Kingbright

3.5x2.8mm SURFACE MOUNT LED LAMP

PRELIMINARY SPEC

Part Number: AA3528VR521Z1S Greenish

ATTENTION
OBSERVE PRECAUTIONS
FOR HANDLING
ELECTROSTATIC
DISCHARGE
SENSITIVE
DEVICES

Features

- Single color.
- Suitable for all SMT assembly and solder process.
- Available on tape and reel.
- Ideal for backlighting.
- Package : 1500pcs / reel.
- Moisture sensitivity level : level 3.
- RoHS compliant.

Description

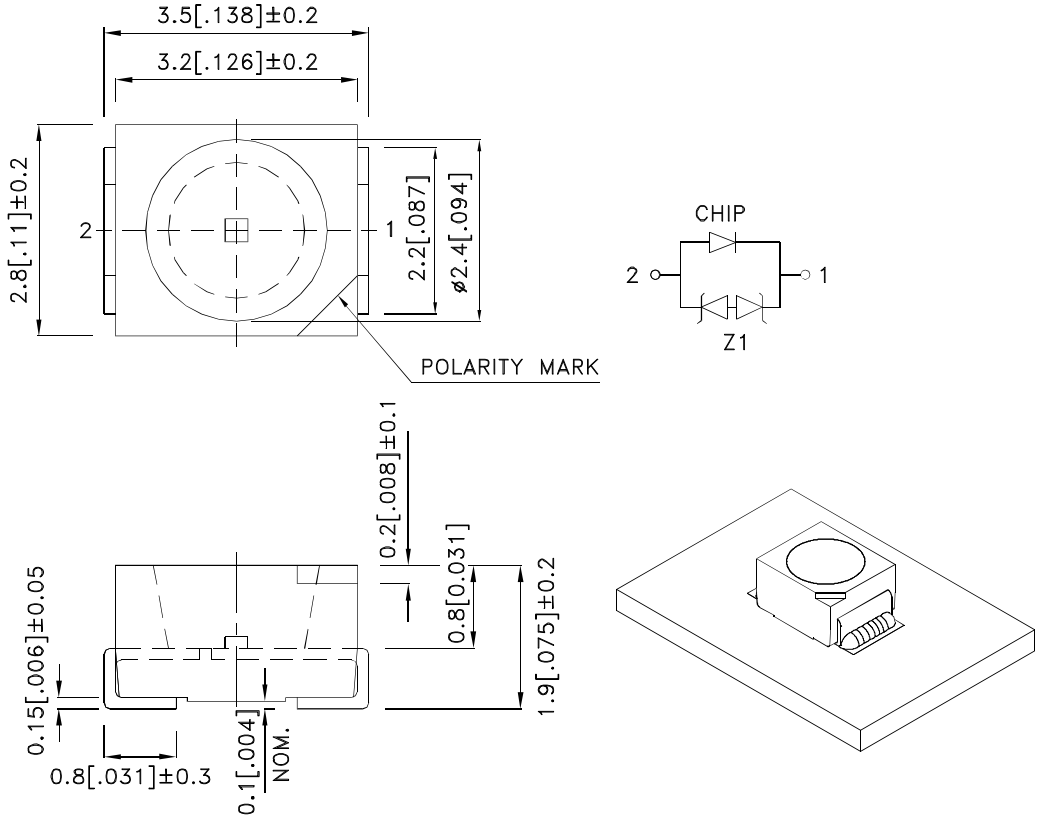
The source color devices are made with InGaN Light Emitting Diode.

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

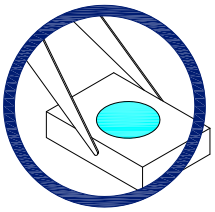


Notes:
1. All dimensions are in millimeters (inches).
2. Tolerance is ±0.25(0.01") unless otherwise noted.
3. Specifications are subject to change without notice.
4.The device has a single mounting surface. The device must be mounted according to the specifications.

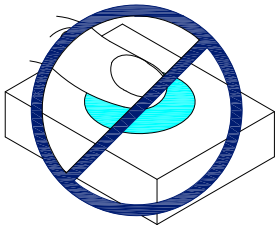
Handling Precautions

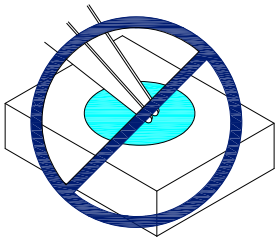
Compare to epoxy encapsulant that is hard and brittle, silicone is softer and flexible. Although its characteristic significantly reduces thermal stress, it is more susceptible to damage by external mechanical force.
As a result, special handling precautions need to be observed during assembly using silicone encapsulated LED products. Failure to comply might leads to damage and premature failure of the LED.

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

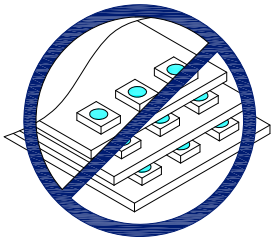


2. Do not directly touch or handle the silicone lens surface. It may damage the internal circuitry.

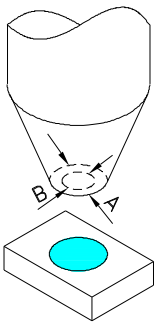




3. Do not stack together assembled PCBs containing exposed LEDs. Impact may scratch the silicone lens or damage the internal circuitry.



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	Iv (mcd) [2] @ 20mA		Viewing Angle [1]
			Min.	Typ.	2θ1/2
AA3528VR521Z1S	Greenish (InGaN)	WATER CLEAR	900	1500	120°

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%.

Electrical / Optical Characteristics at TA=25°C

Symbol	Parameter	Device	Typ.	Max.	Units	Test Conditions
V_F [1]	Forward Voltage	Greenish	3.3	4.0	V	I_F=20mA
I_R	Reverse Current	Greenish		10	uA	V_R = 5V
X [2]	Chromaticity Coordinates	Greenish	0.24			
Y [2]			0.42			
C	Capacitance	Greenish	100		pF	V_F=0V;f=1MHz

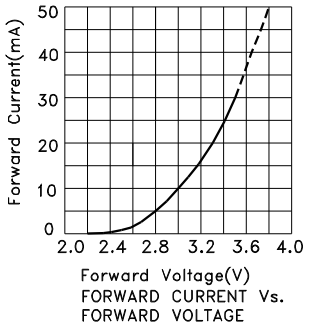
Notes:
1. Forward Voltage: +/-0.1V.
2. Measurement tolerance of the chromaticity coordinates is ±0.01.

Absolute Maximum Ratings at TA=25°C

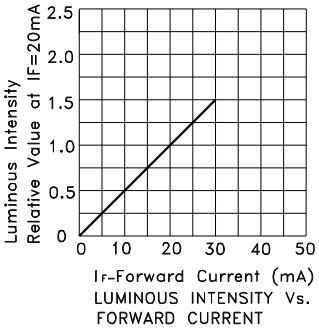
Parameter	Greenish	Units
Power dissipation	120	mW
DC Forward Current	30	mA
Peak Forward Current [1]	100	mA
Reverse Voltage	5	V
Operating Temperature	-40°C To +85°C	
Storage Temperature	-40°C To +85°C	

Note:
1. 1/10 Duty Cycle, 0.1ms Pulse Width.

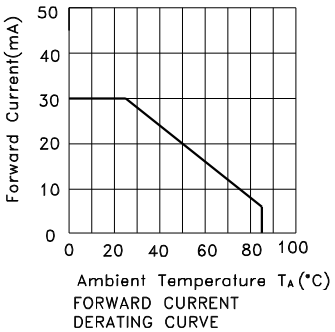
Greenish **AA3528VR521Z1S**



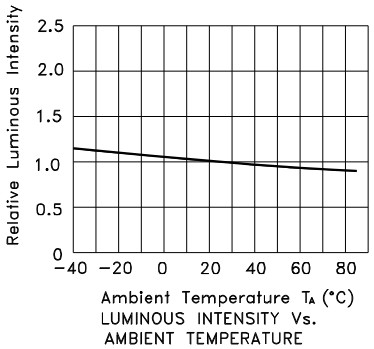
FORWARD CURRENT Vs.
FORWARD VOLTAGE



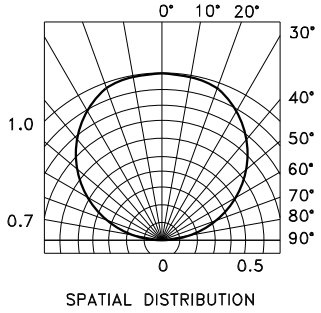
LUMINOUS INTENSITY Vs.
FORWARD CURRENT



FORWARD CURRENT
DERATING CURVE



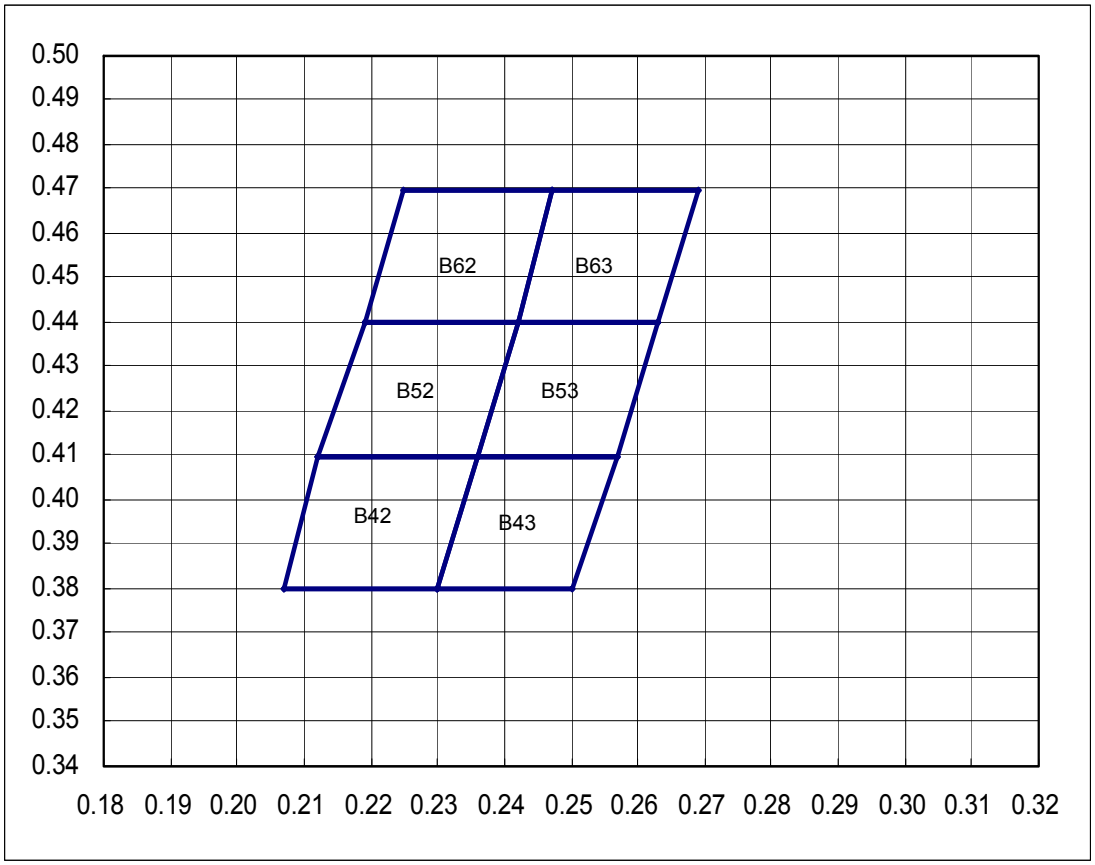
LUMINOUS INTENSITY Vs.
AMBIENT TEMPERATURE



SPATIAL DISTRIBUTION

AA3528VR521Z1S

Greenish CIE



B42				
X	0.207	0.230	0.236	0.212
Y	0.380	0.380	0.410	0.410

B43				
X	0.230	0.250	0.257	0.236
Y	0.380	0.380	0.410	0.410

B52				
X	0.212	0.236	0.242	0.219
Y	0.410	0.410	0.440	0.440

B53				
X	0.236	0.257	0.263	0.242
Y	0.410	0.410	0.440	0.440

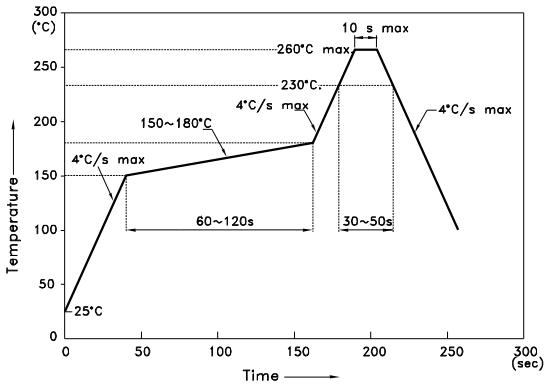
B62				
X	0.219	0.242	0.247	0.225
Y	0.440	0.440	0.470	0.470

B63				
X	0.242	0.263	0.269	0.247
Y	0.440	0.440	0.470	0.470

AA3528VR521Z1S

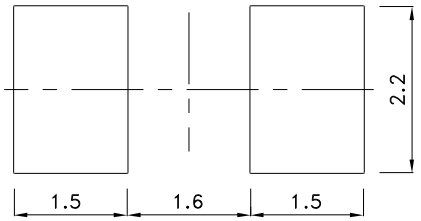
Reflow soldering is recommended and the soldering profile is shown below.
Other soldering methods are not recommended as they might cause damage to the product.

Reflow Soldering Profile For Lead-free SMT Process.

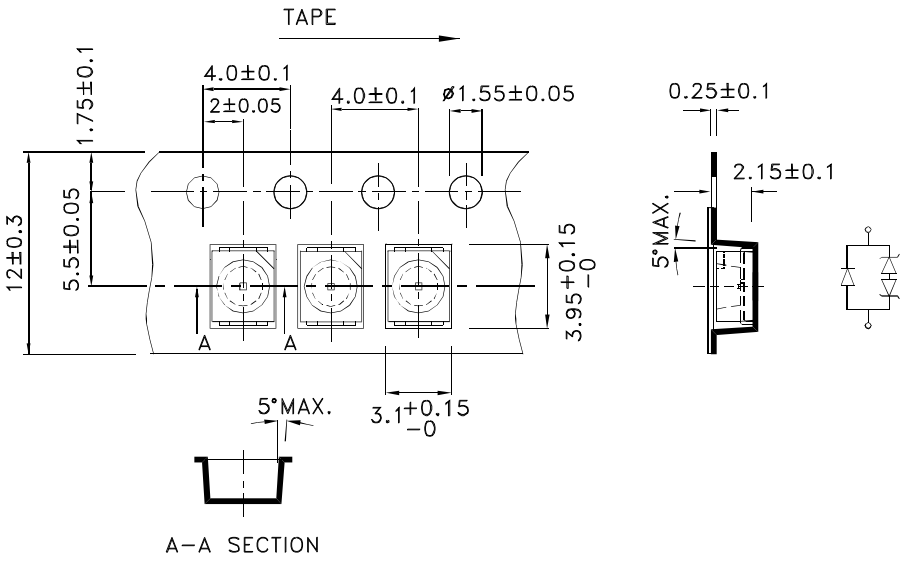


NOTES:
1. We recommend the reflow temperature 245°C(+/-5°C).The maximum soldering temperature should be limited to 260°C.
2. Don't cause stress to the epoxy resin while it is exposed to high temperature.
3. Number of reflow process shall be 2 times or less.

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



Tape Dimensions
(Units : mm)



PACKING & LABEL SPECIFICATIONS **AA3528VR521Z1S**