

### 2.2x1.4mm SURFACE MOUNT LED LAMP



**ATTENTION** 

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

Part Number: AA2214VR4D1S-C1

Cool White

#### **Features**

- 2.2mm x 1.4mm, 1.3mm high.
- Low power consumption.
- Available on tape and reel.
- Package : 2000pcs / reel.
- Moisture sensitivity level : level 3.
- RoHS compliant.

### Description

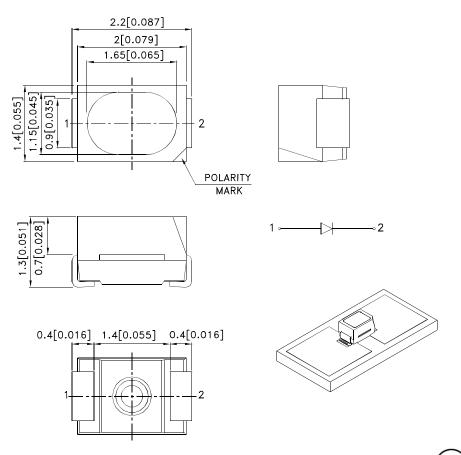
The source color devices are made with InGaN Light Emitting Diode.

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**



- 1. All dimensions are in millimeters (inches).
- 2. Tolerance is  $\pm 0.2(0.008")$  unless otherwise noted.
- The specifications, characteristics and technical data described in the datasheet are subject to change without prior notice.
   The device has a single mounting surface. The device must be mounted according to the specifications.

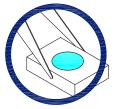
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### **Handling Precautions**

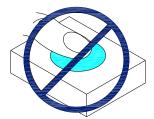
Compare to epoxy encapsulant that is hard and brittle, silicone is softer and flexible. Although its characteristic significantly reduces thermal stress, it is more susceptible to damage by external mechanical force.

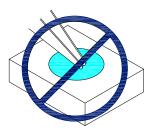
As a result, special handling precautions need to be observed during assembly using silicone encapsulated LED products. Failure to comply might lead to damage and premature failure of the LED.

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

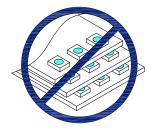


2. Do not directly touch or handle the silicone lens surface. It may damage the internal circuitry.

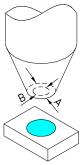




3. Do not stack together assembled PCBs containing exposed LEDs. Impact may scratch the silicone lens or damage the internal circuitry.



- 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.

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### **Selection Guide**

Part No.	Dice	Lens Type	CCT Range			lv (mcd) [2] @ 20mA		Viewing Angle [1]
			Min.	Тур.	Max.	Min.	Тур.	201/2
AA2214VR4D1S-C1	Cool White	Water Clear	5310K	6000K	7040K	1000	1300	120°

#### Notes:

- 1. 01/2 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 the CIE127-2007 compliant national standards.

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

	p					
Symbol	Parameter	Тур. Мах.		Units	Test Conditions	
VF [1]	Forward Voltage	3.3	4.0	V	IF=20mA	
lr	Reverse Current		50	uA	V <sub>R</sub> = 5V	
С	Capacitance	100		pF	VF=0V;f=1MHz	

### Note:

1. Forward Voltage: +/-0.1V.

### Absolute Maximum Ratings at TA=25°C

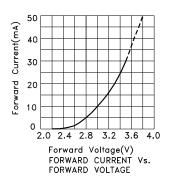
Parameter	Cool White	Unito
Parameter	Cool writte	Units
Power dissipation	120	mW
DC Forward Current	30	mA
Peak Forward Current [1]	100	mA
Reverse Voltage	5	V
Operating Temperature	-40°C To +85°C	·
Storage Temperature	-40°C To +85°C	

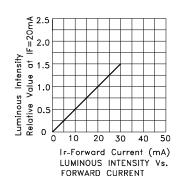
1. 1/10 Duty Cycle, 0.1ms Pulse Width.

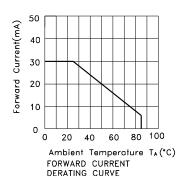
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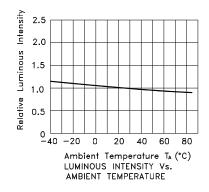
### **Cool White**

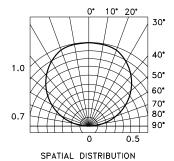
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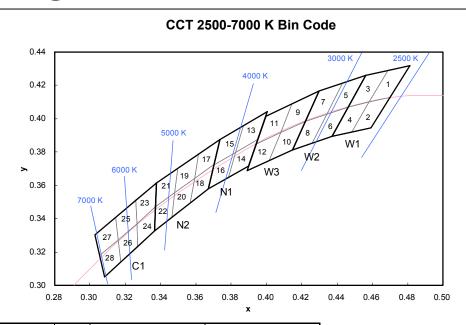








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Color	Group	Chromaticity Regions	CCT (K)			
Coloi	Gloup	Chilomaticity Regions	Min.	Тур.	Max.	
	W1	1, 2, 3, 4	2580	2700	2870	
Warm White	W2	5, 6, 7, 8	2870	3000	3220	
	W3	9, 10, 11, 12	3220	3500	3710	
Neutral White	N1	13, 14, 15, 16	3710	4000	4260	
Neutral Wille	N2	17, 18, 19, 20, 21, 22	4260	4700	5310	
Cool White	C1	23, 24, 25, 26, 27, 28	5310	6000	7040	

#### Notes:

Shipment may contain more than one chromaticity regions. Orders for single chromaticity region are generally not accepted.

Measurement tolerance of the chromaticity coordinates is ±0.01.

	х	у		Х	у		х	у		х	у
	0.4582	0.4099		0.4147	0.3814		0.3702	0.3722		0.3481	0.3557
1	0.4687	0.4289	8	0.4221	0.3984	45	0.3736	0.3874	22	0.3370	0.3472
	0.4813	0.4319		0.4342	0.4028	15	0.3869	0.3958		0.3364	0.3328
	0.4700	0.4126		0.4259	0.3853		0.3825	0.3798		0.3466	0.3411
	0.4483	0.3919		0.4080	0.3916		0.3670	0.3578	23	0.3376	0.3616
2	0.4582	0.4099	9	0.4146	0.4089	16	0.3702	0.3722		0.3260	0.3512
-	0.4700	0.4126	9	0.4299	0.4165	10	0.3825	0.3798		0.3265	0.3371
	0.4593	0.3944		0.4221	0.3984		0.3783	0.3646		0.3370	0.3472
	0.4465	0.4071		0.4017	0.3751		0.3736	0.3874		0.3370	0.3472
3	0.4562	0.4260	10	0.4080	0.3916	17	0.3616	0.3788	24	0.3265	0.3371
ľ	0.4687	0.4289	10	0.4221	0.3984	.,	0.3592	0.3641		0.3270	0.3230
	0.4582	0.4099		0.4147	0.3814		0.3703	0.3726		0.3364	0.3328
	0.4373	0.3893		0.3941	0.3848		0.3703	0.3726		0.3260	0.3512
4	0.4465	0.4071	11	0.3996	0.4015	18	0.3592	0.3641	25	0.3144	0.3408
4	0.4582	0.4099		0.4146	0.4089		0.3568	0.3495		0.3160	0.3274
	0.4483	0.3919		0.4080	0.3916		0.3670	0.3578		0.3265	0.3371
	0.4342	0.4028		0.3889	0.3690		0.3616	0.3788		0.3265	0.3371
5	0.4430	0.4212	12	0.3941	0.3848	19	0.3496	0.3702	26	0.3160	0.3274
)	0.4562	0.4260	12	0.4080	0.3916	19	0.3481	0.3557	26	0.3175	0.3139
	0.4465	0.4071		0.4017	0.3751		0.3592	0.3641		0.3270	0.3230
	0.4259	0.3853		0.3825	0.3798		0.3592	0.3641	3557 3411 27	0.3144	0.3408
	0.4342	0.4028	13	0.3869	0.3958	20	0.3481	0.3557		0.3028	0.3304
6	0.4465	0.4071		0.4006	0.4044	20	0.3466	0.3411		0.3055	0.3177
	0.4373	0.3893		0.3950	0.3875		0.3568	0.3495		0.3160	0.3274
	0.4221	0.3984	44	0.3783	0.3646	21	0.3496	0.3702	28	0.3160	0.3274
	0.4299	0.4165		0.3825	0.3798		0.3376	0.3616		0.3055	0.3177
'	7 0.4430 0.	0.4212	14	0.3950	0.3875		0.3370	0.3472		0.3081	0.3049
	0.4342	0.4028	0.3898	0.3716		0.3481	0.3557		0.3175	0.3139	

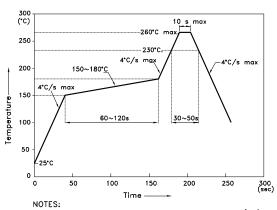
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### AA2214VR4D1S-C1

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.

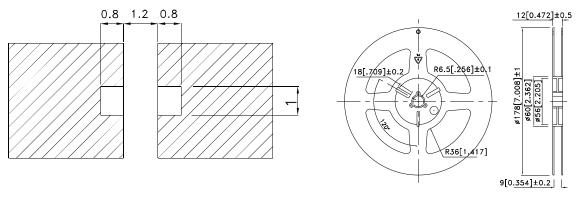


1.We recommend the reflow temperature 245°C(+/-5°C). The maximum soldering temperature should be limited to 260°C.
2.Don't cause stress to the epoxy resin while it is exposed to high temperature.

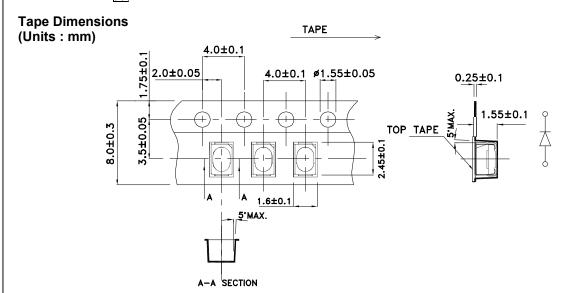
3. Number of reflow process shall be 2 times or less.

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

### **Reel Dimension**

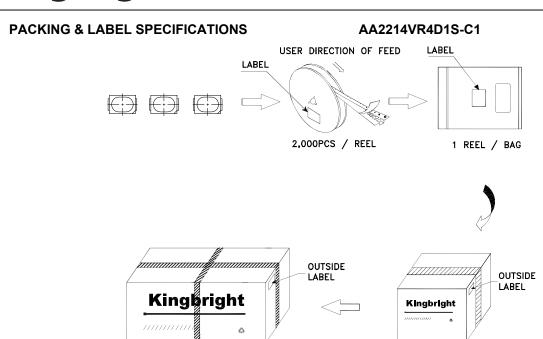


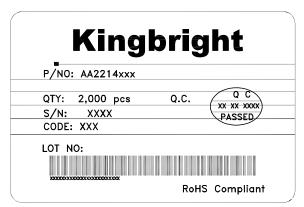
Solder Resist



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