

Miniature Size Aluminum Electrolytic Capacitors

SK [For General]

85°C Single-Ended Lead Aluminum Electrolytic Capacitors



DESCRIPTION

Lower-cost capacitors expressly intended for high density printed circuit board.

Very High Volumetric Efficiency

Ideally suited for general-purpose applications, decoupling, by pass, and filtering circuit in entertainment electronics.

Feature High CV Product with Moderate Cost

For Detail Specifications, Please Refer to Engineering Bulletin No. 2052

ELECTRICAL CHARACTERISTICS

Working Voltage : 6.3 ~ 100V / 160 ~ 450V

Operating Temperature : -40° ~ +85°C / -25° ~ +85°C

Rate Capacitance Range : 0.1 ~ 22000 μ F / 0.47 ~ 470 μ F

Capacitance Tolerance : -20 ~ +20%

DC Leakage Current (μ A) : 0.01 CV or 3 μ A / 0.03 CV +10 Whichever is greater.

(After 2 Minutes Application of DC Working Voltage at 25°C)

Dissipation Factor : at 120Hz, 25°C

WV (V) :	6.3	10	16	25	35	50	63	100	160 ~ 250	350 ~ 450
D.F (%) :	22	19	16	14	12	10	9	8	15	20

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

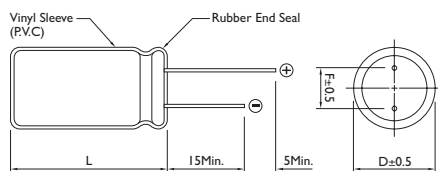
Load Life : 2000 Hours at 85°C Assured with Full Rated Maximum Ripple Current Applied

- (a) Capacitance Change : Within 20% of Initial Value
- (b) Dissipation Factor : Not Exceed 200% of Initial Requirement
- (c) Leakage Current : Not Exceed the Initial Requirement

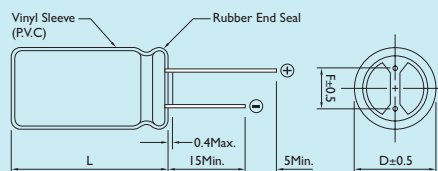
Shelf Life : 1000 Hours, No Voltage Applied

- (a) Capacitance Change : Within 20% of Initial Value
- (b) Dissipation Factor : Not Exceed 200% of Initial Requirement
- (c) Leakage Current : Not Exceed 200% of Initial Requirement

DIAGRAM OF DIMENSIONS



G.R.Y.



$L \leq 12$ $L + 1.5\text{Max.}$
 $13 \leq L \leq 15$ $L + 1.0$
 $L \geq 16$ $L + 2.0\text{Max.}$

Dimensions : mm

D ϕ	F	d ϕ
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

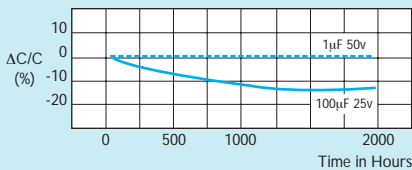
CASE SIZE OF STANDARD PRODUCTS $D\phi \geq 6\text{mm}$ with Safety Vent at Can Bottom

D x L : mm

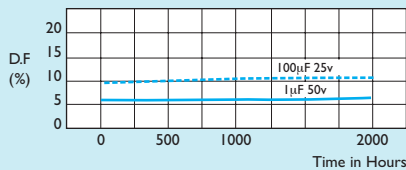
CAP. (μP)	RATED VOLTAGE WV (SV)													
	6.3 (8)	10 (13)	16 (20)	25 (32)	35 (44)	50 (63)	63 (79)	100 (125)	160 (200)	200 (250)	250 (300)	350 (400)	400 (450)	450 (500)
0.1						5 x 11								
0.22						5 x 11								
0.33						5 x 11								
0.47						5 x 11	5 x 11	5 x 11	5 x 11	5 x 11	5 x 11	5 x 11	6 x 11	6 x 11
1.0						5 x 11	5 x 11	5 x 11	5 x 11	5 x 11	6 x 11	6 x 11	6 x 11 8 x 11	8 x 11
2.2						5 x 11	5 x 11	5 x 11	6 x 11	6 x 11 8 x 11	6 x 11 8 x 11	8 x 11	8 x 11 10 x 12	10 x 12
3.3						5 x 11	5 x 11	5 x 11	6 x 11 8 x 11	6 x 11 8 x 11	8 x 11 10 x 12	8 x 11 10 x 12	10 x 12	10 x 15
4.7		5 x 11	5 x 11	5 x 11	5 x 11	5 x 11	5 x 11	5 x 11	6 x 11 8 x 11	8 x 11 10 x 12	8 x 11 10 x 12	10 x 12 10 x 15	10 x 15	10 x 15
10		5 x 11	5 x 11	5 x 11	5 x 11	5 x 11	5 x 11	6 x 11	8 x 11 10 x 12	10 x 12 10 x 15	10 x 15	10 x 15	10 x 19 13 x 20	13 x 20 13 x 25
22	5 x 11	5 x 11	5 x 11	5 x 11	5 x 11	5 x 11	6 x 11	8 x 11	10 x 15	10 x 15	10 x 19	13 x 20	13 x 20 16 x 25	16 x 25
33	5 x 11	5 x 11	5 x 11	5 x 11	5 x 11	6 x 11	6 x 11 8 x 11	8 x 11 10 x 12	10 x 19	10 x 19	13 x 20 13 x 25	13 x 25	16 x 25	16 x 32 16 x 36
47	5 x 11	5 x 11	5 x 11	5 x 11	5 x 11 6 x 11	6 x 11 8 x 11	8 x 11	10 x 12 10 x 15	13 x 20	13 x 20 13 x 25	13 x 25	16 x 25	16 x 25 16 x 32	18 x 36 18 x 40
100	5 x 11	5 x 11	5 x 11 6 x 11	6 x 11	8 x 11	8 x 11 10 x 12	10 x 12	10 x 19	13 x 20 16 x 25	16 x 25	16 x 32	18 x 36	18 x 36	22 x 40
220	5 x 11 6 x 11	6 x 11	6 x 11 8 x 11	8 x 11 10 x 12	8 x 11 10 x 12	10 x 12 10 x 15	10 x 15 10 x 19	13 x 25	16 x 32 16 x 36	18 x 32 18 x 36	18 x 40			
330	6 x 11 8 x 11	8 x 11	8 x 11	8 x 15 10 x 12	10 x 12 10 x 15	10 x 15 10 x 19	10 x 19 13 x 20	13 x 25	16 x 36 18 x 40	18 x 36 18 x 40				
470	6 x 11 8 x 11	8 x 11	8 x 11 10 x 12	10 x 12 10 x 15	10 x 19 13 x 20	10 x 19 13 x 20	13 x 25	16 x 25	22 x 40	18 x 40				
1000	8 x 11 10 x 12	10 x 12 10 x 15	10 x 15 10 x 19	10 x 19 13 x 20	13 x 20 13 x 25	13 x 25 16 x 25	16 x 25 16 x 32	18 x 40						
2200	10 x 19 13 x 20	10 x 19 13 x 20	13 x 20 13 x 25	13 x 25 16 x 25	16 x 25 16 x 32	16 x 36 18 x 36	18 x 40	22 x 40						
3300	10 x 19 13 x 20	13 x 20 13 x 25	13 x 25 16 x 25	16 x 25 16 x 32	16 x 32 18 x 36	18 x 36 18 x 40	22 x 40							
4700	13 x 20 16 x 25	13 x 25 16 x 25	16 x 25 16 x 32	16 x 32 18 x 36	18 x 36	22 x 35 22 x 40								
6800	16 x 25	16 x 25 16 x 32	16 x 36 18 x 36	18 x 36	22 x 40									
10000	16 x 25 16 x 32	16 x 36 18 x 36	18 x 36	22 x 40										
15000	16 x 36 18 x 36	18 x 36	22 x 40	22 x 40										
22000	18 x 40	22 x 40	22 x 40											

LOAD LIFE

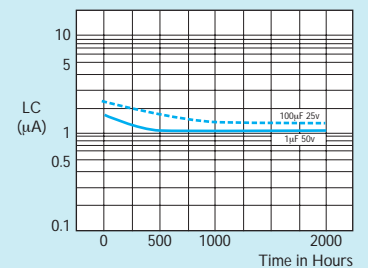
Capacitance Change Ratio



Dissipation Factor Change



Leakage Current Change



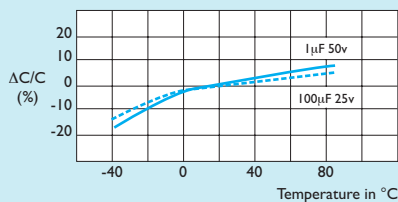


PERMISSIBLE RIPPLE CURRENT (mA, rms) at 85°C, 120Hz

CAP. (μF)	RATED VOLTAGE WV (SV)													
	6.3 (8)	10 (13)	16 (20)	25 (32)	35 (44)	50 (63)	63 (79)	100 (125)	160 (200)	200 (250)	250 (300)	350 (400)	400 (450)	450 (500)
0.1						1								
0.22						2								
0.33						3								
0.47						5	5	10	12	14	14	14	14	14
1.0						10	10	21	17	19	19	19	19	19
2.2						23	29	30	26	22 27	24 30	33	26 33	33
3.3						35	35	40	45	30 35	30 37	33 38	40	42
4.7		20	25	30	35	40	45	50	32 40	36 45	36 45	39 45	45	50
10		35	40	50	60	65	70	75	50 65	57 70	70	70	56 70	60 75
22	35	55	75	90	95	100	115	130	110	120	130	130	110 130	110 130
33	55	80	110	115	120	125	130 140	140 170	150	160	140 160	170	170	160 180
47	75	95	130	135	120 140	140 150	190	190 230	180	160 190	210	220	180 220	200 230
100	130	180	185	200	230	230 250	300	400	250 300	330	310	360	360	370
220	200 240	250	320	290 340	290 370	380 440	410 490	710	450 510	600	600			
330	260 300	330	360	380 420	420 490	490 580	540 680	720 860	540 600	800				
470	330 380	400	400 470	460 540	510 640	610 760	880	1100	900	1000				
1000	460 580	580 630	790	760 950	950 1100	1100 1350	1310 1550	1350 1680						
2200	840 1050	880 1100	1100 1350	1300 1550	1600 1800	1850 2090	2200	2300						
3300	1000 1250	1250 1400	1400 1700	1660 1950	1970 2220	2400	2500							
4700	1300 1700	1500 1800	1800 2100	1950 2360	2400	2500								
6800	1900	1900 2150	2200 2500	2550	2600									
10000	1900 2250	2500	2700	2800										
15000	2500 2880	2950	3150	3200										
22000	3650	3700	3800											

TEMPERATURE CHARACTERISTICS

Capacitance Change Ratio



Dissipation Factor Change

