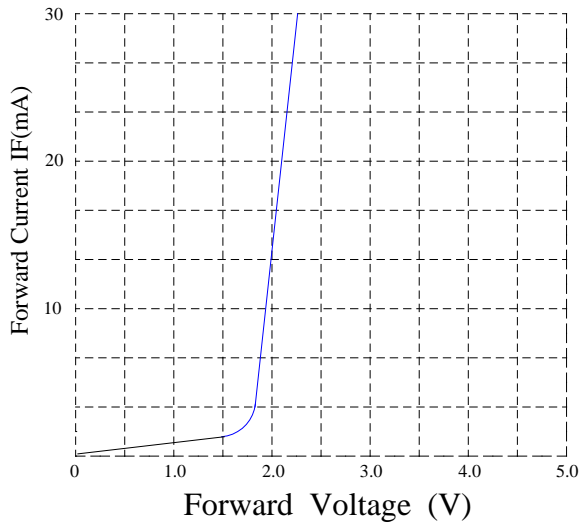**Notes:**

1. Forward voltage: ±0.1V

2. Dominant Wavelength: ±1nm

3. Luminous intensity: ±10%

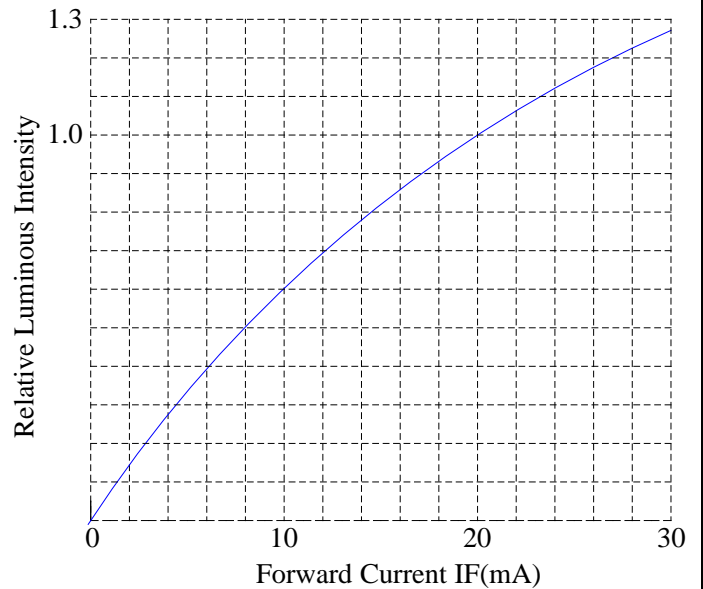# BEEL=D

Typical Electro-Optical Characteristics Curves

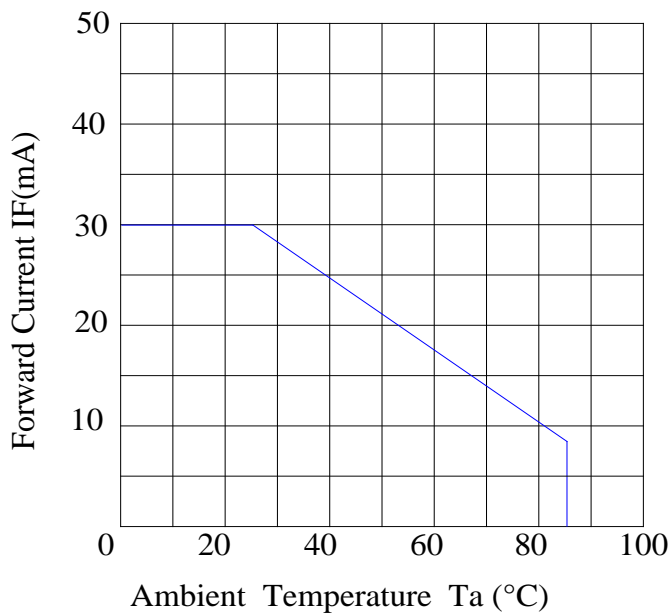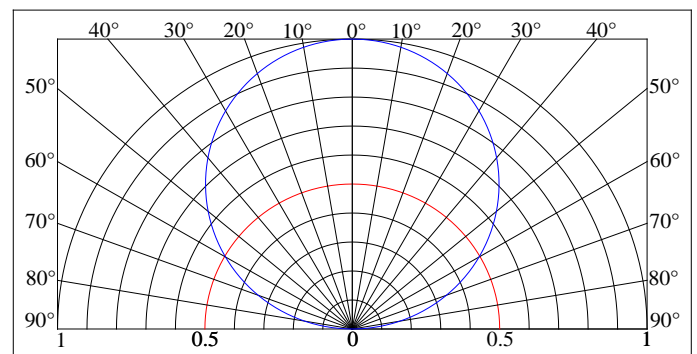| FORWARD CURRENT VS. FORWARD VOLTAGE 电流与电压的关系图	FORWARD CURRENT VS. LUMINOUS INTENSITY 电流与光强的关系图

Forward Current IF(mA)

Forward Voltage (V)

Relative Luminous Intensity

Forward Current IF(mA)

AMBIENT TEMPERA TURE VS.FORWARD CURRENT 电流与温度的关系图	RADIATION DIAGRAM 视角图

Forward Current IF(mA)

Ambient Temperature Ta (°C)

Bin Range of Technical Data Sheet

Voltage code（电压等级）（IF=20mA, Ta=25℃）			Luminous code(光强等级)（IF=20mA, Ta=25℃）		
Bin Code	Forward voltage（V）		Bin Code	Luminous Intensity（mcd）	
	min	max		min	max
16	2.8	3	R	400	500
17	3	3.2	S	500	630
18	3.2	3.4	T	630	800
19	3.4	3.6	U	800	1000

Color Bin Limits

Color code（颜色等级）（IF=20mA, Ta=25℃）		
Bin Code	Dominant wavelength（nm）	
	min	max
G11	520	522
G12	522	524
G13	524	526
G14	526	528
G15	528	530

Notes:

1、Tolerance of forward voltage for each Bin limit is ±0.1v.

2、Tolerance of luminous intensity for each Bin limit is ±10%.

3、Tolerance of wavelength for each Bin limit is ±1nm.

Reliability Test Items and Conditions(可靠性试验及条件)

1、Test items and result(测试项目及结果)

Test Item 测试项目	Ref. Standard 参考标准	Test Condition 测试条件	Note 记录	Number of Damaged 受损数量
Resistance to Soldering Heat (耐热测试)	JESD22-B106	Tsld=260℃,10sec	2 times	0/100
Temperature Cycle (冷热循环)	JESD22-A104	-40℃ 30min ↓↑ 5min 100℃ 30min	10 cycle	0/100
Thermal Shock (冷热冲击)	JESD22-A106	-40℃ 15min ↑↓ 100℃ 15min	10 cycle	0/100
Power temperature Cycling (高低温点亮循环测试)	JESD22-A105	On 5min -40℃>15min ↑↓↑↓<15min Off 5min 100℃>15min	10 cycle	0/100
High temperature Storage (高温储存)	JESD22-A103	Ta=100℃	1000 hrs	0/100
Low temperature Storage (低温储存)	JESD22-A119	Ta=-40℃	1000 hrs	0/100
Lift Test (寿命测试)	JESD22-A108	Ta=25℃ IF=20mA	1000 hrs	0/20
High Humidity Heat Lift Test (高温高湿老化)	JESD22-A101	60℃ RH=90％ IF=20mA	1000 hrs	0/20

2、Criteria for judging damage（受损失效判定标准）

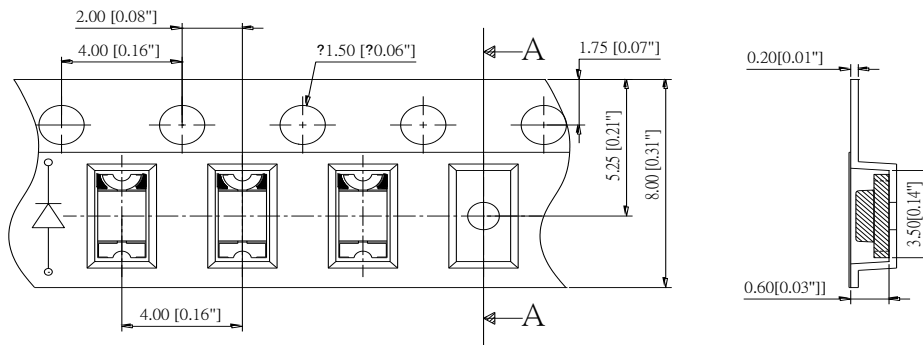| Item 项目	Symbol 符号	Test Conditions 测试条件	Criteria for Judgment 判断标准	
			Min 最小	Max 最大
Forward voltage 正向电压	VF	IF=20mA	--	U.S.L*)×1.1
Reverse current 反向电流	IR	VR=5V	--	U.S.L*)×2.0
Luminous intensity 光照强度	IV	IF=20mA	L.S.L**)×0.7	--

Notes:

U.S.L.: Upper Standard Level   L.S.L.: Lower Standard Level
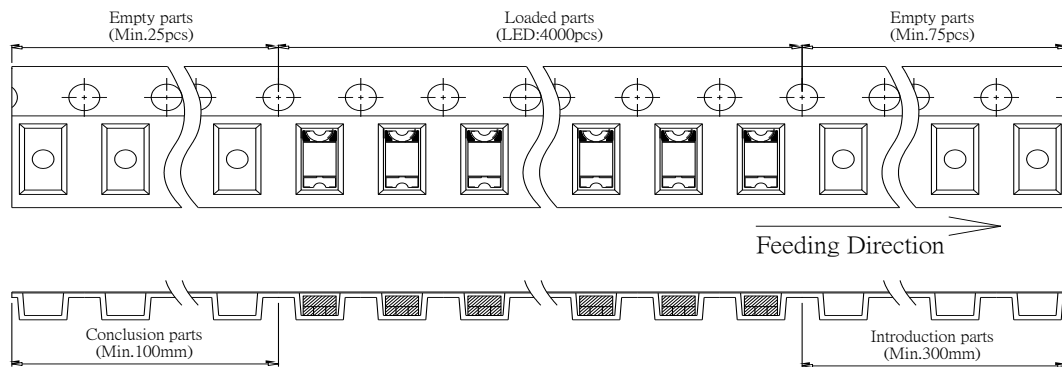
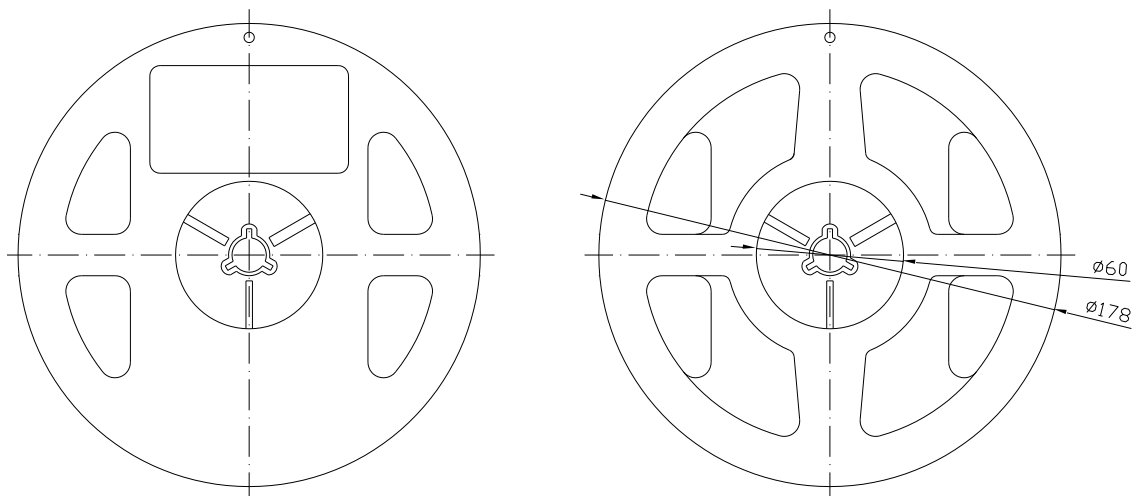# Packaging Dimensions Specification(包装规格)

1、Carrier tape dimensions(载带包装)

2.00 [0.08"]
4.00 [0.16"]
?1.50 [?0.06"]
1.75 [0.07"]
0.20[0.01"]
5.25 [0.21"]
8.00 [0.31"]
3.50[0.14"]
0.60[0.03"]]
4.00 [0.16"]
A
A

Notes:

1) All dimensions are in millimeters

2) Tolerance is ±0.15 unless otherwise noted

3) 3,000 pcs/Reel.

2、Details of carrier tape(编带细节)

Empty parts
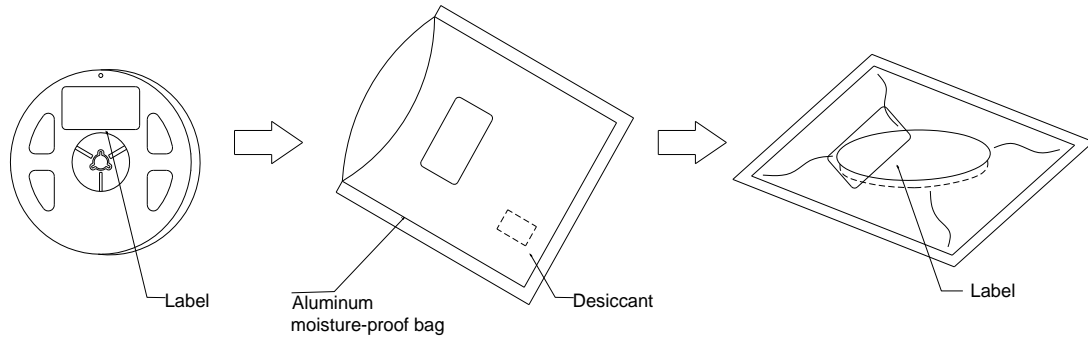(Min.25pcs)
Loaded parts
(LED:4000pcs)
Empty parts
(Min.75pcs)

Feeding Direction

Conclusion parts
(Min.100mm)
Introduction parts
(Min.300mm)

3、Reel dimensions(带盘尺寸)

Ø60
Ø178

Packaging Dimensions Specification

4、Moisture-Proof and anti- static electricity

Label   Aluminum moisture-proof bag   Desiccant   Label

5、Label

```
BEEL≡D                    RoHS
Part No. :  1206UGS-001
VF(v)      :**********
IV(mcd)    :**********
WLD(nm)    :**********

Q'TY(pcs):******

Lot No.   :**********      Made In China
```
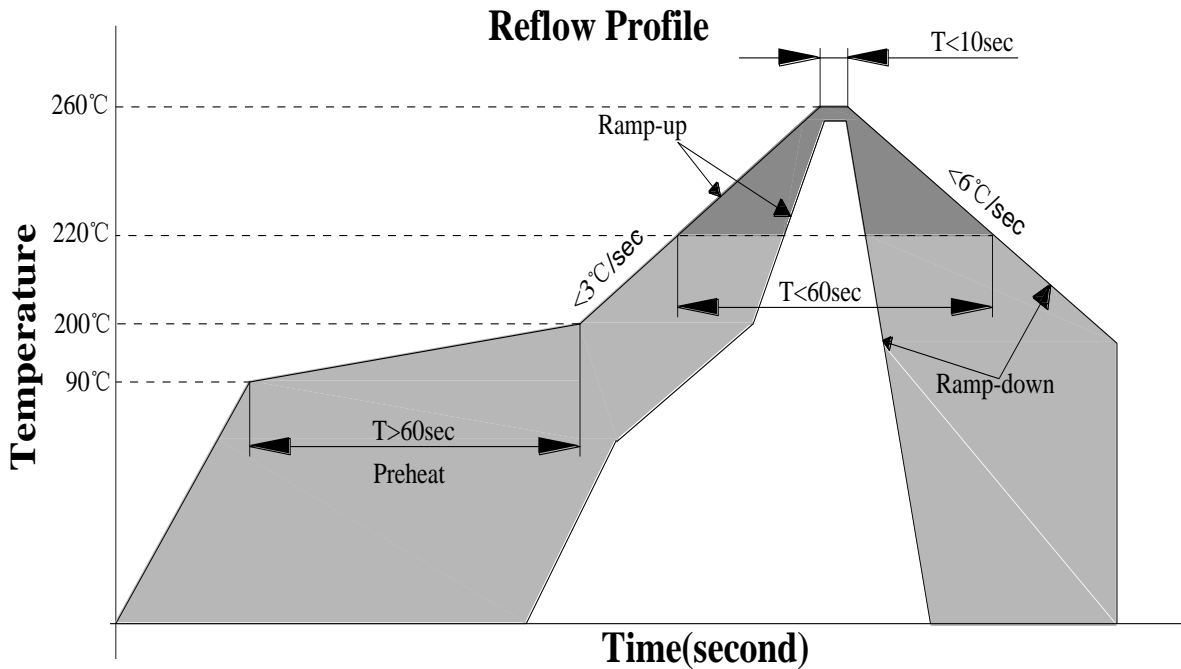
Label Explanation:

```
VF       : Forward voltage
IV       : Luminous intensity
WLD      : Dominant wavelength
VF\IV\WLD used to represent the corresponding Bin code
```

BEEL☰D

Precautions

1、Requirements for application and reflow soldering 应用及回流焊要求：

Use the recommended curve in the under figure of Pb-free reflow soldering.

Reflow Profile

T<10sec

260℃

Ramp-up

<6℃/sec

220℃

<3℃/sec

T<60sec

200℃

90℃

Ramp-down

T>60sec

Preheat

Temperature

Time(second)

☆**Notes for reflow soldering:**

1）No more than twice for reflow soldering.

2）To ensure the quality of our LEDs, please do not put pressure on the lens of LEDs.

3）Please choose the right nozzle to avoid the damage to products due to the pressure.

4）Please put on the antistatic hand loop during the use. The worktable should be with antistatic finish. The equipments must be contacted with ground

☆**Handwork soldering：**

1）During the soldering, the electronic soldering iron must be kept under the temperature of 350℃ and the soldering time mu not be beyond 3 seconds. No touch between the electronic soldering iron and colloid.

2）Handwork soldering is only allowed once. We won't take responsibility for more than that.

3）Avoid using sharp objects to compress products Colloidal Part directly.

4）Please put on the antistatic hand loop during the use. The worktable should be with antistatic finish. The equipments must be contacted with ground.

2、Storage(储存)

☆Moisture proof and anti-electrostatic package with moisture absorbent material is used to keep moisture to a minimum. Before opening the package, the product should be kept at 30℃ or less and humidity less than 60%RH ,and be used in six months.

☆After opening the package, the product should be stored at 30℃or less and humidity less than 10%RH,and be soldered within 24 hours. It is recommended that the product be operated at the workshop condition of 30℃or less and humidity less than 60%RH.

☆If the moisture absorbent material has fade away or the LEDs have exceeded the storage time, baking treatment should be performed based on the following condition(75±5) ℃ for 24 hour。

3、Static electricity

☆Static electricity or surge voltage damages the LEDs .Damaged LEDs will show some unusual characteristic such as the forward voltage comes lower, or the LEDs do not light at the low current .even not light.

All devices, equipment and machinery must be properly grounded. At the same time ,it is recommended that wrist bands or anti-electrostatic gloves, anti-electrostatic containers be used when dealing with the LEDs .

4、Vulcanization

☆LED curing is due to sulfur being in bracket and the ＋1 price of silver in the chemical reaction generated Ag2S in the process. It will lead to the capacity of reflecting of silver layer reducing, light color

Such as to avoid using sulphur volatile substances and keeping away from high sulphur content of the material, Seriously affecting the performance of the product. So we should take corresponding measures to avoiding vulcanization,

5、Safety advice for human eyes

☆Viewing direct to the light emitting center of the LEDs, especially those of great luminous Intensity will cause great hazard to human eyes .Please be careful.

6、Design consideration

☆In designing a circuit about LED, the current through each LED must not exceed the absolute maximum rating specified for each LED. In the meanwhile, resistors for protection should be applied, otherwise slight voltage shift will cause big current change, burn out may happen.