ALUMINUM ELECTROLYTIC CAPACITORS

Suntan®

CHIP TYPE SERIES

TS13C4

FEATURES

- Low impedance with temperature range -55℃ +105℃Lead-free reflow
- Load life of 1000-2000 hours.

Low Impedance

◆ Specifications

ITEMS	PERFORMANCE CHARACTERISTICS
Operating Temperature Range	-55℃ ~ +105℃
Voltage Range	6.3~50V
Capacitance Range	1~4700μF
Capacitance Tolerance	±20% at 120Hz, 20℃
Leakage Current	leakage current (Ø4~Ø10) ≤0.01CV or 3μA, whichever is greater(after 2 minutes' application of rated voltage） leakage current (Ø12.5~Ø16) ≤0.03CV or 4μA, whichever is greater(after 1 minutes' application of rated voltage)

Dissipation Factor (Tan δ)

Measurement frequency : 120Hz, Temperature : 20℃

Rated voltage (V)		6.3	10	16	25	35	50
Tan δ (MAX)	Ø4~Ø10	0.22	0.19	0.16	0.14	0.12	0.12
	Ø12.5~Ø16	0.26	0.22	0.18	0.16	0.14	0.12

Stability at Low Temperature

Measurement frequency : 120Hz

Rated voltage (V)			6.3	10	16	25	35	50
Impedance ratio ZT / Z20 (MAX)	Ø4~Ø10	Z(-25℃) / Z(20℃)	2	2	2	2	2	2
		Z(-55℃) / Z(20℃)	5	4	4	3	3	3
	Ø12.5~Ø16	Z(-25℃) / Z(20℃)	3	3	2	2	2	2
		Z(-55℃) / Z(20℃)	10	8	6	4	3	3

Load Life

After 2000 hours'(1000 hours for Ø4~Ø6.3*5.4)application of rated voltage at 105℃, they meet the characteristics listed at right.

Capacitance Change	Within ±20% of initial value
Dissipation Factor	200% or less of initial specified value
Leakage Current	Initial specified value or less

Self Life

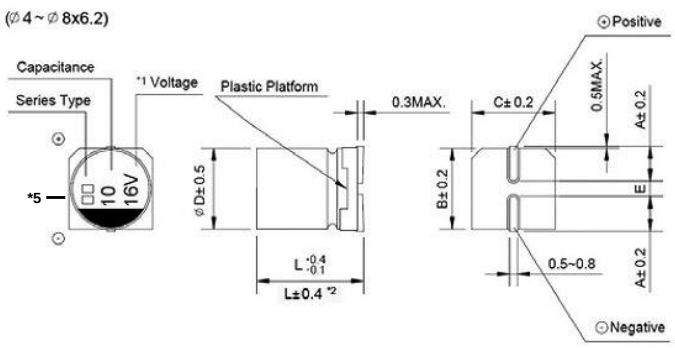
After leaving capacitors under no load at 105℃ for 1000 hours, they meet the specified value for load life characteristics listed above.

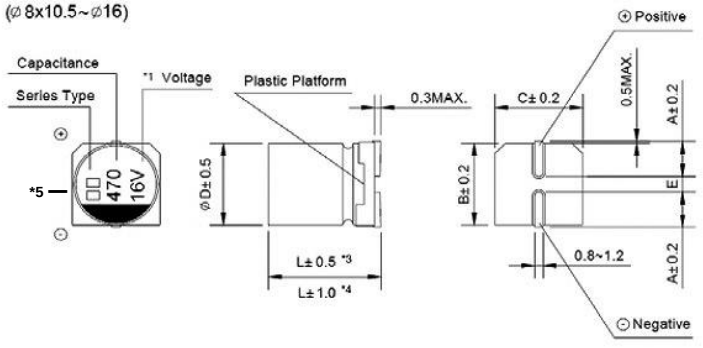
Resistance to Soldering Heat

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

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] or [6.3V]
*2 Applicable to Ø6.3*7.7
*3 Applicable to Ø8*10.5~ Ø10
*4 Applicable to Ø12.5~ Ø16
*5 Markings: Su4, S4, LZ

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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							4×5.4	3.0	60
15	150							5×5.4 (4×5.4)	1.8 (3.0)	95 (60)
22	220	4×5.4	3.0	60	5×5.4 (4×5.4)	1.8 (3.0)	95 (60)	5×5.4 (4×5.4)	1.8 (3.0)	95 (60)
33	330	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 (5×5.4)	1.0 (1.8)	140 (95)
47	470	5×5.4 (4×5.4)	1.8 (3.0)	95 (60)	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)
68	680	6.3×5.4 (5×5.4)	1.0 (1.8)	140 (95)	6.3×5.4	1.0	140	6.3×7.7 (6.3×5.4)	0.6 (1.0)	230 (140)
100	101	6.3×5.4 (5×5.4)	1.0 (1.8)	140 (95)	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)
150	151	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	0.6	230
220	221	6.3×7.7 (6.3×5.4)	0.6 (1.0)	230 (140)	6.3×7.7	0.6	230	8×10.5 (6.3×7.7)	0.3 (0.6)	450 (230)
330	331	6.3×7.7	0.6	230	8×10.5	0.3	450	10×10.5 (8×10.5)	0.15 (0.3)	670 (450)
470	471	8×10.5	0.3	450	8×10.5	0.3	450	10×10.5 (8×10.5)	0.15 (0.3)	670 (450)
680	681	8×10.5	0.3	450	10×10.5	0.15	670	10×10.5	0.15	670
1000	102	10×10.5 (8×10.5)	0.15 (0.3)	670 (450)	10×10.5	0.15	670	10×10.5	0.15	670
1500	152	10×13.5 (10×10.5)	0.13 (0.15)	750 (670)	12.5×13.5 (10×13.5)	0.11 (0.13)	820 (750)	12.5×13.5	0.11	820
2200	222	12.5×13.5 (10×13.5)	0.11 (0.13)	820 (750)	12.5×16	0.09	950	16×16.5 (12.5×16)	0.08 (0.09)	1260 (950)
3300	332	12.5×16 (12.5×13.5)	0.09 (0.11)	950 (820)	16×16.5	0.08	1260	16×16.5	0.08	1260
4700	472	16×16.5	0.08	1260	16×16.5	0.08	1260	Case Size **ØD×L(mm)**	Impedance (Ω) at 20℃ 100kHz	Ripple Current (mA rms) at 105℃ 100kHz

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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℃ 100kHz	Ripple Current (mA rms) at 105℃ 100kHz

◆ DIMENSIONS&MAXIMUM PERMISSIBLE RIPPLE CURRENT&IMPEDANCE

WV / 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℃ 100kHz	Ripple Current (mA rms) at 105℃ 100kHz

◆ 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

Note: Specification are subject to change without notice. For more detail and update, please visit our website.