

# PF

**Feature: 105°C 2,000 hours.**
**General standard size**

## SPECIFICATIONS

Item	Performance Characteristics	
Category Temperature Range	-40 to +105°C	-25 to +105°C
Working Voltage Range	6.3 to 100Vdc	160 to 450Vdc
Capacitance Range	0.47 to 22,000 $\mu$ F	0.47 to 560 $\mu$ F
Capacitance Tolerance	$\pm 20\%$ (at 25°C 120Hz)	
Dissipation Factor ( $\tan \delta$ ) (at 25°C 120Hz)	Rated Voltage (V)	6.3    10    16    25    35    50    63    100
	$\tan \delta$ (Max)	0.26   0.22   0.18   0.16   0.14   0.12   0.10   0.10
	Rated Voltage (V)	160 to 250                      350 to 450
	$\tan \delta$ (Max)	0.15                                      0.20
The above values should be increased by 0.02 for every additional 1000 $\mu$ F		
Leakage Current	$I=0.01CV$ or $3 \mu A$ whichever is greater	$I=0.03CV + 10 \mu A$
	I: Leakage current. ( $\mu A$ )    C: Rated capacitance. ( $\mu F$ )    V: Rated voltage. (V) The rated voltage is impressed for two minutes.	
Endurance	After applying rated voltage to the capacitor for 2,000 hours at 105°C, the following characteristics shall be satisfied when the capacitor has been restored to 25°C. Capacitance change $\leq \pm 20\%$ of the initial value Dissipation factor ( $\tan \delta$ ) $\leq 200\%$ of the specified value Leakage current $\leq$ specified value	
Shelf Life	After exposing the capacitor for 1,000 hours at 105°C, without applying voltage, the following characteristics shall be satisfied when the capacitor has been restored to 25°C. Capacitance change $\leq \pm 20\%$ of the initial value Dissipation factor ( $\tan \delta$ ) $\leq 200\%$ of the specified value Leakage current $\leq 200\%$ of the specified value	
Others	Conforms to JIS C-5141 (1991), characteristic W	

## RIPPLE CURRENT MULTIPLIERS

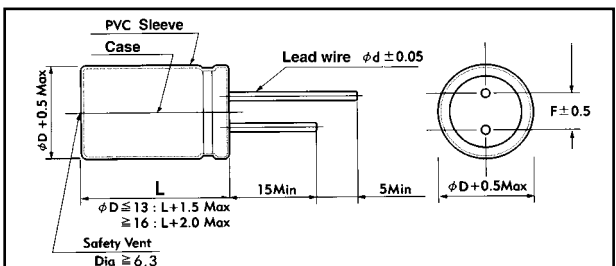
### Temperature Multipliers

Temp (°C)	40	60	70	85	95	105
Factor	1.90	1.75	1.61	1.40	1.25	1.00

### Frequency Multipliers

Vdc	Freq.(Hz)					
	Cap.( $\mu$ F)	50(60)	120	1K	10K	100K
6.3 to 100	0.47 to 68	0.75	1.00	1.57	2.00	2.00
	100 to 680	0.80	1.00	1.34	1.50	1.50
	1000 to 22000	0.85	1.00	1.13	1.15	1.15
160 to 450	0.47 to 220	0.80	1.00	1.40	1.60	1.60
	330 to 560	0.90	1.00	1.13	1.15	1.15

### DIMENSIONS(mm)



$\phi D$	5	6.3	8	10	13	16	18	20	22
$\phi d$	0.5	0.5	0.6	0.6	0.6	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

**PF**

**Case size & Permissible Ripple Current**

$\mu F$ \ Vdc	6.3		10		16		25		35		50		63		100	
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	40	5x11	43	5x11	47	5x11	50	5x11	50	6.3x11	65
15					5x11	45	5x11	47	5x11	50	5x11	52	5x11	65	6.3x11	66
22	5x11	45	5x11	51	5x11	55	5x11	60	5x11	65	5x11	75	6.3x11	85	6.3x11	85
33	5x11	55	5x11	60	5x11	70	5x11	75	5x11	88	6.3x11	100	6.3x11	110	8x12	125
47	5x11	65	5x11	75	5x11	85	5x11	90	6.3x11	115	6.3x11	125	8x12	150	10x12	165
68	5x11	70	5x11	80	5x11	100	6.3x11	125	8x12	130	8x12	159	10x12	198	10x16	200
100	5x11	100	5x11	110	6.3x11	140	6.3x11	145	8x12	200	8x12	210	10x12	250	10x20	265
150	6.3x11	120	6.3x11	130	8x12	180	8x12	200	10x12	240	10x12	290	10x16	330	13x20	335
220	6.3x11	180	6.3x11	190	8x12	240	8x12	250	10x12	320	10x16	370	10x20	410	13x25	440
330	6.3x11	190	8x12	270	8x12	285	10x12	350	10x16	420	10x20	550	13x20	550	16x25	660
470	8x12	300	8x12	330	10x12	380	10x16	460	10x20	570	13x20	660	13x25	720	16x32	880
680	10x12	320	10x12	420	10x16	530	10x20	650	13x20	730	13x25	860	16x25	1000	16x36	1200
1000	10x12	480	10x16	570	10x20	680	13x20	830	13x25	1000	16x25	1020	16x32	1130	18x36	1300
1500	10x16	600	10x20	750	13x20	860	13x25	1020	16x25	1110	16x32	1350	16x36	1450		
2200	10x20	830	13x20	980	13x25	1130	16x25	1210	16x32	1450	18x36	1690	18x40	1780		
3300	13x20	1100	13x25	1250	16x25	1270	16x32	1540	18x32	1600	18x40	2060				
4700	13x25	1320	16x25	1350	16x32	1570	16x36	1650	18x36	1910						
6800	16x25	1500	16x32	1670	18x36	1930	18x36	1950								
10000	16x32	1850	18x36	2010	18x40	2060	18x40	2100								
15000	18x36	2350	18x40	2360												
22000	18x40	2390														

↑ Ripple current (mA rms) at 105°C, 120Hz  
 ↓ Case size  $\phi$  DXL(mm)

$\mu F$ \ Vdc	160		200		250		350		400		450	
0.47	5x11	13	5x11	13	5x11	13	5x11	11	6.3x11	15	6.3x11	16
1	5x11	18	5x11	15	6.3x11	18	6.3x11	15	6.3x11	14	8x12	21
2.2	6.3x11	27	6.3x11	27	6.3x11	23	8x12	23	8x12	25	8x12	22
3.3	6.3x11	28	6.3x11	28	8x12	30	8x12	30	8x12	30	10x12	30
4.7	6.3x11	32	8x12	36	8x12	39	10x12	40	10x16	42	10x16	36
6.8	8x12	38	8x12	40	10x12	42	10x16	42	10x16	45	10x20	40
10	8x12	55	10x12	60	10x16	75	10x20	70	10x20	70	13x20	75
15	10x12	70	10x16	75	10x16	85	13x20	140	13x20	90	13x25	80
22	10x20	140	10x20	150	13x20	160	13x25	145	13x25	140	16x25	105
33	10x20	145	13x20	160	13x20	165	16x25	165	16x25	165	16x32	130
47	13x20	195	13x20	195	13x25	195	16x25	200	16x25	200	18x32	160
56	13x20	215	13x20	215	13x25	215	16x32	230	16x32	210	18x32	170
68	13x25	270	13x25	250	16x25	240	16x36	240	16x36	240	18x36	190
82	13x25	290	16x25	270	16x25	280	18x32	280	18x32	270	18x40	200
100	16x25	340	16x25	320	16x32	310	18x32	320	18x32	310	18x40	215
120	16x25	360	16x32	340	16x32	330	18x36	365	18x36	340	18x45	230
150	16x32	435	16x32	360	16x36	460	18x40	400	18x40	375		
180	16x36	450	16x36	400	18x36	470	18x45	460	18x45	410		
220	16x36	500	16x36	500	18x36	485						
330	18x36	600	18x36	610	18x45	610						
470	18x45	740	18x45	750								
560	18x51	800	18x51	805								

↑ Ripple current (mA rms) at 105°C, 120Hz  
 ↓ Case size  $\phi$  DXL(mm)

**LOAD LIFE TEST**

