

# 承認書

## Specification For Approval

Customer: (客戶) \_\_\_\_\_

Description: (產品描述) **SMDLED335**

Part number: (產品型號) **TJ-S335W60KCF15HQP86-A3**

Date: (日期) \_\_\_\_\_

Approved By: (客戶承認)

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|  |
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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

4.0mm x 0.86mm SMT LED, 1.35mm thickness

Low power consumption TOGIALED

Wide view angle

Package: 4000pcs/reel

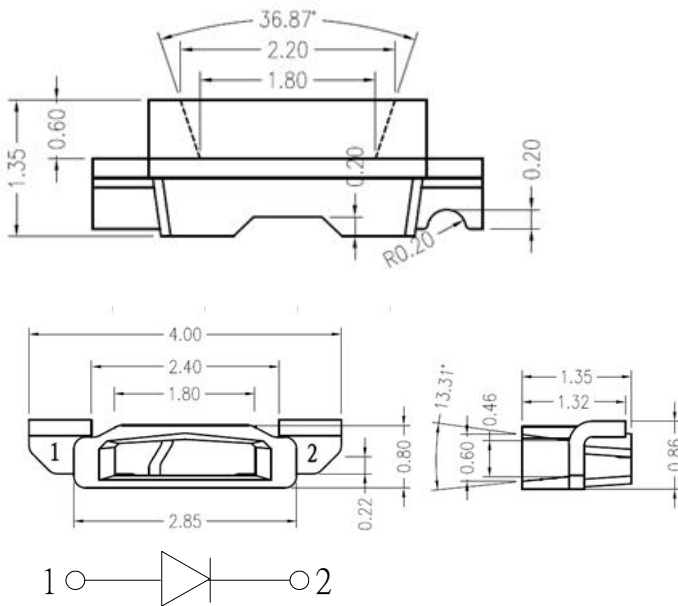
RoHS Compliant

## Applications

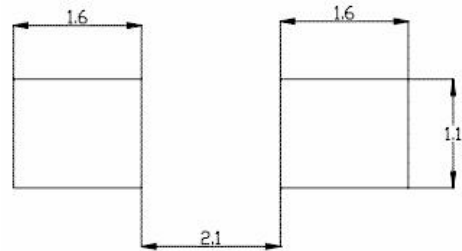
Ideal for back light and indicator

Various colors and lens types available

### Package outlines



### Recommend Pad Layout



| Part No.                | Emitted color | Dice      | Lens color |
|-------------------------|---------------|-----------|------------|
| TJ-S335W60KCF15HQP86-A3 | White         | InGaN/GaN | Yellow     |

### Notes:

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

**Absolute Maximum Ratings (TA=25°C)**

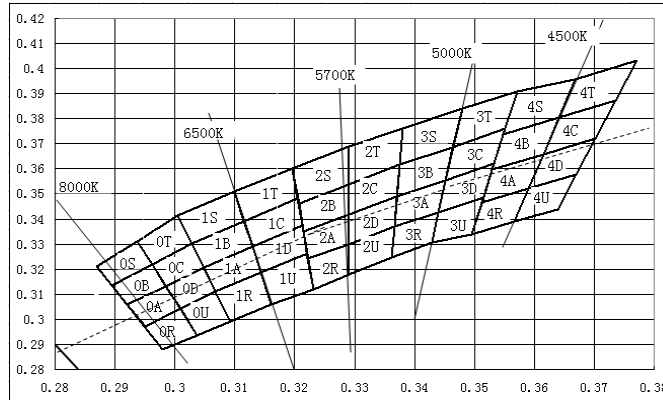
| Parameter                              | Symbol           | Value    | Unit |
|--|------------------|----------|------|
| Forward current                        | I <sub>f</sub>   | 20       | mA   |
| Reverse voltage                        | V <sub>r</sub>   | 5        | V    |
| Power dissipation                      | P <sub>d</sub>   | 108      | mW   |
| Operating temperature                  | T <sub>op</sub>  | -40 ~+80 | °C   |
| Storage temperature                    | T <sub>stg</sub> | -40 ~+85 | °C   |
| Peak pulsing current (1/8 duty f=1kHz) | I <sub>fp</sub>  | 125      | mA   |

**Electro-Optical Characteristics (TA=25°C)**

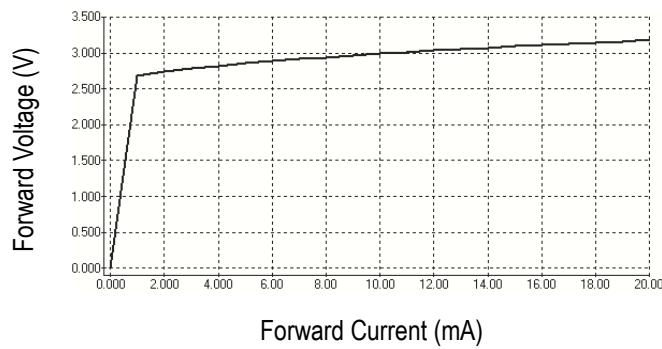
| Parameter                           | Test Condition       | Symbol         | Value |      |      | Unit |
|-------------------------------------|----------------------|----------------|-------|------|------|------|
|                                     |                      |                | Min   | Typ  | Max  |      |
| CCT                                 | I <sub>f</sub> =20mA | --             | 6000  | 6500 | 7000 | K    |
| CIE Coordinates                     | I <sub>f</sub> =20mA | X<br>Y         | --    | --   | --   | --   |
| Forward voltage                     | I <sub>f</sub> =20mA | V <sub>f</sub> | 2.8   | --   | 3.6  | V    |
| Luminous intensity                  | I <sub>f</sub> =20mA | I <sub>v</sub> | 7     | --   | 10   | LM   |
| Viewing angle at 50% I <sub>v</sub> | I <sub>f</sub> =10mA | 2 θ 1/2        | --    | 120  | --   | Deg  |
| Reverse current                     | V <sub>r</sub> =5V   | I <sub>r</sub> | --    | --   | 10   | μA   |

## Optical Characteristic Curves

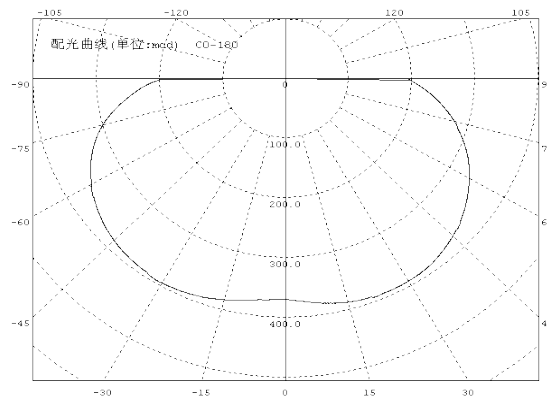
Relative color temperature corresponds to XY coordinates



Forward Current vs. Forward Voltage

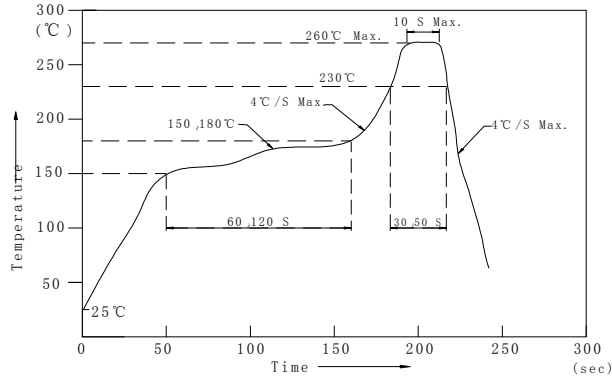


Directive Characteristics



## Reflow Profile

### ■ Reflow Temp/Time



### Notes:

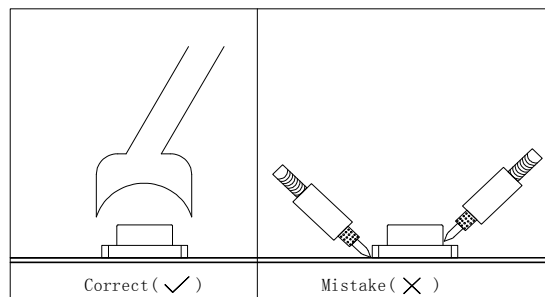
1. We recommend the reflow temperature  $245^{\circ}\text{C}(\pm 5^{\circ}\text{C})$ . the maximum soldering temperature should be limited to  $260^{\circ}\text{C}$ . TOG(A)LED
2. Don't cause stress to the epoxy resin while it is exposed to high temperature.
3. Number of reflow process shall be 2 times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

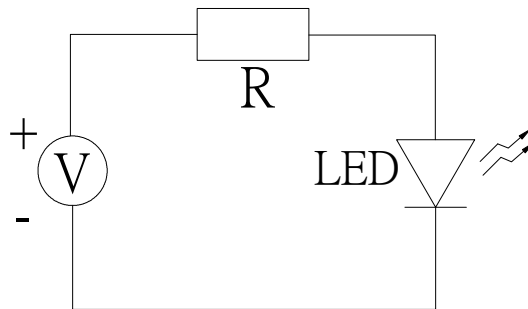
1. Customer must finish rework within 5 sec under  $260^{\circ}\text{C}$ .
2. The head of iron can not touch copper foil
3. Twin-head type is preferred.



- 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). TOGIALED

#### 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

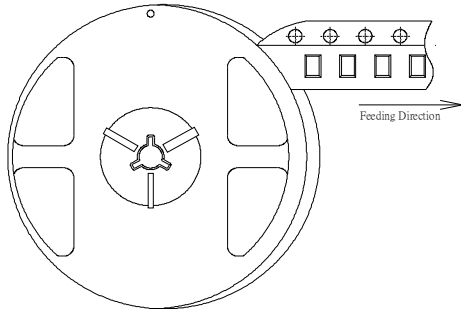
3.3  $130 \pm 3^\circ\text{C}$  x(15~30min), bulk type

Test items and results of reliability TOGIALED

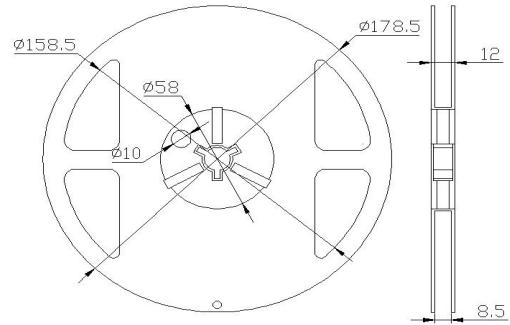
| Type                   | Test Item                    | Test Conditions                   | Note      | Number of Damaged |
|------------------------|------------------------------|-----------------------------------|-----------|-------------------|
| Environmental Sequence | Temperature Cycle    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

### 335 Series SMD Chip LED Lamps Packaging Specifications

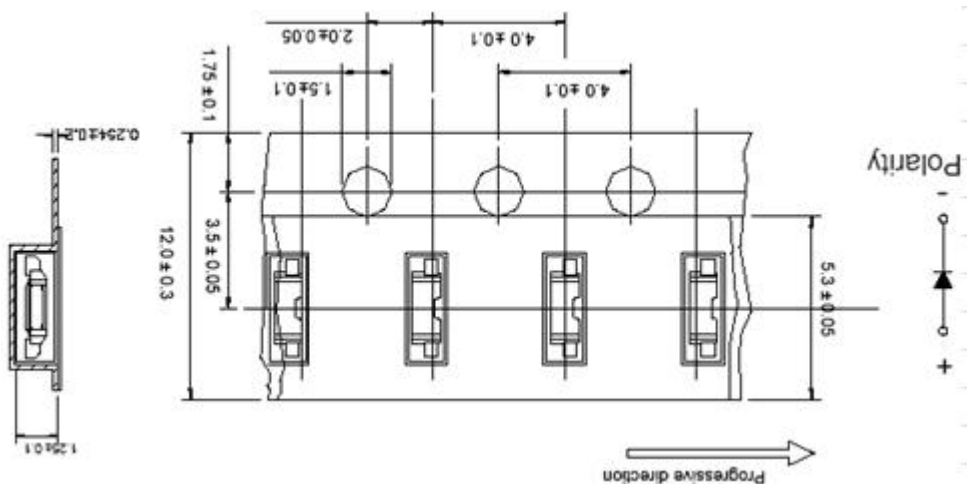
- Feeding Direction



- Dimensions of Reel (Unit: mm)



- Dimensions of Tape (Unit: mm) TOGIALED



#### 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. TOGIALED
4. 4,000 pcs/Reel.



