

GF 系列 Series

特点 Features

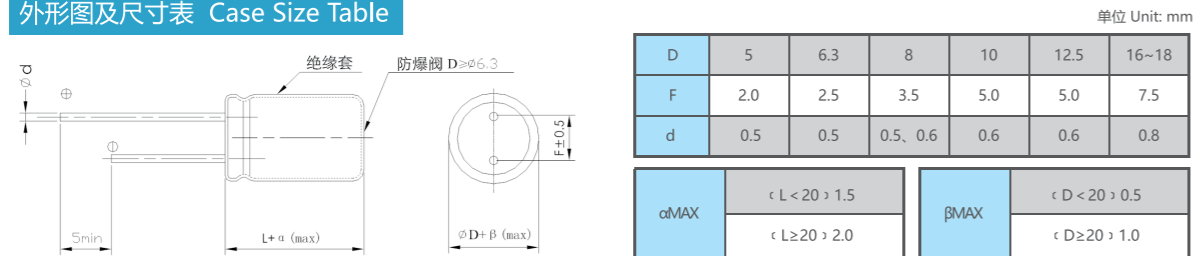
- 高频率, 低阻抗, 寿命2000~4000小时, 105°C。
Low ESR at high frequency, Life time:2000~4000 hours at 105°C.
- 适用于LED照明驱动电源, 电脑主板、开关电源、高保真音响, 高分辨数码彩电等电子线路中。
Used in LED Lighting, main board, switching power supply, hi-fi acoustics, numeral color-TV circuits etc.
- RoHS指令已对应完毕。Adapted to the RoHS directive.



主要技术性能 Specifications

项目 Items	特性 Performance Characteristics																																					
使用温度范围 Operating Temperature Range	-40~+105°C	-25~+105°C																																				
额定电压范围 Rated Voltage Range	6.3~100V	160~450V																																				
标称电容量范围 Nominal Capacitance Range	1~18000μF																																					
标称电容量允许偏差 Capacitance Tolerance	±20% (120Hz, +20°C)																																					
漏电流 Leakage Current	≤0.01CV (μA)或3μA 2分钟 取较大者 (at 20°C, after 2 minutes) (Whichever is greater)	CV≤1000: I=0.01CV+40(μA) max CV > 1000: I=0.04CV+100(μA) max 20°C 1分钟额定电压下的漏电流 After 1 minute application of rated voltage at 20°C																																				
损耗角正切值 (tgδ) Dissipation Factor (+20°C, 120Hz)	<table border="1"> <tr> <th>U_r (V)</th> <td>6.3</td><td>10</td><td>16</td><td>25</td><td>35</td><td>50</td><td>63</td><td>100</td><td>160~250</td><td>400~450</td> </tr> <tr> <th>tgδ</th> <td>0.22</td><td>0.19</td><td>0.16</td><td>0.14</td><td>0.12</td><td>0.10</td><td>0.09</td><td>0.08</td><td>0.20</td><td>0.24</td> </tr> </table> <p>容量大于1000μF者, 每增加1000μF, 其损耗角正切值增加0.02 When nominal capacitance exceeds 1000μF, add 0.02 to the value above for each 1000μF increase.</p>		U _r (V)	6.3	10	16	25	35	50	63	100	160~250	400~450	tgδ	0.22	0.19	0.16	0.14	0.12	0.10	0.09	0.08	0.20	0.24														
U _r (V)	6.3	10	16	25	35	50	63	100	160~250	400~450																												
tgδ	0.22	0.19	0.16	0.14	0.12	0.10	0.09	0.08	0.20	0.24																												
温度特性 Temperature Characteristics (Impedance ratio at 120Hz)	<table border="1"> <tr> <th>U_r (V)</th> <td>6.3</td><td>10</td><td>16</td><td>25</td><td>35</td><td>50</td><td>63</td><td>100</td><td>160~250</td><td>400</td><td>450</td> </tr> <tr> <th>Z-25°C / Z+20°C</th> <td>4</td><td>3</td><td>2</td><td>2</td><td>2</td><td>2</td><td>2</td><td>2</td><td>3</td><td>5</td><td>6</td> </tr> <tr> <th>Z-40°C / Z+20°C</th> <td>8</td><td>6</td><td>6</td><td>4</td><td>3</td><td>3</td><td>3</td><td>3</td><td></td><td></td><td></td> </tr> </table>		U _r (V)	6.3	10	16	25	35	50	63	100	160~250	400	450	Z-25°C / Z+20°C	4	3	2	2	2	2	2	2	3	5	6	Z-40°C / Z+20°C	8	6	6	4	3	3	3	3			
U _r (V)	6.3	10	16	25	35	50	63	100	160~250	400	450																											
Z-25°C / Z+20°C	4	3	2	2	2	2	2	2	3	5	6																											
Z-40°C / Z+20°C	8	6	6	4	3	3	3	3																														
耐久性 Load Life	<p>试验条件 Test conditions 持续时间 Duration:</p> <table border="1"> <tr> <th>ΦD</th> <td>5~6.3</td><td>8~10</td><td>12.5~</td> </tr> <tr> <th>Load life</th> <td>2000h</td><td>3000h</td><td>4000h</td> </tr> </table> <p>+105°C加额定电压, 恢复16小时后: After applying rated voltage at +105°C and then resumed for 16 hours: 电容量变化率 Capacitance change: ±20%初始测量值以内 ±20% of the initial measured value 漏电流 Leakage current: ≤初始规定值 ≤The initial specified value 损耗角正切值 Dissipation factor: ≤2倍初始规定值 ≤2times of the initial specified value</p>		ΦD	5~6.3	8~10	12.5~	Load life	2000h	3000h	4000h																												
ΦD	5~6.3	8~10	12.5~																																			
Load life	2000h	3000h	4000h																																			
高温贮存 Shelf Life	<p>+105°C, 1000小时贮存后, 恢复16小时后: After storage for 1000 hours at +105°C and then resumed for 16 hours: 电容量变化率 Capacitance change: ±20%初始测量值以内 ±20% of the initial measured value 漏电流 Leakage current: ≤2倍初始规定值 ≤2times of the initial specified value 损耗角正切值 Dissipation factor: ≤2倍初始规定值 ≤2times of the initial specified value</p>																																					

外形图及尺寸表 Case Size Table



频率修正系数 Frequency Coefficient

Freq.(Hz)	120	1K	10K	100K
~180	0.40	0.75	0.90	1.00
220~560	0.50	0.85	0.94	1.00
680~1800	0.60	0.87	0.95	1.00
2200~3900	0.75	0.90	0.95	1.00
4700~18000	0.85	0.95	0.98	1.00

尺寸 Dimensions

CAP(μF)	WV	6.3V(0J)			10V(1A)			16V(1C)			25V(1E)		
		Size	ESR	Ripple	Size	ESR	Ripple	Size	ESR	Ripple	Size	ESR	Ripple
2.2	2R2										5×11	1.500	80
4.7	4R7										5×11	1.200	90
10	100							5×11	1.300	90	5×11	1.200	95
22	220							5×11	0.650	120	5×11	1.100	125
47	470							5×11	0.450	130			
82	820										6.3×11	0.200	345
100	101	5×11	0.300	220	5×11	0.280	280	5×11	0.260	200	6.3×11	0.190	350
120	121							6.3×11	0.230	345	6.3×11	0.225	350
150	151							6.3×11	0.220	355	8×11.5	0.117	645
180	181							6.3×11	0.198	345	6.3×11	0.220	355
220	221							6.3×11	0.190	350	6.3×11	0.198	355
270	271							6.3×11	0.180	355	6.3×11	0.220	365
330	331							8×11.5	0.117	645	8×11.5	0.117	645
390	391							8×11.5	0.110	655	8×11.5	0.117	655
470	471							6.3×11	0.170	380	6.3×11	0.105	385
560	561							8×11.5	0.110	675	8×11.5	0.090	665
680	681							8×11.5	0.100	695	8×11.5	0.090	685
820	821							10×12.5	0.072	870	10×12.5	0.072	870
1000	102							8×11.5	0.100	720	8×16	0.078	845
1200	122							10×12.5	0.072	885	10×12.5	0.070	895
1500	152							8×14	0.078	845	10×16	0.030	1300
1800	182							10×16	0.054	1225	10×20	0.041	1450
2200	222							10×20	0.046	1400	10×20	0.041	1500
2700	272							12.5×20	0.032	1906	12.5×20	0.035	1955
3300	332							10×20	0.048	1650	10×25	0.035	2125
3900	392							12.5×20	0.032	1905	16×20	0.032	2320
4700	472							12.5×25	0.027	2130	12.5×25	0.027	2175
5600	562							16×20	0.032	2215	18×20	0.022	2780
6800	682							12.5×30	0.023	2530	16×25	0.025	2560
8200	822							16×20	0.032	2260	18×20	0.031	2505
10000	103							12.5×40	0.017	2650	16×30	0.020	3035
12000	123							16×25	0.025	2560	18×25	0.022	2780
15000	153							18×20	0.031	2505			
18000	183							16×30	0.020	3035	16×35	0.018	3130
								18×20	0.031	2505	18×30	0.025	2555
								16×30	0.020	3035	18×30	0.018	3610
								18×25	0.022	2780	18×35	0.017	3690
								16×40	0.015	3895	18×40	0.014	3790
								18×30	0.018	3610			
								18×35	0.017	3710			
								18×40	0.014	3790			

Size φD×L(mm)
Maximum Allowable Ripple Current (mA rms) at 105°C 100KHz
Maximum ESR (Ω) at 20°C 100KHz

尺寸 Dimensions

CAP(μF)	WV	35V(1V)			50V(1H)			63V(1J)			100V(2A)		
		Size	ESR	Ripple	Size	ESR	Ripple	Size	ESR	Ripple	Size	ESR	Ripple
1	010				5×11	2.900	80						
2.2	2R2	5×11	1.800	85	5×11	2.500	90						
3.3	3R3				5×11	2.000	100						
4.7	4R7	5×11	0.850	120	5×11	1.700	105				5×11	1.800	105
10	100				5×11	1.700	115						
15	150										6.3×11	0.864	300
22	220	5×11	0.650	180	5×11	1.200	160	6.3×11	0.960	260	8×11.5	0.750	370
27	270				6.3×11	0.360	220						
33	330	6.3×11	0.370	240	6.3×11	0.270	300	6.3×11	0.950	275	8×11.5	0.454	375
39	390				6.3×11	0.265	310	6.3×11	0.860	300	8×11.5	0.454	385
47	470				8×11.5	0.260	510				8×16	0.324	460
47	470	6.3×11	0.360	345	6.3×11	0.250	320	8×11.5	0.435	480	10×12.5	0.344	500
56	560	6.3×11	0.350	355	8×11.5	0.160	560	8×11.5	0.430	520	8×20	0.238	610
68	680	6.3×11	0.340	365	8×11.5	0.153	575	8×11.5	0.420	550	10×16	0.223	700
82	820	8×11.5	0.250	645	8×11.5	0.153	585	10×12.5	0.344	680	10×20	0.151	765
100	101				8×11.5	0.220	655	8×11.5	0.153	720	8×16	0.300	780
100	101							10×12.5	0.112	753	10×12.5	0.330	790
100	101							12.5×12.5	0.135	970			
120	121	8×11.5	0.200	665	8×16	0.108	735	10×16	0.248	850	12.5×20	0.115	1050
120	121				10×12.5	0.108	765						
150	151	8×11.5	0.180	675	10×16	0.076	1055	8×20	0.238	1050	12.5×25	0.090	1180
180	181	8×11.5	0.160	685	8×20	0.082	915	10×20	0.151	1190	12.5×25	0.098	1210
180	181	10×12.5	0.150	865	10×16	0.076	1100	12.5×15	0.166	1180	18×16	0.086	1200
220	221	8×11.5	0.102	695	10×16	0.072	1150	10×20	0.151	1400	12.5×25	0.096	1700
220	221	10×12.5	0.072	885	10×12.5	0.085	950	12.5×20	0.135	1550	16×20	0.066	1750
270	271	10×16	0.060	1210	10×25	0.055	1440	12.5×20	0.128	1590	12.5×35	0.059	1960
270	271										16×25	0.052	1940
330	331	8×20	0.069	1050	10×20	0.043	1270	10×25	0.108	1570	12.5×30	0.051	2050
330	331	10×12.5	0.065	905	12.5×20	0.041	1665	12.5×20	0.115	1650	16×25	0.058	2150
390	391	10×16	0.060	1255	12.5×20	0.041	1695	12.5×25	0.090	1780	16×30	0.039	2310
390	391	10×20	0.050	1405							18×25	0.041	2280
470	471	10×16	0.048	1400	10×20	0.055	1350	12.5×20	0.075	1720	16×35	0.032	2900
470	471	12.5×12.5	0.048	1450	12.5×25	0.031	1955	12.5×25	0.072	2000	18×30	0.034	2900
560	561	10×20	0.045	1565	12.5×25	0.031	2015	16×25	0.052	2350	18×40	0.029	3300
680	681	10×20	0.046	1685	12.5×30	0.027	2320	12.5×35	0.059	2720	18×35	0.029	3150
680	681	12.5×20	0.043	1905	16×20	0.031	2220	16×25	0.052	2700			
820	821	10×25	0.042	1650	12.5×35	0.023	2520	12.5×40	0.051	2760	18×40	0.026	3460
820	821	12.5×20	0.042	1965	18×20	0.032	2500	16×30	0.039	2760			
1000	102	12.5×20	0.041	2015	12.5×35	0.019	2555	16×30	0.039	2785	18×40	0.026	3490
1000	102	12.5×25	0.035	2230	12.5×25	0.032	2250	16×35	0.032	2950			
1200	122	12.5×30	0.023	2530	16×30	0.020	3020	16×40	0.029	3450			
1200	122	16×20	0.032	2220	18×25	0.023	2750	18×30	0.034	3480			
1500	152	12.5×35	0.020	2750	16×35	0.017	3160	18×35	0.029	3750			
1500	152	16×25	0.025	2560									
1800	182	12.5×40	0.017	3200	16×40	0.017	3600	18×40	0.026	3880			
1800	182	16×25	0.025	2590	18×30	0.019	3500						
2200	222	16×25	0.028	2630	18×30	0.019	3550						
2200	222	18×25	0.022	2780	18×35	0.016	3690						
2700	272	16×35	0.018	3130	18×40	0.014	3810						
2700	272	18×30	0.018	3610									
3300	332	18×35	0.017	3695									
3900	392	18×40	0.014	3790									

Size φD×L(mm)
Maximum Allowable Ripple Current (mA rms) at 105°C 100KHz
Maximum ESR (Ω) at 20°C 100KHz

尺寸 Dimensions

CAP(μF)	WV	160V(2C)			200V(2D)			250V(2E)			400(2G)		
		Size	ESR	Ripple	Size	ESR	Ripple	Size	ESR	Ripple	Size	ESR	Ripple
1	010	6.3×11	18.8	50	6.3×11	18.2	50	6.3×11	18.7	50	6.3×11	19.8	50
2.2	2R2	6.3×11	12.5	74	6.3×11	12.4	74	6.3×11	12.6	74	6.3×11	17.6	74
3.3	3R3	6.3×11	10.3	91	6.3×11	10.2	91	6.3×11	10.2	91	8×11.5	13.2	106
4.7	4R7	6.3×11	8.84	109	8×11.5	8.28	127	8×11.5	8.28	127	8×11.5	8.80	127
5.6	5R6	8×11.5	6.96	138	8×11.5	7.80	138	8×11.5	7.80	138	8×16	8.25	160
6.8	6R8	8×11.5	7.50	153	8×16	7.20	176	8×16	7.20	176	10×16	7.70	189
10	100	8×11.5	8.04	185	8×16	5.10	214	8×16	5.16	214	10×16	5.50	229
22	220	10×16	2.28	339	10×16	2.34	339	10×20	2.40	374	12.5×20	2.59	407
33	330	10×16	1.68	416	10×20	1.80	458	12.5×20	1.80	498	12.5×25	1.87	549
47	470	10×20	1.18	547	12.5×20	1.20	595	12.5×25	1.20	656	16×25	1.38	753
56	560	12.5×20	1.02	649	12.5×20	1.08	649	12.5×25	1.08	716	16×30	1.10	890
68	680	12.5×25	0.84	789	12.5×25	0.90	789	16×25	0.86	906	16×30	0.94	981
100	101	16×25	0.66	1099	16×25	0.72	1099	16×30	0.72	1190	18×35	0.74	1330
120	121	16×20	0.60	1095	16×25	0.65	1204	16×30	0.65	1303	18×40	0.61	1547
150	151	16×25	0.48	1346	16×30	0.54	1457	16×35	0.58	1561	18×45	0.55	1824
180	181	16×30	0.39	1451	16×35	0.42	1554	18×35	0.42	1623			
220	221	16×35	0.34	1512	18×35	0.36	1579	18×40	0.36	1675			
330	331	18×35	0.22	1933	18×40	0.24	2052						

CAP(μF)	WV	420V(2M)			450V(2W)		
		Size	ESR	Ripple	Size	ESR	Ripple
1	010	6.3×11	19.00	47	6.3×11	19.00	45
2.2	2R2	8×11.5	16.50	82	8×11.5	16.50	78
3.3	3R3	8×11.5	12.50	100	8×16	12.50	110
4.7	4R7	8×16	8.50	138	10×16	8.50	140
5.6	5R6	10×16	7.50	161	10×16	7.50	153
6.8	6R8	10×16	6.50	178	10×20	6.50	186
10	100	10×20	5.30	238	10×20	5.30	226
22	220	12.5×25	2.50	423	12.5×25	2.80	401
33	330	16×25	1.80	595	16×25	1.80	565
47	470	16×30	1.25	769	16×30	1.25	730
56	560	16×35	1.05	899	16×35	1.05	853
68	680	18×30	0.90	967	18×35	0.90	981
100	101	18×40	0.70	1331	18×40	0.74	1263
120	121	18×45	0.60	1538	18×45	0.60	1459

Size φD×L(mm)
Maximum Allowable Ripple Current (mA rms) at 105°C 100KHz
Maximum ESR (Ω) at 20°C 100KHz

GK 系列 Series

特点 Features

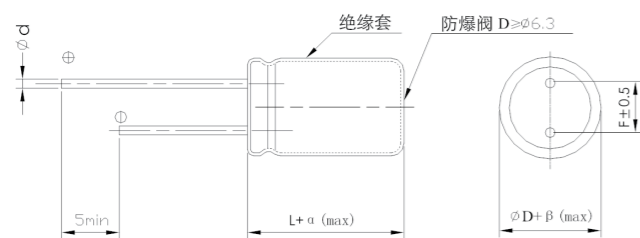
- 105°C 2000~5000小时寿命。
Load life of 2000~5000 hours at 105°C
- 高频率低阻抗、高纹波电流。
Enabled high ripple current by a reduction of impedance at high frequency range.
- 适用于电脑主机板的超低阻抗。
Lowest impedance for personal computer and storage equipment.
- RoHS指令已对应完毕。Adapted to the RoHS directive.



主要技术性能 Specifications

项目 Items	特性 Performance Characteristics																											
使用温度范围 Operating Temperature Range	-55~+105°C																											
额定电压范围 Rated Voltage Range	6.3~100V																											
标称容量范围 Nominal Capacitance Range	4.7~6800µF																											
标称容量允许偏差 Capacitance Tolerance	± 20% (120Hz, +20°C)																											
漏电流 Leakage Current	≤0.01CV (µA)或3µA 2分钟 取较大者 (at 20°C, after 2 minutes, Whichever is greater)																											
损耗角正切值 (tgδ) Dissipation Factor (+20°C, 120Hz)	<table border="1"> <thead> <tr> <th>U_r (V)</th> <th>6.3</th> <th>10</th> <th>16</th> <th>25</th> <th>35</th> <th>50</th> <th>63</th> <th>100</th> </tr> </thead> <tbody> <tr> <td>tgδ</td> <td>0.22</td> <td>0.19</td> <td>0.16</td> <td>0.14</td> <td>0.12</td> <td>0.10</td> <td>0.10</td> <td>0.10</td> </tr> </tbody> </table> <p>容量大于1000µF者, 每增加1000µF, 其损耗角正切值增加0.02 When nominal capacitance exceeds 1000µF, add 0.02 to the value above for each 1000µF increase.</p>	U _r (V)	6.3	10	16	25	35	50	63	100	tgδ	0.22	0.19	0.16	0.14	0.12	0.10	0.10	0.10									
U _r (V)	6.3	10	16	25	35	50	63	100																				
tgδ	0.22	0.19	0.16	0.14	0.12	0.10	0.10	0.10																				
温度特性 Temperature Characteristics (Impedance ratio at 120Hz)	<table border="1"> <thead> <tr> <th>U_r (V)</th> <th>6.3</th> <th>10</th> <th>16</th> <th>25</th> <th>35</th> <th>50</th> <th>63</th> <th>100</th> </tr> </thead> <tbody> <tr> <td>Z-25°C / Z+20°C</td> <td>4</td> <td>3</td> <td>2</td> <td>2</td> <td>2</td> <td>2</td> <td>2</td> <td>2</td> </tr> <tr> <td>Z-40°C / Z+20°C</td> <td>8</td> <td>6</td> <td>6</td> <td>4</td> <td>3</td> <td>3</td> <td>3</td> <td>3</td> </tr> </tbody> </table>	U _r (V)	6.3	10	16	25	35	50	63	100	Z-25°C / Z+20°C	4	3	2	2	2	2	2	2	Z-40°C / Z+20°C	8	6	6	4	3	3	3	3
U _r (V)	6.3	10	16	25	35	50	63	100																				
Z-25°C / Z+20°C	4	3	2	2	2	2	2	2																				
Z-40°C / Z+20°C	8	6	6	4	3	3	3	3																				
耐久性 Load Life	<p>持续时间 Duration:</p> <table border="1"> <thead> <tr> <th>φD</th> <th>5~6.3</th> <th>8</th> <th>10</th> <th>12.5~</th> </tr> </thead> <tbody> <tr> <td>Load life</td> <td>2000h</td> <td>3000h</td> <td>4000h</td> <td>5000h</td> </tr> </tbody> </table> <p>+105°C加额定电压, 恢复16小时后: After applying rated voltage at +105°C and then resumed for 16 hours: 容量变化率 Capacitance change : ±25%初始测量值以内 ±25% of the initial measured value 漏电流 Leakage current : ≤初始规定值 ≤The initial specified value 损耗角正切值 Dissipation factor : ≤2倍初始规定值 ≤2times of the initial specified value</p>	φD	5~6.3	8	10	12.5~	Load life	2000h	3000h	4000h	5000h																	
φD	5~6.3	8	10	12.5~																								
Load life	2000h	3000h	4000h	5000h																								
高温贮存 Shelf Life	<p>+105°C, 1000小时贮存后, 恢复16小时后: After storage for 1000 hours at +105°C and then resumed for 16 hours: 容量变化率 Capacitance change : ±25%初始测量值以内 ±25% of the initial measured value 漏电流 Leakage current : ≤2倍初始规定值 ≤2times of the initial specified value 损耗角正切值 Dissipation factor : ≤2倍初始规定值 ≤2times of the initial specified value</p>																											

外形图及尺寸表 Case Size Table



D	5	6.3	8	10	12.5	16
F	2.0	2.5	3.5	5.0	5.0	7.5
d	0.5	0.5	0.5、0.6	0.6	0.6	0.8

频率修正系数 Frequency Coefficient

Freq.(Hz)	120	1K	10K	100K
CAP(µF)				
~180	0.40	0.75	0.90	1.00
220~560	0.50	0.85	0.94	1.00
680~1800	0.60	0.87	0.95	1.00
2200~3900	0.75	0.90	0.95	1.00
4700~	0.85	0.95	0.98	1.00

αMAX	βMAX
αMAX	βMAX
αMAX	βMAX

尺寸 Dimensions

CAP(µF)	WV	6.3V(0J)			10V(1A)			16V(1C)			25V(1E)		
		Size	ESR	Ripple	Size	ESR	Ripple	Size	ESR	Ripple	Size	ESR	Ripple
100	101	5×11	0.28	220	6.3×11	0.13	405	6.3×11	0.13	405	6.3×11	0.13	410
120	121				6.3×11	0.13	405	6.3×11	0.13	420			
220	221	6.3×11	0.13	405	6.3×11	0.13	420	6.3×11	0.102	450	8×11.5	0.072	760
330	331	6.3×11	0.13	420	8×11.5	0.072	795	8×11.5	0.072	795	8×11.5	0.056	995
470	471	8×11.5	0.072	760	8×11.5	0.056	820				8×14	0.065	1040
560	561	8×11.5	0.072	795				8×20	0.041	1250	10×12.5	0.056	1160
680	681				8×20	0.041	1250	10×12.5	0.048	1160	10×16	0.032	1550
820	821	8×16	0.056	995	10×16	0.038	1430				10×20	0.030	1890
1000	102	10×12.5	0.053	1030				8×16	0.035	1400	10×20	0.028	2000
					10×20	0.030	1820	10×12.5	0.048	1430	12.5×12.5	0.032	1550
1200	122	8×20	0.041	1250	10×20	0.027	1950	10×20	0.027	1900			
		10×16	0.038	1430	12.5×20	0.025	2150						
1500	152	10×20	0.023	1820				12.5×20	0.025	2100	12.5×20	0.024	2400
2200	222	10×25	0.022	1980	12.5×25	0.018	2770	12.5×25	0.023	2850	12.5×25	0.020	2650
2700	272				12.5×30	0.016	2850	12.5×35	0.015	3150	16×25	0.016	3000
3300	332	12.5×20	0.021	2080	12.5×35	0.015	3150						
3900	392	12.5×25	0.018	2470	16×25	0.016	3018						
4700	472	12.5×30	0.016	2850							16×30	0.016	3260
5600	562	12.5×35	0.016	3150									
		16×20	0.015	3150									
6800	682	16×25	0.014	3250									

CAP(µF)	WV	35V(1V)			50V(1H)			63V(1J)			100V(2A)		
		Size	ESR	Ripple	Size	ESR	Ripple	Size	ESR	Ripple	Size	ESR	Ripple
4.7	4R7										5×11	1.60	105
5.6	5R6										5×11	1.49	116
6.8	6R8										5×11	1.45	120
10	100										6.3×11	1.00	150
22	220							6.3×11	0.50	250	8×11.5	0.80	370
33	330							6.3×11	0.32	270	8×11.5	0.70	380
47	470	5×11	0.55	200	6.3×11	0.24	320	8×11.5	0.22	480	10×9	0.35	410
56	560	6.3×11	0.25	350							10×12.5	0.21	550
68	680							8×11.5	0.20	550	10×16	0.18	630
82	820										10×16	0.15	700
100	101	6.3×11	0.15	400	8×11.5	0.15	610	10×12.5	0.14	720	10×20	0.09	970
220	221	8×16	0.065	980	10×12.5	0.065	1000	10×25	0.075	1315	12.5×20	0.065	1500
		10×12.5	0.060	1050	12.5×12.5	0.050	1450	10×20	0.080	1180			
270	271							12.5×20	0.060	1560			
330	331	8×20	0.041	1210	10×20	0.05	1500	10×30	0.047	1750	16×25	0.045	2150
		10×12.5	0.045	1160									
470	471	10×16	0.045	1500	12.5×20	0.035	1900	12.5×25	0.038	2000	16×30	0.030	2350
		12.5×12.5	0.045	1450	10×20	0.055	1650	16×20	0.038	2300			
680	681	12.5×20	0.035	2150									
820	821				16×20	0.034	2100						
1000	102	12.5×20	0.032	2180	16×25	0.025	2700	16×30	0.028	2850			
1200	122	12.5×25	0.028	2300									
1500	152	16×25	0.026	2700									

Size φD×L(mm)
Maximum Allowable Ripple Current (mA rms) at 105°C 100KHz
Maximum ESR (Ω) at 20°C 100KHz

GE 系列 Series

特点 Features

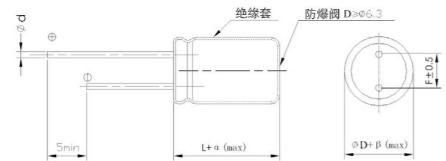
- 100KHZ 低阻抗, 105°C 2000小时。Low impedance at 100KHZ, Load life: 105°C 2000 hours.
- 在高频范围内降低ESR, 承受高频纹波电流, 适用于电脑主机板。
Enabled high ripple current by a reduction of ESR at high frequency range.
Suitable for motherboard.
- RoHS指令已对应完毕。Adapted to the RoHS directive.



主要技术性能 Specifications

项目 Items	特性 Performance Characteristics										
使用温度范围 Operating Temperature Range	-55+105°C										
额定电压范围 Rated Voltage Range	6.3~25V										
标称电容量范围 Nominal Capacitance Range	220~4700μF										
标称电容量允许偏差 Capacitance Tolerance	±20% (120Hz, +20°C)										
漏电流 Leakage Current	I ≤ 0.01CV (μA) 2分钟(at 20°C, after 2 minutes)										
损耗角正切值 (tgδ) Dissipation Factor (+20°C, 120Hz)	<table border="1"> <tr> <td>U_g (V)</td> <td>6.3</td> <td>10</td> <td>16</td> <td>25</td> </tr> <tr> <td>tgδ</td> <td>0.22</td> <td>0.19</td> <td>0.16</td> <td>0.14</td> </tr> </table> <p>容量大于1000μF者, 每增加1000μF, 其损耗角正切值增加0.02 When nominal capacitance exceeds 1000μF, add 0.02 to the value above for each 1000μF increase.</p>	U _g (V)	6.3	10	16	25	tgδ	0.22	0.19	0.16	0.14
U _g (V)	6.3	10	16	25							
tgδ	0.22	0.19	0.16	0.14							
温度特性 Temperature Characteristics (Impedance ratio at 120Hz)	<table border="1"> <tr> <td>U_g (V)</td> <td>6.3</td> <td>10</td> <td>16</td> <td>25</td> </tr> <tr> <td>Z-40°C / Z+20°C</td> <td>8</td> <td>6</td> <td>6</td> <td>4</td> </tr> </table>	U _g (V)	6.3	10	16	25	Z-40°C / Z+20°C	8	6	6	4
U _g (V)	6.3	10	16	25							
Z-40°C / Z+20°C	8	6	6	4							
耐久性 Load Life	+105°C加额定电压2000小时, 恢复16小时后: After applying rated voltage for 2000 hours at +105°C and then resumed for 16 hours: 电容量变化率 Capacitance change: ±25%初始测量值以内 ±25% of the initial measured value 漏电流 Leakage current: ≤初始规定值 ≤the initial specified value 损耗角正切值 Dissipation factor: ≤2倍初始规定值 ≤2times of the initial specified value										
高温贮存 Shelf Life	+105°C, 1000小时贮存后, 恢复16小时后: After storage for 1000 hours at +105°C and then resumed for 16 hours: 电容量变化率 Capacitance change: ±25%初始测量值以内 ±25% of the initial measured value 漏电流 Leakage current: ≤2倍初始规定值 ≤2times of the initial specified value 损耗角正切值 Dissipation factor: ≤2倍初始规定值 ≤2times of the initial specified value										

外形图及尺寸表 Case Size Table



单位 Unit: mm

D	5	6.3	8	10	12.5
F	2.0	2.5	3.5	5.0	5.0
d	0.5	0.5, 0.6	0.6		

αMAX	< L < 20 > 1.5
βMAX	< D < 20 > 0.5
	< L ≥ 20 > 2.0
	< D ≥ 20 > 1.0

频率修正系数 Frequency Coefficient

Freq.(Hz)	120	1K	10K	100K
CAP(μF)	0.50	0.80	0.90	1.00

尺寸 Dimensions

CAP(μF)	WV	6.3V(0J)			10V(1A)			16V(1C)			25V(1E)			
		Size	ESR	Ripple	Size	ESR	Ripple	Size	ESR	Ripple	Size	ESR	Ripple	
220	221						6.3×11	0.135	520	8×11.5	0.060	760		
270	271				8×11.5	0.085	780	6.3×11	0.115	540	8×11.5	0.060	780	
330	331				8×11.5	0.056	780	8×11.5	0.056	780	8×11.5	0.056	780	
470	471	6.3×11	0.095	420	8×11.5	0.046	820	8×11.5	0.052	1036	8×16	0.048	1050	
680	681	8×11.5	0.058	780	8×11.5	0.043	1036	8×16	0.040	1355	10×12.5	0.045	1072	
820	821	8×11.5	0.043	1036				10×12.5	0.038	1400	10×16	0.038	1200	
1000	102	8×11.5	0.036	1120	10×12.5	0.034	1355	8×20	0.025	1700	10×16	0.023	1818	
1200	122	8×16	0.034	1355										
		8×20	0.032	1700										
1500	152	8×20	0.026	1750	8×20	0.025	1700	10×20	0.022	2318				
		10×12.5	0.030	1400	10×16	0.028	1818							
1800	182	10×16	0.028	1818	10×20	0.025	2318	10×25	0.019	2410				
2200	222	10×20	0.025	2318	10×25	0.020	2400	12.5×20	0.018	2450				
3300	332	10×25	0.020	2545										
4700	472	10×30	0.018	2665										

Size: φD×L(mm)
Maximum Allowable Ripple Current (mA rms) at 105°C 100KHz
Maximum ESR (Ω) at 20°C 100KHz

GD 系列 Series

特点 Features

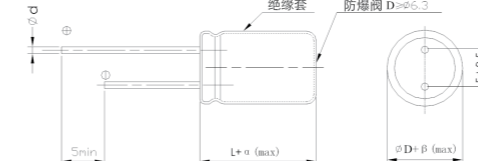
- 100KHZ 低阻抗, 105°C 2000~4000小时。
Low impedance at 100KHZ, Load life: 105°C 2000~4000 hours.
- 高频率低ESR、承受高频纹波电流。
Enabled high ripple current by a reduction of ESR at high frequency range.
- RoHS指令已对应完毕。Adapted to the RoHS directive.



主要技术性能 Specifications

项目 Items	特性 Performance Characteristics										
使用温度范围 Operating Temperature Range	-40~+105°C										
额定电压范围 Rated Voltage Range	6.3~25V										
标称电容量范围 Nominal Capacitance Range	100~3300μF										
标称电容量允许偏差 Capacitance Tolerance	±20% (120Hz, +20°C)										
漏电流 Leakage Current	I ≤ 0.01CV (μA) 2分钟(at 20°C, after 2 minutes)										
损耗角正切值 (tgδ) Dissipation Factor (+20°C, 120Hz)	<table border="1"> <tr> <td>U_g (V)</td> <td>6.3</td> <td>10</td> <td>16</td> <td>25</td> </tr> <tr> <td>tgδ</td> <td>0.18</td> <td>0.14</td> <td>0.12</td> <td>0.10</td> </tr> </table> <p>容量大于1000μF者, 每增加1000μF, 其损耗角正切值增加0.02 When nominal capacitance exceeds 1000μF, add 0.02 to the value above for each 1000μF increase.</p>	U _g (V)	6.3	10	16	25	tgδ	0.18	0.14	0.12	0.10
U _g (V)	6.3	10	16	25							
tgδ	0.18	0.14	0.12	0.10							
温度特性 Temperature Characteristics (Impedance ratio at 120Hz)	<table border="1"> <tr> <td>U_g (V)</td> <td>6.3</td> <td>10</td> <td>16</td> <td>25</td> </tr> <tr> <td>Z-40°C / Z+20°C</td> <td>8</td> <td>6</td> <td>6</td> <td>6</td> </tr> </table>	U _g (V)	6.3	10	16	25	Z-40°C / Z+20°C	8	6	6	6
U _g (V)	6.3	10	16	25							
Z-40°C / Z+20°C	8	6	6	6							
耐久性 Load Life	<table border="1"> <tr> <td>φD</td> <td>5</td> <td>6.3</td> <td>8</td> <td>≥10</td> </tr> <tr> <td>Load life</td> <td>2000h</td> <td>3000h</td> <td>4000h</td> <td></td> </tr> </table> <p>105°C, 按上表时间加额定电压, 恢复16小时后: At 105°C, for the time above, after applying rated voltage and then resumed for 16 hours: 电容量变化率 Capacitance change: ±25%初始测量值以内 ±25% of the initial measured value 漏电流 Leakage current: ≤初始规定值 ≤The initial specified value 损耗角正切值 Dissipation factor: ≤2倍初始规定值 ≤2times of the initial specified value</p>	φD	5	6.3	8	≥10	Load life	2000h	3000h	4000h	
φD	5	6.3	8	≥10							
Load life	2000h	3000h	4000h								
高温贮存 Shelf Life	+105°C, 1000小时贮存后, 恢复16小时后: After storage for 1000 hours at +105°C and then resumed for 16 hours: 电容量变化率 Capacitance change: ±25%初始测量值以内 ±25% of the initial measured value 漏电流 Leakage current: ≤2倍初始规定值 ≤2times of the initial specified value 损耗角正切值 Dissipation factor: ≤2倍初始规定值 ≤2times of the initial specified value										

外形图及尺寸表 Case Size Table



单位 Unit: mm

D	5	6.3	8	10	12.5	16
F	2.0	2.5	3.5	5.0	5.0	7.5
d	0.5	0.5, 0.6	0.6	0.8		

αMAX	< L < 20 > 1.5
βMAX	< D < 20 > 0.5
	< L ≥ 20 > 2.0
	< D ≥ 20 > 1.0

频率修正系数 Frequency Coefficient

Freq.(Hz)	120	1K	10K	100K
CAP(μF)	0.50	0.80	0.90	1.00

尺寸 Dimensions

CAP(μF)	WV	6.3V(0J)			10V(1A)			16V(1C)			25V(1E)					
		Size	ESR	Ripple	Size	ESR	Ripple	Size	ESR	Ripple	Size	ESR	Ripple			
100	101	5×11	0.245	240	5×11	0.300	250	6.3×11	0.065	410	6.3×11	0.055	420	6.3×11	0.085	600
220	221				6.3×11	0.065	410	6.3×11	0.055	420	8×11.5	0.052	820	8×11.5	0.034	1050
330	331				8×11.5	0.038	950	8×11.5	0.036	1140	10×12.5	0.026	1450	10×12.5	0.026	1450
470	471				8×20	0.023	1650									
560	561	8×11.5	0.038	1080	8×11.5	0.038	960									
680	681	8×11.5	0.038	1100	8×11.5	0.036	1080	8×16	0.028	1490	8×20	0.023	1700	8×20	0.023	1700
820	821	8×11.5	0.036	1140	8×16	0.029	1450	10×12.5	0.026	1540	10×16	0.022	1750	10×16	0.022	1750
1000	102	8×16	0.036	1200	8×16	0.028	1490	8×20	0.022	1870	10×20	0.018	2180	10×20	0.018	2180
		10×12.5	0.027	1500	10×12.5	0.026	1540	10×16	0.020	1910						
1200	122	8×16	0.028	1490	8×20	0.023	1850	10×20	0.017	2540						
		10×12.5	0.027	1520												
1500	152	8×20	0.020	1870	8×20	0.023	1900	10×20	0.018	2650	12.5×20	0.016	2480			
		10×12.5	0.022	1540	10×16	0.022	2000									
1800	182	10×16	0.019	1850	10×20	0.020	2450	10×25	0.015	2800						
2200	222	8×20	0.018	1870	10×20	0.018	2500									
		10×16	0.018	1910	10×25	0.016	2650									
2700	272							12.5×30	0.014	3000	16×30	0.015	2555			
3300	332	10×25	0.015	2800												

Size: φD×L(mm)
Maximum Allowable Ripple Current (mA rms) at 105°C 100KHz
Maximum ESR (Ω) at 20°C 100KHz

RS 系列 Series

特点 Features

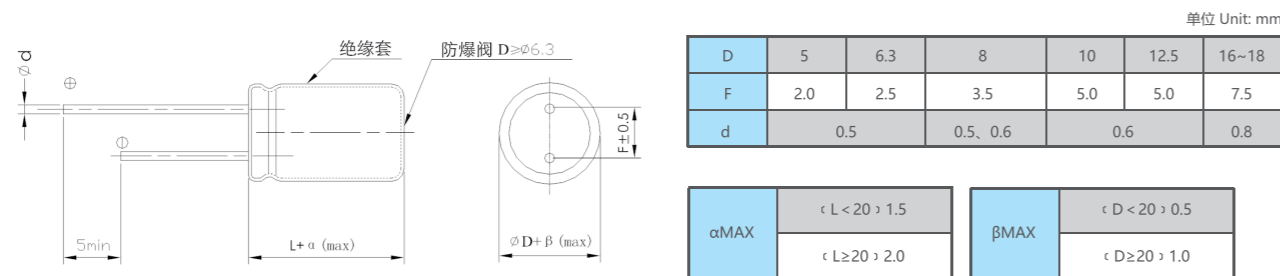
- 低阻抗, 105°C 长寿命
Long life 105°C and low impedance.
- 高纹波电流, 适用于通信设备, 开关式电源, 工业测量仪器。
Excellent ripple current capability. Used in communication equipments, switching power supply, industrial measuring.
- RoHS指令已对应完毕。
Adapted to the RoHS directive.



主要技术性能 Specifications

项目 Items	特性 Performance Characteristics																											
使用温度范围 Operating Temperature Range	-40~+105°C																											
额定电压范围 Rated Voltage Range	6.3~100V																											
标称容量范围 Nominal Capacitance Range	1~15000μF																											
标称容量允许偏差 Capacitance Tolerance	± 20% (120Hz, +20°C)																											
漏电流 Leakage Current	$I \leq 0.01CV$ (μA)或 $3\mu A$ 2分钟 取较大者 (at 20°C, after 2 minutes) (Whichever is greater)																											
损耗角正切值 (tgδ) Dissipation Factor (+20°C, 120Hz)	<table border="1"> <thead> <tr> <th>U_R (V)</th> <th>6.3</th> <th>10</th> <th>16</th> <th>25</th> <th>35</th> <th>50</th> <th>63</th> <th>100</th> </tr> </thead> <tbody> <tr> <td>tgδ</td> <td>0.22</td> <td>0.19</td> <td>0.16</td> <td>0.14</td> <td>0.12</td> <td>0.10</td> <td>0.09</td> <td>0.08</td> </tr> </tbody> </table> <p>容量大于1000μF者, 每增加1000μF, 其损耗角正切值增加0.02 When nominal capacitance exceeds 1000μF, add 0.02 to the value above for each 1000μF increase.</p>	U_R (V)	6.3	10	16	25	35	50	63	100	tgδ	0.22	0.19	0.16	0.14	0.12	0.10	0.09	0.08									
U_R (V)	6.3	10	16	25	35	50	63	100																				
tgδ	0.22	0.19	0.16	0.14	0.12	0.10	0.09	0.08																				
温度特性 Temperature Characteristics (Impedance ratio at 120Hz)	<table border="1"> <thead> <tr> <th>U_s (V)</th> <th>6.3</th> <th>10</th> <th>16</th> <th>25</th> <th>35</th> <th>50</th> <th>63</th> <th>100</th> </tr> </thead> <tbody> <tr> <td>Z-25°C / Z+20°C</td> <td>4</td> <td>3</td> <td>3</td> <td>3</td> <td>3</td> <td>3</td> <td>2</td> <td>2</td> </tr> <tr> <td>Z-40°C / Z+20°C</td> <td>8</td> <td>6</td> <td>4</td> <td>4</td> <td>3</td> <td>3</td> <td>3</td> <td>3</td> </tr> </tbody> </table>	U_s (V)	6.3	10	16	25	35	50	63	100	Z-25°C / Z+20°C	4	3	3	3	3	3	2	2	Z-40°C / Z+20°C	8	6	4	4	3	3	3	3
U_s (V)	6.3	10	16	25	35	50	63	100																				
Z-25°C / Z+20°C	4	3	3	3	3	3	2	2																				
Z-40°C / Z+20°C	8	6	4	4	3	3	3	3																				
耐久性 Load Life	<p>Duration:</p> <table border="1"> <thead> <tr> <th>ΦD</th> <th>5-6.3</th> <th>8</th> <th>10</th> <th>12.5~</th> </tr> </thead> <tbody> <tr> <td>Load life</td> <td>3000h</td> <td>4000h</td> <td>5000h</td> <td>7000h</td> </tr> </tbody> </table> <p>+105°C加额定电压, 恢复16小时后: After applying rated voltage at +105°C and then resumed for 16 hours 电容量变化率 Capacitance change : ±25%初始测量值以内 ±25% of the initial measured value 漏电流 Leakage current : ≤初始规定值 ≤The initial specified value 损耗角正切值 Dissipation factor : ≤2倍初始规定值 ≤2times of the initial specified value</p>	ΦD	5-6.3	8	10	12.5~	Load life	3000h	4000h	5000h	7000h																	
ΦD	5-6.3	8	10	12.5~																								
Load life	3000h	4000h	5000h	7000h																								
高温贮存 Shelf Life	<p>+105°C, 1000小时贮存后, 恢复16小时后: After storage for 1000 hours at +105°C and then resumed for 16 hours: 电容量变化率 Capacitance change : ±25%初始测量值以内 ±25% of the initial measured value 漏电流 Leakage current : ≤2倍初始规定值 ≤2times of the initial specified value 损耗角正切值 Dissipation factor : ≤2倍初始规定值 ≤2times of the initial specified value</p>																											

外形图及尺寸表 Case Size Table



频率修正系数 Frequency Coefficient

Freq.(Hz)	120	1K	10K	100K
CAP(μF)				
~180	0.40	0.75	0.90	1.00
220~560	0.50	0.85	0.94	1.00
680~1800	0.60	0.87	0.95	1.00
2200~3900	0.75	0.90	0.95	1.00
4700~18000	0.85	0.95	0.98	1.00

尺寸 Dimensions

CAP(μF)	WV	6.3V(0J)			10V(1A)			16V(1C)			25V(1E)		
		Size	ESR	Ripple	Size	ESR	Ripple	Size	ESR	Ripple	Size	ESR	Ripple
47	470							5×11	0.50	185	5×11	0.40	220
82	820										6.3×11	0.29	310
100	101	5×11	0.65	210				5×11	0.40	230	6.3×11	0.29	360
120	121							6.3×11	0.28	300	6.3×11	0.28	370
150	151				6.3×11	0.28	300	6.3×11	0.25	340	8×11.5	0.17	570
180	181				6.3×11	0.27	310	6.3×11	0.25	350	8×11.5	0.17	580
220	221	6.3×11	0.28	375	6.3×11	0.25	375	6.3×11	0.20	400	8×11.5	0.15	620
270	271	6.3×11	0.28	375	6.3×11	0.25	385	8×11.5	0.17	570	8×11.5	0.15	630
330	331	6.3×11	0.25	380	6.3×11	0.25	395	8×11.5	0.17	580	8×11.5	0.15	645
390	391	8×11.5	0.16	575	8×11.5	0.17	560	8×11.5	0.15	600	10×12.5	0.10	760
470	471	8×11.5	0.16	585	8×11.5	0.16	575	8×11.5	0.14	740	10×12.5	0.090	1020
560	561	8×11.5	0.16	595	8×11.5	0.15	590	8×11.5	0.14	750	8×20	0.080	1050
680	681	8×11.5	0.13	605	8×11.5	0.14	600	8×16	0.11	785	10×16	0.075	1150
820	821	8×11.5	0.12	670	8×16	0.12	730	8×20	0.08	1050	10×20	0.060	1350
1000	102	10×12.5	0.10	690	8×16	0.10	1020	10×16	0.065	1150	10×20	0.050	1580
1200	122	10×12.5	0.100	780	10×12.5	0.09	1050						
1500	152	8×16	0.095	850	8×20	0.085	1140	10×20	0.060	1500	12.5×20	0.040	1750
1800	182	10×16	0.078	1130	10×16	0.070	1250	10×20	0.060	1565	12.5×20	0.038	1785
2200	222	10×16	0.070	1150	10×20	0.060	1300	10×25	0.055	1700	12.5×25	0.035	1905
2700	272	10×20	0.060	1350	10×25	0.050	1650	12.5×20	0.046	1850			
3300	332	10×25	0.055	1450	12.5×20	0.040	1700	12.5×25	0.035	2300	16×30	0.027	3200
3900	392	12.5×20	0.046	1670	12.5×25	0.035	1900	12.5×35	0.030	2500	18×25	0.025	3150
4700	472	12.5×25	0.034	1865	12.5×25	0.032	1980	16×25	0.027	2680	18×30	0.025	3300
5600	562	12.5×25	0.034	1900	16×25	0.030	2320	16×30	0.025	2850			
6800	682	12.5×30	0.030	2520	16×25	0.030	2385	16×30	0.024	2900			
8200	822	16×25	0.028	2790	16×30	0.028	2500	16×35	0.023	3000			
10000	103	16×30	0.026	2900	16×30	0.025	2700						
15000	153	18×35	0.025	3320									

Size φD×L(mm)
Maximum Allowable Ripple Current (mA rms) at 105°C 100KHz
Maximum ESR (Ω) at 20°C 100KHz

尺寸 Dimensions

CAP(μF)	WV	35V(1V)			50V(1H)			63V(1J)			100V(2A)		
		Size	ESR	Ripple	Size	ESR	Ripple	Size	ESR	Ripple	Size	ESR	Ripple
1	010				5×11	2.5	40						
4.7	4R7				5×11	2.3	80						
10	100				5×11	2.0	120				6.3×11	1.85	260
22	220	5×11	1.00	165	5×11	1.2	160	6.3×11	1.56	230	6.3×11	1.50	270
					6.3×11	1.0	190						
27	270										8×11.5	0.80	325
33	330	5×11	0.85	220	6.3×11	0.40	260	6.3×11	1.56	265	8×11.5	0.75	335
39	390				6.3×11	0.38	270	8×11.5	0.80	405	8×16	0.60	405
47	470	6.3×11	0.29	300	6.3×11	0.35	300	8×11.5	0.60	425	10×12.5	0.55	480
56	560	6.3×11	0.29	310	8×11.5	0.22	450	8×11.5	0.60	460	8×20	0.42	540
68	680	6.3×11	0.29	320	8×11.5	0.22	460	8×11.5	0.50	485	10×16	0.40	620
82	820	8×11.5	0.17	560	8×11.5	0.20	490	10×12.5	0.45	690	10×20	0.18	655
100	101	8×11.5	0.17	570	8×11.5	0.16	540	8×16	0.42	690	10×20	0.13	860
								10×12.5	0.42	700			
120	121	8×11.5	0.17	585	8×16	0.15	640	10×16	0.40	755	12.5×20	0.10	930
					10×12.5	0.14	660						
150	151	8×11.5	0.17	595	8×16	0.15	660	8×20	0.20	930			
					10×12.5	0.14	685						
180	181	8×16	0.12	730	8×20	0.11	800	10×20	0.10	1055	12.5×20	0.09	950
		10×12.5	0.10	760	10×16	0.10	920						
220	221	8×16	0.12	745	10×12.5	0.10	840	10×20	0.08	1240	12.5×20	0.08	1000
		10×12.5	0.10	775							12.5×25	0.07	1510
270	271	8×16	0.11	755	10×20	0.085	1155	12.5×20	0.07	1385			
		10×12.5	0.10	795									
330	331	8×20	0.09	1140	10×20	0.085	1210	12.5×20	0.06	1465	16×25	0.068	1910
		10×12.5	0.080	815	12.5×20	0.060	1460						
390	391	10×16	0.078	1180				12.5×20	0.06	1490	16×25	0.068	1955
470	471	10×16	0.065	1230	12.5×20	0.058	1520	12.5×25	0.05	1775	16×30	0.040	2400
		10×20	0.060	1300									
560	561	10×20	0.060	1350	12.5×20	0.058	1590	12.5×25	0.05	1900	16×35	0.035	2580
					12.5×25	0.050	1650						
680	681	10×25	0.058	1650	12.5×25	0.045	1780	12.5×30	0.040	2350	18×35	0.030	2800
		12.5×20	0.055	1680	10×30	0.043	1710	16×25	0.038	2400			
820	821	12.5×20	0.055	1710	12.5×30	0.042	1850	16×25	0.038	2455	18×40	0.028	3075
		12.5×20	0.050	1750	12.5×30	0.042	1900	16×30	0.035	2750			
1000	102	12.5×25	0.040	1870	16×25	0.040	2050						
		12.5×25	0.040	1920	16×30	0.030	2350						
1500	152	12.5×35	0.030	2500	16×30	0.030	2420						
		12.5×35	0.030	2565	16×35	0.025	2680						
1800	182	16×25	0.028	2480	18×30	0.025	2680						
		16×30	0.027	2790	18×35	0.022	2900						
2200	222	16×35	0.025	2900									
		18×25	0.026	2850									
2700	272	16×35	0.025	2900									
		18×30	0.023	3150									
3300	332	18×35	0.020	3400									

Size φD×L(mm)
Maximum Allowable Ripple Current (mA rms) at 105°C 100KHz
Maximum ESR (Ω) at 20°C 100KHz

RT 系列 Series

特点 Features

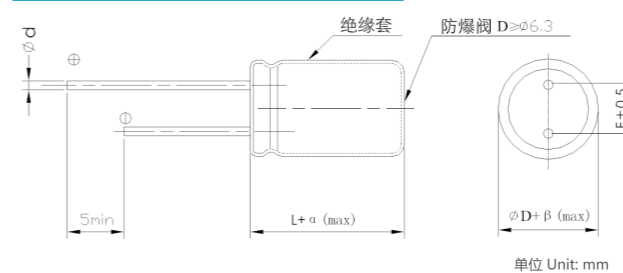
- 耐高纹波电流，高频超低阻抗。
High ripple current, Extremely Low impedance at high frequency.
- 105°C，4000~10000小时寿命。
High reliability withstanding 10000 hours load life at 105°C
(4000~10000 hours for smaller case size as specified below)
- 符合RoHS指令。
Complied to the RoHS directive.



主要技术性能 Specifications

项目 Items	特性 Performance Characteristics																		
使用温度范围 Operating Temperature Range	-40~+105°C																		
额定电压范围 Rated Voltage Range	6.3~100V																		
标称电容量范围 Nominal Capacitance Range	0.47~15000μF																		
标称电容量允许偏差 Capacitance Tolerance	± 20% (120Hz, +20°C)																		
漏电流 Leakage Current	I ≤ 0.01CV (μA) or 3μA, 取较大值 2分钟(at 20°C, after 2 minutes, whichever is greater)																		
损耗角正切值 (tgδ) Dissipation Factor (+20°C, 120Hz)	<table border="1"> <tr> <td>U_r (V)</td> <td>6.3</td> <td>10</td> <td>16</td> <td>25</td> <td>35</td> <td>50</td> <td>63</td> <td>100</td> </tr> <tr> <td>tgδ</td> <td>0.22</td> <td>0.19</td> <td>0.16</td> <td>0.14</td> <td>0.12</td> <td>0.10</td> <td>0.09</td> <td>0.08</td> </tr> </table> <p>容量大于1000μF者，每增加1000μF，其损耗角正切值增加0.02 When nominal capacitance exceeds 1000μF, add 0.02 to the value above for each 1000μF increase.</p>	U _r (V)	6.3	10	16	25	35	50	63	100	tgδ	0.22	0.19	0.16	0.14	0.12	0.10	0.09	0.08
U _r (V)	6.3	10	16	25	35	50	63	100											
tgδ	0.22	0.19	0.16	0.14	0.12	0.10	0.09	0.08											
温度特性 Temperature Characteristics (Impedance ratio at 120Hz)	<table border="1"> <tr> <td>U_r (V)</td> <td>6.3</td> <td>10</td> <td>16</td> <td>25~100</td> </tr> <tr> <td>Z-25°C / Z+20°C</td> <td>4</td> <td>3</td> <td>2</td> <td>2</td> </tr> <tr> <td>Z-40°C / Z+20°C</td> <td>8</td> <td>6</td> <td>4</td> <td>3</td> </tr> </table>	U _r (V)	6.3	10	16	25~100	Z-25°C / Z+20°C	4	3	2	2	Z-40°C / Z+20°C	8	6	4	3			
U _r (V)	6.3	10	16	25~100															
Z-25°C / Z+20°C	4	3	2	2															
Z-40°C / Z+20°C	8	6	4	3															
耐久性 Load Life	<table border="1"> <tr> <td>φD</td> <td>φ5, 6.3</td> <td>φ8, 10</td> <td>≥φ12.5</td> </tr> <tr> <td>6.3~10(V)</td> <td>4,000 hours</td> <td>6,000 hours</td> <td>8,000 hours</td> </tr> <tr> <td>16~100(V)</td> <td>5,000 hours</td> <td>7,000 hours</td> <td>10,000 hours</td> </tr> </table> <p>+105°C加额定电压，恢复16小时后： After applying rated voltage at +105°C and then resumed for 16 hours: 电容量变化率 Capacitance change : ±25%初始测量值以内 ±25% of the initial measured value 漏电流 Leakage current : ≤初始规定值 ≤The initial specified value 损耗角正切值 Dissipation factor : ≤2倍初始规定值 ≤2times of the initial specified value</p>	φD	φ5, 6.3	φ8, 10	≥φ12.5	6.3~10(V)	4,000 hours	6,000 hours	8,000 hours	16~100(V)	5,000 hours	7,000 hours	10,000 hours						
φD	φ5, 6.3	φ8, 10	≥φ12.5																
6.3~10(V)	4,000 hours	6,000 hours	8,000 hours																
16~100(V)	5,000 hours	7,000 hours	10,000 hours																
高温贮存 Shelf Life	+105°C，1000小时贮存后，恢复16小时后： After storage for 1000 hours at +105°C and then resumed for 16 hours: 电容量变化率 Capacitance change : ±25%初始测量值以内 ±25% of the initial measured value 漏电流 Leakage current : ≤2倍初始规定值 ≤2times of the initial specified value 损耗角正切值 Dissipation factor : ≤2倍初始规定值 ≤2times of the initial specified value																		

外形图及尺寸表 Case Size Table



D	5	6.3	8	10	12.5	16	18
F	2.0	2.5	3.5	5.0	5.0	7.5	7.5
d	0.5	0.5, 0.6	0.6	0.6	0.8	0.8	0.8

αMAX	< L < 20 > 1.5	βMAX	< D < 20 > 0.5
	< L ≥ 20 > 2.0		< D ≥ 20 > 1.0

频率修正系数 Frequency Coefficient

Freq.(Hz)	120	1K	10K	100K
~180	0.40	0.75	0.90	1.00
220~560	0.50	0.85	0.94	1.00
680~1800	0.60	0.87	0.95	1.00
2200~3900	0.75	0.90	0.95	1.00
4700~15000	0.85	0.95	0.98	1.00

尺寸 Dimensions

CAP(μF)	WV	6.3V(0J)			10V(1A)			16V(1C)			25V(1E)		
		Size	ESR	Ripple	Size	ESR	Ripple	Size	ESR	Ripple	Size	ESR	Ripple
10	100										5×11	1.20	120
22	220										5×11	1.00	130
33	330										5×11	0.90	150
47	470										5×11	0.58	210
100	101	5×11	0.58	210	5×11	0.58	210	6.3×11	0.22	340	6.3×11	0.22	350
220	221	6.3×11	0.26	290	6.3×11	0.32	340	8×11.5	0.13	510	8×11.5	0.15	640
330	331	6.3×11	0.21	340	6.3×11	0.20	380	8×11.5	0.10	640	8×16	0.087	840
470	471	8×11.5	0.14	400	8×11.5	0.20	640	8×16	0.087	840	8×20	0.069	1050
								10×12.5	0.080	865	10×16	0.060	1210
680	681	8×11.5	0.13	640	8×16	0.085	840	8×20	0.060	1050	10×20	0.046	1400
								10×16	0.046	1150			
820	821	8×11.5	0.10	720									
1000	102	8×16	0.08	850	8×20	0.069	1050	10×20	0.046	1400	12.5×20	0.035	1900
		10×12.5	0.08	870	10×16	0.060	1210						
1200	122	8×20	0.069	1050									
		10×16	0.064	1200									
1500	152	10×20	0.050	1380	10×25	0.042	1650	12.5×20	0.035	1900	12.5×25	0.027	2230
2200	222	10×25	0.042	1650	12.5×20	0.035	1900	12.5×25	0.027	2230	16×25	0.025	2780
3300	332	12.5×20	0.035	1900	12.5×25	0.030	2125	16×25	0.025	2420	16×30	0.020	2920
4700	472	12.5×25	0.030	2200	16×25	0.025	2400	16×30	0.020	2920	18×35	0.018	3520
6800	682	16×25	0.025	2400	16×30	0.020	2920	18×35	0.018	3520			
10000	103	16×30	0.020	2920	18×35	0.018	3520						
15000	153	16×30	0.020	2920									

CAP(μF)	WV	35V(1V)			50V(1H)			63V(1J)			100V(2A)		
		Size	ESR	Ripple	Size	ESR	Ripple	Size	ESR	Ripple	Size	ESR	Ripple
0.47	R47				5×11	5.50	20				5×11	6.00	15
1	010				5×11	3.00	45				5×11	4.50	20
2.2	2R2				5×11	2.50	60				5×11	3.00	30
3.3	3R3				5×11	2.20	65				5×11	2.70	40
4.7	4R7	5×11	1.50	40	5×11	1.90	100				5×11	2.50	65
6.8	6R8										5×11	1.80	105
10	100				5×11	1.50	130	5×11	1.50	105	6.3×11	1.20	140
15	150										6.3×11	1.00	140
22	220				5×11	0.70	200	6.3×11	0.96	200	8×11.5	0.70	210
33	330	5×11	0.58	210	6.3×11	0.60	280	6.3×11	0.96	200	10×12.5	0.50	240
47	470	6.3×11	0.22	340	6.3×11	0.38	290	8×11.5	0.40	360	10×12.5	0.34	400
68	680							8×11.5	0.30	420	10×16	0.30	460
100	101	8×11.5	0.16	460	8×11.5	0.16	600	10×12.5	0.10	685	10×25	0.16	800
											12.5×20	0.18	820
220	221	8×16	0.087	900	10×16	0.084	1050	10×25	0.08	1100	16×20	0.073	1100
		10×12.5	0.080	910									
270	271	8×20	0.069	1000									
330	331	10×16	0.060	1210	10×25	0.055	1480	12.5×20	0.075	1100	16×25	0.070	1300
470	471	10×20	0.046	1400	12.5×20	0.045	1670	12.5×30	0.060	1800			
560	561	10×25	0.042	1650									
680	681	12.5×20	0.035	1900				16×25	0.050	2000			
820	821							18×25	0.048	2200			
1000	102	12.5×25	0.027	2130	16×25	0.025	2410	16×35	0.040	2500			
1200	122							18×30	0.030	2600			
2200	222	16×30	0.025	2610	18×35	0.022	3180						
3300	332	18×35	0.020	3200									

Size φD×L(mm)
Maximum Allowable Ripple Current (mA rms) at 105°C 100KHz
Maximum ESR (Ω) at 20°C 100KHz

RC 系列 Series

特点 Features

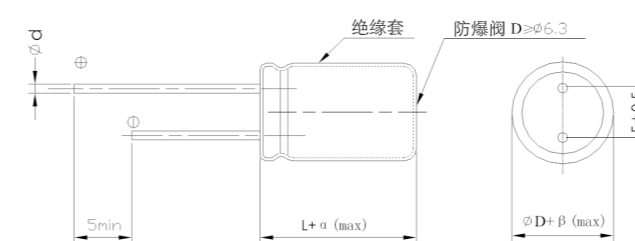
- 宽温度, 105°C, 4000~10000小时。
Wide temperature range, 105°C, long life: 4000~10000 hours.
- RoHS指令已对应完毕。
Adapted to the RoHS directive.



主要技术性能 Specifications

项目 Items	特性 Performance Characteristics																								
使用温度范围 Operating Temperature Range	-40~+105°C																								
额定电压范围 Rated Voltage Range	6.3~63V																								
标称电容范围 Nominal Capacitance Range	2.2~18000μF																								
标称电容允许偏差 Capacitance Tolerance	±20% (120Hz, +20°C)																								
漏电流 Leakage Current	I ≤ 0.01CV (μA) 或 3μA 2分钟 取较大者 (at 20°C, after 2 minute) (Whichever is greater)																								
损耗角正切值 (tgδ) Dissipation Factor (+20°C, 120Hz)	<table border="1"> <tr> <td>U_e (V)</td> <td>6.3</td> <td>10</td> <td>16</td> <td>25</td> <td>35</td> <td>50</td> <td>63</td> </tr> <tr> <td>tgδ</td> <td>0.22</td> <td>0.19</td> <td>0.16</td> <td>0.14</td> <td>0.12</td> <td>0.12</td> <td>0.10</td> </tr> </table> <p>容量大于1000μF者, 每增加1000μF, 其损耗角正切值增加0.02 When nominal capacitance exceeds 1000μF, add 0.02 to the value above for each 1000μF increase.</p>	U _e (V)	6.3	10	16	25	35	50	63	tgδ	0.22	0.19	0.16	0.14	0.12	0.12	0.10								
U _e (V)	6.3	10	16	25	35	50	63																		
tgδ	0.22	0.19	0.16	0.14	0.12	0.12	0.10																		
温度特性 Temperature Characteristics (Impedance ratio at 120Hz)	<table border="1"> <tr> <td>U_e (V)</td> <td>6.3</td> <td>10</td> <td>16</td> <td>25</td> <td>35</td> <td>50</td> <td>63</td> </tr> <tr> <td>Z-25°C / Z+20°C</td> <td>3</td> <td>3</td> <td>3</td> <td>3</td> <td>3</td> <td>3</td> <td>3</td> </tr> <tr> <td>Z-40°C / Z+20°C</td> <td>3</td> <td>3</td> <td>3</td> <td>3</td> <td>3</td> <td>3</td> <td>3</td> </tr> </table>	U _e (V)	6.3	10	16	25	35	50	63	Z-25°C / Z+20°C	3	3	3	3	3	3	3	Z-40°C / Z+20°C	3	3	3	3	3	3	3
U _e (V)	6.3	10	16	25	35	50	63																		
Z-25°C / Z+20°C	3	3	3	3	3	3	3																		
Z-40°C / Z+20°C	3	3	3	3	3	3	3																		
耐久性 Load Life	<table border="1"> <tr> <td>φD</td> <td>φ5, 6.3</td> <td>φ8, 10</td> <td>≥φ12.5</td> </tr> <tr> <td>6.3~10(V)</td> <td>4,000 hours</td> <td>6,000 hours</td> <td>8,000 hours</td> </tr> <tr> <td>16~100(V)</td> <td>5,000 hours</td> <td>7,000 hours</td> <td>10,000 hours</td> </tr> </table> <p>+105°C加额定电压4000~10000小时, 恢复16小时后: After applying rated voltage for 4000~10000 hours at +105°C and then resumed for 16 hours: 电容变化率 Capacitance change : ±25%初始测量值以内 ±25% of the initial measured value 漏电流 Leakage current : ≤初始规定值 ≤The initial specified value 损耗角正切值 Dissipation factor : ≤2倍初始规定值 ≤2times of the initial specified value</p>	φD	φ5, 6.3	φ8, 10	≥φ12.5	6.3~10(V)	4,000 hours	6,000 hours	8,000 hours	16~100(V)	5,000 hours	7,000 hours	10,000 hours												
φD	φ5, 6.3	φ8, 10	≥φ12.5																						
6.3~10(V)	4,000 hours	6,000 hours	8,000 hours																						
16~100(V)	5,000 hours	7,000 hours	10,000 hours																						
高温贮存 Shelf Life	<p>+105°C, 1000小时贮存后, 恢复16小时后: After storage for 1000 hours at +105°C and then resumed for 16 hours: 电容变化率 Capacitance change : ±25%初始测量值以内 ±25% of the initial measured value 漏电流 Leakage current : ≤2倍初始规定值 ≤2times of the initial specified value 损耗角正切值 Dissipation factor : ≤2倍初始规定值 ≤2times of the initial specified value</p>																								

外形图及尺寸表 Case Size Table



D	5	6.3	8	10	12.5	16~18
F	2.0	2.5	3.5	5.0	5.0	7.5
d	0.5		0.5, 0.6	0.6		0.8

频率修正系数 Frequency Coefficient

Freq.(Hz)	120	1K	10K	≥100K
Below 4.7	0.42	0.70	0.80	1.00
5.6~33	0.50	0.73	0.90	1.00
34~330	0.55	0.77	0.95	1.00
331~1000	0.60	0.80	0.96	1.00
1200 Above	0.70	0.85	0.98	1.00

单位 Unit: mm

αMAX	< L < 20 > 1.5	βMAX	< D < 20 > 0.5
	< L ≥ 20 > 2.0		< D ≥ 20 > 1.0

尺寸 Dimensions

CAP(μF)	WV	6.3V(0J)			10V(1A)			16V(1C)			25V(1E)		
		Size	ESR	Ripple	Size	ESR	Ripple	Size	ESR	Ripple	Size	ESR	Ripple
47	470												
56	560							5×11	0.58	150			
100	101	5×11	0.59	200	5×11	0.58	210				5×11	0.67	150
120	121							6.3×11	0.22	340			
150	151	5×11	0.58	210									
220	221				6.3×11	0.25	340						
330	331	6.3×11	0.25	340				8×11.5	0.20	520	10×12.5	0.11	760
470	471				8×11.5	0.18	460	10×12.5	0.18	760	10×16	0.10	1250
								6.3×15	0.18	540	10×20	0.09	1400
680	681	8×11.5	0.11	640	8×16	0.11	680	10×16	0.08	1250	10×16	0.09	1250
											10×20	0.08	1400
820	821	10×12.5	0.08	865							10×20	0.072	1400
		8×16	0.087	840	8×20	0.083	1150	10×20	0.078	1400	10×20	0.068	1400
1000	102				10×16	0.085	1250				12.5×15	0.07	1450
1200	122	10×16	0.060	1210	10×20	0.046	1400	10×25	0.05	1540			
1500	152	10×20	0.046	1400	10×25	0.042	1650	12.5×20	0.045	1820	12.5×25	0.040	2060
2200	222	10×25	0.042	1650	10×30	0.036	1800	12.5×25	0.034	1960	16×25	0.032	2540
3300	332	12.5×20	0.035	1900	12.5×25	0.030	2230	12.5×35	0.029	2500	18×25	0.027	3140
3900	392	12.5×25	0.030	2230	12.5×30	0.028	2650	16×25	0.025	2630	18×30	0.025	3400
4700	472	12.5×30	0.027	2650	12.5×35	0.025	2880	16×30	0.024	3100	18×35	0.023	3900
6800	682	16×25	0.024	2930	18×25	0.023	3140	16×40	0.022	3800			
8200	822	16×30	0.023	3450	18×30	0.021	4170	18×35	0.020	3950			
10000	103	16×35	0.021	3610	18×35	0.020	4220	18×40	0.019	4000			
15000	153	18×35	0.020	4220									
18000	183	18×40	0.018	4280									

CAP(μF)	WV	35V(1V)			50V(1H)			63V(1J)		
		Size	ESR	Ripple	Size	ESR	Ripple	Size	ESR	Ripple
2.2	2R2				5×11	3.5	43			
3.3	3R3				5×11	3.2	53			
4.7	4R7				5×11	3.1	78			
6.8	6R8				5×11	3.0	82			
10	100				5×11	2.0	98			
22	220	5×11	1.5	110	5×11	1.5	110			
33	330	5×11	1.2	125	6.3×11	1.0	158	6.3×11	0.55	180
56	560	6.3×11	0.50	210				8×11.5	0.42	350
82	820							10×12.5	0.20	820
100	101				8×11.5	0.29	500			
120	121				8×16	0.15	530	10×16	0.18	1200
150	151	8×11.5	0.28	380	10×12.5	0.16	820			
220	221	10×12.5	0.16	650	10×16	0.11	1200	10×25	0.18	1540
270	271	8×20	0.15	1150	10×20	0.078	1400	12.5×20	0.18	1820
330	331	10×16	0.14	1200	10×25	0.072	1540	12.5×25	0.079	1950
470	471	8×20	0.13	1180	12.5×20	0.063	1820	12.5×30	0.065	2150
		10×20	0.12	1400						
680	681	12.5×20	0.072	1820	12.5×30	0.058	2150	16×25	0.062	2600
820	821				12.5×35	0.050	2230	18×25	0.050	2800
1000	102	12.5×25	0.060	1950	16×25	0.048	2400	16×35	0.042	2900
1200	122	12.5×30	0.055	2650	18×25	0.040	2680	16×40	0.038	3400
1500	152	12.5×35	0.042	2880	16×35	0.035	2900	18×35	0.030	3400
2200	222	16×30	0.031	3000	18×35	0.030	3680	18×40	0.027	3500
3300	332	16×40	0.026	3200						

Size φD×L(mm)
Maximum Allowable Ripple Current (mA rms) at 105°C 100KHz
Maximum ESR (Ω) at 20°C 100KHz

ZH 系列 Series

特点 Features

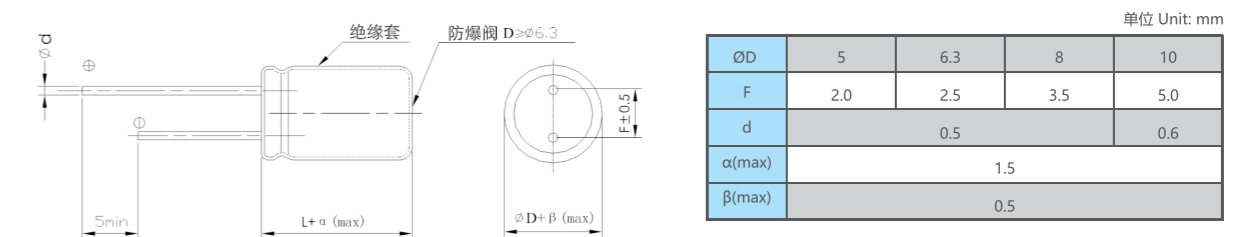
- 低阻抗, 9 mm高度, 105°C 2000-4000小时。
Low impedance, with 9mm height, 105°C 2000-4000hours.
- 符合RoHS标准。
Adapted to the RoHS directive.



主要技术性能 Specifications

项目 Items	特性 Performance Characteristics							
使用温度范围 Operating Temperature Range	-55~+105°C							
额定电压范围 Rated Voltage Range	6.3~100 V							
标称容量范围 Nominal Capacitance Range	4.7~1000μF							
标称容量允许偏差 Capacitance Tolerance	± 20% (120Hz, +20°C)							
漏电流 Leakage Current	I ≤ 0.01CV or 3(μA) 2分钟(at 20°C, after 2 minutes) 取较大者 (whichever is greater)							
损耗角正切值 (tgδ) Dissipation Factor (+20°C, 120Hz)	U _r (V)	6.3	10	16	25	35	50-100	
	tgδ	0.22	0.19	0.16	0.14	0.12	0.10	
温度特性 Temperature Characteristics (Impedance ratio at 120Hz)	U _r (V)	6.3	10	16	25	35	50	100
	Z-25°C / Z+20°C	4	3	2	2	2	2	2
	Z-40°C / Z+20°C	8	6	4	3	3	3	3
耐久性 Load Life	D	5-6.3	8	10				
	Load life	2000h	3000h	4000h				
	+105°C加额定电压, 恢复16小时后: After applying rated voltage at 105°C and then resumed for 16 hours: 容量变化率 Capacitance change : ±25%初始测量值以内 ±25% of the initial measured value 漏电流 Leakage current : ≤初始规定值 ≤ the initial specified value 损耗角正切值 Dissipation factor : ≤2倍初始规定值 ≤ 2times of the initial specified value							
高温贮存 Shelf Life	+105°C, 1000小时贮存后, 恢复16小时后: After storage for 1000 hours at +105°C then resumed for 16 hours: 容量变化率 Capacitance change : ±25%初始测量值以内 ±25% of the initial measured value 漏电流 Leakage current : ≤2倍初始规定值 ≤ 2times of the initial specified value 损耗角正切值 Dissipation factor : ≤2倍初始规定值 ≤ 2times of the initial specified value							

外形图及尺寸表 Case Size Table



频率修正系数 Frequency Coefficient

Freq.(Hz)	120	1K	10K	100K
~180	0.4	0.75	0.90	1
220~560	0.5	0.85	0.94	1
560~1000	0.6	0.87	0.95	1

尺寸 Dimensions

CAP(μF) \ WV		6.3V(0J)			10V(1A)			16V(1C)		
		Size	ESR	Ripple	Size	ESR	Ripple	Size	ESR	Ripple
68	680							5×9	0.65	0.65
100	101	5×9	0.65	150	5×9	0.65	220	5×9	0.60	0.60
150	151	5×9	0.60	220	6.3×9	0.50	280	6.3×9	0.50	0.50
220	221	6.3×9	0.40	350	6.3×9	0.40	380	6.3×9	0.45	0.45
330	331	6.3×9	0.35	380	6.3×9	0.35	405			
470	471	6.3×9	0.25	405	8×9	0.30	550	8×9	0.40	0.40
		8×9	0.19	500				10×9	0.35	0.35
560	561	8×9	0.18	550	8×9	0.30	550	10×9	0.30	0.30
680	681	8×9	0.15	760	10×9	0.25	820			
		10×9	0.13	820						
820	821	10×9	0.12	850	10×9	0.20	970			
1000	102	10×9	0.11	970						

CAP(μF) \ WV		25V(1E)			35V(1V)			50V(1H)		
		Size	ESR	Ripple	Size	ESR	Ripple	Size	ESR	Ripple
15	150							5×9	0.55	100
22	220							5×9	0.55	120
33	330	5×9	0.65	120	5×9	0.55	120	6.3×9	0.40	150
47	470	5×9	0.60	150	5×9	0.55	150	6.3×9	0.35	150
68	680	5×9	0.50	150	6.3×9	0.50	350	8×9	0.30	500
100	101				8×9	0.45	550	8×9	0.25	550
150	151	6.3×9	0.35	380	8×9	0.40	550	10×9	0.20	760
220	221	8×9	0.25	550	10×9	0.35	820			
330	331	8×9	0.20	610						
470	471	10×9	0.15	970						

CAP(μF) \ WV		63V(1J)			100V(2A)		
		Size	ESR	Ripple	Size	ESR	Ripple
4.7	4R7						
6.8	6R8						
10	100	5×9	1.7	100	6.3×9	1.7	
15	150	5×9	1.7	120	6.3×9	1.7	
22	220	5×9	1.2	150	8×9	1.2	
33	330	6.3×9	0.55	220	8×9	1.0	
47	470	6.3×9	0.55	300	10×9	0.55	
68	680	8×9	0.25	500			
100	101	10×9	0.20	760			

Size φD×L(mm)
Maximum Allowable Ripple Current (mA rms) at 105°C 100KHz
Maximum ESR (Ω) at 20°C 100KHz

TA 系列 Series

特点 Features

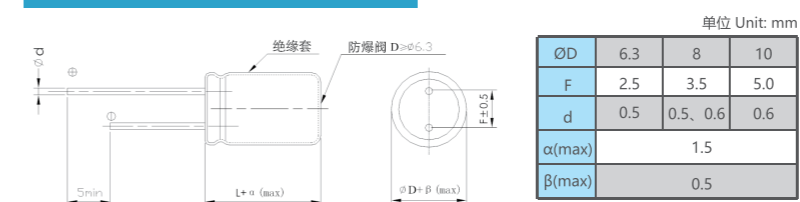
- 钛金属电容器, 100KHz低阻抗, 105°C 2000小时。
Titanium capacitor, Low impedance at 100KHz, Load life: 105°C 2000hours.
- 符合RoHS标准。Adapted to the RoHS directive.



主要技术性能 Specifications

项目 Items	特性 Characteristics					
使用温度范围 Operating Temperature Range	-40~+105°C					
额定电压范围 Rated Voltage Range	6.3~35V					
标称电容范围 Nominal Capacitance Range	220~2200μF					
标称电容允许偏差 Nominal Capacitance Tolerance	±20% (120Hz, +20°C)					
漏电流 Leakage Current	I ≤ 0.01CV or 3(μA) 2分钟 (at 20°C, after 2 minutes) 取较大者 (whichever is greater)					
损耗角正切值(tgδ) Dissipation Factor (+20°C, 120Hz)	U _g (V)	6.3	10	16	25	35
	tgδ	0.14	0.14	0.12	0.10	0.08
容量大于1000μF者, 每增加1000μF, 其损耗角正切值增加0.02 When nominal capacitance exceeds 1000μF, add 0.02 to the value above for each 1000μF increase						
温度特性 Temperature Characteristics (Impedance ratio at 120Hz)	U _g (V)	6.3	10	16	25	35
	Z-40°C / Z+20°C	8	6	6	4	3
耐久性 Load Life	+105°C 施加含额定纹波电流的额定电压2000小时, 恢复16小时后: After applying rated voltage with specified ripple current for 2000 hours at +105°C and then resumed for 16 hours: 电容变化率 Capacitance change : ±25%初始测量值以内 ±25% of the initial measured value 漏电流 Leakage current : ≤初始规定值 ≤Initial specified value 损耗角正切值 Dissipation factor : ≤2倍初始规定值 ≤2 times of the initial specified value					
高温贮存 Shelf Life	+105°C, 1000小时贮存后, 恢复16小时后: After storage for 1000 hours at +105°C and then resumed for 16 hours: 电容变化率 Capacitance change : ±25%初始测量值以内 ±25% of the initial measured value 漏电流 Leakage current : ≤2倍初始规定值 ≤2 times of the initial specified value 损耗角正切值 Dissipation factor : ≤2倍初始规定值 ≤2 times of the initial specified value					

外形图及尺寸表 Case Size Table



频率修正系数 Frequency Coefficient

CAP(μF) \ Freq.(Hz)	120	1K	10K	100K
	220~2200	0.50	0.80	0.90

尺寸 Dimensions

CAP(μF) \ WV		6.3V(0J)			10V(1A)			16V(1C)		
		Size	ESR	Ripple	Size	ESR	Ripple	Size	ESR	Ripple
220	221						6.3×9	0.095	558	
270	271						6.3×9	0.092	561	
470	471				6.3×9	0.065	640	6.3×11	0.056	920
560	561	6.3×9	0.06	665	6.3×9	0.06	665	6.3×11	0.054	925
680	681	6.3×9	0.058	670	6.3×11	0.05	880	8×9	0.049	1285
1000	102	6.3×11	0.05	895	8×9	0.045	1005	8×14	0.030	1545
2200	222	10×12.5	0.035	1800	10×12.5	0.033	1805	10×16	0.024	1905

Size φD×L(mm)
Maximum Allowable Ripple Current (mA rms) at 105°C 100KHz
Maximum ESR (Ω) at 20°C 100KHz

CAP(μF) \ WV		25V(1E)			35V(1V)		
		Size	ESR	Ripple	Size	ESR	Ripple
220	221	6.3×9	0.061	885	8×9	0.055	915
270	271	6.3×11	0.059	971	8×11.5	0.048	1052
330	331	8×9	0.056	980	8×11.5	0.042	1056
470	471	8×11.5	0.048	1185	10×12.5	0.029	1757
560	561	10×12.5	0.030	1775	10×12.5	0.027	1773
680	681	10×12.5	0.030	1780			