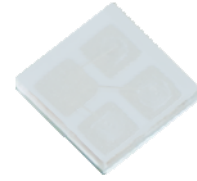




**ATTENTION**  
OBSERVE PRECAUTIONS  
FOR HANDLING  
ELECTROSTATIC  
DISCHARGE  
SENSITIVE  
DEVICES

Part Number: APGF1011SEEPBVGC-TT

Green  
Blue  
Hyper-Red



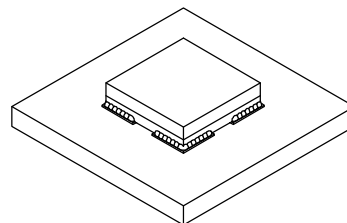
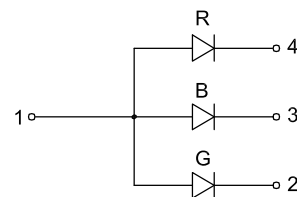
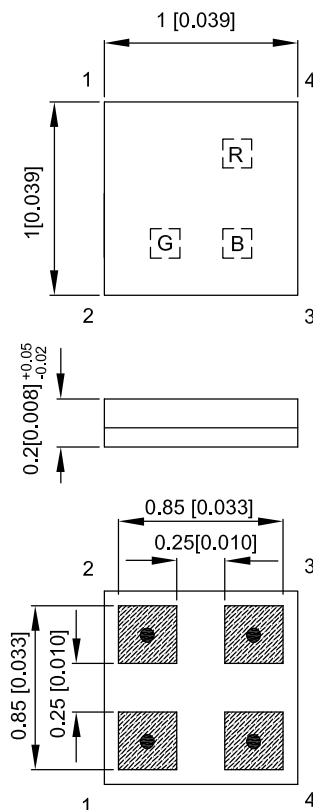
### Features

- 1.0mmX1.0mm SMD LED, 0.2mm thickness.
- Low power consumption.
- Package : 4000pcs / reel.
- Moisture sensitivity level : level 3.
- Low current IF=5mA operating.
- RoHS compliant.

### Descriptions

- The Green source color devices are made with InGaN on SiC substrate Light Emitting Diode.
- The Blue source color devices are made with InGaN on SiC substrate Light Emitting Diode.
- The Hyper-Red source color devices are made with AlGaInP on GaAs substrate Light Emitting Diode.
- Electrostatic discharge and power surge could damage the LEDs.
- It is recommended to use a wrist band or anti-electrostatic glove when handling the LEDs.
- All devices, equipments and machineries 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. The specifications, characteristics and technical data described in the datasheet are subject to change without prior notice.
4. The device has a single mounting surface. The device must be mounted according to the specifications.



## Selection Guide

| Part No.            | Emitting Color (Material) | Lens Type   | Iv (mcd) [2]<br>@ 5mA |      | Viewing Angle [1] |      |      |
|---------------------|---------------------------|-------------|-----------------------|------|-------------------|------|------|
|                     |                           |             | Min.                  | Typ. | 2θ1/2             |      |      |
|                     |                           |             |                       |      | G                 | B    | R    |
| APGF1011SEEPBVGC-TT | Green (InGaN)             | Water Clear | 50                    | 80   | 150°              | 150° | 130° |
|                     | Blue (InGaN)              |             | 10                    | 23   |                   |      |      |
|                     | Hyper-Red (AlGaInP)       |             | 15                    | 30   |                   |      |      |

Notes:

1. θ1/2 is the angle from optical centerline where the luminous intensity is 1/2 of the optical peak value.
2. Luminous intensity / luminous Flux: +/-15%.
3. Luminous intensity value is traceable to the CIE127-2007 compliant national standards.

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

| Symbol             | Parameter                | Emitting Color             | Typ.              | Max.              | Units | Test Conditions           |
|--------------------|--------------------------|----------------------------|-------------------|-------------------|-------|---------------------------|
| λ <sub>peak</sub>  | Peak Wavelength          | Green<br>Blue<br>Hyper-Red | 518<br>461<br>632 |                   | nm    | I <sub>F</sub> =5mA       |
| λ <sub>D</sub> [1] | Dominant Wavelength      | Green<br>Blue<br>Hyper-Red | 527<br>467<br>624 |                   | nm    | I <sub>F</sub> =5mA       |
| Δλ <sub>1/2</sub>  | Spectral Line Half-width | Green<br>Blue<br>Hyper-Red | 35<br>22<br>20    |                   | nm    | I <sub>F</sub> =5mA       |
| C                  | Capacitance              | Green<br>Blue<br>Hyper-Red | 100<br>110<br>25  |                   | pF    | V <sub>F</sub> =0V;f=1MHz |
| V <sub>F</sub> [2] | Forward Voltage          | Green<br>Blue<br>Hyper-Red | 3<br>2.9<br>1.95  | 3.2<br>3.1<br>2.3 | V     | I <sub>F</sub> =5mA       |
| I <sub>R</sub>     | Reverse Current          | Green<br>Blue<br>Hyper-Red |                   | 50<br>50<br>10    | uA    | V <sub>R</sub> =5V        |

Notes:

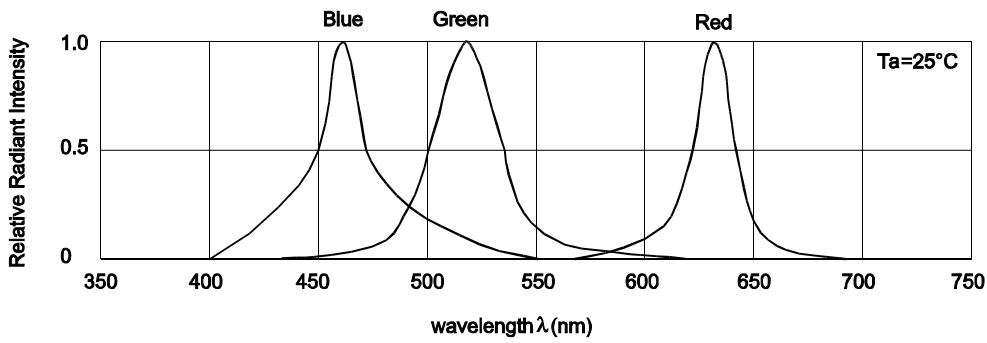
1. Wavelength: +/-1nm.
2. Forward Voltage: +/-0.1V.
3. Wavelength value is traceable to the CIE127-2007 compliant national standards.
4. Excess driving current and/or operating temperature higher than recommended conditions may result in severe light degradation or premature failure.

## Absolute Maximum Ratings at TA=25°C

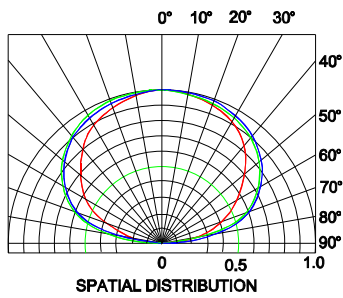
| Parameter                               | Green           | Blue | Hyper-Red | Units |
|---|-----------------|------|-----------|-------|
| Power dissipation [1]                   | 35              |      |           | mW    |
| DC Forward Current [2]                  | 10              | 10   | 10        | mA    |
| Peak Forward Current [3]                | 50              | 50   | 50        | mA    |
| Electrostatic Discharge Threshold (HBM) | 1000            | 1000 | 3000      | V     |
| Reverse Voltage                         | 5               |      |           | V     |
| Operating Temperature                   | -40°C To +85°C  |      |           |       |
| Storage Temperature                     | -40°C To +100°C |      |           |       |

Notes:

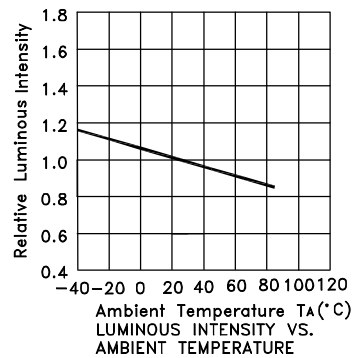
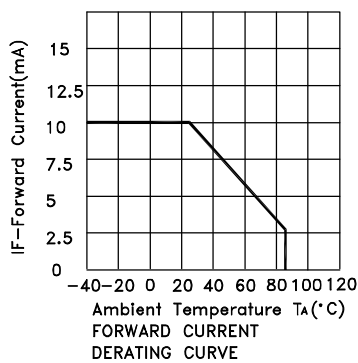
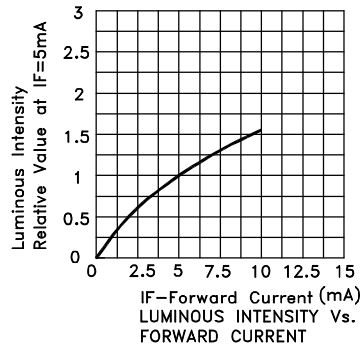
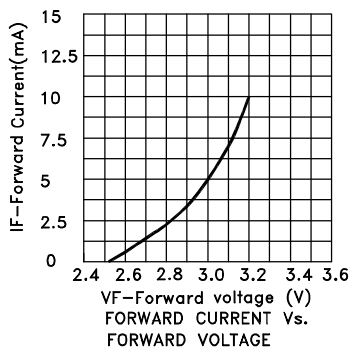
1. Within 35mW when multiple chips are lightened
2. The maximum ratings are valid for the case of lighting a single chip  
When two chips are lit at the same time, each chip should be driven at a current lower than 50% of the absolute maximum ratings  
When three chips are lit at the same time, each chip should be driven at a current lower than 30% of the absolute maximum ratings
3. Duty Cycle 1/20, Pulse Width=1ms.



Relative Intensity Vs. Wavelength

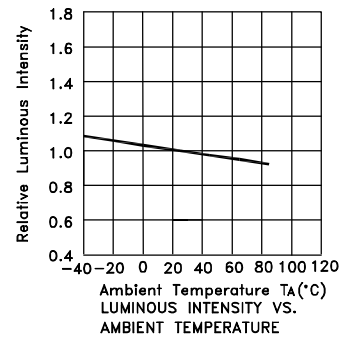
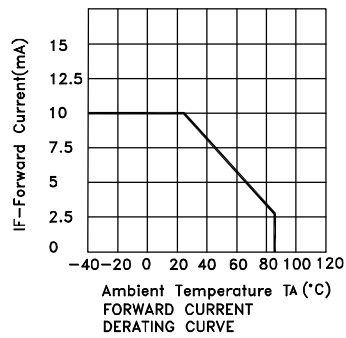
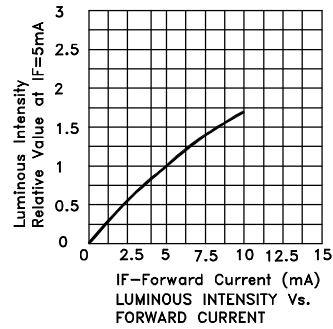
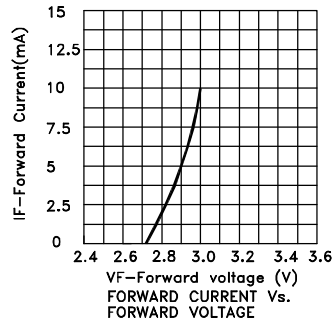


**APGF1011SEEPBVGCTT**  
Green

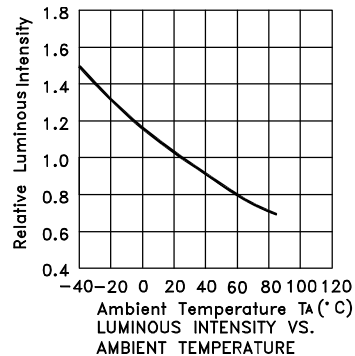
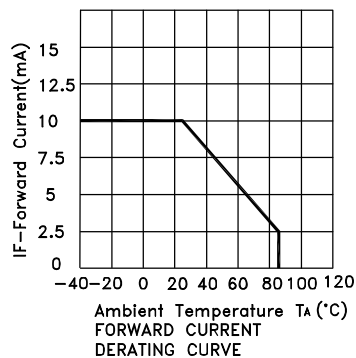
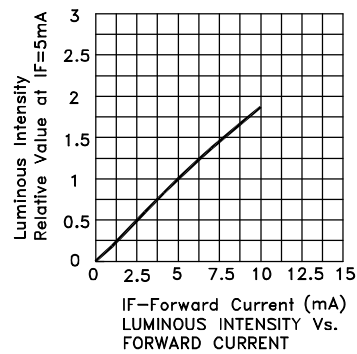
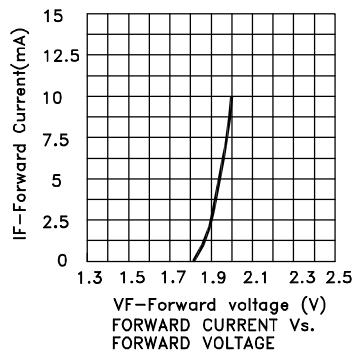


# Kingbright

## Blue



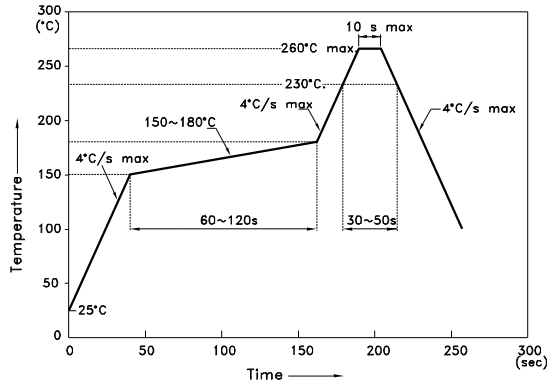
## Hyper-Red



## APGF1011SEEPBVG-C-TT

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.

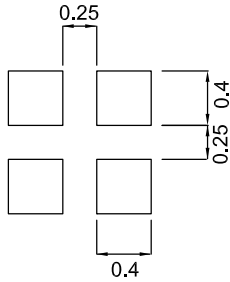
Reflow Soldering Profile For Lead-free SMT Process.



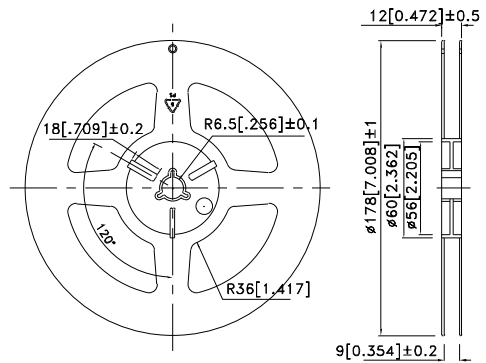
NOTES:

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.

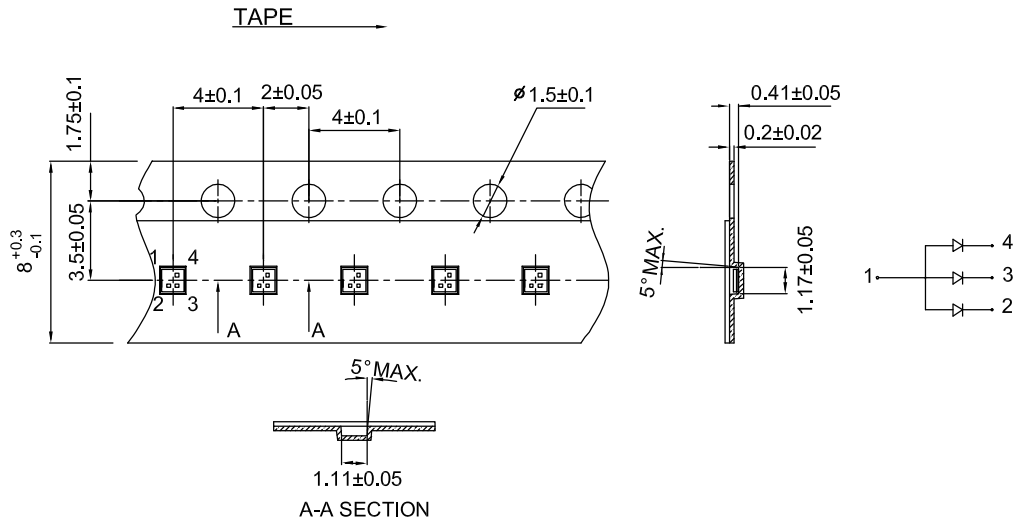
### Recommended Soldering Pattern (Units : mm; Tolerance: ± 0.1)



### Reel Dimension

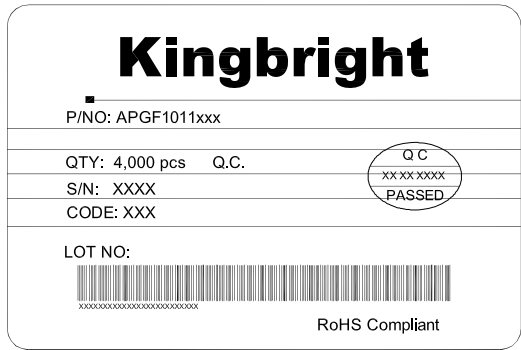
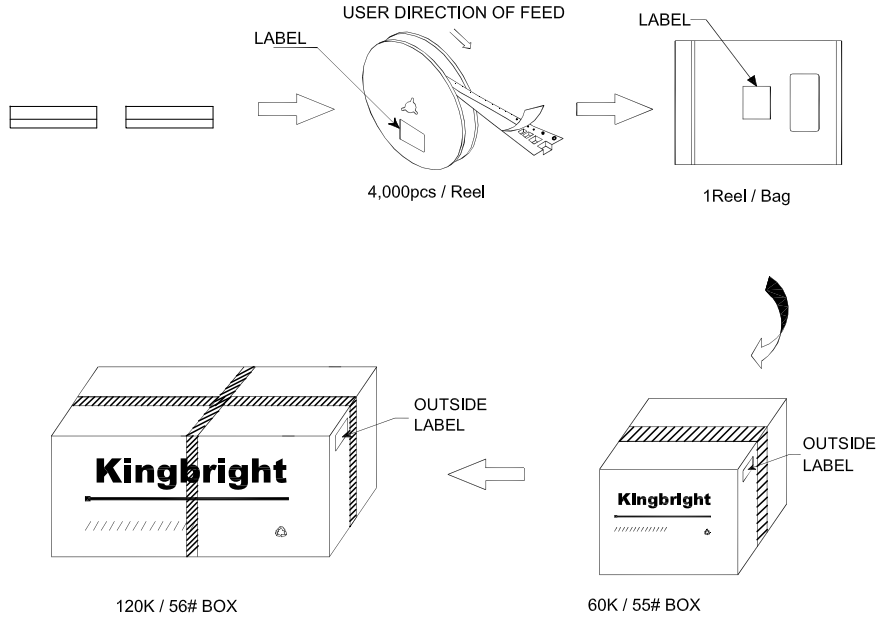


### Tape Dimensions (Units : mm)



**PACKING & LABEL SPECIFICATIONS**

**APGF1011SEEPBVGC-TT**



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Телефон: 8 (812) 309-75-97 (многоканальный)

Факс: 8 (812) 320-03-32

Электронная почта: [ocean@oceanchips.ru](mailto:ocean@oceanchips.ru)

Web: <http://oceanchips.ru/>

Адрес: 198099, г. Санкт-Петербург, ул. Калинина, д. 2, корп. 4, лит. А