

ALUMINUM ELECTROLYTIC CAPACITORS

Suntan®

CHIP TYPE SERIES

TS13C9

FEATURES

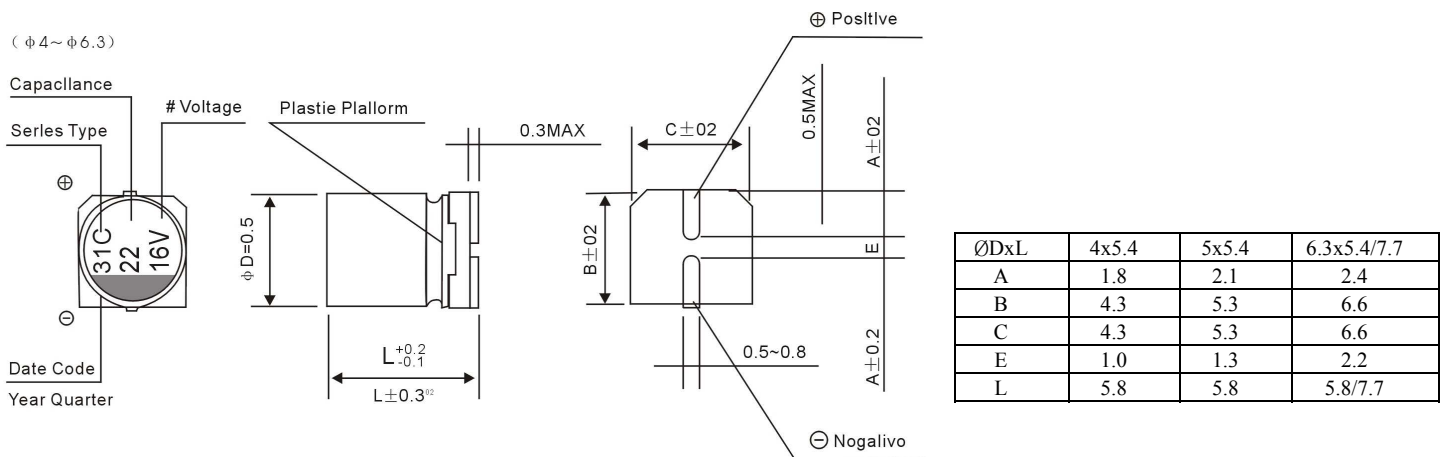
- Low leakage current (0.5 μ A to 2.0 μ A max.)
- Low cost for replacement of many tantalum applications.
- Lead-free soldering product is available subject to customers' request

◆ Specifications



ITEMS	PERFORMANCE CHARACTERISTICS																								
Operating Temperature Range	-40°C ~ +85°C																								
Voltage Range	6.3~50V																								
Capacitance Range	0.1~220 μ F																								
Capacitance Tolerance	\pm 20% at 120Hz, 20°C																								
Leakage Current	After 2 minutes' application of rated voltage, leakage current is not more than 0.002CV or 0.5 μ A, whichever is greater																								
Tan δ	Measurement frequency : 120Hz, Temperature : 20°C																								
	<table border="1"> <tr> <td>Rated voltage (V)</td> <td>6.3</td> <td>10</td> <td>16</td> <td>25</td> <td>35</td> <td>50</td> </tr> <tr> <td>Surge voltage (V)</td> <td>8.0</td> <td>13</td> <td>20</td> <td>32</td> <td>44</td> <td>63</td> </tr> <tr> <td>Tan δ (MAX)</td> <td>0.24</td> <td>0.20</td> <td>0.16</td> <td>0.14</td> <td>0.12</td> <td>0.1</td> </tr> </table>	Rated voltage (V)	6.3	10	16	25	35	50	Surge voltage (V)	8.0	13	20	32	44	63	Tan δ (MAX)	0.24	0.20	0.16	0.14	0.12	0.1			
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Stability at Low Temperature	Measurement frequency : 120Hz																								
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Load Life	After 2000 hour's application of rated voltage at 85°C, capacitors meet the characteristics requirements listed at right.																								
	<table border="1"> <tr> <td>Capacitance Change</td> <td>Within \pm 25% of initial value</td> </tr> <tr> <td>Tan δ</td> <td>200% or less of initial specified value</td> </tr> <tr> <td>Leakage Current</td> <td>Initial specified value or less</td> </tr> </table>	Capacitance Change	Within \pm 25% of initial value	Tan δ	200% or less of initial specified value	Leakage Current	Initial specified value or less																		
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Self 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 requirements listed at right.																								
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Applicable Standards	JIS C-5141 and JIS C-5102																								

◆ Chip type



Voltage mark for 6.3V is [6V]

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, SC Series=C

TS13C9

◆ Standard size & Maximum E.S.R & Maximum permissible ripple current

WV/V Cap/ μ F		6.3			10			16		
		0J			1A			1C		
10	100	--	--	--	--	--	--	4×5.4	34.5	25
22	220	4×5.4	23.5	31	5×5.4	19.6	35	5×5.4	15.7	39
33	330	5×5.4	15.7	39	5×5.4	13.1	43	6.3×5.4	10.5	57
47	470	5×5.4	11.0	47	6.3×5.4	9.2	59	6.3×5.4	7.3	68
100	101	6.3×5.4	52	75	6.3×5.4	4.3	76	6.3×7.7	3.5	96
220	221	6.3×7.7	2.4	85	--	--	--	Case size	Max. E.S.R.	Allowable ripple

◆ Standard size & Maximum E.S.R & Maximum permissible ripple current

WV/V Cap/ μ F		25			35			50		
		1E			1V			1H		
0.1	0R1	--	--	--	--	--	--	4×5.4	2156	1.0
0.22	R22	--	--	--	--	--	--	4×5.4	980	2.3
0.33	R33	--	--	--	--	--	--	4×5.4	653	3.5
0.47	R47	--	--	--	--	--	--	4×5.4	459	5
1	010	--	--	--	--	--	--	4×5.4	216	10
2.2	2R2	--	--	--	--	--	--	4×5.4	98	15
3.3	3R3	--	--	--	--	--	--	4×5.4	65	18
4.7	4R7	4×5.4	64.2	19	4×5.4	55.1	20	5×5.4	46	23
10	100	5×5.4	30.2	28	5×5.4	25.9	30	6.3×5.4	22	34
22	220	6.3×5.4	13.7	52	6.3×5.4	11.8	54	6.3×7.7	9.8	85
33	330	6.3×5.4	9.1	63	6.3×7.7	7.8	105	Case size	Max. E.S.R.	Allowable ripple
47	470	6.3×7.7	6.4	100	6.3×7.7	5.5	10			

Max. E.S.R. (Ω) at 20°C 120Hz, Allowable Ripple (mA rms) at 85°C 120Hz

◆ Frequency coefficient of allowable ripple current

Frequency	~50Hz	120Hz	300Hz	1kHz	10kHz~
Coefficient	0.7	1	1.17	1.36	1.50

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