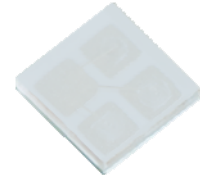




**ATTENTION**  
OBSERVE PRECAUTIONS  
FOR HANDLING  
ELECTROSTATIC  
DISCHARGE  
SENSITIVE  
DEVICES

Part Number: APGF1011SEEPBVGC-TT

Green  
Blue  
Hyper-Red



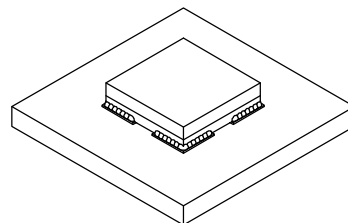
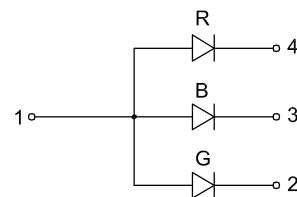
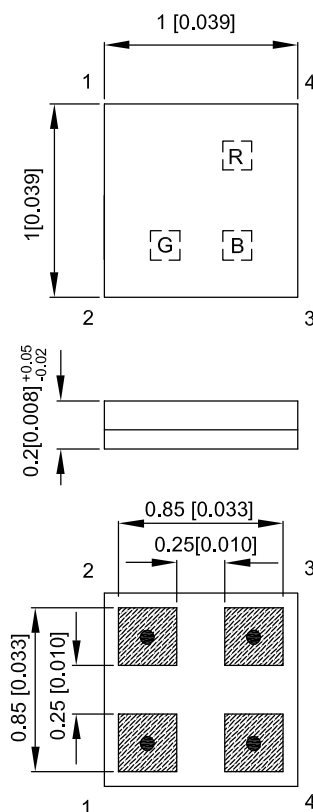
### Features

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

Notes:

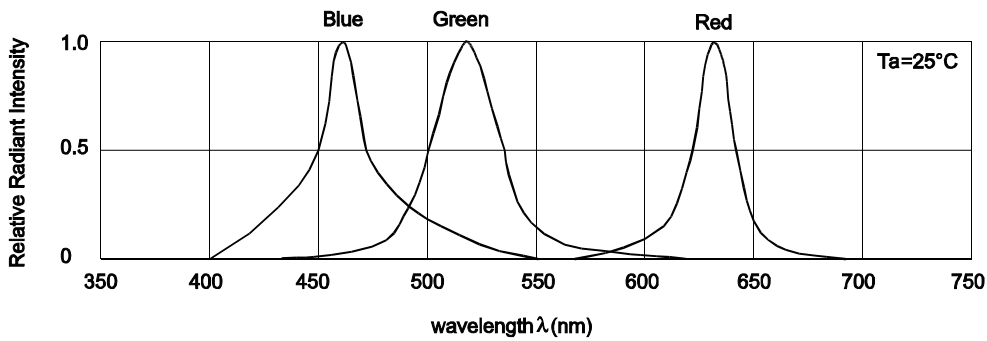
1. Wavelength: +/-1nm.
2. Forward Voltage: +/-0.1V.
3. Wavelength value is traceable to the CIE127-2007 compliant national standards.
4. Excess driving current and/or operating temperature higher than recommended conditions may result in severe light degradation or premature failure.

## Absolute Maximum Ratings at TA=25°C

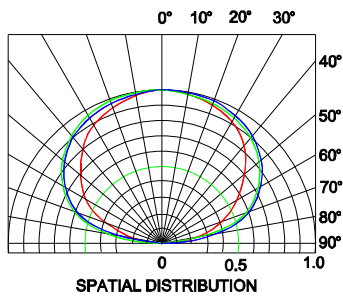
Parameter	Green	Blue	Hyper-Red	Units
Power dissipation [1]	35			mW
DC Forward Current [2]	10	10	10	mA
Peak Forward Current [3]	50	50	50	mA
Electrostatic Discharge Threshold (HBM)	1000	1000	3000	V
Reverse Voltage	5			V
Operating Temperature	-40°C To +85°C			
Storage Temperature	-40°C To +100°C			

Notes:

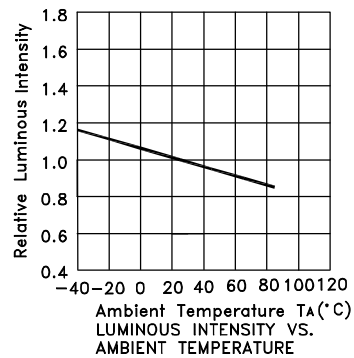
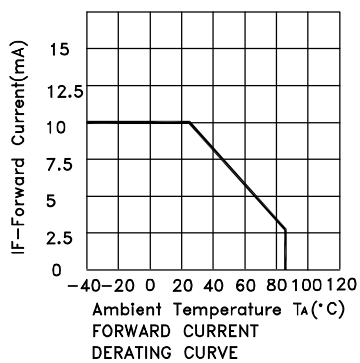
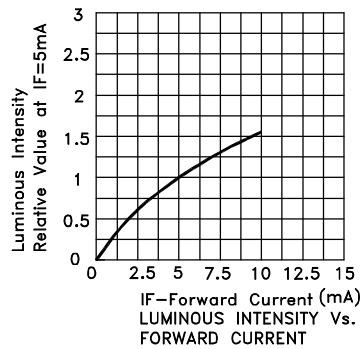
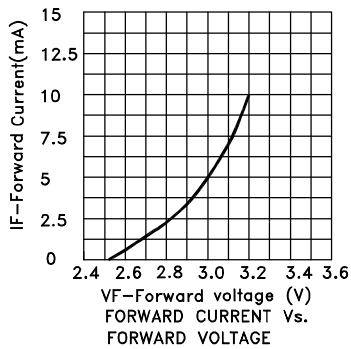
1. Within 35mW when multiple chips are lightened
2. The maximum ratings are valid for the case of lighting a single chip  
When two chips are lit at the same time, each chip should be driven at a current lower than 50% of the absolute maximum ratings  
When three chips are lit at the same time, each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

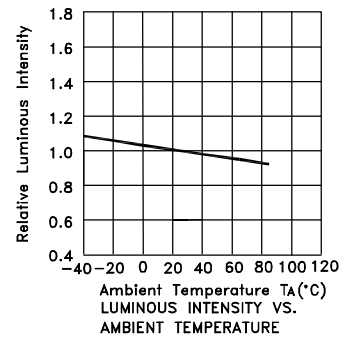
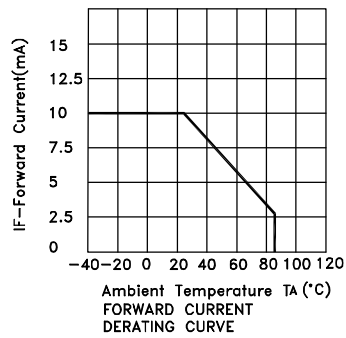
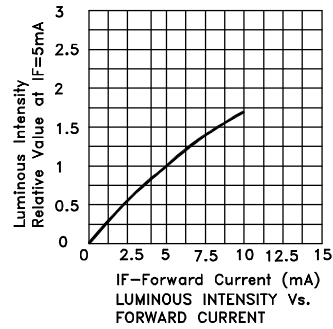
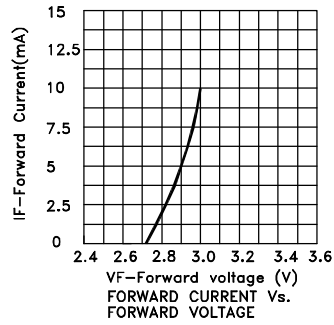


## APGF1011SEEPBVGC-TT Green

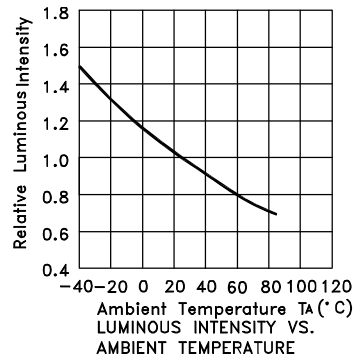
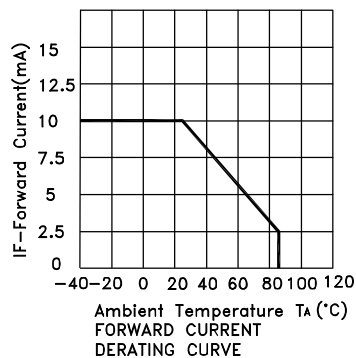
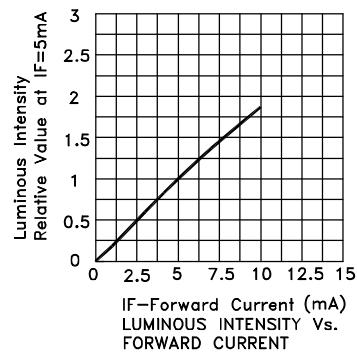
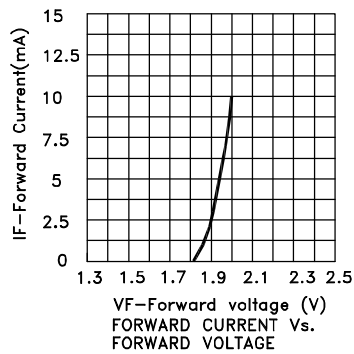


# Kingbright

## Blue



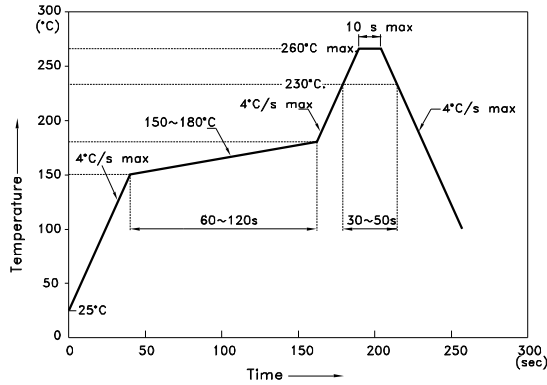
## Hyper-Red



## 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.

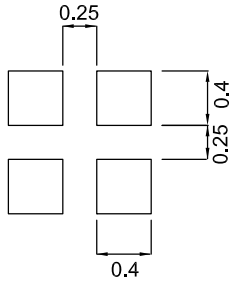
Reflow Soldering Profile For Lead-free SMT Process.



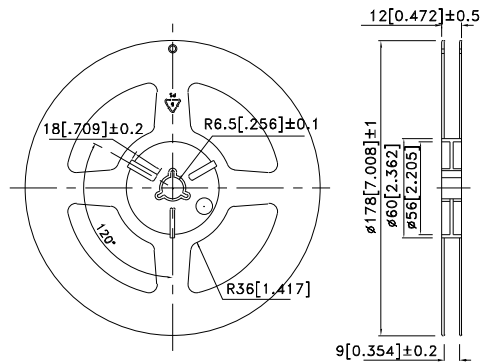
**NOTES:**

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)

