ENGLISH

Datasheet

100µF 25 V dc, Through Hole Aluminium Electrolytic Capacitor

RS Stock number [707-6543]

Item	Performance Characteristics	
Operating Temperature Range	-40 to +105□	-25 to +105□
Rated Voltage Range	10 to 100 VDC	160 to 450 VDC
Capacitance Tolerance	±20%(120Hz, +20□)	

Leakage Current (+20□)

10V ~100V DC	I≦0.02CV+3(uA)
160V~450V DC	I≦0.03CV+4(uA)

I: Leakage current(uA)
C: Rated Capacitance(uF)
V: Working Voltage[V]
After 5 minutes applying the DC working voltage

Surge Voltage (20□)

W.V.	10	16	25	35	50	63	100	160	200	250	350	400	450
S.V	13	20	32	44	63	79	125	200	250	300	400	450	500

Dissipation Factor [120Hz,20 °C]

W.V	10	16	25	35	50	63	100	160	200	250	350	400	450
Tanθ	0.20	0.17	0.15	0.12	0.10	0.10	0.10	0.20	0.20	0.20	0.20	0.24	0.24

For capacitance exceeding 1000uF,add 0.02 per increment of 1000uF

Temperature Caracteristics [Tanθ]

W.V.		10	16	25	35	50	63	100	160	200	250	350	400	450
Impedance	-25 °C/+20 °C	4	3	3	2	2	2	2	8	8	8	12	15	16
	-40 °C/+20 °C	8	6	4	3	3	3	3	6	6	10	-	-	-

Impedance ratio of 120Hz

Load Test

After 1000hours application of W.V. AT+105 °C
The capacitor shall meet the following limits.

Capacitance Change	≦±20% of initial value
Tanθ	≦±200% of initial specified value
Leakage Current	≦±initial specified value

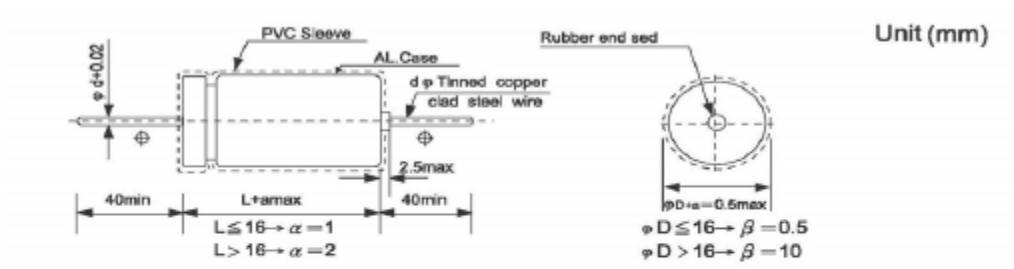
Shelf Test

After 500hours application of W.V. AT+105 °C
The capacitor shall meet the following limits.

Capacitance Change	≦±20% of initial value
Tanθ	≦±200% of initial specified value
Leakage Current	≦±200% of initial specified value

ENGLISH

Diagram of Dimensions:



(Unit: mm)

D	5	6	8	10	13	16	18	20	22	25
φd	0.6	0.6	0.6	0.6	0.6	0.8	0.8	0.8	0.8	0.8

Ripple Current & Frequency Multipliers

Freq.(Hz) / Cap.(μF)	50(60)	120	500	1K	10KUP
Under 100	0.70	1.00	1.30	1.40	1.50
100 < C ≦ 1000	0.75	1.00	1.20	1.30	1.35
1000 up above	0.80	1.00	1.10	1.12	1.15

ENGLISH

CONTENTS OF QUALITY ASSURANCE

ASSURANCE METHOD CONTENTS

Performance

Unless otherwise specified, the capacitors shall be measured at +15℃ to +35℃ , 45to75%RH. However, if any doubt arises on the judgment, the measurement conditions shall be +20±1℃, 60to70%RH the test Conditions shall comply with IEC-60384-4.

1.Capacitance(CAP.)

Measuring frequency	:120Hz±20%
Measuring voltage	:0.5V rms. +1.5 to 2.0V dc
Measuring circuit	:Series equivalent circuit.

Criteria: Shall be within the specified capacitance tolerance.

2.Dissipation Factor (tanδ)

Measuring frequency	:120Hz±20%
Measuring voltage	:0.5V rms. +1.5 to 2.0V dc
Measuring circuit	:Series equivalent circuit.

Criteria: Shall not exceed the specified in the table of Ratings.

3. Leakage Current (L.C.)

DC leakage current shall be measure with rate voltage, which is applied through a resistor of 1,000±10Ω connected in series with the capacitors , at the end of a specified period after the capacitors reached the rated voltage across the terminals.
Criteria: Shall not exceed the specified in the table of Ratings.

4. Surge Voltage

4.1 The surge DC rating is the maximum voltage to which the capacitor should be subjected under any conditions. This includes transients and peak ripple at the highest line voltage.

4.2 Capacitors, connected in series with 1000 ohm resistors, shall withstand the surge test voltage applied at the rated of 1/2 minute on, 4 1/2 minutes off, for 1000 successive test cycles at 20°C (see the following table)

Rated Voltage (WV)	6.3	10	16	25	35	50	63	100
Surge Voltage (SV)	10	13	20	32	44	63	79	125

Criteria:

Capacitance change	:≦±15% of initial value
Dissipation Factor	:within specified value
Leakage Current	:within specified value
Physical	:no broken and undamaged

Endurance characteristic

5. High temperature load life test

Condition	Specification	
1. Capacitors shall be placed in oven with application of ripple current and rate voltage for 1000±12hrs at 105℃ 2. The capacitors should be use within specified permissible ripple current in each standard products table(the sum of DC working voltage and AC peak voltage shall be equal to the rated DC working voltage 3. The specified maximum permissible ripple current in defined at 105℃ and 120 Hz 4. Then the capacitor shall be subjected to standard atmospheric conditions for 16 hours, after witch measurements shall be made.	Capacitance change	Within ±25% of the initial value
	TANδ	Less then 200% of specified value
	Leakage Current	Within specified value
	Physical	no broken and undamaged

ENGLISH

6. High temperature shelf life test

After 500hrs test at 105℃ without rated working voltage. And then the capacitor shall be subjected to standard atmospheric conditions for 16 hours, after witch measurements shall be made.	Capacitance change	Within ±25% of the initial value
	TANδ	Less then 200% of specified value
	Leakage Current	Less then 200% of specified value
	Physical	no broken and undamaged

7. Rotational temperature test

Capacitor is place in a oven whose temperature follow specific regulation to change. The specific regulations is "+25℃ (1 hr) → +105℃ (2 hrs) → +25℃ (0.5 hr) → -40℃ (2 hrs) →+25℃ (0.5 hr)",and it called a cycle. The test totals 10 cycles. And then the capacitor shall be subjected to standard atmospheric conditions for 16 hours, after witch measurements shall be made.	Capacitance change	Within ±10% of the initial value
	TANδ	Within specified value
	Leakage Current	Within specified value
	Physical	no broken and undamaged

8. Humidity test

Capacitors shall be exposed for 500±8hrs in an atmosphere of 90~ 95%R.H at 40℃. And then the capacitor shall be subjected to standard atmospheric conditions for 16 hours, after witch measurements shall be made.	Capacitance change	Within ±10% of the initial value
	TANδ	Less then 120% of specified value
	Leakage Current	Within specified value
	Physical	no broken and undamaged

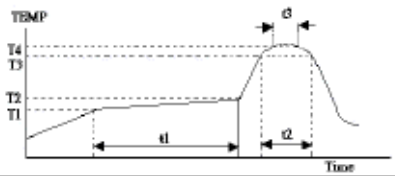
9. Low temperature test

Capacitor are place at -40±3℃ for 72±4hrs.And then the capacitor shall be subjected to standard atmospheric conditions for 16 hours, after witch measurements shall be made.	Capacitance change	Within ±10% of the initial value
	TANδ	Within specified value
	Leakage Current	Within specified value
	Physical	no broken and undamaged

10. Vibration test

1. Fix it at the point 4mm or less form body. For ones of 12.5mm or 25mm or more length, use separate fixture. 2. Direction and during of vibration:3 orthogonal direction each for 2hrs total 6hrs. 3. Mutually frequency: 10 to55Hz reciprocation for 1 min. 4.Total amplitude:1.5mm	Capacitance change	Within ±10% of the initial value
	TANδ	Within specified value
	Leakage Current	Within specified value
	Physical	no broken and undamaged

11. Reflow test

1. IR Reflow  Preheat: Temp (T1~T2) 100~150℃; Time (t1) max 40 sec Duration: Temp(T3) 260℃; Time (t2) max 10 sec Peck: Temp(T4) 270℃; Time (t3) max 5 sec Reflow cycle: Twice or less 2. Solder bath method: Solder temperature:260±3℃ Immersion time:5+1/-0 sec Thickness of heat shunt (Printed wiring board):1.6mm 3. Soldering iron method: Bit temperature: 350±10℃ Application time of soldering Iron:3+1/-0 sec	Capacitance change	Within ±10% of the initial value
	TANδ	Within specified value
	Leakage Current	Within specified value
	Physical	no broken and undamaged

ENGLISH

12. Solderability test

After the lead wire fully immersed in the solder for 2±0.1 sec at a temperature of 245±2℃, the solder coating must be more then 95%

13. Mechanical

1. The test is about lead tabs strength.
2. Tension test:
   The lead tabs shall not be broken or any malformed condition after fixing capacitor vertically and pressing the following weight on the lead tabs of capacitor for 10±1 sec.

Lead tabs diameter(mm)	Weight(Kg)
≦0.5	0.5
0.6~0.8	1.0
>0.8	2.5

3. Bending test:
   capacitor is held in vertical position. Attach a weight to the lead tabs, slowly rotate the capacitor 90°to a same way in the opposite direction. Repeat it again (5 secs per cycle). The lead tabs shall not be broken or cracked.

Lead tabs diameter(mm)	Weight(Kg)
≦0.5	0.5
0.6~0.8	1.0
>0.8	2.5

14. Safety vent

Condition: Apply a reverse voltage with current 1 amp.(DC reverse voltage test)
Criteria: When the pressure relief vent operated, the capacitor shall not flame although gas generation or expulsion of a part of the inside element is allowable. If the vent does not operate with the voltage applied for 30 minutes, the test is Considered to be passed.

15. Standards

Satisfies Characteristic W of IEC-60384-4,18

Code System

LMK	4R7	M	50	V	4	7	----
Series (1)	Capacitance (2)	Tol. (3)	Voltage (4)	Sleeve (5)	Dia. (6)	Length (7)	Forming (8)

(1) Series:

LGK	LHK	LMK	LSM	LEK	LPS	LKP	LNP	LLK	LBP

(2) Capacitance (uF):

μF	0.1	1	10	100	1000	10000	1.5
Code	0R1	010	100	101	102	103	1R5
μF	0.22	2.2	22	220	2200	22000	15
Code	R22	2R2	220	221	222	223	150
μF	0.33	3.3	33	330	3300	33000	150
Code	R33	3R3	330	331	332	333	151
μF	0.47	4.7	47	470	4700	47000	1500
Code	R47	4R7	470	471	472	473	152

(3) Tolerance:

Code	J	K	M
Tolerance	±5%	±10%	±20%

(4) Working Voltage (V):

6.3	10	16	25	35	50	63
100	160	200	250	350	400	450

(5) Sleeve:

Code	V	E
Sleeve	PVC	PET

ENGLISH

(6) Diameter (mm):

4	5	6	8	10	13	16	18
22	25	30	35	51	64	77	90

(7) Length (mm):

5	7	9	11	12	14	16	20	21	25
26	31	33	36	40	42	45	50	53	65
75	83	96	100	115	121	130	140	144	157

(8) Forming (optional):

Taping + pitch (mm)	Cutting + length (mm)	Kink + pitch (mm)
TB2	C3.3	K5
TB2.5	C3.5	
`TB3.5	C5	
TB5	C7	

LABEL

FRONT

	Electrolytic Capacitor	
Capacitance Range:	4.7	uF
Voltage Range:	50	V
Quantity:	2000	pcs
Remark:4*7	105□	RoHS
MADE IN TAIWAN	COMPLIANT	