#### SURFACE MOUNT DISPLAY

Part Number: KCSA39-136

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

#### **Features**

- 0.39 inch digit height.
- Low current operation.
- Excellent character appearance.
- Mechanically rugged.
- Gray face, white segment.
- Package: 400pcs / reel.
- Moisture sensitivity level : level 2a.
- RoHS compliant.

#### Description

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

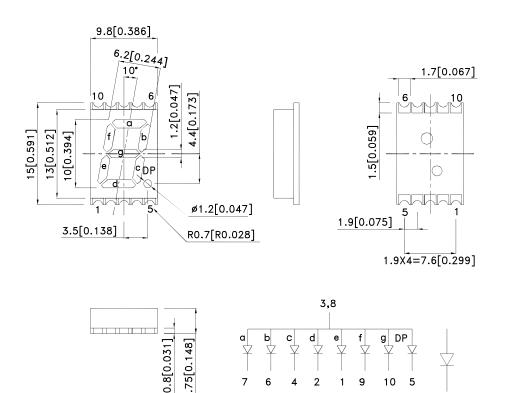
Static electricity and surge damage the LEDS.

It is recommended to use a wrist band or anti-electrostatic glove when handling the LEDs.

Blue

All devices, equipment and machinery must be electrically grounded.

#### **Package Dimensions& Internal Circuit Diagram**





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- 1. All dimensions are in millimeters (inches), Tolerance is  $\pm 0.25 (0.01")$  unless otherwise noted.
- 2. The specifications, characteristics and technical data described in the datasheet are subject to change without prior notice.

3. The gap between the reflector and PCB shall not exceed 0.25mm.

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PB-

#### **Selection Guide**

Part No.	Dice	Lens Type	lv (ucd) [1] @ 10mA		Description
			Min.	Тур.	-
KCSA39-136	Blue (InGaN)	White Diffused	2200	5600	Common Anode, Rt. Hand Decimal.

- Luminous intensity/ luminous Flux: +/-15%.
   Luminous intensity value is traceable to the CIE127-2007 compliant national standards.

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

Symbol	Parameter	Device	Тур.	Max.	Units	Test Conditions
λpeak	Peak Wavelength	Blue	468		nm	IF=20mA
λD [1]	Dominant Wavelength	Blue	465		nm	IF=20mA
Δλ1/2	Spectral Line Half-width	Blue	21		nm	IF=20mA
С	Capacitance	Blue	100		pF	VF=0V;f=1MHz
VF [2]	Forward Voltage	Blue	3.2	4.0	V	I=20mA
lR	Reverse Current	Blue		10	uA	V <sub>R</sub> =5V

- Notes:
  1.Wavelength: +/-1nm.
  2. Forward Voltage: +/-0.1V.
  3. Wavelength value is traceable to the CIE127-2007 compliant national standards.

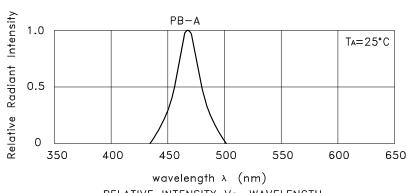
## Absolute Maximum Ratings at TA=25°C

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

#### Note:

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

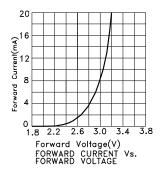
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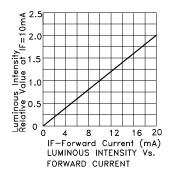


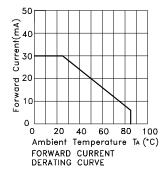
RELATIVE INTENSITY Vs. WAVELENGTH

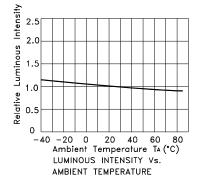
Blue

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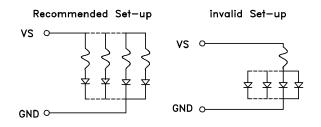






#### CIRCUIT DESIGN NOTES

- 1.Protective current-limiting resistors may be necessary to operate the Displays.
- 2.LEDs mounted in parallel should each be placed in series with its own current-limiting resistor.



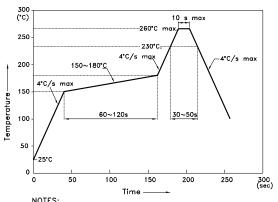
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## KCSA39-136

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.

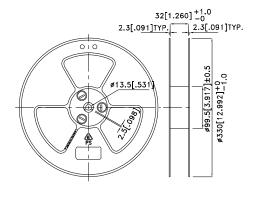
  2.Don't cause stress to the epoxy resin while it is exposed to high temperature.

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

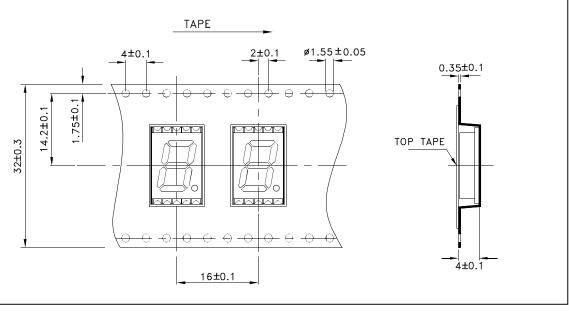
#### **Recommended Soldering Pattern** (Units: mm; Tolerance: ± 0.15)

# $1.9 \times 4 = 7.6$ 1.9 1.5

#### **Reel Dimension**



#### **Tape Specifications** (Units: mm)

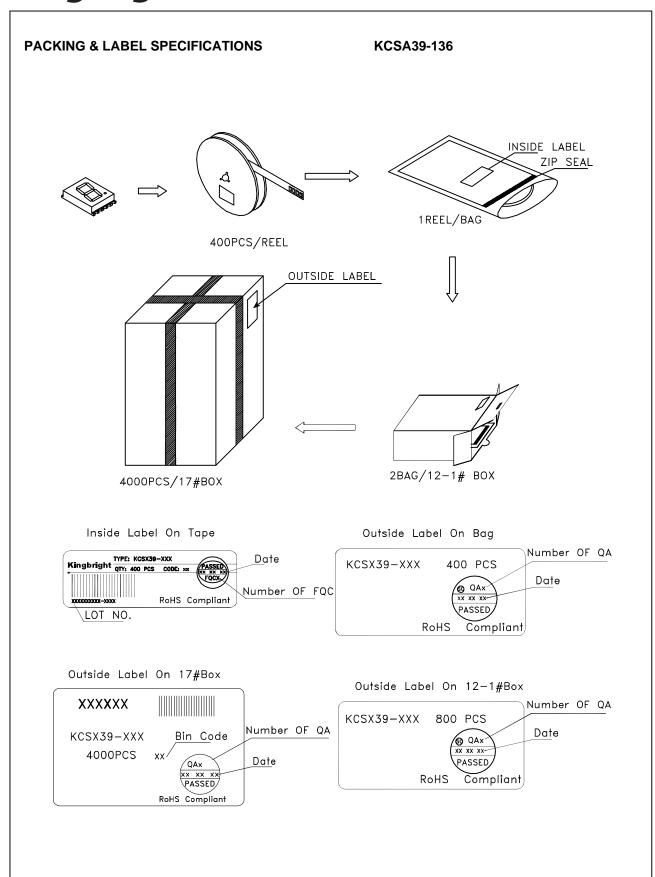


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Detailed application notes are listed on our website. http://www.kingbright.com/application notes

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