



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

Part Number: KAF-5060QBFSURZGS

Blue  
Hyper Red  
Green

### Features

- Outstanding material efficiency.
- Reliable and rugged.
- Low power consumption.
- Can produce any color in visible spectrum, including white light.
- Moisture sensitivity level : level 3.
- RoHS compliant.

### Description

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

The Hyper Red source color devices are made with Al-GaN on GaAs substrate Light Emitting Diode.

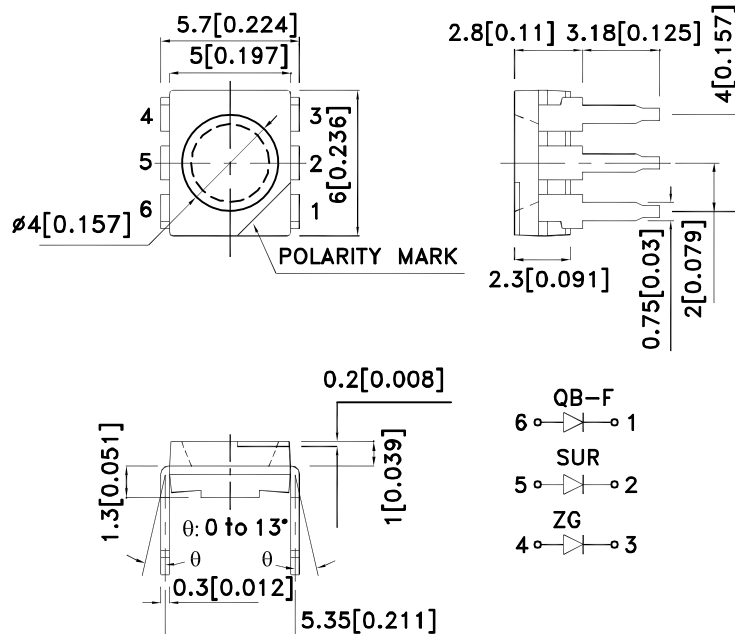
The Green source color devices are made with InGaN on Sapphire Light Emitting Diode.

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  $\pm 0.25$  (0.01") unless otherwise noted.
3. Lead spacing is measured where the leads emerge from the package.
4. The specifications, characteristics and technical data described in the datasheet are subject to change without prior notice.

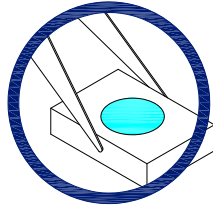


## Handling Precautions

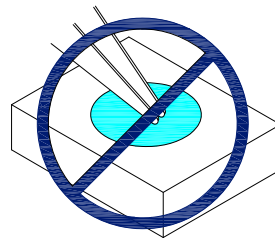
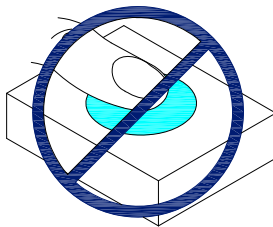
Compare to epoxy encapsulant that is hard and brittle, silicone is softer and flexible. Although its characteristic significantly reduces thermal stress, it is more susceptible to damage by external mechanical force.

As a result, special handling precautions need to be observed during assembly using silicone encapsulated LED products. Failure to comply might lead to damage and premature failure of the LED.

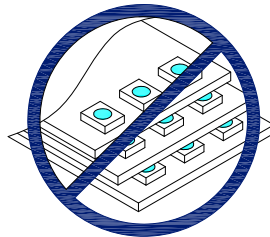
1. Handle the component along the side surfaces by using forceps or appropriate tools.



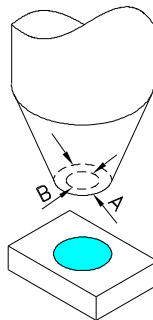
2. Do not directly touch or handle the silicone lens surface. It may damage the internal circuitry.



3. Do not stack together assembled PCBs containing exposed LEDs. Impact may scratch the silicone lens or damage the internal circuitry.



- 4.1. The inner diameter of the SMD pickup nozzle should not exceed the size of the LED to prevent air leaks.
- 4.2. A pliable material is suggested for the nozzle tip to avoid scratching or damaging the LED surface during pickup.
- 4.3. The dimensions of the component must be accurately programmed in the pick-and-place machine to insure precise pickup and avoid damage during production.



5. As silicone encapsulation is permeable to gases, some corrosive substances such as  $H_2S$  might corrode silver plating of leadframe. Special care should be taken if an LED with silicone encapsulation is to be used near such substances.

Detailed application notes are listed on our website.

[http://www.kingbright.com/application\\_notes](http://www.kingbright.com/application_notes)

## Selection Guide

Part No.	Dice	Iv (mcd) [2]		Test Conditions	Lens Type	Viewing Angle [1]
		Min.	Typ.			2θ1/2
KAF-5060QBFSURZGS	Blue (InGaN)	300	400	30mA	Water Clear	100°
		*300	*400			
	Hyper Red (AlGaInP)	500	800	50mA		
		*120	*300			
	Green (InGaN)	500	1000	30mA		
		*500	*1000			

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%.
- \*Luminous intensity value is traceable to the CIE127-2007 compliant national standards.

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

Symbol	Parameter	Device	Typ.	Max.	Units	Test Conditions
λpeak	Peak Wavelength	Blue Hyper Red Green	460 645 515		nm	IF=20mA
λD [1]	Dominant Wavelength	Blue Hyper Red Green	465 630 525		nm	IF=20mA
Δλ1/2	Spectral Line Half-width	Blue Hyper Red Green	25 27 30		nm	IF=20mA
C	Capacitance	Blue Hyper Red Green	100 45 45		pF	VF=0V;f=1MHz
VF [2]	Forward Voltage	Blue Hyper Red Green	3.3 1.9 3.3	4 2.5 4.1	V	IF=20mA
IR	Reverse Current	Blue Hyper Red Green		50 10 50	uA	VR=5V

Notes:

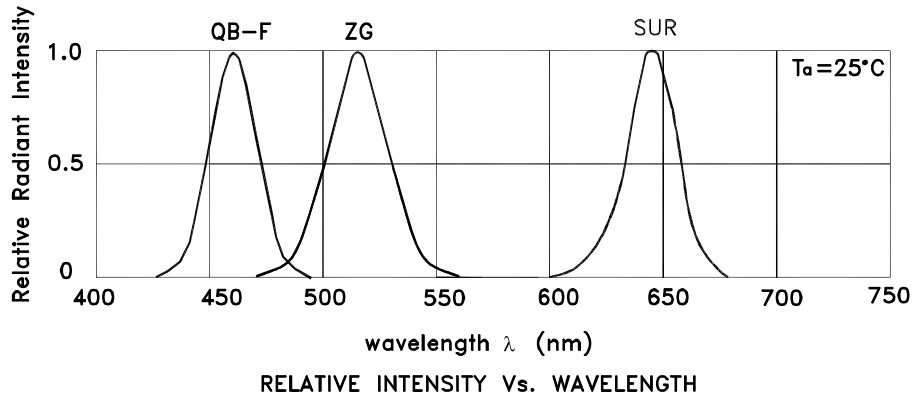
1. Wavelength: +/-1nm.
2. Forward Voltage: +/-0.1V.
3. Wavelength value is traceable to the CIE127-2007 compliant national standards.

## Absolute Maximum Ratings at TA=25°C

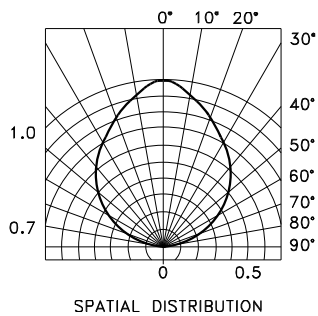
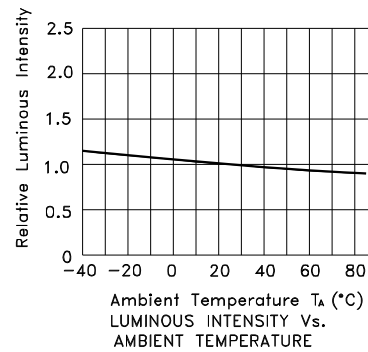
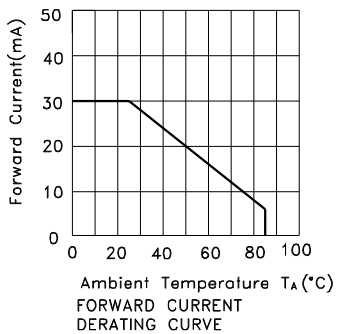
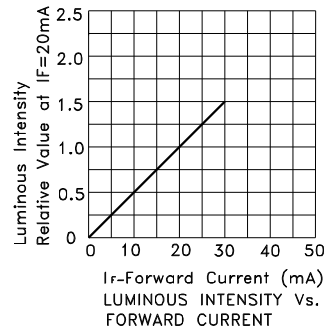
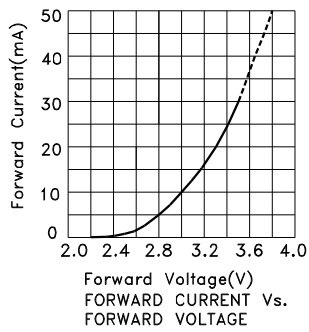
Parameter	Blue	Hyper Red	Green	Units
Power dissipation[2]	350			mW
DC Forward Current	30	50	30	mA
Peak Forward Current [1]	150	185	150	mA
Reverse Voltage	5			V
Operating / Storage Temperature	-40°C To +85°C			
Lead Solder Temperature [3]	260°C For 3 Seconds			
Lead Solder Temperature [4]	260°C For 5 Seconds			

Notes:

1. 1/10 Duty Cycle, 0.1ms Pulse Width.
2. Within 350mW at all chips are lightened.
3. 2mm below package base.
4. 5mm below package base.

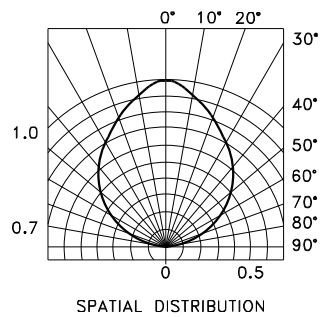
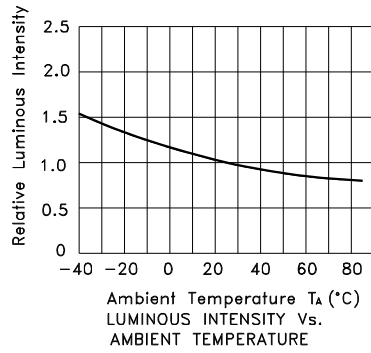
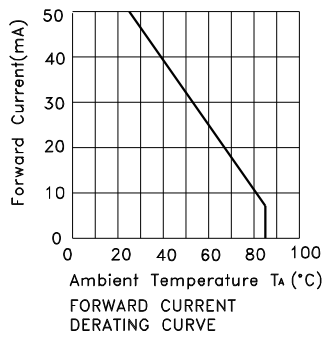
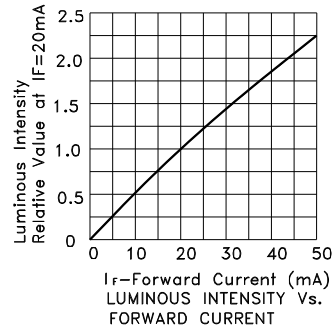
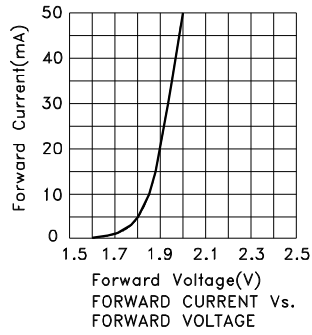


## KAF-5060QBFSURZGS Blue

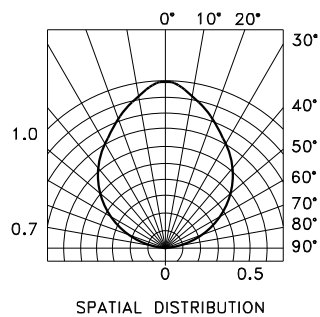
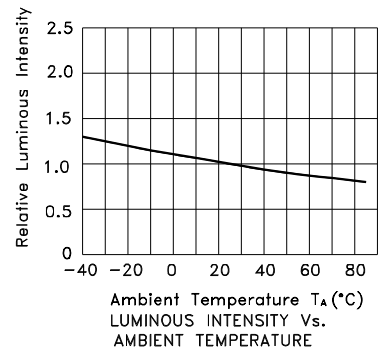
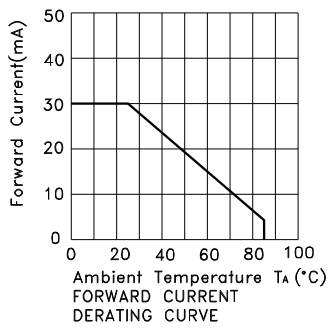
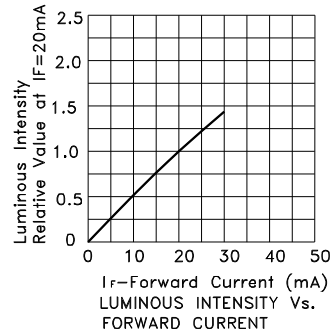
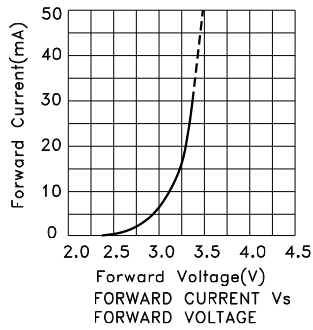


# Kingbright

## Hyper Red

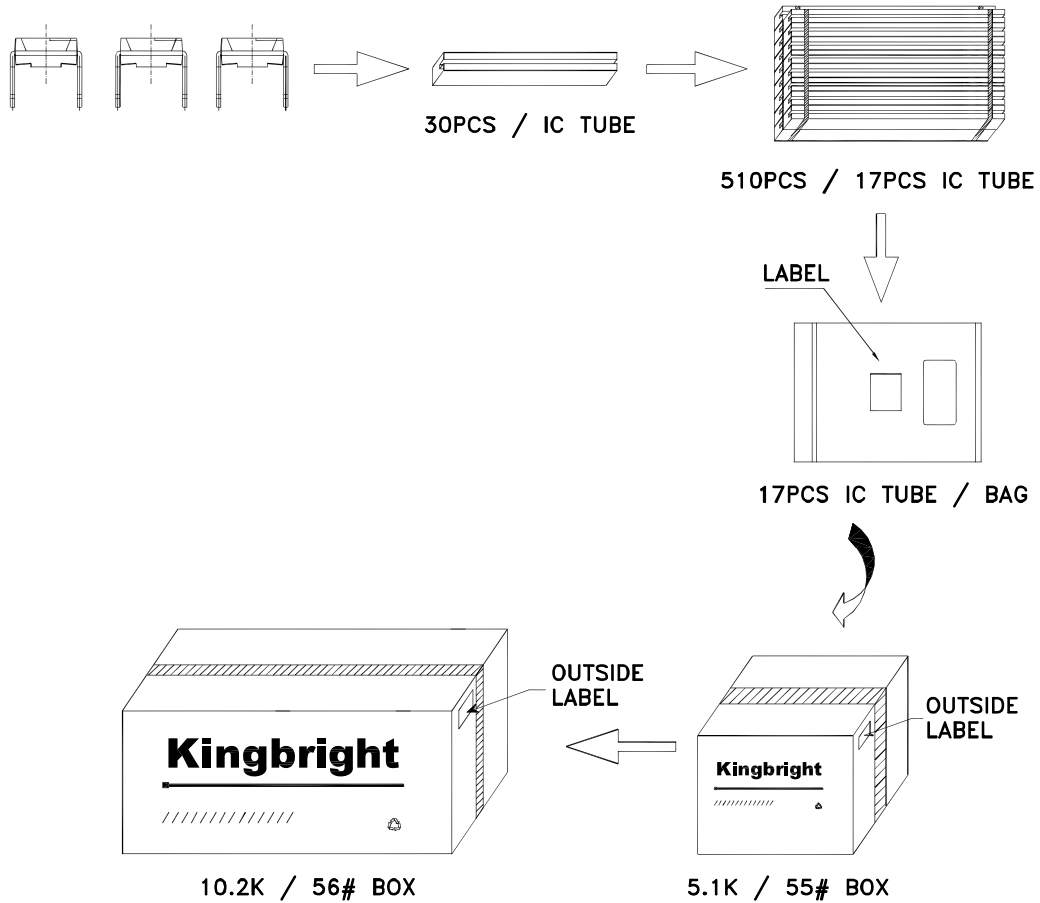


## Green



**PACKING & LABEL SPECIFICATIONS**

**KAF-5060QBFSURZGS**



## Kingbright

P/NO: KAF-5060XXX	
QTY: 510 pcs	Q.C. <span style="border: 1px solid black; border-radius: 50%; padding: 2px;">QC XX-XX-XXXX PASSED</span>
S/N: XXXX	
CODE: XXX	
LOT NO:	
RoHS Compliant	