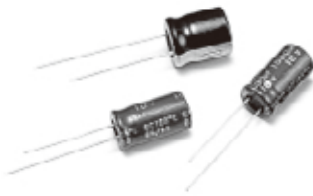




# Miniature Size Aluminum Electrolytic Capacitors

# SY [ For Low Impedance and Low E.S.R Suitable for Output of Mother Board ]

105°C Single-Ended Lead Aluminum Electrolytic Capacitors For High Frequency Applications



## DESCRIPTION

Used in switching regulator applications in computers. Especially for high frequency.

Low impedance and E.S.R., high permissible ripple current at high frequency and higher operating temperature (-40°C to +105°C).

High Temperature Load Life at 105°C for 6000 Hours

## ELECTRICAL CHARACTERISTICS

Operating Temperature : -40° ~ +105°C

Working Voltage : 6.3 ~ 50V

Rate Capacitance Range : 1 ~ 18000µF

Capacitance Tolerance : -20 ~ +20%

DC Leakage Current (µA) : I = 0.01 CV(µA) or 3µA Whichever is greater.

( Measurements shall be Made After a 2 Minute Charge at Rated Working Voltage )

Dissipation Factor : at 120 Hz, 25°C

WV (V) :	6.3	10	16	25	35	50
D.F (%) :	22	19	16	14	12	10

For capacitor whose capacitance exceeds 1000µF. The value of D.F.(%) is increased by 2% for every addition of 1000µF.

WV (V) :	Rated Voltage (V)	6.3	10	16	25	35	50
Impedance :	Z - 25°C / Z + 20°C	4	3	2	2	2	2
Impedance :	Z - 40°C / Z + 20°C	8	6	4	3	3	3

Load Life

Dø :	5ø-6.3ø	8ø-10øx12	10øx15~10øx30	12ø~18ø
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Life :	3000hrs	4000hrs	5000hrs	6000hrs
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If dimension is down size, Endurance will be less 1000 hrs than standard.

- (a) Capacitance Change : Within 25% of Initial Value
- (b) Dissipation Factor : Not Exceed 200% of Initial Requirement
- (c) Leakage Current : Not Exceed the Initial Requirement

Shelf Life : 500 Hours, No Voltage Applied, at 105°C

- (a) Capacitance Change : Within 25% of Initial Value
- (b) Dissipation Factor : Not more than 200% of specified value
- (c) Leakage Current : Not more than 200% of specified value



RoHS COMPLIANT

### Frequency coefficient

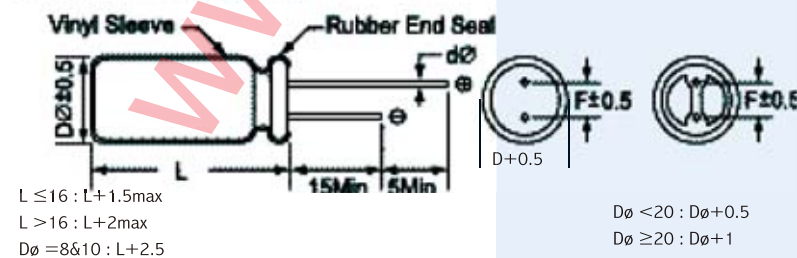
Frequency(Hz)	120	1K	10K	100K
22~180µF	0.40	0.75	0.90	1.00
220~560µF	0.50	0.85	0.94	1.00
680~1800µF	0.60	0.87	0.95	1.00
2200~3900µF	0.75	0.90	0.95	1.00
4700µF Higher	0.85	0.95	0.98	1.00

### Temperature coefficient

Temperature(°C)	65	85	105
Factor	1.80	1.50	1.00

## DIAGRAM OF DIMENSIONS

### Dimensions [mm]



Dimensions : mm

Dø	F	dø
4.0	1.5	0.45
5.0	2.0	0.5
6.0	2.5	
8.0	3.5	
10.0	5.0	0.6
12.0		
13.0		
16.0	7.5	0.8
18.0		
22.0	10.0	0.8



## CASE SIZE OF STANDARD PRODUCTS $D \geq \varnothing 6\text{mm}$ with Safety Vent at Can Bottom

CAP. ( $\mu\text{F}$ )	RATED VOLTAGE								
	6.3			10			16		
	Size	Ripple	Impedance	Size	Ripple	Impedance	Size	Ripple	Impedance
47							5 x 11	184	0.754
68							5 x 11	184	0.754
56							5 x 11	184	0.580
82				5 x 11	184	0.754	5 x 11	184	0.754
100	5 x 11	184	0.754	5 x 11	184	0.754	6.3 x 11	298	0.286
120							6.3 x 11	298	0.286
150	5 x 11	210	0.754	6.3 x 11	298	0.286			
180				6.3 x 11	298	0.286	8 x 11	561	0.169
220	6.3 x 11	298	0.286	6 x 11	298	0.286	8 x 11	561	0.169
				8 x 11	561	0.169			
330	6.3 x 11	298	0.286	8 x 11	561	0.169	8 x 11	561	0.169
	8 x 11	340	0.220						
390	8 x 11	561	0.169	8 x 11	561	0.169	10 x 12	561	0.169
470	8 x 11	561	0.169	8 x 11	561	0.169	8 x 15	737	0.113
	8 x 11	561	0.169				10 x 12	759	0.104
560	8 x 11	561	0.169				10 x 15	1061	0.078
680	8 x 11	640	0.130	8 x 15	737	0.113	8 x 20	921	0.090
				10 x 12	759	0.104	10 x 15	1061	0.078
820	8 x 15	737	0.113	10 x 12	865	0.080	10 x 19.5	1228	0.060
	10 x 12	759	0.104	10 x 15	1061	0.078			
1000	8 x 15	840	0.087	8 x 20	921	0.090	10 x 19.5	1228	0.006
	10 x 12	759	0.104	10 x 15	1061	0.078	10 x 25	1447	0.055
							13 x 15	1450	0.049
1200	8 x 20	921	0.090	10 x 19.5	1228	0.060	10 x 25	1447	0.055
	10 x 15	1061	0.078						
1500	10 x 19.5	1228	0.060	10 x 25	1272	0.055	10 x 30	1675	0.040
				13 x 15	1450	0.049	13 x 20	1666	0.046
							16 x 15	1570	0.072
1800	10 x 25	1447	0.055	10 x 19.5	1666	0.060	13 x 25	1863	0.039
	13 x 15	1450	0.049						
2200	10 x 25	1447	0.055	10 x 30	1675	0.040	13 x 25	1863	0.039
				13 x 20	1666	0.046	18 x 15	2210	0.043
				16 x 15	1940	0.042			
2700	10 x 30	1675	0.040	18 x 15	1772	0.066	13 x 30	2214	0.034
	13 x 20	1666	0.046	13 x 25	1863	0.039	16 x 20	1938	0.046
	16 x 15	1940	0.042						
3300	13 x 20	1900	0.035	13 x 25	2210	0.034	13 x 35	2406	0.029
							18 x 20	2157	0.044
3900	13 x 25	1863	0.039	13 x 30	2406	0.029	13 x 40	3350	0.017
	18 x 15	2210	0.043	16 x 20	1938	0.046	16 x 25	2238	0.036
							18 x 20	2188	0.044
4700	13 x 30	2214	0.034	13 x 25	2798	0.025	16 x 32	2657	0.029
				16 x 25	2238	0.036	18 x 25	2430	0.031
5600	13 x 35	2406	0.029	13 x 40	3350	0.017	16 x 36	2740	0.026
	16 x 20	1938	0.046	16 x 25	2238	0.036	18 x 32	3157	0.026
				18 x 20	2188	0.044			
6800	13 x 40	2798	0.025	16 x 32	2657	0.029	16 x 40	3408	0.022
	16 x 25	2238	0.036	18 x 25	2430	0.031			
	18 x 20	2188	0.044						
8200	16 x 32	2657	0.029	16 x 36	2740	0.026	18 x 36	3191	0.025
				18 x 32	3157	0.026	18 x 40	4280	0.012
				18 x 36	4170	0.015			
10000	16 x 36	2740	0.026	16 x 40	4080	0.013	18 x 40	3316	0.020
	18 x 25	2430	0.031	18 x 36	3191	0.025			
12000	16 x 40	3408	0.022	18 x 40	3316	0.020			
	18 x 32	3157	0.026						
15000	18 x 36	3191	0.025						
18000	18 x 40	3316	0.020						

Note : \* I. D x L : mm

\*2. Ripple Current : (mA r.m.s 105°C / 100KHz), Impedance ( $\Omega$  Max25°C / 100KHz)



## CASE SIZE OF STANDARD PRODUCTS $D \geq \varnothing 6\text{mm}$ with Safety Vent at Can Bottom

CAP. ( $\mu\text{F}$ )	RATED VOLTAGE								
	25			35			50		
	Size	Ripple	Impedance	Size	Ripple	Impedance	Size	Ripple	Impedance
1							5 x 11	30	4.0
2.2							5 x 11	43	2.5
3.3							5 x 11	53	2.2
4.7							5 x 11	88	1.9
10							5 x 11	100	1.5
12							5 x 11	100	1.5
15							5 x 11	158	0.910
18							5 x 11	158	0.910
22				5 x 11	184	0.754	5 x 11	158	0.910
27				5 x 11	184	0.754	5 x 11	158	0.910
33				5 x 11	184	0.754	6 x 11	259	0.390
39	5 x 11	184	0.754	5 x 11	184	0.754	6 x 11	259	0.390
47	5 x 11	184	0.754	6 x 11	298	0.286	6 x 11	259	0.390
56	5 x 11	184	0.754	6 x 11	298	0.286	6 x 11	295	0.300
							8 x 11	487	0.221
68				6 x 11	298	0.286	8 x 11	487	0.221
82	6 x 11	298	0.286	8 x 11	561	0.169	8 x 11	481	0.221
100	6 x 11	298	0.286	8 x 11	561	0.169	8 x 11	555	0.170
							10 x 12	667	0.156
120	8 x 11	561	0.169	8 x 11	561	0.169	8 x 15	640	0.156
							10 x 12	667	0.156
150				8 x 11	759	0.169	10 x 12	760	0.120
							10 x 15	921	0.1096
180	8 x 11	561	0.169	10 x 12	759	0.104	8 x 20	798	0.1183
							10 x 15	921	0.1092
220	8 x 11	561	0.169	8 x 15	737	0.113	10 x 15	1050	0.084
				10 x 12	759	0.104	10 x 19	1070	0.780
270	10 x 12	759	0.104	8 x 20	1050	0.069	10 x 19	1220	0.060
				10 x 15	1061	0.078	10 x 25	1263	0.715
							13 x 15	1260	0.061
330	8 x 15	737	0.113	10 x 15	1061	0.078	10 x 25	1440	0.055
	10 x 12	759	0.104	8 x 20	921	0.090	10 x 30	1482	0.0559
							13 x 20	1456	0.0585
390	10 x 15	1061	0.078	10 x 19	1228	0.060	13 x 20	1456	0.0585
470	8 x 20	921	0.090	10 x 19	1228	0.006	10 x 30	1482	0.0559
	10 x 15	1210	0.060	13 x 15	1450	0.049	13 x 20	1660	0.045
							13 x 25	1710	0.0442
							16 x 15	1690	0.055
560	10 x 19	1228	0.060	10 x 25	1447	0.55	13 x 25	1710	0.0442
				13 x 20	1666	0.046	18 x 15	1693	0.0702
680	10 x 19	1228	0.060	10 x 30	1650	0.042	13 x 30	2026	0.039
	13 x 15	1450	0.049	13 x 20	1910	0.031			
				13 x 25	1666	0.046			
				16 x 15	1814	0.072			
820	10 x 25	1447	0.055	13 x 20	1940	0.042	13 x 35	2201	0.0325
	13 x 20	1666	0.046	13 x 25	2151	0.039	16 x 20	2210	0.034
							18 x 20	2184	0.0468
1000	10 x 30	1675	0.040	13 x 25	2151	0.039	13 x 40	2920	0.021
	13 x 20	1666	0.046	18 x 15	2210	0.043	16 x 25	2241	0.0325
	16 x 15	1570	0.072				18 x 20	2490	0.036
1200	18 x 15	1687	0.073	13 x 30	2557	0.034	16 x 32	2640	0.0286
	13 x 25	1863	0.039	16 x 20	2238	0.046	18 x 25	2403	0.0338
1500	13 x 25	1863	0.039	13 x 35	2779	0.029	16 x 36	2763	0.0247
				16 x 25	2586	0.036			
1800	13 x 30	2214	0.034	13 x 40	2355	0.025	16 x 40	3254	0.0208
	16 x 20	1938	0.046	16 x 25	2586	0.036	18 x 32	2635	0.0273
				18 x 20	2528	0.044			
2200	13 x 35	2406	0.029	16 x 32	3068	0.029	18 x 36	3228	0.0221
	18 x 20	2188	0.044	18 x 25	2807	0.031			
2700	13 x 40	3350	0.017	16 x 36	2610	0.026	18 x 40	3333	0.0182
	16 x 25	2238	0.036	18 x 32	3647	0.026			
3300	16 x 32	2657	0.029	16 x 40	4080	0.013			
	18 x 25	2430	0.029	18 x 36	3685	0.025			
3900	18 x 32	3157	0.026	18 x 36	3830	0.020			
	16 x 36	2740	0.031						
4700	18 x 36	3191	0.025						
5600	18 x 40	3316	0.020						

Note : \* I. D x L : mm

\* 2. Ripple Current : (A r.m.s 105°C / 100KHz), Impedance ( $\Omega$  Max25°C / 100KHz)