



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

Part Number: AAAF5060QBDZGSEES

Blue  
Green  
Hyper Red

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

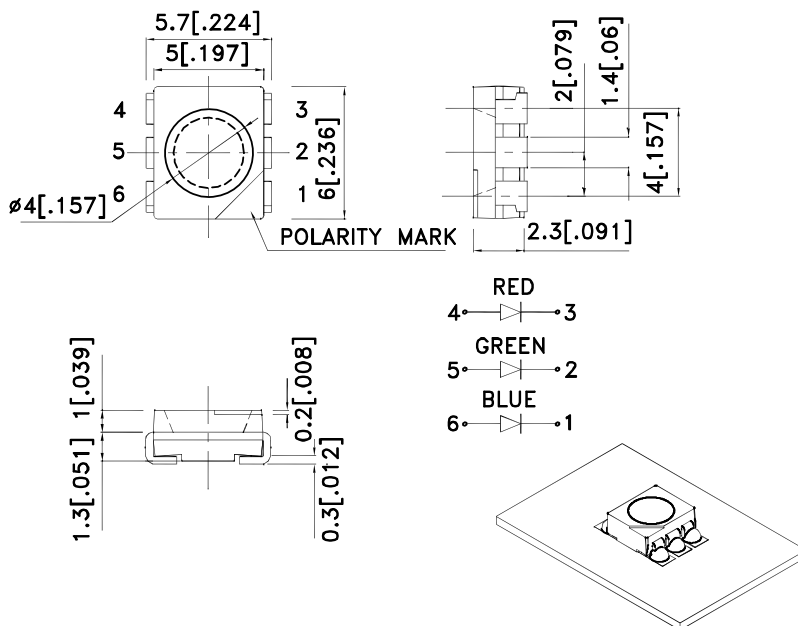
The Hyper Red source color devices are made with Al-GaN on GaAs substrate Light Emitting Diode.

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.

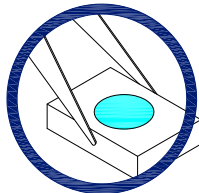


## Handling Precautions

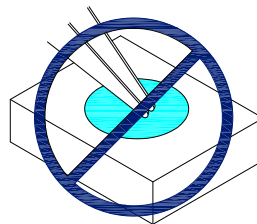
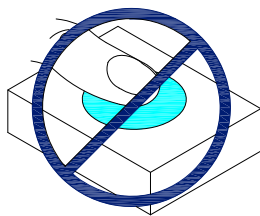
Compare to epoxy encapsulant that is hard and brittle, silicone is softer and flexible. Although its characteristic significantly reduces thermal stress, it is more susceptible to damage by external mechanical force.

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.

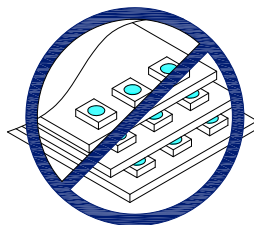
1. Handle the component along the side surfaces by using forceps or appropriate tools.



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



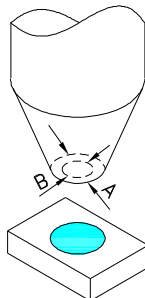
3. Do not stack together assembled PCBs containing exposed LEDs. Impact may scratch the silicone lens or damage the internal circuitry.



4. The outer diameter of the SMD pickup nozzle should not exceed the size of the LED to prevent air leaks. The inner diameter of the nozzle should be as large as possible.

5. A pliable material is suggested for the nozzle tip to avoid scratching or damaging the LED surface during pickup.

6. The dimensions of the component must be accurately programmed in the pick-and-place machine to insure precise pickup and avoid damage during production.



## Selection Guide

Part No.	Dice	Lens Type	Iv (mcd) [2] @ 30mA *50mA		Viewing Angle [1]
			Min.	Typ.	2θ1/2
AAAF5060QBDZGSEES	Blue (InGaN)	Water Clear	120	250	100°
	Green (InGaN)		500	1000	
	Hyper Red (AlGaInP)		*700	*1300	

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 with asterisk is measured at 50mA; Luminous intensity/ luminous Flux: +/-15%.

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

Symbol	Parameter	Device	Typ.	Max.	Units	Test Conditions
λpeak	Peak Wavelength	Blue Green Hyper Red	468 515 630		nm	IF=20mA
λD [1]	Dominant Wavelength	Blue Green Hyper Red	470 525 621		nm	IF=20mA
Δλ1/2	Spectral Line Half-width	Blue Green Hyper Red	25 30 20		nm	IF=20mA
C	Capacitance	Blue Green Hyper Red	100 45 25		pF	VF=0V;f=1MHz
VF [2]	Forward Voltage	Blue Green Hyper Red	3.3 3.3 2	4 4.1 2.5	V	IF=20mA
IR	Reverse Current	Blue Green Hyper Red		50 50 10	uA	VR=5V

Notes:

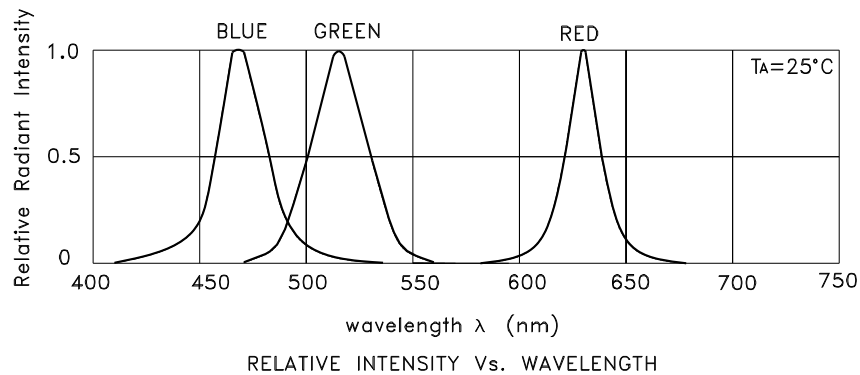
- 1.Wavelength: +/-1nm.
2. Forward Voltage: +/-0.1V.

## Absolute Maximum Ratings at TA=25°C

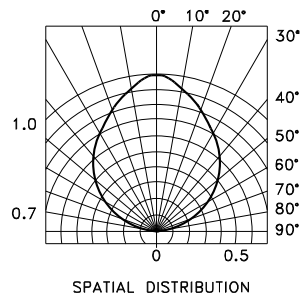
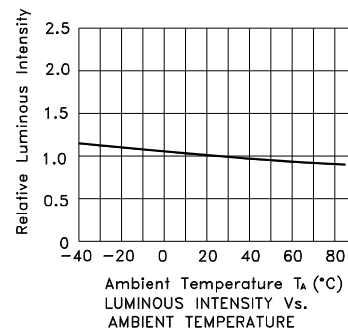
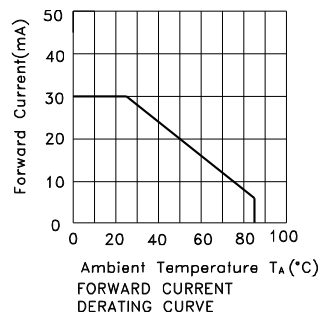
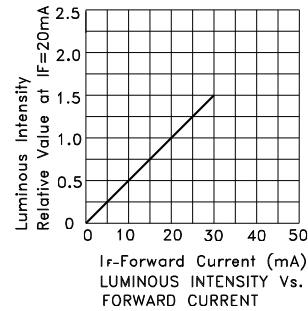
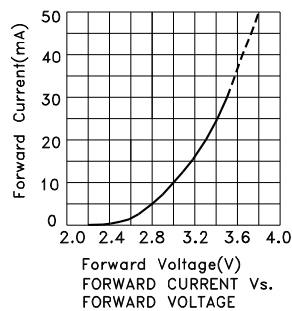
Parameter	Blue	Green	Hyper Red	Units
Power dissipation[2]	350			mW
DC Forward Current	30	30	50	mA
Peak Forward Current [1]	150	150	195	mA
Reverse Voltage	5			V
Operating Temperature	-40°C To +85°C			
Storage Temperature	-40°C To +85°C			

Notes:

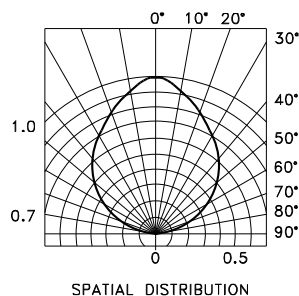
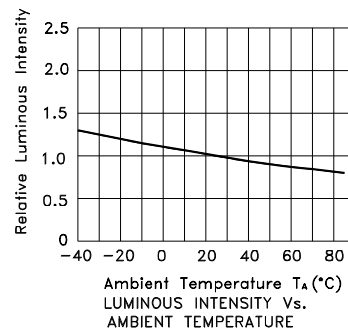
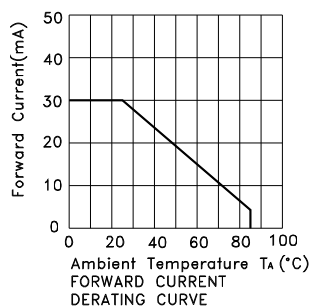
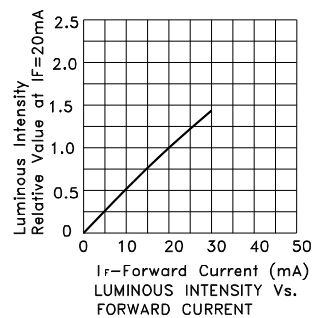
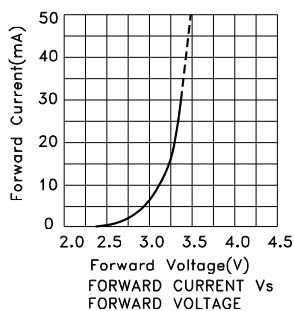
1. 1/10 Duty Cycle, 0.1ms Pulse Width.
2. Within 350mW at all chips are lightened.



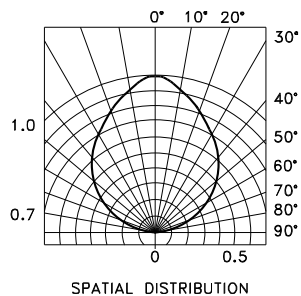
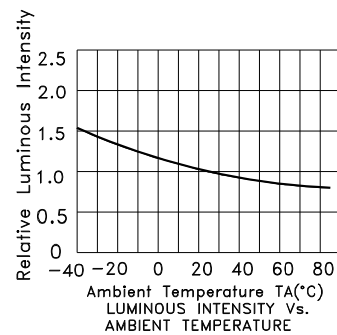
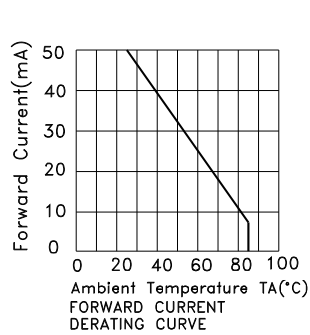
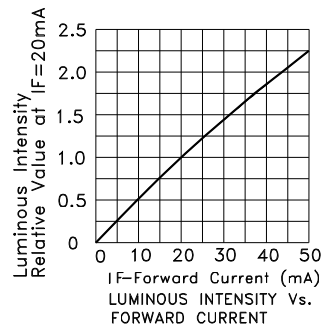
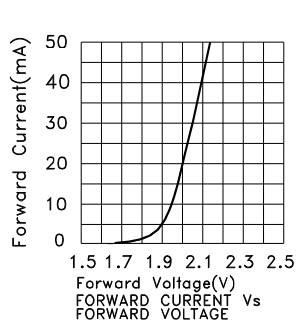
## AAAF5060QBDZGSEES Blue



Green



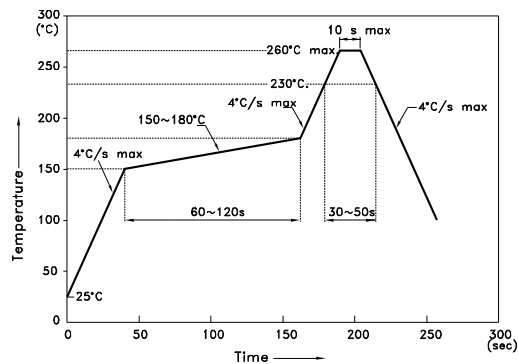
## Hyper Red



## AAAF5060QBDZGSEES

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.

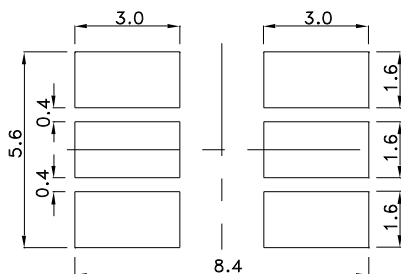
Reflow Soldering Profile For Lead-free SMT Process.



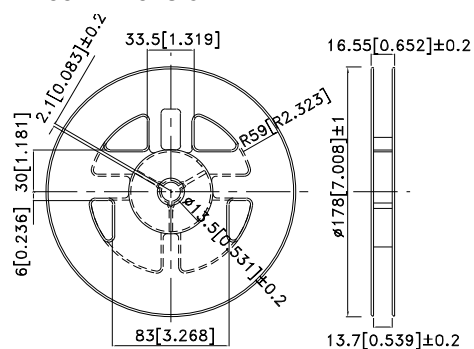
### NOTES:

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.

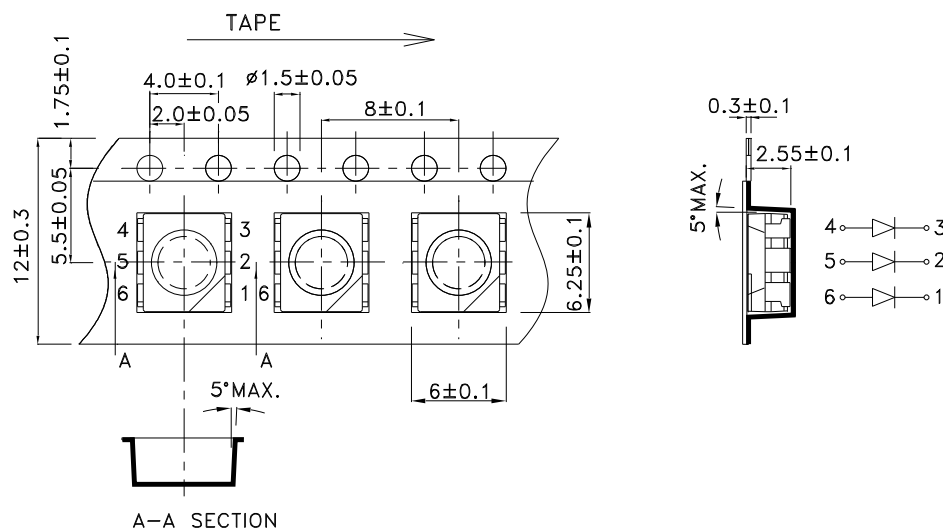
### Recommended Soldering Pattern (Units : mm; Tolerance: ± 0.1)



### Reel Dimension

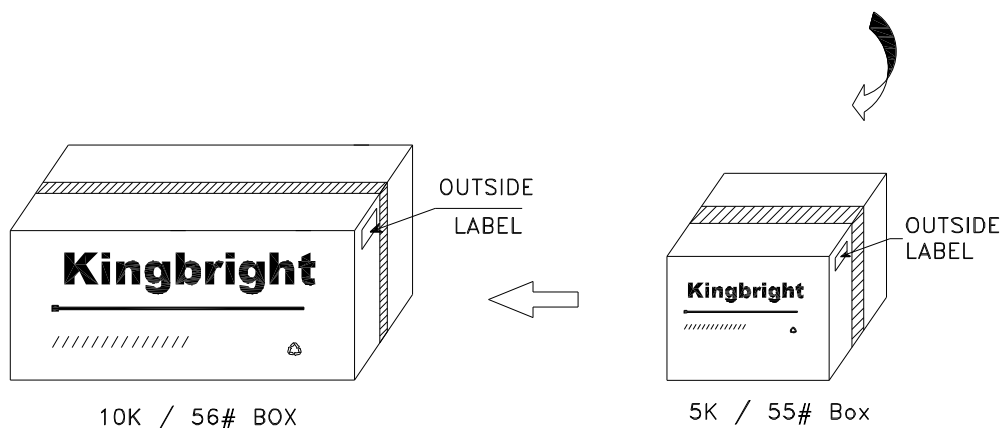
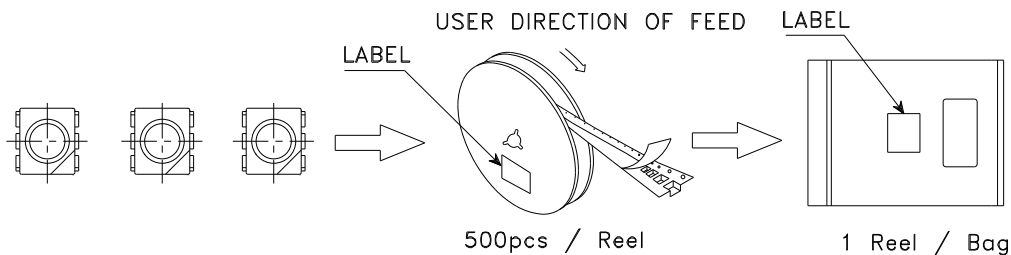



### Tape Dimensions (Units : mm)



## PACKING & LABEL SPECIFICATIONS

AAAF5060QBDZGSEES



<b>Kingbright</b>	
P/NO: AAAF5060xxx	
QTY: 500 pcs	Q.C. <span style="border: 1px solid black; border-radius: 50%; padding: 2px;">Q C xx xx xxxx PASSED</span>
S/N: XXXX	
CODE: XXX	
LOT NO:	
 xxxxxxxxxxxxxxxxxxxxxxxx	
RoHS Compliant	