

Miniature Aluminum Electrolytic Capacitors



SA For General Purposes Series

- High performance and high reliability
- Designed for general industrial devices
- Load life of 2000 hours at 85°C



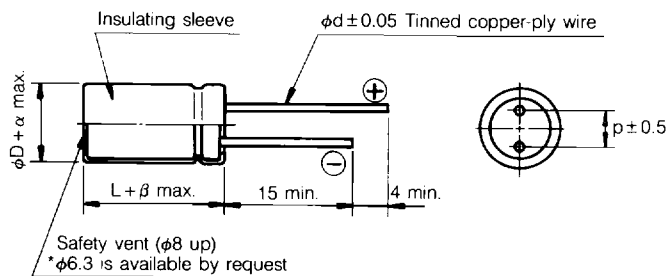
Solvent Proof
WV ≤ 200V



Item	Characteristics										
Operating temperature range	WV	6.3 ~ 350									
	Temperature range	400, 450 -40 ~ +85°C									
Leakage current max.	WV ≤ 100	WV > 100									
	I = 0.01CV or 3μA whichever is greater (after 2 min) I = 0.03CV or 4μA whichever is greater (after 1 min)										
Capacitance tolerance	±20% at 120Hz, 20°C										
Dissipation factor max. (at 120Hz, 20°C)	Capacitance > 1000μF: tanδ increases by 0.02 for each 1000μF from below value.										
	WV	6.3	10	16	25	35,40	50	63,80	100	160 ~ 315	350 ~ 450
tanδ	0.22	0.19	0.16	0.14	0.12	0.10	0.09	0.08	0.15	0.20	
Low temperature characteristics (Impedance ratio at 120Hz)	WV	6.3	10	16	25 ~ 100	160	200 ~ 350	400,450			
	Z - 25°C/Z + 20°C	4	3	2	2	4	8	16			
	Z - 40°C/Z + 20°C	10	8	6	4	8	12	—			
Load life (after application of the rated voltage for 2000 hours at 85°C)	Leakage current	Less than specified value									
	Capacitance change			WV ≤ 16					WV > 16		
		φD ≤ 6.3	±20%					±20%			
	φD > 6.3	±20%					±15%				
tanδ	Less than 150% of specified value										
Shelf life (at 85°C)	After 1000 hours no load test, leakage current, capacitance and tanδ are same as load life value.										

⊗ DRAWING

Unit : mm



φD	5	6.3	8	10	13	16	18	22	25.4
p	2.0	2.5	3.5	5.0	5.0	7.5	7.5	10.0	12.5
φd	0.5	0.5	0.5	0.6	0.6	0.8	0.8	1.0	1.0
β	1.0		1.5				2.0		
α	0.5							1.0	

⊗ PERMISSIBLE RIPPLE CURRENT MULTIPLIERS

μF \ Frequency	50Hz	120Hz	300Hz	1kHz	10kHz ~
~ 47	0.75	1	1.35	1.55	2.0
68 ~ 680	0.80	1	1.25	1.34	1.5
1000 ~	0.85	1	1.10	1.13	1.15

Temp. (°C)	40	60	70	85
Coefficient	2.0	1.5	1.3	1.0



● DIMENSIONS & MAXIMUM PERMISSIBLE RIPPLE CURRENT mA(rms) at 120Hz, 85°C

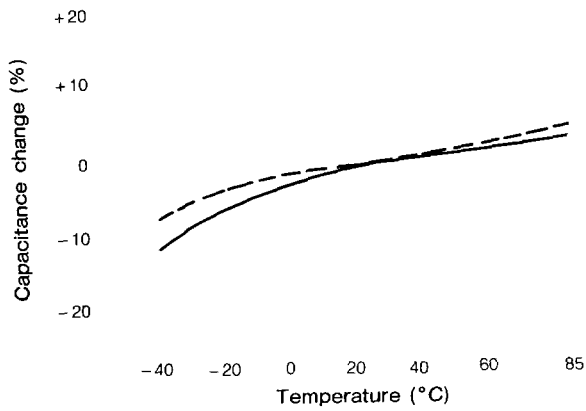
φD × L(mm) / mA (rms)

WV μF	6.3	10	16	25	35	40	50	63	80	100	160	200	250	350	400	450
0.1							5×11 6.1			5×11 6.9						
0.15							5×11 7.1			5×11 8.4						
0.22							5×11 9.1			5×11 10.3						
0.33							5×11 11.3			5×11 12.6						
0.47							5×11 13.4			5×11 15.0						
0.68							5×11 16.2			5×11 18.4						
1.0							5×11 19.6			5×11 21.9	6.3×11 17	6.3×11 18	6.3×11 18	8×11.5 18	8×11.5 18	10×12.5 21
1.5							5×11 24.0			5×11 26.8	6.3×11 21	6.3×11 22	8×11.5 26	8×11.5 23	10×12.5 26	10×12.5 26
2.2							5×11 29.1			5×11 32.5	6.3×11 25	8×11.5 32	8×11.5 32	10×12.5 32	10×16 35	10×16 34
3.3							5×11 35.6			5×11 39.8	8×11.5 38	8×11.5 39	10×12.5 45	10×16 43	10×20 46	10×20 46
4.7							5×11 42.5	5×11 44.8	5×11 44.8	6.3×11 51.9	10×12.5 53	10×12.5 54	10×16 59	10×20 55	13×20 65	13×20 65
6.8							5×11 51.1	5×11 53.8	5×11 53.8	6.3×11 62.4	10×12.5 64	10×16 70	10×20 77	13×20 78	13×20 78	13×25 85
10							5×11 61.9	6.3×11 71.3	6.3×11 71.3	8×11.5 91.9	10×16 85	10×20 93	10×20 94	13×20 95	13×25 103	16×25 115
15					5×11 69.3	5×11 69.3	6.3×11 82.9	6.3×11 87.3	8×11.5 106	8×11.5 113	10×20 114	13×20 134	13×20 135	13×25 127	16×25 140	16×31.5 154
22				5×11 77.7	6.3×11 91.6	6.3×11 91.6	6.3×11 100	8×11.5 129	8×11.5 129	10×12.5 158	13×20 161	13×20 162	13×25 177	16×25 170	16×31.5 186	18×35.5 212
33			5×11 89.0	6.3×11 104	6.3×11 112	8×11.5 136	8×11.5 149	8×12.5 157	10×12.5 157	10×16 212	13×25 217	13×25 217	16×25 240	16×31.5 228	18×35.5 259	22×40 299
47		5×11 97.4	6.3×11 116	6.3×11 124	8×11.5 163	8×11.5 163	8×11.5 178	10×12.5 218	10×16 239	10×16 254	16×25 287	16×25 287	16×31.5 314	18×35.5 309	22×40 357	22×40 357
68	5×11 109	6.3×11 128	6.3×11 139	8×11.5 181	8×11.5 196	10×12.5 227	10×12.5 249	10×16 288	10×16 288	10×20 333	16×25 345	16×31.5 378	18×35.5 425	22×40 429	25.4×40 469	25.4×50 510
100	6.3×11 144	6.3×11 155	8×11.5 205	8×11.5 220	10×12.5 276	10×16 302	10×16 331	10×20 380	10×20 380	13×20 474	16×35.5 475	18×40 541	22×40 595	25.4×40 568		
150	8×11.5 215	8×11.5 231	8×11.5 252	10×12.5 313	10×16 370	10×16 370	10×20 442	10×20 466	13×20 547	13×25 633	18×40 662	22×40 736	25.4×50 869			
220	8×11.5 260	8×11.5 280	10×12.5 354	10×16 415	10×20 489	10×20 489	13×20 628	13×20 662	13×25 722	16×25 850	22×40 892	25.4×50 1060				
330	10×12.5 370	10×12.5 398	10×16 475	10×20 554	13×20 703	13×20 703	13×20 770	13×20 811	16×25 981	16×31.5 1120	25.4×40 1190					
470	10×12.5 441	10×16 520	10×20 619	13×20 776	13×20 839	13×20 839	13×25 1000	13×25 1060	16×31.5 1260	16×35.5 1410						
680	10×16 532	10×20 683	13×20 873	13×20 934	13×25 1100	16×25 1220	16×25 1340	16×25 1410	16×35.5 1600	18×40 1930						
1000	10×20 770	13×20 972	13×20 1060	13×25 1230	16×25 1480	16×25 1480	16×31.5 1750	16×35.5 1940	18×40 2210	22×40 2600						
1500	13×20 1060	13×20 1130	13×25 1330	16×25 1570	16×25 1680	16×35.5 1900	18×40 2340	18×40 2450	22×40 2720	25.4×40 3110						
2200	13×20 1230	13×25 1430	16×25 1700	16×31.5 1940	18×35.5 2370	18×35.5 2370	18×40 2630	22×40 3030	25.4×40 3310							
3300	16×25 1760	16×25 1860	16×31.5 2140	18×35.5 2590	22×40 3150	22×40 3150	25.4×40 3650	25.4×50 4110								
4700	16×25 2030	16×31.5 2310	16×35.5 2570	18×40 3060	25.4×40 3900	25.4×40 3900	25.4×50 4470									
6800	16×35.5 2600	18×35.5 2990	18×40 3260	25.4×40 4110	25.4×50 4660	25.4×50 4660										
10000	18×35.5 3190	18×40 3440	22×40 3990	25.4×50 4890												
15000	22×40 4030	25.4×40 4540	25.4×50 6110													
22000	25.4×40 4710	25.4×50 5260														

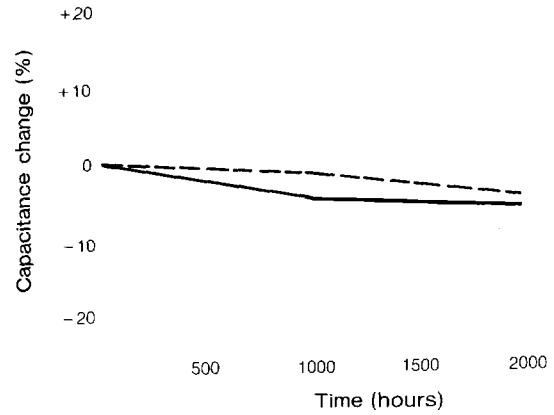
TYPICAL PERFORMANCE

— 25V 680 μ F
 --- 100V 330 μ F

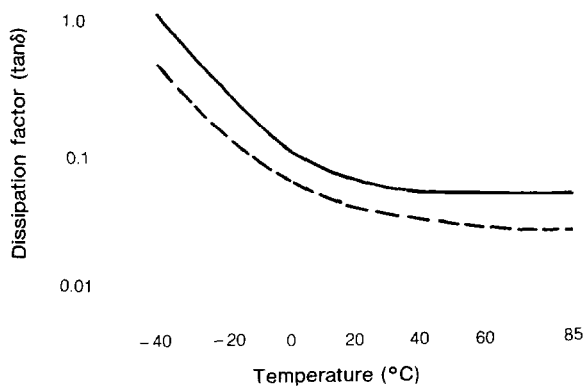
● TEMPERATURE CHARACTERISTICS Capacitance change vs. temperature



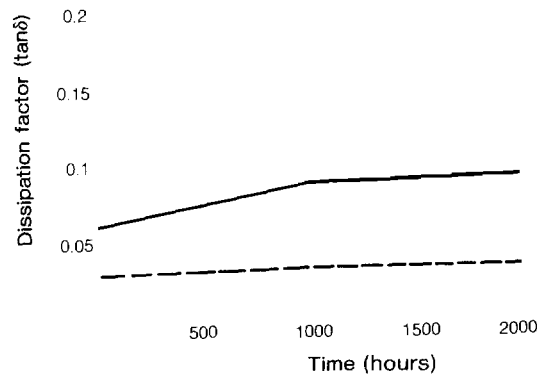
● LOAD LIFE (at +85°C) Capacitance change vs. time



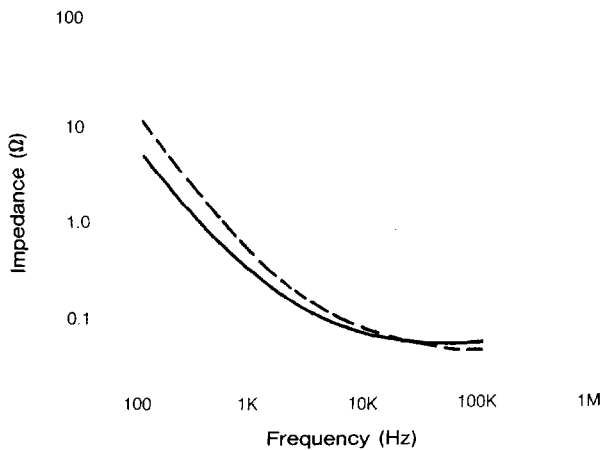
Dissipation factor vs. temperature



Dissipation factor vs. time



● FREQUENCY CHARACTERISTICS Impedance vs. frequency



Leakage current vs. time

