

# ALUMINUM ELECTROLYTIC CAPACITORS



## PF Series

General standard size

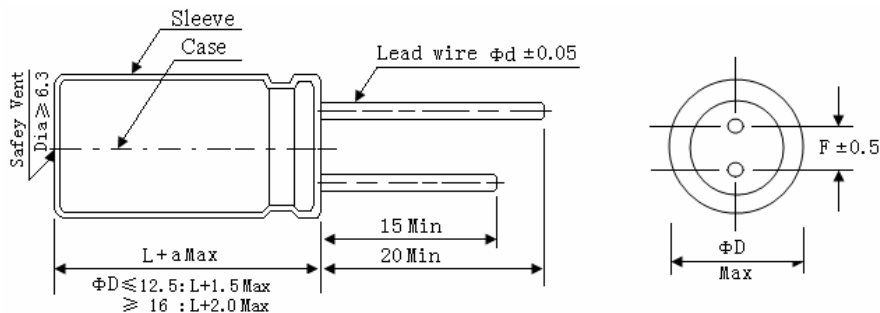
Load life 2,000 hours at 105°C



### SPECIFICATIONS

Item	Performance Characteristics	
Category Temperature Range	-40 ~ +105°C	-25 ~ +105°C
Working Voltage Range	6.3 ~ 100Vdc	160 ~ 450Vdc
Capacitance Range	0.47 ~ 22,000μF	0.47 ~ 560 μF
Capacitance Tolerance	±20% (at 25°C and 120Hz)	
Dissipation Factor (tanδ) (at 25°C, 120Hz)	Rated Voltage (V)	6.3    10    16    25    35    50    63    100    160 ~ 250    350 ~ 450
	tanδ(Max)	0.26    0.22    0.18    0.16    0.14    0.12    0.10    0.10    0.15    0.20
The above values should be increased by 0.02 for every additional 1000μF		
Leakage Current	I=0.01CV or 3μA whichever is greater(6.3 ~ 100V) I=0.03CV + 10μA(160 ~ 450V) I : Leakage current (μA)    C : Rated capacitance (μF)    V : Rated voltage (V) Impress the rated voltage for 2 minutes.	
Endurance	The following requirements shall be satisfied when the capacitor are restored to 25°C after the rated voltage applied for 2,000 hours at 105°C.	
	Capacitance change	≒ ±20% of the initial value
	Dissipation factor(tanδ)	≒ 200% of the specified value
Shelf Life	The following requirements shall be satisfied when the capacitor are restored to 25°C after the rated voltage applied for 1,000 hours at 105°C without voltage applied.	
	Capacitance change	≒ ±20% of the initial value
	Dissipation factor(tanδ)	≒ 200% of the specified value
Others	Leakage current	
	≒ 200% of the specified value	
Conforms to JIS-C-5101-4 (1998), characteristic W.		

### DIMENSIONS (mm)



φD	5	6.3	8	10	12.5 L<35	12.5 L≥35	16	18	20	22
φD	φD +0.5 Max						φD +1.0 Max			
φd	0.5	0.5	0.6	0.6	0.6	0.8	0.8	0.8	1.0	1.0
F	2.0	2.5	3.5	5.0	5.0		7.5	7.5	10	10

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Case size & Permissible rated ripple current: (mA rms) at 105°C / 120Hz

uF	Vdc	6.3		10		16		25	
		ΦD × L	RC	ΦD × L	RC	ΦD × L	RC	ΦD × L	RC
10						5x11	40	5x11	43
15						5x11	45	5x11	47
22		5x11	45	5x11	51	5x11	55	5x11	60
33		5x11	55	5x11	60	5x11	70	5x11	75
47		5x11	65	5x11	75	5x11	85	5x11	90
68		5x11	70	5x11	80	5x11	100	6.3x11	125
100		5x11	100	5x11	110	6.3x11	140	6.3x11	145
150		6.3x11	120	6.3x11	130	8x12	180	8x12	200
220		6.3x11	180	6.3x11	190	8x12	240	8x12	250
330		6.3x11	190	8x12	270	8x12	285	10x12	350
470		8x12	300	8x12	330	10x12	380	10x16	460
680		10x12	320	10x12	420	10x16	530	10x20	650
1000		10x12	480	10x16	570	10x20	680	12.5x20	830
1500		10x16	600	10x20	750	12.5x20	860	12.5x25	1020
2200		10x20	830	12.5x20	980	12.5x25	1130	16x25	1210
3300		12.5x20	1100	12.5x25	1250	16x25	1270	16x32	1540
4700		12.5x25	1320	16x25	1350	16x32	1570	16x36	1650
6800		16x25	1495	16x32	1670	18x36	1930	18x36	1950
10000		16x32	1832	18x36	2010	18x40	2060	18x40	2100
15000		18x36	2235	18x40	2360				
22000		18x40	2375						

uF	Vdc	35		50		63		100	
		ΦD × L	RC	ΦD × L	RC	ΦD × L	RC	ΦD × L	RC
0.47				5x11	11	5x11	8	5x11	12
1				5x11	16	5x11	12	5x11	18
2.2				5x11	23	5x11	20	5x11	27
3.3				5x11	29	5x11	24	5x11	33
4.7				5x11	34	5x11	34	5x11	39
6.8				5x11	35	5x11	37	5x11	46
10		5x11	47	5x11	50	5x11	50	6.3x11	65
15		5x11	50	5x11	52	5x11	65	6.3x11	66
22		5x11	65	5x11	75	6.3x11	85	6.3x11	85
33		5x11	88	6.3x11	100	6.3x11	110	8x12	125
47		6.3x11	115	6.3x11	125	8x12	150	10x12	165
68		8x12	130	8x12	159	10x12	198	10x16	200
100		8x12	200	8x12	210	10x12	250	10x20	265
150		10x12	240	10x12	290	10x16	330	12.5x20	335
220		10x12	320	10x16	370	10x20	410	12.5x25	440
330		10x16	420	10x20	550	12.5x20	550	16x25	660
470		10x20	570	12.5x20	660	12.5x25	720	16x32	880
680		12.5x20	730	12.5x25	860	16x25	1000	16x36	1202
1000		12.5x25	1000	16x25	1020	16x32	1130	18x36	1300
1500		16x25	1110	16x32	1350	16x36	1450		
2200		16x32	1450	18x36	1690	18x40	1780		
3300		18x32	1600	18x40	2060				
4700		18x36	1910						

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Case size & Permissible rated ripple current: (mA rms) at 105°C / 120Hz

uF \ Vdc	160		200		250		350	
	ΦD x L	RC	ΦD x L	RC	ΦD x L	RC	ΦD x L	RC
0.47	5x11	13	5x11	13	5x11	13	5x11	11
1	5x11	18	5x11	15	6.3x11	18	6.3x11	15
2.2	6.3x11	27	6.3x11	27	6.3x11	23	8x12	23
3.3	6.3x11	28	6.3x11	28	8x12	30	8x12	30
4.7	6.3x11	32	8x12	36	8x12	39	10x12	40
6.8	8x12	38	8x12	40	10x12	42	10x16	42
10	8x12	55	10x12	60	10x16	75	10x20	70
15	10x12	70	10x16	75	10x16	85	12.5x20	140
22	10x20	140	10x20	150	12.5x20	160	12.5x25	145
33	10x20	145	12.5x20	160	12.5x20	165	16x25	165
47	12.5x20	195	12.5x20	195	12.5x25	195	16x25	200
56	12.5x20	215	12.5x20	215	12.5x25	215	16x32	230
68	12.5x25	270	12.5x25	250	16x25	240	16x36	240
82	12.5x25	290	16x25	270	16x25	280	18x32	280
100	16x25	340	16x25	320	16x32	310	18x32	320
120	16x25	360	16x32	340	16x32	330	18x36	365
150	16x32	435	16x32	360	16x36	460	18x40	400
180	16x36	450	16x36	400	18x36	470	18x45	460
220	16x36	500	16x36	500	18x36	485		
330	18x36	600	18x36	610	18x45	610		
470	18x45	740	18x45	750				
560	18x51	800	18x51	805				

uF \ Vdc	400		450	
	ΦD x L	RC	ΦD x L	RC
0.47	6.3x11	15	6.3x11	16
1	6.3x11	14	8x12	21
2.2	8x12	25	8x12	22
3.3	8x12	30	10x12	30
4.7	10x16	42	10x16	36
6.8	10x16	45	10x20	40
10	10x20	70	12.5x20	75
15	12.5x20	90	12.5x25	80
22	12.5x25	140	16x25	105
33	16x25	165	16x32	130
47	16x25	200	18x32	160
56	16x32	210	18x32	170
68	16x36	240	18x36	190
82	18x32	270	18x40	200
100	18x32	310	18x40	215
120	18x36	340	18x45	230
150	18x40	375		
180	18x45	410		

### RIPPLE CURRENT MULTIPLIERS

#### Frequency Multipliers

Vdc	Cap.(uF)	Frequency (Hz)				
		50/60	120	1K	10K	100K
6.3 ~ 250	0.47 ~ 68	0.75	1.00	1.57	2.00	2.00
	100 ~ 680	0.80	1.00	1.34	1.40	1.50
	1000 ~ 22000	0.85	1.00	1.13	1.13	1.13
350 ~ 450	0.47 ~ 220	0.80	1.00	1.40	1.40	1.40
	330 ~ 560	0.90	1.00	1.13	1.13	1.13