



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

Part Number: KAAF-3529BGRS-132

Blue  
Green  
Hyper Red

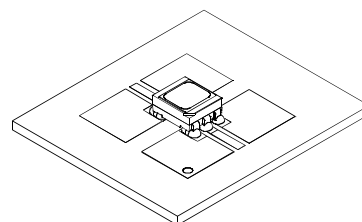
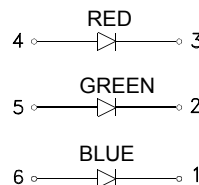
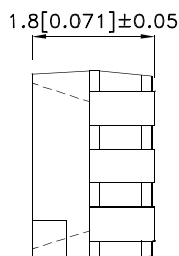
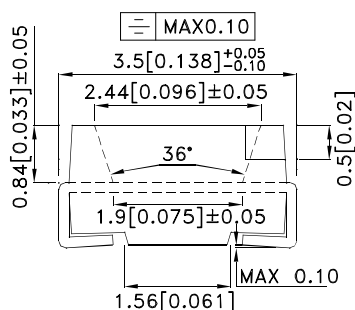
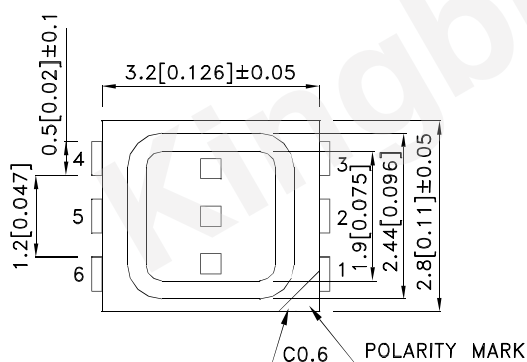
### Features

- Outstanding material efficiency.
- Low power consumption.
- Can produce any color in visible spectrum, including white light.
- Suitable for all SMD assembly and solder process.
- Available on tape and reel.
- Package: 2000pcs / reel .
- Moisture sensitivity level : level 3.
- RoHS compliant.

### Descriptions

- The Blue source color devices are made with InGaN Light Emitting Diode.
- The Green source color devices are made with InGaN Light Emitting Diode.
- The Hyper Red source color devices are made with Al GaInP on Si-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  $\pm 0.2(0.008)$  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.

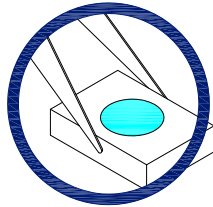


## Handling Precautions

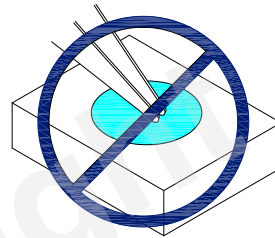
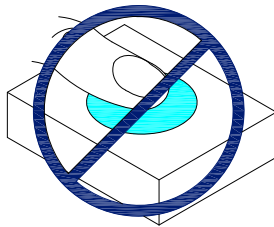
Compare to epoxy encapsulant that is hard and brittle, silicone is softer and flexible. Although its characteristic significantly reduces thermal stress, it is more susceptible to damage by external mechanical force.

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.

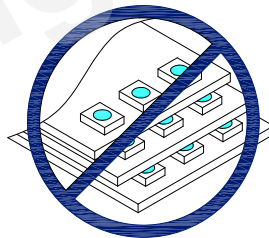
1. Handle the component along the side surfaces by using forceps or appropriate tools.



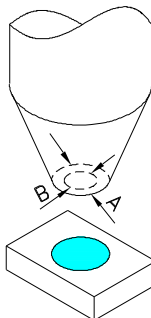
2. Do not directly touch or handle the silicone lens surface. It may damage the internal circuitry.



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  $H_2S$  might corrode silver plating of leadframe. Special care should be taken if an LED with silicone encapsulation is to be used near such substances.

## Selection Guide

Part No.	Emitting Color (Material)	Lens Type	Iv (mcd) [2] @ 20mA		Viewing Angle [1]
			Min.	Typ.	2θ1/2
KAAF-3529BGRS-132	Blue (InGaN)	Water Clear	200	300	130°
	Green (InGaN)		1000	1600	
	Hyper Red (AlGaInP)		700	950	

### 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	Blue Green Hyper Red	465 520 631		nm	If=20mA
λD [1]	Dominant Wavelength	Blue Green Hyper Red	470 525 624		nm	If=20mA
Δλ1/2	Spectral Line Half-width	Blue Green Hyper Red	22 35 20		nm	If=20mA
C	Capacitance	Blue Green Hyper Red	100 100 25		pF	VF=0V;f=1MHz
VF [2]	Forward Voltage	Blue Green Hyper Red	3.3 3.2 2.1	4 4 2.5	V	If=20mA
IR	Reverse Current	Blue Green Hyper Red		50 50 10	uA	VR=5V

### Notes:

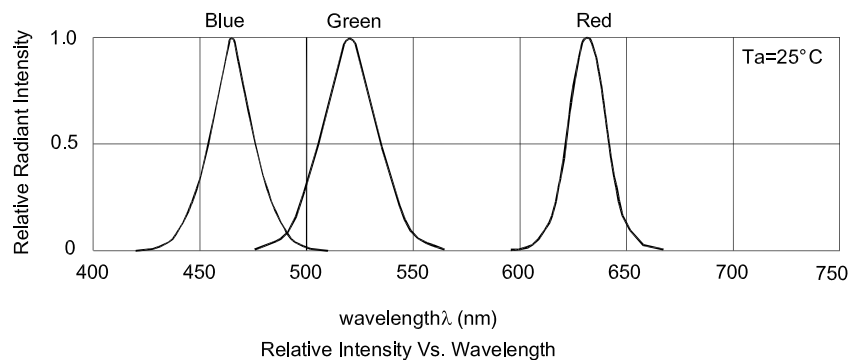
1. Wavelength: +/-1nm.
2. Forward Voltage: +/-0.1V.
3. Wavelength value is traceable to CIE127-2007 standards.
4. Excess driving current and / or operating temperature higher than recommended conditions may result in severe light degradation or premature failure.

## Absolute Maximum Ratings at TA=25°C

Parameter	Blue	Green	Hyper Red	Units
Power dissipation	120	120	175	mW
DC Forward Current	30	30	70	mA
Peak Forward Current [1]	100	100	200	mA
Electrostatic Discharge Threshold (HBM)	250	450	3000	V
Reverse Voltage	5			V
Operating Temperature	-40°C To +85°C			
Storage Temperature	-40°C To +85°C			

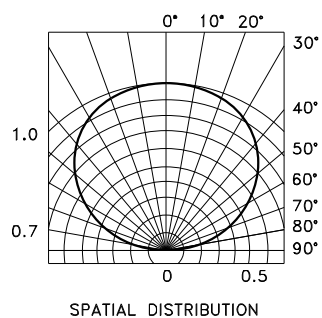
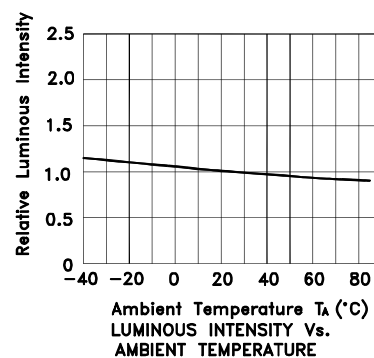
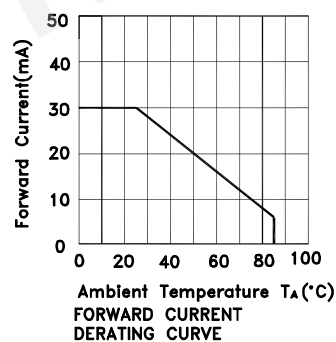
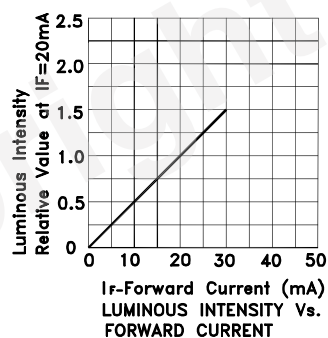
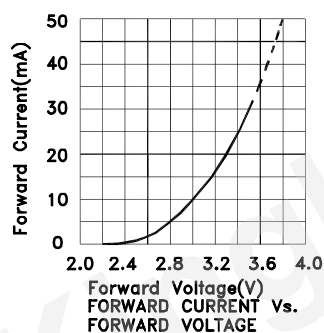
### Note:

1. 1/10 Duty Cycle, 0.1ms Pulse Width.
2. 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.

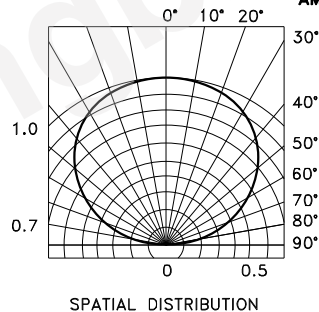
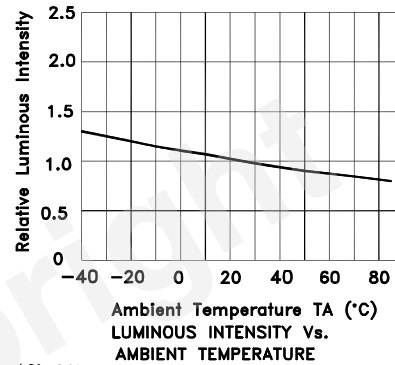
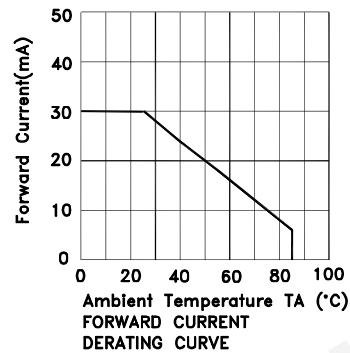
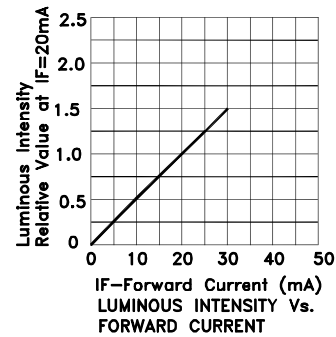
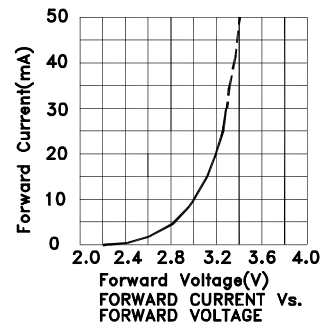


## KAAF-3529BGRS-132

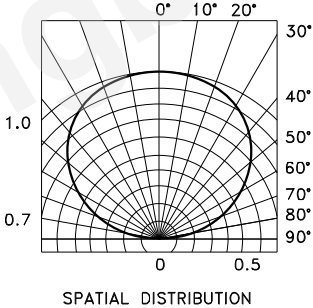
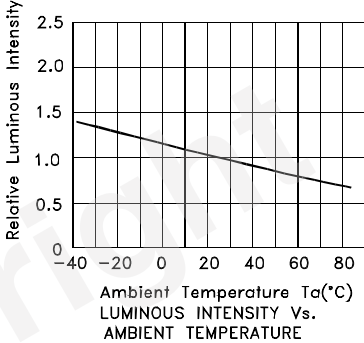
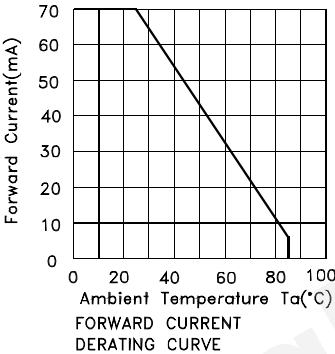
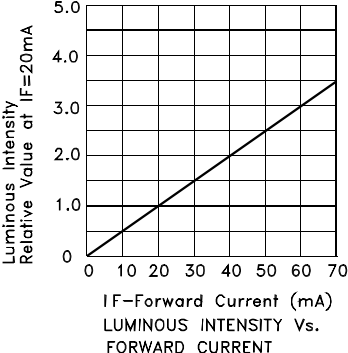
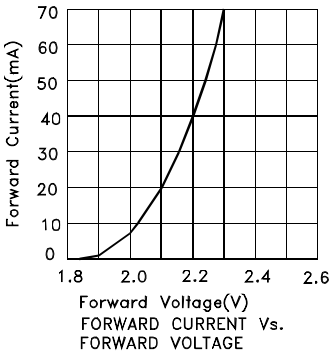
### Blue



## Green



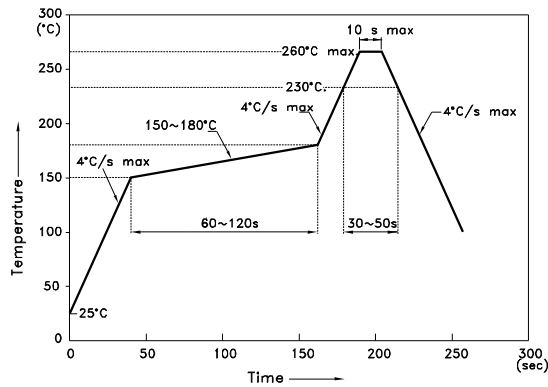
## Hyper Red



## KAAF-3529BGRS-132

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.

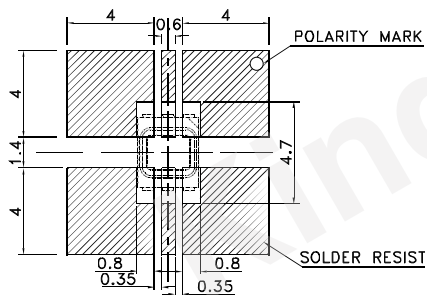
Reflow Soldering Profile For Lead-free SMT Process.



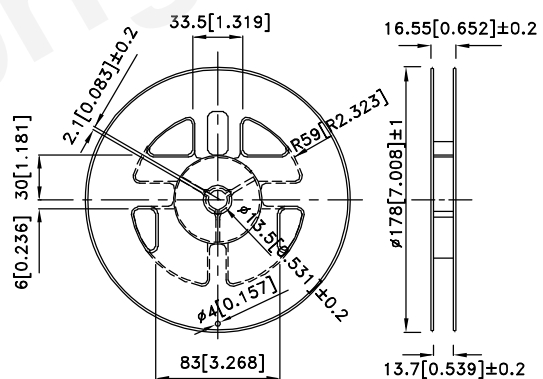
### NOTES:

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.

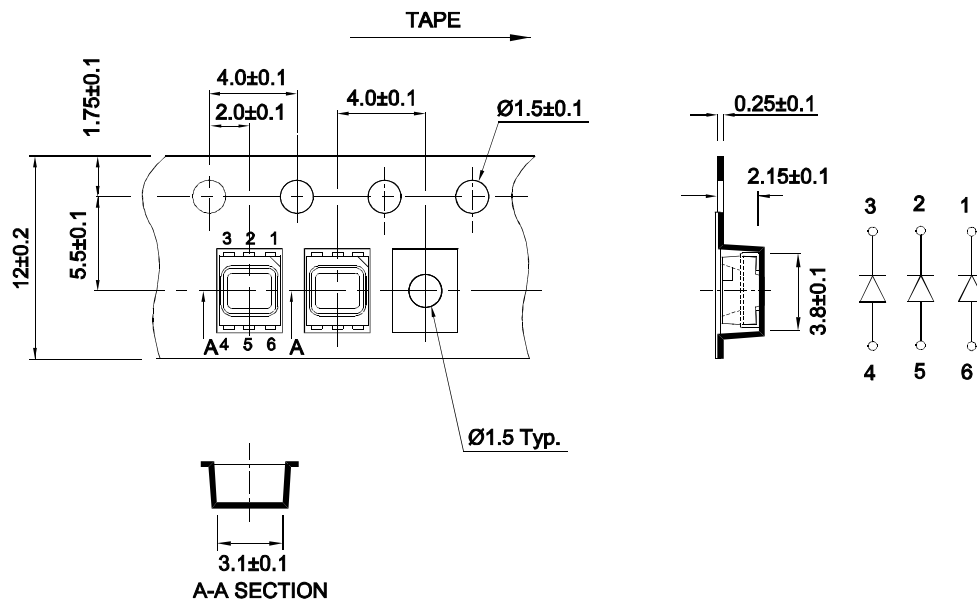
### Recommended Soldering Pattern (Units : mm; Tolerance: $\pm 0.1$ )



### Reel Dimension

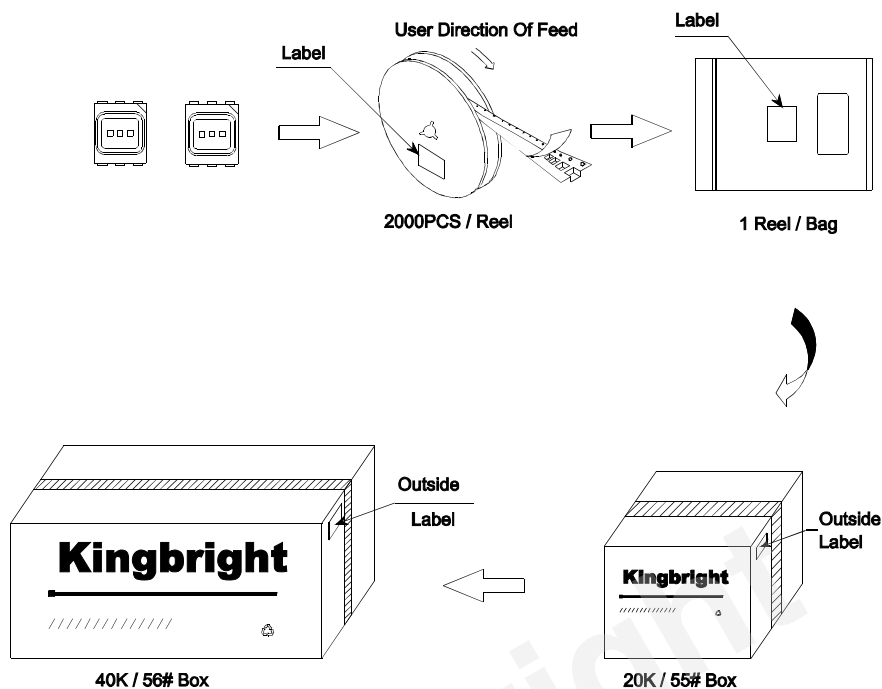


### Tape Dimensions (Units : mm)



## PACKING & LABEL SPECIFICATIONS

KAAF-3529BGRS-132



<b>Kingbright</b>		
P/NO: KAAF-3529xxx		
QTY: 2000 PCS	Q.C.	<div style="border: 1px solid black; border-radius: 50%; padding: 5px; text-align: center;"> Q.C.  xxx xxxxx  <b>PASSED</b> </div>
S/N: XXXX		
CODE: XXX		
LOT NO:		
RoHS Compliant		

### Terms and conditions for the usage of this document

1. The information included in this document reflects representative usage scenarios and is intended for technical reference only.
2. The part number, type, and specifications mentioned in this document are subject to future change and improvement without notice. Before production usage customer should refer to the latest datasheet for the updated specifications.
3. When using the products referenced in this document, please make sure the product is being operated within the environmental and electrical limits specified in the datasheet. If customer usage exceeds the specified limits, Kingbright will not be responsible for any subsequent issues.
4. The information in this document applies to typical usage in consumer electronics applications. If customer's application has special reliability requirements or have life-threatening liabilities, such as automotive or medical usage, please consult with Kingbright representative for further assistance.
5. The contents and information of this document may not be reproduced or re-transmitted without permission by Kingbright.
6. All design applications should refer to Kingbright application notes available at [http://www.kingbright.com/application\\_notes](http://www.kingbright.com/application_notes)