

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



ATTENTION

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

Part Number: KPGF-1011GBRC-120

Green Blue Hyper-Red



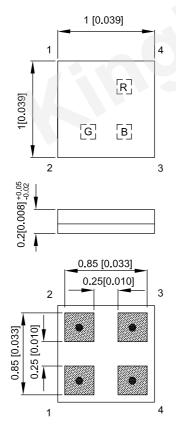
Features

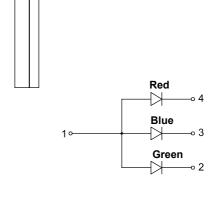
- 1.0mmX1.0mm SMD LED, 0.2mm thickness.
- Low power consumption.
- Package: 4000pcs / reel.
- Moisture sensitivity level : level 3.
- Low current IF=5mA operating.
- RoHS compliant.

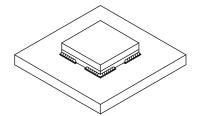
Descriptions

- 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 antielectrostatic glove when handling the LEDs.
- All devices, equipments and machineries must be electrically grounded.

Package Dimensions











- 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 device are subject to such as 4. The device has a single mounting surface. The device must be mounted according to the specifications. The specifications, characteristics and technical data described in the datasheet are subject to change without prior notice.

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Selection Guide

Part No.	Emitting Color (Material)	Lens Type	lv (mcd) [2] @ 5mA		Viewing Angle [1]		
			Min.	Тур.	201/2		
					G	В	R
KPGF-1011GBRC-120	Green (InGaN)	Water Clear	50	80	150°	150°	150°
	Blue (InGaN)		10	23			
	Hyper-Red (AlGaInP)		15	30			

- 1. 01/2 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	Тур.	Max.	Units	Test Conditions
λpeak	Peak Wavelength	Green Blue Hyper-Red	518 461 632		nm	IF=5mA
λD [1]	Dominant Wavelength	Green Blue Hyper-Red	527 467 624		nm	IF=5mA
Δλ1/2	Spectral Line Half-width	Green Blue Hyper-Red	35 22 20		nm	IF=5mA
С	Capacitance	Green Blue Hyper-Red	100 110 25		pF	VF=0V;f=1MHz
VF [2]	Forward Voltage	Green Blue Hyper-Red	3 2.9 1.95	3.2 3.1 2.3	V	IF=5mA
lr	Reverse Current	Green Blue Hyper-Red		50 50 10	uA	VR=5V

- 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.

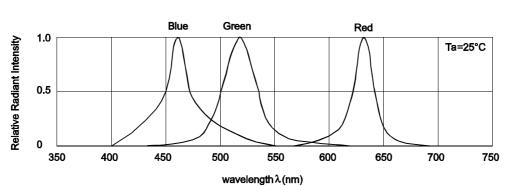
Absolute Maximum Ratings at TA=25°C

Parameter	Green	Blue	Hyper-Red	Units		
Power dissipation [1]	35					
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		V				
Operating Temperature	-40°C To +85°C					
Storage Temperature	-40°C To +100°C					

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.

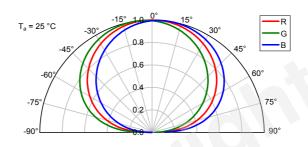
4. Relative humidity levels maintained between 40% and 60% in production area are recommended to avoid the build-up of static electricity - Ref JEDEC/JESD625-A and JEDEC/J-STD-033.

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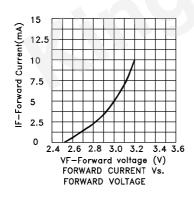


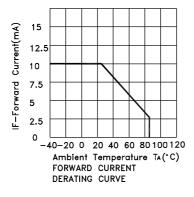
Relative Intensity Vs. Wavelength

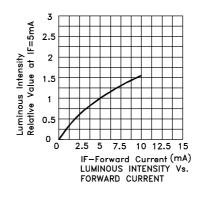
RGB Spatial Distribution

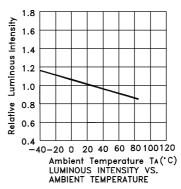


KPGF-1011GBRC-120 Green



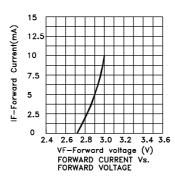


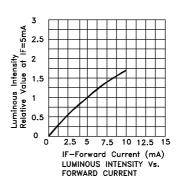


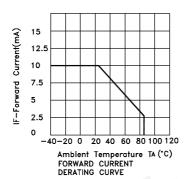


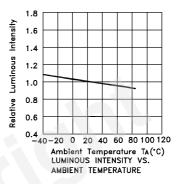
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Blue

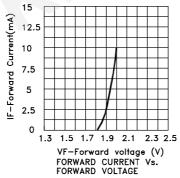


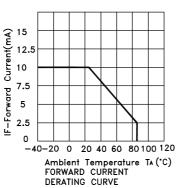


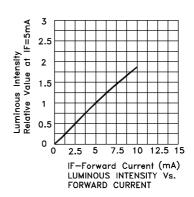


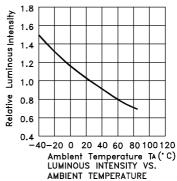


Hyper-Red







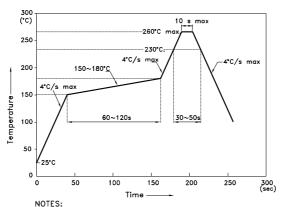


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Reflow soldering is recommended and the soldering profile is shown below. Other soldering methods are not recommended as they might cause damage to the product.

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)

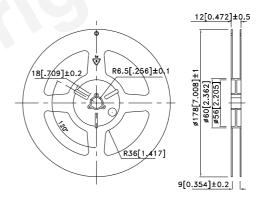
0.25

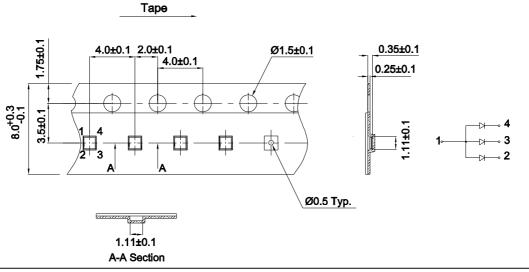
Mask open area ratio:80%; Mask thickness:80~100um;

Tape Dimensions

(Units : mm)

Reel Dimension





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PACKING & LABEL SPECIFICATIONS KPGF-1011GBRC-120 USER DIRECTION OF FEED LABEL LABEL 4.000pcs / Reel 1Reel / Bag OUTSIDE LABFI OUTSIDE LABEL Kingbright Kinabriaht 60K / 55# BOX 120K / 56# BOX Kingbright P/NO: KPGF-1011xxx QTY: 4,000 pcs S/N: XXXX PASSED CODE: XXX

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RoHS Complian

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