

# SMD Aluminum Electrolytic Capacitor – JCD

## FEATURES

- Low impedance with temperature range -55 ~ +105°C.
- Load life of 1000 ~ 2000 hours.
- Comply with the RoHS directive.



## SPECIFICATIONS

Operating Temperature	-55°C ~ +105°C
Voltage Range	6.3V ~ 50V.DC
Capacitance Range	1 ~ 4700 $\mu$ F
Capacitance Tolerance	$\pm$ 20% at 120Hz, 20°C
Leakage Current	Leakage current ( $\Phi$ 4~ $\Phi$ 10) $\leq$ 0.01CV or 3 $\mu$ A, whichever is greater (After 2 minutes application of rated voltage) Leakage current ( $\Phi$ 12.5~ $\Phi$ 16) $\leq$ 0.03CV or 4 $\mu$ A, whichever is greater (After 1 minutes application of rated voltage)

Dissipation Factor (Tan  $\delta$ )

Measurement Frequency: 120Hz, Temperature: 20°C

Rated Voltage (V)		6.3	10	16	25	35	50
Tan $\delta$ (Max.)	$\Phi$ 4~ $\Phi$ 10	0.22	0.19	0.16	0.14	0.12	0.12
	$\Phi$ 12.5~ $\Phi$ 16	0.26	0.22	0.18	0.16	0.14	0.12

Stability At Low Temp.

Measurement Frequency: 120Hz

Rated Voltage (V)		6.3	10	16	25	35	50
Impedance Ratio ZT/Z20 (Max.)	$\Phi$ 4~ $\Phi$ 10	Z(-25°C)/ Z(20°C)	2	2	2	2	2
		Z(-55°C)/ Z(20°C)	5	4	4	3	3
	$\Phi$ 12.5~ $\Phi$ 16	Z(-25°C)/ Z(20°C)	3	3	2	2	2
		Z(-55°C)/ Z(20°C)	10	8	6	4	3

Load Life

After 2000 hours. ( 1000 hours for  $\Phi$ 4~ $\Phi$ 6.3\*5.4) application of rated voltage at 105°C. They meet the characteristics listed at right.

Capacitance Change	Within $\pm$ 20% of initial value.
Dissipation Factor	200% or less of initial specified value
Leakage Current	Initial specified value or less

Shelf Life

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

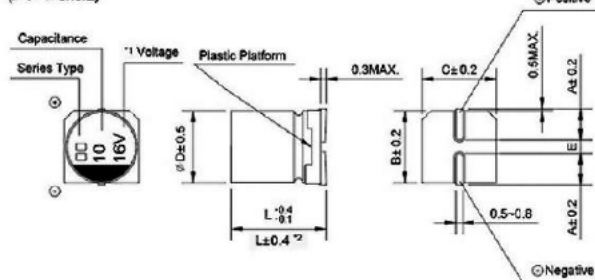
Resistance to Soldering Heat

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

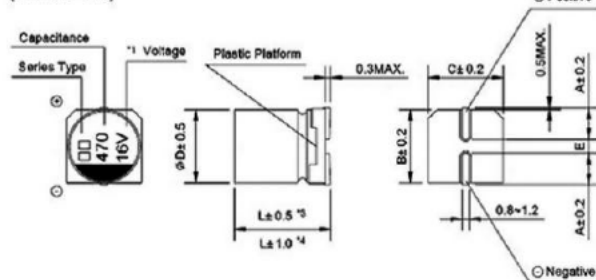
Capacitance Change	Within $\pm$ 10% of initial value
Dissipation Factor	Initial specified value or less
Leakage Current	Initial specified value or less

## DRAWING (Unit: mm)

( $\Phi$ 4~ $\Phi$ 8x6.2)



( $\Phi$ 8x10.5~ $\Phi$ 16)



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

\*2 Applicable to  $\Phi$ 6.3\*7.7

\*3 Applicable to  $\Phi$ 8\*10.5~ $\Phi$ 10

\*4 Applicable to  $\Phi$ 12.5~ $\Phi$ 16

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### DIMENSIONS (Unit: mm)

ØDxL	4x5.4	5x5.4	6.3x5.4/7.7	8x6.2	8x10.5	10x10.5/13.5	12.5x13.5/16	16x16.5
A	2.0	2.2	2.6	3.4	3.0	3.3	4.9	5.8
B	4.3	5.3	6.6	8.4	8.4	10.4	13.0	17.0
C	4.3	5.3	6.6	8.4	8.4	10.4	13.0	17.0
E±0.2	1.0	1.4	1.9	2.3	3.1	4.7	4.7	6.4
L	5.4	5.4	5.4/7.7	6.2	10.5	10.5/13.5	13.5/16	16.5

### DIMENSIONS&MAXIMUM PERMISSIBLE RIPPLE CURRENT&IMPEDANCE

WV/V Cap/µF		6.3			10			16		
		0J			1A			1C		
10	100							4x5.4	3.0	60
15	150							5x5.4 (4x5.4)	1.8 (3.0)	95 (60)
22	220	4x5.4	3.0	60	5x5.4 (4x5.4)	1.8 (3.0)	95 (60)	5x5.4 (4x5.4)	1.8 (3.0)	95 (60)
33	330	5x5.4 (4x5.4)	1.8 (3.0)	95 (60)	5x5.4 (4x5.4)	1.8 (3.0)	95 (60)	6.3x5.4 (5x5.4)	1.0 (1.8)	140 (95)
47	470	5x5.4 (4x5.4)	1.8 (3.0)	95 (60)	6.3x5.4 (5x5.4)	1.0 (1.8)	140 (95)	6.3x5.4 (5x5.4)	1.0 (1.8)	140 (95)
68	680	6.3x5.4 (5x5.4)	1.0 (1.8)	140 (95)	6.3x5.4	1.0	140	6.3x7.7 (6.3x5.4)	0.6 (1.0)	230 (140)
100	101	6.3x5.4 (5x5.4)	1.0 (1.8)	140 (95)	6.3x7.7 (6.3x5.4)	0.6 (1.0)	230 (140)	6.3x7.7 (6.3x5.4)	0.6 (1.0)	230 (140)
150	151	6.3x7.7 (6.3x5.4)	0.6 (1.0)	230 (140)	6.3x7.7 (6.3x5.4)	0.6 (1.0)	230 (140)	6.3x7.7	0.6	230
220	221	6.3x7.7 (6.3x5.4)	0.6 (1.0)	230 (140)	6.3x7.7	0.6	230	8x10.5 (6.3x7.7)	0.3 (0.6)	450 (230)
330	331	6.3x7.7	0.6	230	8x10.5	0.3	450	10x10.5 (8x10.5)	0.15 (0.3)	670 (450)
470	471	8x10.5	0.3	450	8x10.5	0.3	450	10x10.5 (8x10.5)	0.15 (0.3)	670 (450)
680	681	8x10.5	0.3	450	10x10.5	0.15	670	10x10.5	0.15	670
1000	102	10x10.5 (8x10.5)	0.15 (0.3)	670 (450)	10x10.5	0.15	670	10x10.5	0.15	670
1500	152	10x13.5 (10x10.5)	0.13 (0.15)	750 (670)	12.5x13.5 (10x13.5)	0.11 (0.13)	820 (750)	12.5x13.5	0.11	820
2200	222	12.5x13.5 (10x13.5)	0.11 (0.13)	820 (750)	12.5x16	0.09	950	16x16.5 (12.5x16)	0.08 (0.09)	1260 (950)
3300	332	12.5x16 (12.5x13.5)	0.09 (0.11)	950 (820)	16x16.5	0.08	1260	16x16.5	0.08	1260
4700	472	16x16.5	0.08	1260	16x16.5	0.08	1260	Case Size ØDxL(mm)	Impedance (Ω) at 20°C 100kHz	Ripple Current (mA rms) at 105°C 100kHz

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### DIMENSIONS&MAXIMUM PERMISSIBLE RIPPLE CURRENT&IMPEDANCE

WV/V Cap/μF		25			35			50		
		1E			1V			1H		
1	010				4×5.4	3.0	60	4×5.4	5.0	30
1.5	1R5				4×5.4	3.0	60	4×5.4	5.0	30
2.2	2R2				4×5.4	3.0	60	4×5.4	5.0	30
3.3	3R3				4×5.4	3.0	60	4×5.4	5.0	30
4.7	4R7	4×5.4	3.0	60	4×5.4	3.0	60	5×5.4	3.0	50
6.8	6R8	4×5.4	3.0	60	5×5.4	1.8	95	6.3×5.4	2.0	70
10	100	5×5.4 (4×5.4)	1.8 (3.0)	95 (60)	5×5.4 (4×5.4)	1.8 (3.0)	95 (60)	6.3×5.4	2.0	70
15	150	6.3×5.4	1.8	95	5×5.4	1.8	95	6.3×5.4	2.0	70
22	220	6.3×5.4 (5×5.4)	1.0 (1.8)	140 (95)	6.3×5.4 (5×5.4)	1.0 (1.8)	140 (95)	6.3×7.7 (6.3×5.4)	1.0 (2.0)	120 (70)
33	330	6.3×5.4 (5×5.4)	1.0 (1.8)	140 (95)	6.3×5.4	1.0	140	6.3×7.7	1.0	120
47	470	6.3×7.7 (6.3×5.4)	0.6 (1.0)	230 (140)	6.3×7.7 (6.3×5.4)	0.6 (1.0)	230 (140)	6.3×7.7	1.0	120
68	680	6.3×7.7	0.6	230	6.3×7.7	0.6	230	8×10.5	0.6	300
100	101	6.3×7.7	0.6	230	8×10.5	0.3	450	8×10.5	0.6	300
150	151	8×10.5 (6.3×7.7)	0.3 (0.6)	450 (230)	8×10.5	0.3	450	10×10.5	0.3	500
								Case Size ØD×L(mm)	Impedance (Ω) at 20°C 100kHz	Ripple Current (mA rms) at 105°C 100kHz

WV/V Cap. (μF)		25			35			50		
		1E			1V			1H		
220	221	8×10.5	0.30	450	10×10.5 (8×10.5)	0.15 (0.30)	670 (450)	10×10.5	0.30	500
330	331	10×10.5 (8×10.5)	0.15 (0.30)	670 (450)	10×10.5	0.15	670	16×16.5 (12.5×13.5) (10×13.5)	0.12 (0.20) (0.25)	1060 (650) (580)
470	471	10×10.5	0.15	670	10×10.5	0.15	670	16×16.5 (12.5×16)	0.12 (0.15)	1060 (700)
680	681	10×13.5	0.13	750	12.5×13.5 (10×13.5)	0.11 (0.13)	820 (750)	16×16.5	0.12	1060
1000	102	16×16.5 (12.5×13.5)	0.08 (0.11)	1260 (820)	16×16.5 (12.5×16)	0.08 (0.09)	1260 (950)			
1500	152	12.5×16	0.09	950	16×16.5	0.08	1260			
2200	222	16×16.5	0.08	1260				Case Size ØD×L(mm)	Impedance (Ω) at 20°C 100kHz	Ripple Current (mA rms) at 105°C 100kHz

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### FREQUENCY COEFFICIENT OF ALLOWABLE RIPPLE CURRENT

Frequency		50Hz	120Hz	300Hz	1KHz	10KHz~	
Coefficient	Ø4~Ø10	1~68µF	0.35	0.50	0.64	0.83	1.00
		100~2200µF	0.40	0.55	0.70	0.85	1.00
	Ø12.5~Ø16	~680µF	0.45	0.65	0.80	0.90	1.00
		1000~4700µF	0.65	0.85	0.95	1.00	1.00