

SE-K [For General]

105°C Single-Ended Lead Aluminum Electrolytic Capacitors Rated Voltage up to 450V

Miniature Size Aluminum Electrolytic Capacitors

ELECTRICAL CHARACTERISTICS

Operating Temperature : -40° ~ +105°C / -25° ~ +105°C

Working Voltage : 6.3 ~ 250V / 350 ~ 450V

Rate Capacitance Range : 0.47 ~ 15000µF / 0.47 ~ 150µF

Capacitance Tolerance : -20 ~ +20%

DC Leakage Current (µA) : $I = 0.01CV + 3 / 0.03CV + 10$

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

Dissipation Factor : at 120 Hz, 25°C

WV (V):	6.3	10	16	25	35	50	63	80	100	160 ~ 250	350 ~ 450
D.F (%) :	26	22	18	16	14	12	10	10	10	15	20

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

Load Life : 1000 Hours at 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 : 500 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

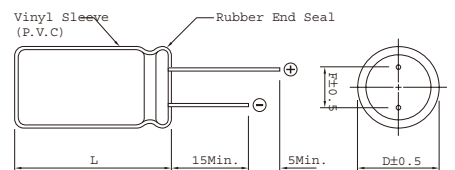
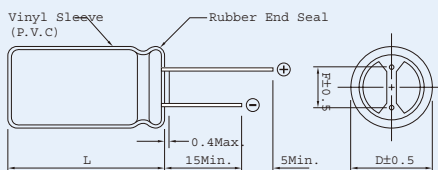


RoHS
COMPLIANT

DIAGRAM OF DIMENSIONS

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

Rubber Stand-off



DESCRIPTION



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

Very High Volumetric Efficiency

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

Feature High CV Product with Moderate Cost

Multiplier for Ripple Current

Frequency coefficient

Frequency (Hz)	120	300	1K	10K~100K
6.3~100V Below~68µF	1.00	1.20	1.30	1.45
6.3~100V 100~680µF	1.00	1.10	1.15	1.25
6.3~110V 1000~22000µF	1.00	1.05	1.10	1.15
160~450V ALL Cap(µF)	1.00	1.05	1.10	1.50

Temperature coefficient

Temperature(°C)	65	85	105
Factor	1.80	1.40	1.00

Dimensions : mm



CASE SIZE & PERMISSIBLE RIPPLE CURRENT OF STANDARD PRODUCTS

CAP. (μF)	RATED VOLTAGE WV													
	6.3		10		16		25		35		50		63	
	Size	Ripple	Size	Ripple	Size	Ripple	Size	Ripple	Size	Ripple	Size	Ripple	Size	Ripple
0.1											5 x 11	3		
0.22											5 x 11	4		
0.33											5 x 11	5		
0.47											5 x 11	6	5 x 11	8
1.0											5 x 11	9	5 x 11	12
2.2											5 x 11	11	5 x 11	20
3.3											5 x 11	15	5 x 11	20
4.7							5 x 11	20	5 x 11	18	5 x 11	18	5 x 11	20
6.8							5 x 11	20	5 x 11	18	5 x 11	25	5 x 11	30
10			5 x 11	18	5 x 11	20	5 x 11	20	5 x 11	25	5 x 11	25	5 x 11	50
											8 x 11	54		
15					5 x 11	30	5 x 11	20	5 x 11	30	5 x 11	35	5 x 11	50
22			5 x 11	45	5 x 11	30	5 x 11	35	5 x 11	35	5 x 11	35	6.3 x 11	90
33			5 x 11	60	5 x 11	40	5 x 11	40	5 x 11	50	6.3 x 11	50	6.3 x 11	60
											8 x 11	50	8 x 11	60
47	5 x 11	60	5 x 11	45	5 x 11	50	5 x 11	50	5 x 11	65	6.3 x 11	70	8 x 11	90
										8 x 11	65			
										6.3 x 11	65			
68	5 x 11	75	5 x 11	80	5 x 11	50	6.3 x 11	80	8 x 11	110	8 x 11	120	10 x 12	90
100	5 x 11	60	5 x 11	80	5 x 11	80	6.3 x 11	90	6.3 x 11	110	8 x 11	120	8 x 15	90
							8 x 11	90	8 x 11	110	10 x 12	120	10 x 12	150
							8 x 11	80						
							8 x 11	80						
150	5 x 11	60	5 x 11	110	8 x 11	110	8 x 11	140	10 x 12	190	10 x 12	120	10 x 15	150
			6.3 x 11	130										
	5 x 11	100	6.3 x 11	110	6.3 x 11	140	8 x 11	140	8 x 11	190	10 x 12	240	10 x 15	270
220	6.3 x 11	100			8 x 11	140	10 x 12	140	8 x 15	190	10 x 15	240	10 x 19.5	270
	8 x 11	100	8 x 11	110					10 x 12	190				
	6.3 x 11	120	6.3 x 11	160	8 x 11	180	8 x 11	140	8 x 15	220	10 x 15	320	10 x 19.5	380
330	8 x 11	120	8 x 11	160			8 x 15	140	8 x 20	220	10 x 19.5	320	13 x 20	380
							10 x 12	220	10 x 12	260				
									10 x 15	260				
	6.3 x 11	125	6.3 x 11	110	8 x 11	250	8 x 15	290	10 x 15	350	10 x 19.5	430	13 x 20	500
470	8 x 11	170	8 x 11	170	8 x 15	250	10 x 12	290	10 x 19.5	350	13 x 20	430	13 x 25	500
					10 x 12	250	10 x 15	290	13 x 20	350				
	8 x 11	255	8 x 11	300	10 x 12	455	10 x 19.5	290	13 x 20	620	13 x 25	430	13 x 25	500
680	10 x 12	320	8 x 15	300	10 x 15	530							16 x 25	500
			10 x 12	300	13 x 25	300								
	8 x 11	300	8 x 11	300	8 x 20	300	10 x 19.5	540	13 x 20	620	13 x 25	790	16 x 25	900
1000	10 x 12	300	8 x 15	300	10 x 15	360	12 x 20	540	13 x 25	620	16 x 25	790	16 x 32	900
			10 x 12	300	10 x 19.5	360	13 x 20	540						
			10 x 15	300										
1500	10 x 15	600	10 x 19.5	300	10 x 19.5	360	13 x 25	540	13 x 25	620	16 x 32	790	16 x 32	900
					13 x 20	700			16 x 25	620			16 x 36	900
	10 x 19.5	580	10 x 19.5	580	10 x 25	895	13 x 25	880	16 x 25	1030	16 x 36	1230	18 x 36	1455
2200	13 x 20	580	13 x 20	580	12 x 25	1040	16 x 25	880	16 x 32	1030	18 x 36	1230		
					13 x 20	620								
					13 x 25	620								
	10 x 19.5	670	10 x 25	550	13 x 25	970	13 x 25	1120	16 x 36	1320	18 x 36	1400	22 x 40	1730
3300	13 x 20	670	10 x 30	550	16 x 25	970	16 x 25	1120	18 x 36	1120	18 x 40	1400		
			13 x 20	670			16 x 32	1120						
			13 x 25	670										
4700	13 x 25	1320	13 x 25	1000	16 x 25	1240	16 x 32	1420	18 x 36	1540	22 x 35	1900		
	16 x 25	1000	16 x 25	1000	16 x 32	1240	18 x 36	1440	18 x 40	1540	22 x 40	1780		
	13 x 25	1120	16 x 25	1120	16 x 36	1530	18 x 36	1630	22 x 40	1880				
6800	16 x 25	1120	16 x 32	1120	16 x 40	1530	18 x 40	1630						
					18 x 36	1530								
10000	16 x 25	1320	16 x 36	1320	18 x 36	1730	22 x 40	2000						
	16 x 32	1320	18 x 36	1320	18 x 40	1730								
	18 x 36	1320												
15000	18 x 36	2280	18 x 40	1960										

Note : * 1. D x L : mm

* 2. mA rms at 85°C, 120Hz



CASE SIZE & PERMISSIBLE RIPPLE CURRENT OF STANDARD PRODUCTS

CAP. (μF)	RATED VOLTAGE WV															
	100		160		200		250		350		400		450			
	Size	Ripple	Size	Ripple	Size	Ripple	Size	Ripple	Size	Ripple	Size	Ripple	Size	Ripple		
0.1	5 x 11	3														
0.22	5 x 11	4														
0.33	5 x 11	5														
0.47	5 x 11	6	5 x 11	8	5 x 11	6	5 x 11	6	5 x 11	14	6.3 x 11	14	6.3 x 11	14		
					8 x 11	6	8 x 11	9								
1.0	5 x 11	9	5 x 11	12	5 x 11	9	6.3 x 11	9	6.3 x 11	20	6.3 x 11	15	8 x 11	20		
					8 x 11	9	8 x 11	9			8 x 11	15	10 x 15	15		
2.2	5 x 11	15	6.3 x 11	15	6.3 x 11	15	6.3 x 11	15	8 x 11	35	8 x 11	20	10 x 12	29		
			8 x 11	15	8 x 11	15	8 x 11	15			10 x 12	20	8 x 11	15		
											10 x 15	20	10 x 15	29		
3.3	5 x 11	18	6.3 x 11	20	6.3 x 11	20	8 x 11	20	8 x 11	37	8 x 11	20	10 x 15	35		
			8 x 11	20	8 x 11	20	10 x 12	20	10 x 12	47	10 x 15	20				
											10 x 12	25				
											10 x 19.5	25	10 x 19.5	35		
	5 x 11	20	6.3 x 11	30	8 x 11	30	8 x 11	30	10 x 12	55	8 x 15	37	10 x 15	50		
											8 x 11	37				
4.7			8 x 11	30	10 x 12	30	10 x 12	30	10 x 15	55	10 x 12	47				
									8 x 11	55	10 x 15	47				
											13 x 20	77	13 x 20	50		
											16 x 25	47				
6.8	5 x 11	35	10 x 12	30	10 x 12	45	8 x 15	45	10 x 15	65	10 x 15	70	10 x 19.5	80		
							10 x 12	45			10 x 19	70	12 x 20	40		
	5 x 11	35	8 x 11	40	10 x 12	45	10 x 15	45	10 x 15	95	10 x 15	70	13 x 20	75		
10	6.3 x 11	35	10 x 12	40	10 x 15	45	10 x 19.5	45			10 x 19.5	70	13 x 25	75		
											13 x 20	70	10 x 19.5	75		
15	8 x 11	35	10 x 15	40	10 x 15	45	10 x 15	80	10 x 19.5	140	10 x 19	100	16 x 25	75		
											13 x 20	110				
											13 x 25	110				
22	8 x 11	65	8 x 20	70	10 x 15	70	10 x 19.5	80	13 x 20	165	13 x 20	110	13 x 25	110		
			10 x 15	70							13 x 25	110	16 x 25	110		
			10 x 19.5	70	10 x 19.5	70					16 x 32	110	16 x 32	110		
	8 x 11	95	10 x 19.5	110	10 x 19.5	110	13 x 20	100	13 x 25	195	13 x 25	180	16 x 25	150		
33	10 x 12	95	13 x 20	110	13 x 25	110	13 x 25	100			16 x 20	180	16 x 36	150		
											16 x 25	180	16 x 20	170		
	10 x 12	120	13 x 20	140	13 x 20	140	13 x 25	140	16 x 25	340	16 x 25	250	16 x 36	230		
47	10 x 15	120	13 x 25	140	13 x 25	140	16 x 25				16 x 32	250	18 x 40	230		
											16 x 36	250	22 x 40	230		
											18 x 20	250				
											18 x 25	250				
68	10 x 15	220	13 x 25	250	13 x 25	140	16 x 25	140	16 x 32	320	16 x 32	320	18 x 32	340		
											16 x 36	320	22 x 40	340		
											18 x 25	320				
											18 x 36	320				
											18 x 40	330				
100	10 x 19	220	13 x 25	250	13 x 25	335	16 x 32	260	18 x 36	360	16 x 36	425				
			16 x 25	250	16 x 25	335					18 x 32	430				
											18 x 36	480				
120											18 x 36	480				
150	13 x 20	414	16 x 32	250	16 x 36	450	18 x 40	460	22 x 40	480	22 x 40	450				
	13 x 25	414														
220	13 x 25	420	16 x 32	430	18 x 32	515	22 x 40	525								
			16 x 36	430	18 x 36	515										
					18 x 40	515										
330	13 x 25	510	18 x 36	850	18 x 36	705										
	16 x 25	510	18 x 40	850	18 x 40	780										
					22 x 40	920										
470	16 x 25	680	22 x 40	980												
	16 x 32	680														
680	16 x 36	1200														
1000	18 x 40	1340														
	22 x 40	1500														

Note : * I. D x L : mm

* 2. mA rms at 105°C, 120Hz