

Miniature Aluminum Electrolytic Capacitors

SB [For Low Leakage Current]

105°C Single-Ended Lead Aluminum Electrolytic Capacitors



DESCRIPTION

Used in where low leakage current is essential as in coupling of pre-amplifiers.

Very low leakage current remains even after prolonged storage.

MULTIPLIER FOR RIPPLE CURRENT

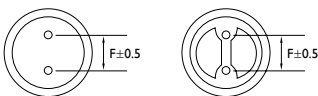
Frequency Coefficient

FREQUENCY (Hz)	50	120	300	1K	10K
6.3~25V	0.85	1.00	1.04	1.08	1.19
26~50V	0.80	1.00	1.30	1.40	1.43
50~100V	0.77	1.00	1.34	1.43	1.48

Temperature Coefficient

TEMPERATURE (°C)	60	70	85	105
FACTOR	1.95	1.75	1.20	1.00

DIAGRAM OF DIMENSIONS



$D\phi < 20$ $D\phi + 0.5$
 $D\phi \geq 20$ $D\phi + 1$

ELECTRICAL CHARACTERISTICS

Operating Temperature Range : -40 ~ +105°C

Rated Voltage Range : 6.3 ~ 100V

Rated Capacitance Range : 0.1 ~ 4700 μ F

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

DC Leakage Current (μ A) : $I = 0.002CV$ (μ A) or 0.4 μ A whichever is greater.
 (After Rated Voltage Applied for 2 Minutes)

Dissipation Factor

WV (V) :	6.3	10	16	25	35	50 ~ 100
D.F. (%) :	24	20	16	14	12	10

When nominal capacitance is over 1000 μ F, tan δ shall be added 0.02 to the listed value with increase of every 1000 μ F

Low Temperature Stability Impedance Ratio (Max.)

WV (V) :			6.3	10	16 ~ 25	35 ~ 63	80 ~ 100
Impedance : Z(120Hz) Z - 25°C / Z + 20°C	4	3	2	2	1.5		
Z(120Hz) Z - 40°C / Z + 20°C	8	6	4	3	2		

Endurance: After the rated voltage has been applied at 105°C for 1000 hours, the capacitors shall meet the following requirements.

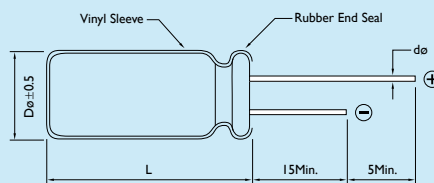
- (a) Capacitance Change : Within 25% of Initial Value
- (b) Dissipation Factor : Not Exceeding 200% of Specified Value
- (c) Leakage Current : Not Exceeding the Specified Value

Shelf Life : After having been placed at 105°C without voltage application for 500 hours,

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

Dimensions: mm

Rubber Stand-off



$L \leq 16$ $L + 1.5$ Max.
 $L > 16$ $L + 2$ Max.
 $D\phi = 8 \ \& \ 10$ $L + 2.5$ Max.

D ϕ	F	d ϕ
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	
12.0		
13.0		
16.0	7.5	0.8
18.0		
22.0	10.0	

CASE SIZE & PERMISSIBLE RIPPLE CURRENT OF STANDARD PRODUCTS

D x L: mm

CAP. (μF)	RATED VOLTAGE WV (SURGE VOLTAGE WV)					
	6.3 (8) SIZE		10 (13) SIZE		16 (20) SIZE	
		RIPPLE		RIPPLE		RIPPLE
10					5 x 11	40
15					5 x 11	56
22			5 x 11	68	6.3 x 11	70
33			6.3 x 11	78	6.3 x 11	95
47			6.3 x 11	106	6.3 x 11	100
					8 x 11	122
68	6.3 x 11	80	6.3 x 11	142	8 x 11	168
100	6.3 x 11	126	8 x 11	179	8 x 11	210
					10 x 12	264
150	8 x 11	196	8 x 11	220	10 x 15	416
			10 x 12	280		
220	10 x 12	272	10 x 15	355	10 x 19.5	553
330	10 x 15	388	10 x 19.5	480	13 x 20	732
470	10 x 19.5	507	13 x 20	640	13 x 20	1040
680	13 x 20	700	13 x 20	848	13 x 25	1280
820	13 x 25	850	13 x 25	980	16 x 25	1450
1000	13 x 25	896	13 x 25	1081	16 x 25	1700
1500	13 x 25	1204	16 x 25	1376	16 x 32	1750
2200	16 x 25	1513	16 x 32	1680	18 x 36	1900
3300	16 x 36	1902	16 x 36	2155	18 x 40	2250
4700	18 x 36	2272	18 x 40	2560		

Note: I. Ripple Current: (mA/rms) 105°C, 120Hz



CASE SIZE & PERMISSIBLE RIPPLE CURRENT OF STANDARD PRODUCTS

D x L: mm

CAP. (μF)	RATED VOLTAGE WV (SURGE VOLTAGE WV)					
	25 (32) SIZE		35 (44) SIZE		50 (63) SIZE	
		RIPPLE		RIPPLE		RIPPLE
0.10					5 x 11	1
0.15					5 x 11	4
0.22					5 x 11	4
0.33					5 x 11	6
0.47					5 x 11	7
0.56					5 x 11	7
0.68					5 x 11	9
1.0					5 x 11	18
1.5					5 x 11	24
2.2					5 x 11	30
3.3					5 x 11	36
4.7	5 x 11	27	5 x 11	40	6.3 x 11	45
6.8	5 x 11	42	5 x 11	45	6.3 x 11	55
10	6.3 x 11	63	5 x 11	55	8 x 11	82
			6.3 x 11	67		
15	6.3 x 11	67	8 x 11	75	8 x 11	97
22	6.3 x 11	61	8 x 11	97	10 x 12	127
	8 x 11	84				
33	8 x 11	102	10 x 12	139	10 x 15	156
47	10 x 12	141	10 x 12	166	10 x 15	217
68	10 x 12	190	10 x 15	238	10 x 19.5	300
100	10 x 15	277	8 x 11	200	13 x 20	390
			10 x 19.5	310		
150	10 x 19.5	455	13 x 20	491	13 x 25	569
220	13 x 20	590	13 x 25	630	16 x 25	910
330	13 x 25	754	10 x 15	450	16 x 32	986
			16 x 25	771		
470	16 x 25	1110	16 x 25	1150	16 x 36	1249
680	16 x 32	1385	16 x 32	1462	16 x 36	1870
820	16 x 32	1540	16 x 36	1630	16 x 36	1950
1000	16 x 36	1710	18 x 36	1723	18 x 40	2070
1500	16 x 36	1779	18 x 40	2006		
2200	18 x 40	2174				

Note: I. Ripple Current: (mA/rms) 105°C, 120Hz

CASE SIZE & PERMISSIBLE RIPPLE CURRENT OF STANDARD PRODUCTS

D x L: mm

CAP. (μF)	RATED VOLTAGE WV (SURGE VOLTAGE WV)					
	63 (79) SIZE	RIPPLE	80 (100) SIZE	RIPPLE	100 (125) SIZE	RIPPLE
0.10	5 x 11	1	5 x 11	1	5 x 11	1
0.15	5 x 11	4	5 x 11	4	5 x 11	4
0.22	5 x 11	4	5 x 11	4	5 x 11	4
0.33	5 x 11	6	5 x 11	6	5 x 11	6
0.47	5 x 11	7	5 x 11	7	5 x 11	7
0.56	5 x 11	7	5 x 11	7	5 x 11	7
0.68	5 x 11	9	5 x 11	9	5 x 11	9
1.0	4 x 7	12	5 x 11	18	5 x 11	18
	5 x 11	18				
1.5	5 x 11	24	5 x 11	24	5 x 11	24
2.2	5 x 11	30	5 x 11	30	6.3 x 11	30
3.3	5 x 11	36	6.3 x 11	36	8 x 11	36
4.7	6.3 x 11	45	6.3 x 11	45	8 x 11	60
6.8	6.3 x 11	55	8 x 11	60	10 x 12	67
10	8 x 11	82	10 x 12	90	10 x 15	94
15	10 x 12	103	10 x 15	112	10 x 19.5	117
22	10 x 15	148	10 x 15	165	10 x 19.5	187
33	10 x 15	210	10 x 19.5	217	13 x 20	225
47	10 x 19.5	240	10 x 19.5	276	13 x 25	285
68	10 x 19.5	328	13 x 20	361	13 x 25	375
100	13 x 25	420	13 x 25	447	16 x 25	456
150	13 x 25	648	16 x 25	663	16 x 32	707
220	16 x 32	930	16 x 32	970	16 x 36	1010
330	16 x 36	1088	16 x 36	1198	18 x 36	1377
470	18 x 36	1385	18 x 36	1509		
680	18 x 36	1870				
820	18 x 40	1950				

Note: I. Ripple Current: (mA/rms) 105°C, 120Hz