Kingbright

5.0mm x 6.0mm FULL COLOR LED LAMP

Part Number: KAF-5060VBDSEEVGAS

Blue
Hyper Red
Green

ATTENTION
OBSERVE PRECAUTIONS
FOR HANDLING
ELECTROSTATIC
DISCHARGE
SENSITIVE
DEVICES

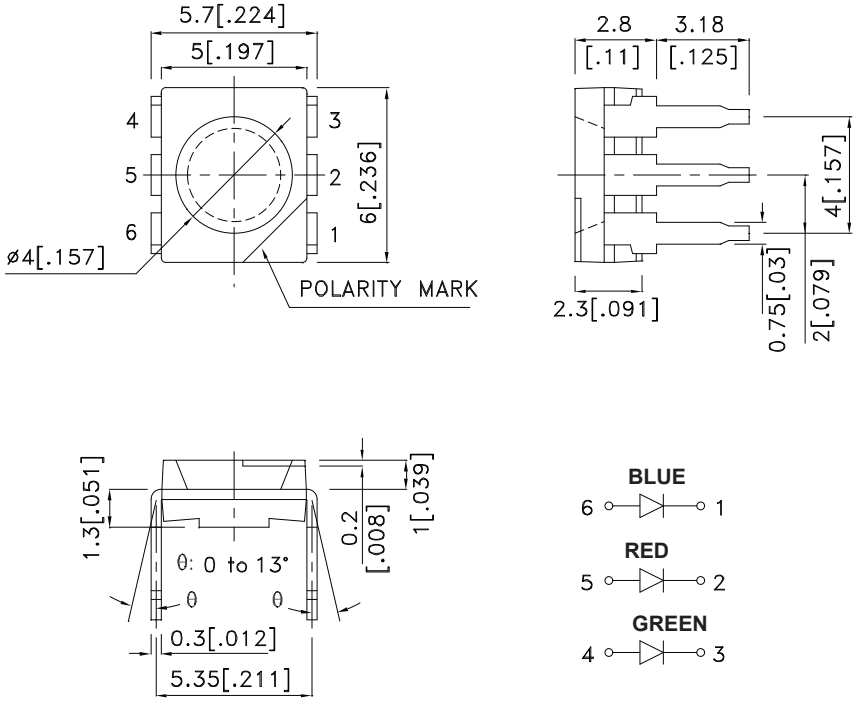
Features

- 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-GaInP on GaAs substrate Light Emitting Diode.
The Green source color devices are made with InGaN on G-SiC 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

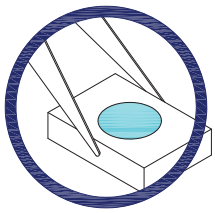


Notes:
1. All dimensions are in millimeters (inches).
2. Tolerance is ±0.25(0.01") unless otherwise noted.
3. Lead spacing is measured where the leads emerge from the package.
4. The specifications, characteristics and technical data described in the datasheet are subject to change without prior notice.

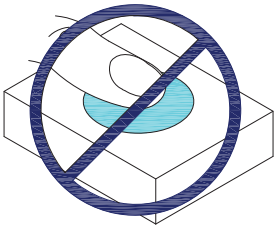
Handling Precautions

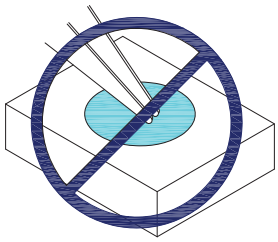
Compare to epoxy encapsulant that is hard and brittle, silicone is softer and flexible. Although its characteristic significantly reduces thermal stress, it is more susceptible to damage by external mechanical force.
As a result, special handling precautions need to be observed during assembly using 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.

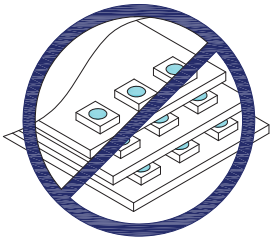


2. Do not directly touch or handle the silicone lens surface. It may damage the internal circuitry.

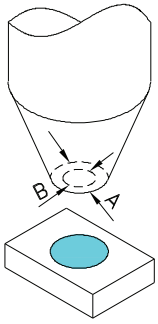




3. Do not stack together assembled PCBs containing exposed LEDs. Impact may scratch the silicone lens or damage the internal circuitry.



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

Kingbright

Selection Guide

Part No.	Dice	Lens Type	Iv (mcd) [2] @ 30mA		Iv (mcd) [2] @ 50mA		Viewing Angle [1]
			Min.	Typ.	Min.	Typ.	2θ1/2
KAF-5060VBDSEEVGAS	Blue (InGaN)	Water Clear	400	600	-	-	100°
			*400	*600	-	-	
	Hyper Red (AlGaInP)		-	-	650	1000	
			-	-	*200	*400	
	Green (InGaN)		200	400	-	-	
			*200	*400	-	-	

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

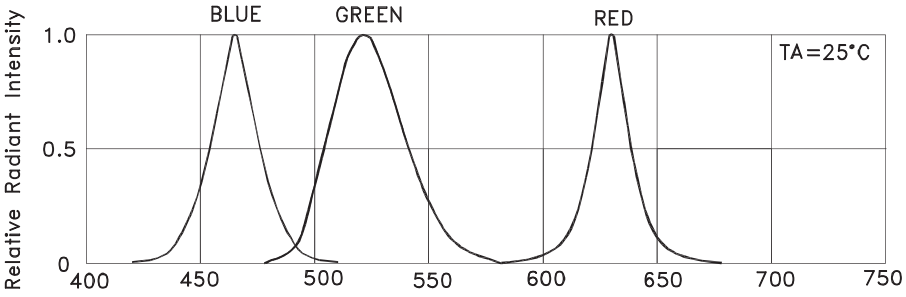
Symbol	Parameter	Device	Typ.	Max.	Units	Test Conditions
λpeak	Peak Wavelength	Blue Hyper Red Green	465 630 520		nm	I_F=20mA
λD [1]	Dominant Wavelength	Blue Hyper Red Green	470 621 530		nm	I_F=20mA
Δλ1/2	Spectral Line Half-width	Blue Hyper Red Green	22 20 35		nm	I_F=20mA
C	Capacitance	Blue Hyper Red Green	100 25 100		pF	V_F=0V;f=1MHz
V_F [2]	Forward Voltage	Blue Hyper Red Green	3.3 2 3.2	4 2.5 4	V	I_F=20mA
I_R	Reverse Current	Blue Hyper Red Green		50 10 10	uA	V_R=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

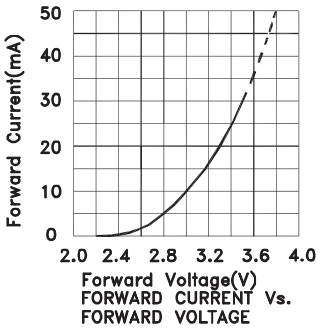
Parameter	Blue	Hyper Red	Green	Units
Power dissipation[2]	350			mW
DC Forward Current	30	50	30	mA
Peak Forward Current [1]	100	195	100	mA
Reverse Voltage	5			V
Operating / Storage Temperature	-40°C To +85°C			
Lead Solder Temperature [3]	260°C For 3 Seconds			
Lead Solder Temperature [4]	260°C For 5 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.

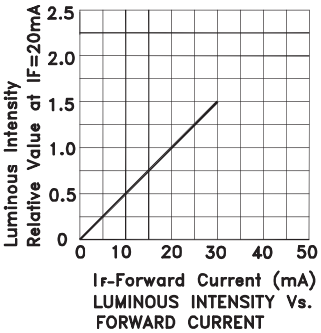


RELATIVE INTENSITY Vs. CIE WAVELENGTH

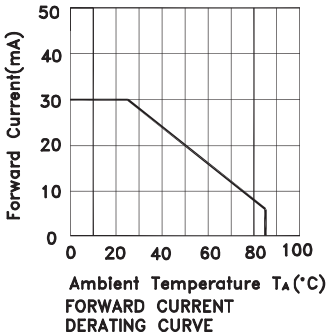
KAF-5060VBDSEEVGAS
Blue



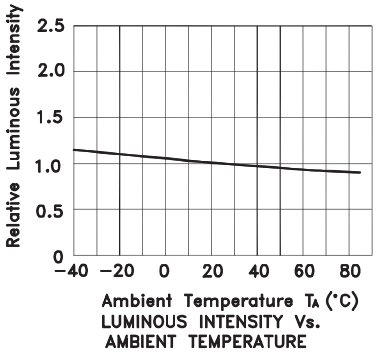
FORWARD CURRENT Vs.
FORWARD VOLTAGE



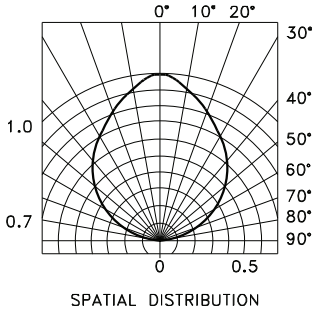
LUMINOUS INTENSITY Vs.
FORWARD CURRENT



FORWARD CURRENT
DERATING CURVE

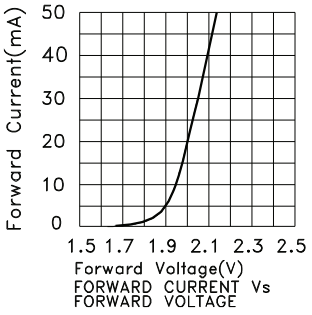


LUMINOUS INTENSITY Vs.
AMBIENT TEMPERATURE

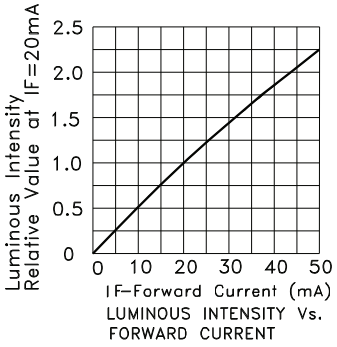


SPATIAL DISTRIBUTION

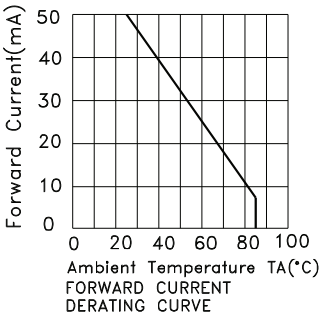
Hyper Red



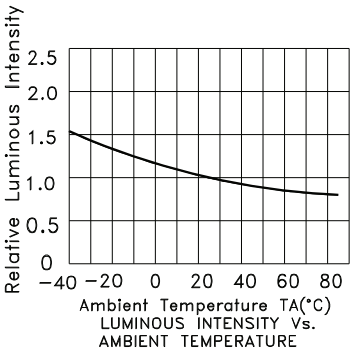
FORWARD CURRENT Vs
FORWARD VOLTAGE



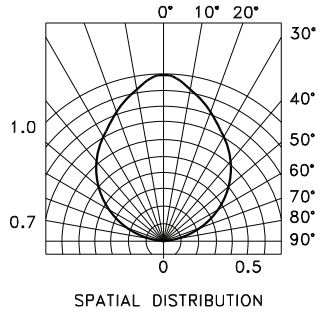
LUMINOUS INTENSITY Vs.
FORWARD CURRENT



FORWARD CURRENT
DERATING CURVE

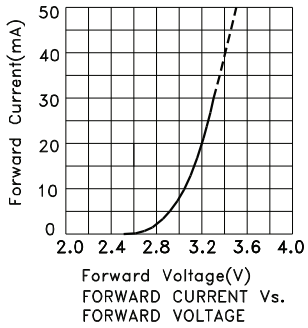


LUMINOUS INTENSITY Vs.
AMBIENT TEMPERATURE

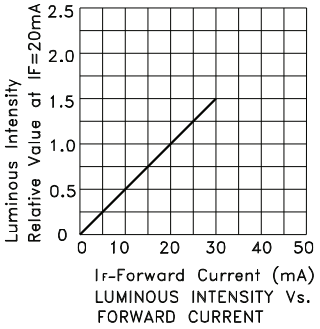


SPATIAL DISTRIBUTION

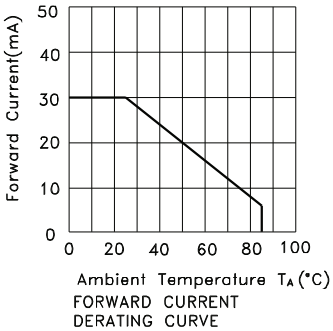
Green



FORWARD CURRENT Vs.
FORWARD VOLTAGE



LUMINOUS INTENSITY Vs.
FORWARD CURRENT



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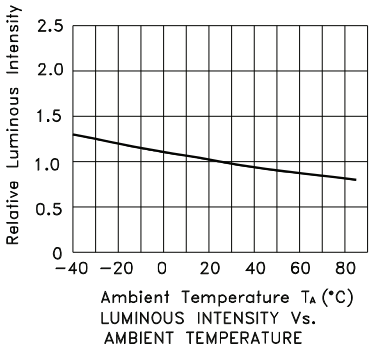
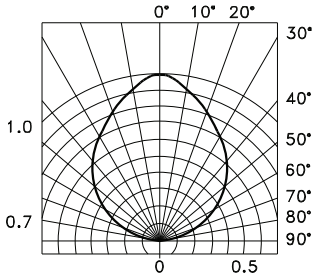
DERATING CURVE

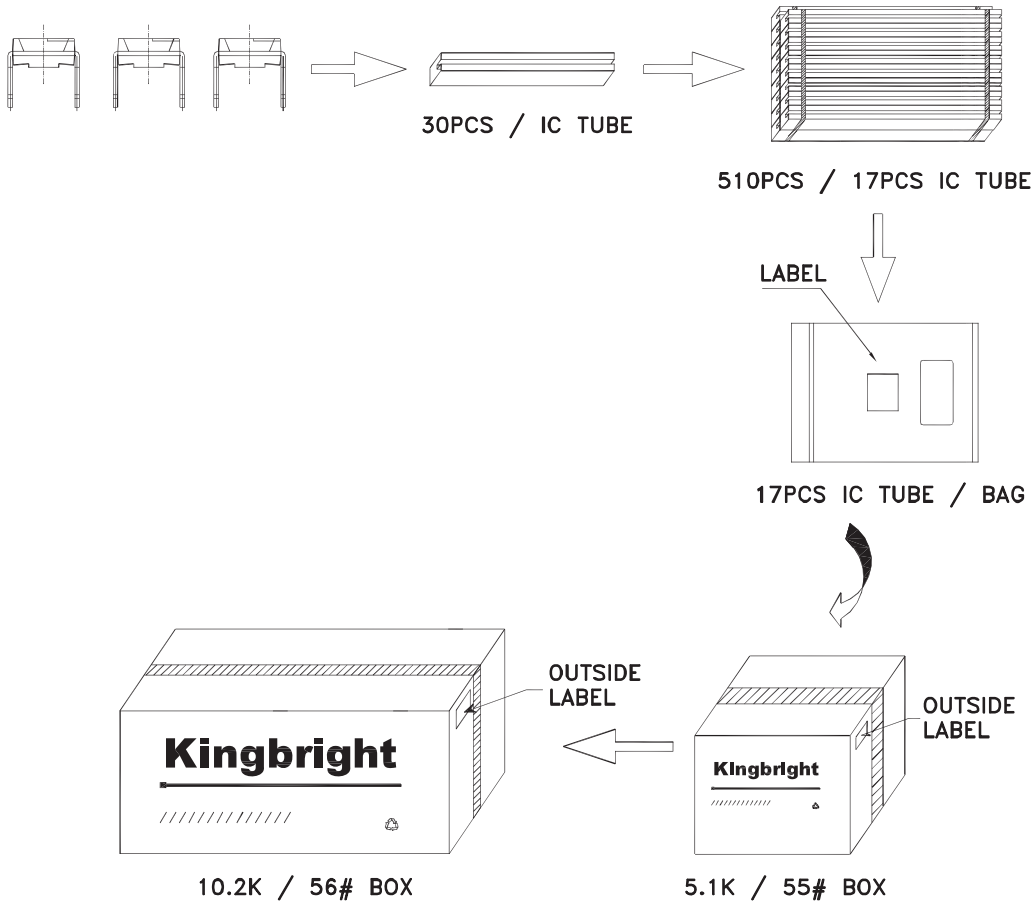


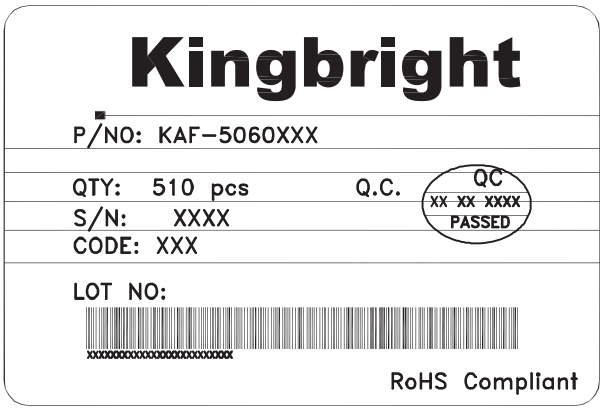
LUMINOUS INTENSITY Vs.
AMBIENT TEMPERATURE



SPATIAL DISTRIBUTION

PACKING & LABEL SPECIFICATIONS **KAF-5060VBDSEEVGAS**





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