



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

Part Number: APG1005RWF-T-5MAV White

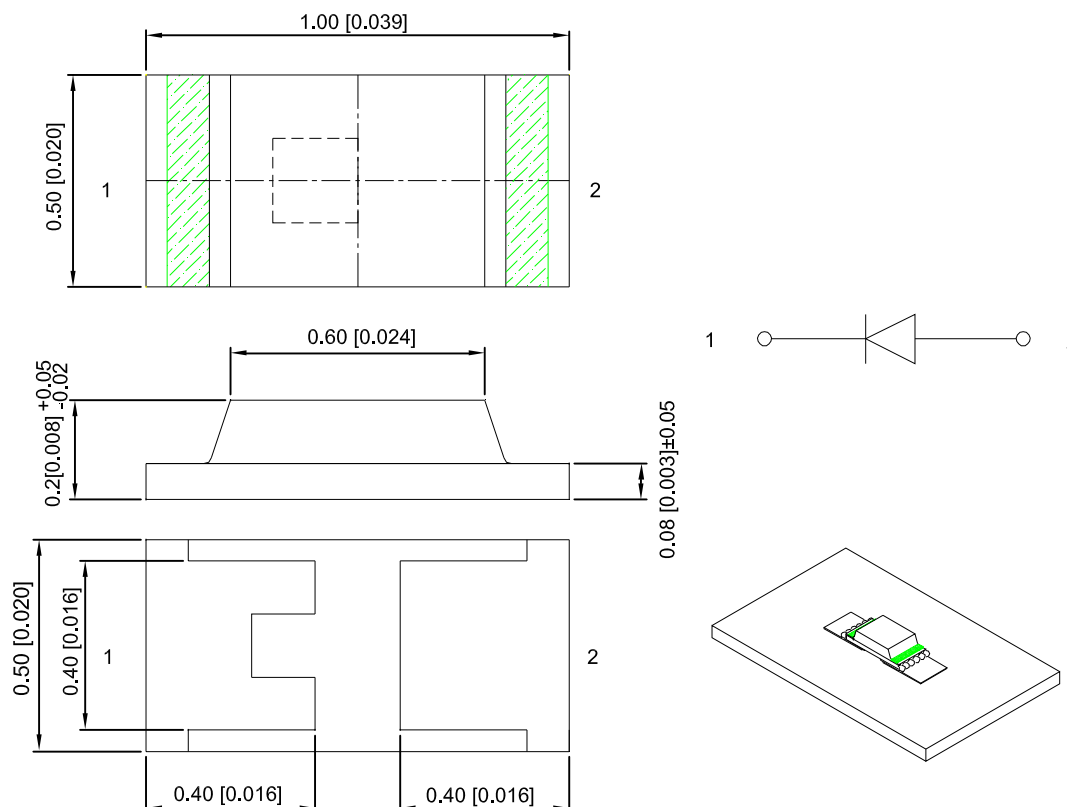
### Features

- 1.0mmX0.5mm SMT LED, 0.2mm thickness.
- Low power consumption.
- Wide viewing angle.
- Compatible with automatic placement equipment.
- Ideal for backlight and indicator.
- Package: 4000pcs / reel.
- Moisture sensitivity level : level 3.
- Low current IF=5mA operating.
- RoHS compliant.

### Descriptions

- The source color devices are made with InGaN on SiC substrate Light Emitting Diode.
- Electrostatic discharge and power surge could damage the LEDs.
- It is recommended to use a wrist band or anti-electrostatic glove when handling the LEDs.
- All devices, equipments and machineries must be electrically grounded.

### Package Dimensions



#### Notes:

1. All dimensions are in millimeters (inches).
2. Tolerance is  $\pm 0.1$  (0.004") 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.



## Selection Guide

| Part No.          | Dice          | Lens Type          | Iv (mcd) [2]<br>@ 5mA |      | Viewing<br>Angle [1] |
|-------------------|---------------|--------------------|-----------------------|------|----------------------|
|                   |               |                    | Min.                  | Typ. | 2θ1/2                |
| APG1005RWF-T-5MAV | White (InGaN) | Yellow Fluorescent | 40                    | 85   | 120°                 |

Notes:

1. θ1/2 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     |
|--------------------|--------------------------|--------|------|------|-------|---------------------|
| V <sub>F</sub> [1] | Forward Voltage          | White  | 2.9  | 3.1  | V     | I <sub>F</sub> =5mA |
| I <sub>R</sub>     | Reverse Current          | White  |      | 50   | uA    | V <sub>R</sub> = 5V |
| X [2]              | Chromaticity Coordinates | White  | 0.31 |      |       |                     |
| Y [2]              |                          |        | 0.31 |      |       |                     |

Notes:

1. Forward Voltage: +/-0.1V.
2. Measurement Tolerance Of The Chromaticity Coordinates Is ±0.01.
3. Excess driving current and/or operating temperature higher than recommended conditions may result in severe light degradation or premature failure.

## Absolute Maximum Ratings at TA=25°C

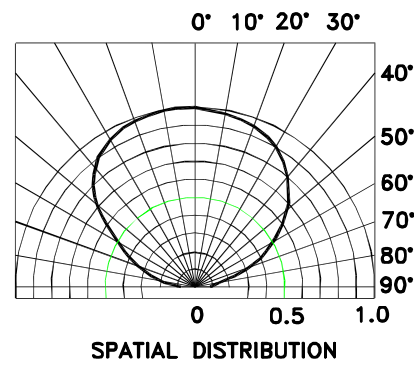
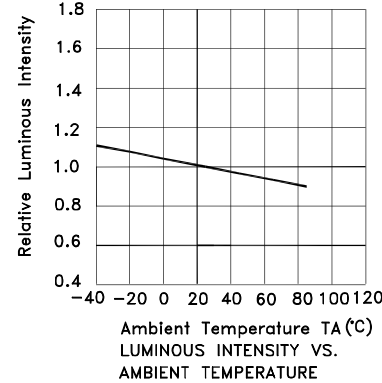
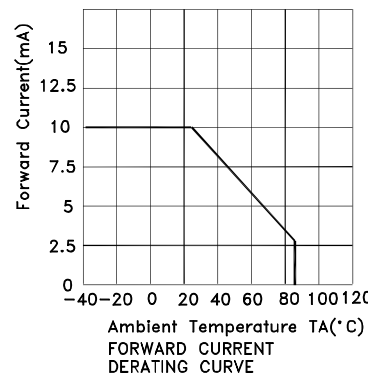
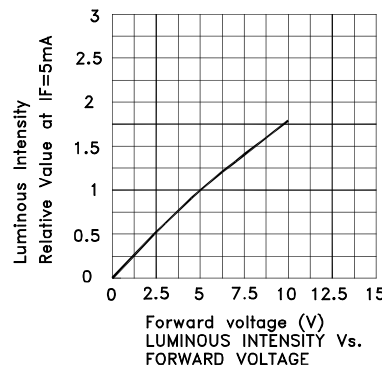
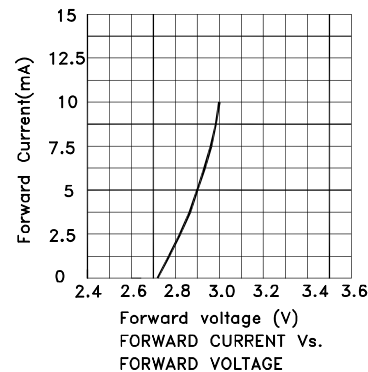
| Parameter                               | White          | Units |
|-----------------------------------------|----------------|-------|
| Power dissipation                       | 32             | mW    |
| DC Forward Current                      | 10             | mA    |
| Peak Forward Current [1]                | 100            | mA    |
| Reverse Voltage                         | 5              | V     |
| Electrostatic Discharge Threshold (HBM) | 1000           | 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.

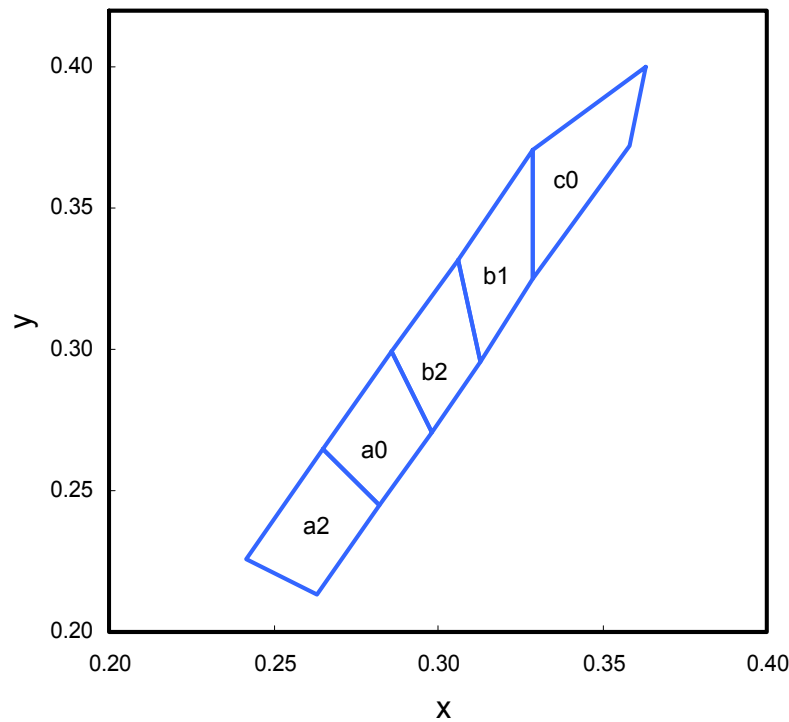
White

APG1005RWF-T-5MAV



APG1005RWF-T-5MAV

White CIE



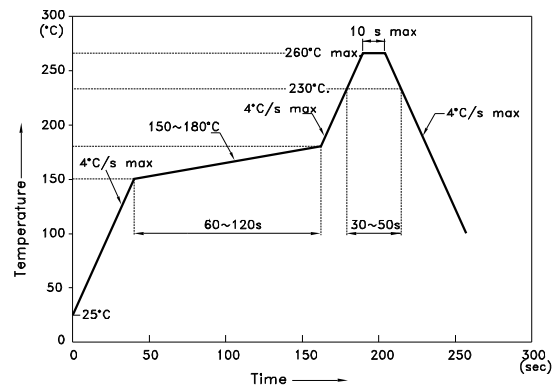
| a2    |       |  | a0    |       |  | b2    |       |  |
|-------|-------|--|-------|-------|--|-------|-------|--|
| x     | y     |  | x     | y     |  | x     | y     |  |
| 0.263 | 0.213 |  | 0.282 | 0.245 |  | 0.298 | 0.271 |  |
| 0.282 | 0.245 |  | 0.298 | 0.271 |  | 0.313 | 0.296 |  |
| 0.265 | 0.265 |  | 0.286 | 0.299 |  | 0.306 | 0.332 |  |
| 0.242 | 0.226 |  | 0.265 | 0.265 |  | 0.286 | 0.299 |  |
| b1    |       |  | c0    |       |  |       |       |  |
| 0.313 | 0.296 |  | 0.329 | 0.325 |  |       |       |  |
| 0.329 | 0.325 |  | 0.358 | 0.372 |  |       |       |  |
| 0.329 | 0.371 |  | 0.363 | 0.400 |  |       |       |  |
| 0.306 | 0.332 |  | 0.329 | 0.371 |  |       |       |  |

Notes:  
Shipment may contain more than one chromaticity regions.  
Orders for single chromaticity region are generally not accepted.  
Measurement tolerance of the chromaticity coordinates is ±0.01.

## APG1005RWF-T-5MAV

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.

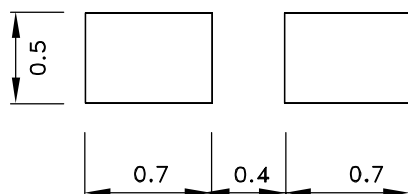
Reflow Soldering Profile For Lead-free SMT Process.



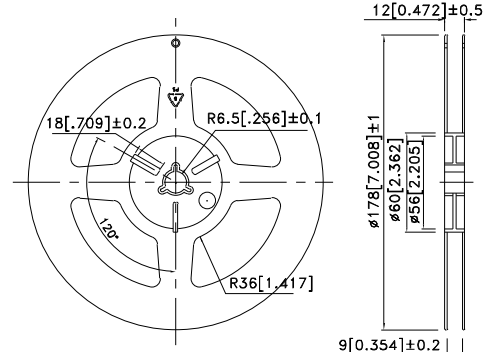
### NOTES:

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.

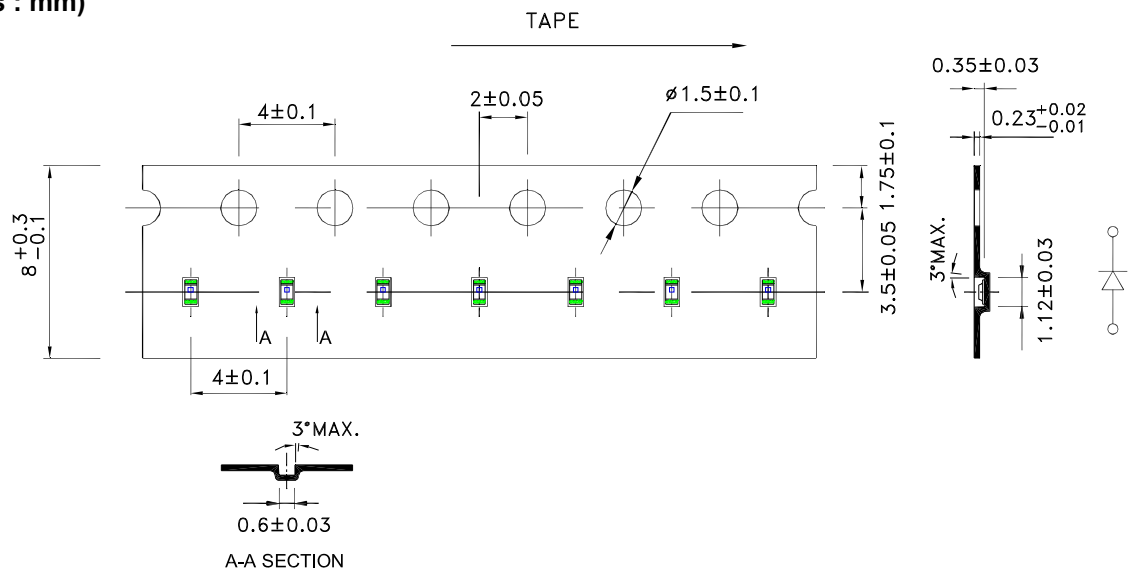
### Recommended Soldering Pattern (Units : mm; Tolerance: $\pm 0.1$ )



### Reel Dimension

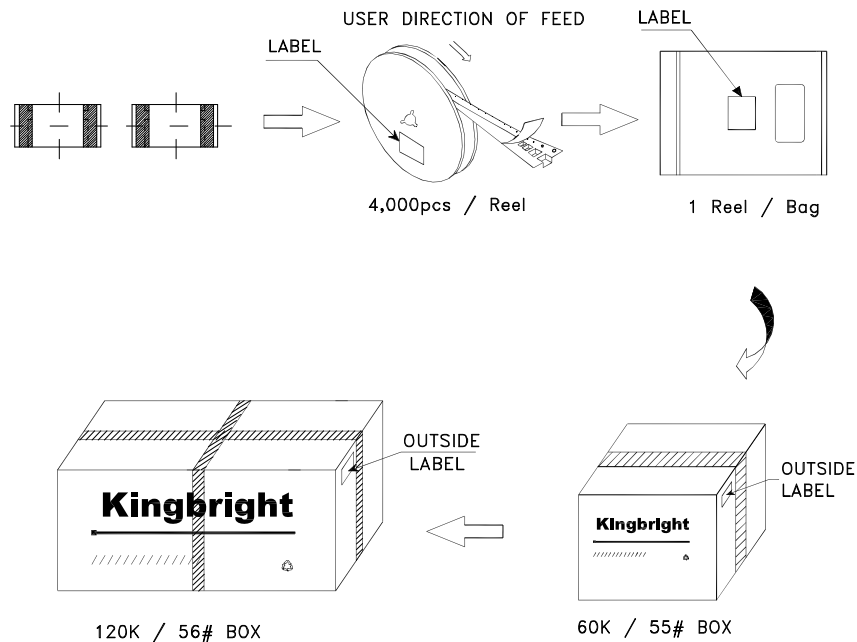


### Tape Dimensions (Units : mm)



## PACKING & LABEL SPECIFICATIONS

## APG1005RWF-T-5MAV



|                                                                                      |      |                             |
|--------------------------------------------------------------------------------------|------|-----------------------------|
| <b>Kingbright</b>                                                                    |      |                             |
| P/NO: APG1005xxx                                                                     |      |                             |
| QTY: 4000 pcs                                                                        | Q.C. | Q C<br>XX-XX-XXXX<br>PASSED |
| S/N: XXXX                                                                            |      |                             |
| CODE: XXX                                                                            |      |                             |
| LOT NO:                                                                              |      |                             |
|  |      |                             |
| RoHS Compliant                                                                       |      |                             |

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