

# jb<sup>®</sup> SMD Aluminum Electrolytic Capacitor – JCS

## ■ FEATURES

- 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 ~ +85°C

4V ~ 100V.DC

0.1 ~ 10000  $\mu$ F

$\pm$ 20% at 120Hz, 20°C

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)	4	6.3	10	16	25	35	50	63	100
tan $\delta$	$\Phi$ 4~ $\Phi$ 10	0.35	0.30	0.24	0.20	0.16	0.14	0.12	0.10
(max)	$\Phi$ 12.5~ $\Phi$ 16	0.42	0.38	0.34	0.30	0.26	0.22	0.18	0.10

- Stability At Low Temp.

Measurement frequency: 120Hz

Rated Voltage (V)		4	6.3	10	16	25	35	50~100
Impedance Ratio	$\Phi$ 4~ $\Phi$ 10	Z(-25°C)/Z(20°C)	7	4	3	2	2	2
		Z(-40°C)/Z(20°C)	15	8	6	4	4	3
Z1/Z20 (max.)	$\Phi$ 12.5~ $\Phi$ 16	Z(-25°C)/Z(20°C)	7	5	4	3	2	2
		Z(-40°C)/Z(20°C)	17	12	10	8	5	4

- Load Life

After 2000 hours application of rated voltage at 85°C, capacitors meet the characteristics requirements listed below.

Capacitance Change	Within $\pm$ 20% of initial value (Within $\pm$ 30% of initial value for 4V)
Dissipation Factor	200% or less of initial specified value
Leakage Current	Initial specified value or less

- Shelf Life

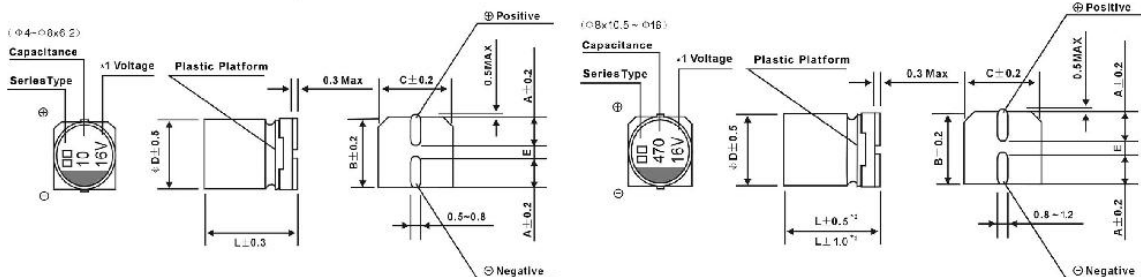
After leaving capacitors under no load at 85°C for 1000 hours, they meet the specified value for load life characteristics listed above.

- Resistance to Soldering Heat

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

Capacitance Change	Within $\pm$ 10% of initial value
Tan $\delta$	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  $\Phi$ 8x10.5~ $\Phi$ 10

\*3 Applicable to  $\Phi$ 12.5~ $\Phi$ 16

(mm)

$\Phi$ DxL	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 $\pm$ 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

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## ■ Frequency coefficient of allowable ripple current

Coefficient	Frequency		50Hz	120Hz	300Hz	1kHz	10kHz~
	Φ4~Φ10	0.1~68μF	0.70	1.00	1.17	1.36	1.50
		100~3300μF	0.85	1.00	1.08	1.20	1.30
Φ12.5~Φ16	~68μF	0.75	1.00	1.35	1.57	2.00	
	100~680μF	0.8	1.00	1.23	1.34	1.50	
	1000~10000μF	0.85	1.00	1.10	1.13	1.15	

## ■ STANDARD SIZE

WV		4		6.3		10		16		25	
Cap.(μF)		0G		0J		1A		1C		1E	
4.7	4R7	--	--	--	--	--	--	--	--	--	--
10	100	--	--	--	--	--	--	4x5.4	25	5x5.4 (4x5.4)	28 (20)
15	150	--	--	--	--	--	--	4x5.4	28	5x5.4	34
22	220	--	--	4x5.4	31	5x5.4 (4x5.4)	35 (28)	5x5.4 (4x5.4)	39 (28)	6.3x5.4 (5x5.4)	52 (35)
33	330	4x5.4	26	5x5.4 (4x5.4)	39 (31)	6.3x5.4 (5x5.4)	43 (32)	6.3x5.4 (5x5.4)	47 (40)	6.3x5.4 (5x5.4)	63 (42)
47	470	4x5.4	34	5x5.4 (4x5.4)	47 (36)	6.3x5.4 (5x5.4)	59 (43)	6.3x5.4 (5x5.4)	68 (44)	6.3x5.4	68
56	560	4x5.4	39	5x5.4	46	6.3x5.4	57	6.3x5.4	74	6.3x5.4	82
68	680	5x5.4	45	6.3x5.4 (5x5.4)	62 (52)	6.3x5.4	72	6.3x5.4	80	6.3x5.4	94
100	101	5x5.4	61	6.3x5.4 (5x5.4)	71 (55)	5x5.4 6.3x5.4	55 76	6.3x5.4 (8x6.2)	86 (200)	6.3x7.7 (8x6.2)	130 (91)
150	151	6.3x5.4	74	6.3x5.4	78	6.3x5.4	88	6.3x7.7	135	8x10.5 (6.3x7.7)	200 (130)
220	221	6.3x5.4	82	6.3x5.8	95	6.3x5.8 6.3x7.7 (8x6.2)	95 150 (250)	8x10.5 6.3x7.7 (8x6.2)	215 (150) (135)	8x10.5	250
330	331	6.3x7.7	150	6.3x7.7 (8x6.2)	150 (300)	8x10.5	280	8x10.5	280	10x10.5 (8x10.5)	340 (310)
470	471	6.3x7.7	150	8x10.5 (6.3x7.7)	300 (150)	10x10.5 (8x10.5)	320 (300)	10x10.5 (8x10.5)	420 (330)	10x10.5	400
680	681	8x10.5	300	8x10.5	300	10x10.5	380	10x10.5	450	10x13.5	550
1000	102	8x10.5	330	10x10.5 (8x10.5)	430 (330)	10x10.5	450	12.5x13.5 (10x13.5) (10x10.5)	710 (550) (490)	12.5x13.5	820
1500	152	10x10.5	450	10x13.5 (10x10.5)	850 (450)	10x13.5	650	12.5x13.5	750	12.5x16	1000
2200	222	10x13.5 (10x10.5)	620 (480)	12.5x13.5 (10x13.5)	890 (720)	12.5x13.5	960	16x16.5 (12.5x16)	1150 (1000)	16x16.5 16x21.5	1250 1450
3300	332	10x13.5	700	12.5x16 (12.5x13.5)	1000 (900)	16x16.5 (12.5x16)	1300 (1050)	16x16.5 16x21.5	1350 1450	16x21.5	1650
4700	472	12.5x13.5	850	16x16.5 16x21.5	1400 1650	16x16.5 16x21.5	1450 1550	16x21.5	1650		
6800	682	16x16.5 (12.5x16)	1350 (900)	16x21.5	1750	16x21.5	1850				
10000	103	16x21.5	1750	16x21.5	1800					Case Size	Ripple Current

WV		35		50		63		100	
Cap.(μF)		1V		1H		1J		2A	
0.1	0R1	--	--	4x5.4	1.0	4x5.4	1.0	--	--
0.22	R22	--	--	4x5.4	2.3	4x5.4	2.3	--	--
0.33	R33	--	--	4x5.4	3.5	4x5.4	3.5	--	--
0.47	R47	--	--	4x5.4	5.0	4x5.4	5.0	--	--
1	101	--	--	4x5.4	10	4x5.4	10	4x5.4	10
1.5	1R5	--	--	4x5.4	12	4x5.4	12	6.3x5.4	15
2.2	2R2	--	--	4x5.4	15	4x5.4	15	6.3x5.4	20
3.3	3R3	--	--	4x5.4	18	5x5.4	20	6.3x7.7 (6.3x5.4) (8x6.2)	45 (28) (50)
4.7	4R7	--	--	5x5.4 (4x5.4)	23 (19)	6.3x5.4 (5x5.4)	30 (23)	6.3x7.7 (6.3x5.4) (8x6.2)	30 (30) (50)
10	100	5x5.4 (4x5.4)	30 (20)	6.3x5.4 (5x5.4)	34 (27)	6.3x7.7 (6.3x5.4)	55 (34)	8x10.5 (6.3x7.7) (8x6.2)	110 (50) (50)
22	220	6.3x5.4	54	6.3x5.4 (8x6.2)	60 (120)	6.3x7.7 (8x6.2)	70 (35)	10x10.5 (8x10.5)	180 (120)
33	330	6.3x5.4 (8x6.2)	60 (130)	6.3x7.7 (8x6.2)	85 (65)	8x10.5 (6.3x7.7)	160 (85)	10x10.5	190
47	470	6.3x5.8 (8x6.2)	70 (165)	10x10.5 (8x10.5)	130 (110)	10x10.5 (8x10.5)	230 (170)	--	--
56	560	6.3x7.7	80	6.3x7.7	110	10x10.5	250	--	--
68	680	6.3x7.7	110	8x10.5	170	10x10.5	260	--	--
100	101	8x10.5 (6.3x7.7)	175 (120)	10x10.5 (8x10.5)	240 (200)	12.5x13.5 (10x13.5) (10x10.5)	380 (290) (280)	12.5x13.5	440
150	151	8x10.5	220	10x10.5	240	10x13.5	310	--	--
220	221	10x10.5 (8x10.5)	310 (270)	10x13.5 (10x10.5)	400 (320)	12.5x13.5 (10x13.5)	500 (330)	16x16.5 16x21.5	700 850
330	331	10x10.5	350	12.5x13.5 (10x13.5)	600 (420)	16x16.5 (12.5x16)	820 (720)	16x21.5	900
470	471	12.5x13.5 (10x13.5) (10x10.5)	600 (530) (400)	16x16.5 (12.5x16)	850 (740)	16x16.5	950		
680	681	12.5x13.5 (10x13.5)	750 (560)	16x16.5	950	16x21.5	1000		
1000	102	16x16.5 (12.5x16)	1100 (800)	16x21.5	1300			Case size	Allowable ripple
2200	222	16x21.5	1550						

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