



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

Part Number: ACSA56-51RWWA/A

White

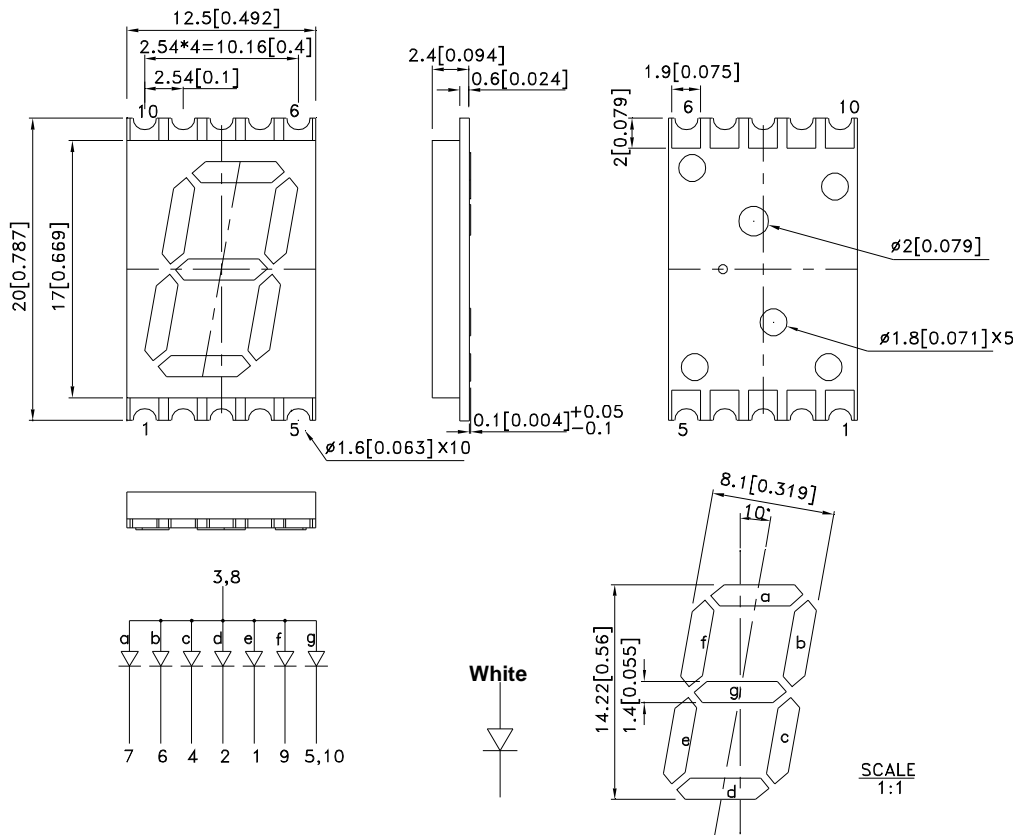
### Features

- 0.56 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.

### Descriptions

- The source color devices are made with InGaN on SiC 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.

### Package Dimensions & Internal Circuit Diagram



#### Notes:

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.



## Selection Guide

Part No.	Emitting Color (Material)	Lens Type	Iv (ucd) [1] @ 10mA		Description
			Min.	Typ.	
ACSA56-51RWWA/A	White (InGaN)	White Diffused	5600	15000	Common Anode

Notes:

- 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	Emitting Color	Min.	Typ.	Max.	Units	Test Conditions
V <sub>F</sub> [1]	Forward Voltage	White		3.05	4.0	V	I <sub>F</sub> =10mA
I <sub>R</sub>	Reverse Current	White			10	uA	V <sub>R</sub> = 5V
CCT	Color Temperature	White	4600		15000	K	I <sub>F</sub> =10mA
x [2]	Chromaticity Coordinates	White		0.31			
y [2]				0.31			
C	Capacitance	White		100		pF	V <sub>F</sub> =0V;f=1MHz

Notes:

- Forward Voltage: +/-0.1V.
- Measurement tolerance of the chromaticity coordinates is ±0.01.
- Excess driving current and/or operating temperature higher than recommended conditions may result in severe light degradation or premature failure.

## Absolute Maximum Ratings at TA=25°C

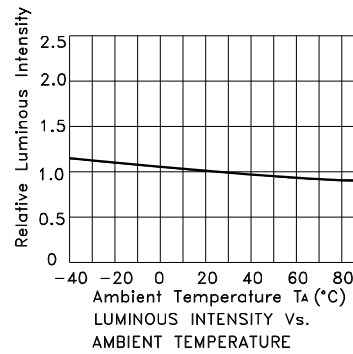
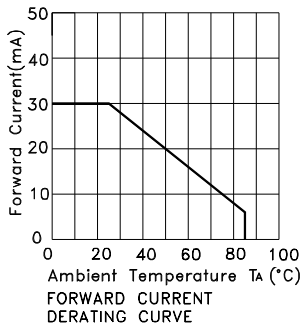
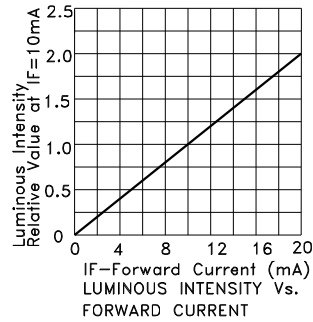
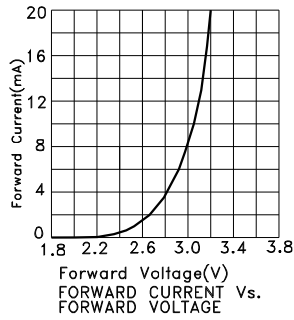
Parameter	Values	Units
Power dissipation	120	mW
DC Forward Current	30	mA
Peak Forward Current [1]	100	mA
Electrostatic Discharge Threshold (HBM)	1000	V
Reverse Voltage	5	V
Operating / Storage Temperature	-40°C To +85°C	

Note:

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

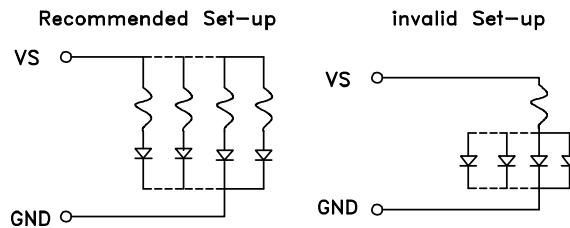
White

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## CIRCUIT DESIGN NOTES

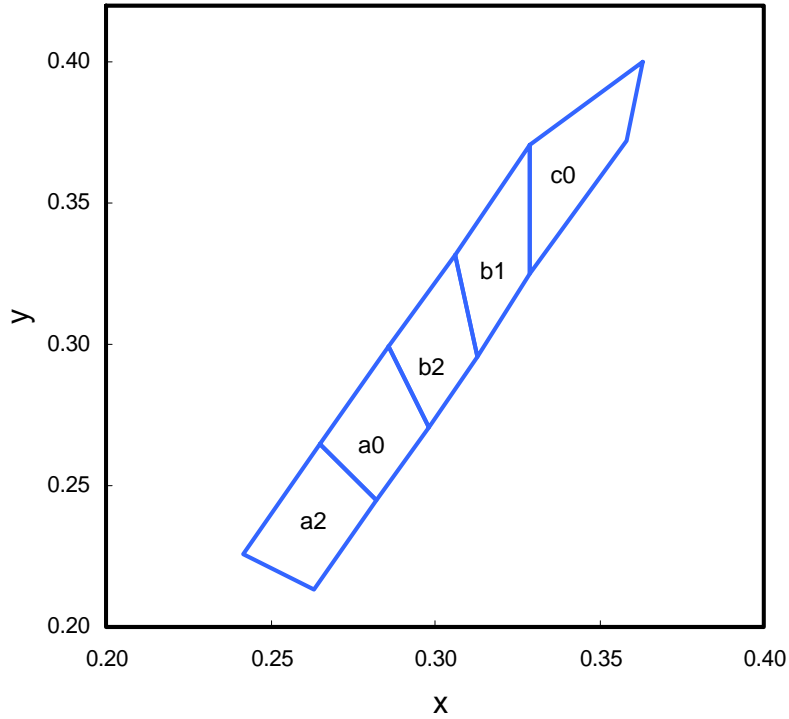
1. Protective current-limiting resistors may be necessary to operate the Displays.
2. LEDs mounted in parallel should each be placed in series with its own current-limiting resistor.



White

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## White CIE

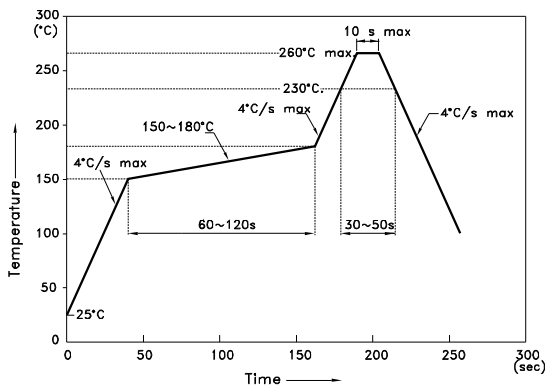


	x	y		x	y		x	y
a2	0.263	0.213	a0	0.282	0.245	b2	0.298	0.271
	0.282	0.245		0.298	0.271		0.313	0.296
	0.265	0.265		0.286	0.299		0.306	0.332
	0.242	0.226		0.265	0.265		0.286	0.299
b1	0.313	0.296	c0	0.329	0.325			
	0.329	0.325		0.358	0.372			
	0.329	0.371		0.363	0.400			
	0.306	0.332		0.329	0.371			

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  $\pm 0.01$ .

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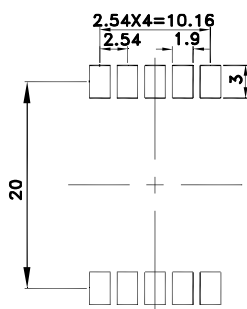
Reflow Soldering Profile For Lead-free SMT Process.



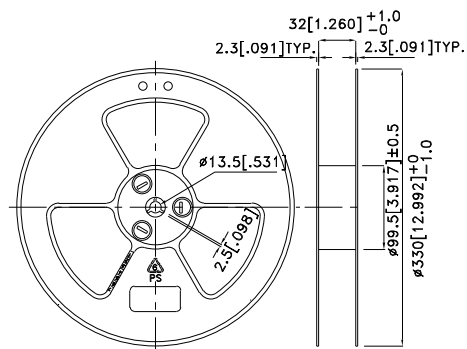
NOTES:

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.

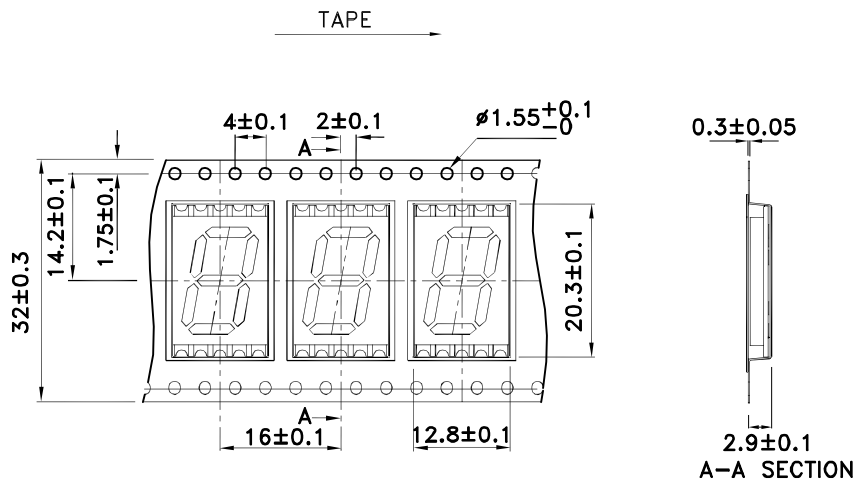
### Recommended Soldering Pattern (Units : mm; Tolerance: ± 0.15)



### Reel Dimension

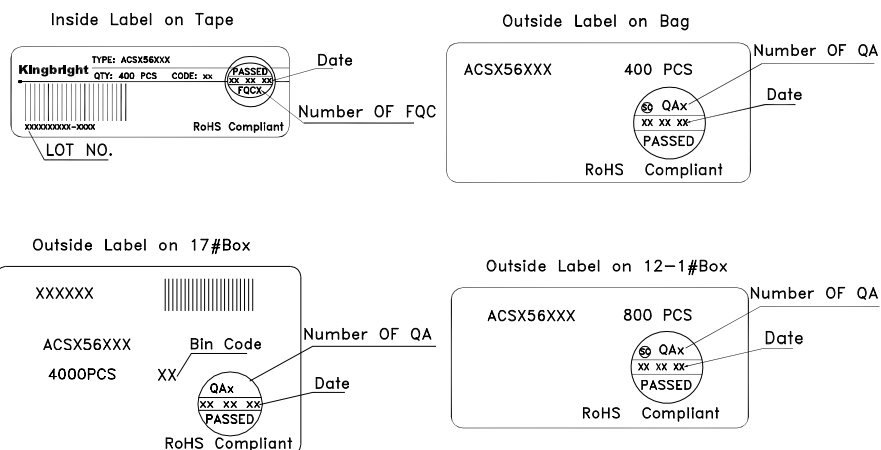
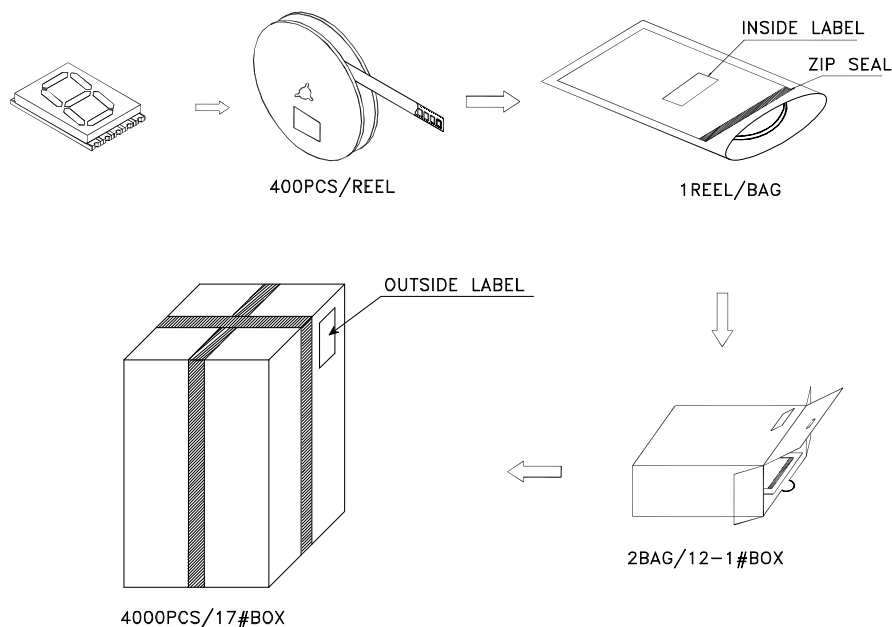


### Tape Specifications (Units : mm)



## PACKING & LABEL SPECIFICATIONS

## ACSA56-51RWWA/A



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