



**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 Top View
- ▶ 3020HC 0.8t Series
- ▶ Cool White (6500K)

# NOW58S32 (CRI 90)



Release Date: 29 March 2021 Version: A1.0



3020 0.8t Series

## 3020 0.8t Series

**RoHS**  
Compliant



### FEATURES:

- **Package:** PLCC White Top View SMT Package
- **Forward Current:** 20mA
- **Forward Voltage (typ.):** 3.2V
- **Luminous Intensity (typ.):** 2200mcd@20mA
- **Colour:** Cool White
- **CCT (typ.):** 6500K
- **Viewing angle:** 120°
- **Materials:**
  - Die: InGaN
  - Resin: Silicon (Yellow Diffused)
- **Operating Temperature:** -40~+85°C
- **Storage Temperature:** -40~+100°C
- **ESD:** 500V
- **Grouping parameters:**
  - Forward voltage
  - Luminous intensity
  - CIE Chromaticity
- **Soldering methods:** IR Reflow soldering
- **Preconditioning:** acc. to JEDEC Level 3
- **Packing:** 8mm tape with max.2000/reel,  $\phi$ 180mm (7")

### APPLICATIONS:

- LCD Backlighting
- General Lighting
- Commercial Lighting
- Residential Lighting
- Architectural Lighting
- Flash Lighting

## CHARACTERISTICS:

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

| Parameter                            | Symbol           | Ratings  | Unit |
|--------------------------------------|------------------|----------|------|
| Forward Current                      | I <sub>F</sub>   | 30       | mA   |
| Peak Forward Current Duty 1/10@10KHz | I <sub>FP</sub>  | 100      | mA   |
| Power Dissipation                    | P <sub>D</sub>   | 108      | mW   |
| Reverse Current @5V                  | I <sub>R</sub>   | 50       | μA   |
| Electrostatic Discharge              | ESD              | 500      | V    |
| Operating Temperature                | T <sub>OPR</sub> | -40~+85  | °C   |
| Storage Temperature                  | T <sub>STG</sub> | -40~+100 | °C   |
| Colour Rendering Index               | CRI              | 90       | ---  |

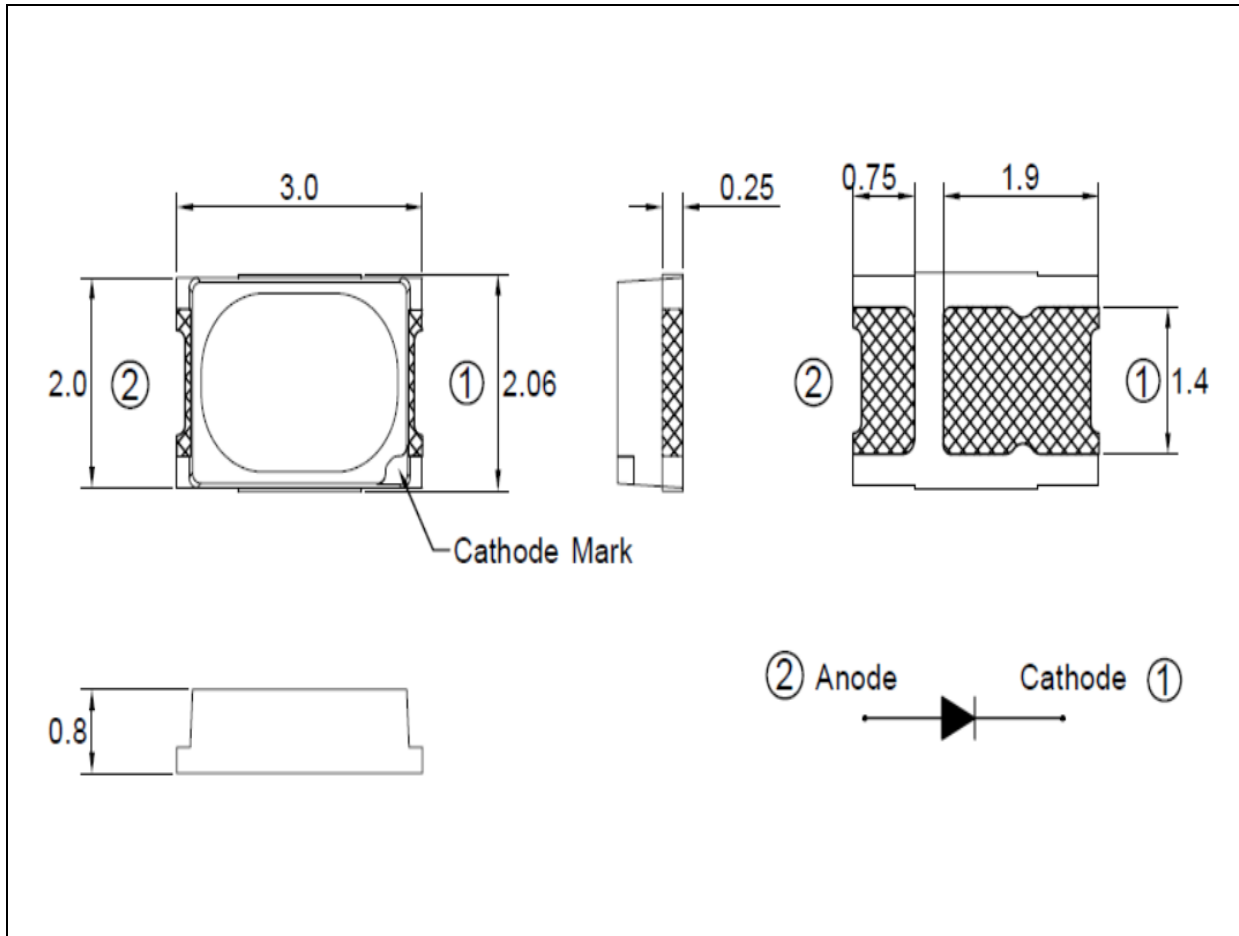
### Electrical & Optical Characteristics (Ta=25°C)

| Parameter                | Symbol            | Values |      |        | Unit | Test Condition       |
|--------------------------|-------------------|--------|------|--------|------|----------------------|
|                          |                   | Min.   | Typ. | Max.   |      |                      |
| Forward Voltage          | V <sub>F</sub>    | 2.8    | ---  | 3.6    | V    | I <sub>F</sub> =20mA |
| Luminous Intensity       | I <sub>v</sub>    | 1800   | 2200 | ---    | mcd  | I <sub>F</sub> =20mA |
| Chromaticity Coordinates | X                 | 0.3028 | ---  | 0.3221 | ---  | I <sub>F</sub> =20mA |
|                          | Y                 | 0.3113 | ---  | 0.3481 |      |                      |
| Colour Temperature       | CCT               | 6020   | 6500 | 7040   | K    |                      |
| Viewing Angle            | 2θ <sub>1/2</sub> | ---    | 120  | ---    | deg  | I <sub>F</sub> =20mA |

1. Luminous intensity (I<sub>v</sub>) ±15%, Forward Voltage (V<sub>F</sub>) ±0.1V, Viewing angle(2θ<sub>1/2</sub>) ±5%, CRI ±3

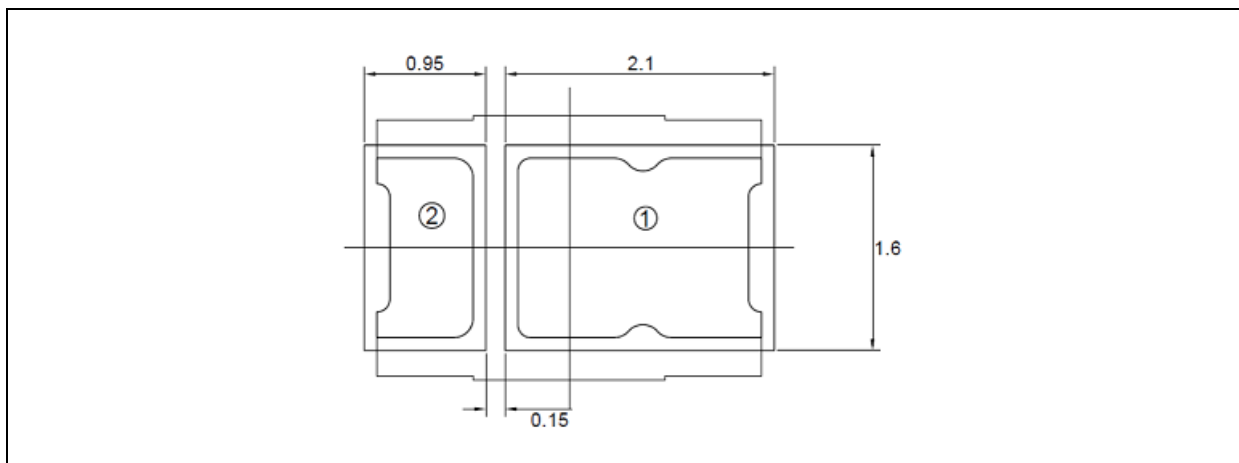
## OUTLINE DIMENSION:

Package Dimension:



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

Recommended Soldering Pad Dimension:



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

**BINNING GROUPS:**

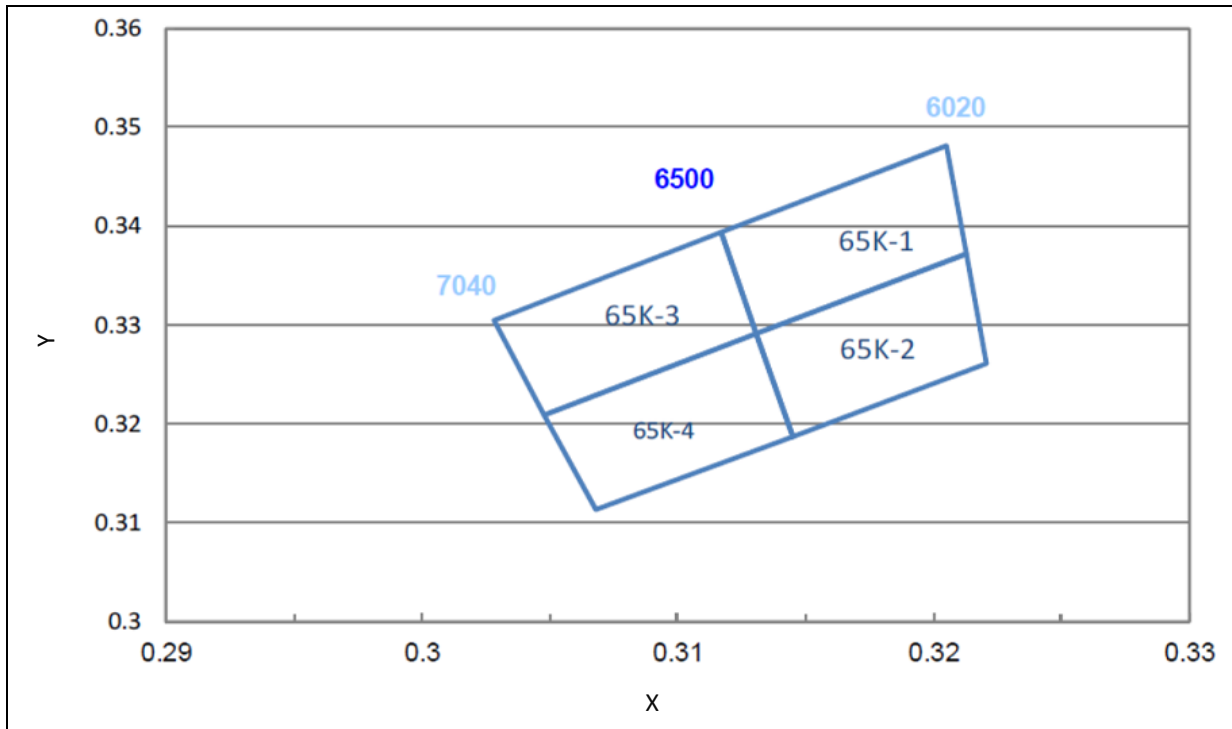

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 Forward Voltage Classifications ( $I_F = 20\text{mA}$ ):

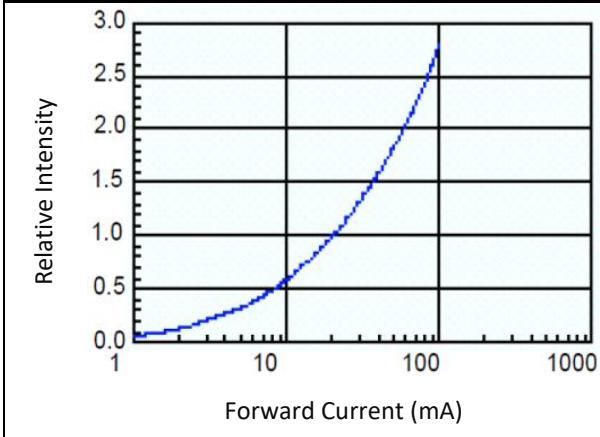
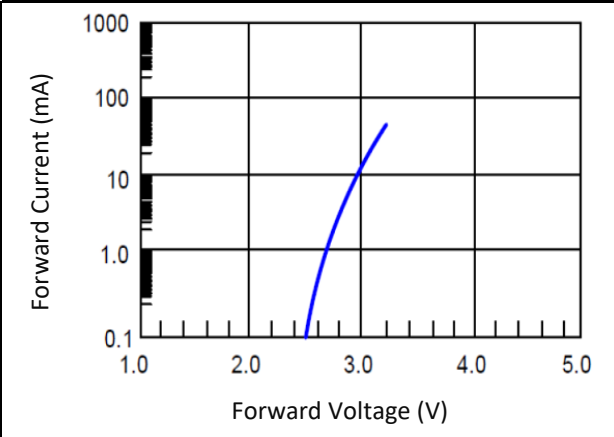
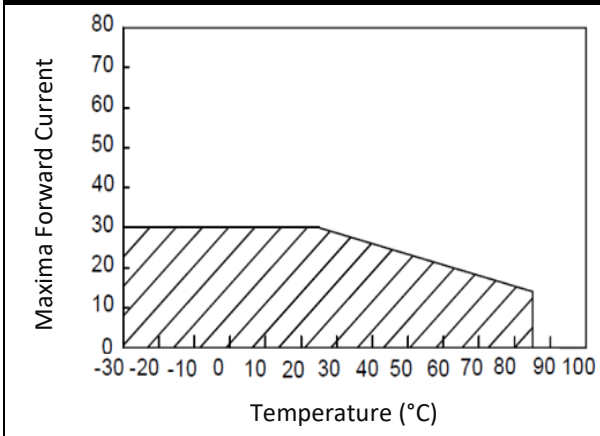
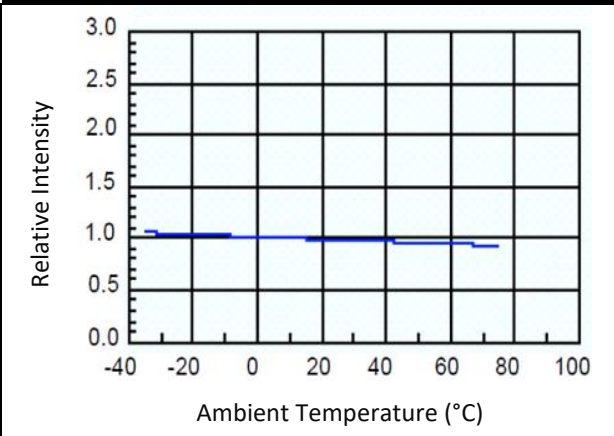
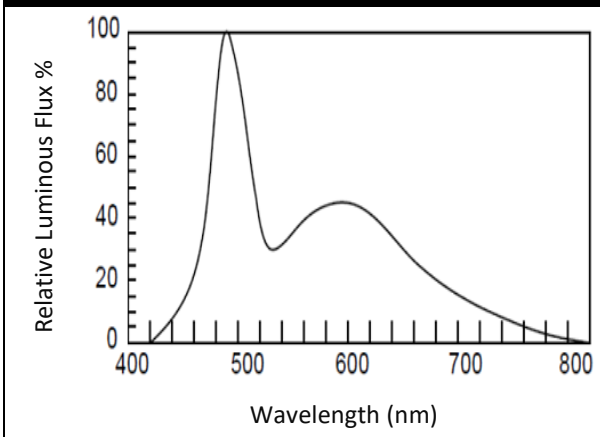
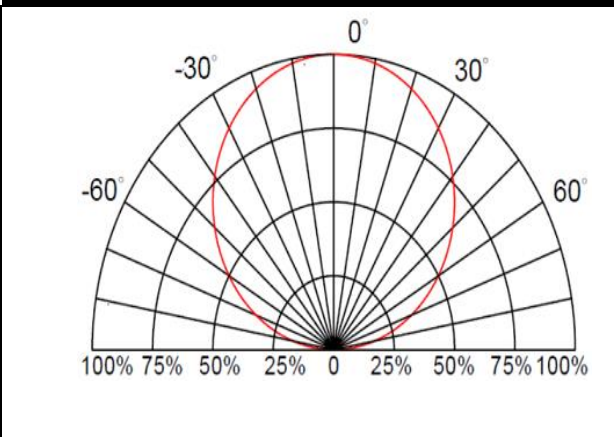
| Code | Min. | Max. | Unit |
|------|------|------|------|
| 1    | 2.8  | 2.9  | V    |
| 2    | 2.9  | 3.0  |      |
| 3    | 3.0  | 3.1  |      |
| 4    | 3.1  | 3.2  |      |
| 5    | 3.2  | 3.3  |      |
| 6    | 3.3  | 3.4  |      |
| 7    | 3.4  | 3.5  |      |
| 8    | 3.5  | 3.6  |      |

 Luminous Intensity Classifications ( $I_F = 20\text{mA}$ ):

| Code   | Min. | Max. | Unit |
|--------|------|------|------|
| W34W37 | 1800 | 2000 | mcd  |
| X11X14 | 2000 | 2200 |      |
| X15X18 | 2200 | 2400 |      |
| X19X22 | 2400 | 2600 |      |
| X23X26 | 2600 | 2800 |      |

**CIE CHROMATICITY DIAGRAM:**

**Chromaticity Coordinates Classifications ( $I_F = 20\text{mA}$ ):**

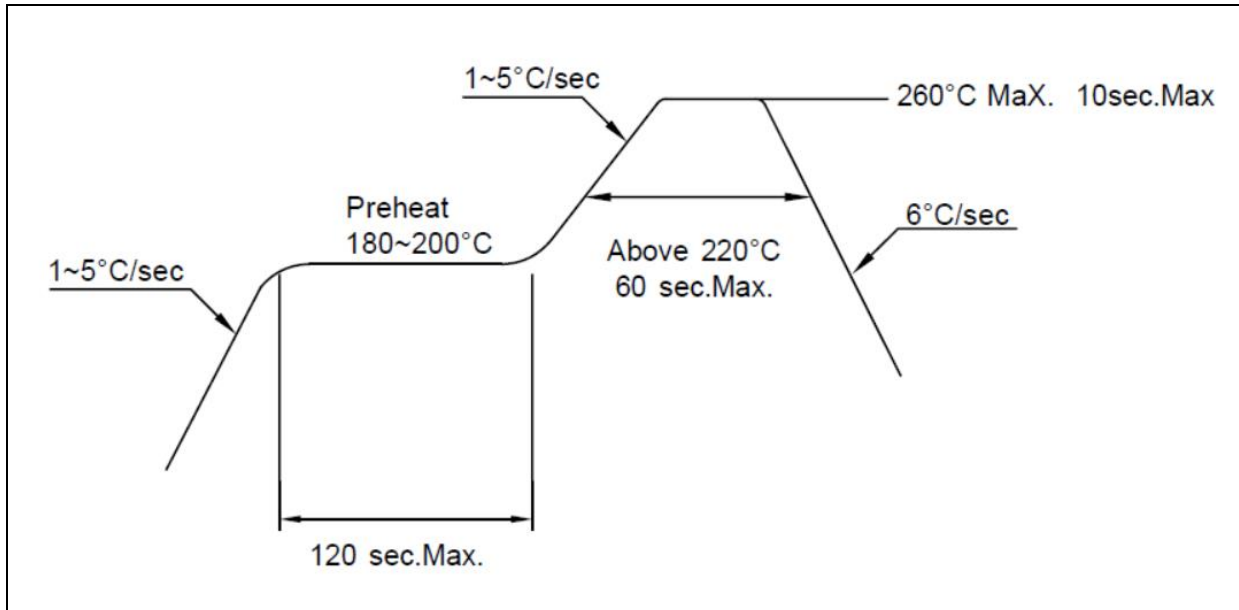
|       | 1      |        | 2      |        | 3      |        | 4      |        |
|-------|--------|--------|--------|--------|--------|--------|--------|--------|
|       | X      | Y      | X      | Y      | X      | Y      | X      | Y      |
| 65K-1 | 0.3205 | 0.3481 | 0.3117 | 0.3393 | 0.3131 | 0.3290 | 0.3213 | 0.3371 |
| 65K-2 | 0.3213 | 0.3371 | 0.3131 | 0.3290 | 0.3145 | 0.3187 | 0.3221 | 0.3261 |
| 65K-3 | 0.3117 | 0.3393 | 0.3128 | 0.3304 | 0.3048 | 0.3209 | 0.3131 | 0.3290 |
| 65K-4 | 0.3131 | 0.3290 | 0.3048 | 0.3209 | 0.3068 | 0.3113 | 0.3145 | 0.3187 |

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

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

**Maximum Current Derating Chart**

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

**Luminous Spectrum**

**Directive Radiation**


## RECOMMENDED SOLDERING PROFILE:

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Lead-free Solder:

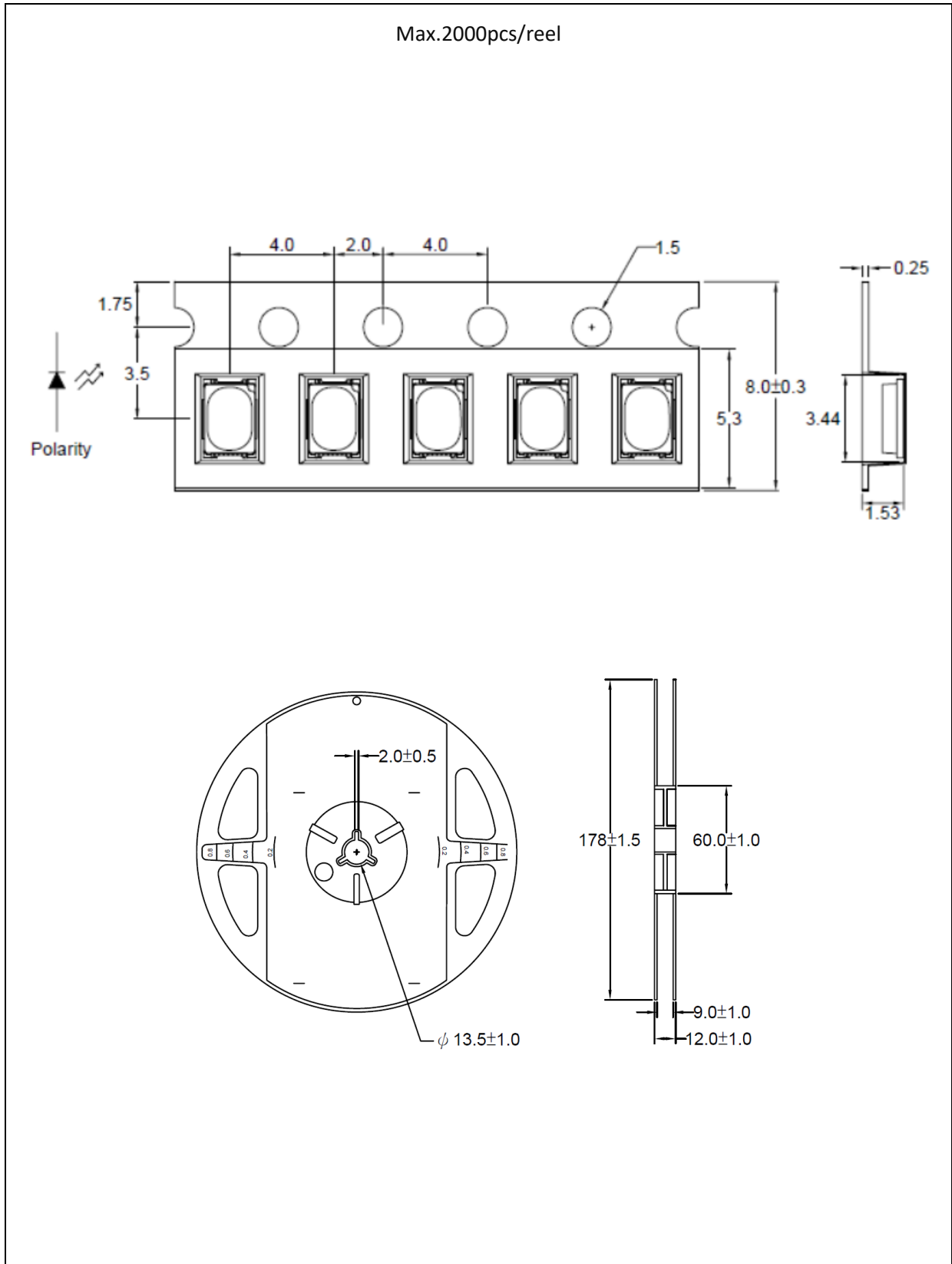


Note:

1. Maxima reflow soldering: 2 times.
2. Recommended soldering temperature is 240°C. The maxima soldering temperature should be limited to 260°C.
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 <10% R.H. and apply baking before use.

### Baking:

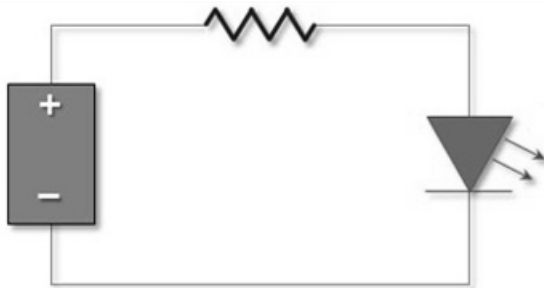
It is recommended to bake the LED before soldering if the pack has been unsealed for longer than 24hrs.

The suggested baking conditions are as followings:

- 60±5°C x 72hrs and <5%RH, taped / reel 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-electrosatic 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    | 29/03/2021 | Datasheet set-up.   |