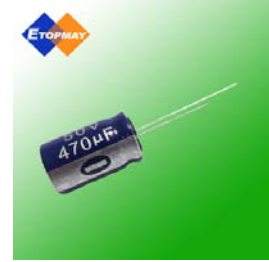


Features

- 105°C, 2000 hours, ultra low impedance, high ripple current.
- Suitable for using in switching power supplies and computer boards.

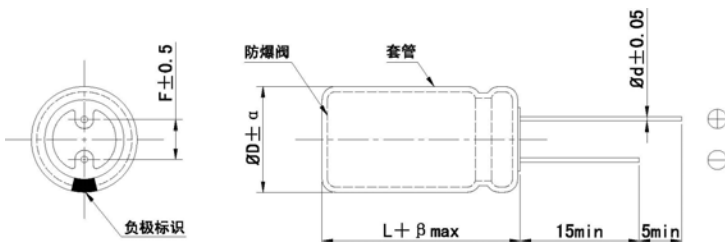


Specifications

Items	Characteristics																
Rated Voltage Range	6.3~450V. DC																
Operating Temperature Range	-55°C~+105°C																
Capacitance Tolerance	±20%(M) (25°C, 100/120Hz)																
Leakage Current	$I \leq 0.01CV$ or $3(\mu A)$, Whichever is greater. Where, I: max. leakage current (μA), C: Nominal capacitance (μF), V: Rated voltage (V) (At 25°C after 2 minutes)																
Dissipation Factor $\tan \delta$	(25°C, 100/120Hz) <table border="1" style="margin-top: 5px;"> <tr> <td>Rated voltage (V_{dc})</td> <td>6.3</td> <td>10</td> <td>16</td> <td>25</td> <td>35</td> <td>50~100</td> <td>160~450</td> </tr> <tr> <td>$\tan \delta$ (Max.)</td> <td>0.16</td> <td>0.14</td> <td>0.12</td> <td>0.10</td> <td>0.10</td> <td>0.08</td> <td>0.12</td> </tr> </table> When nominal capacitance exceeds 1000 μF , add 0.02 to the value above for each 1000 μF increase.	Rated voltage (V_{dc})	6.3	10	16	25	35	50~100	160~450	$\tan \delta$ (Max.)	0.16	0.14	0.12	0.10	0.10	0.08	0.12
Rated voltage (V_{dc})	6.3	10	16	25	35	50~100	160~450										
$\tan \delta$ (Max.)	0.16	0.14	0.12	0.10	0.10	0.08	0.12										
Low Temperature Characteristics (Max. Impedance Ratio)	Impedance ratio at 100Hz or 120Hz shall not exceed the values given in the below table. <table border="1" style="margin-top: 5px;"> <tr> <td>Rated voltage (V_{dc})</td> <td>6.3~10</td> <td>16</td> <td>25~100</td> <td>160~250</td> <td>400~450</td> </tr> <tr> <td>$Z_{-55^\circ C} / Z_{+20^\circ C}$</td> <td>10</td> <td>8</td> <td>5</td> <td>12</td> <td>15</td> </tr> </table> When nominal capacitance exceeds 1000Mf, add 1 to the value above for each 1000 μF increase.	Rated voltage (V_{dc})	6.3~10	16	25~100	160~250	400~450	$Z_{-55^\circ C} / Z_{+20^\circ C}$	10	8	5	12	15				
Rated voltage (V_{dc})	6.3~10	16	25~100	160~250	400~450												
$Z_{-55^\circ C} / Z_{+20^\circ C}$	10	8	5	12	15												
Shelf Life	After storage at 105°C for 1000 hours, the capacitors shall meet the following requirements. <table border="1" style="margin-top: 5px;"> <tr> <td>Capacitance Change</td> <td>$\leq \pm 20\%$ of the initial value</td> </tr> <tr> <td>D.F. ($\tan \delta$)_r</td> <td>$\leq 200\%$ of the initial specified value</td> </tr> <tr> <td>Leakage Current</td> <td>$\leq 200\%$ of the initial specified value</td> </tr> </table>	Capacitance Change	$\leq \pm 20\%$ of the initial value	D.F. ($\tan \delta$) _r	$\leq 200\%$ of the initial specified value	Leakage Current	$\leq 200\%$ of the initial specified value										
Capacitance Change	$\leq \pm 20\%$ of the initial value																
D.F. ($\tan \delta$) _r	$\leq 200\%$ of the initial specified value																
Leakage Current	$\leq 200\%$ of the initial specified value																
Load Life	After application of rated voltage with rated ripple current for 2000 hours at +105°C, the following specification shall be satisfied. <table border="1" style="margin-top: 5px;"> <tr> <td>Capacitance Change</td> <td>$\leq \pm 20\%$ of the initial value</td> </tr> <tr> <td>D.F. ($\tan \delta$)</td> <td>$\leq 250\%$ of the initial specified value</td> </tr> <tr> <td>Leakage Current</td> <td>\leq the initial specified value</td> </tr> </table>	Capacitance Change	$\leq \pm 20\%$ of the initial value	D.F. ($\tan \delta$)	$\leq 250\%$ of the initial specified value	Leakage Current	\leq the initial specified value										
Capacitance Change	$\leq \pm 20\%$ of the initial value																
D.F. ($\tan \delta$)	$\leq 250\%$ of the initial specified value																
Leakage Current	\leq the initial specified value																
Others	Meet Q/RME 09—2003, GB/T 5993—2003																

Dimensions

mm



D	5	6.3	8	10	13	16
d	0.5			0.6	0.6	0.8
F	2.0	2.5	3.5	5.0	5.0	7.5
α	0.5					
β	1.0		2.0			



◆ Size, Max Ripple Current And Impedance

Voltage (V)	Cap. (μF)	Size ΦD×L (mm)	tan δ	Z (Ω, 25°C, 100KHz)	I _R (mArms, 105°C, 100KHz)
6.3	100	5×11	0.16	0.72	254
	220	6.3×11	0.16	0.32	428
	330	6.3×11	0.16	0.24	525
	470	8×12	0.16	0.17	607
	680	8×12	0.16	0.14	689
	1000	8×16	0.16	0.10	947
	1000	10×12	0.16	0.10	950
	1500	10×16	0.16	0.06	1315
	2200	10×20	0.18	0.038	1444
	3300	13×20	0.20	0.032	1954
	4700	13×25	0.22	0.032	2461
	10	100	5×11	0.14	0.72
220		6.3×11	0.14	0.32	454
330		8×12	0.14	0.24	642
470		8×12	0.14	0.17	589
680		8×16	0.14	0.13	804
680		10×12	0.14	0.13	806
1000		8×20	0.14	0.10	1077
1000		10×16	0.14	0.10	1105
1500		10×20	0.14	0.06	1492
2200		13×20	0.16	0.038	1764
3300		13×25	0.18	0.032	2259
4700		16×25	0.20	0.032	2889
16	47	5×11	0.12	0.72	197
	100	6.3×11	0.12	0.40	327
	220	8×12	0.12	0.25	624
	330	8×12	0.12	0.18	707
	470	10×12	0.12	0.10	874
	680	8×20	0.12	0.08	916
	680	10×16	0.12	0.08	939
	1000	10×20	0.12	0.06	1342
	1500	13×20	0.12	0.05	1906
	2200	13×25	0.14	0.038	2062
	3300	16×25	0.16	0.032	2677
	4700	16×30	0.18	0.032	3281
25	47	5×11	0.10	0.72	213
	100	6.3×11	0.10	0.38	387
	220	8×12	0.10	0.23	683
	330	10×12	0.10	0.12	869
	470	10×16	0.10	0.09	987
	680	10×20	0.10	0.07	1196
	1000	13×20	0.10	0.05	1681
	1500	13×25	0.10	0.038	2269
	2200	16×25	0.12	0.032	2478
	3300	16×30	0.14	0.032	2982

Voltage (V)	Cap. (μF)	Size ΦD×L (mm)	tan δ	Z (Ω, 25°C, 100KHz)	I _R (mArms, 105°C, 100KHz)	
35	22	5×11	0.10	0.72	146	
	33	5×11	0.10	0.45	179	
	47	6.3×11	0.10	0.32	266	
	100	8×12	0.10	0.25	421	
	220	10×12	0.10	0.12	777	
	330	10×16	0.10	0.06	1076	
	470	10×20	0.10	0.045	1089	
	680	13×20	0.10	0.04	1386	
	1000	13×20	0.10	0.032	1681	
	1000	13×25	0.10	0.032	1852	
	1500	16×25	0.10	0.032	2361	
	2200	16×25	0.12	0.032	2478	
	50	4.7	5×11	0.08	1.5	74
		10	5×11	0.08	1.5	120
22		5×11	0.08	0.72	179	
33		6.3×11	0.08	0.45	249	
47		6.3×11	0.08	0.32	266	
100		10×12	0.08	0.25	524	
220		10×16	0.08	0.12	982	
330		13×20	0.08	0.06	1375	
470		13×20	0.08	0.04	1262	
680		13×25	0.08	0.04	1673	
1000		16×25	0.08	0.03	2550	
1500		16×35	0.08	0.03	3240	
2200		18×35	0.10	0.03	3313	
63		4.7	5×11	0.08	1.5	74
	10	5×11	0.08	0.9	108	
	22	6.3×11	0.08	0.65	182	
	33	8×12	0.08	0.45	265	
	47	8×16	0.08	0.32	358	
	68	10×12	0.08	0.32	432	
	100	10×16	0.08	0.25	592	
	220	10×20	0.08	0.12	969	
	330	13×20	0.08	0.09	1375	
	470	13×25	0.08	0.065	1391	
	680	16×25	0.08	0.05	1881	
	1000	16×30	0.08	0.045	2470	
	1500	18×35	0.08	0.040	3458	
	2200	18×40	0.10	0.040	3517	
80	100	10×16	0.08	0.32	592	
	220	10×25	0.08	0.12	1071	
	330	13×20	0.08	0.09	1375	
	470	13×25	0.08	0.065	1391	
	680	16×25	0.08	0.045	1881	
	1000	16×35	0.08	0.045	2645	



◆ Size, Max Ripple Current And Impedance

Voltage (V)	Cap. (μF)	Size ΦD×L (mm)	tan δ	Z (Ω, 25°C, 100KHz)	I _R (mArms, 105°C, 100KHz)
100	4.7	5×11	0.08	1.2	74
	10	6.3×11	0.08	0.9	123
	22	8×12	0.08	0.72	216
	33	10×12	0.08	0.65	301
	47	10×16	0.08	0.5	406
	68	10×16	0.08	0.45	488
	100	10×20	0.08	0.32	653
	220	13×25	0.08	0.12	1237
	330	16×25	0.08	0.09	1703
	470	16×30	0.08	0.065	1693
	680	18×35	0.08	0.045	2328
	680	18×40	0.08	0.045	2471
	1000	18×40	0.08	0.045	2997
160	1	5×11	0.12	20	36
	2.2	6.3×11	0.12	15	74
	3.3	6.3×11	0.12	12	79
	4.7	8×12	0.12	7	100
	6.8	10×12	0.12	5	137
	10	10×12	0.12	3	185
	22	10×20	0.12	1.5	306
	33	13×20	0.12	1.2	435
	47	13×20	0.12	1.0	519
	68	13×25	0.12	0.8	688
	100	16×25	0.12	0.6	938
	220	18×35	0.12	0.3	1722
	200	1	5×11	0.12	20
2.2		6.3×11	0.12	15	64
3.3		6.3×11	0.12	9	70
4.7		8×12	0.12	6.5	100
6.8		10×12	0.12	5.0	137
10		10×12	0.12	3.2	166
22		10×20	0.12	1.5	306
33		13×20	0.12	1.0	435
47		13×25	0.12	0.7	572
68		13×25	0.12	0.7	688
100		16×30	0.12	0.5	1015
220		18×40	0.12	0.3	1827

Voltage (V)	Cap. (μF)	Size ΦD×L (mm)	tan δ	Z (Ω, 25°C, 100KHz)	I _R (mArms, 105°C, 100KHz)	
250	1	6.3×11	0.12	15	43	
	2.2	8×12	0.12	12	76	
	3.3	8×12	0.12	7	94	
	4.7	10×12	0.12	4	127	
	6.8	10×12	0.12	2.8	153	
	10	10×16	0.12	2.2	209	
	22	13×20	0.12	1.2	397	
	33	13×25	0.12	0.8	536	
	47	16×25	0.12	0.6	719	
	68	16×25	0.12	0.5	865	
	100	16×35	0.12	0.4	1216	
	400	1	6.3×11	0.12	40	41
		2.2	8×12	0.12	18	72
3.3		10×12	0.12	15	100	
4.7		10×16	0.12	10	135	
6.8		10×16	0.12	8	163	
10		10×20	0.12	6	218	
22		13×25	0.12	3	412	
33		16×25	0.12	1.8	568	
47		16×30	0.12	1.1	734	
68		16×35	0.12	0.8	844	
82		18×30	0.12	0.8	1035	
100		18×35	0.12	0.6	1224	
120		18×40	0.12	0.5	1423	
450	1	6.3×11	0.12	40	41	
	2.2	8×12	0.12	18	72	
	3.3	10×12	0.12	15	100	
	4.7	10×12	0.12	10	120	
	6.8	10×16	0.12	8	163	
	10	10×20	0.12	6	218	
	10	13×20	0.12	6	252	
	22	13×25	0.12	3	412	
	33	16×25	0.12	1.8	568	
	47	16×30	0.12	1.1	734	
	68	18×30	0.12	0.8	943	
	82	18×35	0.12	0.8	1108	
	100	18×40	0.12	0.6	1299	

◆ Ripple Current Multiplier

Frequency Coefficient

Frequency (Hz)	50/60	100/120	1K	10K	100K
4.7~330μF	0.35	0.5	0.75	0.85	1.0
470~1500μF	0.45	0.65	0.85	0.9	1.0
2200~4700μF	0.53	0.75	0.9	0.95	1.0