

Miniature Size Aluminum Electrolytic Capacitors

SH [For General]

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



DESCRIPTION

Long life for 2,000 hours at 105°C, ideally suited for high quality and high reliability applications.

Feature High CV Product

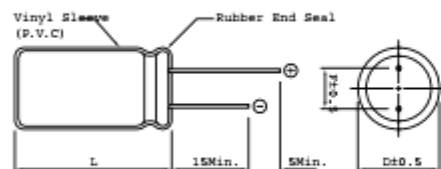
Multiplier for Ripple Current
Frequency coefficient

Frequency (Hz)	120	300	1K	10K-100K
6.3-100V Below-68μF	1.00	1.30	1.57	2.00
6.3-100V 100-470μF	1.00	1.23	1.34	1.50
6.3-100V 471-22000μF	1.00	1.10	1.13	1.15
160-450V ALL Cap(μF)	1.00	1.25	1.40	1.60

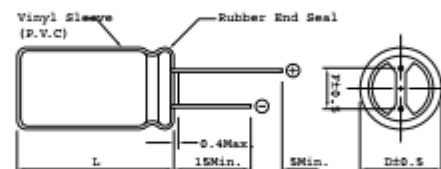
Temperature coefficient

Temperature(°C)	65	85	105
Factor	1.70	1.40	1.00

DIAGRAM OF DIMENSIONS



Rubber Stand-off



$L \leq 16 : L+1.5\text{max}$
 $L > 16 : L+2\text{max}$
 $D\phi = 8\&10 : L+2.5$

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

Dφ	F	dφ
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

ELECTRICAL CHARACTERISTICS

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

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

Rate Capacitance Range : 0.1 ~ 15000μF / 0.1 ~ 15000μF

Capacitance Tolerance : -20 ~ +20%

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

(Measurements shall be made after a2 minute charge at rated working voltage at 25°C)

Dissipation Factor : at 120 Hz, 25°C

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

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

WV (V) :	6.3	10	16	25	35 ~ 100	160 ~ 250	350 ~ 450
Impedance : Z - 25°C / Z + 25°C	4	3	2	2	2	4	4
Z - 40°C / Z + 20°C	8	6	4	3	3	8	8

Load Life : 2000 Hours at 105°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



RoHS
COMPLIANT

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	10		
0.22											5 x 11	15		
0.33											5 x 11	18		
0.47											5 x 11	7	5 x 11	8
1.0											5 x 11	12	5 x 11	12
2.2											5 x 11	18	5 x 11	20
3.3											5 x 11	25	5 x 11	24
4.7							5 x 11	85	5 x 11	92	5 x 11	30	5 x 11	34
6.8											5 x 11	30	5 x 11	37
10							5 x 11	92	5 x 11	44	5 x 11	50	5 x 11	55
15									5 x 11	50	5 x 11	50	5 x 11	65
22							5 x 11	60	5 x 11	65	5 x 11	75	6 x 11	90
33					5 x 11	70	5 x 11	75	5 x 11	85	6.3 x 11	105		
47			5 x 11	75	5 x 11	85	5 x 11	90	5 x 11	104	6.3 x 11	125	8 x 11	155
									6.3 x 11	115				
68			5 x 11	80	5 x 11	100	6.3 x 11	125	8 x 11	130	8 x 11	159	10 x 12	198
100	5 x 11	100	5 x 11	110	6.3 x 11	135	6.3 x 11	145	8 x 11	190	8 x 11	210	10 x 12	260
											6.3 x 11	210		
150	5 x 11	120	6.3 x 11	130	8 x 11	180	8 x 11	200	10 x 12	240	10 x 12	289	10 x 15	330
220	6.3 x 11	165	6.3 x 11	180			10 x 12	250	10 x 12	315	10 x 15	400	10 x 19.5	465
					8 x 11	235			8 x 11	315				
330	8 x 11	200	8 x 11	255	8 x 11	285	10 x 12	355	10 x 15	440	10 x 19	535	13 x 20	650
470	8 x 11	280	8 x 11	305			10 x 15	470			13 x 20	730	13 x 25	800
					10 x 12	395	10 x 12	470	13 x 20	580				
680	10 x 12	320	10 x 12	420	10 x 15	530	10 x 19.5	650	13 x 20	730	13 x 25	860	16 x 25	1000
1000	10 x 12	470			10 x 19.5	700	13 x 20	855	13 x 25	995	16 x 25	1110	16 x 32	1200
			10 x 15	570			10 x 19.5	821	13 x 20	1023				
1500	10 x 15	600	10 x 19.5	750	13 x 20	860	13 x 25	1020	16 x 25	1110	16 x 32	1350	16 x 36	1450
2200	13 x 20	930			13 x 25	1150	16 x 25	1230	16 x 32	1450	18 x 36	1530		
			13 x 20	1010					16 x 25	1200	18 x 32	1340		
3300	13 x 20	1100	13 x 25	1220	16 x 25	1350	16 x 32	1450	18 x 36	1660				
4700	16 x 25	1320	16 x 25	1410			18 x 36	1690						
			13 x 25	1190	16 x 32	1560								
6800	16 x 25	1490	16 x 32	1610	18 x 36	1790								
10000	16 x 32	1830	18 x 36	1980										
15000	18 x 36	2280												

Note : * I. D x L : mm

* 2. mA rms at 105°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		
0.47	5 x 11	10	5 x 11	12	5 x 11	12	5 x 11	12			8 x 11	1/8	6.3 x 11	11		
1.0	5 x 11	15	5 x 11	17	6.3 x 11	17	6.3 x 11	17			10 x 12	30	8 x 11	22		
													10 x 12	19		
2.2	5 x 11	22	6.3 x 11	18	6.3 x 11	25	8 x 11	29			10 x 12	35	10 x 12	29		
			6 x 11	25									10 x 15	29		
3.3	5 x 11	29	8 x 11	36	8 x 11	36	10 x 12	42			10 x 12	41	10 x 19.5	35		
			10 x 15	49												
4.7	5 x 11	37	8 x 11	43	10 x 12	50	10 x 12	50			8 x 11	57	10 x 15	50		
			10 x 15	57									13 x 20	50		
6.8	6.3 x 11	46	10 x 12	54	10 x 12	60	10 x 12	60			10 x 19.5	67				
10	6.3 x 11	65	10 x 12	70	10 x 15	80	10 x 19.5	80			10 x 19.5	97	13 x 25	75		
15	8 x 11	82	10 x 15	90	10 x 19.5	110	13 x 20	120								
22	8 x 11	115	10 x 19.5	130	10 x 19.5	135	13 x 25	155			13 x 25	170	16 x 32	110		
													16 x 25	170		
													16 x 25	170		
													16 x 32	175		
33	10 x 12	160	13 x 20	175			13 x 25	190					18 x 36	205		
													16 x 32	200		
													16 x 36	220		
													16 x 25	213		
47	10 x 15	210	13 x 25	230			16 x 25	230			16 x 25	213	18 x 40	250		
													16 x 32	245		
68	10 x 19.5	241	13 x 25	270	16 x 25	270	16 x 32	300			18 x 36	325				
100	13 x 20	385	16 x 25	330	16 x 32	335	18 x 36	340								
120																
150	13 x 25	414	16 x 32	435	16 x 36	450	18 x 40	460			18 x 40	654				
220			16 x 36	500			22 x 40	525								
	16 x 25	590			18 x 40	515										
330	16 x 25	720	18 x 40	850			22 x 40	920								
															22 x 40	1016
470	16 x 32	875	22 x 40	980	22 x 40	1016										
680	16 x 36	1200														

Note : * I. D x L : mm

* 2. mA rms at 105°C, 120Hz