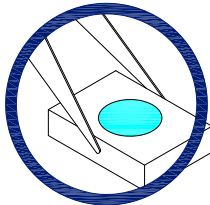


Handling Precautions

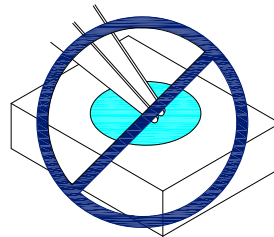
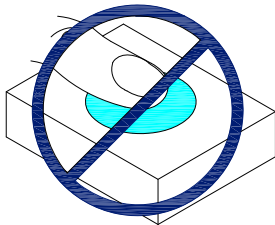
Compare to epoxy encapsulant that is hard and brittle, silicone is softer and flexible. Although its characteristic significantly reduces thermal stress, it is more susceptible to damage by external mechanical force.

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

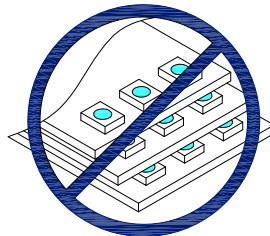
1. Handle the component along the side surfaces by using forceps or appropriate tools.



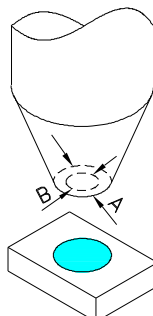
2. Do not directly touch or handle the silicone lens surface. It may damage the internal circuitry.



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	luminous Intensity ^{Note2} Iv(mcd) @ 20mA		Φ_v (mlm) ^{Note3} @ 20mA		Viewing Angle ^{Note1}
			Min.	Typ.	Min.	Typ.	2 θ 1/2
AA3020ARWC/Z	WHITE (InGaN)	WATER CLEAR	480	1200	1200	3000	120 °

Absolute Maximum Ratings at TA=25°C

Parameter	Symbol	Value	Unit
Power dissipation	Pt	111	mW
Reverse Voltage	VR	5	V
Junction temperature	TJ	110	°C
Operating Temperature	Top	-40 To +85	°C
Storage Temperature	Tstg	-40 To +100	°C
DC Forward Current	IF	30	mA
Peak Forward Current ^{Note4}	IFM	100	mA
Thermal resistance Junction/ambient ^{Note5} Junction/solder point	Rth JA Rth JS	300 140	°C/W °C/W

Notes:

1. θ 1/2 is the angle from optical centerline where the luminous intensity is 1/2 the optical centerline value.
2. Luminous intensity is measured by a current pulse of 10ms at a tolerance of $\pm 15\%$.
3. The typical data of Luminous Flux can only reflect statistical figures, actual parameters of individual product could differ from the typical data. For the purpose of product enhancement, the typical data is subject to change without prior notice.
4. 1/10 Duty Cycle, 0.1ms Pulse Width.
5. Rth(J-A) Results from mounting on PC board FR4 (pad size $\geq 16 \text{ mm}^2$ per pad),

Electrical / Optical Characteristics at TA=25°C

Parameter	Symbol	Value	Unit
Chromaticity coordinate x acc.to CIE1931 IF=20mA [Typ.]	X ^{Note1}	0.31	-
Chromaticity coordinate y acc.to CIE1931 IF=20mA [Typ.]	Y ^{Note1}	0.31	-
Forward Voltage IF=20mA [Min.]	VF ^{Note2}	2.7	V
Forward Voltage IF=20mA [Typ.]		3.2	
Forward Voltage IF=20mA [Max.]		3.7	
Reverse Current (VR=5V) [Typ.]	IR	0.01	μA
Reverse Current (VR=5V) [Max.]		10	
Temperature coefficient of x IF=20mA, $-10^\circ\text{C} \leq T \leq 100^\circ\text{C}$ [Typ.]	TCx	-0.1	$10^{-3}/^\circ\text{C}$
Temperature coefficient of y IF=20mA, $-10^\circ\text{C} \leq T \leq 100^\circ\text{C}$ [Typ.]	TCy	-0.2	$10^{-3}/^\circ\text{C}$
Temperature coefficient of VF IF=20mA, $-10^\circ\text{C} \leq T \leq 100^\circ\text{C}$ [Typ.]	TCV	-2.5	$\text{mV}/^\circ\text{C}$

Notes:

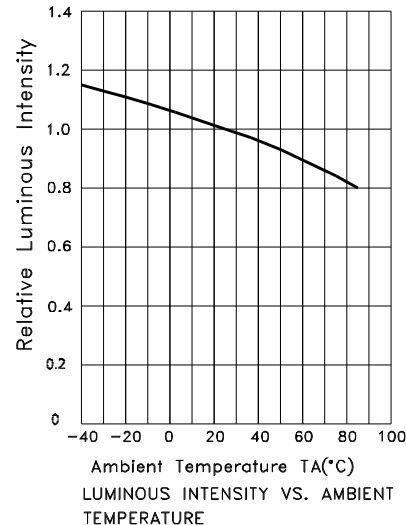
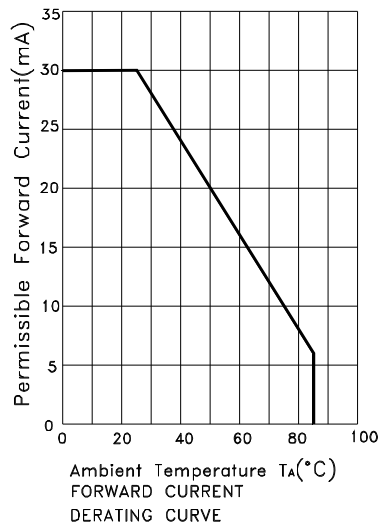
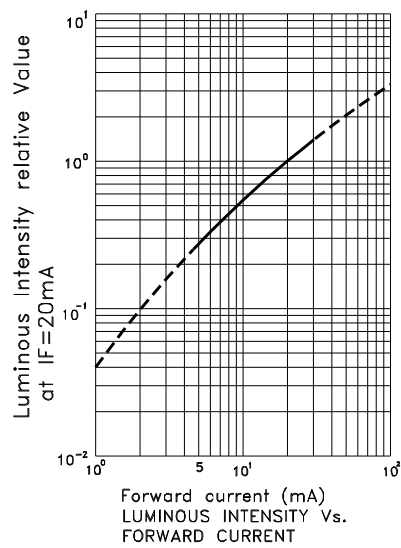
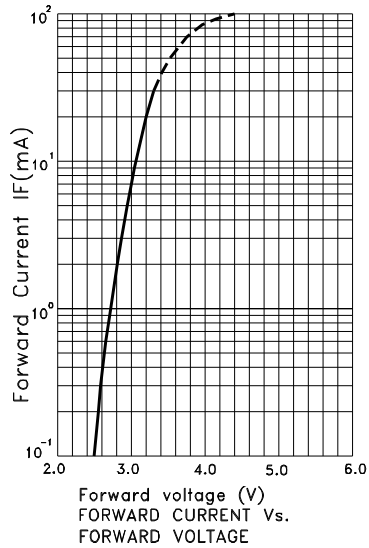
1. Chromaticity coordinates are measured by a current pulse of 20ms with a tolerance of ± 0.01 in X and Y color coordinates.
2. Forward voltage is measured with a current pulse of 10ms at a tolerance of $\pm 0.1\text{V}$.

Brightness codes

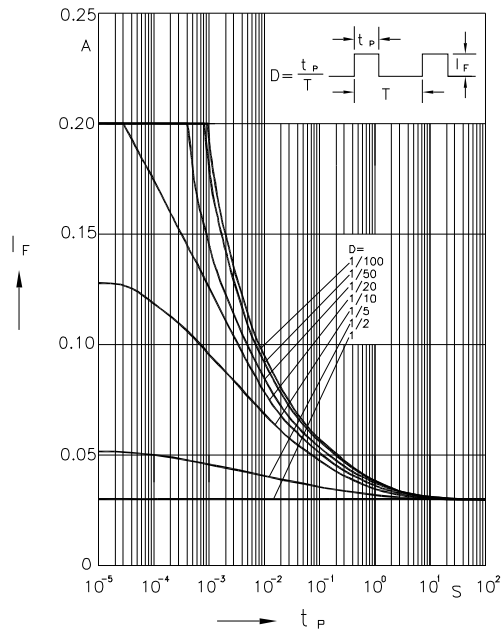
luminous Intensity ^{Note1} Iv(mcd) @ 20mA			Φ_v (lm) ^{Note2} @ 20mA
Code.	Min.	Max.	Typ.
S	480	750	2000
T	650	1100	2400
U	900	1500	3000
V	1200	1800	3500

Notes:
1.Luminous intensity is measured by a current pulse of 10ms at a tolerance of $\pm 15\%$.
2.The typical data of Luminous Flux can only reflect statistical figures, actual parameters of individual product could differ from the typical data.
For the purpose of product enhancement, the typical data is subject to change without prior notice.

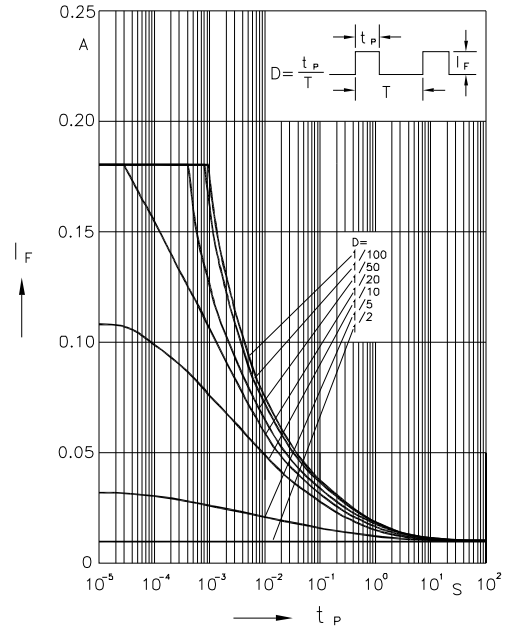
White AA3020ARWC/Z



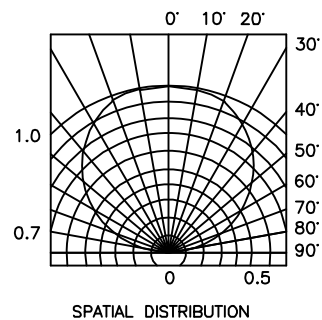
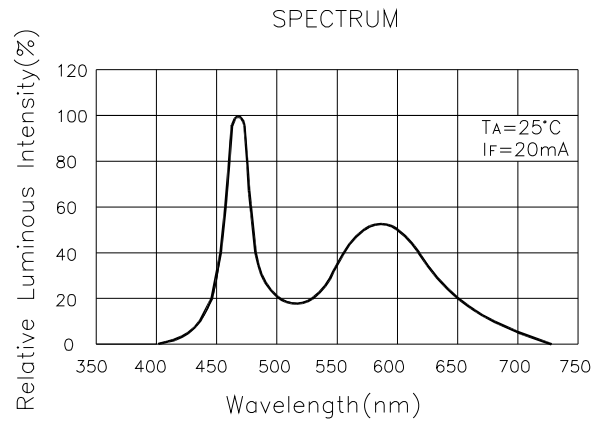
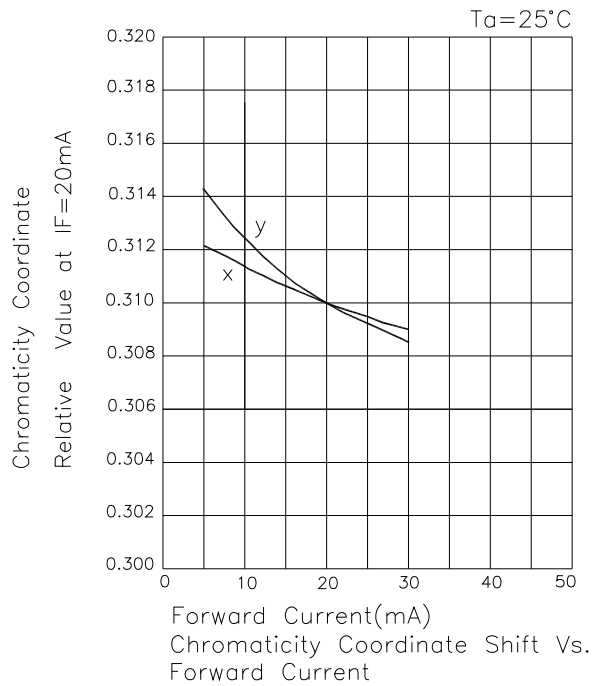
AA3020ARWC/Z



Permissible Pulse Handling Capability
Duty cycle $D = \text{parameter}$, $T_A = 25^\circ\text{C}$

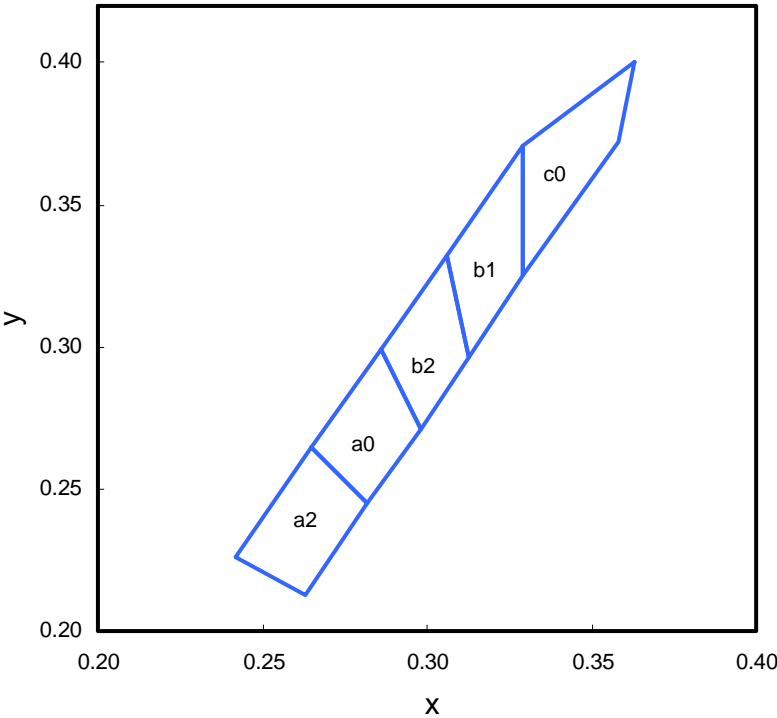


Permissible Pulse Handling Capability
Duty cycle $D = \text{parameter}$, $T_A = 85^\circ\text{C}$



AA3020ARWC/Z

White CIE



Rank a2				
X	0.263	0.282	0.265	0.242
Y	0.213	0.245	0.265	0.226

Rank a0				
X	0.282	0.298	0.286	0.265
Y	0.245	0.271	0.299	0.265

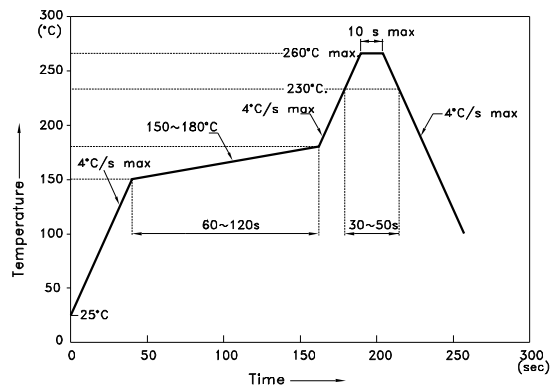
Rank b2				
X	0.298	0.313	0.306	0.286
Y	0.271	0.296	0.332	0.299

Rank b1				
X	0.313	0.329	0.329	0.306
Y	0.296	0.325	0.371	0.332

Rank c0				
X	0.329	0.358	0.363	0.329
Y	0.325	0.372	0.400	0.371

AA3020ARWC/Z

Reflow Soldering Profile For Lead-free SMT Process.

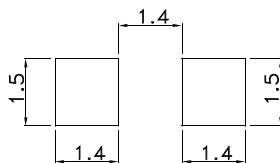


NOTES:

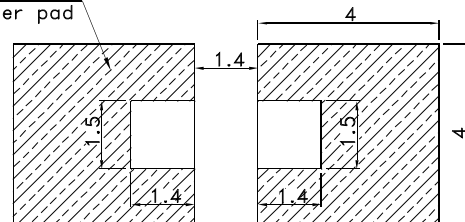
1. We recommend the reflow temperature 245°C(+/-5°C).The maximum soldering temperature should be limited to 260°C.
2. Don't cause stress to the epoxy resin while it is exposed to high temperature.
3. Number of reflow process shall be 2 times or less.

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

Pad design for improved heat dissipation

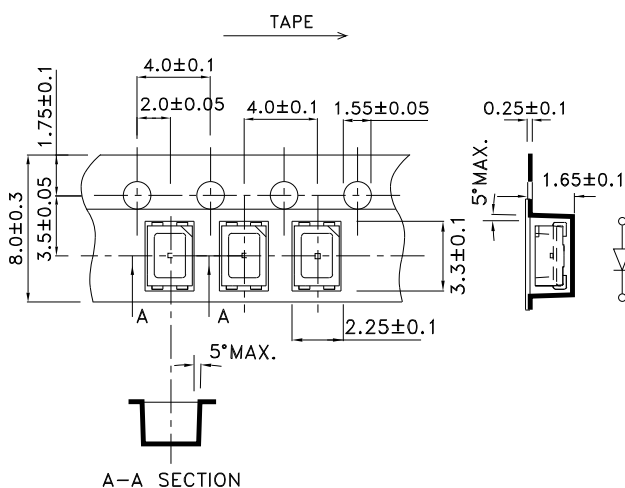


Cu-area $\geq 16 \text{ mm}^2$
per pad

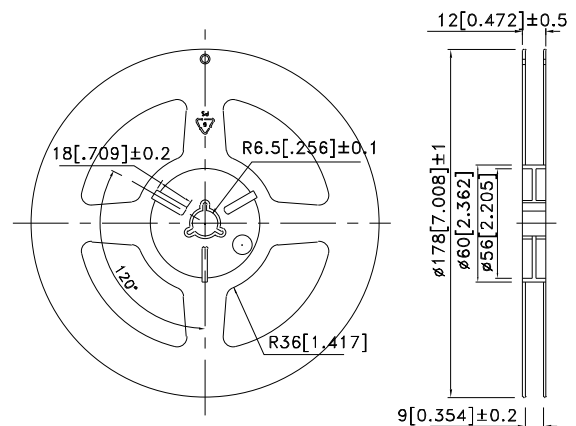


 Solder resist

Tape Specifications (Units : mm)

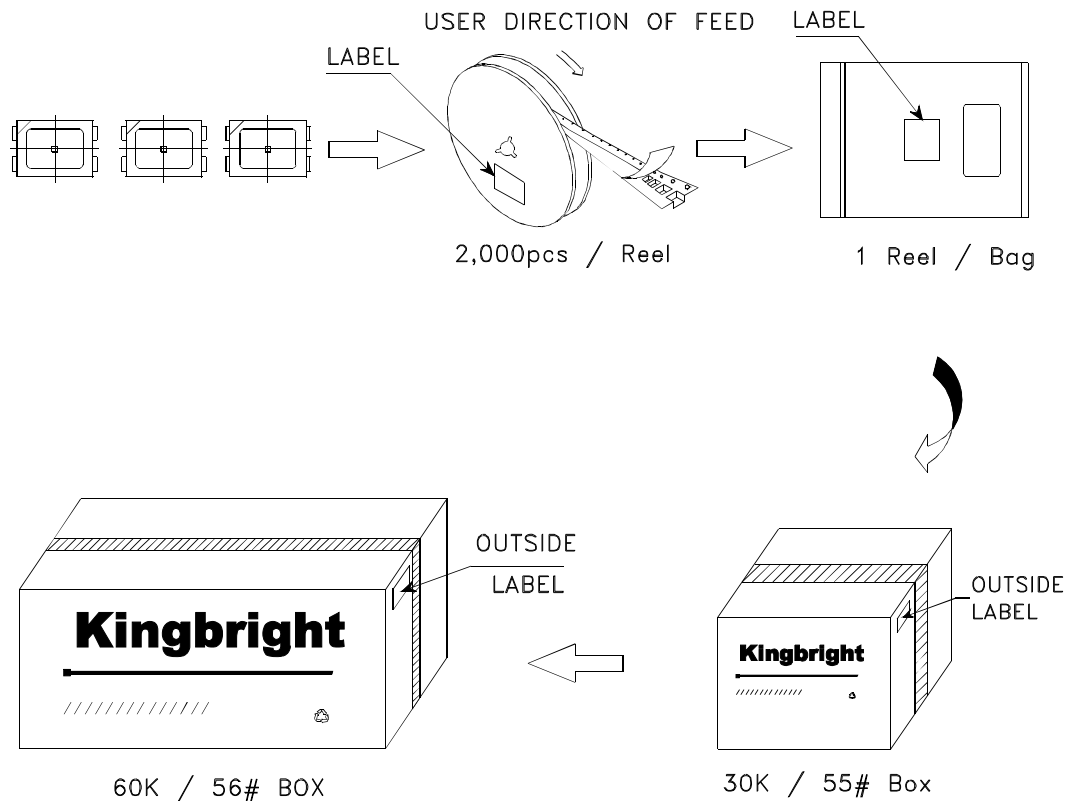



Reel Dimension



PACKING & LABEL SPECIFICATIONS

AA3020ARWC/Z



Kingbright	
P/NO: AA3020Axxx	
QTY: 2,000 pcs	Q.C. <div>Q C xx xx xxxx PASSED</div>
S/N: XXXX	
CODE: XXX	
LOT NO:	
 xxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxx	
RoHS Compliant	