

Spec. No. E 1 7 8 5

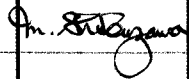
Dec. 26. 2006

SPECIFICATION
OF
ALUMINUM ELECTROLYTIC CAPACITORS

NICHICON TYPE No. : TVX1E103MDD

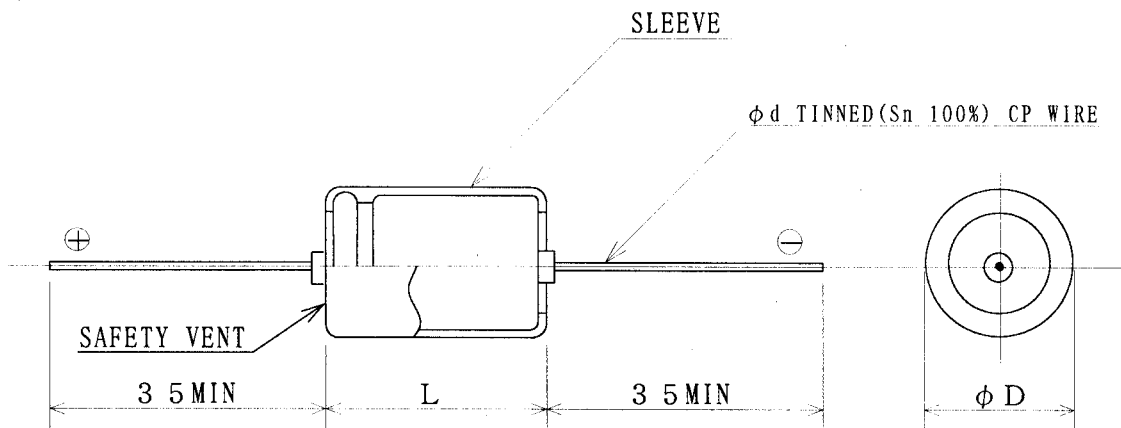
RATE : 25V 10000 μ F

DRAWING No. : N061226Q1-

LET.	REVISION	DATE	DESIGNED	CHECKED	APPROVED
		Dec. 26. '06	M. Saitou	—	

ELECTROLYTIC CAPACITOR

SPEC No. E1785



CONNECTION DIAGRAM

[MARKING]



[SLEEVE]

COLOR	PURPLE BLUE
MATERIAL	P.E.T.
MARKING	WHITE

[DIMENSIONS]

φD	23.0 MAX
L	54.0 MAX
φd	0.8 ± 0.05

(mm)

VX(M)
85°C
EIA DATE CODE
PET

[WEIGHT]

about 27.8g

ELECTRICAL CHARACTERISTICS

TERM	RATED VOLTAGE (V.D.C)	SURGE VOLTAGE (V.D.C)	RATED CAP. (μF)	CAP. TOL. (%)	D.F. (%) (MAX)	LEAKAGE CURRENT (μA MAX)	RIPPLE CURRENT (mA MAX)	
INAL	25	32	10000	±20	32	1500	2940	
				at 120Hz 20°C		after 5 min.	at 120Hz 85°C	

TEST STANDARD

JIS C 5141

(OPERATING TEMP. RANGE -40°C ~ + 85°C)

				APPROVED	NICHICON TYPE No. TVX1E103MDD			
				CHECKED	RATE			
				DESIGNED	25V 10000 μF			
				3RD ANGLE PROJEC- TION	SCALE	DATE	CASE SIZE	
					/mm	'06.12.26	φ22 × 52	
MARK	DATE	DESCRIPTIONS	DESI.	DWG. No.				
		REVISION		NICHICON CORPORATION				
				N061226Q1-				

1. SCOPE

This specification covers axial lead type aluminum electrolytic capacitors.

2. APPLICABLE SPECIFICATION

Standard JIS C5101-1, C5101-4, C60068-2-21, C60068-2-6, 60068-2-20

3. CATEGORY TEMPERATURE RANGE : -40 ~ +85°C

4. PERFORMANCE

Unless otherwise specified, the standard range of atmospheric conditions for making measurements and tests is as follows, Ambient temperature : 15 to 35°C

Relative humidity : 45 to 85%

Air Pressure : 86k to 106kPa

If there may be any doubt on the results, measurements shall be made within the following limits,

Ambient temperature : 20 ± 2°C

Relative humidity : 60 to 70%

Air Pressure : 86k to 106kPa

No.	Items	Test method	Performance
4.1	RATED VOLTAGE		DC 25V
4.2	CAPACITANCE	(JIS C5101-4 4.3) Measuring frequency: 120 ± 12Hz Measuring voltage : 0.5Vrms or less	10000 μF (-20~+20%)
4.3	DISSIPATION FACTOR	(JIS C5101-4 4.3) Measuring frequency and measuring circuit and measuring voltage are the same as those for capacitance.	32% MAX.
4.4	LEAKAGE CURRENT	(JIS C5101-4 4.3) The rated voltage shall be applied across the capacitor and its protective resistor shall be 1000±100Ω. The leakage current shall then be measured after an electrification period of 5 min.	1.50mA MAX.
4.5	RATED RIPPLE CURRENT	Test temperature : 85±2°C Ripple current: The maximum r.m.s 120Hz sinusoidal A.C. current. (D.C. voltage+Peak ripple voltage ≤ Rated voltage)	2940mArms
4.6	SURGE	Voltage application: 1000 times charging for 30±5s, with a period of 6±0.5 min Test voltage: 32VDC Test temperature : 15~35°C Series protective resistor: 1000Ω Electric discharge: Not to carry out.	Variation of capacitance: Within ±20% of the value before test. Dissipation factor: Not more than 200% of the initial specified value. Leakage current: To satisfy No.4.4
4.7	TEMPERATURE CHARACTERISTIC	The ratio of impedance value at -40 ± ½ °C and -25 ± ½ °C to the value at +20±2°C. Measuring frequency: 120±12Hz	$Z_{-25^{\circ}\text{C}}/Z_{20^{\circ}\text{C}} \leq 3$ $Z_{-40^{\circ}\text{C}}/Z_{20^{\circ}\text{C}} \leq 10$

No.	Items	Test method	Performance
4.8	TERMINAL STRENGTH	(JIS C5101-1 4.13 and JIS C60068-2-21) Tensile strength of termination: A static load of 10N shall be applied to the terminal in the axial direction and acting in a bisection away from the body for 10sec. Bending strength of termination: Hang the specified dead 0.5kg weight, then bend the body through 90°, return to original position. Carry out this operation in about 5sec., and count it as once. Next bend it in opposite direction through 90° with the same speed, again return to the original position count it as 2 times.	When the capacitance is measured, there shall be no intermittent contacts, open or short circuiting. There shall be no such mechanical damage.
4.9	VIBRATION	(JIS C5101-4 4.8 and C60068-2-6) Direction and duration of vibration: 3 orthogonal directions mutually each for 2 hrs. (Total 6 hrs.) Capacitance to be measured several times during last 30min. of test. Frequency range : 10~55~10Hz Sweep rate : 1 min Total amplitude : 1.5mm	When the capacitance is measured, there shall be no intermittent contacts, open or short circuiting. There shall be no such mechanical damage.
4.10	SOLDER ABILITY	(JIS C5101-1 4.15 and C60068-2-20) Temperature of solder : 245±2°C Duration of immersion : 3 sec.	At least 3/4 of circus fantail surface of the dipped portion of termination shall be covered with new solder.
4.11	RESISTANCE TO SOLDERING HEAT	(JIS C5101-1 4.14 and C60068-2-20) (Solder bath method) Temperature of solder : 260±5 °C Duration of immersion : 10±1 sec or (Soldering iron method) Temperature of solder : 400±10°C Duration of immersion : 3 ± 1/10 sec.	Variation of capacitance: Within ±10% of the value before test. Dissipation factor: To satisfy No.4.3 Leakage current: To satisfy No.4.4 Appearance: No remarkable Abnormality
4.12	DAMP HEAT (STEADY STATE)	(JIS C5101-1 4.22 and C5101-4 4.12) Test temperature : 40±2°C Test time : 240±8 hrs Relative humidity : 90~95%	Variation of capacitance: Within ±15% of the value before test. Dissipation factor: To satisfy No.4.3 Leakage current: To satisfy No.4.4 Appearance: No remarkable abnormality

No.	Items	Test method	Performance
4.13	ENDURANCE	Test temperature: $85^{\circ}\text{C} \pm 2^{\circ}\text{C}$ Test time : $2000 \pm \frac{7}{8}$ hrs. Applied voltage : Rated D.C. voltage After complection of test, the capaci- tor shall be subjected to standard atmospheric conditions for 2h., after which measurements shall be made.	Variation of capacitance: within $\pm 20\%$ of the value before test. Dissipation factor: Not more than 200% of the initial specified value. Leakage current: To satisfy No.4.4 Appearance: No remarkable abnormality
4.14	SHELF LIFE TEST	Test temperature: $85^{\circ}\text{C} \pm 2^{\circ}\text{C}$ Test time : $1000 \pm \frac{4}{8}$ hrs. Before the final measurement, the specimen shall be allowed to stand under the standard conditions for 2h. and to apply rated D.C. voltage for 30 min.	Variation of capacitance: Within $\pm 20\%$ of the value before test. Dissipation factor: Not more than 200% of the initial specified value. Leakage current: To satisfy No.4.4 Appearance: No remarkable abnormality
4.15	PRESSURE RELIEF	(JIS C5101-1 4.28 and C5101-4 4.16) The capacitor shall be connected in inverse polarity. and D.C. current shall be passed through the capacitor. D.C. current : 1 A	Pressure relief vent shall be opened normally and there shall be no metal piece scattered. Or, there shall be no abnormality after 30 minutes from test start.

5. OTHERS

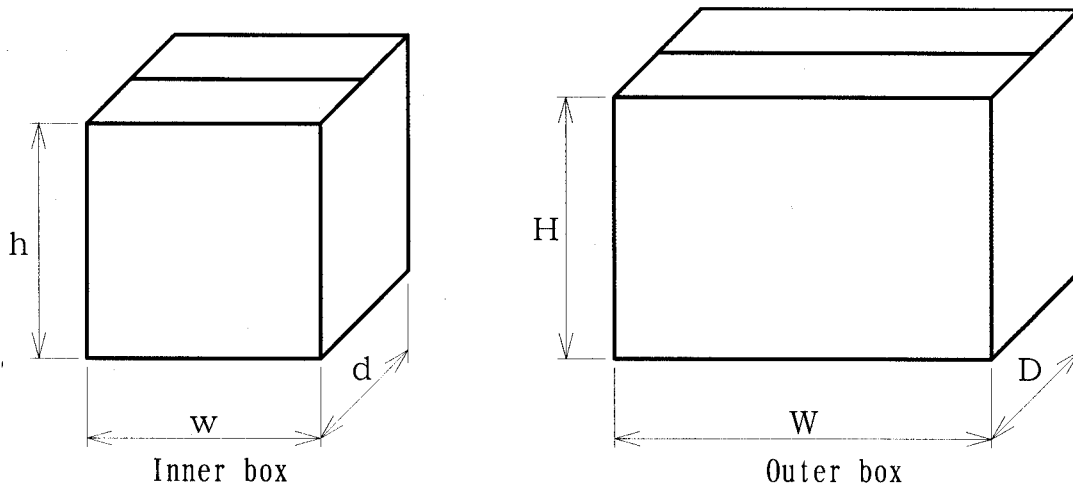
- ① This item capacitor can be cleaned using AK-225AES or equivalent agents. The cleaning conditions are shown in below table. (Please pay attention to remove agents on the sealed plate surface after cleaning.)

Cleaning conditions	Within 5min., total cleaning time by immersion, vapor spray, or ultrasonic and such. (Temperature of agent: 40°C or below)
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- ② Leakage current may increase after capacitors are stored more than 2 years (after capacitors are produced.) under standard condition (approximately 35°C or below). Please perform a voltage treatment through $1\text{k}\Omega$ resistor before use.
- ③ Neither our production process nor our parts supplier uses ozone depleting substances, designated bromine flame retardant or heavy metals.
- ④ Do not store capacitor under high temperature and/or high humidity.
It is recommended to store indoor where the direct sunlight is not come along, at a temperature range of $5 \sim 35^{\circ}\text{C}$ and a related humidity of 75% or less.
- ⑤ The Relevant Export Regulation Laws
In case that there is a certain danger of the products conflicting with the use and activity for the developments of weapons of mass destruction, the procedures based upon the relevant export regulation laws are absolutely needed.
- ⑥ Capacitor mentioned in this application applied to directive of the European parliament and council on RoHS (2002/95/EC).

アルミニウム電解コンデンサ仕様書	図番	N 0 6 1 2 2 6 Q 1 -
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Packaging



(unit : mm)

Size $\phi D \times L$	Inner box					Outer box				
	Layer	total (pcs.)	w	d	h	Inner box	total (pcs.)	W	D	H
22×52	7 24×1+26×6	180	250	208	185	2	360	435	265	220