ALUMINUM ELECTROLYTIC CAPACITORS

Suntan®

CHIP TYPE SERIES

TS13C0

FEATURES

- Designed for surface mounting on high density circuit board.
- Emboss carrier tape packing system is available for automatic insertion.

Fig 1

Fig 2

Fig 3

Note: Fig 1 & 2: Diameter 4 ~10mm

Fig 3 : Diameter: ⩾12.5mm

Standard Series

◆ Specifications

ITEMS	PERFORMANCE CHARACTERISTICS
Operating Temperature Range	-40℃ ~ +85℃
Voltage Range	4~100V
Capacitance Range	1~10000 μF
Capacitance Tolerance	±20% at 120Hz, 20℃
Leakage Current	Leakage current(φ4~φ10)≤0.01CV or 3 μA,, whichever is greater.(After 2 minutes' application of rated voltage) Leakage current(φ12.5)≤0.03CV or 4 μA,, whichever is greater.(After 1 minutes' application of rated voltage)
Tan δ	Measurement frequency : 120Hz, Temperature : 20℃

Rated voltage (V)		4	6.3	10	16	25	35	50	63	100
Tan δ (MAX)	φ4~φ10	0.35	0.32	0.26	0.20	0.18	0.16	0.14	0.14	0.14
	φ12.5	0.42	0.42	0.38	0.30	0.28	0.22	0.18	0.16	0.16

Stability at Low Temperature — Measurement frequency : 120Hz

Rated voltage (V)			4	6.3	10	16	25	35	50~100
Impedance ratio ZT / Z20 (MAX)	φ4~φ10	Z-25℃ / Z+20℃	7	4	4	3	2	2	2
		Z-40℃ / Z+20℃	15	8	6	4	4	3	3
	φ12.5	Z-25℃ / Z+20℃	7	5	4	3	2	2	2
		Z-40℃ / Z+20℃	17	12	10	8	5	4	3

Load Life — After 2000 hours' application of rated voltage at 85℃, capacitors meet the characteristics requirements listed at right

Capacitance Change	Within ± 20% of initial value (Within ± 30% of initial value for 4V)
Tan δ	200% or less of initial specified value
Leakage Current	Initial specified value or less

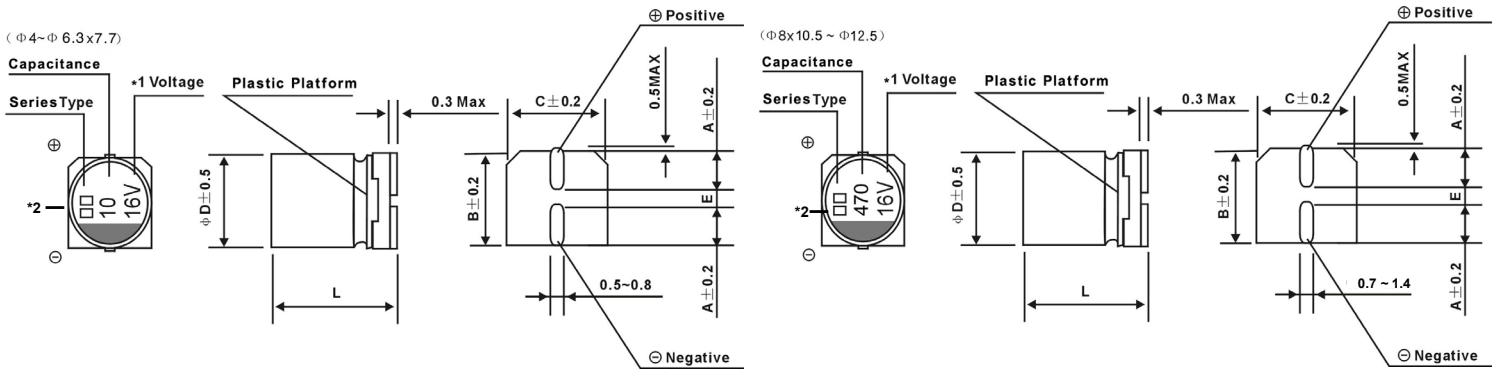
Self Life — After leaving capacitors under no load at 85℃ for 1000 hours, they meet the specified value for load life characteristics listed above.

Resistance to Soldering Heat — After reflow soldering and restored at room temperature, they meet the characteristics requirements listed at right.

Capacitance Change	Within ± 10% of initial value
Tan δ	Initial specified value or less
Leakage Current	Initial specified value or less

Applicable Standards — JIS C-5141 and JIS C-5102.

◆ Drawing (Unit: mm)



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

*2 Markings: Su0, S0, CS, XS

(mm)

ØDxL	4x5.4	5x5.4	6.3x5.4	6.3x7.7	8x6.5	8x10.5	10x10.5/13.5	12.5x13.5
A	1.8	2.1	2.4	2.4	3.3	2.9	3.2	4.7
B	4.3	5.3	6.6	6.6	8.3	8.3	10.3	13.0
C	4.3	5.3	6.6	6.6	8.3	8.3	10.3	13.0
E	1.0±0.2	1.3±0.2	2.2±0.2	2.2±0.2	2.2±0.2 / 3.1±0.2	3.1±0.2	4.4±0.2	4.8±0.6
L	5.4±0.6	5.4±0.6	5.4±0.6	7.7±0.6	6.5±0.6	10.5±0.6	10.5/13.5±1.0	13.5±1.0

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◆ Standard size & Maximum permissible ripple current

WV / Cap.(μF)		4		6.3		10		16		25	
		0G		0J		1A		1C		1E	
4.7	4R7	--	--	--	--	--	--	--	--	4x5.4	13
10	100	--	--	--	--	--	--	4x5.4	18	4x5.4 5x5.4	14 20
15	150	--	--	--	--	--	--	4x5.4	25	5x5.4	27
22	220	--	--	4x5.4	20	4x5.4 5x5.4	20 25	4x5.4 5x5.4	20 27	5x5.4 6.3x5.4	25 36
33	330	4x5.4	18	4x5.4 5x5.4	22 27	4x5.4 5x5.4	22 30	5x5.4 6.3x5.4	28 31	5x5.4 6.3x5.4	29 44
47	470	4x5.4	24	4x5.4 5x5.4	23 30	5x5.4 6.3x5.4	30 49	5x5.4 6.3x5.4	30 48	6.3x5.4 8x6.5	48 80
56	560	4x5.4	27	5x5.4	32	6.3x5.4	40	6.3x5.4	52	6.3x5.4	48
68	680	5x5.4	31	5x5.4 6.3x5.4	41 43	6.3x5.4	50	6.3x5.4	56	6.3x5.4	50
100	101	5x5.4	39	5x5.4 6.3x5.4	40 50	5x5.4 6.3x5.4	40 53	6.3x5.4 6.3x7.7 8x6.5	60 109 100	6.3x5.4 6.3x7.7 8x6.5 8x10.5	80 91 100 180
150	151	6.3x5.4	52	6.3x5.4	55	6.3x5.4	62	6.3x7.7 8x6.5	80 120	6.3x7.7 8x10.5	100 140
220	221	6.3x5.4	57	6.3x5.4 6.3x7.7	67 105	6.3x5.4 6.3x7.7 8x6.5	67 88 105	6.3x7.7 8x6.5 8x10.5	86 105 150	8x10.5 10x7.7	175 160
330	331	6.3x7.7	100	6.3x7.7 8x6.5	105 105	6.3x7.7 8x10.5	135 195	8x10.5 10x7.7	195 175	8x10.5 10x10.5	220 220
470	471	6.3x7.7	105	6.3x7.7 8x10.5	120 230	8x10.5 10x7.7 10x10.5	210 290 232	8x10.5 10x10.5	270 280	10x10.5	280
680	681	8x10.5	210	8x10.5	230	8x10.5 10x10.5	230 270	10x10.5	315	10x13.5	400
1000	102	8x10.5	230	8x10.5 10x10.5	290 315	10x10.5	315	10x10.5 10x13.5 12.5x13.5	315 390 500	12.5x13.5	580
1500	152	10x10.5	315	10x10.5	410	12.5x13.5	458	12.5x13.5	550	--	--
2200	222	--	--	12.5x13.5	620	12.5x13.5	680	--	--	Case size	Allowable ripple

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◆ Standard size & Maximum permissible ripple current

Cap.(μF) \ WV		35		50		63		100	
		1V		1H		1J		2A	
1	010	--	--	4x5.4	8	4x5.4	8	4x5.4	8
1.5	1R5	--	--	4x5.4	9	4x5.4	9	6.3x5.4	12
2.2	2R2	--	--	4x5.4	11	4x5.4	11	6.3x5.4	14
3.3	3R3	--	--	4x5.4	12	5x5.4 6.3x5.4	12 30	6.3x5.4 6.3x7.7	23 41
4.7	4R7	4x5.4	15	4x5.4 5x5.4	14 19	5x5.4 6.3x5.4	18 23	5x5.4 6.3x5.4 6.3x7.7	15 21 35
10	100	4x5.4 5x5.4	18 25	5x5.4 6.3x5.4	20 28	6.3x5.4 6.3x7.7 8x6.5	24 39 25	6.3x5.4 6.3x7.7 8x6.5 8x10.5	25 35 50 90
22	220	5x5.4 6.3x5.4	34 29	6.3x5.4 6.3x7.7 8x6.5	42 51 70	6.3x7.7 8x6.5 8x10.5	48 55 98	8x10.5 10x10.5	84 120
33	330	6.3x5.4 8x6.5	46 85	6.3x5.4 6.3x7.7 8x6.5	60 60 70	6.3x7.7 8x10.5	49 112	10x10.5	120
47	470	6.3x5.4 6.3x7.7 8x6.5	55 78 85	6.3x7.7 8x6.5 8x10.5 10x10.5	63 85 119 170	8x10.5 10x10.5	119 160	10x10.5 10x13.5 12.5x13.5	120 160 250
56	560	6.3x7.7	65	6.3x7.7	90	10x10.5	210	--	--
68	680	6.3x7.7	69	8x6.5 8x10.5	70 110	10x10.5	140	10x13.5 12.5x13.5	180 300
100	101	6.3x7.7 8x10.5 10x7.7	80 80 160	8x10.5 10x10.5	145 175	10x10.5 10x13.5 12.5x13.5	196 210 270	12.5x13.5	380
150	151	8x10.5	175	10x10.5	200	--	--	--	--
220	221	8x10.5 10x10.5	185 250	10x10.5 10x13.5	220 280	12.5x13.5	470	--	--
330	331	10x10.5 10x13.5	300 330	10x13.5 12.5x13.5	295 420	--	--	--	--
470	471	10x10.5 10x13.5 12.5x13.5	324 375 520	--	--	--	--	--	--
680	681	12.5x13.5	530	--	--	--	--	Case size	Allowable ripple

Allowable Ripple (mA ms) at 85℃ 120Hz

◆ Frequency coefficient of allowable ripple current

Frequency		50Hz	120Hz	1kHz	10kHz~
Coefficient	≦1000uF	0.70	1.00	1.20	1.30
	>1000uF	0.80	1.00	1.10	1.20

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