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Address: A1208, Overseas Decoration Building, #122 Zhenhua RD., Futian, Shenzhen, China

Kingbright

1x1x0.2mm (0404) FULL-COLOR SURFACE MOUNT LED

Part Number: APGF1011SEEPBVGC-TT

Green
Blue
Hyper-Red

ATTENTION
OBSERVE PRECAUTIONS
FOR HANDLING
ELECTROSTATIC
DISCHARGE
SENSITIVE
DEVICES

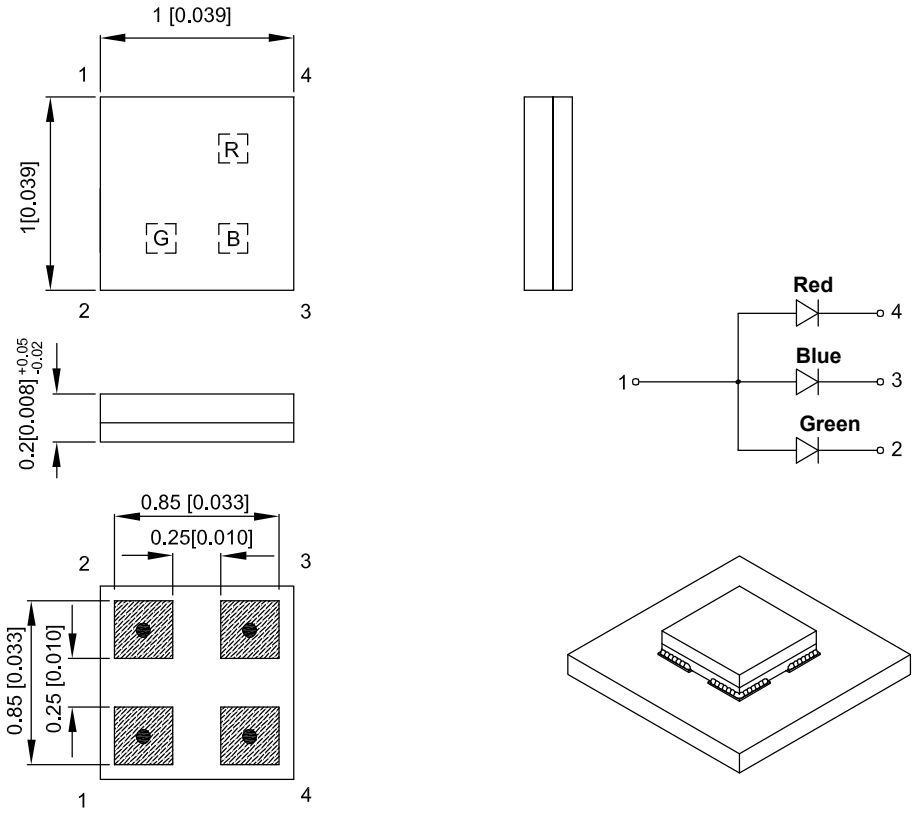
Features

- 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 ±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] 2θ1/2
			Min.	Typ.	
APGF1011SEEPBVGC-TT	Green (InGaN)	Water Clear	50	80	150°
	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 CIE127-2007 standards.

Electrical / Optical Characteristics at TA=25°C

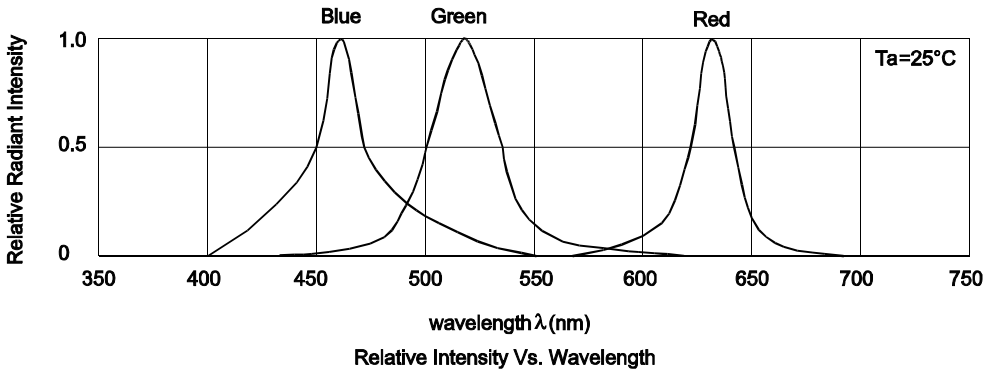
Symbol	Parameter	Emitting Color	Typ.	Max.	Units	Test Conditions
λpeak	Peak Wavelength	Green Blue Hyper-Red	518 461 632		nm	I_F=5mA
λD [1]	Dominant Wavelength	Green Blue Hyper-Red	527 467 624		nm	I_F=5mA
Δλ1/2	Spectral Line Half-width	Green Blue Hyper-Red	35 22 20		nm	I_F=5mA
C	Capacitance	Green Blue Hyper-Red	100 110 25		pF	V_F=0V;f=1MHz
V_F [2]	Forward Voltage	Green Blue Hyper-Red	3 2.9 1.95	3.2 3.1 2.3	V	I_F=5mA
I_R	Reverse Current	Green Blue Hyper-Red		50 50 10	uA	V_R=5V

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

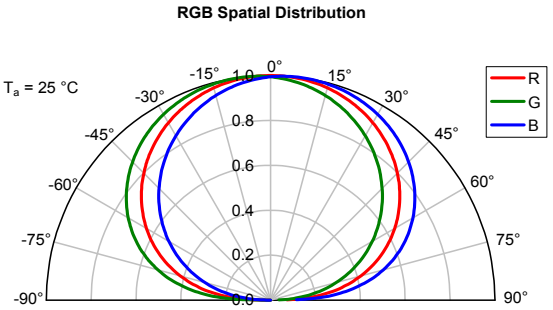
Absolute Maximum Ratings at TA=25°C

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			

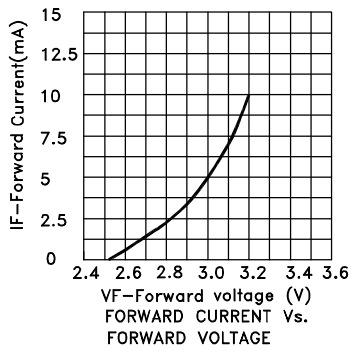
Notes:
1. Within 35mW when multiple chips are lightened
2. The maximum ratings are valid for the case of lighting a single chip
   When two chips are lit at the same time, each chip should be driven at a current lower than 50% of the absolute maximum ratings
   When three chips are lit at the same time, each chip should be driven at a current lower than 30% of the absolute maximum ratings
3. Duty Cycle 1/20, Pulse Width=1ms.
4. Relative humidity levels maintained between 40% and 60% in production area are recommended to avoid the build-up of static electricity – Ref JEDEC/JESD625-A and JEDEC/J-STD-033.

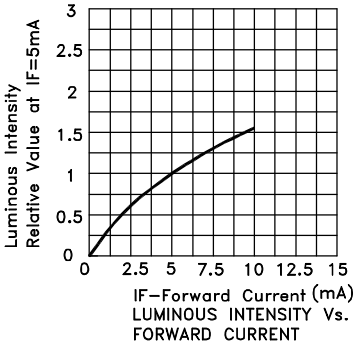


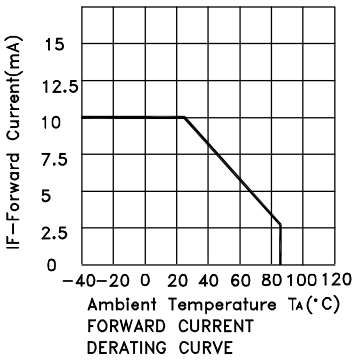
Relative Intensity Vs. Wavelength

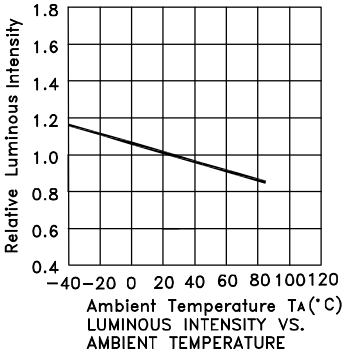


APGF1011SEEPBVGC-TT
Green

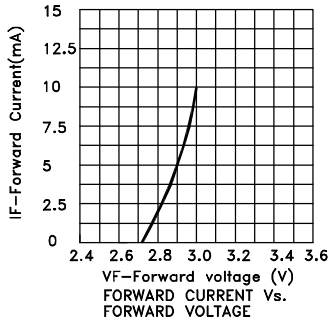


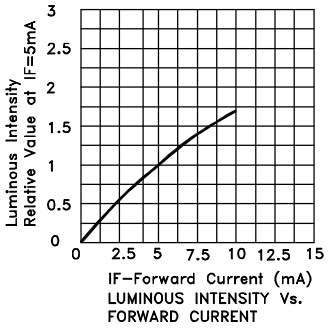


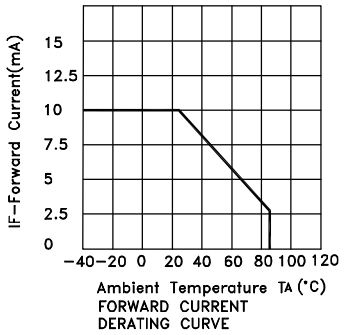


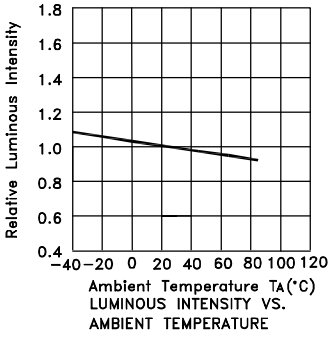


Blue

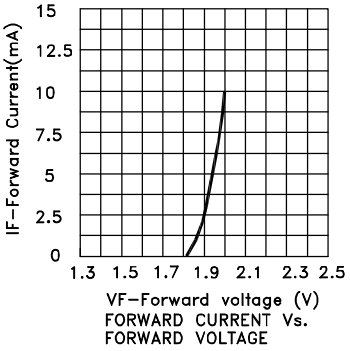


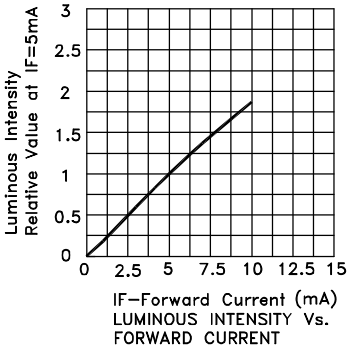


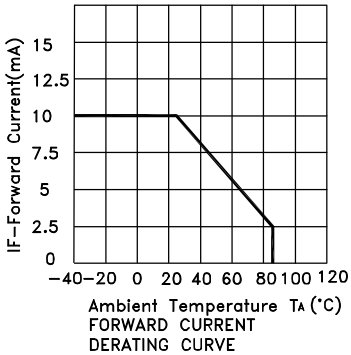


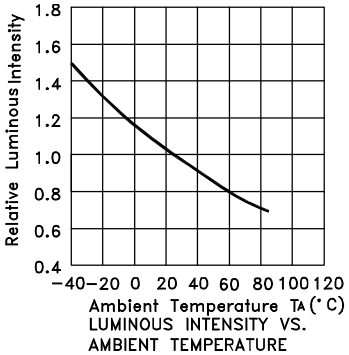


Hyper-Red





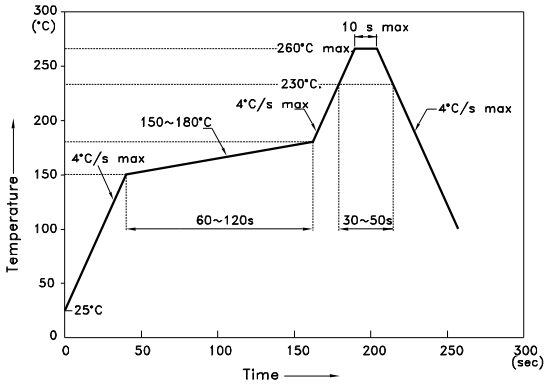




APGF1011SEEPBVGC-TT

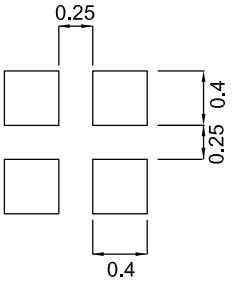
Reflow soldering is recommended and the soldering profile is shown below.
Other soldering methods are not recommended as they might cause damage to the product.

Reflow Soldering Profile For Lead-free SMT Process.



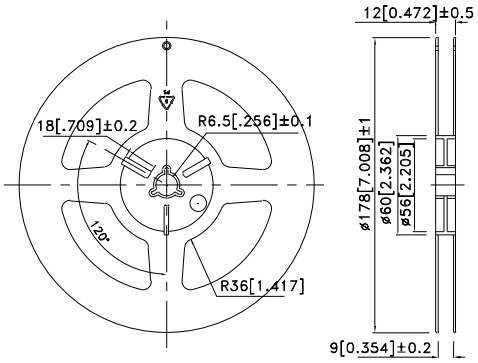
NOTES:
1.We recommend the reflow temperature 245°C(+/-5°C).The maximum soldering temperature should be limited to 260°C.
2.Don't cause stress to the epoxy resin while it is exposed to high temperature.
3.Number of reflow process shall be 2 times or less.

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

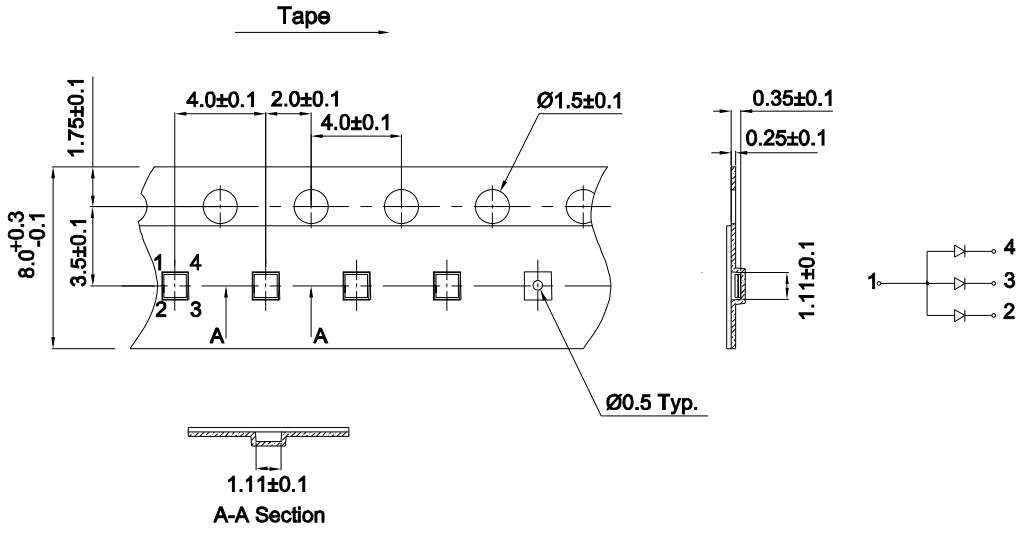


Mask open area ratio:80%
Mask thickness:80~100um

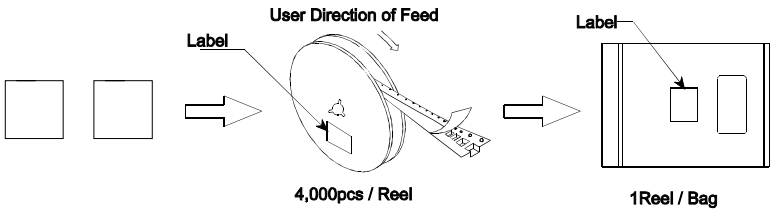
Reel Dimension

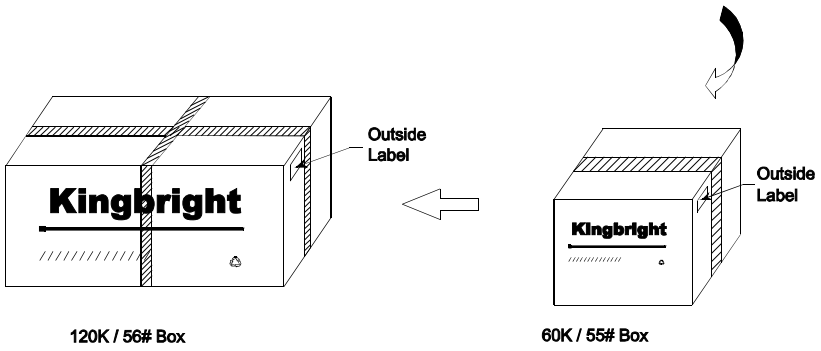


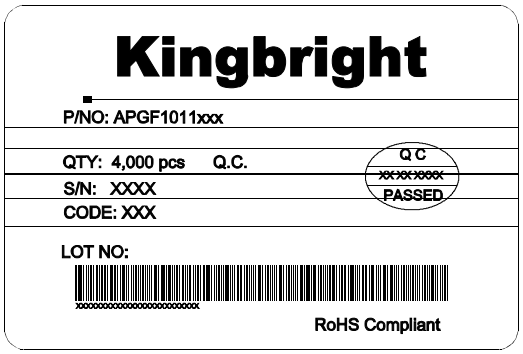
Tape Dimensions (Units : mm)



PACKING & LABEL SPECIFICATIONS **APGF1011SEEPBVGC-TT**







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