

### PRELIMINARY SPEC

Part Number: AAF5060PBESEEVGA



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

BLUE  
HYPER ORANGE  
GREEN

### Features

- OUTSTANDING MATERIAL EFFICIENCY.
- RELIABLE AND RUGGED.
- WATER CLEAR LENS.
- LOW POWER CONSUMPTION.
- ONE BLUE, ONE ORANGE AND ONE GREEN CHIPS IN ONE PACKAGE.
- CAN PRODUCE ANY COLOR IN VISIBLE SPECTRUM, INCLUDING WHITE LIGHT.
- MOISTURE SENSITIVITY 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.

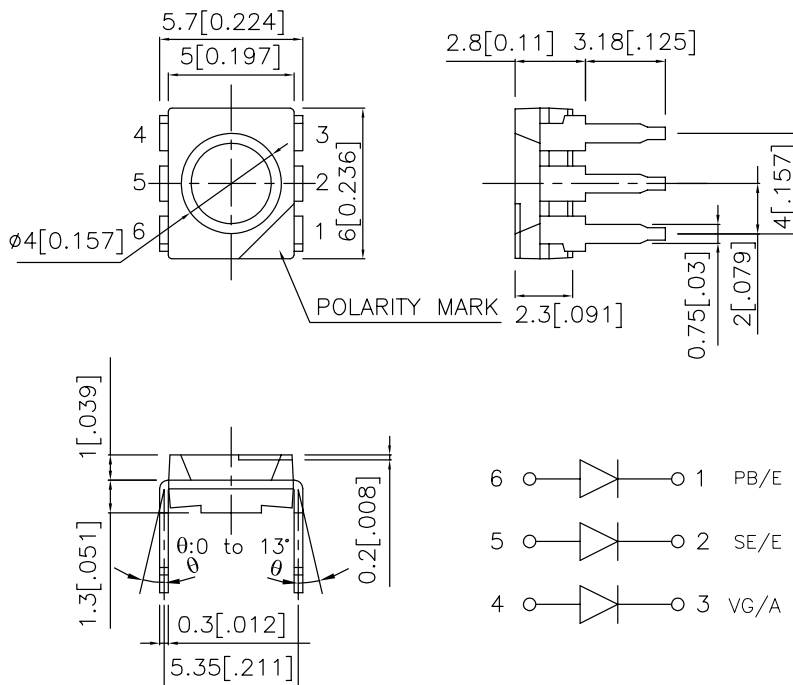
The Green source color devices are made with InGaN on G-SiC Light Emitting Diode.

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. Lead spacing is measured where the leads emerge from package.
4. 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 θ 1/2              |
| AAF5060PBESEEVGA | BLUE (InGaN)          | WATER CLEAR | 110                         | 250   | 100°                 |
|                  | HYPER ORANGE(InGaAlP) |             | *650                        | *1000 |                      |
|                  | GREEN (InGaN)         |             | 180                         | 350   |                      |

Notes:

1. θ1/2 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           |
|--------------------|--------------------------|-------------------------------|-------------------|-------------------|-------|---------------------------|
| λ <sub>peak</sub>  | Peak Wavelength          | Blue<br>Hyper Orange<br>Green | 465<br>630<br>520 |                   | nm    | I <sub>F</sub> =20mA      |
| λ <sub>D</sub> [1] | Dominant Wavelength      | Blue<br>Hyper Orange<br>Green | 470<br>621<br>525 |                   | nm    | I <sub>F</sub> =20mA      |
| Δλ <sub>1/2</sub>  | 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:

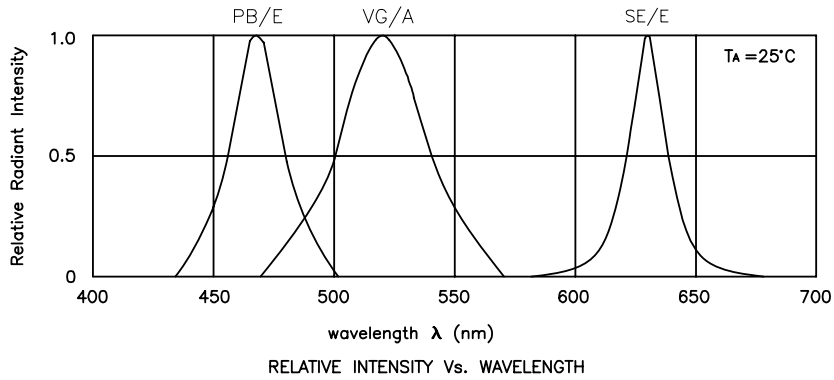
1. Wavelength: +/-1nm.
2. Forward Voltage: +/-0.1V.

## Absolute Maximum Ratings at TA=25°C

| Parameter                       | Blue                | Hyper Orange | Green | Units |
|---------------------------------|---------------------|--------------|-------|-------|
| Power dissipation [1]           | 350                 |              |       | mW    |
| DC Forward Current              | 30                  | 50           | 50    | mA    |
| Peak Forward Current [2]        | 160                 | 195          | 100   | mA    |
| Reverse Voltage                 | 5                   | 5            | 5     | V     |
| Operating / Storage Temperature | -40°C To +85°C      |              |       |       |
| Lead Solder Temperature [3]     | 260°C For 3 Seconds |              |       |       |
| Lead Solder Temperature [4]     | 260°C For 5 Seconds |              |       |       |

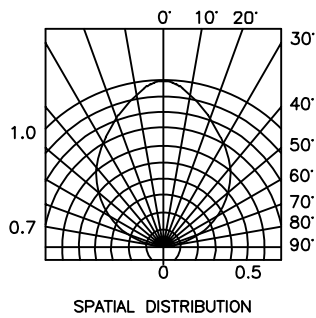
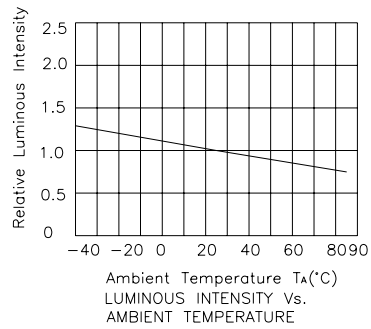
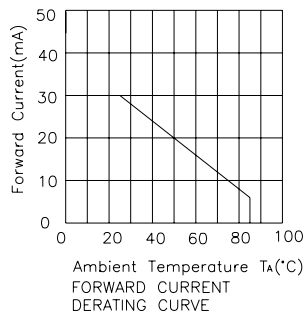
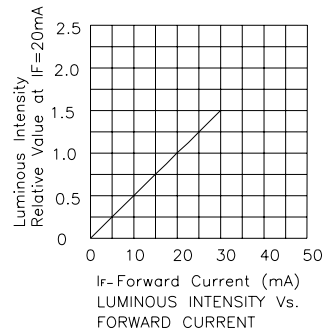
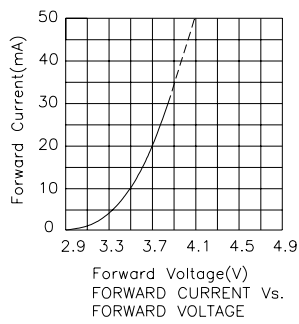
Notes:

1. Within 350mW at all chips are lightened.
2. 1/10 Duty Cycle, 0.1ms Pulse Width.
3. 2mm below package base.
4. 5mm below package base.



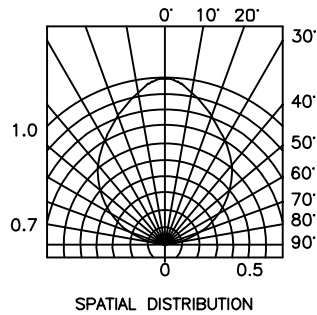
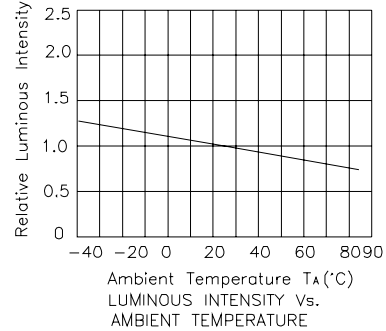
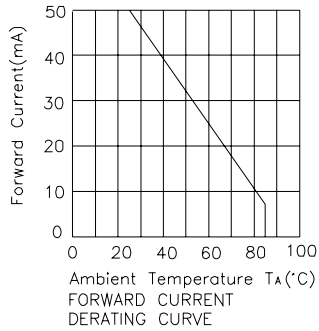
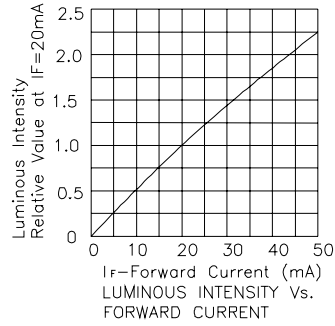
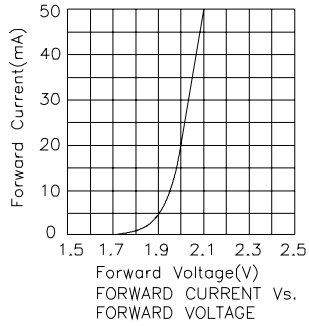
## AAF5060PBESEEVGA

Blue



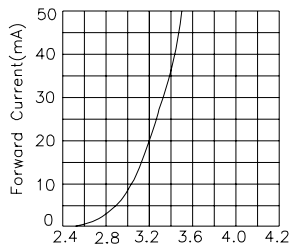
# Kingbright

## Hyper Orange

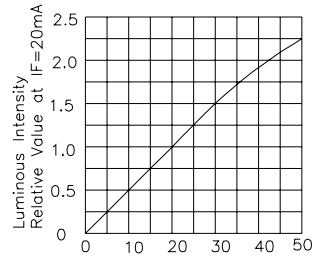


# Kingbright

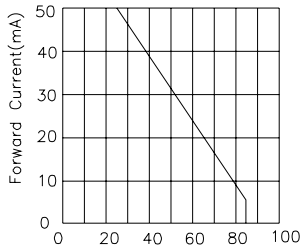
## Green



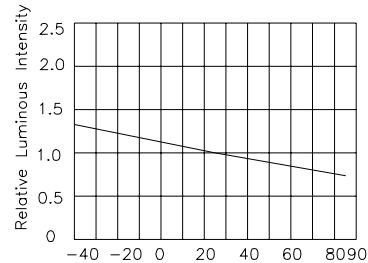
Forward Voltage(V)  
FORWARD CURRENT Vs  
FORWARD VOLTAGE



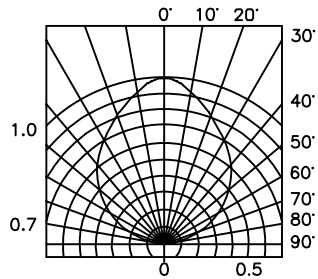
If-Forward Current (mA)  
LUMINOUS INTENSITY Vs.  
FORWARD CURRENT



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



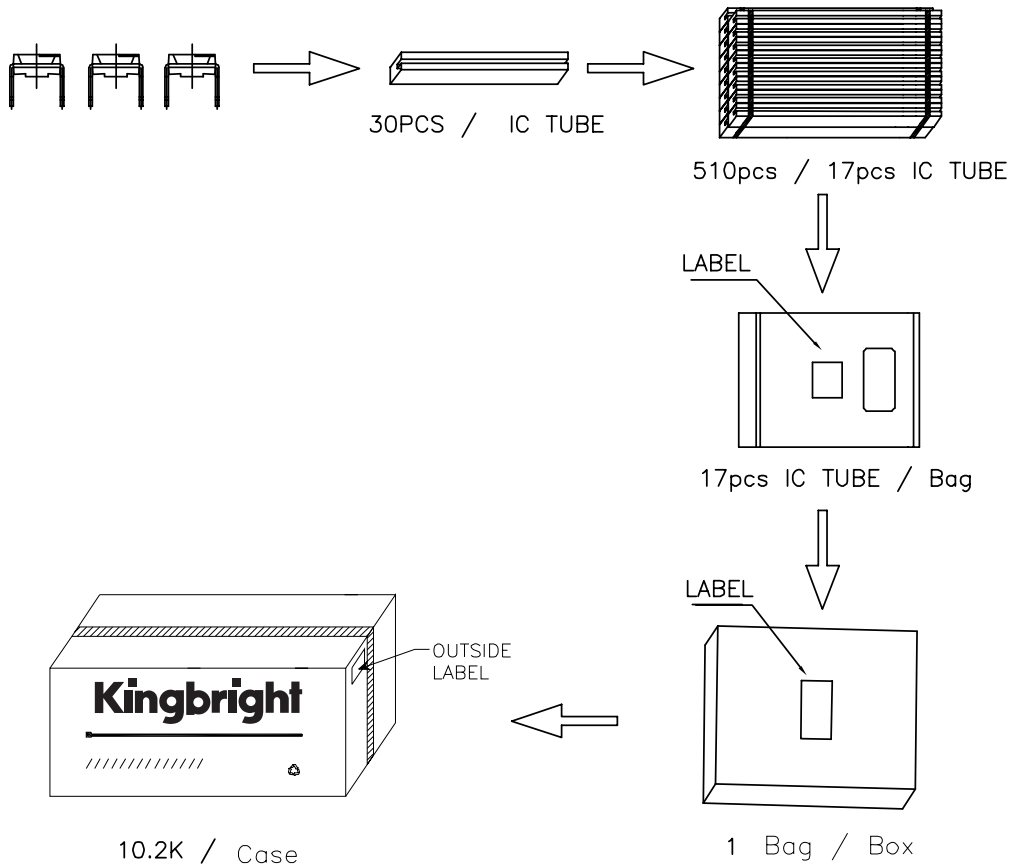
Ambient Temperature  $T_a$  (°C)  
LUMINOUS INTENSITY Vs.  
AMBIENT TEMPERATURE




SPATIAL DISTRIBUTION

**PACKING & LABEL SPECIFICATIONS**

**AAF5060PBESEEVGA**



|  |  |
|--|--|
| <b>Kingbright</b>  |  |
| P/NO: AAF5060xxx   |  |
| QTY: 30 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  | Date   |
| CODE: XXX  |  |
| LOT NO:  |  |
|  |  |
| MADE IN CHINA  | RoHS Compliant   |