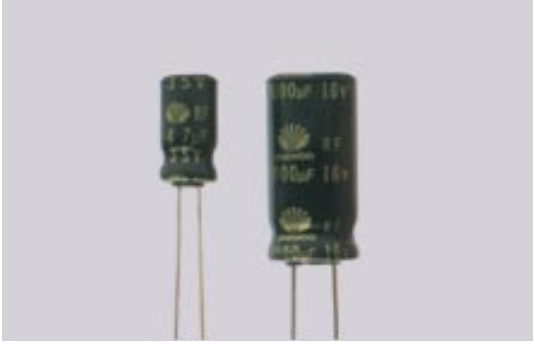
RF SERIES

ALUMINUM ELECTROLYTIC CAPACITORS
Low Z, Low ESR, Superminiature, Radial Leads

n Features

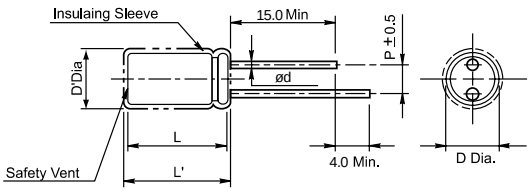
- Superminiature (Smaller than RMF)
- Low impedance at high frequency (Lower than RMF)
- For switching mode power supply
- Possible cleaning by Freon TE,TES,TMS (5 min)
- Load life of 2000 hours at 105˚C



n Specifications

Item	Performance Characteristics						
Operating temperature range	-55˚C ~ +105˚C						
Rated working voltage range	6.3V ~ 50V						
Nominal capacitance range	0.47μF ~ 15000μF, ±20%(at 20˚C, 120Hz)						
D.C Leakage current(at 20˚C)	The following specifications shall be satisfied when the rated voltage is applied for the required time. I≤ 0.01CV or 2μA(2 min),whichever is greater Where I =Leakage current(μA) C=Nominal capacitance(μF) V=Rated voltage(V)						
Tanδ (max., at 20˚C, 120Hz)	W.V(V)	6.3	10	16	25	35	50
	Tanδ	0.24	0.20	0.16	0.14	0.12	0.10
	When capacitance is over 1000μF, Tanδ shall be added 0.02 to the listed value with increase of every each 1000μF						
Characteristics at low temperature(max.) (impedance ratio at 120Hz)	W.V(V)	6.3~10		16~35		50	
	Z-55˚C/Z20˚C	3		2		2	
Load life	After applying rated working voltage for 2000 hours at +105˚C and then being stabilized at +20˚C, capacitors shall meet following limits.						
	Capacitance change	Within ± 20% of initial measured value					
	Tanδ	≤ 200% of initial specified value					
	Leakage current	≤ Initial specified value					
Shelf life	After storage for 1000 hours at +105˚C with no voltage applied and then being stabilized at +20˚C, capacitors shall meet following limits.						
	Capacitance change	Within ± 20% of initial measured value					
	Tanδ	≤ 200% of initial specified value					
	Leakage current	≤ 200% of initial specified value					

n Case sizes and Dimensions



• Standard lead style

øD	5.0	6.3	8.0	10.0	13.0	16.0	
P	18.0						
ød	2.0	2.5	3.5	5.0		7.5	

D'= [D+0.5]Max. L'= [L+1.0]Max. at D ≤ 8.0
L' = [L+1.5]Max. at D ≥ 10.0

n Ripple current coefficient

• Frequency

W.V \ Freq(Hz)	50	120	400	1K	10K	100K
Cap ≤ 4.7	0.34	0.46	0.54	0.70	0.83	1
4.7 < Cap ≤ 47	0.45	0.57	0.68	0.80	0.87	1
47 < Cap ≤ 330	0.55	0.70	0.76	0.88	0.90	1
330 < Cap ≤ 1000	0.67	0.78	0.88	0.90	0.92	1
1000 < Cap	0.82	0.84	0.90	0.94	0.97	1

• Temperature

Temperature	≤ 70˚C	85˚C	105˚C
Factor	1.65	1.4	1.0

Standard ratings [Dimensions, Impedance, Ripple Current]

øD x L(mm)

W.V(V) / Cap(μF)	6.3(0J)			10(1A)			16(1C)		
	SIZE	Z	I_R	SIZE	Z	I_R	SIZE	Z	I_R
10							5 x 11	0.78	180
22	5 x 11	0.78	180	5 x 11	0.78	180	5 x 11	0.78	180
33	5 x 11	0.78	180	5 x 11	0.78	180	5 x 11	0.78	180
47	5 x 11	0.78	180	5 x 11	0.78	180	5 x	0.78	180
100	5 x 11	0.78	180	5 x 11	0.78	180	11	0.33	280
150	6.3 x	0.33	280	6.3 x	0.33	280	6.3x1	0.33	280
220	11	0.33	280	11	0.33	280	1	0.18	450
330	6.3 x	0.33	280	6.3 x	0.18	450	6.3x1	0.18	450
470	11	0.18	450	11	0.18	450	1	0.12	660
680	6.3 x	0.12	660	8 x 11.5	0.12	660	8x11.5	0.091	850
1000	11	0.12	660	8 x 11.5	0.11	850	8x11.5	0.069	1100
1500	8 x 11.5	0.070	1100	10 x	0.069	1100		0.065	1400
2200	10 x	0.065	1400	12.5	0.065	1400	10x12.	0.049	1700
3300	12.5	0.065	1400	10 x	0.038	1700	5	0.033	2100
4700	10 x	0.033	2100	16	0.032	2100	10x16	0.028	2600
6800	12.5	0.033	2100	10 x	0.028	2600	10x20	0.026	3000
10000	10 x	0.029	2600	20	0.023	3000	13x20	0.023	3600
15000	20	0.026	3000	13 x	0.023	3600	13x25 16x25		

W.V(V) / Cap(μF)	25(1E)			35(1V)			50(1H)		
	SIZE	Z	I_R	SIZE	Z	I_R	SIZE	Z	I_R
0.47							5x11	6.50	25
1.0							5x11	4.55	40
2.2							5x11	3.90	55
3.3							5x11	3.38	65
4.7	5x11	0.78	180	5x11	0.78	180	5x11	2.99	90
10	5x11	0.78	180	5x11	0.78	180	5x11	1.82	120
22	5x11	0.78	180	5x11	0.78	180	5x11	1.56	150
33	5x11	0.78	180	5x11	0.78	180	6.3x11	0.56	250
47	5x11	0.78	180	6.3x1	0.33	280	6.3x11	0.56	250
100	6.3x1	0.33	280	1	0.18	450	8x11.5	0.31	340
150	1	0.18	450	8x11.5	0.18	450	10x12.5	0.22	490
220	8x11.5	0.18	450	8x11.5	0.12	660	10x16	0.16	650
330	8x11.5	0.12	660	10x12.5	0.091	850	10x20	0.13	810
470	10x12.5	0.091	850	10x16	0.069	1100	13x20	0.11	1100
680	10x16	0.069	1100	10x20	0.065	1400	13x25	0.085	1200
1000	10x20	0.065	1400	13x20	0.049	1700	16x25	0.056	1600
1500	13x20	0.033	2100	13x25	0.033	2100	16x31.5	0.049	2000
2200	16x25	0.033	2100	16x25	0.028	2600	18x35.5	0.044	2300
3300	16x25	0.028	2600	16x31.5	0.026	3000			
4700	16x31.5	0.026	3000	18x35.5	0.023	3600			
6800	18x35.5	0.023	3600						

I_R : Maximum permissible ripple current[mA(rms) at 105˚C,100KHz]