

# Kingbright

## 3.0x2.0mm SURFACE MOUNT LED LAMP

### PRELIMINARY SPEC

Part Number: AA3020APBC/A

Blue



**ATTENTION**  
OBSERVE PRECAUTIONS  
FOR HANDLING  
ELECTROSTATIC  
DISCHARGE  
SENSITIVE  
DEVICES

### Features

- 3.0MM X 2.0MM, 1.4MM HIGH, ONLY MINIMUM SPACE REQUIRED.
- SUITABLE FOR COMPACT OPTOELECTRONIC APPLICATIONS.
- LOW POWER CONSUMPTION.
- PACKAGE : 2000PCS / REEL.
- MOISTURE SENSITIVITY LEVEL : LEVEL 4.
- RoHS COMPLIANT.

### Description

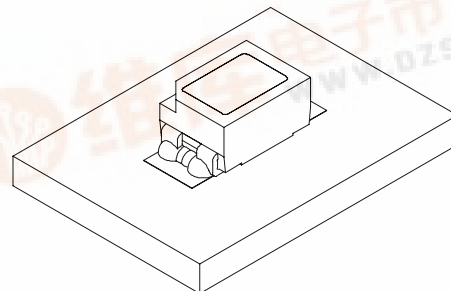
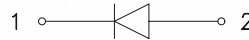
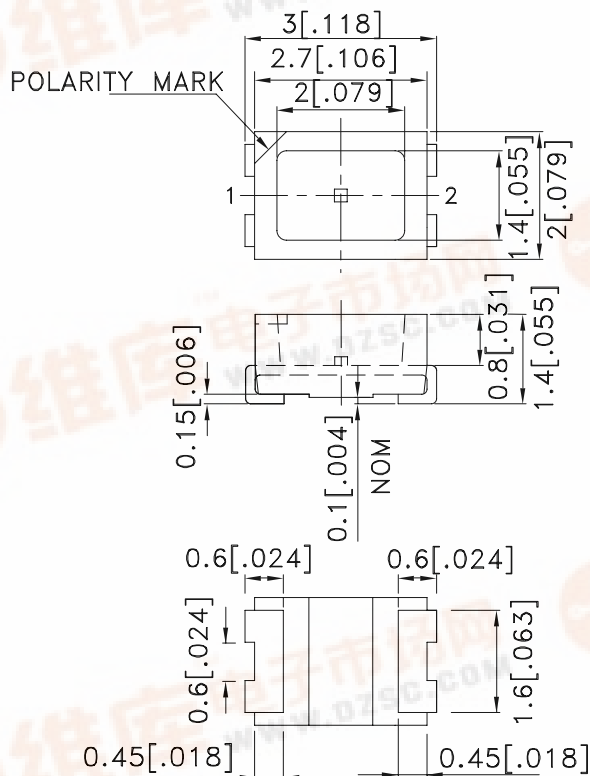
The Blue source color devices are made with InGaN on SiC Light Emitting Diode.

Static electricity and surge damage the LEDs.

It is recommended to use a wrist band or anti-electrostatic glove when handling the LEDs.

All devices, equipment and machinery must be electrically grounded.

### Package Dimensions



#### Notes:

1. All dimensions are in millimeters (inches).
2. Tolerance is  $\pm 0.25(0.01)$  unless otherwise noted.
3. Specifications are subject to change without notice.
4. The device has a single mounting surface. The device must be mounted according to the specifications.



## Selection Guide

| Part No.     | Dice         | Lens Type   | Iv (mcd) [2]<br>@ 20mA |      | Viewing<br>Angle [1] |
|--------------|--------------|-------------|------------------------|------|----------------------|
|              |              |             | Min.                   | Typ. | 2θ1/2                |
| AA3020APBC/A | Blue (InGaN) | WATER CLEAR | 18                     | 60   | 90°                  |

Notes:

1. θ1/2 is the angle from optical centerline where the luminous intensity is 1/2 the optical centerline value.
2. Luminous intensity/ luminous Flux: +/-15%.

## Electrical / Optical Characteristics at TA=25°C

| Symbol | Parameter                | Device | Typ. | Max. | Units | Test Conditions |
|--------|--------------------------|--------|------|------|-------|-----------------|
| λpeak  | Peak Wavelength          | Blue   | 468  |      | nm    | IF=20mA         |
| λD [1] | Dominant Wavelength      | Blue   | 470  |      | nm    | IF=20mA         |
| Δλ1/2  | Spectral Line Half-width | Blue   | 21   |      | nm    | IF=20mA         |
| C      | Capacitance              | Blue   | 100  |      | pF    | VF=0V;f=1MHz    |
| VF [2] | Forward Voltage          | Blue   | 3.2  | 4    | V     | IF=20mA         |
| IR     | Reverse Current          | Blue   |      | 10   | uA    | VR=5V           |

Notes:

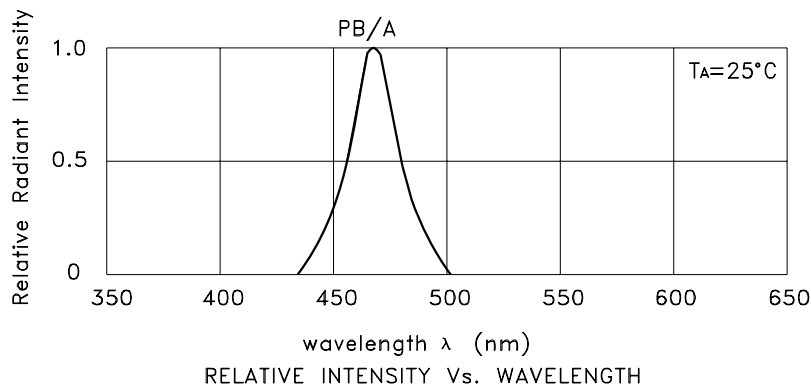
- 1.Wavelength: +/-1nm.
2. Forward Voltage: +/-0.1V.

## Absolute Maximum Ratings at TA=25°C

| Parameter                | Blue           | Units |
|--------------------------|----------------|-------|
| Power dissipation        | 120            | mW    |
| DC Forward Current       | 30             | mA    |
| Peak Forward Current [1] | 100            | mA    |
| Reverse Voltage          | 5              | V     |
| Operating Temperature    | -40°C To +85°C |       |
| Storage Temperature      | -40°C To +85°C |       |

Note:

1. 1/10 Duty Cycle, 0.1ms Pulse Width.



Blue

AA3020APBC/A

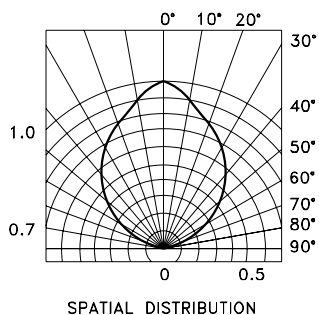
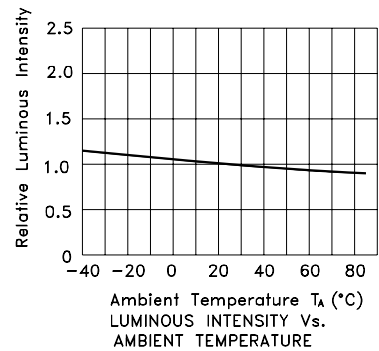
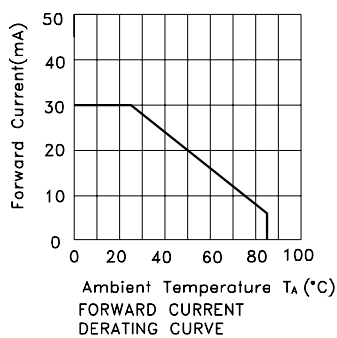
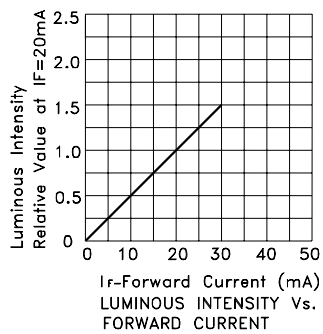
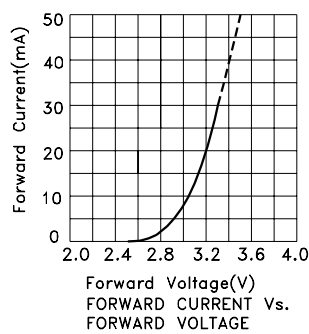


Figure 1 is a line graph showing the temperature profile of the furnace during the heat treatment of the specimen. The vertical axis represents Temperature in degrees Celsius (°C), ranging from 0 to 300. The horizontal axis represents Time in seconds (sec), ranging from 0 to 300. The profile starts at 25°C at 0 seconds. It rises at a rate of 4°C/s to 150°C at 40 seconds. From 150°C, it rises at a rate of 1°C/s to 180°C at 120 seconds. From 180°C, it rises at a rate of 4°C/s to 230°C at 160 seconds. From 230°C, it rises at a rate of 4°C/s to 260°C at 180 seconds. It then holds at 260°C for 10 seconds (until 190 seconds). Finally, it cools at a rate of 4°C/s to 100°C at 250 seconds. Key points and rates are labeled: 25°C, 4°C/s max, 150~180°C, 1°C/s max, 230°C, 4°C/s max, 260°C max, 10 s max, 4°C/s max, and 30~50s.

A diagram showing a 2x2 grid of squares. The horizontal distance between the center of the left column and the center of the right column is labeled 1.4. The vertical distance between the center of the top row and the center of the bottom row is labeled 1.5. Each square has a side length of 1.4.

Technical drawing of a tape reel showing top, side, and cross-sectional views with dimensions in millimeters.

**Top View Dimensions:**

- Overall width:  $8.0 \pm 0.3$
- Distance from top edge to center line:  $3.5 \pm 0.05$
- Distance from center line to bottom edge:  $1.75 \pm 0.1$
- Distance between center lines of adjacent reels:  $4.0 \pm 0.1$
- Distance from center line to the start of the reel body:  $2.0 \pm 0.05$
- Distance between the start of adjacent reel bodies:  $4.0 \pm 0.1$
- Distance from the start of the reel body to the center line:  $1.55 \pm 0.05$
- Distance from the start of the reel body to the bottom edge:  $2.25 \pm 0.1$
- Angle of the bottom edge:  $5^\circ \text{MAX.}$

**Side View Dimensions:**

- Overall height:  $3.3 \pm 0.1$
- Distance from top edge to the start of the reel body:  $0.25 \pm 0.1$
- Distance from the start of the reel body to the bottom edge:  $1.65 \pm 0.1$
- Angle of the bottom edge:  $5^\circ \text{MAX.}$

**Cross-sectional View (A-A SECTION):**

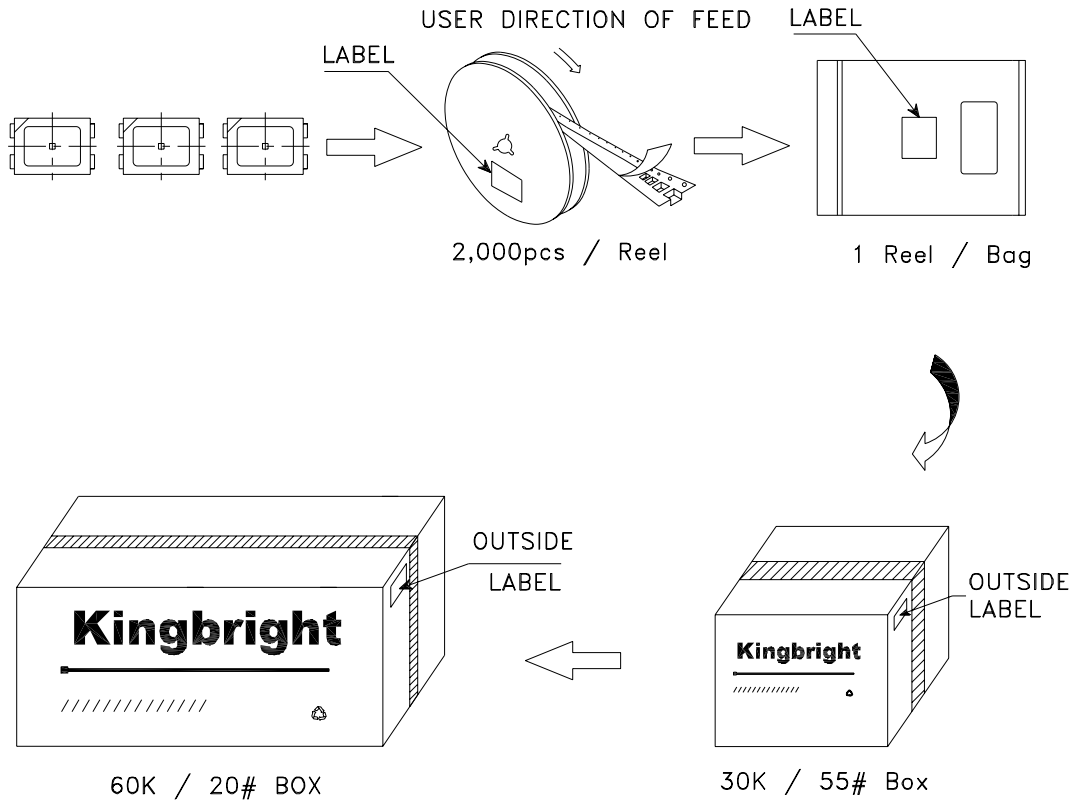
- Shows the profile of the reel body with a central slot.

**Other Labels:**

- TAPE**: Indicated by an arrow pointing right.
- A-A SECTION**: Label for the cross-sectional view.

PACKING & LABEL SPECIFICATIONS

AA3020APBC/A



|                                                                                                              |                                               |
|--------------------------------------------------------------------------------------------------------------|-----------------------------------------------|
| <b>Kingbright</b>                                                                                            |                                               |
| P/NO: AA3020Axxx                                                                                             |                                               |
| QTY: 2,000 pcs                                                                                               | Q.C. <div>Q C<br/>xx xx xxxx<br/>PASSED</div> |
| S/N: XXXX                                                                                                    |                                               |
| CODE: XXX                                                                                                    |                                               |
| LOT NO:                                                                                                      |                                               |
| <br>XXXXXXXXXXXXXXXXXXXX |                                               |
| RoHS Compliant                                                                                               |                                               |