

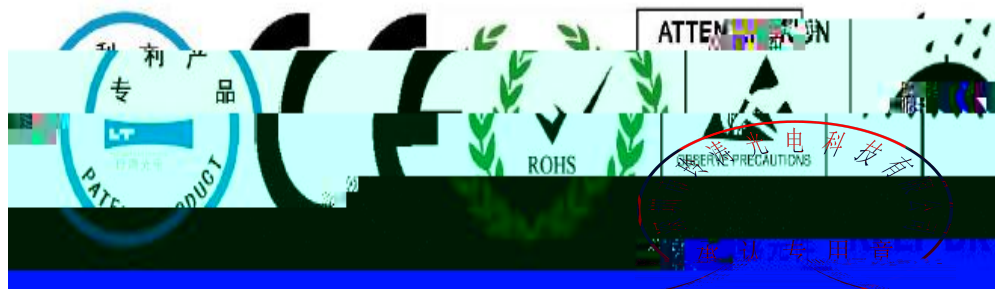
SPECIFICATION

LT P/N

LT3006WH-A-GL

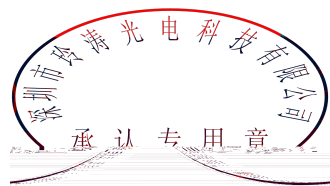
R&D

Mass Product

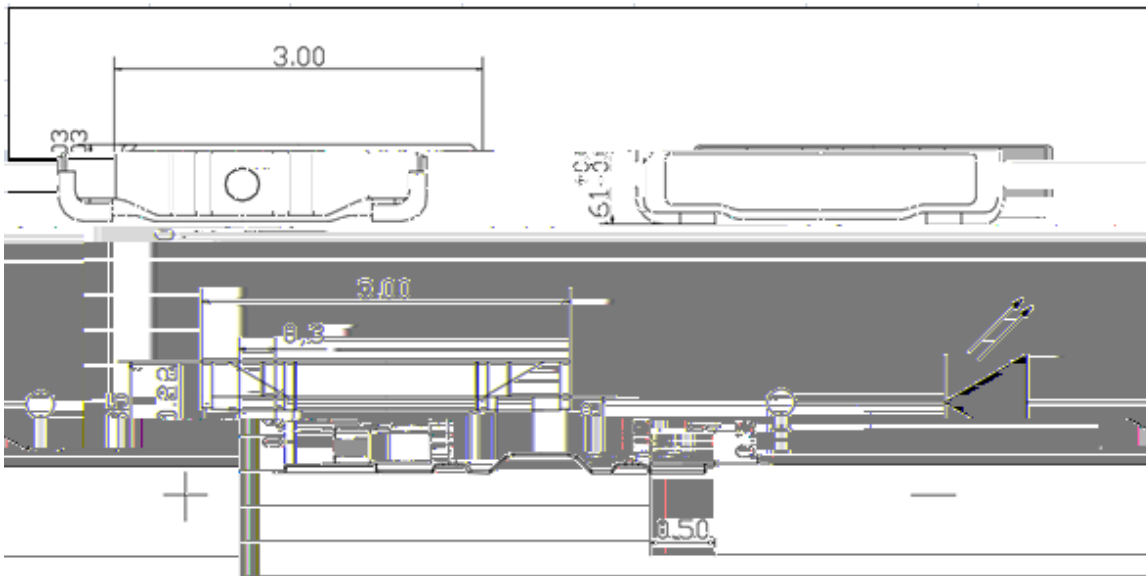


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- 1. Description
 - 1.1 General Description
 - 1.2 Features
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 - 1.5 Product Parameters
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1.4 Package Dimension



Notes

1. All dimensions units are millimeters.
2. All dimensions tolerances are ± 0.1 mm unless otherwise noted. ± 0.1

1.5 Product Parameters

Table 1-1 Electrical / Optical Characteristics at $T_s=25^\circ\text{C}$

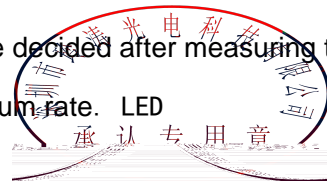
| Item | Symbol | Test Condition | Value | | | Unit |
|-----------------|--------|-------------------|-------|------|------|---------------|
| | | | Min. | Typ. | Max. | |
| Forward Voltage | V_F | $I_F=20\text{mA}$ | --- | 3.0 | --- | V |
| Reverse Current | I_R | $V_R=5\text{V}$ | --- | --- | 1 | μA |
| Luminous | I_v | $I_F=20\text{mA}$ | --- | 2850 | --- | mcd |
| Viewing Angle | | $I_F=20\text{mA}$ | --- | 120 | --- | deg |

Table 1-2 Absolute Maximum Ratings at Ts=25°C

| Parameter | Symbol | Rating | Units |
|----------------------------------|------------------|------------|-------|
| Forward Current | I _F | 30 | mA |
| Peak Forward Current | I _{FP} | 100 | mA |
| Reverse Voltage | V _R | 5 | V |
| Electrostatic Discharge (HBM) | E _{SD} | 2000 | V |
| LED Junction Temperature (LED结温) | T _j | 105 | °C |
| Operating Temperature | T _{OPR} | -30 ~ + 85 | °C |
| Storage Temperature | T _{STG} | -40~100 | °C |

Notes

- 1/10 Duty cycle, 0.1ms pulse width. 0.1ms, 1/10.
- The above forward voltage measurement allowance tolerance is $\pm 0.03V$. $\pm 0.03V$.
- The above color coordinates measurement allowance tolerance is ± 0.003 . ± 0.003 .
- The above luminous intensity measurement allowance tolerance $\pm 3\%$. $\pm 3\%$.
- Care is to be taken that power dissipation does not exceed the absolute maximum rating of the product.
- All measurements were made under the standardized environment of LT.
- When the LEDs are in operation the maximum current should be decided after measuring the package temperature, junction temperature should not exceed the maximum rate. LED



1.6 Bin Range Of Forward Voltage and Luminous Intensity (IF=20mA)

BIN (IF=20mA)

Table 1-3 Bin Range Of Luminous Intensity Bin (IF=20mA)

| | Min(mcd) | | Min(lm) | Max(lm) |
|--|----------|--|---------|---------|
| | | | | |
| | | | | |
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| | | | | |

Table 1-4 Bin Range Of Forward Voltage Bin

| | | | | |
|--|--|--|--|--|
| | | | | |
| | | | | |
| | | | | |
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| | | | | |
| | | | | |
| | | | | |

Notes

VF Tolerance: $\pm 0.03V @ I_F = 20mA @ T_a = 25^\circ C$
 IV Tolerance: $\pm 3% @ I_F = 20mA @ T_a = 25^\circ C$

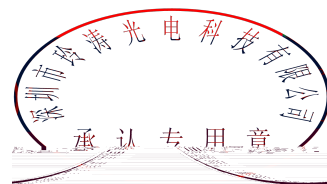


Fig. 1-5 The C.I.E. 1931 Chromaticity Diagram: (N&M)

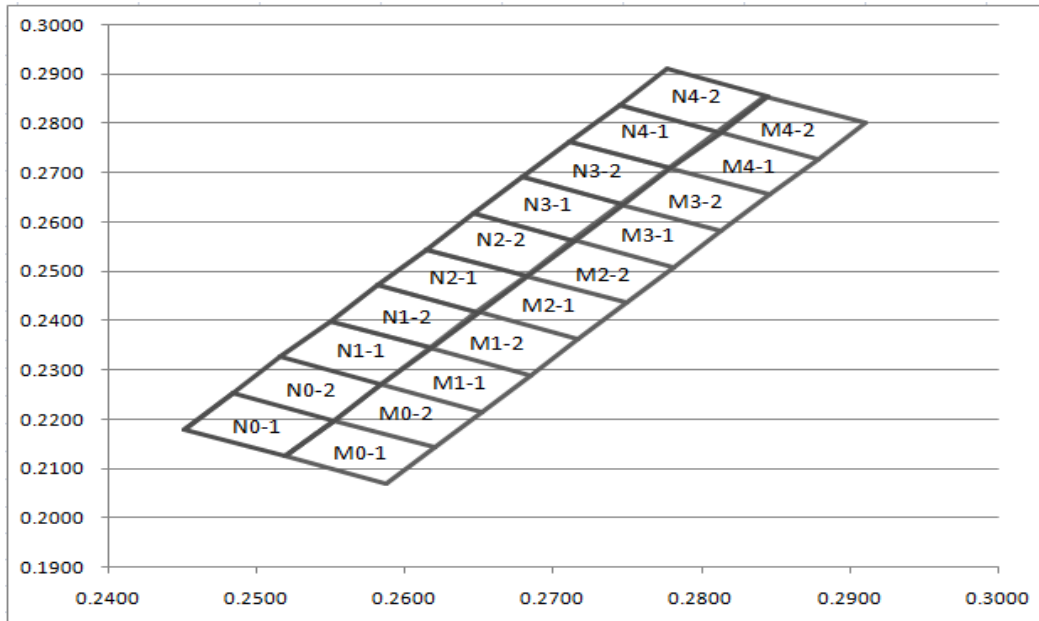


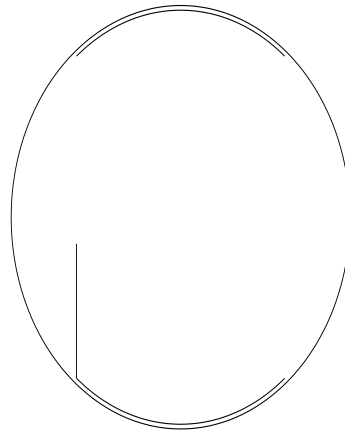
Table 1-6 Bin Range of Chromaticity Coordinates Block (IF=20mA ; Ta=25)

| | | | | | | | | |
|------|--------|--------|------|--------|--------|------|--------|--------|
| N0-1 | 0.2451 | 0.2180 | N0-2 | 0.2484 | 0.2253 | N1-1 | 0.2516 | 0.2326 |
| | 0.2484 | 0.2253 | | 0.2516 | 0.2326 | | 0.2549 | 0.2399 |
| | 0.2552 | 0.2198 | | 0.2584 | 0.2271 | | 0.2617 | 0.2344 |
| | 0.2519 | 0.2125 | | 0.2552 | 0.2198 | | 0.2584 | 0.2271 |
| N1-2 | 0.2549 | 0.2399 | N2-1 | 0.2581 | 0.2472 | N2-2 | 0.2614 | 0.2545 |
| | 0.2581 | 0.2472 | | 0.2614 | 0.2545 | | 0.2646 | 0.2618 |
| | 0.2649 | 0.2417 | | 0.2682 | 0.2490 | | 0.2714 | 0.2563 |
| | 0.2617 | 0.2344 | | 0.2649 | 0.2417 | | 0.2682 | 0.2490 |
| N3-1 | 0.2646 | 0.2618 | N3-2 | 0.2679 | 0.2691 | N4-1 | 0.2711 | 0.2764 |
| | 0.2679 | 0.2691 | | 0.2711 | 0.2764 | | 0.2744 | 0.2837 |
| | 0.2747 | 0.2636 | | 0.2779 | 0.2709 | | 0.2812 | 0.2782 |
| | 0.2714 | 0.2563 | | 0.2747 | 0.2636 | | 0.2779 | 0.2709 |
| N4-2 | 0.2744 | 0.2837 | M0-1 | 0.2519 | 0.2125 | M0-2 | 0.2552 | 0.2198 |
| | 0.2776 | 0.2910 | | 0.2552 | 0.2198 | | 0.2584 | 0.2271 |
| | 0.2844 | 0.2855 | | 0.2620 | 0.2143 | | 0.2652 | 0.2216 |
| | 0.2812 | 0.2782 | | 0.2587 | 0.2070 | | 0.2620 | 0.2143 |
| M1-1 | 0.2584 | 0.2271 | M1-2 | 0.2616 | 0.2345 | M2-1 | 0.2648 | 0.2418 |
| | 0.2616 | 0.2345 | | 0.2648 | 0.2418 | | 0.2681 | 0.2491 |
| | 0.2684 | 0.2290 | | 0.2716 | 0.2363 | | 0.2749 | 0.2436 |
| | 0.2652 | 0.2216 | | 0.2684 | 0.2290 | | 0.2716 | 0.2363 |
| M2-2 | 0.2681 | 0.2491 | M3-1 | 0.2713 | 0.2564 | M3-2 | 0.2745 | 0.2637 |
| | 0.2713 | 0.2564 | | 0.2745 | 0.2637 | | 0.2777 | 0.2710 |
| | 0.2781 | 0.2509 | | 0.2813 | 0.2582 | | 0.2845 | 0.2655 |
| | 0.2749 | 0.2436 | | 0.2781 | 0.2509 | | 0.2813 | 0.2582 |

2. Packaging

2.1 Packaging Specification

Package:5000pcs/reel.



2.1.1 Carrier Tape Dimension

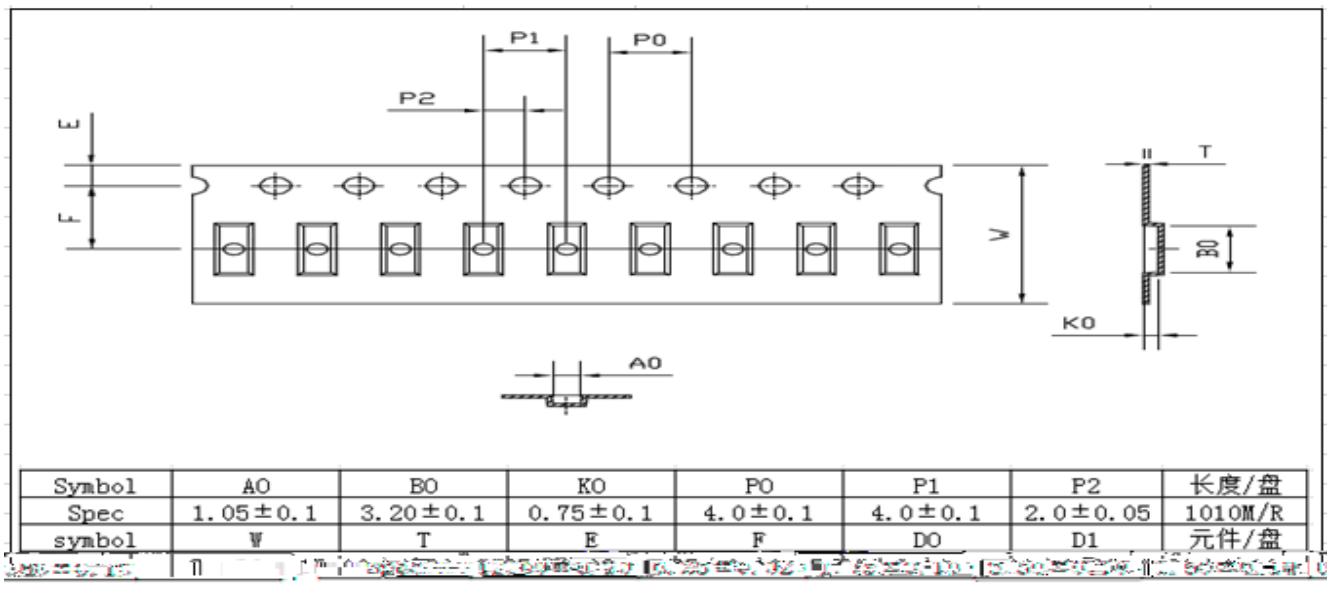
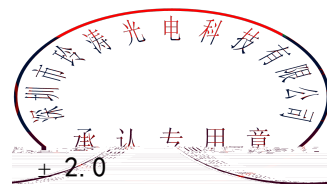


Fig.2-1 Carrier Tape Dimension

Notes

The tolerances unless mentioned ±2.0mm. Unit : mm



2.1.2 Label Form Specification



Table 2-2 Label Map

Table 2-3 Label Form Specification

| PART NO. | Part Number |
|----------------|--------------------|
| BIN CODE | Bin Code |
| IV | Luminous intensity |
| V _F | Forward Voltage |
| WL | Wavelength |
| QTY | Packing Quantity |
| DATE | Made Date |
| LOT NO | Lot Number 批次号 |

2.2 Moisture Resistant Packing

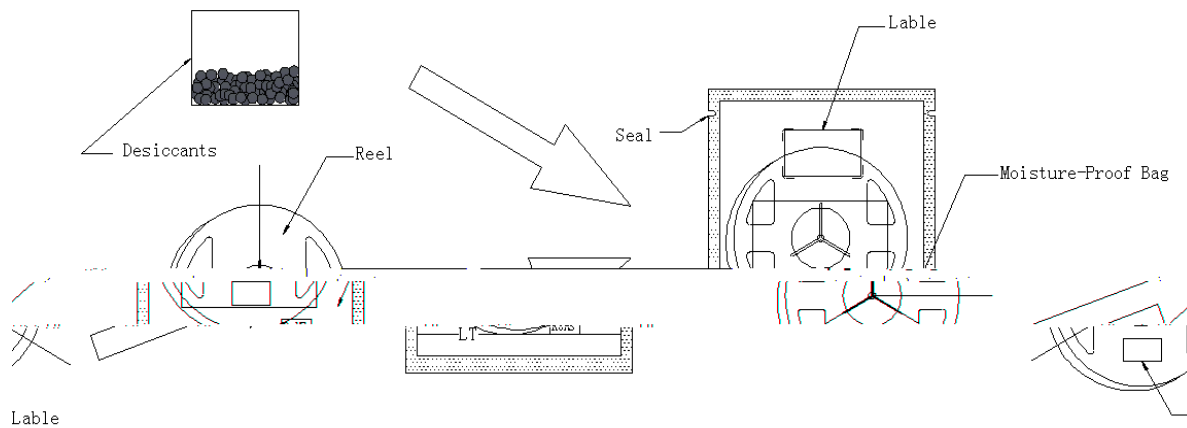


Fig.2-4 Moisture Resistant Packing

2.3 Cardboard Box

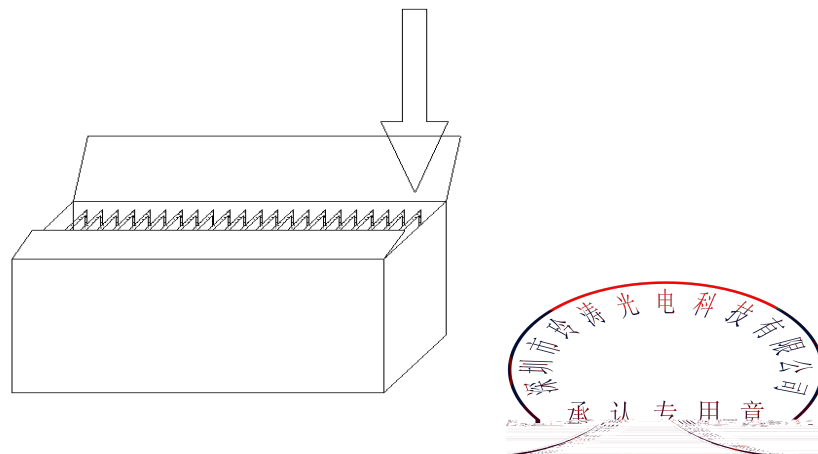


Fig.2-5 Cardboard Box

2.4 Reliability Test Items And Conditions

Table 2-6 Reliability Test Items And Conditions

| TestItems | Test Condition | Time | Quantity | Ac/Re / |
|---|------------------------------|-----------|----------|------------|
| Reflow | Temp:260 max T=10 sec | --- | 20pcs. | 0/1 |
| Thermal Shock | -40 ~ 100 20min 10S 20min | 100 cycle | 20pcs. | 0/1 |
| High Temperature Storage | Temp:100 | 1000hrs. | 20pcs. | 0/1 |
| Low Temperature Storage | Temp:-40 | 1000hrs. | 20pcs. | 0/1 |
| Life Test | Ta=25 If=20mA | 1000hrs. | 20pcs. | 0/1 |
| High Temperature and Humidity storage | 60 / 90%RH | 1000hrs. | 20pcs. | 0/1 |
| High Temperature and High Humidity Aging | 60 / 90%RH If=15mA | 500hrs. | 20pcs | 0/1 |

2.5 Criteria For Judging Damage

Table 2-7 Criteria For Judging Damage

| Test Items | Symbol | Test Condition | Criteria For Judgement | |
|-----------------|----------------|----------------|------------------------|--------------|
| | | | Min. | Max. |
| Forward Voltage | V _F | If=20mA | | >U.S.L*)x1.1 |



| | | | | |
|-----------------|-------|--------------|------------------------|------------------------|
| Reverse Current | I_R | $V_R = 5V$ | - | $>U.S.L^*) \times 2.0$ |
| Luminous Flux | | $I_F = 20mA$ | $<L.S.L^*) \times 0.7$ | - |

Notes

1.U.S.L: Upper standard level L.S.L: Lower standard level

2.The above reliability tests is based on the verification of

Fig.3-2 SMT Reflow Soldering Instructions SMT

| | | | |
|--|---------------------------------|----------|---------------|
| Average temperature rise speed | T_{smax} T_P | 5 °C/ | Max 5 °C/ s |
| Preheating: minimum temperature | (T_{smin}) | 160 °C | |
| Preheating: Max temperature | (T_{smax}) | 260 °C | |
| Preheating: Time | T_{smin} T_{smax} | 60 - 120 | 60s-120s |
| Time limited to maintain high temperature: the temperature | (T_L) | 217 °C | |
| Time limited to maintain high temperature: The Time | (t_L) | 60 | Max 60s |
| Peak /Classification of temperature: | / (T_P) | 260 °C | |
| Time limit classification of peak temperature time | t_p | 10 | Max 10s |
| (T_P) 5 °C actual peak temperature (TP) | Hold time within 5 ° C with the | 30 | Max 30s |
| Cooling speed | | 6 °C/ | Max 6 °C/ s |
| 25 °C | Needed time from 25 °C to T_p | 8 | Max 8 minutes |

Notes

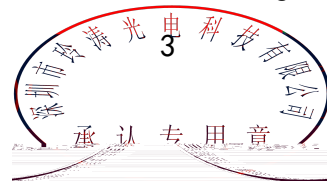
(1)Reflow soldering should not be done more than twice. If more than 24 hours between the two solderings , LED will be damaged. 24 LED

(2)Whensoldering , do not put stress on the LEDs during heating.

3.1.1 Soldering Iron

(1) When do soldering by hand, keep the temperature of iron below less 300°C less than 3 seconds , 300

(2) Soldering by hand should be done only one time.



3.1.2 Repairing

Repairing should not be done after the LEDs have been soldered. When repairing is unavoidable, a double-head soldering iron should be used (as below figure). It should be confirmed in advance whether the characteristics of LEDs will or not be damaged by repairing.

LED

LED

3.1.3 Cautions

The encapsulated material of the LEDs is silicone. Therefore the LEDs have a soft surface on the top of package. The pressure to the top surface will be impacted on the reliability of the LEDs. Precautions should be taken to avoid the strong pressure on the encapsulated part. So when use the picking up nozzle, the pressure on the silicone resin should be proper. LED

LED

(2) Components should not be mounted on warped (non coplanar) portion of PCB. After soldering, do not warp the circuit board. LED PCB

(3) Do not apply mechanical force or excess vibration during the cooling process to normal temperature after soldering. Do not rapidly cool device after soldering.

4. Handling Precautions

4.1 Handling Precautions

(1) LED operating environment and sulfur element composition cannot be over 100PPM in the LED mating usage material. This is provided for informational purposes only and is not a warranty or endorsement. LED LED 100PPM.

(2) In order to prevent external material from getting into the inside of LED, which may cause the malfunction of LED, the single content of Bromine element is required to be less than 900PPM, the single content of Chlorine element is required to be less than 900PPM, the total

(6) Thermal Design is paramount importance because heat generation may result in the Characteristics decline, such as brightness decreased, Color change and so on. Please consider the heat generation of the LEDs when making the system design. LED

LED

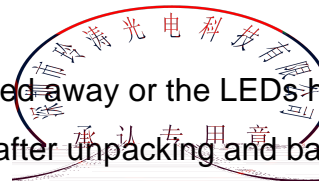
(7) Compared to standard encapsulants, silicone is generally softer, and the surface is more likely to attract dust, requiring special care during processing. In cases where a minimal level of dirt and dust particles cannot be guaranteed, a suitable cleaning solution must be applied to the surface after the soldering of components. LT suggests using isopropyl alcohol for cleaning. In case other solvents are used, it must be assured that these solvents do not dissolve the package or resin. Ultrasonic cleaning is not recommended. Ultrasonic cleaning may cause damage to the LED.

LED

Table 4-1 Storage

| Conditions | | Temperature | Humidity | Time |
|---------------|-----------------------------|-------------|----------|-------------------------|
| Storage 储存 | Before Opening Aluminum Bag | 30 | 75% | Within 1 Year From Date |
| | After Opening Aluminum Bag | 30 | 60% | 24hours 24 |
| Baking | | 60± 5 | - | 24hours 24 |

(8) If the moisture absorbent material (silica gel) has faded away or the LEDs have exceeded the storage time, baking treatment should be performed after unpacking and based on the



following condition (65±5) °C for above 24 hours.

60± 5

24

If the package is flatulence or damaged, please notify the sales staff to assist.

(9) Similar to most Solid state devices; LEDs are sensitive to Electro-Static Discharge (ESD) and Electrical Over Stress (EOS). LED

