

Part Number: KA-3021SGS

Super Bright Green

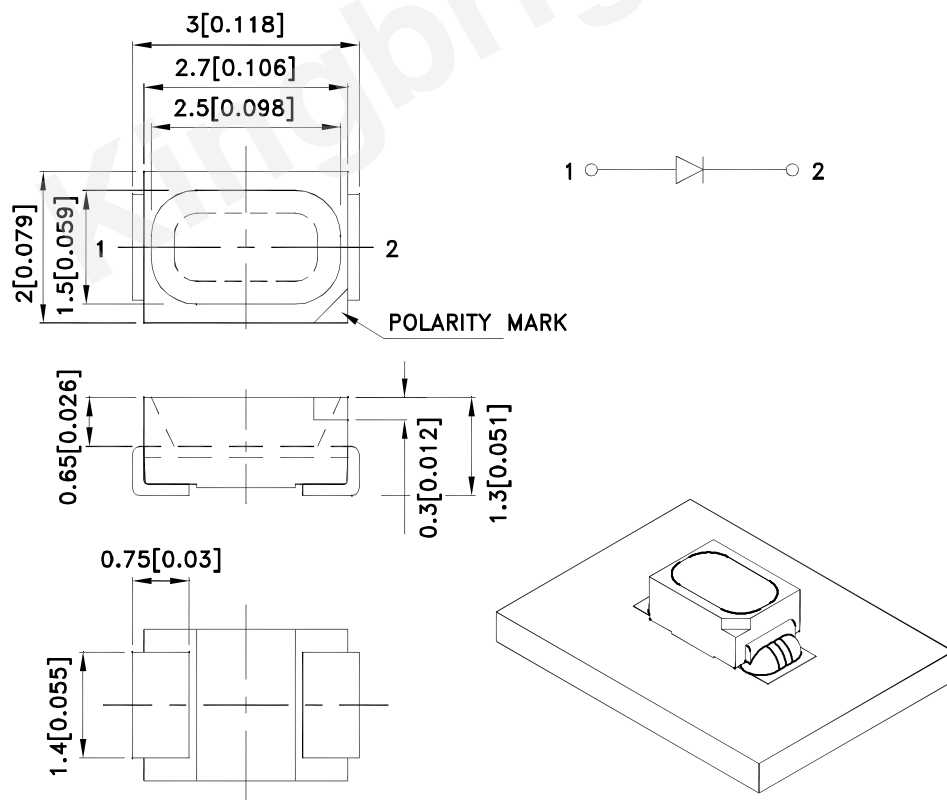
### Features

- 3.0mm x 2.0mm, 1.3mm high, only minimum space required.
- Suitable for compact optoelectronic applications.
- Low power consumption.
- Package : 2000pcs / reel.
- Moisture sensitivity level : level 3.
- RoHS compliant.

### Description

The Super Bright Green source color devices are made with Gallium Phosphide Green Light Emitting Diode.

### Package Dimensions



#### Notes:

1. All dimensions are in millimeters (inches).
2. Tolerance is  $\pm 0.2$  (0.008") unless otherwise noted.
3. The specifications, characteristics and technical data described in the datasheet are subject to change without prior notice.
4. The device has a single mounting surface. The device must be mounted according to the specifications.



## Handling Precautions

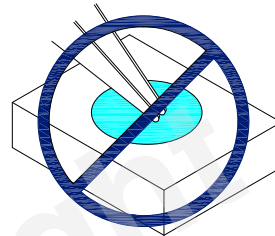
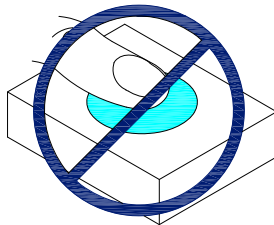
Compare to epoxy encapsulant that is hard and brittle, silicone is softer and flexible. Although its characteristic significantly reduces thermal stress, it is more susceptible to damage by external mechanical force.

As a result, special handling precautions need to be observed during assembly using silicone encapsulated LED products. Failure to comply might lead to damage and premature failure of the LED.

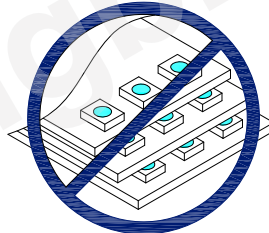
1. Handle the component along the side surfaces by using forceps or appropriate tools.



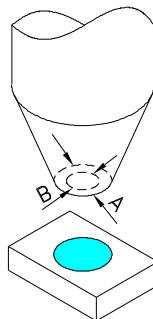
2. Do not directly touch or handle the silicone lens surface. It may damage the internal circuitry.



3. Do not stack together assembled PCBs containing exposed LEDs. Impact may scratch the silicone lens or damage the internal circuitry.



- 4.1. The inner diameter of the SMD pickup nozzle should not exceed the size of the LED to prevent air leaks.
- 4.2. A pliable material is suggested for the nozzle tip to avoid scratching or damaging the LED surface during pickup.
- 4.3. The dimensions of the component must be accurately programmed in the pick-and-place machine to insure precise pickup and avoid damage during production.



5. As silicone encapsulation is permeable to gases, some corrosive substances such as  $H_2S$  might corrode silver plating of leadframe. Special care should be taken if an LED with silicone encapsulation is to be used near such substances.

Detailed application notes are listed on our website.

[http://www.kingbright.com/application\\_notes](http://www.kingbright.com/application_notes)

## Selection Guide

| Part No.   | Dice                     | Lens Type   | Iv (mcd) [2]<br>@ 20mA |      | Viewing<br>Angle [1] |
|------------|--------------------------|-------------|------------------------|------|----------------------|
|            |                          |             | Min.                   | Typ. | 2θ1/2                |
| KA-3021SGS | Super Bright Green (GaP) | Water Clear | 12                     | 20   | 125°                 |

Notes:

1.  $\theta_{1/2}$  is the angle from optical centerline where the luminous intensity is 1/2 of the optical peak value.
2. Luminous intensity/ luminous Flux: +/-15%.
3. Luminous intensity value is traceable to the CIE127-2007 compliant national standards.

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

| Symbol                | Parameter                | Device             | Typ. | Max. | Units | Test Conditions            |
|-----------------------|--------------------------|--------------------|------|------|-------|----------------------------|
| $\lambda_{peak}$      | Peak Wavelength          | Super Bright Green | 565  |      | nm    | I <sub>F</sub> =20mA       |
| $\lambda_D$ [1]       | Dominant Wavelength      | Super Bright Green | 568  |      | nm    | I <sub>F</sub> =20mA       |
| $\Delta\lambda_{1/2}$ | Spectral Line Half-width | Super Bright Green | 30   |      | nm    | I <sub>F</sub> =20mA       |
| C                     | Capacitance              | Super Bright Green | 15   |      | pF    | V <sub>F</sub> =0V; f=1MHz |
| V <sub>F</sub> [2]    | Forward Voltage          | Super Bright Green | 2.2  | 2.5  | V     | I <sub>F</sub> =20mA       |
| I <sub>R</sub>        | Reverse Current          | Super Bright Green |      | 10   | uA    | V <sub>R</sub> =5V         |

Notes:

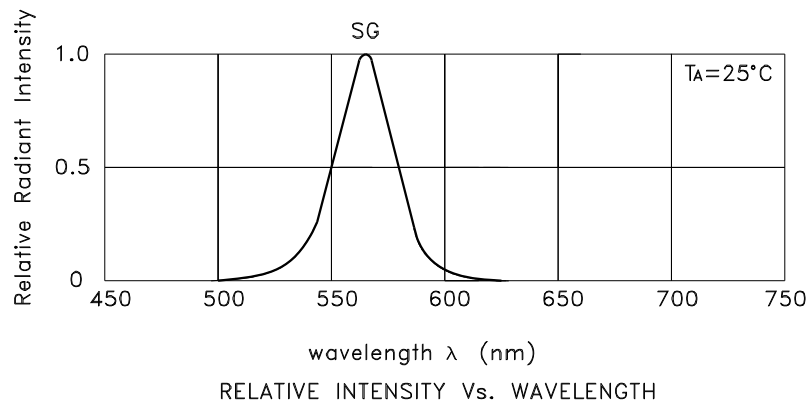
1. Wavelength: +/-1nm.
2. Forward Voltage: +/-0.1V.
3. Wavelength value is traceable to the CIE127-2007 compliant national standards.

## Absolute Maximum Ratings at TA=25°C

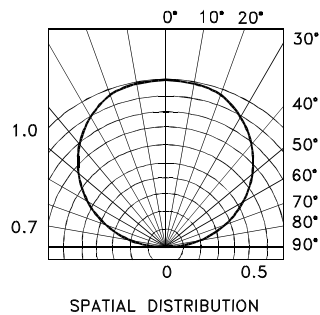
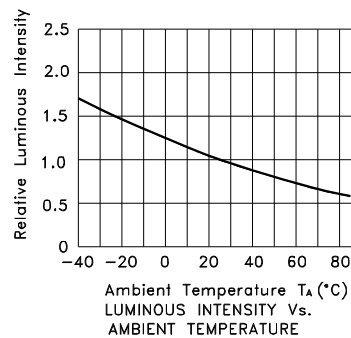
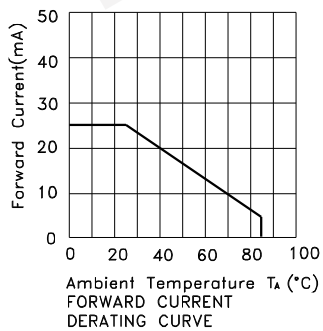
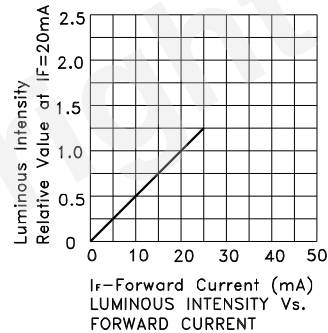
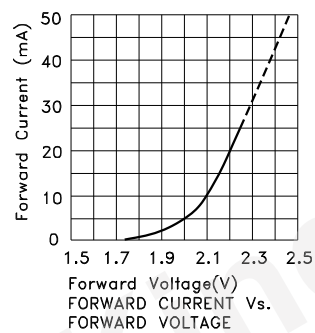
| Parameter                | Super Bright Green | Units |
|--------------------------|--------------------|-------|
| Power dissipation        | 62.5               | mW    |
| DC Forward Current       | 25                 | mA    |
| Peak Forward Current [1] | 140                | mA    |
| Reverse Voltage          | 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.



Super Bright Green KA-3021SGS



## KA-3021SGS

Reflow soldering is recommended and the soldering profile is shown below.  
Other soldering methods are not recommended as they might cause damage to the product.

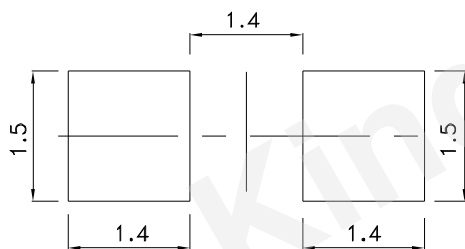
Reflow Soldering Profile For Lead-free SMT Process.



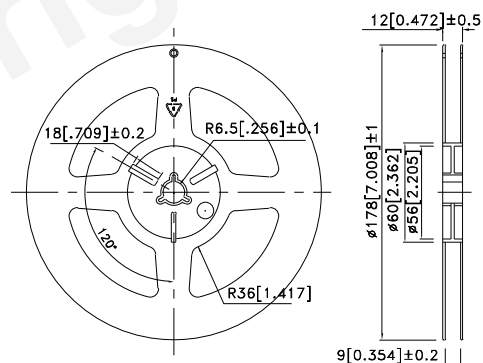
### NOTES:

1. We recommend the reflow temperature 245°C(+/-5°C). The maximum soldering temperature should be limited to 260°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.

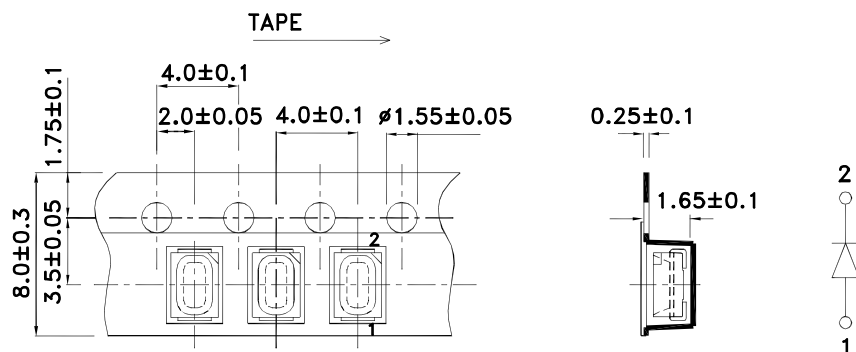
## Recommended Soldering Pattern (Units : mm; Tolerance: $\pm 0.1$ )



## Reel Dimension

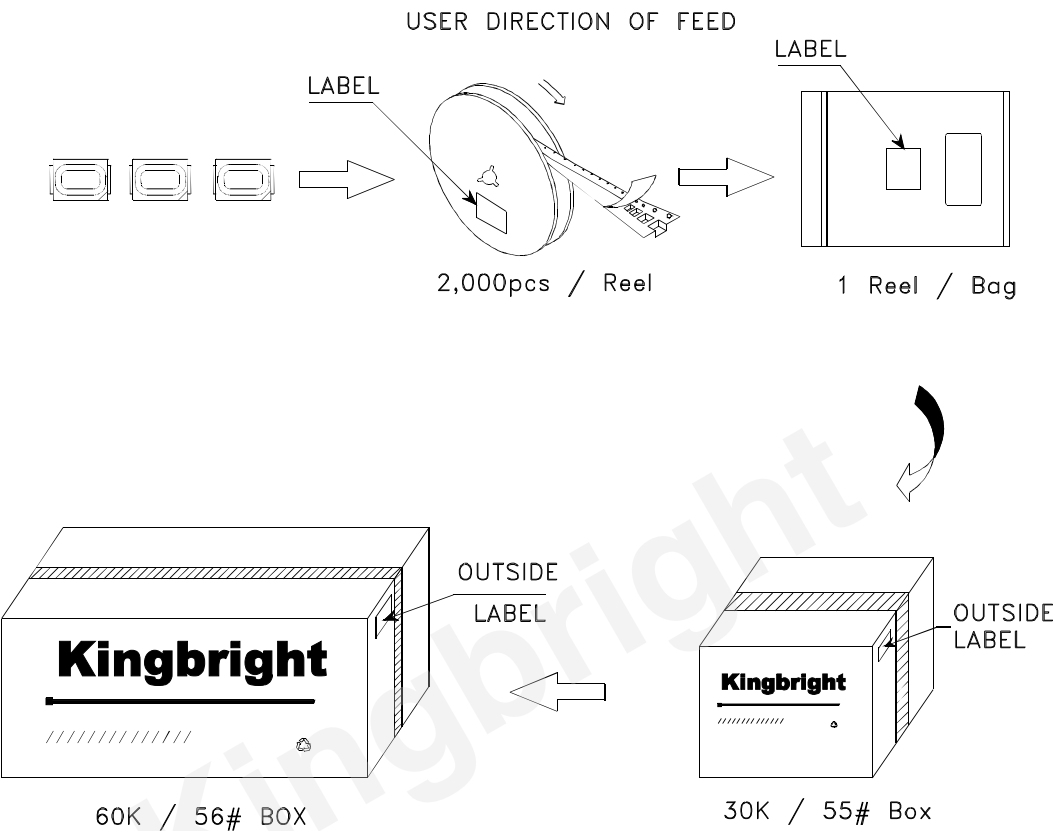



## Tape Dimensions (Units : mm)



PACKING & LABEL SPECIFICATIONS

KA-3021SGS



|  |  |
|--|--|
| <b>Kingbright</b>  |  |
| P/NO: KA-3021xxx   |  |
| QTY: 2,000 pcs   | Q.C. <span style="border: 1px solid black; border-radius: 50%; padding: 2px;">Q C<br/>XX XX XXXX<br/>PASSED</span> |
| S/N: XXXX  |  |
| CODE: XXX  |  |
| LOT NO:  |  |
| <br>XXXXXXXXXXXXXXXXXXXXXXXXXXXX |  |
| RoHS Compliant   |  |