

# SMD Aluminum Electrolytic Capacitor – JCK

## FEATURES

- Chip type, operating with wide temperature range -40~+105°C.
- Load Life of 1,000~2,000 hours
- Designed for surface mounting on high density circuit board.
- Emboss carrier tape packing system is available for automatic insertion.



## SPECIFICATIONS

Operating Temperature  
Voltage Range  
Capacitance Range  
Capacitance Tolerance  
Leakage Current

-40°C ~ +105°C  
4V ~ 100V.DC  
0.1 ~ 10000 μF  
±20% at 120Hz, 20°C  
Leakage current (Φ4~Φ10) ≤0.01CV or 3μA, whichever is greater.  
(After 2 minutes application of rated voltage)  
Leakage current (Φ12.5~Φ16) ≤0.03CV or 4μA, whichever is greater.  
(After 1 minutes application of rated voltage)

Dissipation Factor (Tan δ)

Measurement Frequency: 120Hz, Temperature: 20°C

Rated Voltage (V)	4	6.3	10	16	25	35	50	63	100
Tan δ (Max.)	0.35	0.3	0.24	0.2	0.16	0.14	0.14	0.12	0.12
	Φ4~Φ10	0.35	0.3	0.24	0.2	0.16	0.14	0.14	0.12
	Φ12.5~Φ16	0.42	0.38	0.34	0.3	0.26	0.22	0.18	0.14

Stability At Low Temp.

Measurement Frequency: 120Hz

Rated Voltage (V)	4	6.3	10	16	25	35	50~63	100	
Impedance Ratio	Φ4~Φ10	Z(-25°C)/ Z(20°C)	7	4	3	2	2	3	
		Z(-40°C)/ Z(20°C)	15	8	6	4	4	3	4
ZT/Z20 (Max.)	Φ12.5~Φ16	Z(-25°C)/ Z(20°C)	7	5	4	3	2	2	2
		Z(-40°C)/ Z(20°C)	17	12	10	8	5	4	3

Load Life

After 2000 hours (1000hrs. for Φ4~Φ6.3x5.8) application of rated voltage at 105°C, They meet the characteristics listed below.

Capacitance Change	within ± 20% of initial value for capacitors of 10V or more (within ± 30% of initial value for capacitors of 4V & 6.3V)
Dissipation Factor	200% or less of initial specified value
Leakage Current	Initial specified value or less

Self Life

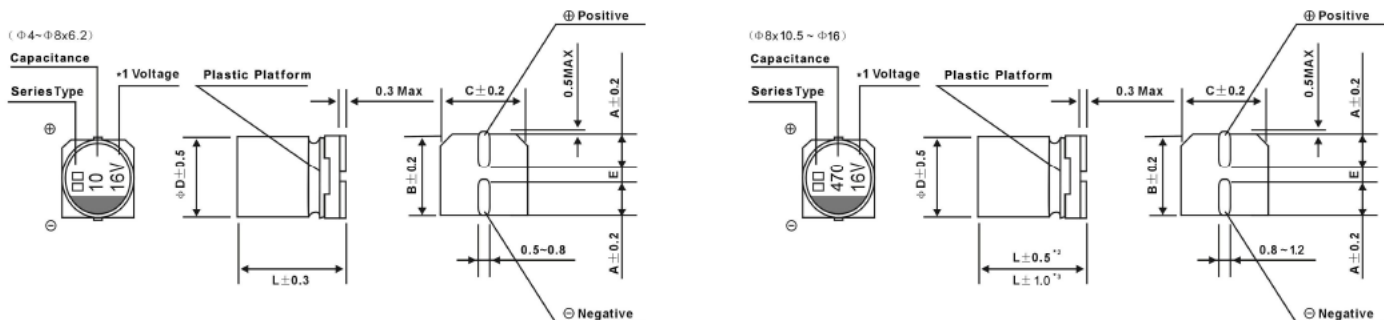
After leaving capacitors under no load at 105°C for 1000 hours, They meet the specified value for load life characteristics listed above.

Resistance to Soldering Heat

After reflow soldering and restored at room temperature, they meet the characteristics listed below.

Capacitance Change	Within ± 10% of initial value
Dissipation Factor	Initial specified value or less
Leakage Current	Initial specified value or less

## DRAWING (Unit: mm)



\*1 Voltage mark for 6.3V is [6V]

\*2 Applicable to Φ8x10.5~Φ10

\*3 Applicable to Φ12.5~Φ16

(mm)

ΦDxL	4x5.4	5x5.4	6.3x5.4	6.3x7.7	8x6.2	8x10.5	10x10.5	10x13.5	12.5x13.5	12.5x16	16x16.5	16x21.5
A	1.8	2.1	2.4	2.4	3.3	2.9	3.2	3.2	4.7	4.7	5.5	5.5
B	4.3	5.3	6.6	6.6	8.3	8.3	10.3	10.3	13.0	13.0	17.0	17.0
C	4.3	5.3	6.6	6.6	8.3	8.3	10.3	10.3	13.0	13.0	17.0	17.0
E±0.2	1.0	1.3	2.2	2.2	2.2	3.1	4.4	4.4	4.4	4.4	6.7	6.7
L	5.4	5.4	5.4	7.7	6.2	10.5	10.5	13.5	13.5	16.0	16.5	21.5

## FREQUENCY COEFFICIENT OF ALLOWABLE RIPPLE CURRENT

Frequency		50Hz	120Hz	300Hz	1KHz	10KHz~
Coefficient	Φ4~Φ10	0.1~68μF	0.70	1.00	1.17	1.50
		100~3300μF	0.85	1.00	1.08	1.30
	Φ12.5~Φ16	~68μF	0.75	1.00	1.35	2.00
		100~680μF	0.8	1.00	1.23	1.57
	1000~10000μF	0.85	1.00	1.10	1.34	1.15

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## STANDARD SIZE

WV/V		4		6.3		10		16		25		35		50	
Cap/μF		0G		0J		1A		1C		1E		1V		1H	
0.1	0R1	--	--	--	--	--	--	--	--	--	--	--	--	4x5.4	0.7
0.22	R22	--	--	--	--	--	--	--	--	--	--	--	--	4x5.4	1.6
0.33	R33	--	--	--	--	--	--	--	--	--	--	--	--	4x5.4	2.5
0.47	R47	--	--	--	--	--	--	--	--	--	--	--	--	4x5.4	3.5
1	010	--	--	--	--	--	--	--	--	--	--	--	--	4x5.4	7
2.2	2R2	--	--	--	--	--	--	--	--	--	--	--	--	4x5.4	11
3.3	3R3	--	--	--	--	--	--	--	--	--	--	--	--	4x5.4	13
4.7	4R7	--	--	--	--	--	--	--	--	--	--	--	--	5x5.4	16
10	100	--	--	--	--	--	--	4x5.4	18	5x5.4 (4x5.4)	20 (14)	5x5.4 (4x5.4)	21 (14)	6.3x5.4	24
22	220	--	--	4x5.4	22	5x5.4 (4x5.4)	25 (20)	5x5.4 (4x5.4)	27 (20)	6.3x5.4 (5x5.4)	36 (25)	6.3x5.4	38	6.3x7.7 (6.3x5.4) (8 x 6.2)	51 (42) (70)
33	330	5x5.4 (4x5.4)	30 (18)	5x5.4 (4x5.4)	27 (22)	5x5.4 (4x5.4)	30 (22)	6.3x5.4 (5x5.4)	40 (28)	6.3x5.4 (5x5.4)	44 (29)	6.3x5.4 (8 x 6.2)	42 (84)	6.3x7.7	60
47	470	5x5.4 (4x5.4)	36 (24)	5x5.4 (4x5.4)	33 (25)	6.3x5.4 (5x5.4)	41 (30)	6.3x5.4 (5x5.4)	48 (31)	6.3x5.4 (8 x 6.2)	48 (91)	6.3x7.7 (6.3x5.8)	70 (50)	8x10.5 (6.3x7.7)	120 (63) (63)
100	101	6.3x5.4 (5x5.4)	60 (43)	6.3x5.4 (5x5.4)	50 (39)	6.3x5.4 (8x6.2)	53 (110)	6.3x5.4 (8 x 6.2)	60 (120)	6.3x7.7	91	8x10.5 (6.3x7.7)	120 (84)	10x10.5 (8x10.5)	170 (140) (140)
150	151	6.3x5.4	52	6.3x5.4	55	6.3x5.4	62	6.3x7.7	95	8x10.5 (6.3x7.7)	140 (100)	8x10.5	155	10x10.5	170
220	221	6.3x5.4	57	6.3x7.7 (6.3x5.8)	105 (67)	6.3x7.7 (8x6.2)	105 (105)	8x10.5 (6.3x7.7) (8 x 6.2)	150 (105) (85)	8x10.5	175	10x10.5 (8x10.5)	220 (190)	10 x 13.5 (10x10.5)	280 (220)
330	331	6.3x7.7	100	6.3x7.7	105	8x10.5	196	8x10.5	195	10x10.5 (8x10.5)	240 (220)	10x10.5	245	16x16.5 (12.5x13.5) (10x13.5)	600 (420) (295)
470	471	6.3x7.7	105	8x10.5 (6.3x7.7)	210 (120)	10x10.5 (8x10.5)	260 (210)	10x10.5 (8x10.5)	295 (230)	10x10.5	280	12.5x13.5 (10x13.5) (10x10.5)	520 (375) (280)	16x16.5 (12.5x16)	700 (520)
680	681	8x10.5	210	8x10.5	210	10x10.5	270	10x10.5	315	10 x 13.5	400	12.5x13.5 (10x13.5)	530 (395)	16x16.5	750
1000	102	8x10.5	230	10x10.5 (10x10.5)	300 (230)	10x10.5	315	12.5x13.5 (10x13.5) (10x10.5)	500 (390) (340)	12.5x13.5	580	16x16.5 (12.5x16)	750 (600)	16x21.5	1000
1500	152	10x10.5	315	10 x 13.5 (10x10.5)	450 (315)	10x13.5	460	12.5x13.5	550	12.5x16	850	--	--	--	--
2200	222	10 x 13.5 (10x10.5)	440 (340)	12.5x13.5 (10x13.5)	620 (500)	12.5x13.5	680	16x16.5 (12.5x16)	950 (750)	16x16.5 16x21.5	1050 1250	16x21.5	1300	--	--
3300	332	10 x 13.5	490	12.5x16 (12.5x13.5)	700 (660)	16x16.5	1000	16x16.5 16x21.5	1000 1200	16x21.5	1400	--	--	--	--
4700	472	12.5x13.5	600	16x16.5 16x21.5	1000 1200	16x21.5	1300	16x21.5	1350	--	--	--	--	--	--
6800	682	16x16.5 (12.5x16)	950 (650)	16x21.5	1250	--	--	--	--	--	--	--	--	--	--
10000	103	16x21.5	250	--	--	--	--	--	--	--	--	--	--	--	--

WV/V		63		100	
Cap/μF		1J		2A	
0.1	0R1	4x5.4	0.7	--	--
0.22	R22	4x5.4	1.6	--	--
0.33	R33	4x5.4	2.5	--	--
0.47	R47	4x5.4	3.5	--	--
1	010	4x5.4	7	4x5.4	7
2.2	2R2	4x5.4	11	6.3x5.4	14
3.3	3R3	5x5.4	13	6.3x7.7 (6.3x5.4) (8x6.2)	32 (20) (30)
4.7	4R7	5x5.4	16	6.3x7.7 (6.3x5.4)	35 (21)
10	100	6.3x7.7 (6.3x5.4) (8 x 6.2)	39 (24) (25)	8x10.5 (6.3x7.7)	77 (35)
22	220	8x10.5 (6.3x7.7)	98 (49)	10x10.5 (8x10.5)	126 (84)
33	330	8x10.5	112	10x10.5	133
47	470	10x10.5 (8x10.5)	160 (119)	12.5x13.5 (10x13.5) (10x10.5)	250 (160) (140)
68	680	--	--	12.5x13.5 (10x13.5)	300 (180)
100	101	12.5x13.5 (10.5x13.5) (10x10.5)	270 (210) (196)	16x16.5 (12.5x13.5)	450 (380)
150	151	10 x 13.5	225	--	--
220	221	16x16.5 (12.5x13.5) (10x13.5)	560 (470) (235)	16x16.5 16x21.5	550 750
330	331	16x16.5 (12.5x16)	700 (510)	16x21.6	800
470	471	16x16.5 16x21.5	750 900	--	--
680	681	16x21.5	950	Case size	Allowable ripple