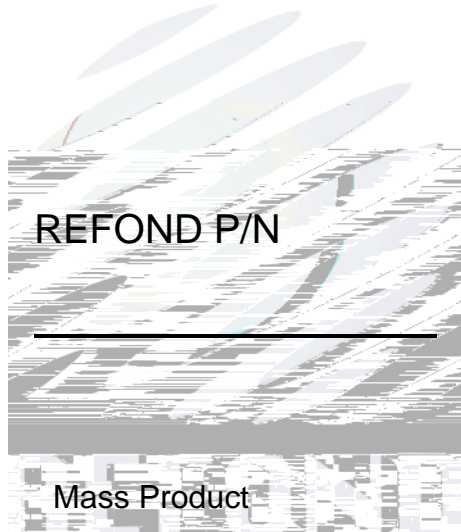


# SPECIFICATION

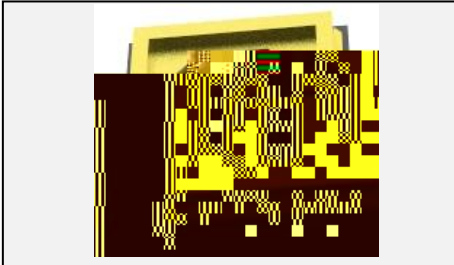


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## 1. Description

### 1.1 General Description



This production has a high reliability, good heat dissipation, are widely used in the disinfection, uv sterilization, Air purification, etc.

### 1.2 Features

Size(mm):3.5\*3.5\*1.5.

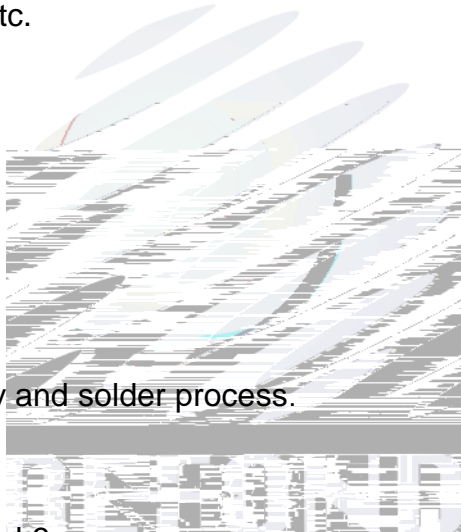
Viewing angle:120° .

Suitable for all SMT assembly and solder process.

Available on tape and reel.

Moisture sensitivity level: Level 3.

RoHS compliant.



### 1.3 Application

Ultraviolet disinfection.

UV sterilization.

Air purification.

General use.

## 1.4 Package Dimension

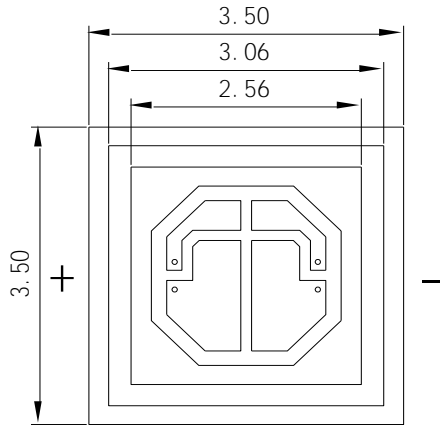


Fig.1-1 Top view

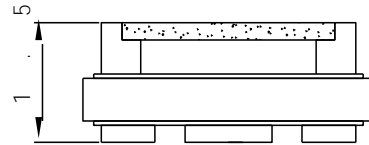


Fig.1-2 Side view

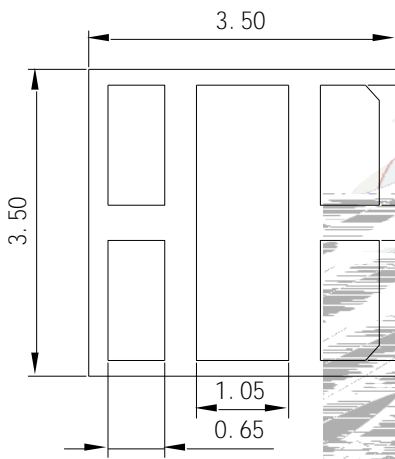


Fig.1-3 Bottom view

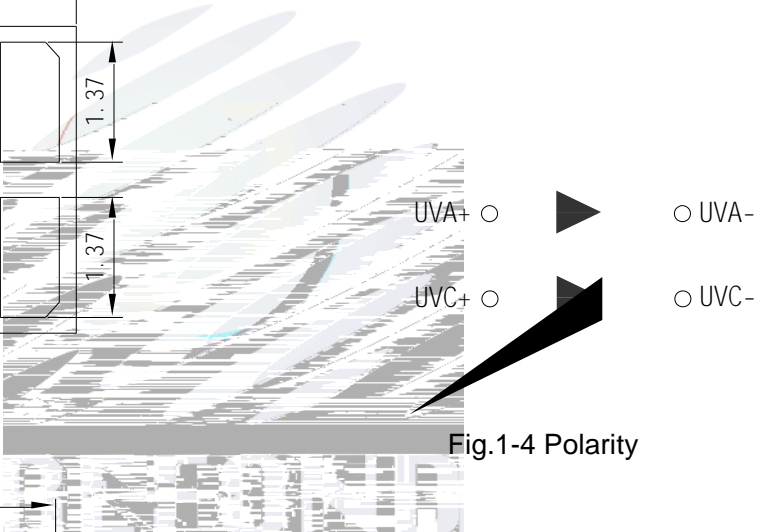


Fig.1-4 Polarity

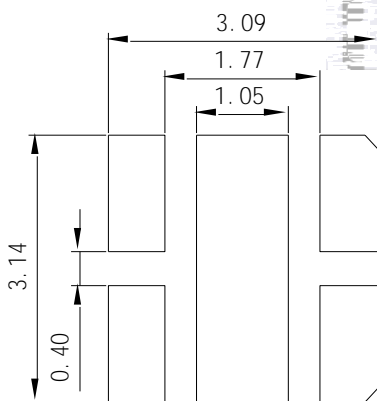


Fig.1-5 Soldering patterns

### Notes

All dimensions units are millimeters.

All dimensions tolerances are  $\pm 0.2\text{mm}$  unless otherwise noted.

## 1.5 Product Parameters

Table 1-1 Electrical / Optical Characteristics at Ts=25°C

| Item               | Colour | Symbol   | Test Condition | Code | Value |     |      | Unit    |
|--------------------|--------|----------|----------------|------|-------|-----|------|---------|
|                    |        |          |                |      | Min.  | Typ | Max. |         |
| Forward Voltage    | UVC    | $V_F$    | $I_F=100mA$    | F02  | 4.5   | --- | 5.5  | V       |
|                    |        |          |                | F03  | 5.5   | 6.2 | 6.5  |         |
|                    |        |          |                | F04  | 6.5   | --- | 7.5  |         |
|                    | UVA    | $V_F$    | $I_F=20mA$     | B11  | 3.0   | --- | 3.2  |         |
|                    |        |          |                | B12  | 3.2   | 3.3 | 3.4  |         |
|                    |        |          |                | B13  | 3.4   | --- | 3.6  |         |
| Reverse Current    | UVC/A  | $I_R$    | $V_R=10V$      | ---  | ---   | --- | 5    | $\mu A$ |
| Total radiant flux | UVC    | $\phi_e$ | $I_F=100mA$    | 1J03 | 6     | 10  | 10   | mW      |
|                    |        |          |                | 1J04 | 10    | --- | 15   |         |



## 1.6 Typical optical characteristics curves

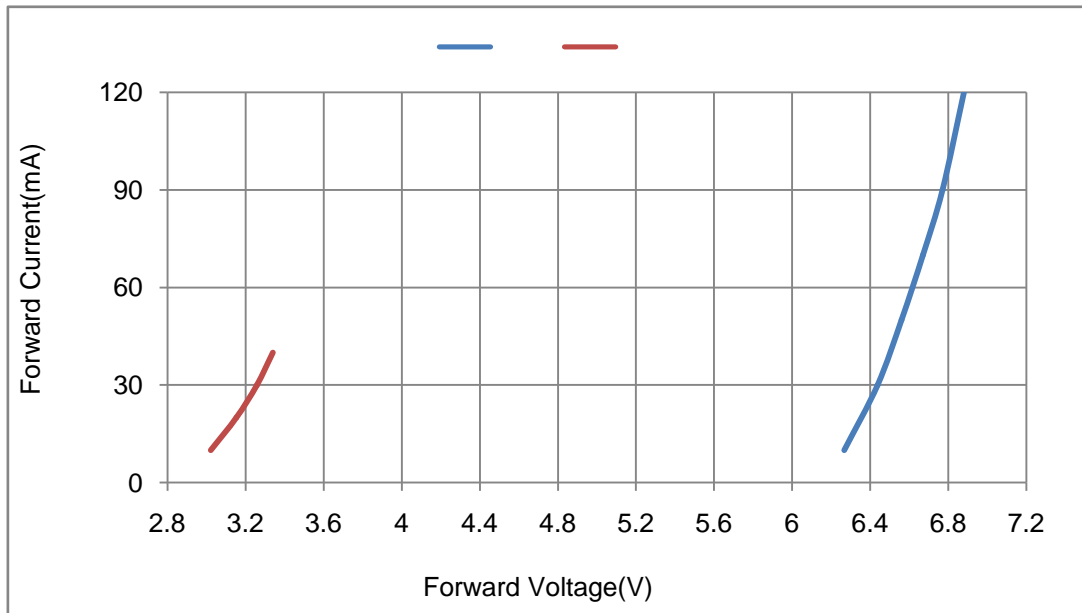


Fig.1- Forward Voltage Vs. Forward Current

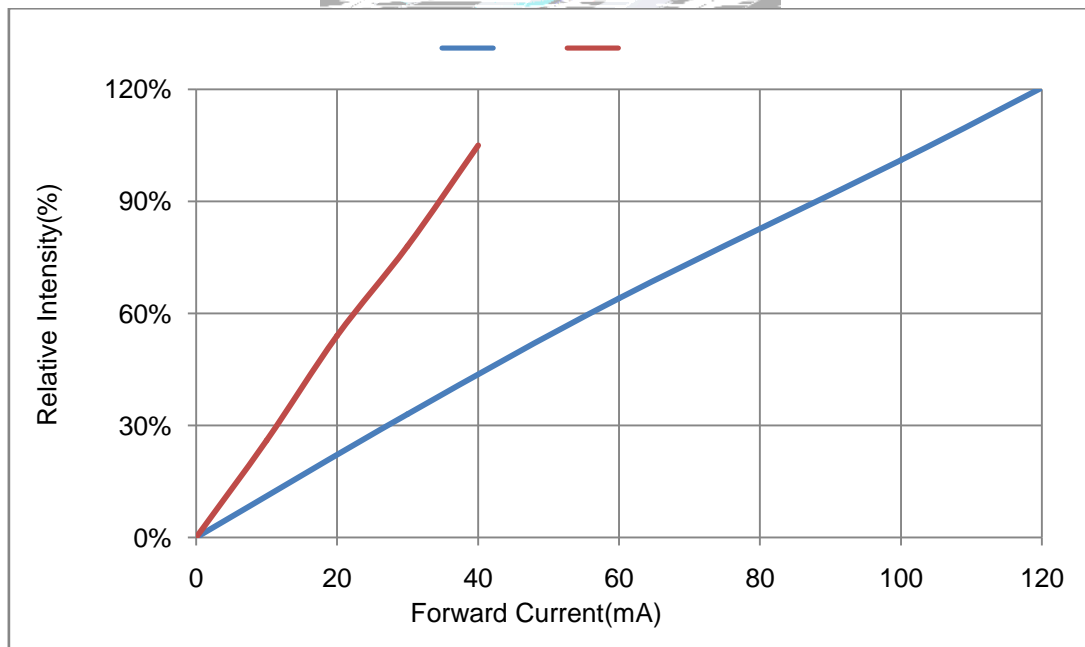


Fig.2- Forward Current Vs. Relative Power

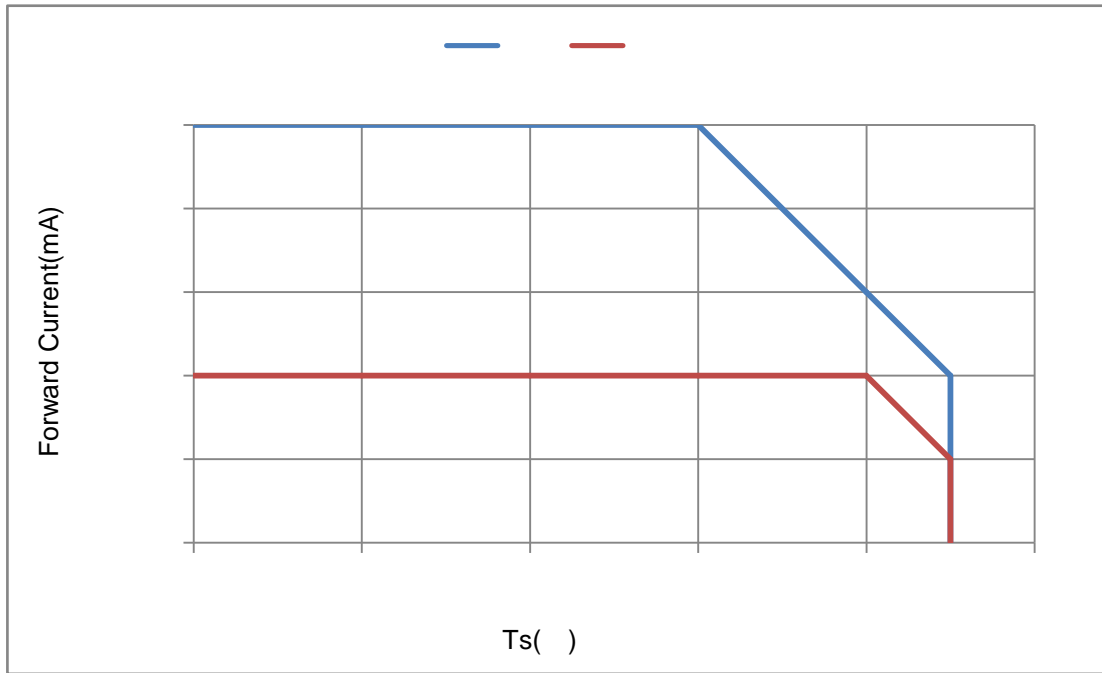


Fig.3-Ts Temperature VS. Forward Current

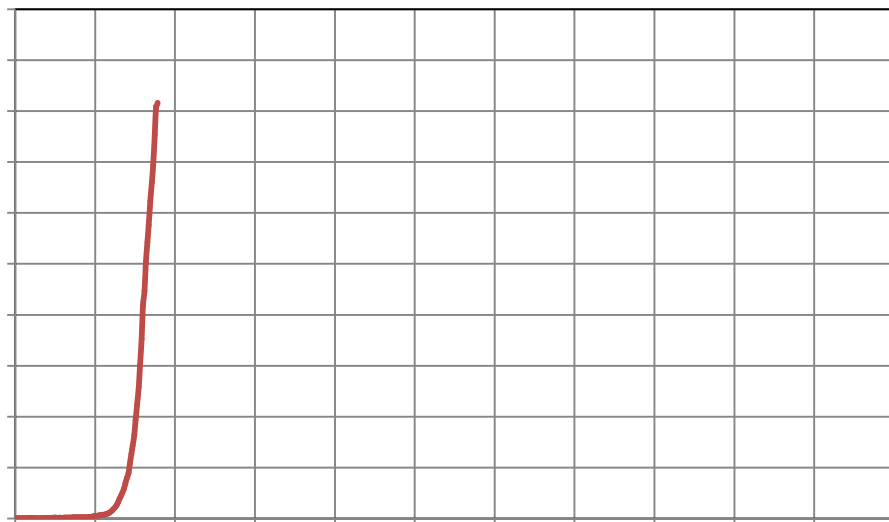
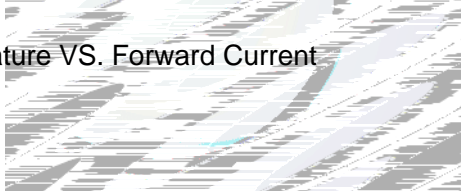


Fig.4-Spectrum Distribution



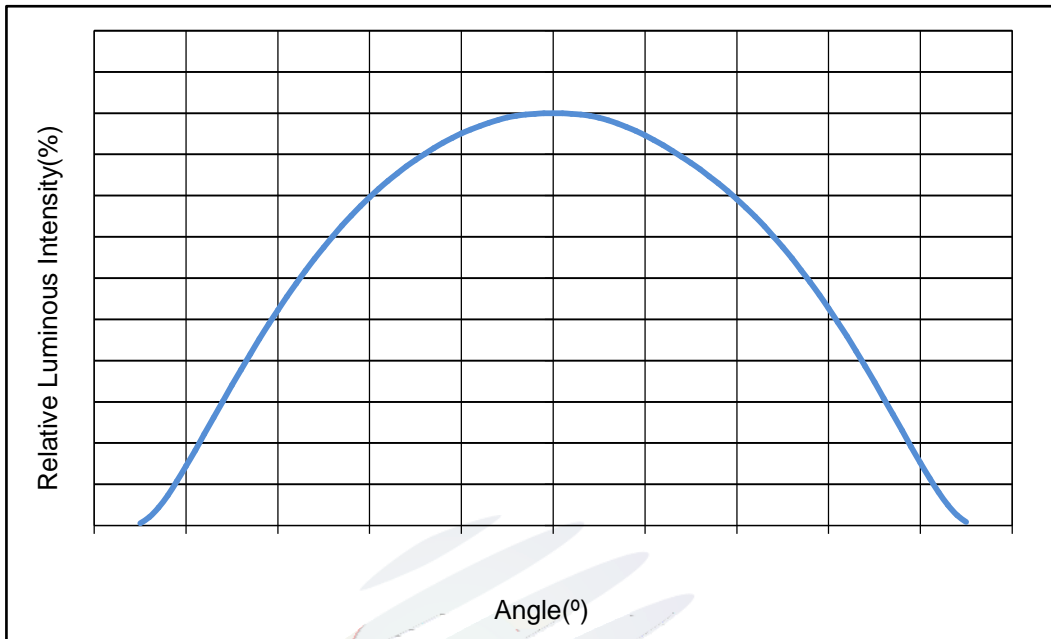
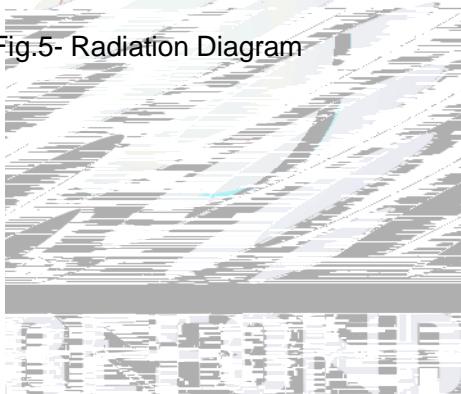


Fig.5- Radiation Diagram



## 2. Packaging

### 2.1 Packaging Specification

Package:1000pcs/reel.

#### 2.1.1 Carrier Tape Dimension

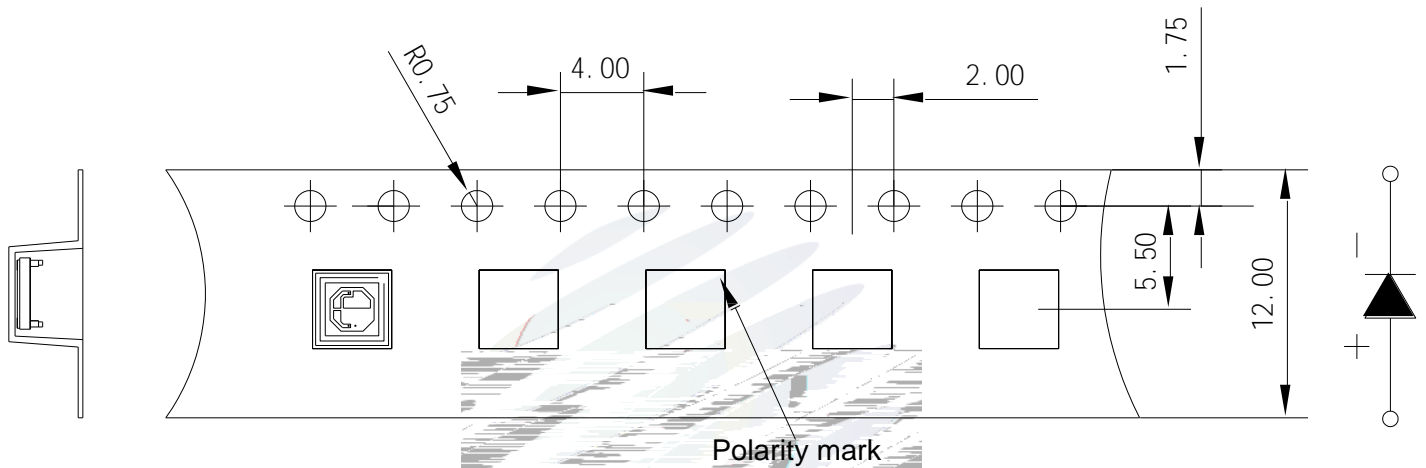
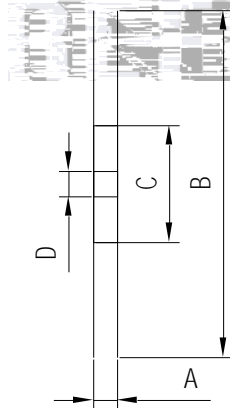
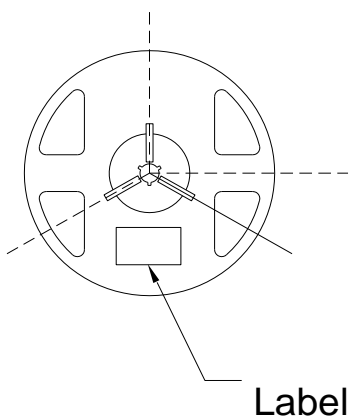


Fig.2-1 Carrier Tape Dimension

#### 2.1.2 Reel Dimension



Reel Dimension

|   |            |
|---|------------|
| A | 12 0.1mm   |
| B | 178 1mm    |
| C | 60 1mm     |
| D | 13.0 0.5mm |

Fig.2-2 Reel Dimension

#### Notes

The tolerances unless mentioned  $\pm 0.1\text{mm}$ . Unit : mm

### 2.1.3 Label Form Specification

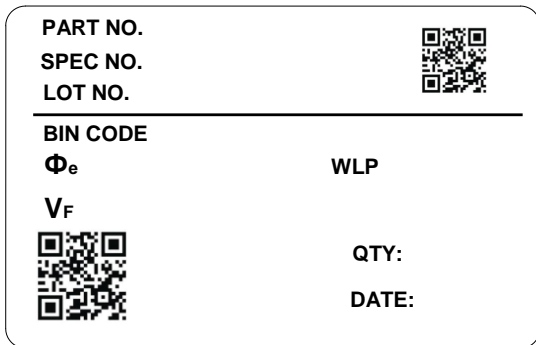


Fig. 2-3 Label Form Specification

#### Label Form Specification

|          |                  |
|----------|------------------|
| PART NO. | Part Number      |
| SPEC NO. | Spec Number      |
| LOT NO.  | Lot Number       |
| BIN CODE | Bin Code         |
| $\Phi_e$ | Radiation flux   |
| $V_F$    | Forward Voltage  |
| WLP      | Wavelength       |
| QTY      | Packing Quantity |
| DATE     | Made Date        |

### 2.2 Moisture Resistant Packing

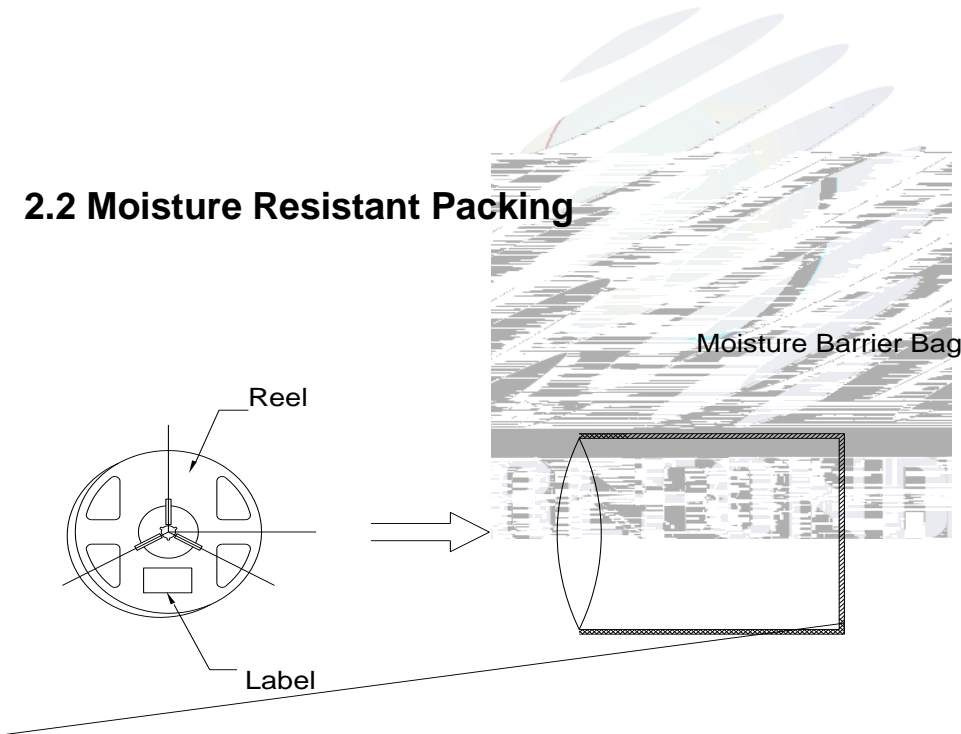


Fig.2-4 Moisture Resistant Packing Process

## 2.3 Cardboard Box

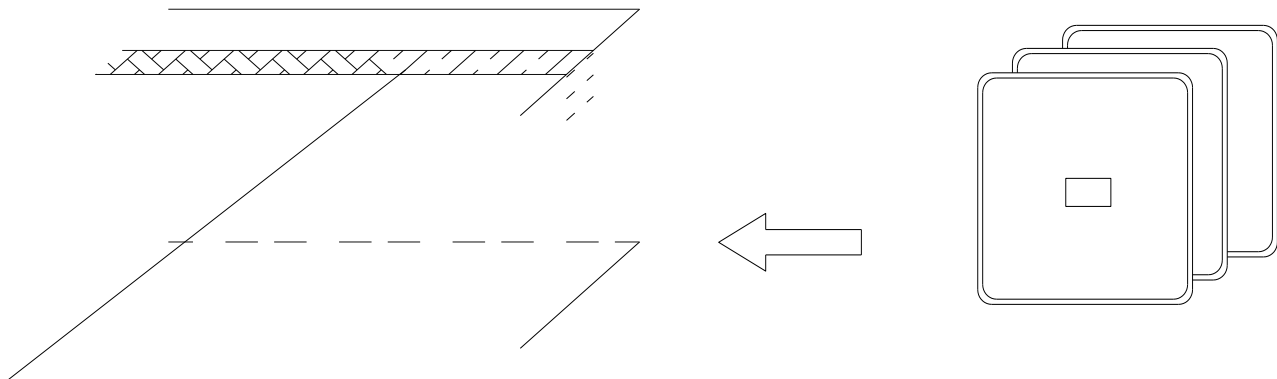


Fig.2-5 Cardboard Box

## 2.4 Reliability Test Items And Conditions

Table 2-3 Reliability Test Items And Conditions

| Test Items    | Ref.Standard | Test Condition                                 | Time       | Quantity | Ac/Re |
|---------------|--------------|--|------------|----------|-------|
| Reflow        | JESD22-B106  | Temp:260 max<br>T=10 sec                       | 3times.    | 10Pcs.   | 0/1   |
| Thermal Shock | JESD22-A106  | -40 15min<br>100 15min                         | 100 Cycles | 10Pcs.   | 0/1   |
| Life Test     | JESD22-A108  | T <sub>a</sub> =25<br>I <sub>F</sub> =20/100mA | 1000Hrs.   | 10Pcs.   | 0/1   |

## 2.5 Criteria For Judging Damage

Table 2-4 Criteria For Judging Damage

| Test Items | Symbol | Test Condition | Criteria For Judgement |      |
|------------|--------|----------------|------------------------|------|
|            |        |                | Min.                   | Max. |

Forward Voltage



### 3. SMT Reflow Soldering Instructions SMT 回流焊说明

#### 3.1 SMT Reflow Soldering Instructions SMT

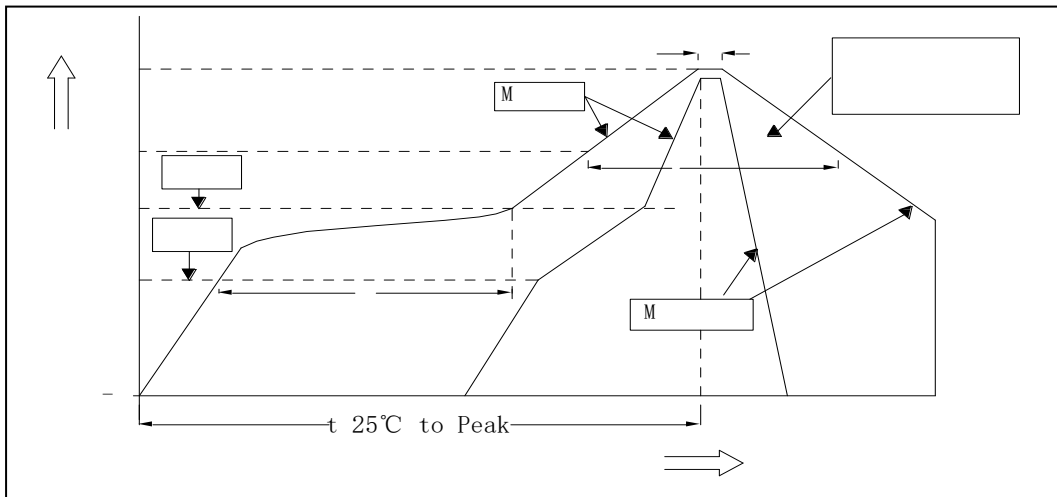


Fig.3-1 SMT Reflow Soldering Instructions

Table 3-1 SMT Reflow Soldering Instructions

|   |                     |                   |               |          |
|---|---------------------|-------------------|---------------|----------|
| Average temperature rise speed  | $T_{smax}$          | $T_P$             | Max 3 °C/ s   | 3 °C/    |
| Preheating: minimum temperature   | (T <sub>min</sub> ) |                   | 150 °C        |          |
| Preheating: Max temperature   | (T <sub>max</sub> ) |                   | 200 °C        |          |
| Preheating: Time  | T <sub>min</sub>    | T <sub>max</sub>  | 60s-120s      | 60 - 120 |
| Time limited to maintain high temperature: the temperature (T <sub>L</sub> )  |                     |                   | 217 °C        |          |
| Time limited to maintain high temperature: The Time (t <sub>L</sub> )         |                     |                   | Max 60s       | 60       |
| Peak /Classification of temperature:  | /                   | (T <sub>P</sub> ) | 260 °C        |          |
| Time limit classification of peak temperature time t <sub>p</sub>             |                     |                   | Max 10s       | 10       |
| Hold time within 5 °C with the actual peak temperature (T <sub>P</sub> ) 5 °C |                     |                   | Max 30s       | 30       |
| Cooling speed   |                     |                   | Max 6 °C/ s   | 6 °C/    |
| Needed time from 25 °C to T <sub>p</sub> 25 °C                                |                     |                   | Max 8 minutes | 8        |

## Notes

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

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

### 3.1.1 Soldering Iron

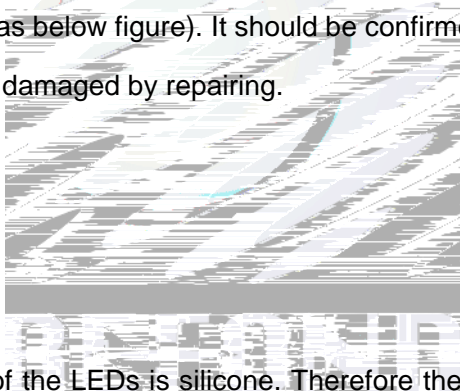
(1) When do soldering by hand, keep the temperature of iron below less 300 less than 3 seconds.

(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



### 3.1.3 Cautions

(1) 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

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

(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.





Fig 4-1 Operate Method

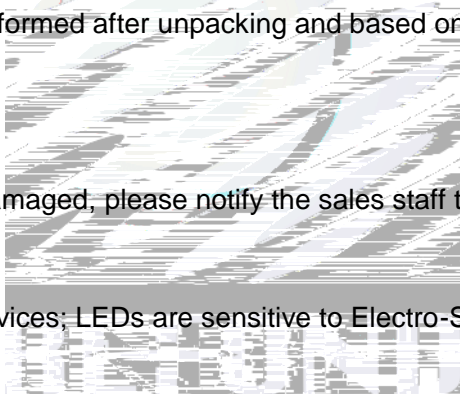
(5) In designing a circuit, the current through each LED can not exceed the absolute maximum rating specified for each LED. In the meanwhile, resistors for



Table 4-1 Storage

| Conditions |                             | Temperature | Humidity | Time                    |
|------------|-----------------------------|-------------|----------|-------------------------|
| Storage    | Before Opening Aluminum Bag | 30          | 75%      | Within 1 Year From Date |
|            | After Opening Aluminum Bag  | 30          | 60%      | 24hours<br>24           |
| Baking     |                             | 60 5        | -        | 24hours<br>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 for above 24 hours.



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).

(10) When using this product, you need to take good care to prevent it from causing harm to eyes and human body.

(11) Other points for attention, please refer to our relevant information.



