

### PRELIMINARY SPEC



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

Part Number: AAAF5060BESEEVGA

BLUE  
HYPER ORANGE  
GREEN

### Features

- CHIPS CAN BE CONTROLLED SEPARATELY.
- SUITABLE FOR ALL SMT ASSEMBLY AND SOLDER PROCESS.
- AVAILABLE ON TAPE AND REEL.
- PACKAGE: 500PCS / REEL.
- MOISTURE SENSIVITY LEVEL : LEVEL 4.
- RoHS COMPLIANT.

### Description

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

The Hyper Orange source color devices are made with DH InGaAlP on GaAs substrate Light Emitting Diode.

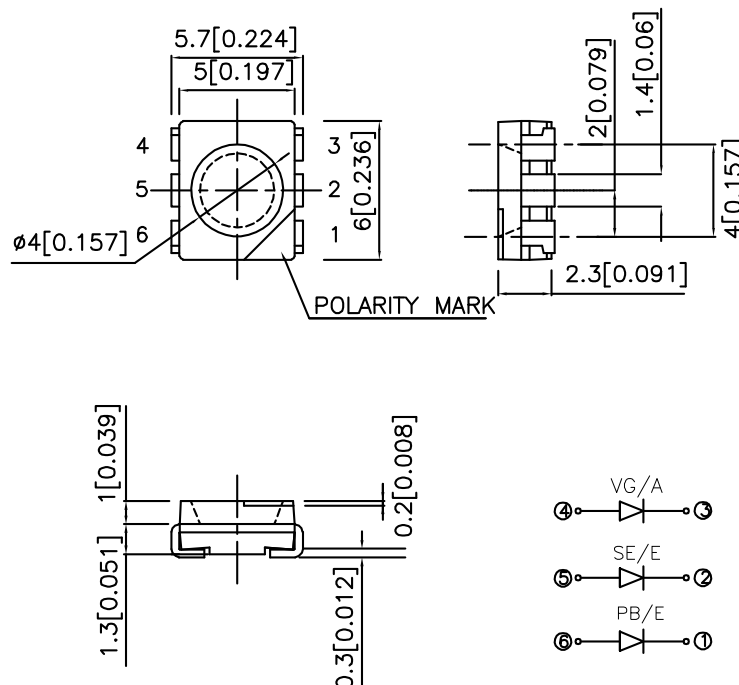
The Green source color devices are made with InGaN on G-SiC Light Emitting Diode.

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.

## Selection Guide

| Part No.         | Dice                  | Lens Type   | Iv (mcd) [2]<br>@30mA *50mA |       | Viewing<br>Angle [1] |
|------------------|-----------------------|-------------|-----------------------------|-------|----------------------|
|                  |                       |             | Min.                        | Typ.  | 2 $\theta$ 1/2       |
| AAAF5060BESEEVGA | BLUE (InGaN)          | WATER CLEAR | 110                         | 250   | 100°                 |
|                  | HYPER ORANGE(InGaAlP) |             | *650                        | *1000 |                      |
|                  | GREEN (InGaN)         |             | 180                         | 350   |                      |

Notes:

1.  $\theta$ 1/2 is the angle from optical centerline where the luminous intensity is 1/2 the optical centerline value.
2. \*Luminous intensity with asterisk is measured at 50mA; Luminous intensity / luminous flux: +/-15%.

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

| Symbol                | Parameter                | Device                        | Typ.              | Max.              | Units | Test Conditions           |
|-----------------------|--------------------------|-------------------------------|-------------------|-------------------|-------|---------------------------|
| $\lambda_{peak}$      | Peak Wavelength          | Blue<br>Hyper Orange<br>Green | 465<br>630<br>520 |                   | nm    | I <sub>F</sub> =20mA      |
| $\lambda_D$ [1]       | Dominant Wavelength      | Blue<br>Hyper Orange<br>Green | 470<br>621<br>525 |                   | nm    | I <sub>F</sub> =20mA      |
| $\Delta\lambda_{1/2}$ | Spectral Line Half-width | Blue<br>Hyper Orange<br>Green | 25<br>20<br>35    |                   | nm    | I <sub>F</sub> =20mA      |
| C                     | Capacitance              | Blue<br>Hyper Orange<br>Green | 110<br>25<br>100  |                   | pF    | V <sub>F</sub> =0V;f=1MHz |
| V <sub>F</sub> [2]    | Forward Voltage          | Blue<br>Hyper Orange<br>Green | 3.7<br>2.0<br>3.2 | 4.3<br>2.5<br>4.0 | V     | I <sub>F</sub> =20mA      |
| I <sub>R</sub>        | Reverse Current          | Blue<br>Hyper Orange<br>Green |                   | 10<br>10<br>10    | uA    | V <sub>R</sub> = 5V       |

Notes:

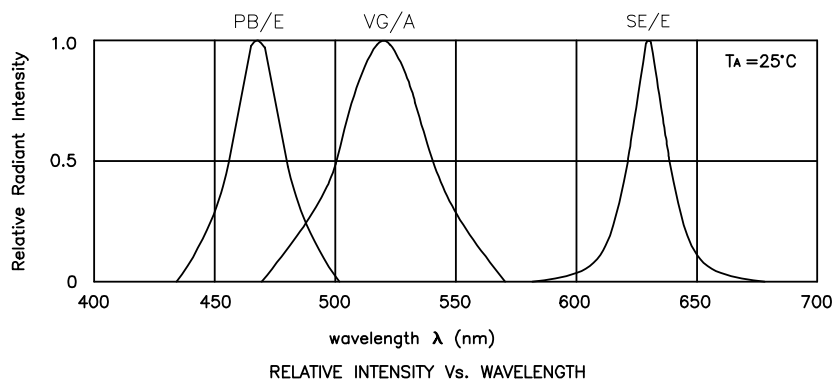
- 1.Wavelength: +/-1nm.
2. Forward Voltage: +/-0.1V.

## Absolute Maximum Ratings at TA=25°C

| Parameter                       | Blue           | Hyper Orange | Green | Units |
|---------------------------------|----------------|--------------|-------|-------|
| Power dissipation [2]           | 350            |              |       | mW    |
| DC Forward Current              | 30             | 50           | 50    | mA    |
| Peak Forward Current [1]        | 160            | 195          | 100   | mA    |
| Reverse Voltage                 | 5              | 5            | 5     | V     |
| Operating / Storage Temperature | -40°C To +85°C |              |       |       |

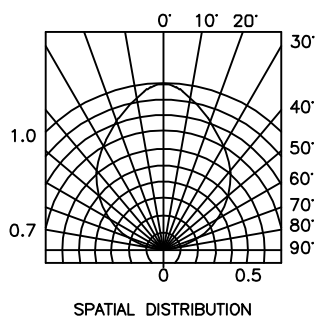
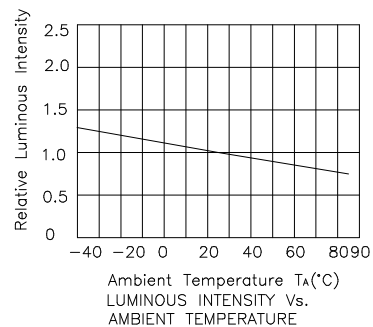
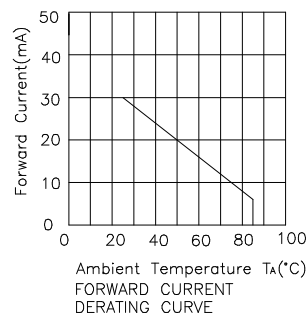
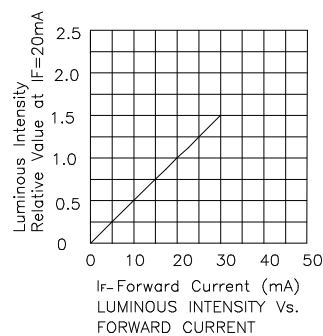
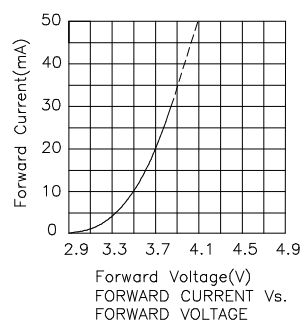
Notes:

1. 1/10 Duty Cycle, 0.1ms Pulse Width.
2. Within 350mW at all chips are lightened.

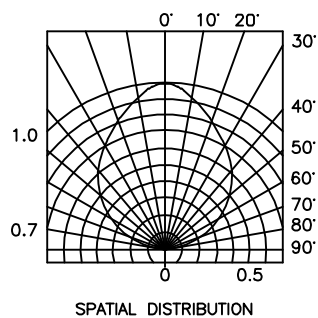
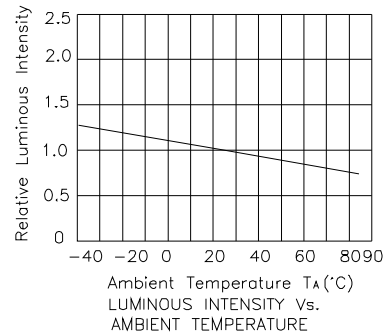
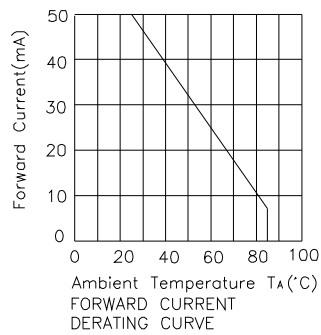
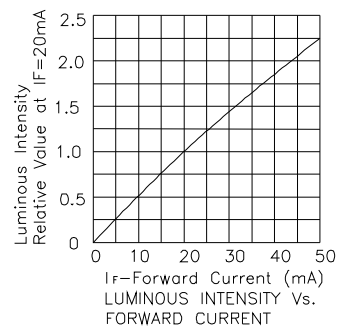
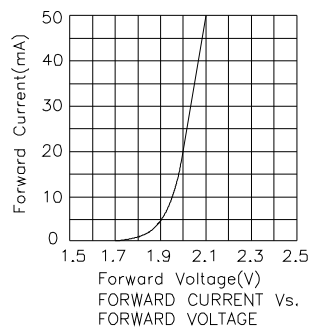


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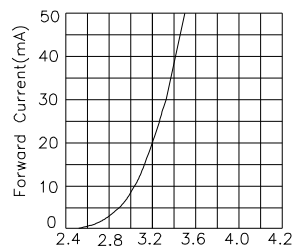
Blue



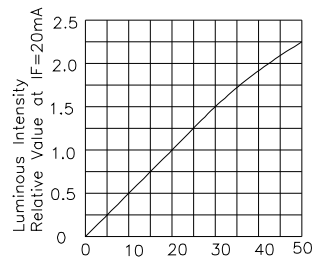
## Hyper Orange



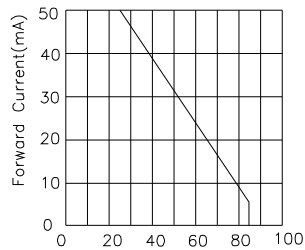
## Green



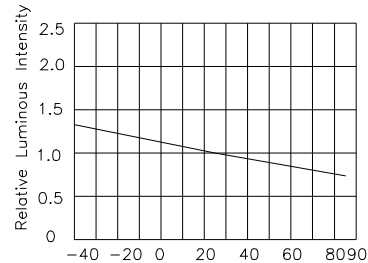
Forward Voltage(V)  
FORWARD CURRENT Vs  
FORWARD VOLTAGE



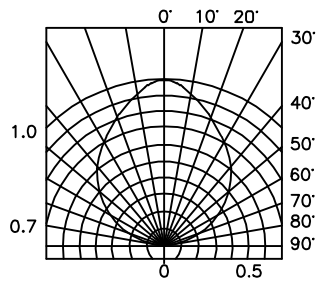
$I_f$ -Forward Current (mA)  
LUMINOUS INTENSITY Vs.  
FORWARD CURRENT



Ambient Temperature  $T_a$  (°C)  
FORWARD CURRENT  
DERATING CURVE



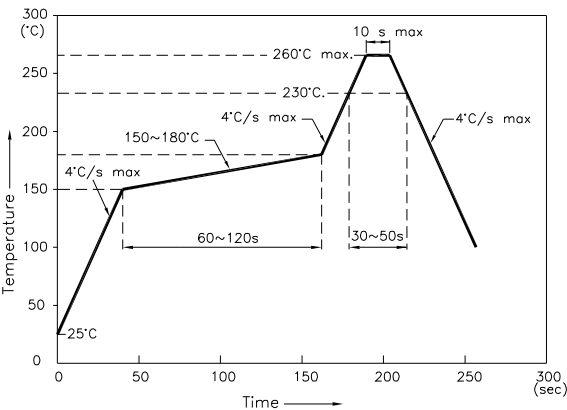
Ambient Temperature  $T_a$  (°C)  
LUMINOUS INTENSITY Vs.  
AMBIENT TEMPERATURE



SPATIAL DISTRIBUTION

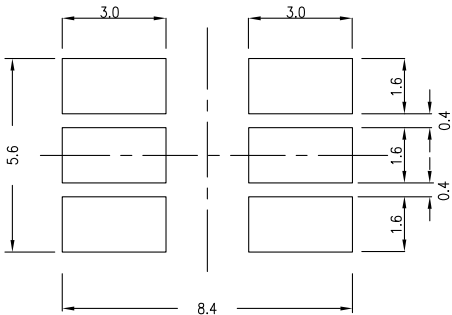
## AAAF5060BESEEVGA

Reflow Soldering Profile For Lead-free SMT Process.

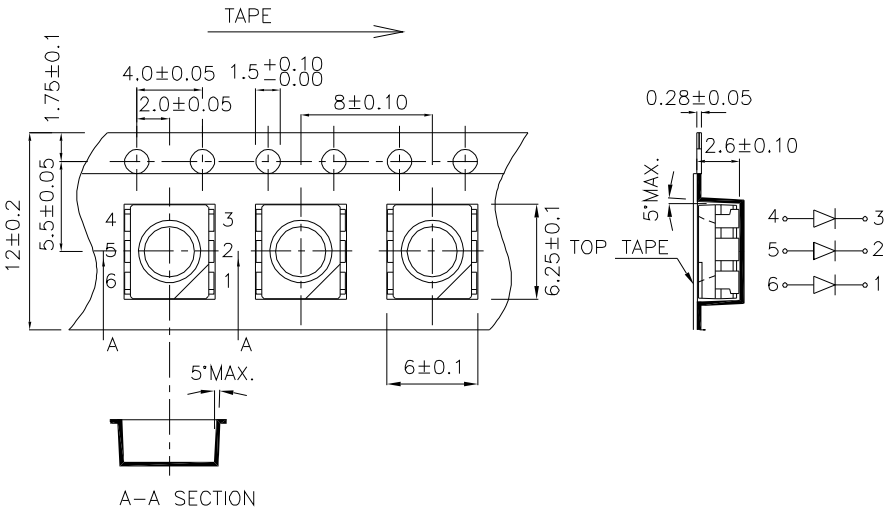


- NOTES:
- 1.We recommend the reflow temperature 245°C(+/-5°C).The maximum soldering temperature should be limited to 260°C.
  - 2.Don't cause stress to the epoxy resin while it is exposed to high temperature.
  - 3.Number of reflow process shall be 2 times or less.

### Recommended Soldering Pattern (Units : mm; Tolerance: ± 0.1)

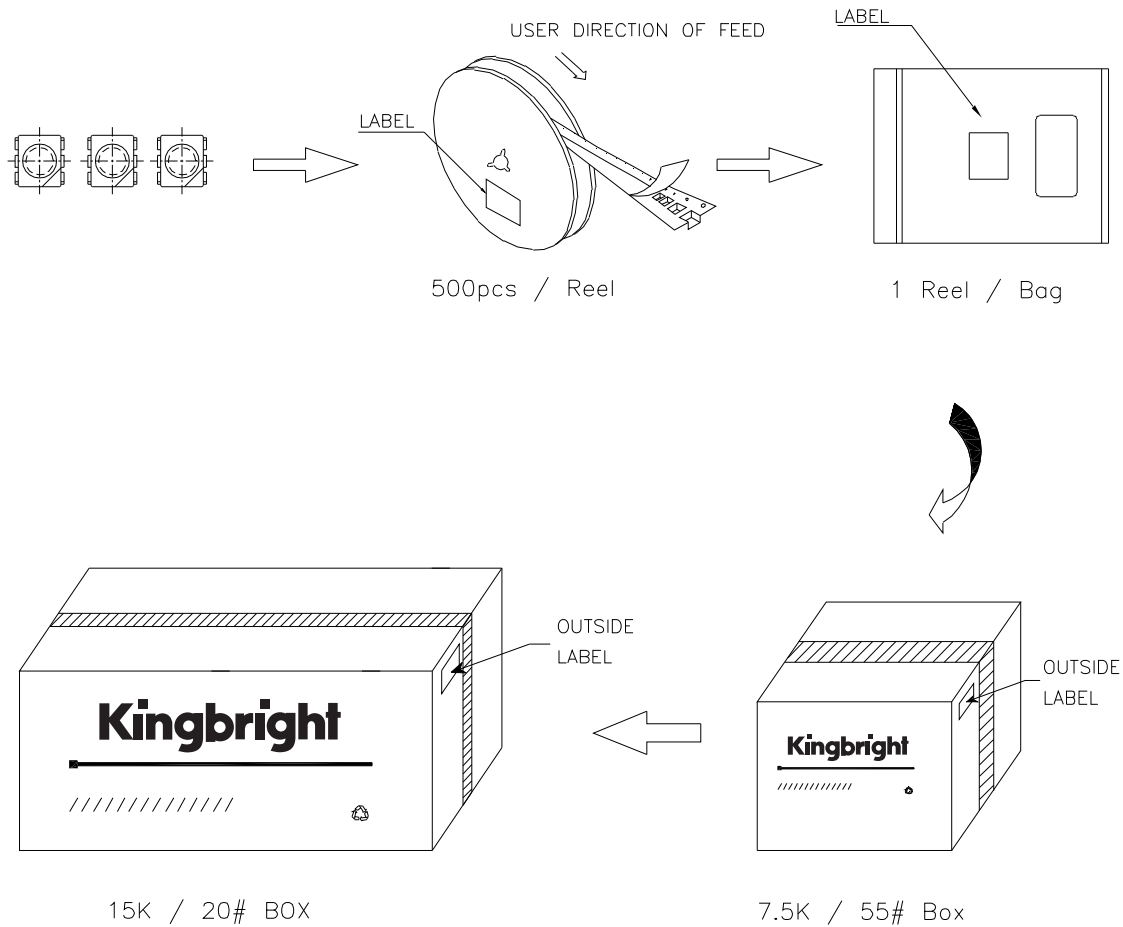


### Tape Specifications (Units : mm)



PACKING & LABEL SPECIFICATIONS

AAAF5060BESEEVGA



|                                                                                      |                                               |
|--------------------------------------------------------------------------------------|-----------------------------------------------|
| <b>Kingbright</b>                                                                    |                                               |
| P/NO: AAAF5060xxx                                                                    |                                               |
| QTY: 500 pcs                                                                         | Q.C. <div>Q C<br/>xx xx. xxx<br/>PASSED</div> |
| S/N: XXXX                                                                            |                                               |
| CODE: XXX                                                                            |                                               |
| LOT NO:                                                                              |                                               |
|  |                                               |
| MADE IN CHINA                                                                        | RoHS Compliant                                |