

### PRELIMINARY SPEC



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

Part Number: APF3236SURKVGAPBA

Hyper Red  
Green  
Blue

### Features

- LOW POWER CONSUMPTION.
- 3.2mmx3.6mm SMT LED, 1.1mm THICKNESS.
- 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 DH InGaAlP on GaAs substrate Light Emitting Diode.

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

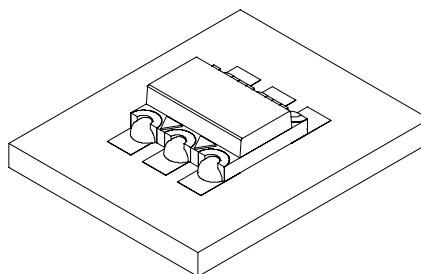
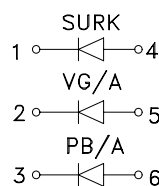
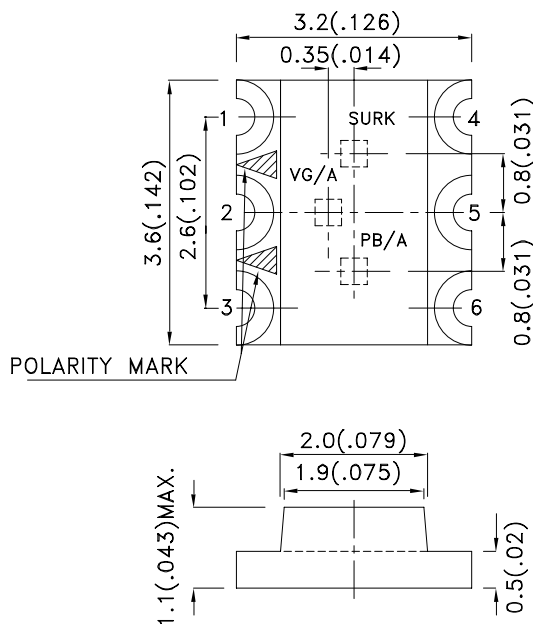
The Blue source color devices are made with InGaN on SiC Light Emitting Diode.

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



#### 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 (InGaAlP) | WATER CLEAR | 70                     | 150  | 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 | 635<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:

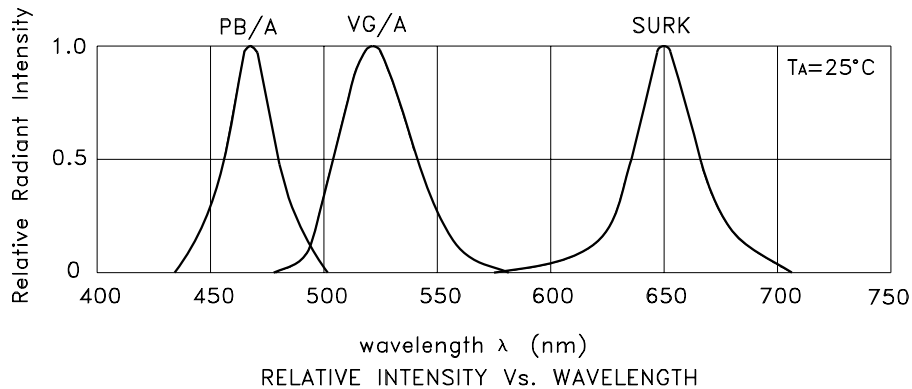
1. Wavelength: +/-1nm.
2. Forward Voltage: +/-0.1V.

## Absolute Maximum Ratings at TA=25°C

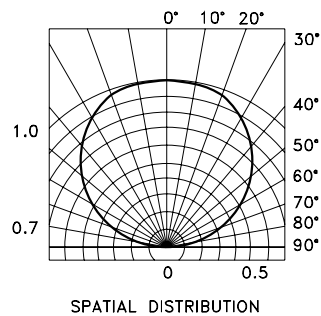
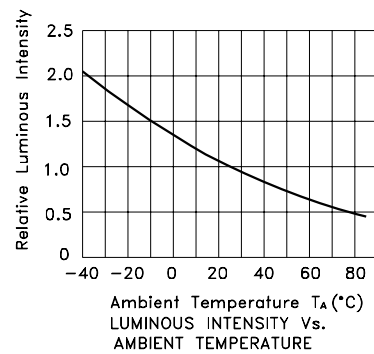
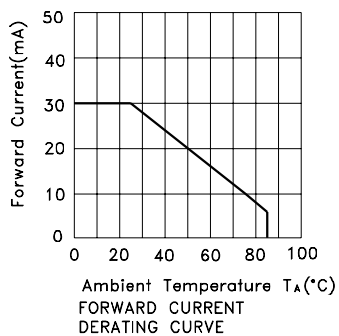
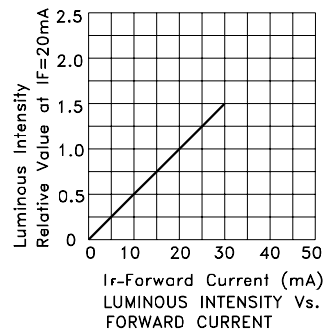
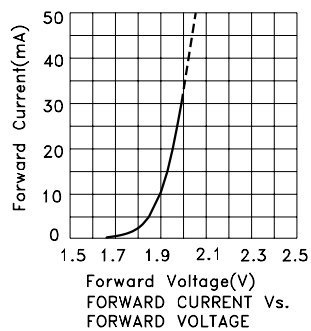
| Parameter                | Hyper Red      | Green | Blue | Units |
|--------------------------|----------------|-------|------|-------|
| Power dissipation        | 75             | 120   | 120  | mW    |
| DC Forward Current       | 30             | 30    | 30   | mA    |
| Peak Forward Current [1] | 185            | 100   | 100  | mA    |
| Reverse Voltage          | 5              |       |      | V     |
| Operating Temperature    | -40°C To +85°C |       |      |       |
| Storage Temperature      | -40°C To +85°C |       |      |       |

### Notes:

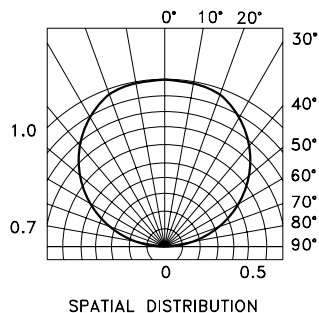
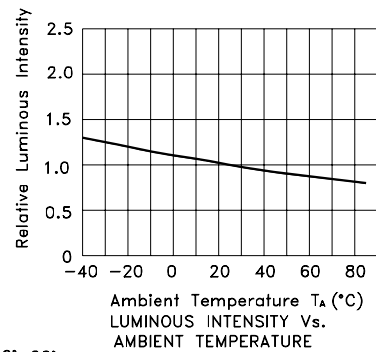
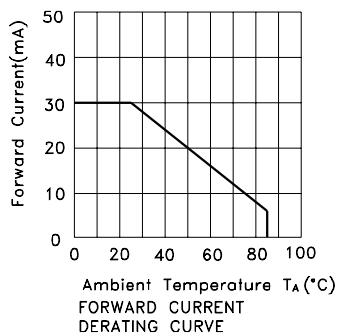
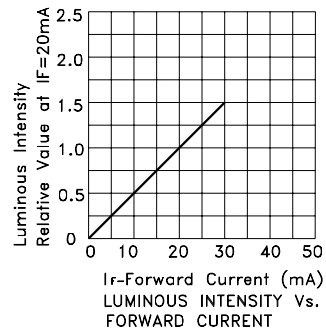
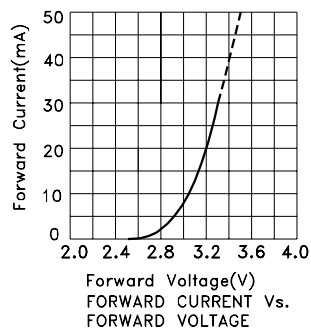
1. 1/10 Duty Cycle, 0.1ms Pulse Width.



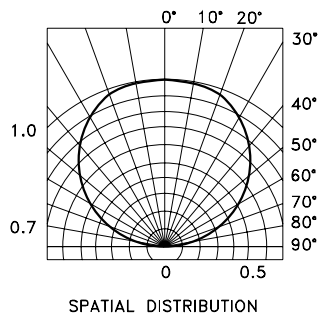
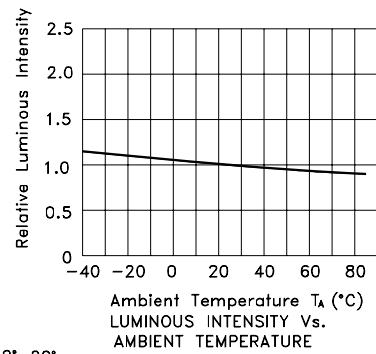
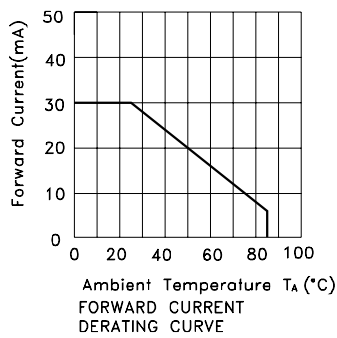
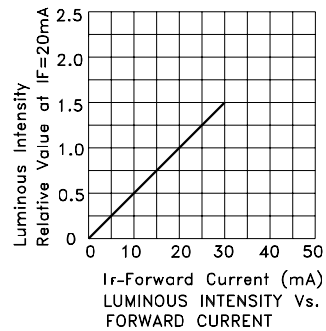
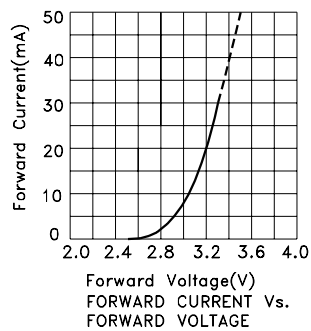
## APF3236SURKVGAPBA Hyper Red



## Green

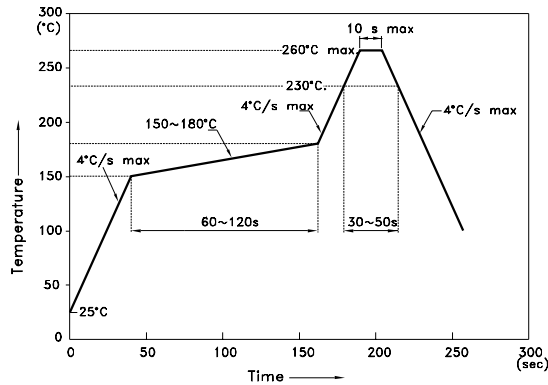


## Blue



## APF3236SURKVGAPBA

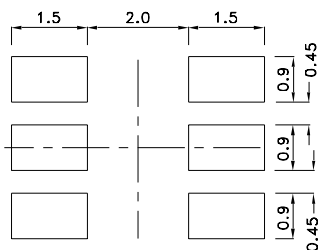
Reflow Soldering Profile For Lead-free SMT Process.



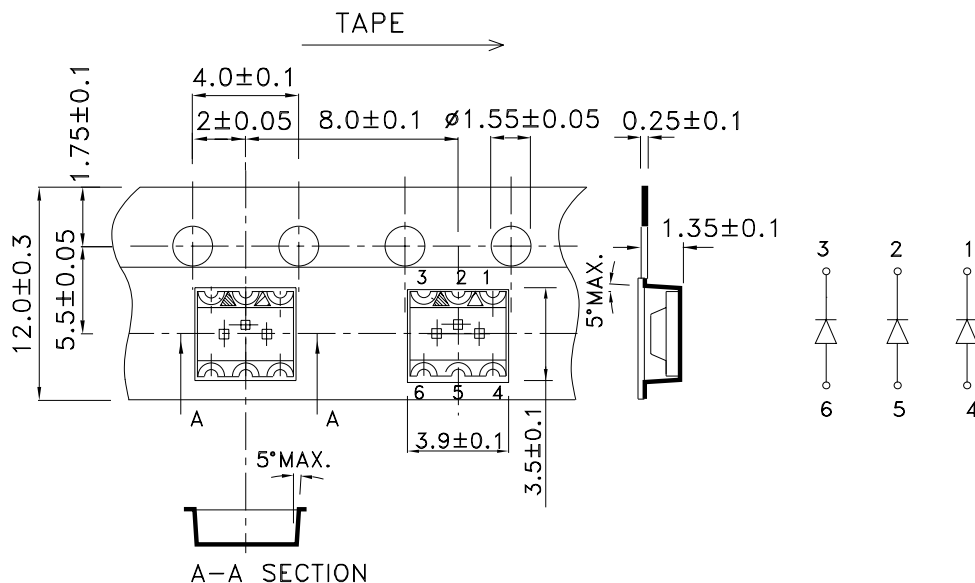
### NOTES:

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: $\pm 0.1$ )

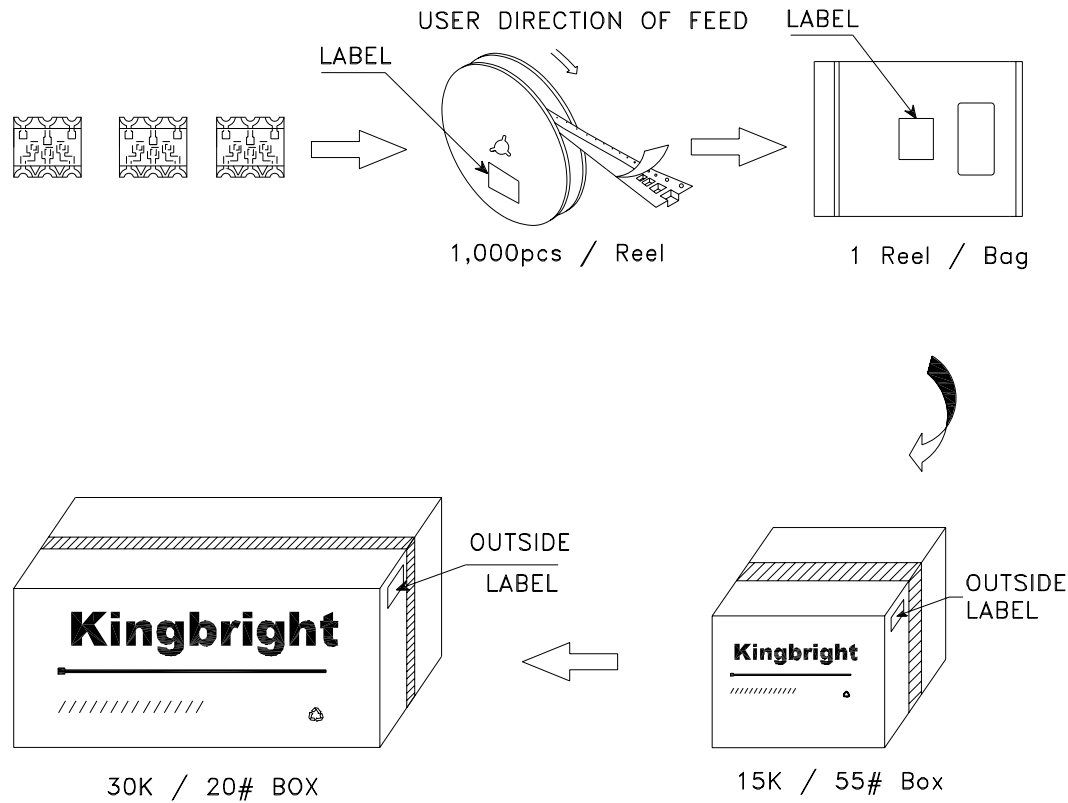


### Tape Specifications (Units : mm)



PACKING & LABEL SPECIFICATIONS

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                                                                                                       |                                               |