



DATE: Dec 24, 2014

TK NO.: H-UTWKZ-C101A

# SPECIFICATION

Customer: \_\_\_\_\_

Name of product: UTWKZ series Aluminum Electrolytic Capacitors

Symbol: 1EUTWKZ681M0G16; 1EUTWKZ681M4G20

Approved by	Title	Signature	Date
Description:			

Please return a sheet of this specification after your approval. Please connect with technical department of our **Maruko Factory**, if you have any technical question.

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1. Application

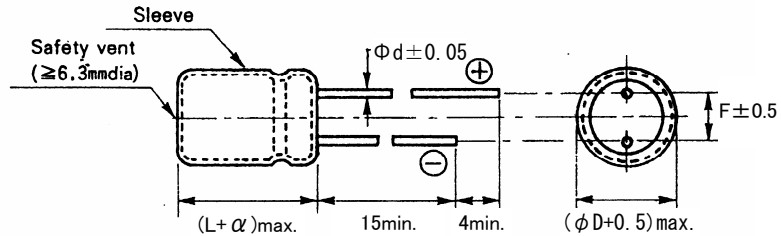
This specification is applicable to the performance of aluminum electrolyte capacitors of type-UTWKZ [RoHS corresponding & PET (Non-PVC) sleeve type].

2. Operating Temperature Range

-55°C ~ +105°C

3. Capacitance Tolerance

±20% (M) (20°C, 120Hz)



\* RoHS corresponding

\* PET (Poly Ethylene Terephthalate) sleeve

φD ≥ 10

L < 20: α = 1.5 L ≥ 20: α = 2.0

4. PERFORMANCE

Rated Ripple Current (105°C, 100kHz)

TK Part Number	Rated Voltage [V DC]	Nominal Capacitance [μF]	tan δ (120Hz) (20°C)	Leakage Current [μA]	Impedance (100kHz) (20°C) [Ω]	Ripple Current (100kHz) [mA]	Dimensions in mm			
							D	L	F	d
1EUTWKZ681M0G16	25	680	max 0.14	max 170	max 0.065	max 990	10.0	16.0	5.0	0.6
1EUTWKZ681M0G20	25	680	0.14	170	0.062	1040	10.0	20.0	5.0	0.6

5. Leakage Current

Less than 0.01CV or 3 μA, whichever is the greater after 2 minutes at 20°C.

Note: C: Nominal Capacitance (μF), V: Rated Voltage (V.D.C.)

6. Multiplier for Ripple Current

When the ripple frequency differs from the specification shown the list of standard products, multiply the value with the coefficient shown below, and use the products under the obtained value.

< Frequency coefficient >

Cap (μF)	Frequency (Hz)			
	120	1K	10K	100K
390 ~ 1000	0.80	0.95	1.00	1.0

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Prepared	Approved		
<i>Gan. Dejun</i>	<i>K. Aoyama</i>		

7. Load Life Test

Capacitors shall be applied the rated voltage overlapped by an allowable ripple current at  $105\pm 2^{\circ}\text{C}$  for 4000hours.

Capacitance Change	Within $\pm 20\%$ of the initial value.
Dissipation Factor	Less than the 200% of the specified value.
Leakage Current	Less than the specified value.

8. Shelf Life Test

Capacitors shall be stored at  $105\pm 2^{\circ}\text{C}$  with no voltage applied for 1000 hours.

Capacitance Change	Within $\pm 20\%$ of the initial value.
Dissipation Factor	Less than the 200% of the specified value.
Leakage Current	Less than the specified value.

9. Surge Voltage Test

Capacitors shall be applied the surge voltage through a  $(100\pm 50)/\text{CR}$  ( k  $\Omega$  ) resistor in series for  $30\pm 5$  seconds in every  $6\pm 0.5$  minutes at  $15\sim 35^{\circ}\text{C}$  procedure shall be rated 1000 times. Then the capacitors shall be left under normal humidity for 1~2hours before measurement.

( CR: Nominal Capacitance (uF) )

WV (V D.C.)	25
Surge voltage	32

Note: This test simulates over voltage at abnormal situations and not be hypothesizing that over voltage is always applied.

Capacitance Change	Within $\pm 20\%$ of the initial value.
Dissipation Factor	Less than the 200% of the specified value.
Leakage Current	Less than the specified value.

10. Low Temperature Characteristics (Impedance ratio at 120Hz)

WV (VDC)	25
Z-25 $^{\circ}\text{C}$ / Z+20 $^{\circ}\text{C}$	2
Z-55 $^{\circ}\text{C}$ / Z+20 $^{\circ}\text{C}$	3

11. Resistance to Solder Heat

Immerse the lead wire of 2mm from the root of the body in a soldering solution (H63A) of  $270\pm 5^{\circ}\text{C}$  for  $5\pm 0.5$  seconds. Take out the lead wire and expose it in room temperature for 2-4 hours. Then measure the electric characteristics.

Appearance	Notable changes shall not be found.
Leakage Current	Not more than the specified value.
Capacitance Change	Within $\pm 10\%$ of the initial value.
Dissipation Factor	Not more than the specified value.

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## 12. Terminal Strength test

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

### 【Tensile Strength of Terminals】

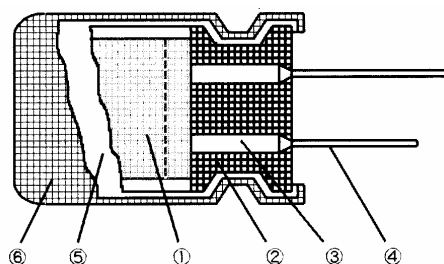
The body of capacitor shall be fixed and the tensile force of above table shall be gradually applied to the terminal in lead out direction of the terminal , and retained for  $10 \pm 1$  seconds.

### 【Bending Strength of Terminals】

The body of the capacitor shall be held in such a way that the regular lead-out axis of the terminal becomes vertical. The weight of above table shall be suspended from the end of the terminal. In this condition. After the body of the sample is bent through 90 degrees, it shall be returned to the original position. Next the body shall be reversibly bent through 90 degrees and again returned to the original position. (Give the test 1 time for each direction and movement within 2~3 seconds per time.)

Diameter of lead wire	Tensile force	Bending force
0.5mm and less	5N (0.51kgf)	2.5N (0.25kgf)
Over 0.5mm to 0.8mm	10N (1.0 kgf)	5N (0.51kgf)

## 12. Construction



No	Compositions	Materials	Manufacture
①	Element	Anode foil	Aluminum : Purity 99.9% min.
		Cathode foil	Aluminum : Purity 99.4% min.
		Separator	Paper
		Electrolyte	Solvent : Ethylene glycol Solute : Ammonium salt
②	Rubber bung	Flat Rubber	CHIANG AN (Taiwan)
③	Aluminum tab	Aluminum : Purity 99.7% min.	Genenic (Taiwan)
④	Lead wire	CP-wire(CP-Wire(Plating: Sn100%))	
⑤	Case	Aluminum : Purity 99.5% min.	Rijin (Taiwan)
⑥	Sleeve	PolyEthylene Telephtalate (PET)	YunLin(Taiwan)

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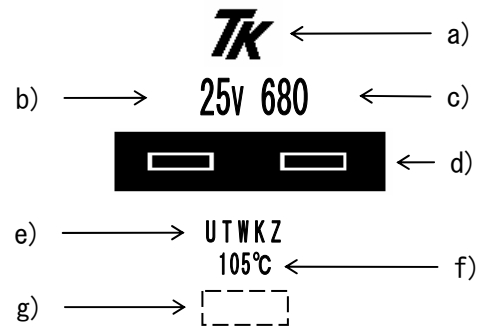
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13. Marking

The following items shall be marked on each capacitor. (White marking on brown sleeve)

- a) Trade Mark
- b) Rated Voltage
- c) Nominal Capacitance
- d) Negative Polarity Direction
- e) Series
- f) Maximum Operating Temperature
- g) Management No.



( Example )

14. Others

Other characteristics are based on JIS C 5101-4.

15. Guide to application

Please refer to technical report EIAJ RCR-2367B "Guideline of notabilia for fixed aluminum electrolytic capacitors for use in electrolytic equipment".

(Technical Report of Electronic industries Association of Japan in march 1995, revised edition in march 2002.)

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