

AA4008VRBB1S

4.0 x 0.8 mm Right Angle SMD Chip LED Lamp



DESCRIPTIONS

- The Blue source color devices are made with InGaN 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

FEATURES

- 4.0 x 1.4 x 0.8 mm right angle SMD LED, 0.8 mm thickness
- · Low power consumption
- · Ideal for backlight and indicator
- · Package: 2000 pcs / reel
- Moisture sensitivity level: 3
- Halogen-free
- RoHS compliant

APPLICATIONS

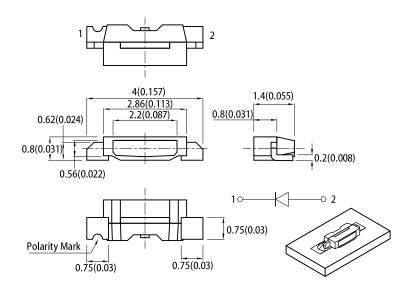
- Backlight
- · Status indicator
- · Home and smart appliances
- · Wearable and portable devices
- · Healthcare applications

ATTENTION

Observe precautions for handling electrostatic discharge sensitive devices

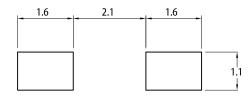


PACKAGE DIMENSIONS



RECOMMENDED SOLDERING PATTERN

(units: mm; tolerance: \pm 0.1)



- Notes:

 1. All dimensions are in millimeters (inches).

 2. Tolerance is ±0.1(0.004") 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.

SELECTION GUIDE

Part Number	Emitting Color	Iv (mcd) @ 20mA [2]		Viewing Angle [1]
Fait Number	(Material)	Min.	Тур.	201/2
AA4008VRBB1S	■ Blue (InGaN)	700	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 CIE127-2007 standards.





ELECTRICAL / OPTICAL CHARACTERISTICS at T_A=25°C

Parameter	Symbol	Emitting Color	Value		Unit
Farameter	Symbol Emitting Color		Тур.	Max.	
Chromaticity Coordinates x I _F = 20mA	x ^[1]	Blue	0.17	-	-
Chromaticity Coordinates y I _F = 20mA	y ^[1]	Blue	0.22	-	-
Capacitance	С	Blue	100	-	pF
Forward Voltage I _F = 20mA	V _F ^[2]	Blue	3.3	4.0	V
Reverse Current (V _R = 5V)	I _R	Blue	-	50	μА

ABSOLUTE MAXIMUM RATINGS at $T_A=25$ °C

Parameter	Symbol	Value	Unit
Power Dissipation	P_D	120	mW
Reverse Voltage	V _R	5	V
Junction Temperature	T _j	115	°C
Operating Temperature	T _{op}	-40 to +85	°C
Storage Temperature	T _{stg}	-40 to +85	°C
DC Forward Current	I _F	30	mA
Peak Forward Current	I _{FM} ^[1]	100	mA
Electrostatic Discharge Threshold (HBM)	-	250	V

Notes:
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.



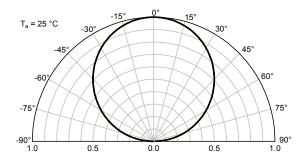
Notes: 1. Measurement tolerance of the chromaticity coordinates is \pm 0.01.

^{2.} Forward voltage: ±0.1V.
3. Excess driving current and / or operating temperature higher than recommended conditions may result in severe light degradation or premature failure.

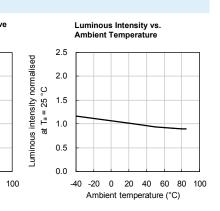


TECHNICAL DATA

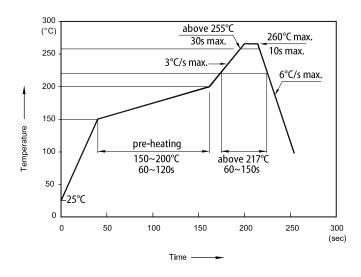
SPATIAL DISTRIBUTION



BLUE Forward Current Derating Curve Forward Current vs. Luminous Intensity vs. Forward Current Forward Voltage 50 2.5 50 Permissible forward current (mA) Luminous intensity normalised at 20mA $T_a = 25$ °C T_a = 25 °C 2.0 Forward current (mA) 40 40 30 1.5 30 20 1.0 20 10 10 0.5 0 0.0 2.4 2.8 0 50 -20 0 20 40 60 80 100 2.0 3.2 3.6 10 20 30 40 -40 Forward voltage (V) Forward current (mA) Ambient temperature (°C)



REFLOW SOLDERING PROFILE for LEAD-FREE SMD PROCESS



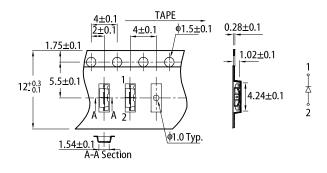
Notes:

- 1. Don't cause stress to the LEDs while it is exposed to high temperature.

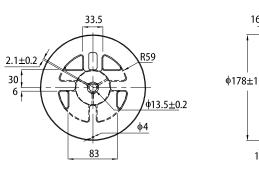
 2. The maximum number of reflow soldering passes is 2 times.

 3. Reflow soldering is recommended. Other soldering methods are not recommended as they might cause damage to the product.

TAPE SPECIFICATIONS (units: mm)



REEL DIMENSION (units: mm)

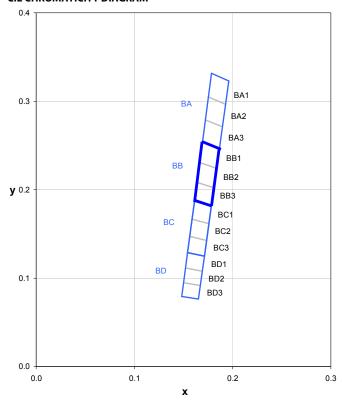


16.55±0.2

13.7±0.2



CIE CHROMATICITY DIAGRAM

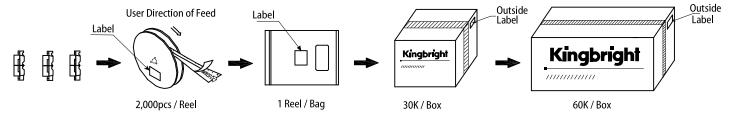


Notes: Shipment may contain more than one chromaticity regions. Orders for single chromaticity region are generally not accepted. Measurement tolerance of the chromaticity coordinates is ±0.01.

	X	У		Χ	у
BA1	0.1786	0.3318	BB1	0.1693	0.2543
	0.1754	0.3048		0.1665	0.2308
	0.1928	0.2964		0.1837	0.2241
	0.1961	0.3228		0.1866	0.2471
	0.1754	0.3048	BB2	0.1665	0.2308
DAG	0.1723	0.2790		0.1638	0.2084
BA2	0.1896	0.2712		0.1810	0.2022
	0.1928	0.2964		0.1837	0.2241
	0.1723	0.2790		0.1638	0.2084
DAG	0.1693	0.2543	DD2	0.1612	0.1870
BA3	0.1866	0.2471	BB3	0.1783	0.1814
	0.1896	0.2712		0.1810	0.2022
	0.1612	0.1870		0.1542	0.1288
DC4	0.1587	0.1666	BD1	0.1521	0.1114
BC1	0.1758	0.1615		0.1691	0.1077
	0.1783	0.1814		0.1712	0.1247
	0.1587	0.1666	BD2	0.1521	0.1114
BC2	0.1564	0.1473		0.1501	0.0948
	0.1735	0.1427		0.1670	0.0917
	0.1758	0.1615		0.1691	0.1077
BC3	0.1564	0.1473	BD3	0.1501	0.0948
	0.1542	0.1288		0.1482	0.0791
	0.1712	0.1247		0.1651	0.0765
	0.1735	0.1427		0.1670	0.0917



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



- 2. As silicone encapsulation is permeable to gases, some corrosive substances such as H₂S might corrode silver plating of lead frame.
 - Special care should be taken if an LED with silicone encapsulation is to be used near such substances.

PRECAUTIONARY NOTES

- The information included in this document reflects representative usage scenarios and is intended for technical reference only
- 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.
- 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.

 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
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