

This specification covers polarized aluminium electrolytic capacitors with solid electrolyte for use in electronic equipment.

Conductive Polymer Aluminum Solid Capacitors

Lead Spacing

2.0

Lead Length

(mm)

Long Lead

3.3

1.Scope:

2. Reference Standard: JIS C 5101-4-2 1998 Aluminium electrolytic capacitors with solid electrolyte

3. Operating Temperature Range: -55 °C~+105 °C

4. Style:Radial Leaded voltage:6.3VDC

Capacitance:220uF/270uF/330uF/470uF/560uF/680uF. Tolerance: ±20%

5. Lead Forming Type, Lead Spacing and Lead Length

Capacitance

(mm) Long Lead 2.0 220uF/270uF/330uF 5.0 Taping

Lead Forming Type

TMCE33

Cutting

	Culling	2.0	3.1	
Capacitance	Lead Forming Type	Lead Spacing	Lead Length	
Capacitance	Lodd Forming Typo	(mm)	(mm)	
	Long Lead	2.5	Long Lead	
470uF/560uF/680uF	Taping	5.0		
	Cutting	2.5	3.3	
	Cutting	2.5	3.1	
6. Case Dimension Co	ode			

3. C	Case Dimension Co	ode				_
	Part number	6308				
	Dimension (mm)	6.3x8				
	TOPMAY	TMCE33	Conductiv	ve Polymer Alumi	num Solid Capad	citors

(1) Rated Voltage (2) Rated Capacitance

(4) Series

that enamel by nylon laminate.

(3) Negative Polarity

Series .

7. Marking

(5) Date Code			

- Code

Rated Capacitance

- Rated Voltage

Unless otherwise specified capacitor shall be clearly marked the following items on its aluminium

Negative Polarity

Table - 1 PERFORMANCE ITEM

> Rated Voltage (WV)

SurgeVoltage

Capacitance

(Tolerance)

Leakage

Current

Endurance

(Load Life Test)

Surge Voltage

Nominal

WV (V.DC)

SV (V.DC)

< Condition >

Measuring Frequency

Measuring Temperature

Measuring Voltage

Measuring Voltage

Capacitance:

 $8\text{m}\Omega~\text{Max}$

< Condition >

< Criteria >

Rated LC (2 Minute)

Rated LC (2 Minute)

Measuring Temperature

calculated from following formula.

6.3

7.2

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PERFORMANCE

: 120 Hz ±20%

: 25 ± 10 °C

: 25 ± 10 °C

270μF

 $8m\Omega$ Max

: Not more than 0.5 Vrms +2.1 \sim 2.5 V.DC

: Not more than 0.5 Vrms +2.1 \sim 2.5 V.DC

470μF

 $8 \text{m} \Omega$ Max

6.3V / **330** μF

6.3V / 680 μF

500 μΑ

500 μΑ

330μF

17m Ω Max

The rated voltage shall be applied between terminals of capacitor such that the terminal

voltage will reach the rated voltage with in two minute and the leakage current shall be measured at following time after the voltage has reached the rated voltage across a 1000 \pm 10 Ω series protection resistor. Then the current value shall not exceed value

6.3V / 220 μF | 6.3V / 270 μF

500 μΑ

 $6.3V / 560 \mu F$

706 μΑ

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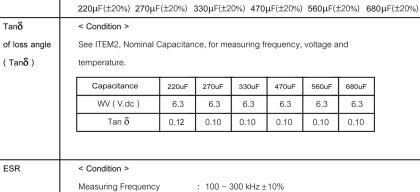
300 μΑ

6.3V / **470** μF

592 μΑ

6.3

0.10



220μF

11m Ω Max

<Condition> Temperature Characteristics Step 1 : Measure impedance at $+20\pm2$ °C , 100 kHz $\pm20\%$ Step 2 : Measure impedance at $\,$ -25 ± 2 °C , 100 kHz $\pm 20\%$ Step 3 : Measure impedance at -55 ± 2 °C , 100 kHz $\pm 20\%$ <Criteria> Impedance ratio of the -25 °C and -55 °C values to the +20 °C value shall be not exceed the following values.

1.15

1.25

Capacitors shall be applied the rated voltage continuously through $1000\Omega\,$ series protective

Within ± 20 % of the initial value

Not more than the specified value

Not more than 150% of the specified value Not more than 150% of the specified value

[CR : Nominal Capacitance(µF)]

resisto at 105±2 °C for 2000 hours. After the test and returned in standard condition

Capacitors shall be applied the surge voltage continuously through 1000 $\!\Omega$ resistor in series for 30 ± 5 seconds in every 6 ± 0.5 minutes at 15~35 °C. Procedure shall be repeated 1000 times. Then the capacitors shall be left under normal humidity

Not more than the specified value

Not more than 150% of the specified value

Not more than 150% of the specified value Notable changes shall not be found

This test simulates overvoltage at abnormal situations, and not be hypothesizing that

for 1~2 hours, and the capacitor shall meet the following requirements.

Z(-25 °C)/Z(+20 °C)

Z(-55 °C)/Z(+20 °C)

Capacitance Change

for 1~2 hours before measurement.

overvoltage is always applied.

Capacitance Change Within ±20% of the initial value

Leakage Current

Leakage Current

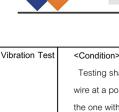
Tanδ ESR

Appearance

<Condition>

Tanδ

ESR



10 | Solderability

Testing shall be done out in 3 AXIS for 2 hours each (total 6 hours) as below. Fix lead wire at a point not more than 4mm from the body, use mounting device separately for the one with a diameter 12.5mm and greater or with a length 25mm and longer.

: 10~55~10 Hz, about 1 min.

Measured value shall be stable. (The time for one

end to the other of the vibration frequency within last

Vibration frequency range : $10 \sim 55 \text{ Hz}$ Peak to peak amplitude : 1.5 mm

30 minutes at direction.)

Within $\pm 5\%$ of the initial value

Notable changes shall not be found

Sweep rate

<Criteria> Capacitance

(During test)

Appearance

<Condition>

<Criteria>

<Condition>

<Criteria>

Tan δ

ESR

Capacitance Change

Leakage Current

1. Tensile Strength of Terminals

2. Bending Strenght of Terminals

and again returned to the original position. Diameter of lead wire

0.5 mm and less

0.6 mm to 0.8 mm

Appearance

<Criteria>

Humidity Test:

12

13

Terminal Strength

Resistance to

(Steady State)

Damp Heat

Capacitance Change

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10	Solderability	- Cortainori				
	Test	1. Test method is r	refer to EIAJ ED-4701.			
		2. Material :				
		(1) Solder: Sn / 3.0 Ag / 0.5 Cu (Weight %)				
		(2) Flux :	Rosin 25% , IPA 75%			
		3. Test condition: Take a capacitor subjected to the above pre-treatment, leave it for				
		at least 2 hours	at room temperature,and the	en,immersion for 3~5 seconds in the		
		prescribe flux.				
			Solder Temp	235 ± 5 °C		
			Immersion depth	2 m / m		
			Immersion Time	3 seconds		
		<criteria></criteria>				
		Wetting must occ	ure over at least 95 % of the	solder immersion surface.		
1	Solder Heat	<condition></condition>				
	Resistance	According to the	standard of EIAJ ED-4701 v	vhere test conditions as.		
	Test	1. Material of solder: Sn / 3.0 Ag / 0.5 Cu (weight %)				
		2. Test A: Flow So	oldering (Party heating)			
		Terminal of the	capacitor shall be immersed	into solder bath at 260 +/-3 °C		
		For ≤10 seconds	to 1.5 2.0 m/m depth fro	m the body of capacitor or apply		
		To 260 +/-3 °C for	5 seconds 2 times.			

After test, the capacitor shall be left for 1-2 hours under the room temperature

Capacitor shall be exposed for 1000 ± 24 hours in an atmosphere of 90~95% R.H. at 60 ± 2 °C, the characteristic change shall meet the following requirement. After test, the capacitor shall be left for 1-2 hours under the room temperature

Within ±20% of initial value

The body of capacitor shall be fixed and the tensile force of following table shall be applied to the terminal in lead out direction of the terminal for 10 \pm 1seconds.

The body of capacitor shall be held in such a way that the ragular lead out axis of leadwire terminal becomes vertical. The weight of following table shall be suspended from the end of terminal. In this condition , after the body of sample is bent through $90\ degrees$, it shall be returned to the original position. Next the body shall be revers bent through 90 degrees

Tensile force

N(kgf)

5(0.51)

10(1.0)

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Notable changes shall not be found, as breakage or looseness in the terminal.

Bending force N(kgf)

2.5(0.25)

5(0.51)

<u>Separator</u>

- Lead wire

Materials

Aluminum

Aluminum

Manila Hemp

PPS Rubber

Aluminum

Tinned Lead

Laminate Coated Aluminum

Foil ⊜

AL. Foil⊕

Adhesive <u>Tape</u>

Not more than 150% of the specified value

Not more than 150% of the specified value Not more than the specified value

Notable changes shall not be found

Not more than the specified value

Within +/- 10 % of the initial value

Not more than the specified value

Not more than the specified value

Notable changes shall not be found

and normal humility before measurement.

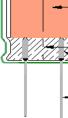
Leakage Current

Capacitance Tanδ

Appearance

and normal humility before measurement.

ESR



No.

1

3

4

10. Diagram of Dimensions (unit: mm.)

8+1.0max

Code : NN

Element

8. Construction and Material Details

Component Anode Foil

Aluminum Tab

Lead wire

Case

Cathode Foil

Separator Adhesive Tape

⑤ Case

1) Element

②Rubber

4 Lead wire

③ Aluminum Tap

торм	AY	TMCE	33 Con	ductive Polymer A	luminum Solid Capa	acitors	
). Table -2 Standard	Ratings	Rated	Case Size	ESR	Rated		Leakage
Part Number	Voltage	Capacitance	φD×L	100 KHz~to 300KHz	Ripple Current	Tanδ	Current
	(Vdc)	(µF)	(mm)	(m Ω max)	(mArms/105°C100KHz)		(µA)
TMCE33-221M6.3VP2B	6.3 (0J)	220	5 ×8	11	3200	0.12	300
TMCE33-271M6.3VP2B	6.3 (0J)	270	5×8	8	4180	0.10	500
TMCE33-331M6.3VP2B	6.3 (0J)	330	5×8	17	3390	0.10	500
TMCE33-471M6.3VP2.5B	6.3 (0J)	470	6.3×8	8	4700	0.10	592
TMCE33-561M6.3VP2.5B	6.3 (0J)	560	6.3×8	8	4700	0.10	706
TMCE33-681M6.3VP2.5B	6.3 (0J)	680	6.3×8	8	4700	0.10	500

15 m in

5 min