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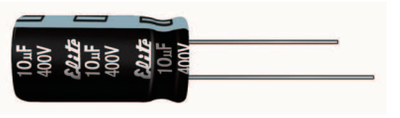
PF Series



- General standard size
- Load life 2,000 hours at 105℃

◆ SPECIFICATIONS

Item	Performance Characteristics	
Category Temperature Range	-40 ~ +105℃	-25 ~ +105℃
Working Voltage Range	6.3 ~ 100Vdc	160 ~ 450Vdc
Capacitance Range	0.47 ~ 22,000μF	0.47 ~ 560 μF
Capacitance Tolerance	±20% (at 25℃ and 120Hz)	
Dissipation Factor (tanδ) (at 25℃, 120Hz)	See table below	
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	See table below	
Shelf Life	See table below	
Others	Conforms to JIS-C-5101-4 (1998), characteristic W.	

Dissipation Factor (tanδ) (at 25℃, 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

Endurance

The following requirements shall be satisfied when the capacitor are restored to 25℃ after the rated voltage applied for 2,000 hours at 105℃.

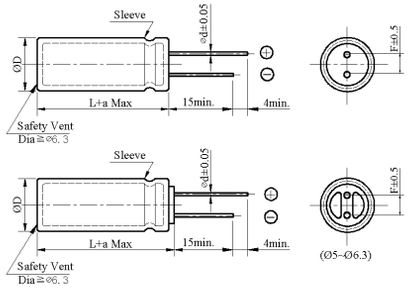
Capacitance change	≦ ±20% of the initial value
Dissipation factor(tanδ)	≦ 200% of the specified value
Leakage current	≦ specified value

Shelf Life

The following requirements shall be satisfied when the capacitor are restored to 25℃ after the rated voltage applied for 1,000 hours at 105℃ without voltage applied.

Capacitance change	≦ ±20% of the initial value
Dissipation factor(tanδ)	≦ 200% of the specified value
Leakage current	≦ 200% of the specified value

◆ 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
a	L+1.5 Max				≦ 35 L+1.5Max ≧ 40 L+2.0 Max		L+1.5 Max		L+2.0 Max	

◆ PART NUMBERING SYSTEM(Example : 200V 330μF)

P	F	2	D	3	3	1	M	N	N	1	8	P	1						

Special Request
Size code(18P1 : 18×35.5)
Lead length code
Lead forming Type code
Capacitance tolerance code(M:±20%)
Capacitance code(330μF)
Voltage code(200V)
Series code(PF)

PF Series

◆ **Case size & Permissible rated ripple current: (mA rms) at 105℃ / 120Hz**

uF \ Vdc	6.3		10		16		25	
	ΦD × L	RC	ΦD × L	RC	ΦD × L	RC	ΦD × L	RC
10					5×11	40	5×11	43
15					5×11	45	5×11	47
22	5×11	45	5×11	51	5×11	55	5×11	60
33	5×11	55	5×11	60	5×11	70	5×11	75
47	5×11	65	5×11	75	5×11	85	5×11	90
68	5×11	70	5×11	80	5×11	100	6.3×11	125
100	5×11	100	5×11	110	6.3×11	140	6.3×11	145
150	6.3×11	120	6.3×11	130	8×11.5	180	8×11.5	200
220	6.3×11	180	6.3×11	190	8×11.5	240	8×11.5	250
330	6.3×11	190	8×11.5	270	8×11.5	285	10×12.5	350
470	8×11.5	300	8×11.5	330	10×12.5	380	10×16	460
680	10×12.5	320	10×12.5	420	10×16	530	10×20	650
1000	10×12.5	480	10×16	570	10×20	680	12.5×20	830
1500	10×16	600	10×20	750	12.5×20	860	12.5×25	1020
2200	10×20	830	12.5×20	980	12.5×25	1130	16×25	1210
3300	12.5×20	1100	12.5×25	1250	16×25	1270	16×31.5	1540
4700	12.5×25	1320	16×25	1350	16×31.5	1570	16×35.5	1650
6800	16×25	1495	16×31.5	1670	18×35.5	1930	18×35.5	1950
10000	16×31.5	1832	18×35.5	2010	18×40	2060	18×40	2100
15000	18×35.5	2235	18×40	2360				
22000	18×40	2375						

uF \ Vdc	35		50		63		100	
	ΦD × L	RC	ΦD × L	RC	ΦD × L	RC	ΦD × L	RC
0.47			5×11	11	5×11	8	5×11	12
1			5×11	16	5×11	12	5×11	18
2.2			5×11	23	5×11	20	5×11	27
3.3			5×11	29	5×11	24	5×11	33
4.7			5×11	34	5×11	34	5×11	39
6.8			5×11	35	5×11	37	5×11	46
10	5×11	47	5×11	50	5×11	50	6.3×11	65
15	5×11	50	5×11	52	5×11	65	6.3×11	66
22	5×11	65	5×11	75	6.3×11	85	6.3×11	85
33	5×11	88	6.3×11	100	6.3×11	110	8×11.5	125
47	6.3×11	115	6.3×11	125	8×11.5	150	10×12.5	165
68	8×11.5	130	8×11.5	159	10×12.5	198	10×16	200
100	8×11.5	200	8×11.5	210	10×12.5	250	10×20	265
150	10×12.5	240	10×12.5	290	10×16	330	12.5×20	335
220	10×12.5	320	10×16	370	10×20	410	12.5×25	440
330	10×16	420	10×20	550	12.5×20	550	16×25	660
470	10×20	570	12.5×20	660	12.5×25	720	16×31.5	880
680	12.5×20	730	12.5×25	860	16×25	1000	16×35.5	1202
1000	12.5×25	1000	16×25	1020	16×31.5	1130	18×35.5	1300
1500	16×25	1110	16×31.5	1350	16×35.5	1450		
2200	16×31.5	1450	18×35.5	1690	18×40	1780		
3300	18×31.5	1600	18×40	2060				
4700	18×35.5	1910						

PF Series

◆ **Case size & Permissible rated ripple current: (mA rms) at 105℃ / 120Hz**

Vdc / uF	160		200		250		350	
	ΦD × L	RC	ΦD × L	RC	ΦD × L	RC	ΦD × L	RC
0.47	5×11	13	5×11	13	5×11	13	5×11	11
1	5×11	18	5×11	15	6.3×11	18	6.3×11	15
2.2	6.3×11	27	6.3×11	27	6.3×11	23	8×11.5	23
3.3	6.3×11	28	6.3×11	28	8×11.5	30	8×11.5	30
4.7	6.3×11	32	8×11.5	36	8×11.5	39	10×12.5	40
6.8	8×11.5	38	8×11.5	40	10×12.5	42	10×16	42
10	8×11.5	55	10×12.5	60	10×16	75	10×20	70
15	10×12.5	70	10×16	75	10×16	85	12.5×20	140
22	10×20	140	10×20	150	12.5×20	160	12.5×25	145
33	10×20	145	12.5×20	160	12.5×20	165	16×25	165
47	12.5×20	195	12.5×20	195	12.5×25	195	16×25	200
56	12.5×20	215	12.5×20	215	12.5×25	215	16×31.5	230
68	12.5×25	270	12.5×25	250	16×25	240	16×35.5	240
82	12.5×25	290	16×25	270	16×25	280	18×31.5	280
100	16×25	340	16×25	320	16×31.5	310	18×31.5	320
120	16×25	360	16×31.5	340	16×31.5	330	18×35.5	365
150	16×31.5	435	16×31.5	360	16×35.5	460	18×40	400
180	16×35.5	450	16×35.5	400	18×35.5	470	18×45	460
220	16×35.5	500	16×35.5	500	18×35.5	485		
330	18×35.5	600	18×35.5	610	18×45	610		
470	18×45	740	18×45	750				
560	18×50	800	18×50	805				

Vdc / uF	400		450	
	ΦD × L	RC	ΦD × L	RC
0.47	6.3×11	15	6.3×11	16
1	6.3×11	14	8×11.5	21
2.2	8×11.5	25	8×11.5	22
3.3	8×11.5	30	10×12.5	30
4.7	10×16	42	10×16	36
6.8	10×16	45	10×20	40
10	10×20	70	12.5×20	75
15	12.5×20	90	12.5×25	80
22	12.5×25	140	16×25	105
33	16×25	165	16×31.5	130
47	16×25	200	18×31.5	160
56	16×31.5	210	18×31.5	170
68	16×35.5	240	18×35.5	190
82	18×31.5	270	18×40	200
100	18×31.5	310	18×40	215
120	18×35.5	340	18×45	230
150	18×40	375		
180	18×45	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