



**BRIGHTTEK**  
**BRIGHTTEK (EUROPE) LIMITED**

*Brighten Up The World With LED!*



ISO/TS 16949:2009



BS EN ISO 14001:2004



QC 080000 IECQ HSPM

## PRODUCT DATASHEET



- ▶ PLCC2 SMD
- ▶ 2835 0.7t
- ▶ Infrared (IR) 950nm

**NOF17S11**



Release Date: 29 July 2015 Version: A1.0



### 2835 0.7t Series

**RoHS**  
Compliant



#### FEATURES:

- **Package:** PLCC2 White Top View IR Emitter
- **Forward Current:** 100mA
- **Forward Voltage (typ.):** 1.8V
- **Radiant Intensity (typ.):** 19mW/sr@100mA
- **Colour:** Infrared (IR)
- **Wavelength:** 950nm
- **Viewing angle:** 120°
- **Materials:**
  - Die: AlGaAs
  - Resin: Silicon (Water Clear)
- **Operating Temperature:** -40~+85°C
- **Storage Temperature:** -40~+100°C
- **ESD (HBM):** 2000V
- **Grouping parameters:**
  - Forward voltage
  - Radiant intensity
  - Dominant wavelength
- **Soldering methods:** Reflow Soldering
- **Preconditioning:** acc. to JEDEC Level 3
- **Packing:** 8mm tape with 2500/reel, ø180mm (7")

#### APPLICATIONS:

- Sensor
- Optoelectronic Switch
- VCR
- Smoke Detector
- Surveillance Camera
- Security Device

## CHARACTERISTICS:

### Absolute Maximum Characteristics (Ta=25°C)

| Parameter                                   | Symbol    | Ratings  | Unit |
|---|-----------|----------|------|
| Forward Current                             | $I_F$     | 100      | mA   |
| Peak Forward Current (Width≤100μS; duty≤1%) | $I_{FP}$  | 200      | mA   |
| Reverse Current @5V                         | $I_R$     | 5        | μA   |
| Power Dissipation                           | $P_D$     | 140      | mW   |
| Electrostatic Discharge (HBM)               | ESD       | 2000     | V    |
| Operating Temperature                       | $T_{OPR}$ | -40~+85  | °C   |
| Storage Temperature                         | $T_{STG}$ | -40~+100 | °C   |

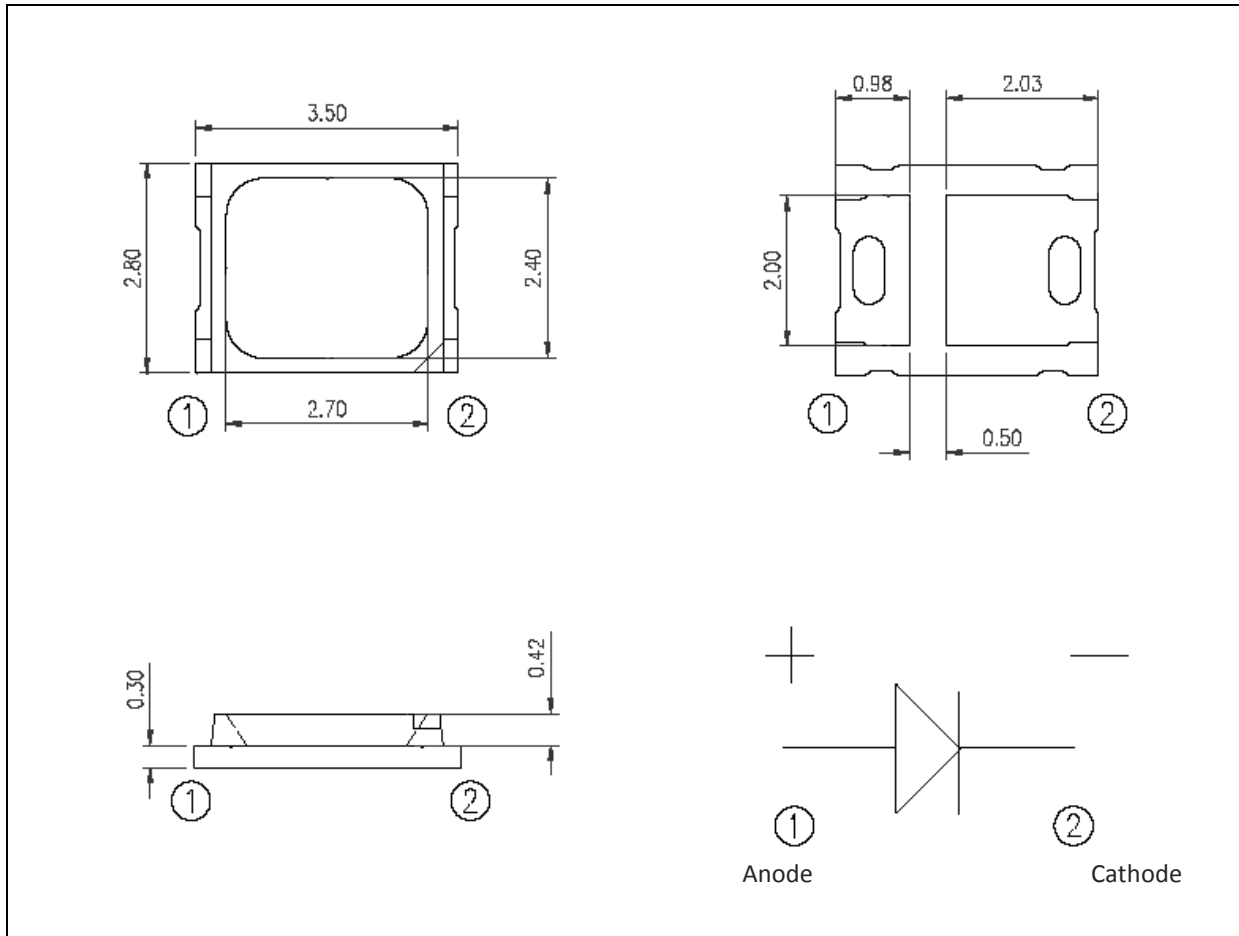
### Electrical & Optical Characteristics (Ta=25°C)

| Parameter         | Symbol          | Values |      |      | Unit  | Test Condition |
|-------------------|-----------------|--------|------|------|-------|----------------|
|                   |                 | Min.   | Typ. | Max. |       |                |
| Forward Voltage   | $V_F$           | 1.5    | ---  | 2.0  | V     | $I_F=100mA$    |
| Radiant Intensity | $I_E$           | 10     | ---  | 25   | mW/sr | $I_F=100mA$    |
| Peak Wavelength   | $\lambda_P$     | 925    | 950  | 970  | nm    | $I_F=100mA$    |
| Viewing Angle     | $2\theta_{1/2}$ | ---    | 120  | ---  | deg   | $I_F=100mA$    |

1. Radiant intensity ( $I_v$ ) ±10%, Forward Voltage ( $V_F$ ) ±0.1V, Viewing angle( $2\theta_{1/2}$ ) ±5%, Wavelength ( $\lambda$ ) ±0.1nm

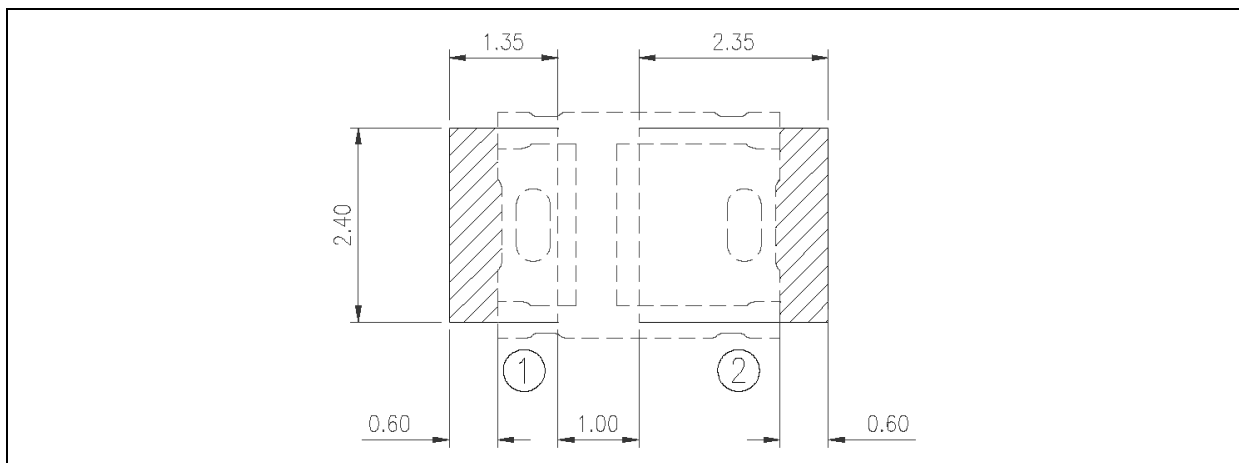
## OUTLINE DIMENSION:

Package Dimension:



1. All dimensions are in millimetre (mm).
2. Tolerance  $\pm 0.1\text{mm}$ , unless otherwise noted.

Recommended Soldering Pad Dimension:



1. Dimensions are in millimetre (mm).
2. Tolerance  $\pm 0.1\text{mm}$  with angle tolerance  $\pm 0.5^\circ$ .

**BINNING GROUPS:**


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 Forward Voltage Classifications ( $I_F = 100\text{mA}$ ):

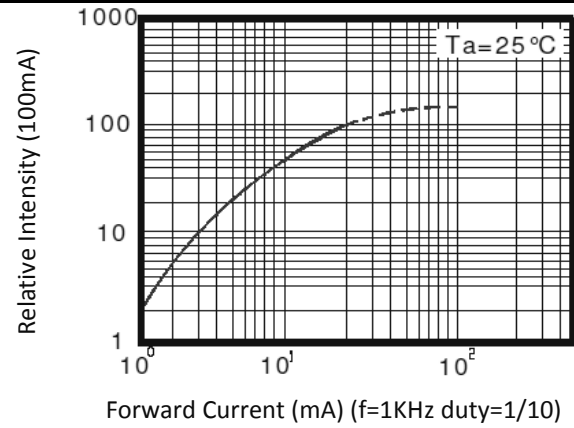
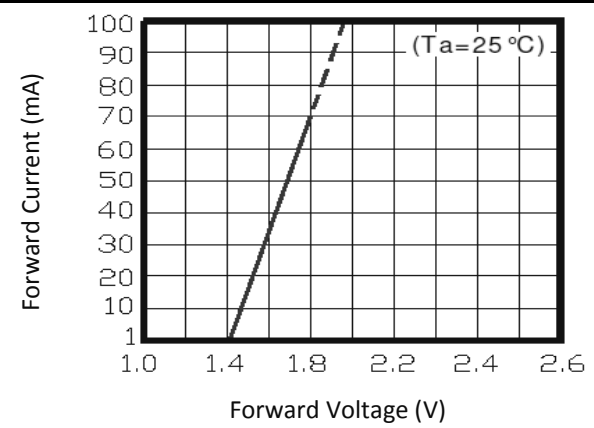
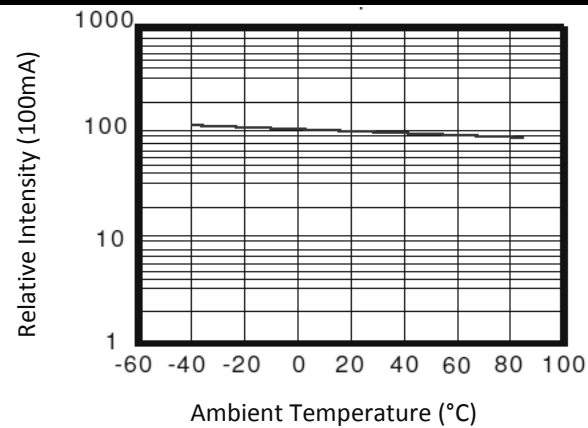
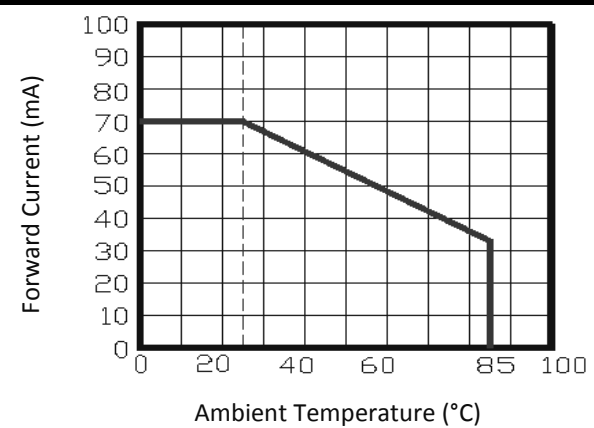
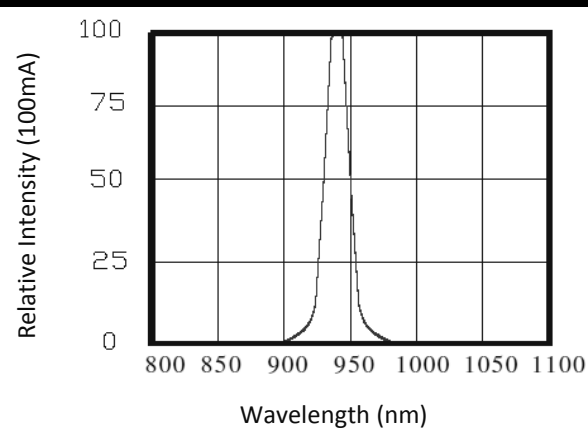
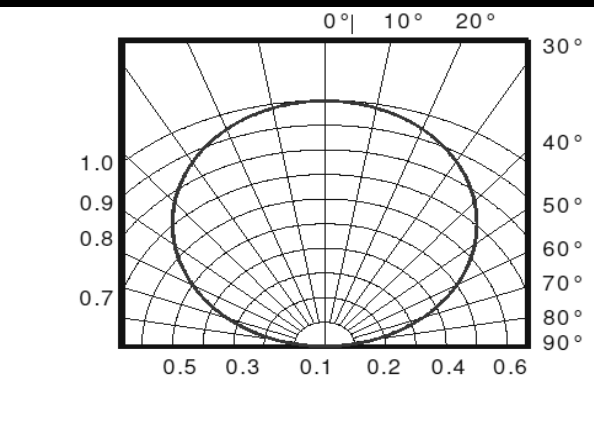
| Code | Min. | Max. | Unit |
|------|------|------|------|
| A1   | 1.50 | 1.75 | V    |
| A2   | 1.75 | 2.00 |      |

 Radiant Intensity Classifications ( $I_F = 100\text{mA}$ ):

| Code | Min. | Max. | Unit  |
|------|------|------|-------|
| A    | 10.0 | 14.5 | mW/sr |
| B    | 14.5 | 20.5 |       |
| C1   | 20.5 | 25.0 |       |

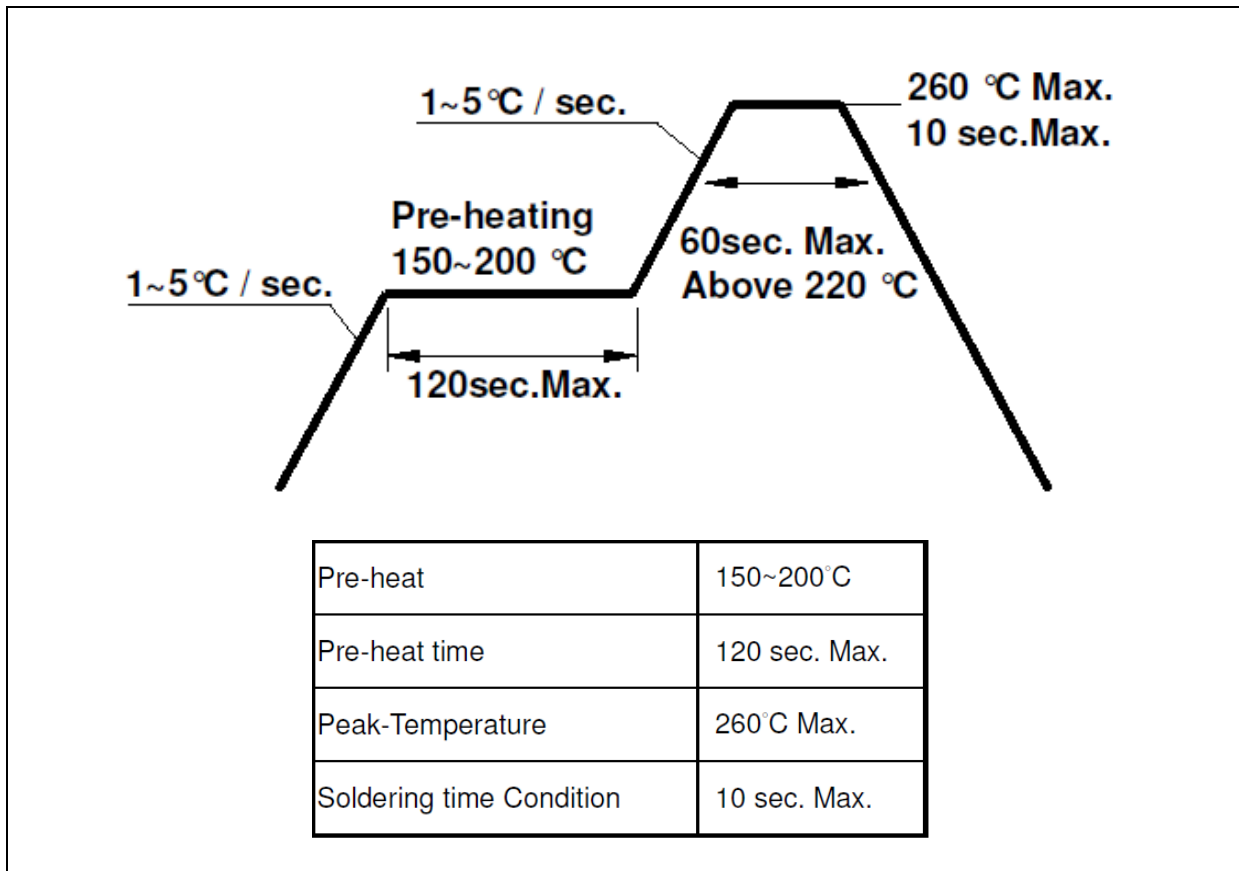
 Dominant Wavelength Classifications ( $I_F = 100\text{mA}$ ):

| Code | Min. | Max. | Unit |
|------|------|------|------|
| B    | 925  | 975  | nm   |

**ELECTRO-OPTICAL CHARACTERISTICS:**
**Relative Intensity v.s. Forward Current**

**Forward Current v.s. Forward Voltage**

**Relative Intensity v.s. Ambient Temperature**

**Forward Current v.s. Ambient Temperature**

**Relative Spectral Distribution**

**Radiation Diagram**


## RECOMMENDED SOLDERING PROFILE:

Reflow Solder:

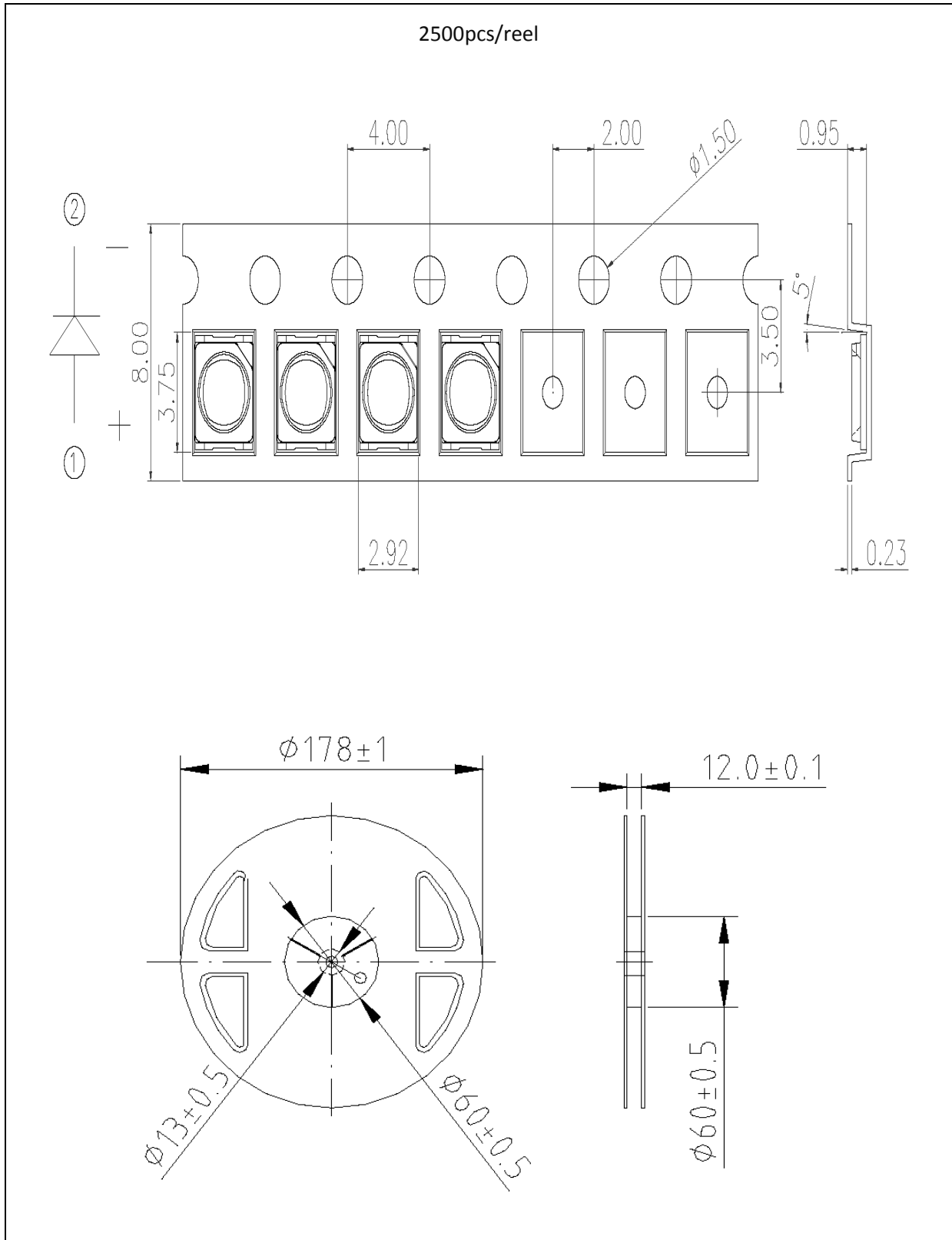


Note:

1. Recommend reflow temperature 245°C. The maximum soldering temperature should be limited to 260°C.
2. Maximum reflow soldering: 2 times.
3. Before, during, and after soldering, should not apply stress on the components and PCB board.

**PACKING SPECIFICATION:**

Reel Dimension:



## PRECAUTIONS OF USE:

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### Storage:

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).

Shelf life in sealed bag: 12 month at 5°C~30°C and <60% R.H.

Once the package is opened, the products should be used within a week. Otherwise, they should be kept in a damp-proof box with desiccating agent and apply baking at 60°C±5°C for 15hrs before use.

### Baking:

It is recommended to bake the LED before soldering if the pack has been unsealed for longer than 24hrs.

The suggested baking conditions are as followings:

- 70±3°C x 24hrs and <5%RH, taped / reel package.
- 100±3°C x 2hrs, bulk (loose) package.
- 130±3°C x 30min, bulk (loose) package.

It's normal to see slight color fading of carrier (light yellow) after baking in process.

### Testing Circuit:



Must apply resistor(s) for protection (over current proof).

### Cleaning:

Use alcohol-based cleaning solvents such as isopropyl alcohol to clean the LED carrier / package. Avoid putting any stress force directly on to the LED lens.

### ESD (Electrostatic Discharge):

Static Electricity or power surge will damage the LED. Use of a conductive wrist band or anti-electrostatic glove is recommended when handling the LED all time. All devices, equipment, machinery, work tables, and storage racks must be properly grounded.

In the events of manual working in process, make sure the devices are well protected from ESD at any time.



**REVISION RECORD:**

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| Version | Date       | Summary of Revision |
|---------|------------|---------------------|
| A1.0    | 29/07/2015 | Datasheet set-up.   |