



TAIWAN TONGJIA OPTOELECTRONICS TECHNOLOGY CO., LTD

GUANGDONG TONGJIA OPTOELECTRONICS TECHNOLOGY CO., LTD

## 承認書

### Specification For Approval

Customer: (客戶)

Description: (產品描述)

SMD0603灯珠橙光

Part number: (產品型號)

TJ-S1608SW4T5ALC0A-A5

Date: (日期)

Approved By: (客戶承認)

Prepared By: (我司承認)

| Approval | Check | Design | Sales |
|----------|-------|--------|-------|
|          |       |        |       |

核准

審核

製作

業務

Customer Service Hotline: **400-676-8616**

TEL: 0769-8662 5999      0769-8200 2226

E-MAIL : dg@togialed.com

FAX: 0769-8200 2227

WEB: www.togialed.com

## Features

1.6mm × 0.8mm SMT LED, 0.4mm thickness

Low power consumption

Wide view angle

Package: 4000pcs/reel

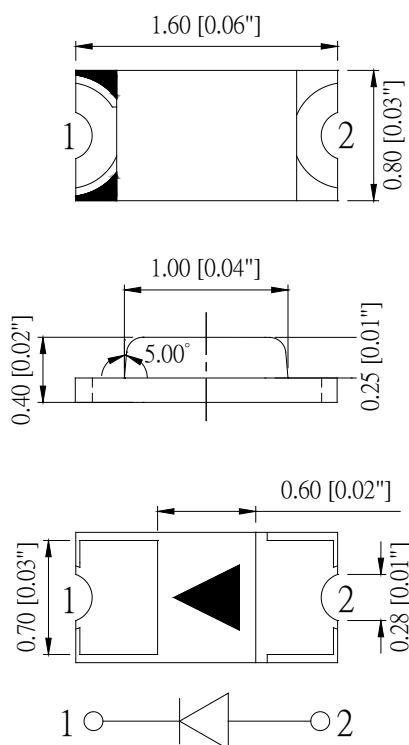
RoHS Compliant

## Applications

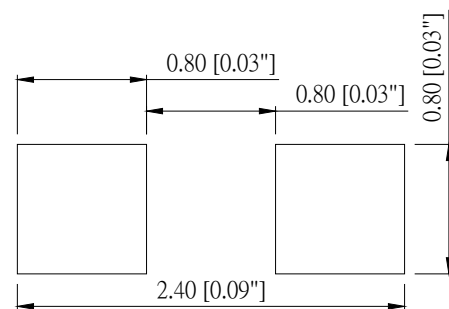
Ideal for back light and indicator

Various colors and lens types available

## Package outlines



## Recommend Pad Layout



| Part No.              | Emitted color | Dice    | Lens color        |
|-----------------------|---------------|---------|-------------------|
| TJ-S1608SW4T5ALC0A-A5 | Orange        | AlGaInP | Water transparent |

## Notes:

1. All dimensions are in millimeters (inches);
2. Tolerances are  $\pm 0.1\text{mm}$  (0.004inch) unless otherwise noted.

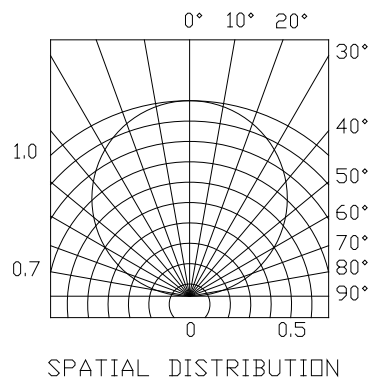
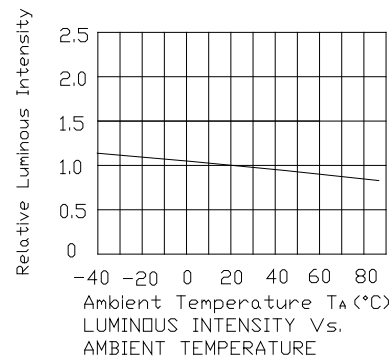
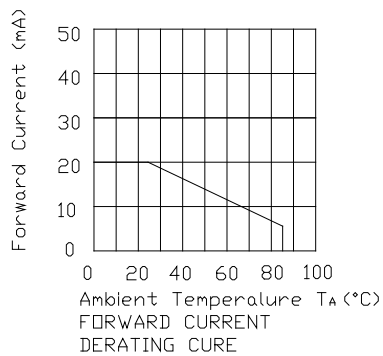
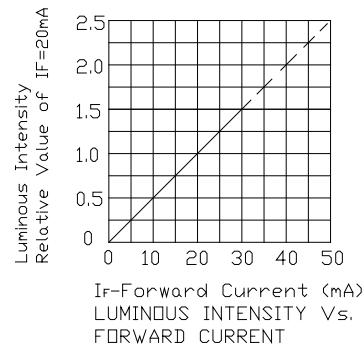
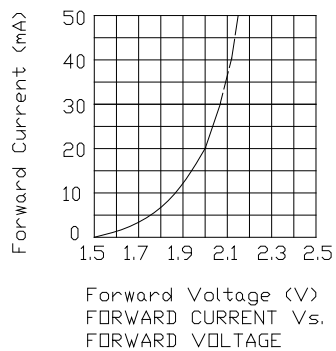
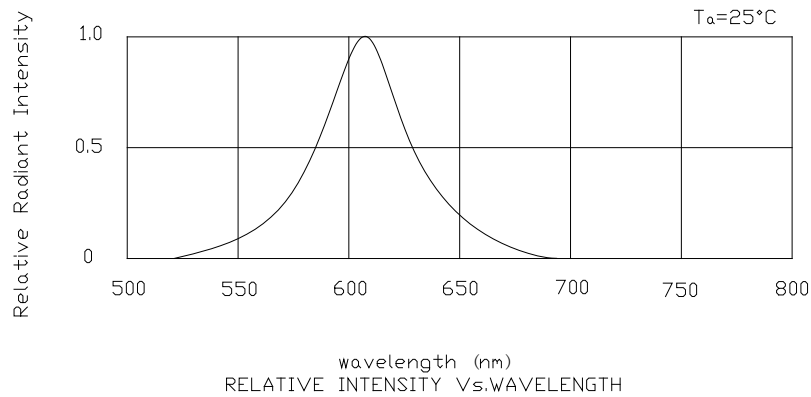
**Absolute maximum ratings (TA=25°C)**

| Parameter                              | Symbol | Value    | Unit |
|----------------------------------------|--------|----------|------|
| Forward current                        | If     | 30       | mA   |
| Reverse voltage                        | Vr     | 5        | V    |
| Power dissipation                      | Pd     | 72       | mW   |
| Operating temperature                  | Top    | -40 ~+80 | °C   |
| Storage temperature                    | Tstg   | -40 ~+85 | °C   |
| Peak pulsing current (1/8 duty f=1kHz) | Ifp    | 60       | mA   |

**Electro-optical characteristics (TA=25°C)**

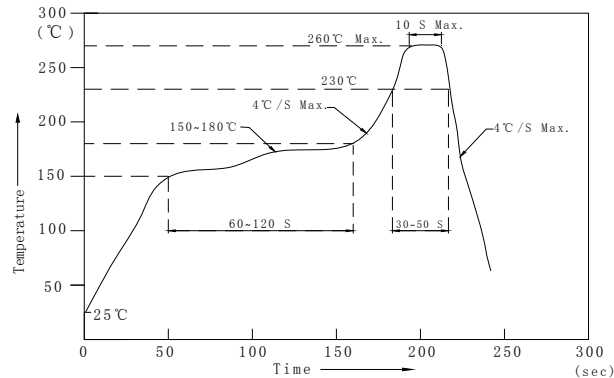
| Parameter                   | Test Condition | Symbol           | Value |     |     | Unit    |
|-----------------------------|----------------|------------------|-------|-----|-----|---------|
|                             |                |                  | Min   | Typ | Max |         |
| Wavelength at peak emission | If=20mA        | $\lambda_p$      | --    | 610 | --  | nm      |
| Spectral half bandwidth     | If=20mA        | $\Delta \lambda$ | --    | 18  | --  | nm      |
| Dominant wavelength         | If=20mA        | $\lambda_d$      | 600   | --  | 610 | nm      |
| Forward voltage             | If=20mA        | Vf               | 1.8   | --  | 2.4 | V       |
| Luminous intensity          | If=20mA        | Iv               | 63    | --  | 200 | mcd     |
| Viewing angle at 50% Iv     | If=10mA        | 2 $\theta$ 1/2   | --    | 120 | --  | Deg     |
| Reverse current             | Vr=5V          | Ir               | --    | --  | 10  | $\mu$ A |

## Optical characteristic curves



## Reflow Profile

### ■ Reflow Temp/Time



### Notes:

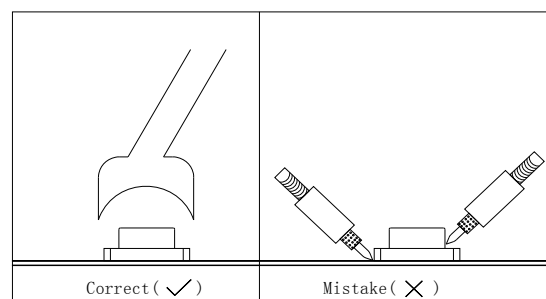
1. We recommend the reflow temperature  $245^{\circ}\text{C}(\pm 5^{\circ}\text{C})$ . the maximum soldering temperature should be limited to  $260^{\circ}\text{C}$ .
2. Don't cause stress to the epoxy resin while it is exposed to high temperature.
3. Number of reflow process shall be 2 times or less.

### ■ Soldering iron

Basic spec is  $\leq 5\text{sec}$  when  $260^{\circ}\text{C}$ . If temperature is higher, time should be shorter ( $+10^{\circ}\text{C} \rightarrow -1\text{sec}$ ). Power dissipation of iron should be smaller than 20W, and temperatures should be controllable. Surface temperature of the device should be under  $230^{\circ}\text{C}$ .

### ■ Rework

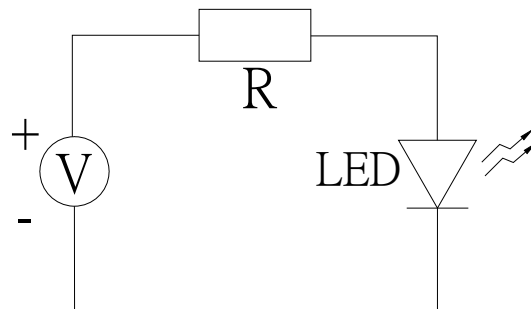
1. Customer must finish rework within 5 sec under  $260^{\circ}\text{C}$ .
2. The head of iron can not touch copper foil
3. Twin-head type is preferred.



- Avoid rubbing or scraping the resin by any object, during high temperature, for example reflow solder etc.

## Test circuit and handling precautions

### ■ Test circuit



### ■ Handling precautions

#### 1. Over-current-proof

Customer must apply resistors for protection; otherwise slight voltage shift will cause big current change (Burn out will happen).

#### 2. Storage

2.1 It is recommended to store the products in the following conditions:

Humidity: 60% R.H. Max.

Temperature : 5°C~30°C(41°F~86°F)

2.2 Shelf life in sealed bag: 12 month at <5°C~30°C and <30% R.H. after the package is Opened, the products should be used within a week or they should be keeping to stored at  $\leq 20$  R.H. with zip-lock sealed.

#### 3. Baking

It is recommended to baking before soldering when the pack is unsealed after 72hrs. The Conditions are as followings:

3.1  $60 \pm 3^\circ\text{C}$  x(12~24hrs) and <5%RH, taped reel type

3.2  $100 \pm 3^\circ\text{C}$  x(45min~1hr), bulk type

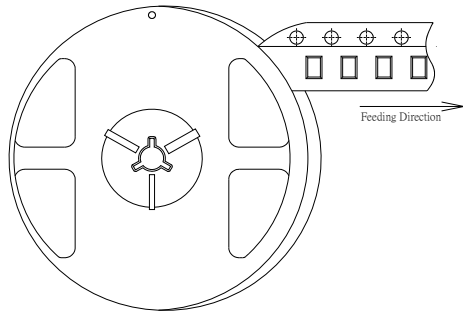
3.3  $130 \pm 3^\circ\text{C}$  x(15~30min), bulk type

**Test items and results of reliability**

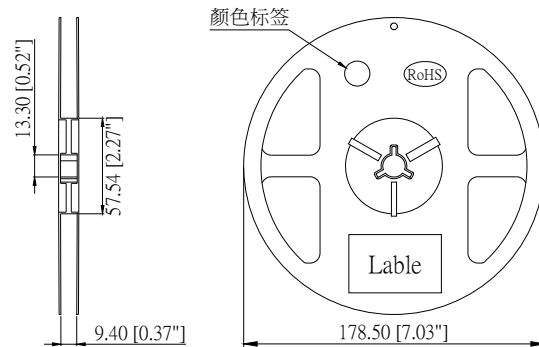
| Type                   | Test Item                    | Test Conditions                | Note      | Number of Damaged |
|------------------------|------------------------------|--------------------------------|-----------|-------------------|
| Environmental Sequence | Temperature Cycle            | -40℃ 30min<br>↑ ↓<br>80℃ 30min | 100 cycle | 0/22              |
|                        | Thermal Shock                | -40℃ 15min<br>↑ ↓<br>80℃ 15min | 100 cycle | 0/22              |
|                        | High Humidity Heat Cycle     | 30℃↔65℃<br>90%RH 24hrs/1cycle  | 10 cycle  | 0/22              |
|                        | High Temperature Storage     | Ta=80℃                         | 1000 hrs  | 0/22              |
|                        | Humidity Heat Storage        | Ta=60℃<br>RH=90%               | 1000 hrs  | 0/22              |
|                        | Low Temperature Storage      | Ta=-40℃                        | 1000 hrs  | 0/22              |
| Operation Sequence     | Life Test                    | Ta=25℃<br>IF=20mA              | 1000 hrs  | 0/22              |
|                        | High Humidity Heat Life Test | 60℃ RH=90%<br>IF=10mA          | 500 hrs   | 0/22              |
|                        | Low Temperature Life Test    | Ta=-40℃<br>IF=20mA             | 1000 hrs  | 0/22              |

## 1608 Series SMD Chip LED Lamps Packaging Specifications

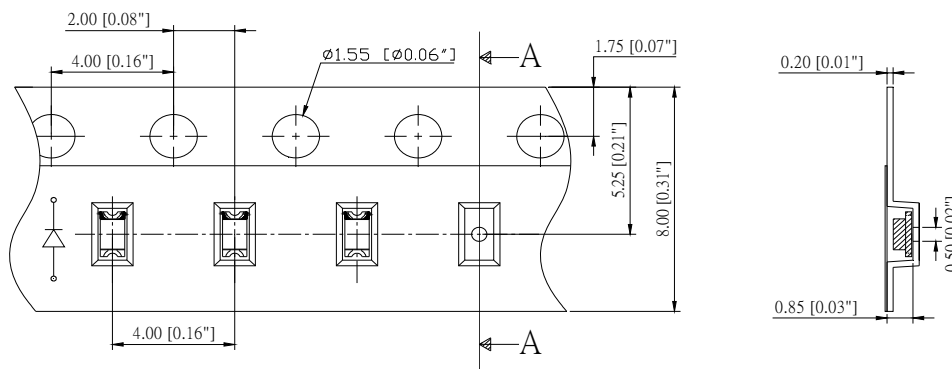
### ● Feeding Direction



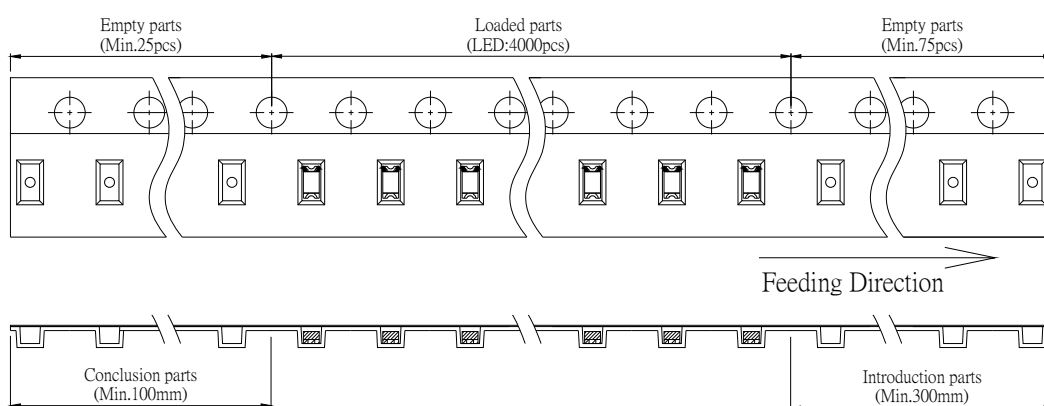
### ● Dimensions of Reel (Unit: mm)



### ● Dimensions of Tape (Unit: mm)



### ● Arrangement of Tape



### Notes:

1. Empty component pockets are sealed with top cover tape;
2. The maximum number of missing lamps is two;
3. The cathode is oriented towards the tape sprocket hole in accordance with ANSI/EIA RS-481 specifications.
4. 4,000 pcs/Reel.

