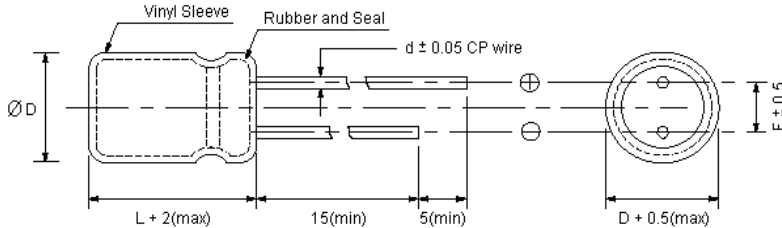


■ **FEATURES**

- ◆ High temperature long life at 105°C for 2000 hours
- ◆ Low impedance and low ESR with high ripple current at high frequency
- ◆ Applications for output of switching power supplies and mother board

■ **OUTLINE**



	mm						
D	5	6.3	8	10	13	16	18
F	2.0	2.5	3.5	5.0		7.5	
d		0.5		0.6		0.8	

■ **SPECIFICATIONS**

Items	Characteristics							
Capacitance Tolerance (120Hz, 25°C)	± 20% (M)							
Rated Working Voltage Range	6.3 ~ 50Vdc							
Operation Temperature	-40°C ~ +105°C							
Leakage Current (25°C)	(After 2 minutes applying the DC working voltage)							
	$I \leq 0.01CV$ or 3 (μ A)							
	◆ I : Leakage Current (μ A)		◆ C : Rated Capacitance (μ F)			◆ V : Working Voltage (V)		
Surge Voltage (25°C)	W.V.	6.3	10	16	25	35	50	
	S.V.	8	13	20	32	44	63	
Dissipation Factor (120Hz, 25°C)	W.V.	6.3	10	16	25	35	50	
	$\tan \delta$	0.22	0.19	0.16	0.14	0.12	0.10	
	◆ For capacitance exceeding 1000 μ F, add 0.02 per increment of 1000 μ F							
Temperature Characteristics	W.V.	6.3	10	16	25	35	50	
	- 25°C / + 25°C	2	2	2	2	2	2	
	- 40°C / + 25°C	3	3	3	3	3	3	
◆ Impedance ratio at 120Hz								
Load Test	After 2000 hours application of WV at +105°C, the capacitor shall meet the following limits: (3000 hours for 10 ϕ and larger)							
	Capacitance Change	$\leq \pm 20\%$ of initial value						
	$\tan \delta$	$\leq 200\%$ of initial specified value						
	Leakage Current	\leq initial specified value						
Shelf Test	After 1000 hours, no voltage applied at +105°C, the capacitor shall meet the following limits:							
	Capacitance Change	$\leq \pm 20\%$ of initial value						
	$\tan \delta$	$\leq 150\%$ of initial specified value						
	Leakage Current	$\leq 200\%$ of initial specified value						



■ **DIMENSIONS**

D x L (mm)

uF \ WV	D x L (mm)					
	6.3	10	16	25	35	50
4.7				]	5 x 11	5 x 11
10				]	5 x 11	5 x 11
22				]	5 x 11	5 x 11
33				]	5 x 11	6.3 x 11
47			]	5 x 11	6.3 x 11	6.3 x 12
68		]	5 x 11	6.3 x 11	6.3 x 12	8 x 12
100	[	5 x 11	6.3 x 11	6.3 x 12	8 x 12	8 x 14
150	6.3 x 11	6.3 x 11	6.3 x 12	8 x 12	8 x 12	8 x 16
220	6.3 x 12	6.3 x 12	8 x 12	8 x 14	8 x 16	10 x 16
330	8 x 12	8 x 12	8 x 14	8 x 16	10 x 16	10 x 20
470	8 x 12	8 x 14	8 x 16	10 x 16	10 x 20	13 x 20
680	8 x 16	8 x 16	10 x 16	10 x 20	13 x 20	13 x 25
1000	8 x 16	10 x 16	10 x 20	13 x 20	13 x 25	16 x 26
1200	10 x 16	10 x 20	10 x 25	13 x 20	13 x 30	16 x 31
1500	10 x 20	10 x 25	13 x 20	13 x 25	16 x 26	16 x 35
2200	10 x 25	13 x 20	13 x 25	16 x 26	16 x 31	18 x 35
3300	13 x 20	13 x 25	16 x 26	16 x 31	18 x 35	
4700	13 x 30	16 x 26	16 x 31	18 x 35	18 x 41	
6800	16 x 26	16 x 31	18 x 35	18 x 41		
10000	16 x 35	18 x 35				
15000	18 x 35					

■ **RIPPLE CURRENT & IMPEDANCE**

RC: mA (rms) at 100KHz 105°C

Imp: Ω (ohm) at 100KHz 25°C

uF \ WV	Item	6.3		10		16		25		35		50	
		R.C	Imp	RC	Imp	RC	Imp	RC	Imp	RC	Imp	RC	Imp
4.7								[	80	1.559	80	1.451	
10								[	105	1.201	110	1.116	
22								[	145	0.620	150	0.573	
33								[	165	0.552	210	0.515	
47						[	140	0.480	210	0.441	255	0.412	
68				[	145	0.462	195	0.400	255	0.309	365	0.286	
100		[	150	0.460	190	0.370	240	0.285	370	0.236	460	0.201	
150		200	0.421	250	0.345	300	0.320	340	0.242	485	0.173	628	0.156
220		240	0.351	275	0.276	430	0.165	470	0.150	625	0.110	830	0.103
330		350	0.283	450	0.155	580	0.107	690	0.087	735	0.073	1070	0.075
470		465	0.165	610	0.100	640	0.090	870	0.077	1070	0.062	1245	0.057
680		655	0.085	670	0.082	850	0.069	1015	0.054	1250	0.052	1495	0.044
1000		695	0.076	900	0.057	1065	0.050	1340	0.048	1580	0.042	1790	0.039
1200		930	0.061	1070	0.049	1225	0.045	1430	0.042	1815	0.037	2080	0.035
1500		1150	0.044	1210	0.042	1370	0.039	1700	0.035	1880	0.032	2415	0.029
2200		1405	0.041	1425	0.037	1740	0.031	1910	0.029	2330	0.026	2810	0.024
3300		1580	0.035	1800	0.029	1930	0.027	2345	0.023	2775	0.022		
4700		1900	0.029	1970	0.025	2305	0.022	2830	0.021	3020	0.021		
6800		2090	0.024	2360	0.021	2670	0.020	2950	0.020				
10000		2560	0.022	2680	0.020								
15000		3090	0.020										

■ **RIPPLE CURRENT COEFFICIENTS**

Temperature(°C)	45	65	85	105
Multiplier	2.40	2.15	1.70	1.00

uF \ Hz	Hz				
	60(50)	120	1K	10K	100K
4.7 ~ 33	0.35	0.45	0.75	0.90	1.00
39 ~ 330	0.60	0.70	0.85	0.95	1.00
390 ~ 1000	0.65	0.75	0.90	0.98	1.00
1200 ~ 15000	0.75	0.80	0.95	1.00	1.00