



ATTENTION
OBSERVE PRECAUTIONS
FOR HANDLING
ELECTROSTATIC
DISCHARGE
SENSITIVE
DEVICES

Part Number: KAAF-5060QBDSURKZGS

Blue
Hyper Red
Green

Features

- Chips can be controlled separately.
- Suitable for all SMT assembly and solder process.
- Available on tape and reel.
- Package: 500pcs / reel.
- 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.

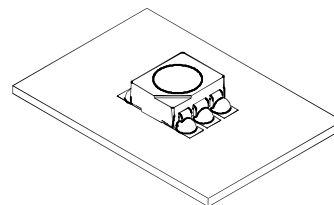
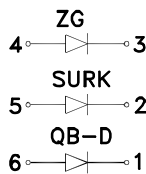
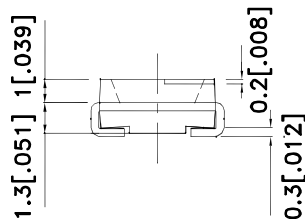
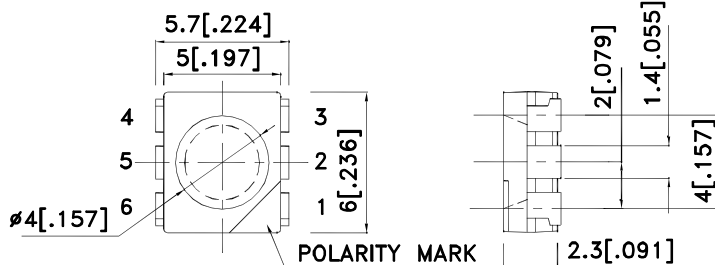
The Green source color devices are made with InGaN on Sapphire Light Emitting Diode.

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. 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.

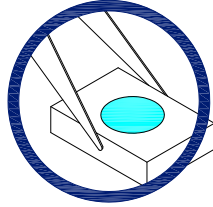


Handling Precautions

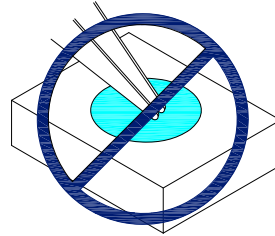
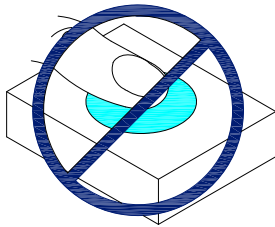
Compare to epoxy encapsulant that is hard and brittle, silicone is softer and flexible. Although its characteristic significantly reduces thermal stress, it is more susceptible to damage by external mechanical force.

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.

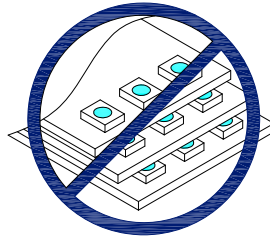
1. Handle the component along the side surfaces by using forceps or appropriate tools.



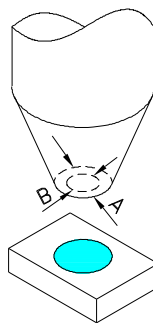
2. Do not directly touch or handle the silicone lens surface. It may damage the internal circuitry.



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 H₂S might corrode silver plating of leadframe. Special care should be taken if an LED with silicone encapsulation is to be used near such substances.

Selection Guide

Part No.	Dice	Lens Type	Iv (mcd) [2] @ 30mA		Viewing Angle [1]
			Min.	Typ.	2θ1/2
KAAF-5060QBDSURKZGS	Blue (InGaN)	Water Clear	120	250	100°
			120*	250*	
	Hyper Red (AlGaInP)		400	600	
			80*	180*	
	Green (InGaN)		500	1000	
			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	468 650 515	460* 645* 515	nm	I _F =20mA
λD [1]	Dominant Wavelength	Blue Hyper Red Green	470 630 525	465* 630* 525*	nm	I _F =20mA
Δλ1/2	Spectral Line Half-width	Blue Hyper Red Green	25 28 30		nm	I _F =20mA
C	Capacitance	Blue Hyper Red Green	100 35 45		pF	V _F =0V;f=1MHz
V _F [2]	Forward Voltage	Blue Hyper Red Green	3.3 1.95 3.3	4.0 2.5 4.1	V	I _F =20mA
I _R	Reverse Current	Blue Hyper Red Green		50 10 50	uA	V _R =5V

Notes:

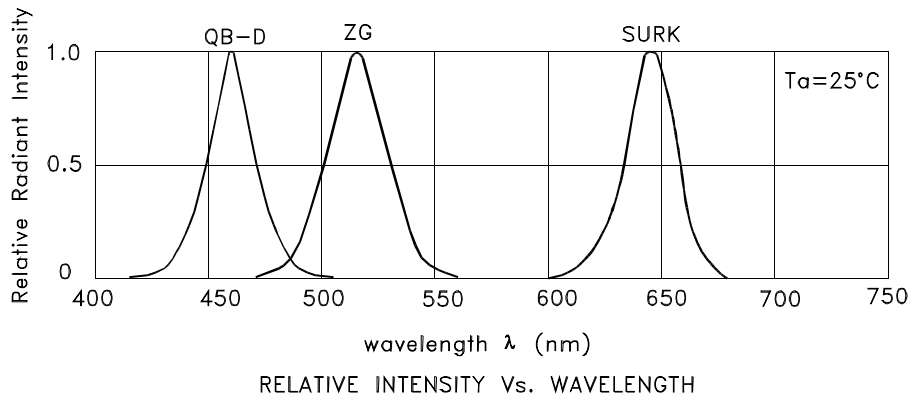
1. Wavelength: +/-1nm.
 2. Forward Voltage: +/-0.1V.
- * Wavelength value is traceable to the CIE127-2007 compliant national standards.

Absolute Maximum Ratings at TA=25°C

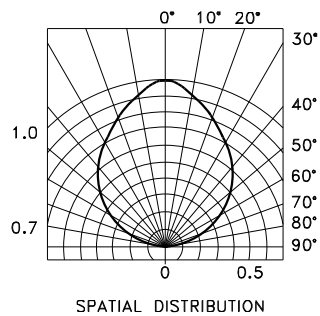
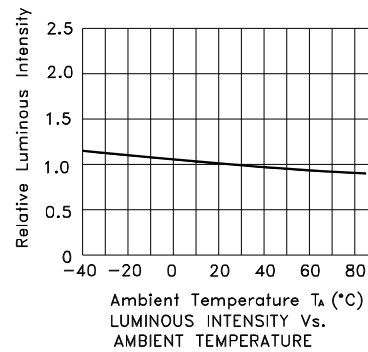
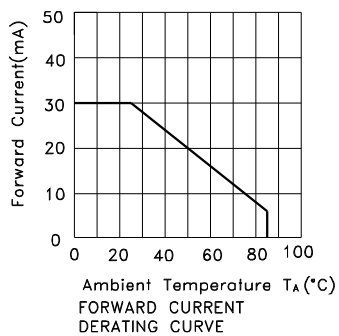
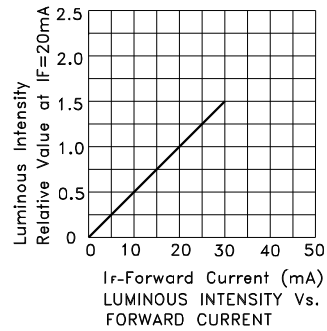
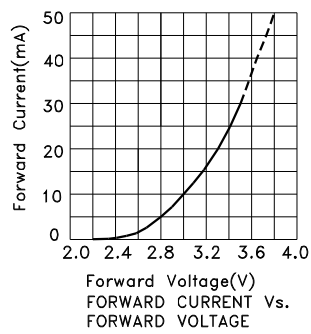
Parameter	Blue	Hyper Red	Green	Units
Power dissipation[2]	350			mW
DC Forward Current	30	30	30	mA
Peak Forward Current [1]	150	185	150	mA
Reverse Voltage	5			V
Operating Temperature	-40°C To +85°C			
Storage Temperature	-40°C To +85°C			

Notes:

1. 1/10 Duty Cycle, 0.1ms Pulse Width.
2. Within 350mW at all chips are lightened.

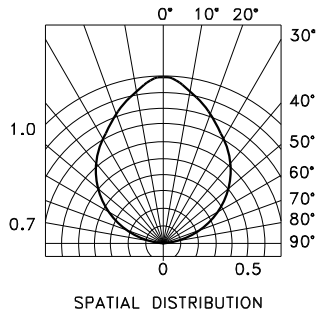
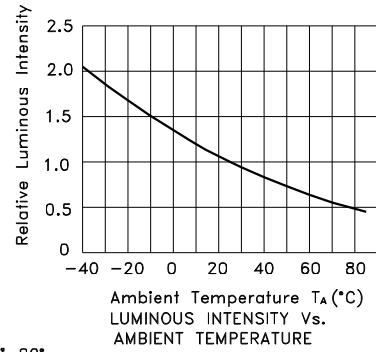
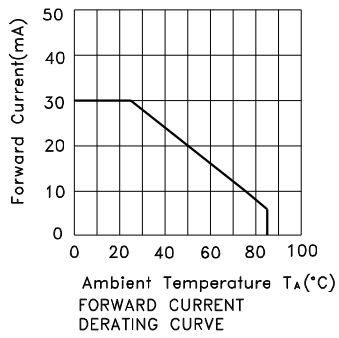
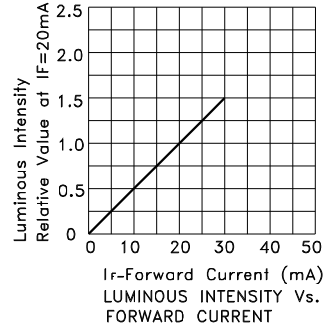
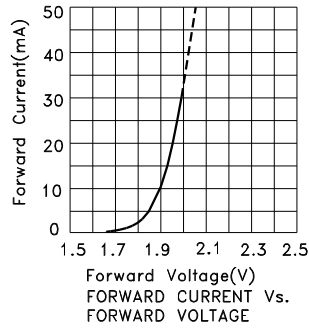


KAAF-5060QBDSURKZGS Blue

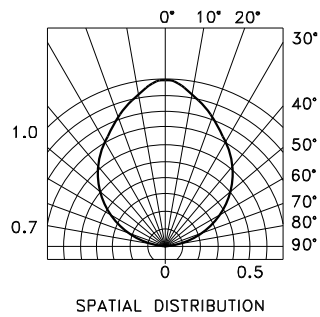
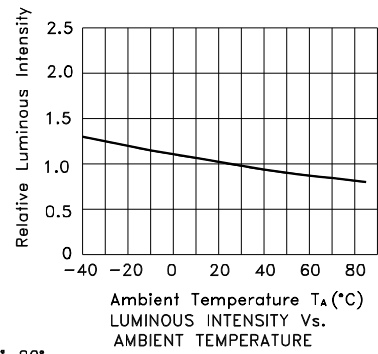
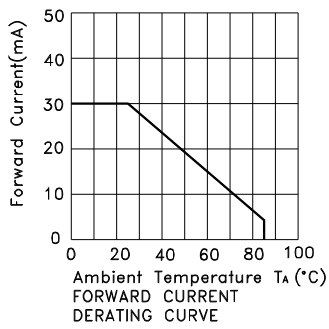
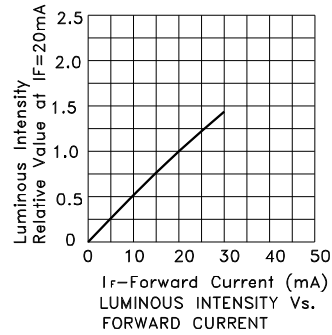
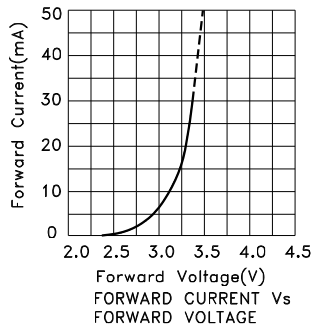


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Hyper Red



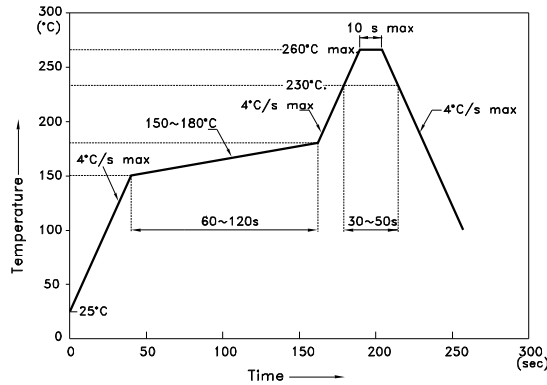
Green



KA AF-5060QBDSURKZGS

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.

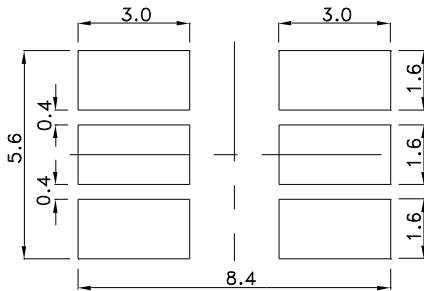
Reflow Soldering Profile For Lead-free SMT Process.



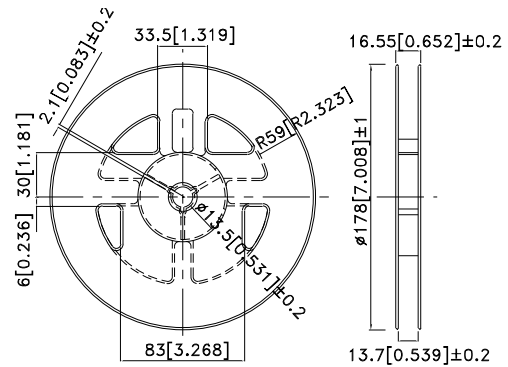
NOTES:

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.

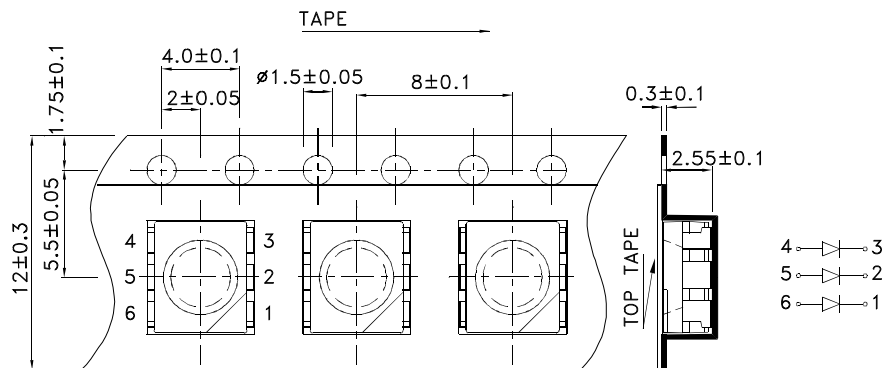
Recommended Soldering Pattern (Units : mm; Tolerance: ± 0.1)



Reel Dimension



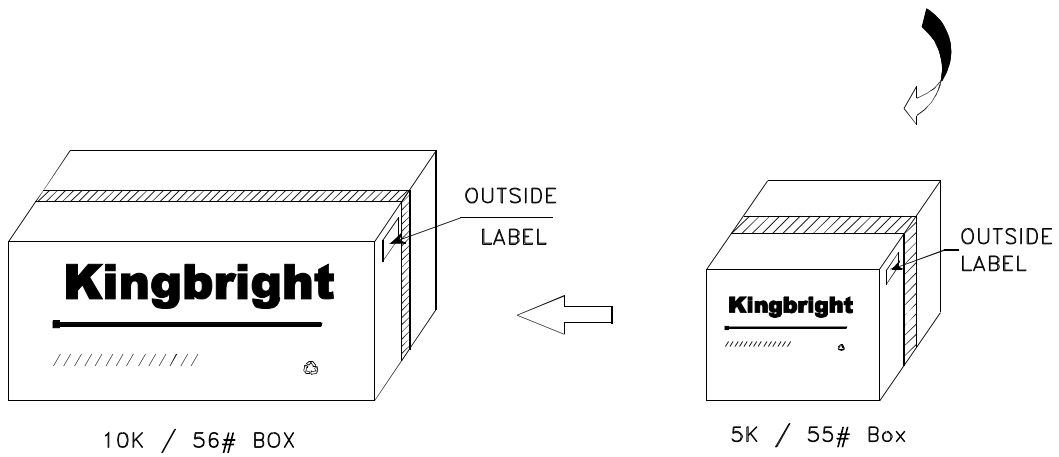
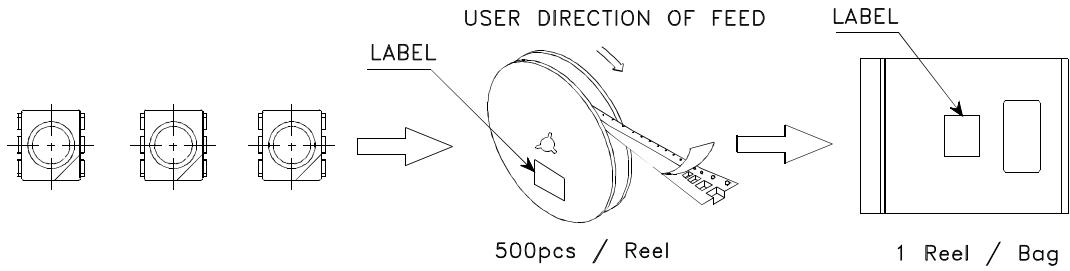
Tape Dimensions (Units : mm)




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PACKING & LABEL SPECIFICATIONS

KAAF-5060QBDSURKZGS



Kingbright	
P/NO: KAAF-5060xxx	
QTY: 500 pcs	Q.C. Q C XX XX XXXX PASSED
S/N: XXXX	
CODE: XXX	
LOT NO:	
 xxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxx	
RoHS Compliant	