ALUMINUM ELECTROLYTIC CAPACITORS

Suntan®

CHIP TYPE SERIES

TS13CA

FEATURES

- Endurance : 105℃ 2000~5000 H
- Extra Low Impedance
- Designed for reflow soldering
- Designed for surface mounting on high-density PCB

Fig 1

Fig 2

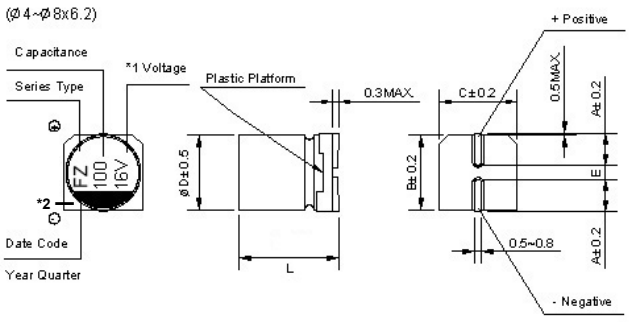
Fig 3

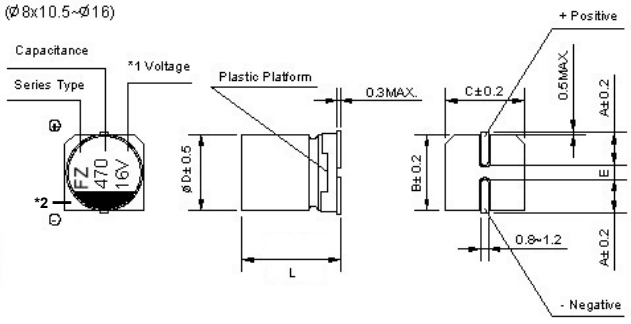
Note: Fig 1 & 2: Diameter 4 ~10mm
Fig 3 : Diameter: ≥12.5mm

◆ Specifications

ITEMS	Condition			Specifications								
Rated voltage (V)	-			6.3	10	16	25	35	50	63	80	100
Surge voltage (V)	Room temperature			7.3	11.5	18.4	28.8	40.3	57.5	72.5	92	115
Category temperature range (℃)	-			－55 to ＋105								
Capacitance tolerance (%)	120Hz/20℃			M : ±20								
Dissipation Factor (Tan δ)	tanδ（max）120Hz/20℃		φ4 to φ10	0.28	0.24	0.20	0.16	0.14	0.12	0.12	0.12	0.12
			φ12.5to φ16	0.34	0.29	0.22	0.20	0.16	0.12	0.14	0.14	0.14
Leakage current（LC）	μA/after 2minutes (max)			The greater value of either 0.01CV or 3μA								
Impedance ratio at low temperature	Based on the value at 120Hz, ＋20℃	-25℃	Z/Z20℃	4	3	2	2	2	2	2	2	2
		-55℃	Z/Z20℃	8	5	4	3	3	3	3	3	3
Endurance	After applying rated working voltage for 2000/3000/5000 hours at +105℃±2℃, and then being stabilized at +20℃, capacitors shall meet the following limits	Test		ΦD x L ≦6.3x 5.7Lmm: 2000H, 6.3φx7.7L , 8φx 6.5L, 10φx7.7L: 3000H , ΦD ≧ 8mm: 5000H								
		△C/C		Within ±30% of the initial value								
		tanδ		Less than 300% of the specified value								
		LC		Within the initial limit								
Shelf life	-			After storage for 1000h at +105℃±2℃ with no voltage applied and then being stabilized at +20℃, capacitors shall meet the limits specified in endurance.								
Resistance to soldering heat	After reflow soldering and then being stabilized at +20℃, capacitors shall meet the following limits	△C/C		Within ±10% of the initial value								
		tanδ		Within the initial limit								
		LC		Within the initial limit								

◆ Chip type





*1 Voltage mark for 6.3V is [6V] or [6.3V]
Re: Date code and series type-
1st digit for ear;
2nd digit for Quarter, 4 quarter codes in one year are 1.4.7.0;
3rd character for Series, TS13CA series=F

*2 Markings: SuA, SA, FZ

ØDxL	4x5.8	5x5.8	6.3x5.8/7.7	8 x6.5/10.5	10x7.7	10x10.5/13.5	12.5 x13.5/16	16 x16.5
A	1.8	2.1	2.4	3.3	3.2	3.2	4.7	5.5
B	4.3	5.3	6.6	8.3	10.3	10.3	13	17
C	4.3	5.3	6.6	8.3	10.3	10.3	13	17
E	1.0	1.3	2.2	2.2 / 3.1	4.4	4.4	4.4	6.4
L	5.8±0.6	5.8±0.6	5.8/7.7±0.6	6.5/10.5±0.6	7.7±0.6	10.5/13.5±1.0	13.5/16±1.0	16.5±1.0

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◆ Standard size &Maximum permissible ripple current & Impedance

WV/V / Cap/ μF		6.3			10			16		
		0J			1A			1C		
10	100	--	--	--	--	--	--	4×5.8	1.45	80
22	220	4×5.8	1.45	80	4×5.8	1.45	80	5×5.8	0.80	150
33	330	4×5.8 (5×5.8)	1.45 (0.80)	80 (150)	5×5.8	0.80	150	5×5.8 (6.3×5.8)	0.80 (0.44)	150 (230)
47	470	5×5.8	0.80	150	6.3×5.8	0.44	230	6.3×5.8	0.44	230
68	680	--	--	--	--	--	--	6.3×5.8	0.44	230
100	101	5×5.8 (6.3×5.8)	0.80 (0.44)	150 (230)	6.3×5.8	0.44	230	6.3×5.8 (8×6.5)	0.44 (0.36)	230 (280)
150	151	6.3×5.8	0.44	230	6.3×5.8	0.44	230	6.3×7.7 (8×6.5)	0.36 (0.36)	280 (280)
220	221	6.3×5.8 (6.3×7.7)	0.44 (0.36)	230 (280)	6.3×7.7 (8×6.5)	0.36 (0.36)	280 (280)	6.3×7.7	0.36	280
330	331	6.3×7.7 (8×6.5) (8×10.5)	0.36 (0.36) (0.17)	280 (280) (450)	8×10.5 (10×7.7)	0.17 (0.17)	450 (450)	8×10.5 (10×7.7)	0.17 (0.17)	450 (450)
470	471	6.3×7.7 (8×10.5) (10×7.7)	0.36 (0.17) (0.17)	280 (450) (450)	8×10.5 (10×7.7)	0.17 (0.17)	450 (450)	8×10.5 (10×10.5)	0.17 (0.09)	450 (670)
680	681	8×10.5 (10×7.7)	0.17 (0.17)	450 (450)	10×10.5	0.09	670	10×10.5	0.09	670
1000	102	8×10.5	0.17	450	10×10.5	0.09	670	10×13.5 (12.5×13.5)	0.08 (0.07)	720 (820)
1500	152	10×10.5 (10×13.5)	0.09 (0.08)	670 (720)	10×13.5 (12.5×13.5)	0.08 (0.07)	720 (820)	Case size:φDxL(mm)	Impedance (Ω) max at 100kHz, 20℃	Rated ripple current mArms (100kHz, 105℃)
2200	222	12.5×13.5	0.07	820	12.5×13.5	0.07	820			

WV/V / Cap/ μF		25			35			50		
		1E			1V			1H		
1	1R0	--	--	--	--	--	--	4×5.8	2.90	60
2.2	2R2	--	--	--	--	--	--	4×5.8	2.90	60
3.3	3R3	--	--	--	--	--	--	4×5.8	2.90	60
4.7	4R7	--	--	--	4×5.8	1.45	80	4×5.8 (5×5.8)	2.90 (1.52)	60 (85)
10	100	4×5.8	1.45	80	4×5.8 (5×5.8)	1.45 (0.80)	80 (150)	6.3×5.8	0.88	165
22	220	5×5.8	0.80	150	5×5.8 (6.3×5.8)	0.80 (0.44)	150 (230)	6.3×5.8	0.88	165
33	330	5×5.8 (6.3×5.8)	0.80 (0.44)	150 (230)	6.3×5.8	0.44	230	6.3×7.7	0.68	185
47	470	6.3×5.8	0.44	230	6.3×5.8	0.44	230	6.3×7.7 (8×6.5) (8×10.5)	0.68 (0.68) (0.34)	185 (185) (360)
68	680	6.3×5.8	0.44	230	6.3×7.7 (8×6.5)	0.36 (0.36)	280 (280)	8×10.5	0.34	360
100	101	6.3×7.7 (8×6.5)	0.36 (0.36)	280 (280)	6.3×7.7 (8×10.5)	0.36 (0.17)	280 (450)	8×10.5 (10×10.5)	0.34 (0.18)	360 (560)
150	151	8×10.5	0.17	450	8×10.5 (10×7.7)	0.17 (0.17)	450 (450)	10×10.5	0.18	560
220	221	8×10.5 (10×7.7)	0.17 (0.17)	450 (450)	8×10.5 (10×10.5)	0.17 (0.09)	450 (670)	10×10.5 (12.5×13.5)	0.18 (0.12)	560 (650)
330	331	8×10.5	0.17	450	10×10.5 (12.5×13.5)	0.09 (0.07)	850 (820)	12.5×13.5	0.12	650
470	471	10×10.5	0.09	670	10×13.5 (12.5×13.5)	0.08 (0.07)	720 (820)	--	--	--
680	681	10×13.5 (12.5×13.5)	0.08 (0.07)	720 (820)	--	--	--	Case size:φDxL(mm)	Impedance (Ω) max at 100kHz, 20℃	Rated ripple current mArms (100kHz, 105℃)
1000	102	12.5×13.5	0.07	820	--	--	--			

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WV/V / Cap/ μF		63			80			100		
		1J			1K			2A		
3.3	3R3	--	--	--	5×5.8	5.00	25	--	--	--
4.7	4R7	5×5.8	2.90	60	6.3×5.8	3.00	40	--	--	--
10	100	6.3×5.8	1.50	80	6.3×7.7 (8×6.5)	2.40 (2.40)	60 (60)	--	--	--
22	220	6.3×7.7 (8×6.5)	1.20 (1.20)	120 (120)	8×10.5	1.30	130	8×10.5	1.30	130
33	330	8×10.5	0.65	250	8×10.5	1.30	130	10×10.5	0.70	200
47	470	8×10.5	0.65	250	10×10.5	0.70	200	10×10.5 (10×13.5) (12.5×13.5)	0.70 (0.40) (0.32)	200 (400) (500)
68	680	8×10.5	0.65	250	10×13.5 (12.5×13.5)	0.40 (0.32)	400 (500)	12.5×13.5	0.32	500
100	101	10×10.5 (12.5×13.5)	0.35 (0.16)	400 (800)	10×13.5 (12.5×13.5)	0.40 (0.32)	400 (500)	12.5×13.5	0.32	500
150	151	12.5×13.5	0.16	800	12.5×13.5	0.32	500	Case size:φDxL(mm)	Impedance (Ω) max at 100kHz, 20℃	Rated ripple current mArms (100kHz, 105℃)
220	221	12.5×13.5	0.16	800	--	--	--			

◆ Frequency coefficient Factor of Rated Ripple current

Frequency: F(Hz) / Capacitance: C (uF)	50Hz	120Hz	1kHz	10kHz≦
Full Capacitance	0.60	0.70	0.85	1.00

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