

GF Series Low Impedance

Features

- ◆ Used in mother board, computer peripheral, etc.
- ◆ Endurance 2000 ~ 5000 Hrs at 105 °C
- ◆ Safety vent construction design.
- ◆ RoHS Compliant



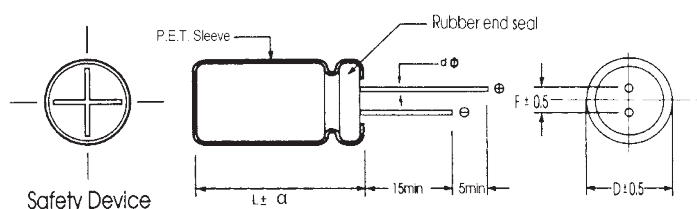
Specifications

Item	Performance Characteristics																																				
Operating Temperature Range	-55 to +105℃																																				
Rated Voltage Range	6.3 to 100 VDC																																				
Capacitance Range	4.7 to 6800 μF																																				
Capacitance Tolerance	±20% (120Hz, +20℃)																																				
Leakage Current (+20℃,max.)	I≤0.01 CV or 3 (μA) After 2 minutes whichever is greater measured with rated working voltage applied.																																				
Dissipation Factor (tan δ , at 20℃ , 120Hz)	<table><tr><td>Working Voltage (VDC)</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>D.F. (%)max</td><td>16</td><td>14</td><td>12</td><td>10</td><td>9</td><td>8</td><td>8</td><td>8</td></tr></table>										Working Voltage (VDC)	6.3	10	16	25	35	50	63	100	D.F. (%)max	16	14	12	10	9	8	8	8									
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	D.F. (%)max	16	14	12	10	9	8	8	8																												
For capacitance > 1000 μF, add 2% per another 1000 μF.																																					
Low Temperature Characteristics (at 120Hz)	Impedance ratio max																																				
	<table><tr><td>Working Voltage</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>Z(-25℃) / Z(20℃)</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℃) / Z(20℃)</td><td>8</td><td>6</td><td>4</td><td>3</td><td>3</td><td>3</td><td>3</td><td>3</td></tr></table>										Working Voltage	6.3	10	16	25	35	50	63	100	Z(-25℃) / Z(20℃)	4	3	3	3	3	3	2	2	Z(-40℃) / Z(20℃)	8	6	4	3	3	3	3	3
	Working Voltage	6.3	10	16	25	35	50	63	100																												
	Z(-25℃) / Z(20℃)	4	3	3	3	3	3	2	2																												
Z(-40℃) / Z(20℃)	8	6	4	3	3	3	3	3																													
For Capacitance > 1000 μF, add 0.5 per another 1000 μF for -25℃／+20℃ add 1 per another 1000 μF for -40℃／+20℃																																					
Endurance	Test conditions Duration time :as right Ambient temperature :+105℃ Applied voltage :Rated DC working voltage							<table><tr><td>D φ</td><td>Life hours</td></tr><tr><td>5 - 6.3 φ</td><td>2000</td></tr><tr><td>8 φ</td><td>3000</td></tr><tr><td>≥ 10 φ</td><td>5000</td></tr></table>		D φ	Life hours	5 - 6.3 φ	2000	8 φ	3000	≥ 10 φ	5000																				
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	5 - 6.3 φ	2000																																			
8 φ	3000																																				
≥ 10 φ	5000																																				
After test requirement at +20℃ Capacitance change :≧ ±20% of the initial measured value Dissipation factor :≧ 200% of the initial specified value Leakage current :≧ The initial specified value																																					
Shelf Life	Test conditions Duration time :1000Hrs Ambient temperature :+105℃ Applied voltage :None																																				
	After test requirement at +20℃:Same limits as Endurance. Pre-treatment for measurements shall be conducted after application of DC working voltage for 30 minutes.																																				

Multiplier for Ripple Current vs. Frequency

CAP(µF) \ Frequency(Hz)	50(60)	120	400	1K	10K	50K-100K
CAP ≤ 10	0.47	0.59	0.76	0.85	0.97	1.0
10 < CAP ≤ 100	0.52	0.62	0.80	0.89	0.97	1.0
100 < CAP ≤ 1000	0.58	0.72	0.84	0.90	0.98	1.0
1000 < CAP	0.63	0.78	0.87	0.91	0.98	1.0

Diagram of Dimensions:(unit:mm)



D φ	5	6.3	8	10	13	16	18
F	2.0	2.5	3.5	5.0	5.0	7.5	7.5
d φ	0.5		L < 20 0.5	L ≥ 20 0.6	0.6		0.8
α	D < 18		D = 18		D > 18		
	1.5		L < 35.5	L ≥ 35.5	2.0		2.0

Case Size

WV Cap(μF)		6.3				10			
		Size	Ripple	Impedance		Size	Ripple	Impedance	
				+20°C	-10°C			+20°C	-10°C
68						5x11	190	0.70	2.065
82						5x11	210	0.50	1.475
100		5x11	200	0.40	1.240	5x11	242	0.31	0.915
120		5x11	210	0.38	1.178	5x11	261	0.28	0.826
150		5x11	225	0.35	1.085	6.3x11	300	0.26	0.767
180		6.3x11	300	0.32	0.992	6.3x11	350	0.22	0.649
220		6.3x11	360	0.25	0.775	6.3x11	390	0.18	0.531
270		6.3x11	377	0.24	0.744	6.3x15	460	0.16	0.472
330		6.3x11	395	0.20	0.465	8x11.5	540	0.11	0.325
390		8x11.5	576	0.14	0.434	8x11.5	620	0.095	0.280
470		8x11.5	600	0.095	0.294	8x11.5	750	0.075	0.221
560		8x16	720	0.087	0.270	8x16	870	0.072	0.212
680		8x16	800	0.080	0.248	8x20	1010	0.068	0.201
		10x16	814	0.084	0.260				
820		8x20	970	0.070	0.217	8x20	1030	0.065	0.192
		10x12.5	1000	0.055	0.168	8x20	1220	0.050	0.148
1000						10x16	1400	0.042	0.124
		8x20	1150	0.048	0.146	10x20	1560	0.035	0.095
1200		10x16	1180	0.050	0.152				
		10x20	1400	0.045	0.137	10x20	1670	0.032	0.086
1500		10x25	1560	0.043	0.131				
1800		10x20	1500	0.041	0.125	10x25	2000	0.028	0.076
		10x25	1720	0.037	0.113	13x20	2370	0.025	0.065
2200		13x20	1890	0.039	0.119				
2700		13x20	2080	0.034	0.095	13x20	2400	0.023	0.060
3300		13x20	2290	0.026	0.073	13x25	2720	0.021	0.055
		10x30	2450	0.024	0.067	13x30	3000	0.020	0.052
3900		13x25	2670	0.022	0.062				
4700		13x30	3200	0.021	0.059	13x35	3450	0.019	0.049
5600		13x35	3270	0.020	0.056	16x31.5	3460	0.018	0.047
6800		16x31.5	3490	0.018	0.050	16x31.5	3630	0.016	0.042

Ripple Current (mA, rms) at 105°C 100KHz

Max Impedance (Ω) at 20°C 100KHz

φ pDxL(mm)

WV Cap(μF)	16				25			
	Size	Ripple	Impedance		Size	Ripple	Impedance	
			+20℃	-10℃			+20℃	-10℃
39					5x11	210	0.42	1.218
47	5x11	200	0.40	1.16	5x11	240	0.35	1.015
56	5x11	220	0.38	1.10	5x11	256	0.31	0.899
68	5x11	230	0.35	1.02	6.3x11	300	0.28	0.812
82	5x11	260	0.31	0.90	6.3x11	350	0.24	0.696
100	6.3x11	360	0.25	0.73	6.3x11	410	0.15	0.435
120	6.3x11	365	0.23	0.67	6.3x15	490	0.13	0.377
150	6.3x11	385	0.21	0.61	8x11.5	540	0.11	0.319
180	8x11.5	520	0.19	0.55	8x11.5	620	0.098	0.2842
220	8x11.5	575	0.14	0.41	8x11.5	750	0.075	0.218
270	8x11.5	600	0.12	0.35	8x16	850	0.063	0.183
330	8x11.5	740	0.08	0.23	8x16	990	0.056	0.1624
					10x12.5	1010	0.054	0.1566
390	8x16	790	0.075	0.22	10x12.5	1050	0.051	0.1479
	8x16	990	0.062	0.18	8x20	1260	0.045	0.1305
470	10x12.5	1000	0.058	0.17	10x16	1415	0.042	0.1218
560	8x20	1070	0.057	0.17	10x20	1450	0.040	0.116
	8x20	1120	0.055	0.16	10x20	1570	0.035	0.1015
680	10x16	1280	0.052	0.15				
820	10x20	1400	0.048	0.14	10x25	1910	0.032	0.093
1000	10x20	1840	0.035	0.09	13x20	2340	0.025	0.055
1200	10x25	1920	0.032	0.08	13x20	2390	0.025	0.055
	10x25	2050	0.030	0.08	13x25	2710	0.023	0.0506
1500	13x20	2200	0.029	0.07				
1800	13x20	2380	0.026	0.07	13x30	3150	0.021	0.0462
2200	13x25	2750	0.022	0.06	13x35	3420	0.018	0.0396
2700	13x25	3000	0.022	0.06	16x31.5	3480	0.018	0.0396
3300	13x35	3490	0.018	0.05	16x31.5	3600	0.018	0.0396
3900	16x25	3520	0.018	0.05				
4700	16x31.5	3770	0.017	0.04				

Ripple Current (mA, rms) at 105℃ 100KHz

Max Impedance (Ω) at 20℃ 100KHz

φ DxL(mm)

WV Cap(μF)	35				50			
	Size	Ripple	Impedance		Size	Ripple	Impedance	
			+20℃	-10℃			+20℃	-10℃
22					5x11	220	0.35	1.015
27					6.3x11	265	0.34	0.986
33	5x11	230	0.32	0.934	6.3x11	280	0.32	0.928
39	6.3x11	277	0.31	0.905	6.3x11	300	0.28	0.812
47	6.3x11	340	0.20	0.584	8x11.5	360	0.20	0.580
56	6.3x11	375	0.20	0.584	8x11.5	385	0.19	0.551
68	6.3x11	400	0.19	0.555	8x11.5	400	0.17	0.493
82	8x11.5	480	0.17	0.496	8x11.5	550	0.12	0.348
100	8x11.5	560	0.15	0.438	8x11.5	730	0.075	0.2175
120	8x11.5	585	0.13	0.38	8x16	770	0.073	0.2117
					10x12.5	790	0.072	0.2088
150	8x11.5	680	0.11	0.321	10x12.5	870	0.068	0.1972
180	8x16	810	0.098	0.286	8x20	1060	0.055	0.1595
					10x16	1090	0.055	0.1595
220	8x16	1000	0.056	0.164	10x16	1385	0.045	0.1305
	10x12.5	1060	0.052	0.152				
270	10x16	1190	0.050	0.146	10x20	1500	0.043	0.1247
330	8x20	1210	0.041	0.12	10x25	1850	0.032	0.0928
	10x16	1400	0.038	0.111				
390	10x20	1550	0.035	0.102	13x20	1910	0.031	0.0899
470	10x20	1850	0.034	0.064	13x20	2000	0.030	0.0870
560	10x25	2040	0.031	0.064	13x20	2150	0.028	0.0812
680	13x20	2260	0.029	0.061	13x25	2490	0.026	0.0754
820	13x25	2630	0.021	0.053	13x30	2770	0.025	0.0725
					16x25	2960	0.024	0.0696
1000	13x25	2780	0.019	0.048	16x25	3000	0.020	0.0580
1200	13x30	2950	0.019	0.048				
	16x25	3150	0.018	0.045				
1500	13x35	3350	0.018	0.045				
	16x31.5	3600	0.017	0.043				
1800	16x31.5	3670	0.016	0.04				
2200	16x35.5	3750	0.015	0.038				
2700	18x31.5	3850	0.014	0.035				

Ripple Current (mA, rms) at 105℃ 100KHz

Max Impedance (Ω) at 20℃ 100KHz