

CUSTOMER :

Doc No : MES002787

Rev : A0

RoHS Comp.

Halogen Free




承認書

APPROVAL SHEET

Specifications description : **AP CAP 220uF-2V ESR9**
7.3X4.3X1.9mm +10~-35 %,2000hrs

APAQ P/N : **ACAS2R0221E09Y**

Customer P/N :

Date	Approved by	Checked by
		

Approved by Customer
(Signing or stamping here) :

Approved Date :



鈺邦科技股份有限公司
APAQ TECHNOLOGY CO., LTD

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Taiwan ,(R.O.C.)

AP-CAP ACAS SERIES SPECIFICATION

1. Application

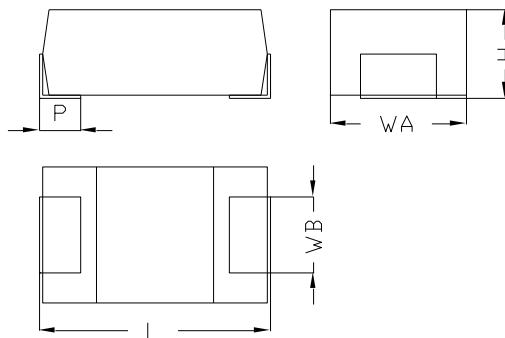
This specification shall be specified to chip type conductive polymer aluminum solid electrolytic capacitors of ACAS series.

2. Product Identification

ACAS 2R0 S 221 E09 □
 ① ② ③ ④ ⑤ ⑥

- ① Product Code
- ② Rated Voltage 2R0 : 2.0V
 2R5 : 2.5V
- ③ Case Height S : 1.9 mm
- ④ Capacitance 101 : 100 μ F
 820 : 82 μ F
- ⑤ ESR E18 : 18 m Ω
- ⑥ Suffix for special code Y : Capacitance +10 ~ -35%, blank space: Capacitance \pm 20 %

3. Configuration and Dimensions



unit : mm

Case size	L	WA	WB	H	P
S	7.3 \pm 0.3	4.3 \pm 0.3	2.4 \pm 0.2	1.9 \pm 0.2	1.3 \pm 0.2

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4. Marking



- ① : Polarity Bar (+)
- ② : Rated Capacity
- ③ : Company Logo
- ④ : Rated Voltage
- ⑤ : Year (F for 2014 · G for 2015 · H for 2016)
- ⑥ : Week

5. Specifications

5.1 Ratings

WV(VDC)	Cap (μF)@120Hz	tanδ Max. @120Hz	Leakage Current Max. (μA)	ESR Max. (mΩ) @100kHz	Ripple Current (A r.m.s) @100kHz -55 to 105°C	Part No.
2	100	0.06	12.0	18	2.5	ACAS2R0S101E18
	150	0.06	18.0	18	2.5	ACAS2R0S151E18
	220	0.06	26.4	15	2.7	ACAS2R0S221E15
	220	0.06	26.4	15	2.7	ACAS2R0S221E15K
	220	0.06	26.4	15	2.7	ACAS2R0S221E15Y
	220	0.06	26.4	9	3.0	ACAS2R0S221E09
	220	0.06	26.4	9	3.0	ACAS2R0S221E09Y
	220	0.06	26.4	6	3.5	ACAS2R0S221E06
	220	0.06	26.4	4.5	3.8	ACAS2R0S221E04
	330	0.06	39.6	15	2.7	ACAS2R0S331E15
	330	0.06	39.6	15	2.7	ACAS2R0S331E15Y
	330	0.06	39.6	9	3.0	ACAS2R0S331E09
	330	0.06	39.6	9	3.0	ACAS2R0S331E09Y
	330	0.06	39.6	6	3.5	ACAS2R0S331E06
	330	0.06	39.6	4.5	3.8	ACAS2R0S331E04

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WV(VDC)	Cap (μ F)@120Hz	tan δ Max. @120Hz	Leakage Current Max. (μ A)	ESR Max. (m Ω) @100kHz	Ripple Current (A r.m.s) @100kHz -55 to 105 $^{\circ}$ C	Part No.
2.5	100	0.06	15.0	18	2.5	ACAS2R5S101E18
	220	0.06	33.0	15	2.7	ACAS2R5S221E15
	220	0.06	33.0	9	3.0	ACAS2R5S221E09Y
	220	0.06	33.0	6	3.5	ACAS2R5S221E06Y
	270	0.06	40.5	7	3.5	ACAS2R5S271E07
	270	0.06	40.5	6	3.5	ACAS2R5S271E06
	330	0.06	49.5	9	3.0	ACAS2R5S331E09
	330	0.06	49.5	9	3.0	ACAS2R5S331E09Y
	330	0.06	49.5	6	3.5	ACAS2R5S331E06

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5.2 Environmental Performance

Item	Conditions	Characteristics	
Category Temperature Range		-55 to +105 °C	
Rated Voltage Range		2 to 2.5 V.DC	
Capacitance Tolerance	at 20°C, 120Hz	±20 % (M) ; Y : +10 ~ -35%	
Leakage Current	at 20°C after 2 minutes	$I \leq 0.06CV$ (2V.DC to 4V.DC) I : Leakage Current(μA), C : Rated Capacitance(μF), V : Rated Voltage(V)	
Surge Voltage	-55 to +105°C	Rated voltage × 1.25 V	
Dissipation Factor (tanδ)	at 20°C , 120Hz	Case Height : S Type, 0.06 max.	
Endurance	105°C, rated voltage applied,1000 hrs	Appearance	No significant damage
		Capacitance Change	±10% of the initial value
		Dissipation Factor	within the initial specified value
		Leakage Current	within the initial specified value
Damp Heat, Steady State	60°C, 90 to 95%RH, 500 hrs	Appearance	No significant damage
		Capacitance Change	+70%, -20% of the initial value
		Dissipation Factor	≤ 200% of the initial specified value
		Leakage Current	within the initial specified value
Surge Voltage	The capacitors shall be subjected to 1000 cycles each consisting of charge with the surge voltages, 125% rated voltage, at 105°C for 30 seconds through a protective resistor(R=1KΩ)and discharge for 5min 30 seconds.	Appearance	No significant damage
		Capacitance Change	±10% of the initial value
		Dissipation Factor	within the initial specified value
		Leakage Current	within the initial specified value
Solderability	Pb-free solder Around 25% rosin melted ethanol or isopropylalcohol Temperature : 230 ± 5 °C Immersing time : 2 ± 0.5 s	More than 95% of outer terminal surface to be covered	
Resistance to Solvents	Solvent : isopropylalcohol Immersing time : 30 ± 5 s Room temperature	No significant damage and marking readable	

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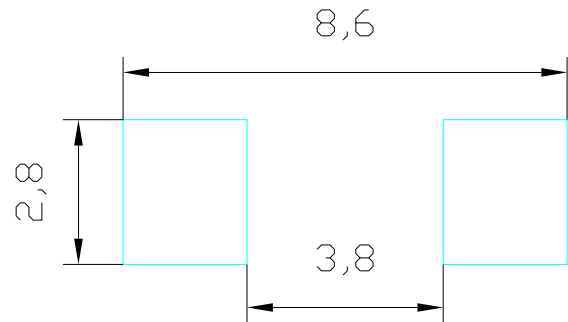
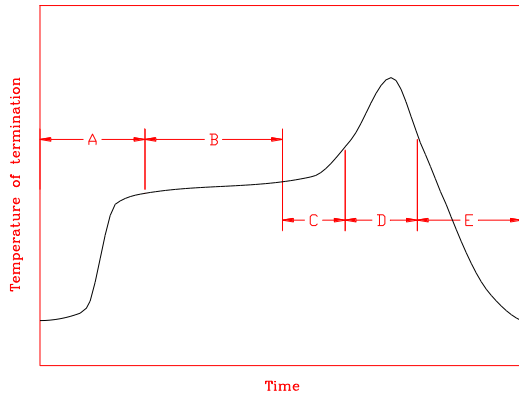
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5.3 Mechanical Performance

Item	Conditions	Characteristics	
Vibration	Test for 2 hours each in the directions of X-Y-Z at the frequency of 10 to 2000 Hz and amplitude of 1.5 mm(10-2000-10).	Appearance	No significant damage
		Capacitance Change	±10% of the initial value
		Dissipation Factor	within the initial specified value
		Leakage Current	within the initial specified value
Shear Force	Side push direction Force : 5 N Holding time : 10 ± 0.5s	No significant damage in appearance	

6. Reflow Condition

Recommended Pad Layout(mm)



A	1 st rising temperature	The normal to Preheating temperature	30s to 60s
B	Preheating	140°C to 160°C	60s to 120s
C	2 nd rising temperature	Preheating to 200°C	20s to 40s
D	Main heating	217°C 260°C	90s 10s
E	Regular cooling	200°C to 100°C	1°C/s ~ 4°C/s

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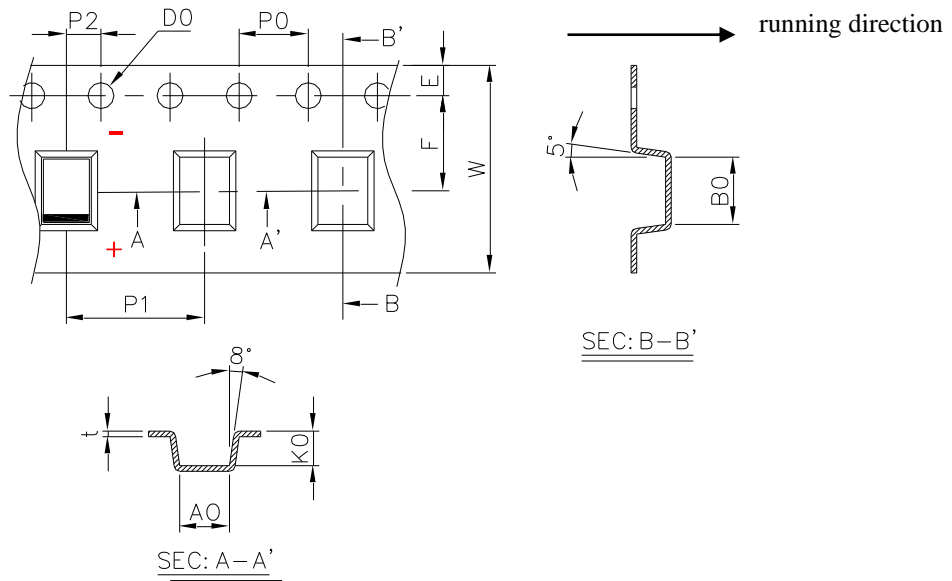
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7. Taping Packing and Label Marking

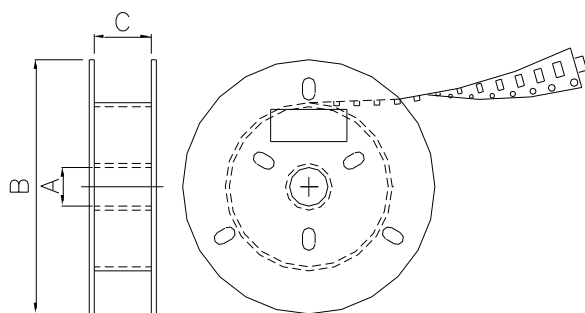
7.1 Carrier Tape Dimensions



unit : mm

	W	P1	E	F	D0	P0	P2	A0	B0	K0	t
Dimension	12.00	8.00	1.75	5.50	1.50	4.00	2.00	5.00	7.60	2.30	0.24
Tolerance	±0.10	±0.10	±0.10	±0.10	+ 0.10 - 0.00	±0.10	±0.10	±0.10	±0.10	±0.10	±0.10

7.2 Taping Reel Dimensions



Reel Dimension (mm)		
A	B	C
13.2±0.3	330±1.0	13.5±0.5

7.3 Label Marking

The label specified as follows shall be put on the side of reel.

- (1) Part No.
- (2) Quantity. (3.5 kpcs / reel)
- (3) Lot No.

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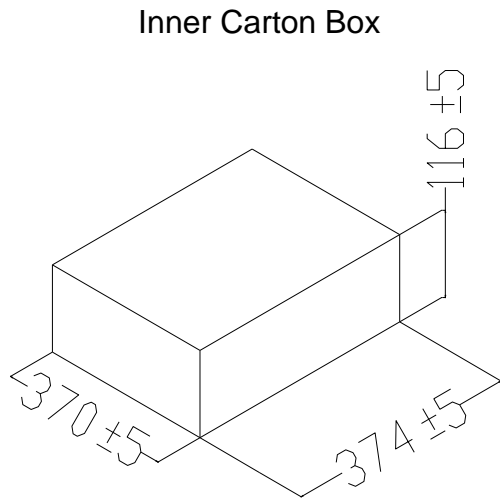
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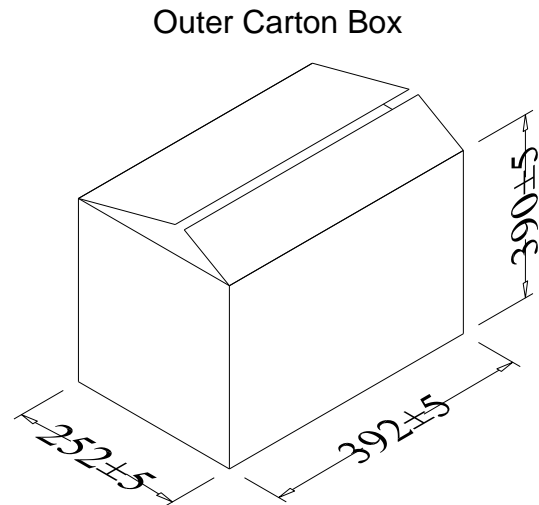
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7.4 Dimension of inner and outer carton box

3.5 kpcs capacitors were packed in a taping reel, 6 reels were packed in a inner carton box (W374*D370*H116mm) and 2 inner carbon box were packed in a outer shipping carton box (W392*D252*H390mm), 42kpcs capacitors in a outer carton box.



unit : mm



unit : mm

8. Precautions for Handling

8.1 Storage : All AP-Cap series are classified as MSL-3 (Moisture Sensitivity Level 3).

Product should be packaged in a moisture barrier bags with desiccant and moisture indicator card. The recommended storage condition is as below.


Temperature: 5 °C to 30 °C

Humidity: Less than 60 % RH

The maximum storage period is no more than 1 year before opening bags, and capacitors should be used within 7 days after opening bags. If these conditions are exceeded, the product may absorb moisture and have damage risk to the exterior by heat stress during mounting. Those product should be baked again before mounting, and APAQ's recommended baking conditions follow the standard of IPC/JEDEC J-STD-033.

8.2 Environment : Capacitors are not subject to direct contact with water, salt water, chemically gas, acidic and alkaline environment.

8.3 Disposal : Treat Capacitors as industrial waste because they consist of various metals and resin.

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