

### PRELIMINARY SPEC



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

Part Number: APFA3210QBCVGASEKC

BLUE  
GREEN  
SUPER BRIGHT ORANGE

### Features

- LOW POWER CONSUMPTION.
- 3.2mmX1.0mm RIGHT ANGLE SMT LED,1.5mm THICKNESS.
- WIDE VIEWING ANGLE.
- PACKAGE : 2000PCS / REEL.
- MOISTURE SENSITIVITY LEVEL : LEVEL 3
- RoHS COMPLIANT.

### Description

The Blue source color devices are made with GaN on Sapphire Light Emitting Diode.

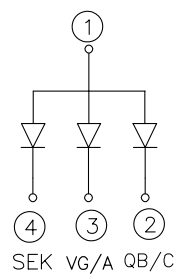
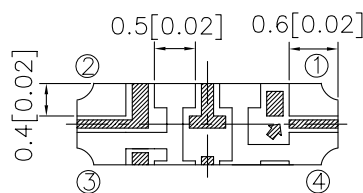
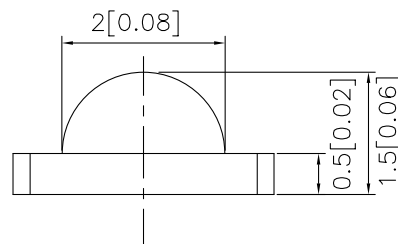
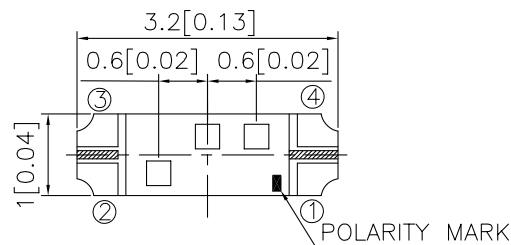
The Green source color devices are made with InGaN on G-SiC Light Emitting Diode.

The Super Bright Orange source color devices are made with DH InGaAlP on GaAs substrate 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  $\pm 0.1$  (0.004") unless otherwise noted.
3. Specifications are subject to change without notice.

## Selection Guide

| Part No.           | Dice                          | Lens Type   | Iv (mcd)[2]<br>@ 20mA |      | Viewing<br>Angle[1] |
|--------------------|-------------------------------|-------------|-----------------------|------|---------------------|
|                    |                               |             | Min.                  | Typ. | 2θ1/2               |
| APFA3210QBCVGASEKC | BLUE (GaN)                    | WATER CLEAR | 36                    | 70   | 130°                |
|                    | GREEN (InGaN)                 |             | 50                    | 200  |                     |
|                    | SUPER BRIGHT ORANGE (InGaAlP) |             | 70                    | 200  |                     |

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 / Luminous Flux:  $\pm 15\%$ .

## Electrical / Optical Characteristics at T<sub>A</sub>=25°C

| Symbol                | Parameter                | Device                               | Typ.              | Max.              | Units | Test Conditions            |
|-----------------------|--------------------------|--------------------------------------|-------------------|-------------------|-------|----------------------------|
| $\lambda_{peak}$      | Peak Wavelength          | Blue<br>Green<br>Super Bright Orange | 470<br>520<br>610 |                   | nm    | I <sub>F</sub> =20mA       |
| $\lambda_D$ [1]       | Dominant Wavelength      | Blue<br>Green<br>Super Bright Orange | 470<br>525<br>601 |                   | nm    | I <sub>F</sub> =20mA       |
| $\Delta\lambda_{1/2}$ | Spectral Line Half-width | Blue<br>Green<br>Super Bright Orange | 25<br>35<br>29    |                   | nm    | I <sub>F</sub> =20mA       |
| C                     | Capacitance              | Blue<br>Green<br>Super Bright Orange | 105<br>100<br>15  |                   | pF    | V <sub>F</sub> =0V; f=1MHz |
| V <sub>F</sub> [2]    | Forward Voltage          | Blue<br>Green<br>Super Bright Orange | 3.3<br>3.2<br>2.1 | 4.0<br>4.0<br>2.5 | V     | I <sub>F</sub> =20mA       |
| I <sub>R</sub>        | Reverse Current          | Blue<br>Green<br>Super Bright Orange |                   | 10<br>10<br>10    | uA    | V <sub>R</sub> = 5V        |

Notes:

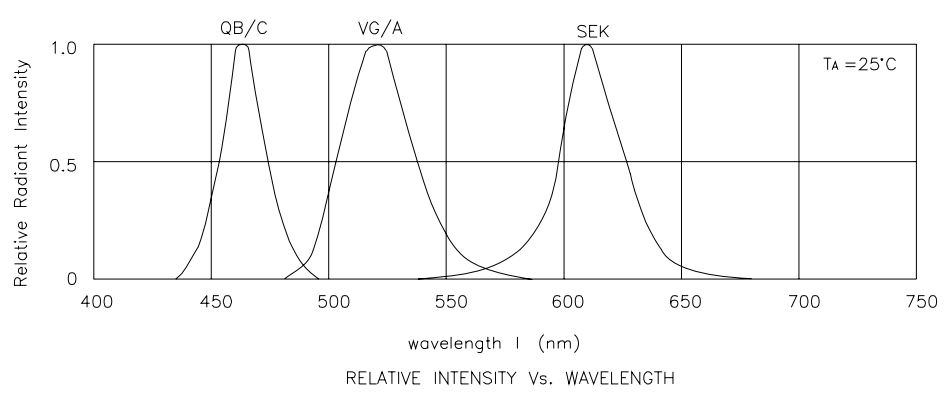
1. Wavelength:  $\pm 1\text{nm}$ .
2. Forward Voltage:  $\pm 0.1\text{V}$ .

## Absolute Maximum Ratings at T<sub>A</sub>=25°C

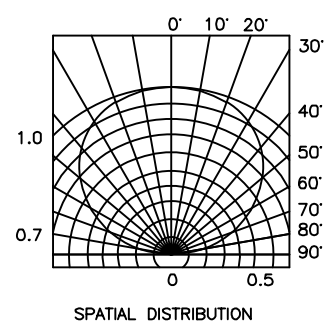
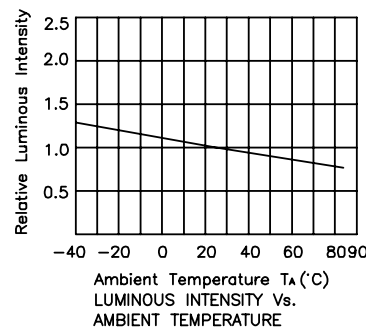
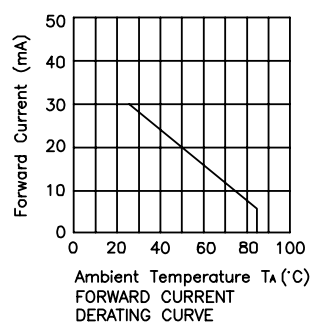
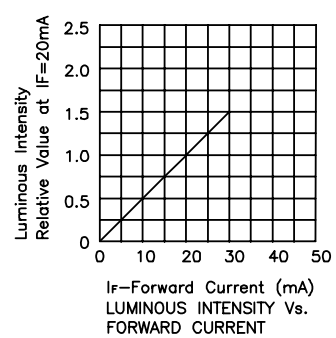
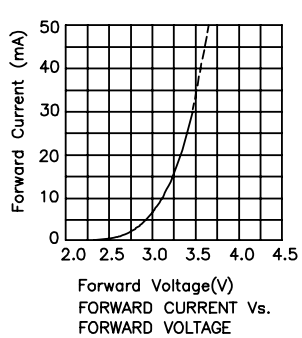
| Parameter                     | Blue           | Green | Super Bright Orange | Units |
|-------------------------------|----------------|-------|---------------------|-------|
| Power dissipation             | 120            | 120   | 75                  | mW    |
| DC Forward Current            | 30             | 30    | 30                  | mA    |
| Peak Forward Current [1]      | 150            | 100   | 195                 | mA    |
| Reverse Voltage               | 5              | 5     | 5                   | V     |
| Operating/Storage Temperature | -40°C To +85°C |       |                     |       |

Note:

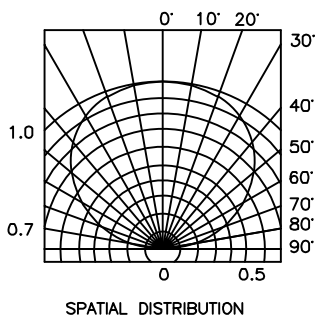
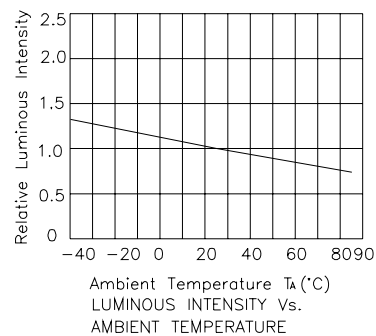
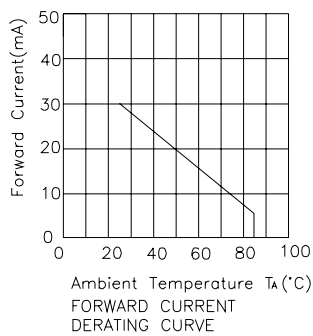
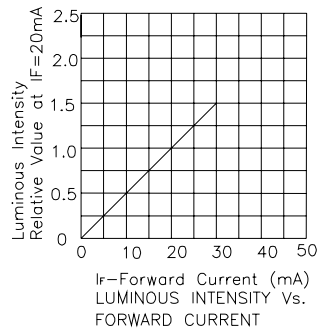
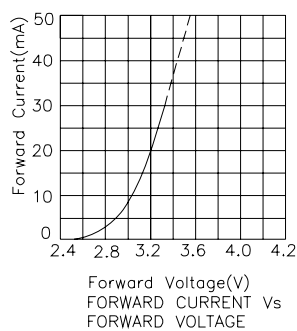
1. 1/10 Duty Cycle, 0.1ms Pulse Width.



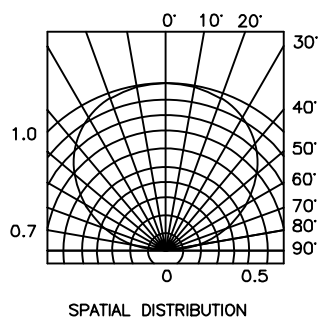
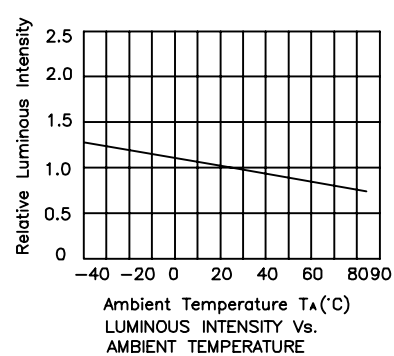
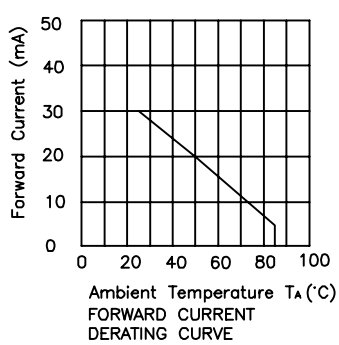
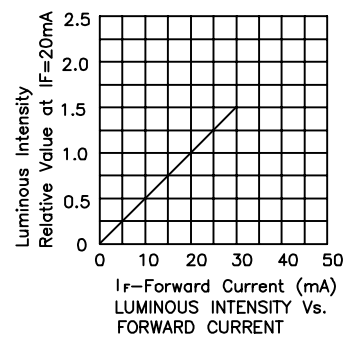
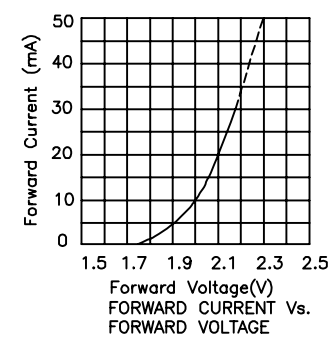
## APFA3210QBCVGASEKC Blue



Green

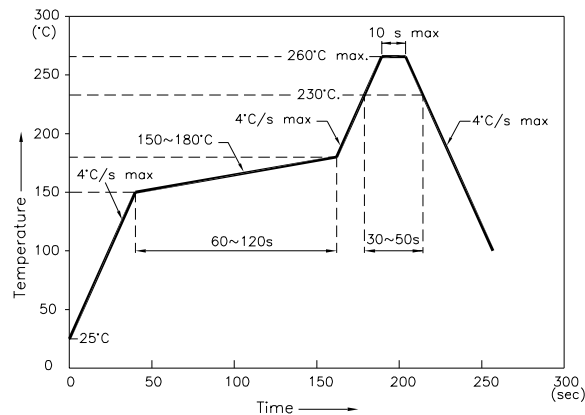


## Super Bright Orange



## APFA3210QBCVGASEKC

Reflow Soldering Profile For Lead-free SMT Process.

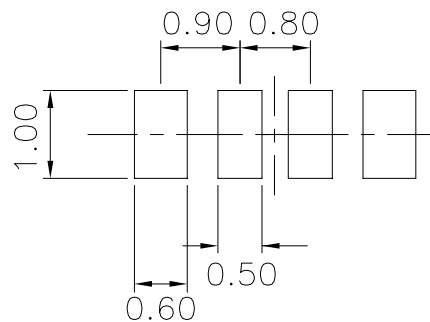


### NOTES:

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.

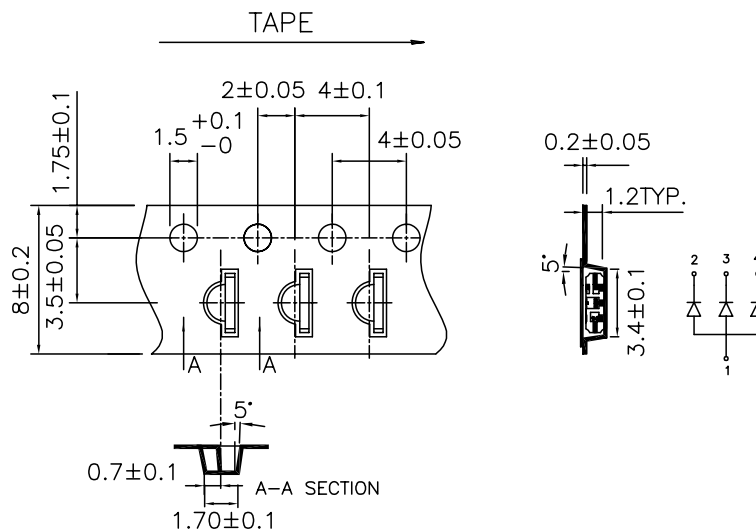
### Recommended Soldering Pattern

(Units: mm ; Tolerance:  $\pm 0.1$ )



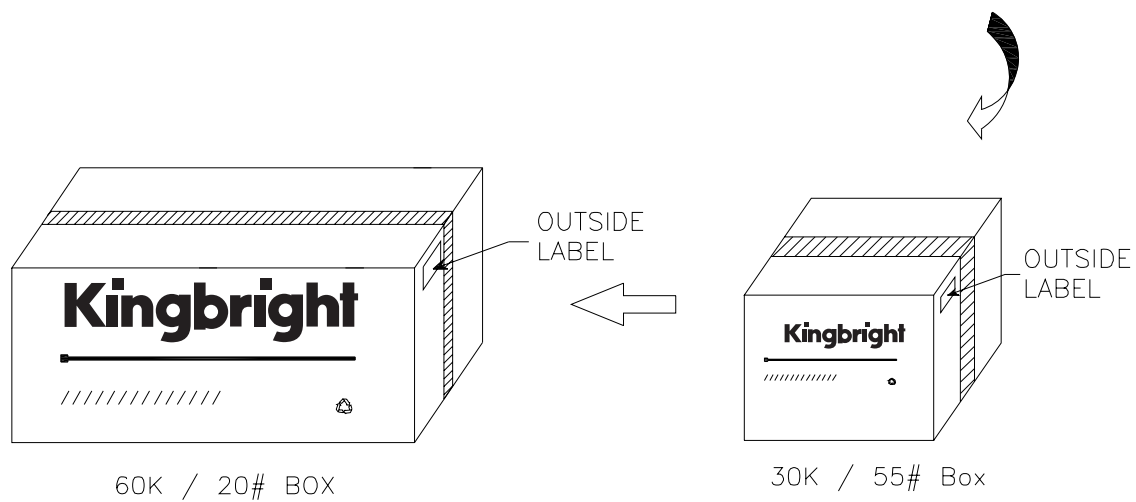
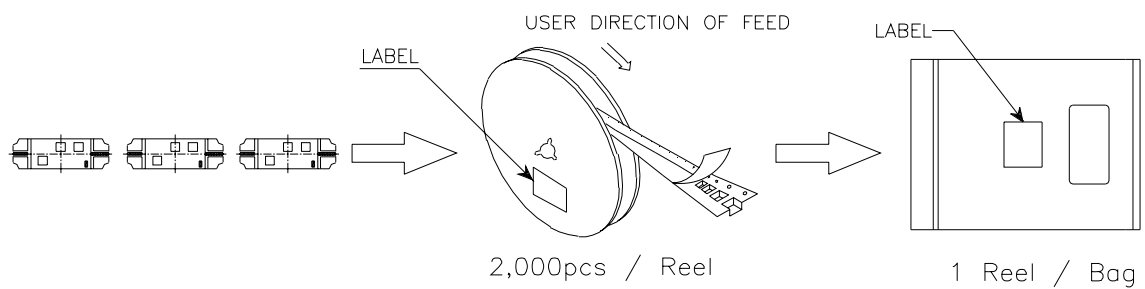
### Tape Specifications

(Units : mm)



PACKING & LABEL SPECIFICATIONS

APFA3210QBCVGASEKC



|                                                                                      |                                               |
|--------------------------------------------------------------------------------------|-----------------------------------------------|
| <b>Kingbright</b>                                                                    |                                               |
| P/N : APFA3210xxx                                                                    |                                               |
| QTY: 2,000 pcs                                                                       | Q.C. <div>Q C<br/>xx xx xxxx<br/>PASSED</div> |
| S/N: XXXX                                                                            |                                               |
| CODE: XXX                                                                            |                                               |
| LOT NO:                                                                              |                                               |
|  |                                               |
| MADE IN CHINA                                                                        | RoHS Compliant                                |