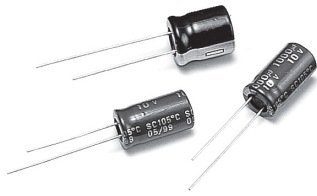


# Miniature Aluminum Electrolytic Capacitors

# SC [ 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

Recommended Applications: Applicable for switching regulator of computer, especially for high frequency

## ELECTRICAL CHARACTERISTICS

Operating Temperature : -40° ~ +105°C

Working Voltage : 6.3 ~ 100V

Rate Capacitance Range : 4.7 ~ 15000µF

Capacitance Tolerance : +/-20% at 120Hz, 20°C

DC Leakage Current (µA) : I=0.01CV or 3µA, whichever is greater

(After rated voltage applied for 2 minutes)

Dissipation Factor : at 120 Hz, 20°C

WV (V) :  $\frac{6.3}{0.15}$   $\frac{10}{0.14}$   $\frac{16}{0.12}$   $\frac{25}{0.10}$   $\frac{35}{0.10}$   $\frac{50}{0.08}$   $\frac{63}{0.08}$   $\frac{100}{0.07}$

When nominal capacitance is over 1000 µF,

WV (V) :	6.3	10	16	25	35	50	63	100
Impedance : Z - 40°C / Z + 20°C	8	6	4	4	4	4	4	4

Endurance : After applying rated voltage with ripple current for 3000 hours at 105°C, the capacitors shall meet the following requirements.

If dimension is down size, Endurance will be less 1000 hours than standard

- (a) Capacitance Change : Within 20% of Initial Value
- (b) Not more than 200% of specified value
- (c) Not more than the specified value

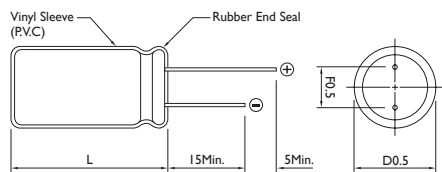
Shelf Life : After placed at 105°C without voltage applied for 1000 hours, the capacitors shall meet the same requirement as Endurance.

## Multiplier for Ripple Current

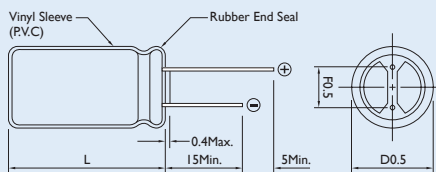
Frequency coefficient

Frequency(Hz)	50	120	300	1K	10K	100K
~4.7µF	0.30	0.40	0.50	0.70	0.80	1.00
5.6~33µF	0.40	0.50	0.60	0.80	0.90	1.00
34~330µF	0.60	0.70	0.80	0.90	0.95	1.00
331~1000µF	0.65	0.90	0.90	0.98	1.00	1.00
1200µF Higher	0.85	0.90	0.95	0.98	1.00	1.00

## DIAGRAM OF DIMENSIONS



### Rubber Stand-off



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

Dø < 20 : Dø+0.5  
 Dø ≥ 20 : Dø+1

Dimensions : mm

Dø	F	dø
4.0	1.5	0.45
5.0	2.0	0.5
6.3	2.5	
8.0	3.5	0.6
10.0	5.0	0.6
12.0		
13.0		
16.0	7.5	0.8
18.0		
22.0	10.0	0.8 (1.0)


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

CAP. ( $\mu\text{F}$ )	RATED VOLTAGE WV											
	6.3 SIZE			10 SIZE			16 SIZE			25 SIZE		
	SIZE	RIPPLE	ESR	SIZE	RIPPLE	ESR	SIZE	RIPPLE	ESR	SIZE	RIPPLE	ESR
4.7												
6.8												
10							5 x 11	29	0.064	4 x 7	40	2.00
										5 x 11	50	0.550
22							5 x 11	77	0.060			
39							5 x 11	95	0.500			
47							5 x 11	117	0.500			
56							5 x 11	100	0.630	5 x 11	150	0.042
68							5 x 11	150	0.420	6 x 11	200	0.370
82												
100				5 x 11	150	0.420	5 x 11	200	0.370	6 x 11	250	0.220
							6 x 7	164	0.240			
120				5 x 11	200	0.370	6 x 11	250	0.320	8 x 11	300	0.200
150	5 x 11	200	0.420	6 x 11	250	0.320	6 x 11	300	0.220	8 x 11	550	0.140
180				6 x 11	250	0.32						
220	6 x 11	250	0.320	6 x 11	300	0.220	8 x 11	550	0.140	*8 x 11	620	0.120
										8 x 15	750	0.100
270	*6 x 11	300	0.220							10 x 12	865	0.08
330	*6 x 11	320	0.230	8 x 11	550	0.140	*8 x 11	623	0.120	*8 x 15	660	0.100
	8 x 11	400	0.180				8 x 15	750	0.100	8 x 20	800	0.069
							10 x 12	688	0.080	10 x 15	900	0.086
470	*6 x 11	440	0.180				*8 x 15	730	0.093	*8 x 20	1000	0.067
	8 x 11	550	0.140	8 x 15	750	0.100	10 x 12	800	0.085	8 x 15	835	0.086
										10 x 12	900	0.086
				8 x 11	620	0.120	8 x 11	644	0.150	10 x 15	1050	0.064
560							10 x 12	846	0.073			
680	8 x 11	580	0.120	8 x 11	640	0.110	10 x 15	1050	0.064	10 x 19	1100	0.039
	8 x 15	700	0.100	10 x 12	800	0.085	8 x 15	880	0.076			
820	8 x 15	620	0.100									
	8 x 20	750	0.085	10 x 15	1050	0.064	10 x 19	1100	0.044	10 x 19	1250	0.039
	*8 x 11	580	0.150	8 x 20	1080	0.065				10 x 20	1160	0.047
1000	*8 x 15	670	0.085	8 x 15	900	0.077						
	8 x 20	800	0.069	10 x 12	930	0.075	10 x 19	1250	0.039	*10 x 25	1310	0.042
	10 x 12	690	0.080	10 x 15	990	0.085	10 x 15	1140	0.043	13 x 20	1450	0.038
1200	10 x 15	1000	0.064	10 x 19	1250	0.044	*10 x 25	1310	0.042	13 x 25	1600	0.029
	8 x 15	840	0.076				13 x 20	1450	0.038			
1500	*10 x 15	1070	0.055	10 x 19	1450	0.039	10 x 20	1200	0.045			
	10 x 19	1250	0.044				13 x 20	1600	0.035	16 x 25	2000	0.028
	8 x 15	980	0.085									
	8 x 20	1070	0.051									
2200	10 x 19	1220	0.051	*10 x 19	1330	0.047	10 x 30	1780	0.032	13 x 30	1810	0.029
	*10 x 25	1310	0.048	10 x 25	1450	0.025	13 x 20	1720	0.033	16 x 25	1660	0.032
							10 x 25	1644	0.034			
				13 x 20	1450	0.043	13 x 25	2000	0.028	16 x 32	2200	0.024
3300	10 x 19	1236	0.048	10 x 30	1740	0.032				16 x 36	2540	0.019
	13 x 25	1700	0.035	13 x 25	2000	0.028	16 x 25	2200	0.024			
	10 x 25	1400	0.043				13 x 40	2200	0.026	18 x 36	2550	0.019
3900												
	13 x 25	1750	0.032									
4700	*13 x 30	1570	0.033	13 x 25	1860	0.028				18 x 36	2800	0.019
				16 x 25	2200	0.024	16 x 36	2550	0.019			
6800	16 x 25	1800	0.028									
	16 x 32	2000	0.024	16 x 36	2550	0.019	18 x 36	2800	0.019	18 x 36	2800	0.019
8200	16 x 32	2350	0.019				18 x 36	3638	0.019			
				18 x 36	2800	0.019						
10000	16 x 36	2350	0.019									
15000	18 x 36	3000	0.019									

Note : \* 1. D x L : mm

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

\* 3. " \* " is down size, Edurance is less 1000 hrs than standard



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

CAP. ( $\mu\text{F}$ )	RATED VOLTAGE WV			RATED VOLTAGE WV			RATED VOLTAGE WV			RATED VOLTAGE WV		
	35 SIZE	RIPPLE	ESR	50 SIZE	RIPPLE	ESR	63 SIZE	RIPPLE	ESR	100 SIZE	RIPPLE	ESR
1.0				5 x 11	100	4.000						
2.2				5 x 11	100	3.000						
3.3												
4.7	5 x 11	115	1.200	5 x 11	115	2.000	5 x 11	115	2.200	5 x 11	120	2.000
6.8	5 x 11	120	1.000	5 x 11	120	1.850	5 x 11	120	2.000	5 x 11	140	1.850
10	5 x 11	140	0.900	5 x 11	140	1.700	5 x 11	140	1.850	6 x 11	200	1.500
12												
15	5 x 11	170	0.690	5 x 11	180	1.200	5 x 11	200	1.700	6 x 11	250	1.200
18												
22	5 x 11	190	0.420	5 x 11	200	0.700	6 x 11	250	1.200	8 x 11	300	0.790
27												
33	5 x 11	200	0.420	6 x 11	250	0.600	6 x 11	300	0.900	8 x 15	450	0.590
39												
47	6 x 11	250	0.370	6.3 x 11	300	0.520	8 x 11	450	0.700	10 x 15	550	0.350
56										8 x 20	362	0.264
68	6 x 11	340	0.220	8 x 11	450	0.350	8 x 11	550	0.520	10 x 19	650	0.240
82	8 x 11	640	0.130									
100	6 x 11	360	0.180	*8 x 11	480	0.290	8 x 20	650	0.350	13 x 20	800	0.180
	8 x 11	450	0.140	8 x 15	550	0.250						
120	8 x 11	550	0.130	8 x 20	650	0.210	10 x 15	800	0.300	13 x 25	1050	0.150
150				10 x 12	800	0.160				13 x 25	1300	0.110
	8 x 15	650	0.100				10 x 15	1050	0.200			
180												
220	*8 x 15	730	0.075	10 x 15	1050	0.100	10 x 19	1300	0.150	16 x 25	1400	0.071
	10 x 12	800	0.069	10 x 25	1050	0.068						
270												
330	*10 x 15	900	0.052	10 x 19	1300	0.072				16 x 32	1550	0.049
	8 x 20	902	0.051				13 x 20	1400	0.100			
	10 x 19	1050	0.044									
390												
470	10 x 19.5	1300	0.039	10 x 19	1390	0.075	13 x 25	1550	0.064	18 x 36	1700	0.038
				13 x 20	1400	0.060						
560												
680	13 x 20	1400	0.038	13 x 25	1550	0.050	16 x 25	1700	0.052			
820	13 x 20	1550	0.034	16 x 25	1700	0.040	16 x 32	1900	0.048			
1000	13 x 25	1700	0.030	16 x 25	1900	0.039	16 x 32	2100	0.042			
	13 x 20	1724	0.034									
1200				16 x 32	2100	0.025	16 x 36	2550	0.036			
1500	16 x 25	1900	0.028									
1800	16 x 25	2100	0.024	16 x 36	2550	0.025	18 x 36	2800	0.033			
2200	*16 x 32	2300	0.021	18 x 40	2800	0.025	18 x 40	2800	0.026			
	16 x 25	2062	0.023									
	16 x 36	2550	0.019									
2700												
3300	18 x 36	2880	0.019									
3900												
4700				22 x 40	2850	0.025						
6800												
8200												
10000												
15000												

Note : \* I. D x L : mm

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

\* 3. " \* " is down size, Edurance is less 1000 hrs than standard