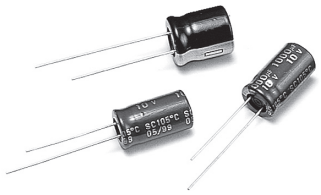
Miniature Aluminum Electrolytic Capacitors

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

Features: Low ESR, high permissible ripple current at high frequency and long life than SC

Recommended Applications: Used switching requlator applications in computers. Especially for high frequency.

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

ELECTRICAL CHARACTERISTICS

Operating Temperature : -40° ~ +105°C

Working Voltage : 6.3 ~ 50V

Rate Capacitance Range : 1~18000μF

Capacitance Tolerance : -20 ~ +20%

Leakage Current (Max) (20°C): I=0.01CV or 3μA, whichever is greater. (After rated voltage applied for 2 minutes)

I=Leakate Current (μA) C=nOMINAL cAPACITANCE (μF) V=Rated Voltage (V)

Dissipation Factor : at 120 Hz, 20°C

WV (V) :	6.3	10	16	25	35	50
tan δ :	0.22	0.19	0.16	0.14	0.12	0.10

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~10øx12.5	10øx15~12ø	13ø~18ø
Life :	3000hrs	4000hrs	5000hrs	6000hrs

After applying rated voltage with rated ripple current for 6000 horus at 105°C, the capacitors shall meet the following requirements.

(a) Capacitance Change : Within 25% of Initial Value

(b) Dissipation Factor : Not more than 200% of spedified value

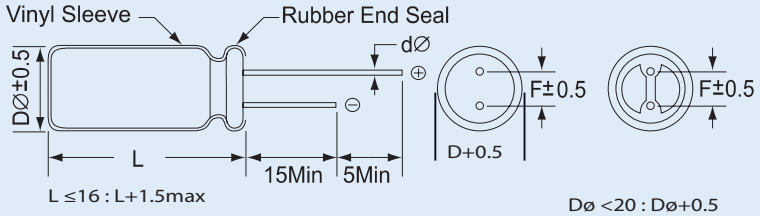
(c) Leakage Current : Not more than the specified value

Shelf Life : After placed at 105°C without voltage applied for 1000 hours, the capacitors shall meet the same requirement as Endurance.

DIAGRAM OF DIMENSIONS

Dimensions : mm

Dø	F	dø
5.0	2.0	0.5
6.3	2.5	
8.0	3.5	
10.0	5.0	0.6
12.0		
13.0		
16.0	7.5	0.8
18.0		



L ≤16 : L+1.5max
L >16 : L+2max
Dø =8&10 : L+2.5

Dø <20 : Dø+0.5
Dø ≥20 : Dø+1

CASE SIZE OF STANDARD PRODUCTS D≥ ø 6mm with Safety Vent at Can Bottom

CAP. (μF)	RATED VOLTAGE								
	6.3			10			16		
	SIZE	RIPPLE	ESR	SIZE	RIPPLE	ESR	SIZE	RIPPLE	ESR
47						5 x 11	155	0.630	
68									
56						5 x 11	210	0.580	
82							5 x 11	184	0.754
100				5 x 11	210	0.580			
120						6.3 x 11	340	0.220	
150	5 x 11	210	0.580						
180									
220				6 x 11	340	0.220			
							6 x 11	469	0.185
330	6.3 x 11	340	0.220				8 x 11	640	0.130
390									
470	6 x 11	510	0.160	8 x 11	640	0.130	8 x 15	840	0.087
	8 x 11	570	0.160			10 x 12	865	0.080	
560									
680	8 x 11	640	0.130	8 x 15	840	0.087	8 x 20	1050	0.069
							10 x 15	1210	0.060
820	8 x 15	737	0.113	10 x 12	865	0.080			
	10 x 12	865	0.080						
1000	8 x 11	697	0.104	8 x 20	1050	0.069	10 x 19.5	1400	0.046
				10 x 15	1210	0.060			
	8 x 15	840	0.087			13 x 15	1450	0.049	
1200	8 x 20	1050	0.069	10 x 19.5	1400	0.046	10 x 25	1650	0.042
	10 x 15	1210	0.060						
1500	10 x 19.5	1210	0.060	10 x 25	1650	0.042	10 x 30	1910	0.031
				13 x 15	1450	0.049	13 x 20	1900	0.035
	8 x 20	1050	0.069			16 x 15	1940	0.042	
1800							13 x 25	1863	0.039
	13 x 15	1450	0.049						
2200	10 x 25	1650	0.042	10 x 30	1910	0.031	13 x 25	2230	0.027
				13 x 20	1900	0.035	18 x 15	2210	0.043
	10 x 19.5	1400	0.046	16 x 15	1940	0.042			
2700	10 x 30	1910	0.031	18 x 15	2210	0.043	13 x 30	2650	0.024
							16 x 20	2530	0.027
	16 x 15	1940	0.042						
3300	13 x 20	1900	0.035	13 x 25	2230	0.027	13 x 35	2280	0.020
	10 x 25	1650	0.042	10 x 30	1990	0.030			
3900	13 x 25	2230	0.027	13 x 30	2650	0.024	13 x 40	3350	0.017
	18 x 15	2210	0.043	16 x 20	2530	0.027	16 x 25	2930	0.021
						18 x 20	2860	0.026	
4700	13 x 30	2650	0.024	13 x 25	2880	0.020	16 x 32	3450	0.017
							18 x 25	3140	0.019
5600	13 x 35	2880	0.020	13 x 40	3350	0.017	16 x 36	3160	0.015
	16 x 20	2530	0.027	16 x 25	2930	0.021	18 x 32	4170	0.015
				18 x 20	2860	0.026			
6800	13 x 40	3350	0.017	16 x 32	3450	0.017	16 x 40	4080	0.013
	16 x 25	2930	0.021	18 x 25	3140	0.019			
	18 x 20	2860	0.026						
8200	16 x 32	2450	0.017	16 x 36	3160	0.015	18 x 36	4220	0.014
				18 x 32	4170	0.015			
10000	16 x 36	3610	0.015	16 x 40	4080	0.013	18 x 40	4280	0.012
	18 x 25	3140	0.017	18 x 36	4220	0.014			
12000				18 x 40	4280	0.012			
	18 x 32	4170	0.015						
15000	18 x 36	4220	0.014						
18000									

Note : * 1. D x L : mm

* 2. Ripple Current : (mA r.m.s 105°C / 100KHz), ESR (Ω Max20°C / 100KHz)

CASE SIZE OF STANDARD PRODUCTS D≥ ø 6mm with Safety Vent at Can Bottom

CAP. (μF)	RATED VOLTAGE								
	25			35			50		
	SIZE	RIPPLE	ESR	SIZE	RIPPLE	ESR	SIZE	RIPPLE	ESR
1									
2.2							5 x 11	85	2.28
3.3									
4.7							5 x 11	135	2
10				5 x 11	130	2.4	5 x 11	100	1.2
12				5 x 11	275	0.39			
15									
18									
22							5 x 11	180	0.7
27									
33				5 x 11	210	0.58	6 x 11	245	0.49
39									
47	5 x 11	210	0.58	6 x 11	275	0.39	6 x 11	300	0.52
56				6 x 11	340	0.22	6 x 11	295	0.300
68									
82									
100	6 x 11	340	0.22	6 x 11	580	0.15	8 x 11	555	0.170
120							8 x 15	730	0.12
150	8 x 11	640	0.160	8 x 11	640	0.13	10 x 12	760	0.120
180							8 x 20	910	0.091
220	8 x 11	640	0.130	8 x 15	840	0.087	10 x 15	1050	0.084
				10 x 12	865	0.080			
270				8 x 20	1050	0.069	10 x 19	1220	0.060
330	8 x 15	840	0.087	10 x 15	1210	0.060	10 x 25	1440	0.055
	10 x 12	865	0.080				10 x 19	1400	0.058
				10 x 19	1040	0.062			
390									
470	8 x 20	1050	0.069	10 x 19	1400	0.046	10 x 30	1690	0.043
	10 x 15	1210	0.060	13 x 15	1450	0.049	13 x 20	1660	0.045
	10 x 12	1050	0.070						
							16 x 15	1690	0.055
560				10 x 25	1650	0.42	13 x 25	1950	0.034
							18 x 15	1930	0.054
680	10 x 19	1400	0.046	10 x 30	1910	0.031	13 x 30	2310	0.030
	13 x 15	1450	0.049	13 x 20	1900	0.035			
820	10 x 25	1650	0.042	13 x 20	1900	0.035	13 x 35	2510	0.025
							16 x 20	2210	0.034
1000	10 x 30	1910	0.031	13 x 25	2230	0.027	13 x 40	2920	0.021
	13 x 20	1990	0.035	18 x 15	2210	0.043	16 x 25	2555	0.025
	10 x 19	1400	0.046				18 x 20	2490	0.036
1200	18 x 15	2210	0.043	13 x 30	2650	0.024	16 x 32	3010	0.022
							18 x 25	3740	0.026
1500	13 x 25	2230	0.027	13 x 35	2880	0.020	16 x 36	3150	0.019
1800	13 x 30	2650	0.024	13 x 40	3350	0.017	16 x 40	3710	0.016
	16 x 20	2530	0.027	16 x 25	2930	0.021	18 x 32	3635	0.021
				18 x 20	2860	0.026			
2200	13 x 35	2880	0.020	16 x 32	3450	0.017	18 x 36	3680	0.017
	18 x 20	2860	0.026	18 x 25	3140	0.019			
2700	13 x 40	3350	0.017	16 x 36	3610	0.015	18 x 40	3800	0.014
	16 x 25	2930	0.021	18 x 32	4170	0.015			
3300	16 x 32	3450	0.017	16 x 40	4080	0.013			
	18 x 25	3140	0.019	18 x 36	4220	0.014			
3900	18 x 32	4170	0.015	18 x 40	4280	0.012			
4700	18 x 36	4220	0.014						
5600	18 x 40	4280	0.012						

Note : * 1. D x L : mm

* 2. Ripple Current : (A r.m.s 105°C / 100KHz), ESR (Ω Max20°C / 100KHz)