



Chipsmall Limited consists of a professional team with an average of over 10 year of expertise in the distribution of electronic components. Based in Hongkong, we have already established firm and mutual-benefit business relationships with customers from,Europe,America and south Asia,supplying obsolete and hard-to-find components to meet their specific needs.

With the principle of “Quality Parts,Customers Priority,Honest Operation,and Considerate Service”,our business mainly focus on the distribution of electronic components. Line cards we deal with include Microchip,ALPS,ROHM,Xilinx,Pulse,ON,Everlight and Freescale. Main products comprise IC,Modules,Potentiometer,IC Socket,Relay,Connector.Our parts cover such applications as commercial,industrial, and automotives areas.

We are looking forward to setting up business relationship with you and hope to provide you with the best service and solution. Let us make a better world for our industry!



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

Part Number: APF3236SURKVGAPBA

Hyper Red  
Green  
Blue

### Features

- 3.2mmx3.6mm SMT LED, 1.1mm thickness.
- Low power consumption.
- One red, one green and one blue chips in one package.
- Can produce any color in visible spectrum, including white light.
- Package : 1000pcs / reel.
- Moisture sensitivity level : level 3.
- RoHS compliant.

### Description

The Hyper Red source color devices are made with AlGaInP on GaAs substrate Light Emitting Diode.

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

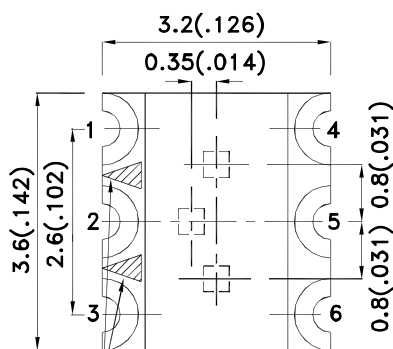
The Blue source color devices are made with InGaN on SiC Light Emitting Diode.

Static electricity and surge damage the LEDs.

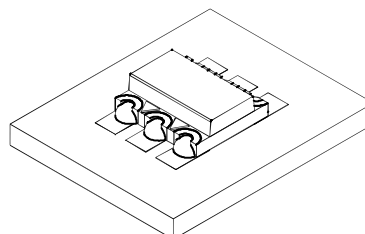
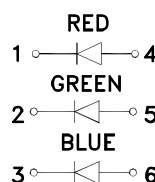
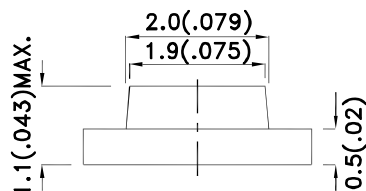
It is recommended to use a wrist band or anti-electrostatic glove when handling the LEDs.

All devices, equipment and machinery must be electrically grounded.

### Package Dimensions



POLARITY MARK



#### Notes:

1. All dimensions are in millimeters (inches).
2. Tolerance is  $\pm 0.2(0.008)$  unless otherwise noted.
3. Specifications are subject to change without 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>@ 20mA |      | Viewing<br>Angle [1] |
|-------------------|---------------------|-------------|------------------------|------|----------------------|
|                   |                     |             | Min.                   | Typ. | 2θ1/2                |
| APF3236SURKVGAPBA | Hyper Red (AlGaInP) | WATER CLEAR | 70                     | 220  | 120°                 |
|                   | Green (InGaN)       |             | 50                     | 150  |                      |
|                   | Blue (InGaN)        |             | 18                     | 60   |                      |

### Notes:

1. θ1/2 is the angle from optical centerline where the luminous intensity is 1/2 the optical centerline value.
2. Luminous intensity/ luminous Flux: +/-15%.

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

| Symbol | Parameter                | Device                     | Typ.               | Max.           | Units | Test Conditions |
|--------|--------------------------|----------------------------|--------------------|----------------|-------|-----------------|
| λpeak  | Peak Wavelength          | Hyper Red<br>Green<br>Blue | 650<br>520<br>468  |                | nm    | IF=20mA         |
| λD [1] | Dominant Wavelength      | Hyper Red<br>Green<br>Blue | 630<br>525<br>470  |                | nm    | IF=20mA         |
| Δλ1/2  | Spectral Line Half-width | Hyper Red<br>Green<br>Blue | 28<br>35<br>21     |                | nm    | IF=20mA         |
| C      | Capacitance              | Hyper Red<br>Green<br>Blue | 35<br>100<br>100   |                | pF    | VF=0V;f=1MHz    |
| VF [2] | Forward Voltage          | Hyper Red<br>Green<br>Blue | 1.95<br>3.2<br>3.2 | 2.5<br>4<br>4  | V     | IF=20mA         |
| IR     | Reverse Current          | Hyper Red<br>Green<br>Blue |                    | 10<br>10<br>10 | uA    | VR=5V           |

### Notes:

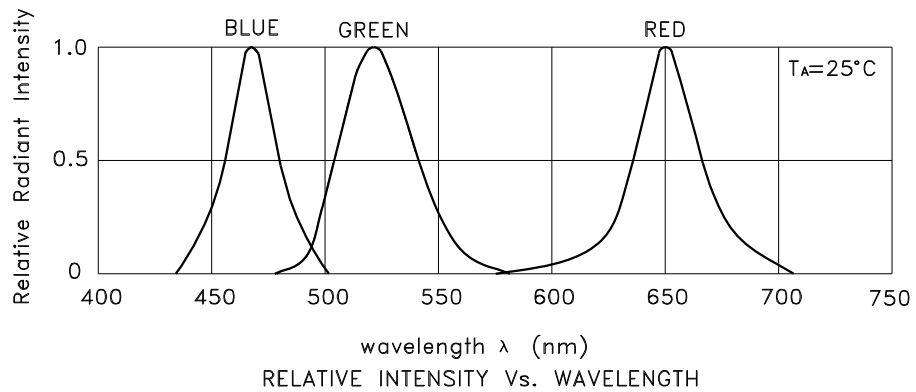
1. Wavelength: +/-1nm.
2. Forward Voltage: +/-0.1V.

## Absolute Maximum Ratings at TA=25°C

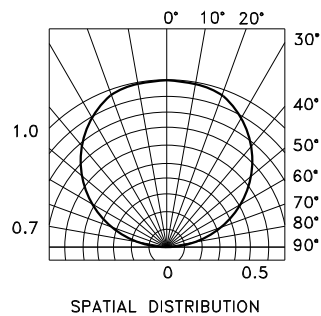
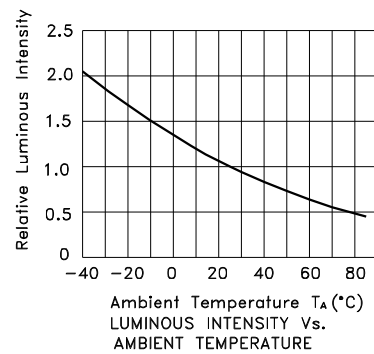
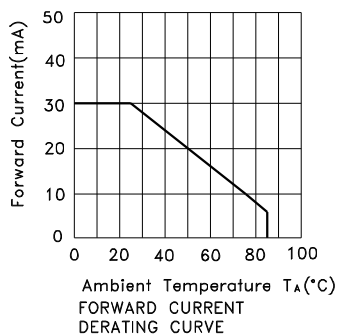
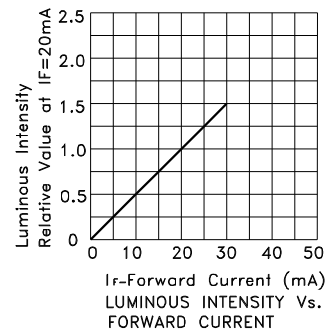
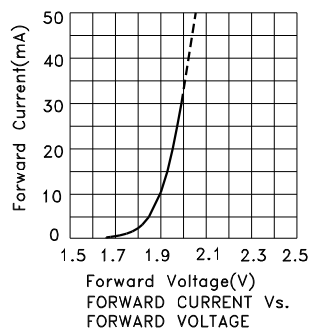
| Parameter                | Hyper Red      | Green | Blue | Units |
|--------------------------|----------------|-------|------|-------|
| Power dissipation        | 75             | 120   | 120  | mW    |
| DC Forward Current       | 30             | 30    | 30   | mA    |
| Peak Forward Current [1] | 185            | 100   | 100  | 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.

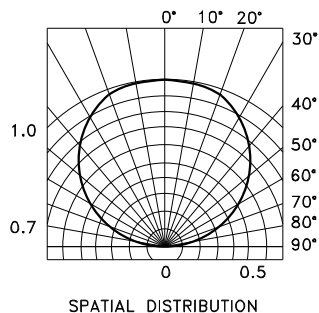
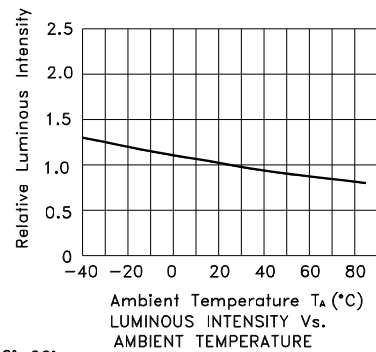
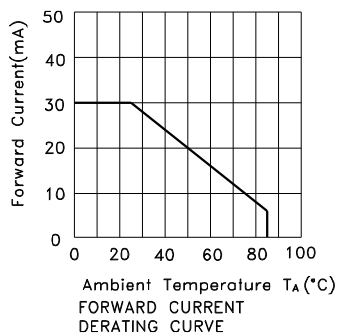
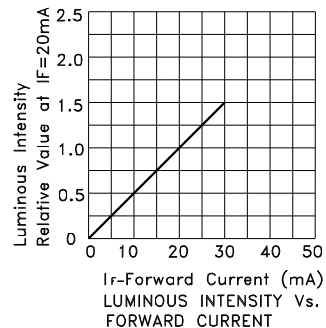
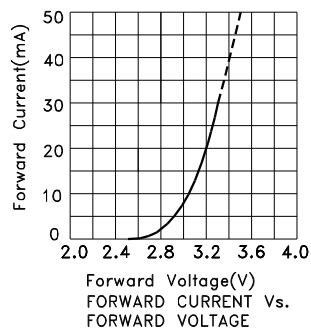


## APF3236SURKVGAPBA Hyper Red

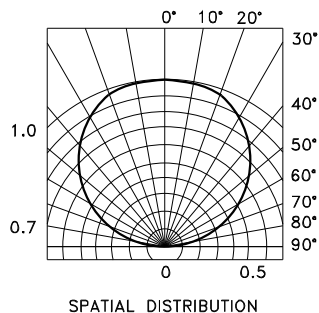
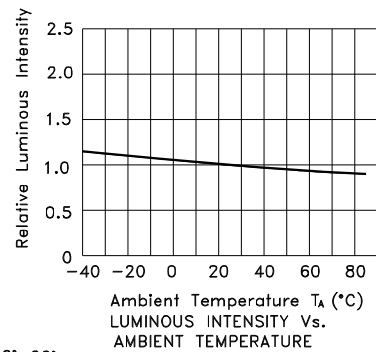
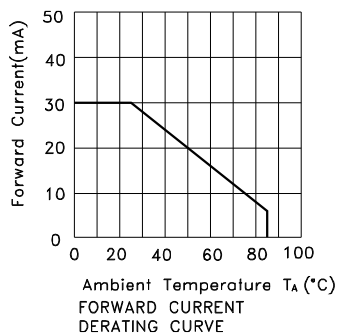
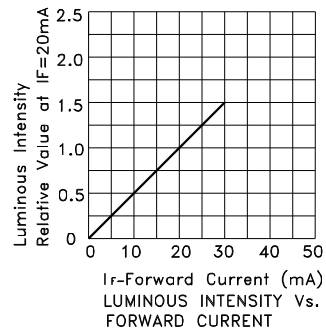
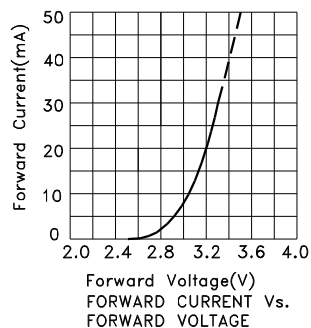




## Green



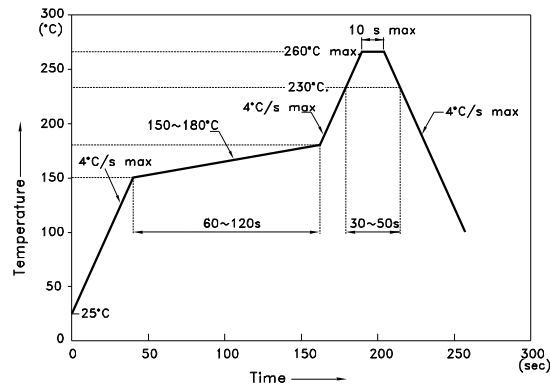
## Blue



**APF3236SURKVGAPBA**

**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.**

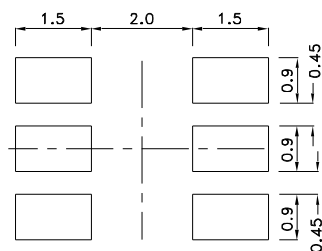
### Reflow Soldering Profile For Lead-free SMT Process.



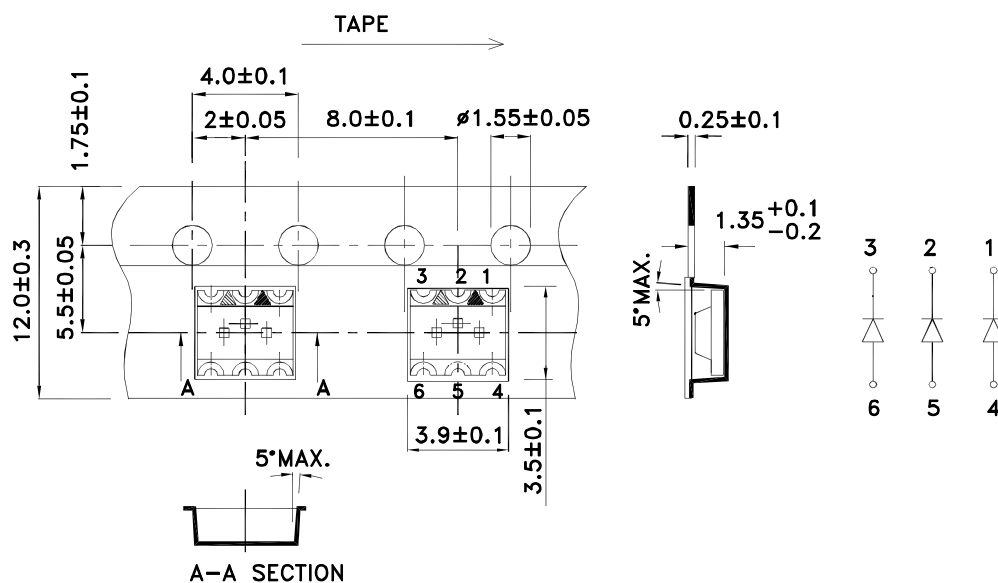
NOTES:

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:  $\pm 0.1$ )

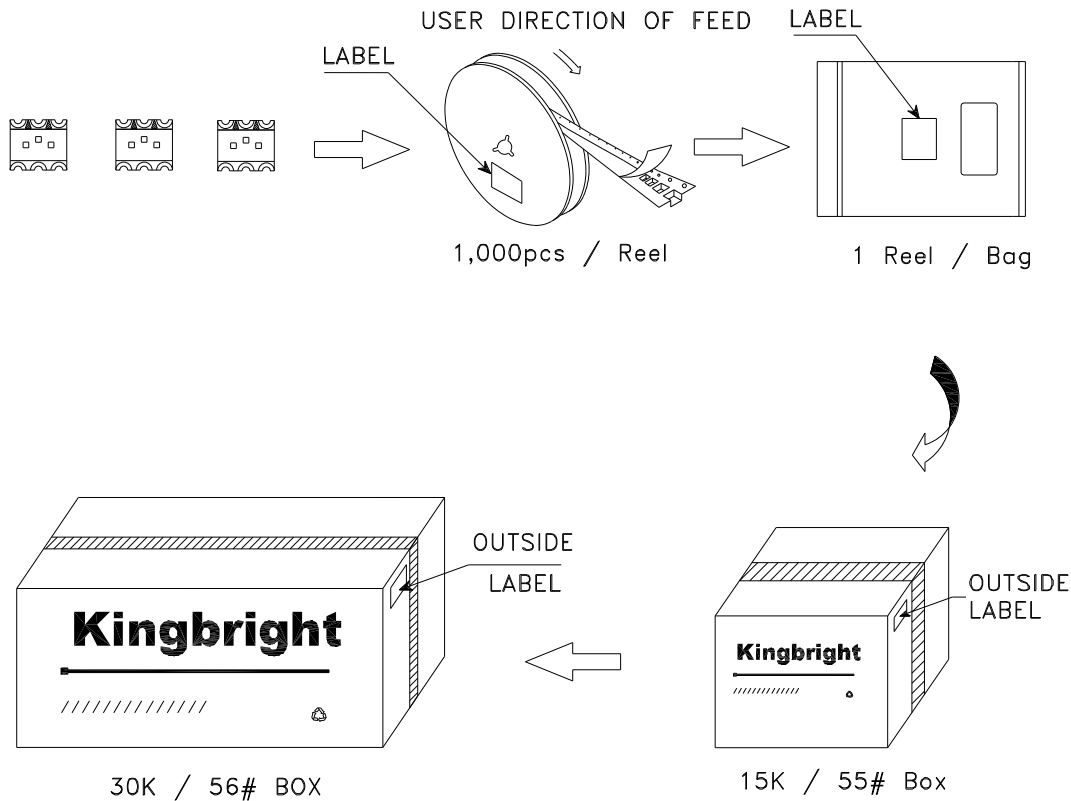



### Tape Dimensions (Units : mm)



PACKING & LABEL SPECIFICATIONS

APF3236SURKVGAPBA



|  |   |
|--|---|
| <b>Kingbright</b>  |   |
| P/NO: APF3236xxx   |   |
| QTY: 1,000 pcs   | Q.C. <div>Q C<br/>xx xx xxxx<br/>PASSED</div> |
| S/N: XXXX  |   |
| CODE: XXX  |   |
| LOT NO:  |   |
| <br>xxxxxxxxxxxxxxxxxxxxxxxxxxxx |   |
| RoHS Compliant   |   |