

GFZ 105°C Low Impedance Series

- For surface mounted and high frequency application.
- Excellent characteristic vs frequency with low impedance
- Life guaranteed 5,000 hours/105°C.
- RoHS & REACH compliant, Halogen-Free.



Specifications

Item	Performance Characteristics																																				
Operating Temperature range	-55 + 105°C																																				
Rated Voltage	6.3V ~ 100V																																				
Capacitance Range	3.3 ~ 8,200 μF																																				
Capacitance Tolerance	±20% (120 Hz, 20°C)																																				
Leakage Current	I ≤ 0.01CV or 3 μA (φ4~φ10), whichever is greater after 2 minutes application of rated voltage. I ≤ 0.03CV or 4 μA (φ12.5~φ16), whichever is greater after 2 minutes application of rated voltage.																																				
Dissipation Factor (120 Hz, 20°C)	<table border="1"> <thead> <tr> <th>Rated voltage (V)</th> <th>6.3</th> <th>10</th> <th>16</th> <th>25</th> <th>35</th> <th>50</th> <th>63~80</th> <th>100</th> </tr> </thead> <tbody> <tr> <td>Tan δ (max.) φ4 ~ φ10</td> <td>0.26</td> <td>0.19</td> <td>0.16</td> <td>0.14</td> <td>0.12</td> <td>0.10</td> <td>0.08</td> <td>0.07</td> </tr> <tr> <td>φ12.5 ~ φ16</td> <td>0.26</td> <td>0.19</td> <td>0.18</td> <td>0.16</td> <td>0.14</td> <td>0.10</td> <td>0.08</td> <td>0.07</td> </tr> </tbody> </table>	Rated voltage (V)	6.3	10	16	25	35	50	63~80	100	Tan δ (max.) φ4 ~ φ10	0.26	0.19	0.16	0.14	0.12	0.10	0.08	0.07	φ12.5 ~ φ16	0.26	0.19	0.18	0.16	0.14	0.10	0.08	0.07									
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Temperature Characteristics (120 Hz)	<p>Impedance Ratio / Stability at Low Temperature</p> <table border="1"> <thead> <tr> <th>Rated voltage (V)</th> <th>6.3</th> <th>10</th> <th>16</th> <th>25</th> <th>35</th> <th>50</th> <th>63~80</th> <th>100</th> </tr> </thead> <tbody> <tr> <td>Z(-25°C) / Z(20°C)</td> <td>2</td> <td>2</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>3</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(-55°C) / Z(20°C)</td> <td>4</td> <td>4</td> <td>4</td> <td>3</td> <td>3</td> <td>3</td> <td>3</td> <td>3</td> </tr> </tbody> </table>	Rated voltage (V)	6.3	10	16	25	35	50	63~80	100	Z(-25°C) / Z(20°C)	2	2	2	2	2	2	2	2	Z(-40°C) / Z(20°C)	3	3	3	3	3	3	3	3	Z(-55°C) / Z(20°C)	4	4	4	3	3	3	3	3
Rated voltage (V)	6.3	10	16	25	35	50	63~80	100																													
Z(-25°C) / Z(20°C)	2	2	2	2	2	2	2	2																													
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Z(-55°C) / Z(20°C)	4	4	4	3	3	3	3	3																													
Load Life	<p>After 5,000 hours (2,000 hours for φ4~φ6.3x5.8) application of rated voltage at 105°C, capacitor shall meet the characteristics mentioned below.</p> <table border="1"> <tbody> <tr> <td>Capacitance change</td> <td>Within ±30% of initial value</td> </tr> <tr> <td>Tan δ</td> <td>200% or less of initial specified value</td> </tr> <tr> <td>Leakage current</td> <td>Initial specified value or less</td> </tr> </tbody> </table>	Capacitance change	Within ±30% of initial value	Tan δ	200% or less of initial specified value	Leakage current	Initial specified value or less																														
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Shelf Life	At 105°C, no voltage applied for 1,000 hours, the capacitor shall meet the limits as in load life. (With voltage treatment)																																				
Resistance to Soldering Heat	<p>Capacitor placed on a 250°C hot plate for 30 seconds with their electrode terminals facing downward will fulfill the following conditions after being cooled to room temperature.</p> <table border="1"> <tbody> <tr> <td>Capacitance change</td> <td>Within ±10% of initial value</td> </tr> <tr> <td>Tan δ</td> <td>200% or less of initial specified value</td> </tr> <tr> <td>Leakage current</td> <td>Initial specified value or less</td> </tr> </tbody> </table>	Capacitance change	Within ±10% of initial value	Tan δ	200% or less of initial specified value	Leakage current	Initial specified value or less																														
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Dimension (mm)

Fig. 1: φ4 ~ φ6.3x7.7

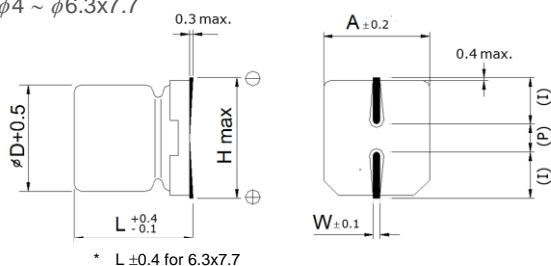
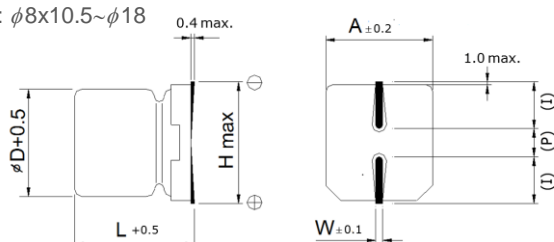


Fig. 2: φ8x10.5~φ18



Dφ	L	A	H	I	W	P	Fig
4	5.8	4.3	4.4	2.0	0.5~0.8	1.0	1
5	5.8	5.3	5.4	2.2	0.5~0.8	1.4	1
6.3	5.8	6.6	6.7	2.6	0.5~0.8	1.9	1
6.3	7.7	6.6	6.7	2.6	0.5~0.8	1.9	1
8	10.5	8.4	8.5	3.0	0.8~1.2	3.1	2
10	10.5	10.4	10.5	3.3	0.8~1.2	4.7	2
10	13.5	10.4	10.5	3.3	0.8~1.2	4.7	2
12.5	13.5	13.0	13.1	4.9	1.1~1.4	4.7	2
12.5	16	13.0	13.1	4.9	1.1~1.4	4.7	2
16	16.5	17.0	17.1	5.8	1.1~1.4	6.4	2
18	16.5	19.0	19.1	6.2	1.1~1.4	6.4	2
18	18.5	19.0	19.1	6.2	1.1~1.4	6.4	2

• Standard Products Table

D ϕ x L (mm)

WV(SV) Cap (μ F)	6.3 (8)			10 (13)			16 (20)		
	D x L	Imp.	R.C.	D x L	Imp.	R.C.	D x L	Imp.	R.C.
10							4 x 5.8	1.35	90
22	4 x 5.8	1.35	90	4 x 5.8	1.35	90	5 x 5.8	0.76	160
33	5 x 5.8	0.76	160	5 x 5.8	0.76	160	6.3 x 5.8	0.44	240
	4 x 5.8	1.35	90						
47	5 x 5.8	0.76	160	6.3 x 5.8	0.44	240	6.3 x 5.8	0.44	240
	4 x 5.8	1.35	90				5 x 5.8	0.76	160
56	5 x 5.8	0.76	160	6.3 x 5.8	0.44	240	6.3 x 5.8	0.44	240
68	6.3 x 5.8	0.44	240	6.3 x 5.8	0.44	240	6.3 x 7.7	0.34	300
							6.3 x 5.8	0.44	240
100	6.3 x 5.8	0.44	240	6.3 x 7.7	0.34	300	6.3 x 7.7	0.34	300
							6.3 x 5.8	0.44	240
150	6.3 x 5.8	0.44	240	6.3 x 7.7	0.34	300	6.3 x 7.7	0.34	300
220	6.3 x 7.7	0.34	300	6.3 x 7.7	0.34	300	8 x 10.5	0.17	600
	6.3 x 5.8	0.44	240				6.3 x 7.7	0.34	300
330	8 x 10.5	0.17	600	10 x 10.5	0.09	850	10 x 10.5	0.08	850
				8 x 10.5	0.17	600	8 x 10.5	0.17	600
470	8 x 10.5	0.17	600	10 x 10.5	0.09	850	10 x 10.5	0.09	850
				8 x 10.5	0.17	600	8 x 10.5	0.17	600
680	10 x 10.5	0.09	850	10 x 10.5	0.09	850	10 x 13.5	0.07	950
	8 x 10.5	0.17	600				10 x 10.5	0.09	850
1000	10 x 10.5	0.09	850	10 x 13.5	0.07	950	12.5 x 16	0.055	1200
	8 x 10.5	0.17	600	10 x 10.5	0.09	850	12.5 x 13.5	0.06	1100
1500	10 x 13.5	0.09	950	12.5 x 13.5	0.06	1100	16 x 16.5	0.05	1450
2200	12.5 x 13.5	0.06	1100	12.5 x 16	0.055	1200	16 x 16.5	0.05	1450
3300	12.5 x 16	0.055	1200	16 x 16.5	0.05	1260	16 x 16.5	0.05	1450
4700	16 x 16.5	0.05	1450	16 x 16.5	0.05	1450	18 x 16.5	0.048	1500
6800	18 x 16.5	0.048	1500	18 x 16.5	0.048	1500			
8200	18 x 16.5	0.048	1500				Case size	Impedance	Ripple current

WV(SV) Cap (μ F)	25 (32)			35 (44)			50 (63)		
	D x L	Imp.	R.C.	D x L	Imp.	R.C.	D x L	Imp.	R.C.
4.7				4 x 5.8	1.35	90	5 x 5.8	1.52	85
10	4 x 5.8	1.35	90	5 x 5.8	0.76	160	6.3 x 5.8	0.88	165
							5 x 5.8	1.35	115
15	5 x 5.8	0.76	160	5 x 5.8	0.76	160	6.3 x 5.8	0.88	165
22	6.3 x 5.8	0.44	240	6.3 x 5.8	0.44	240	6.3 x 7.7	0.68	195
	5 x 5.8	0.76	160				6.3 x 5.8	0.88	165
33	6.3 x 5.8	0.44	240	6.3 x 5.8	0.44	240	6.3 x 7.7	0.68	195
47	6.3 x 7.7	0.34	300	6.3 x 7.7	0.34	300	8 x 10.5	0.34	350
	6.3 x 5.8	0.44	240	6.3 x 5.8	0.88	165	6.3 x 7.7	0.68	195
56	6.3 x 7.7	0.34	300	6.3 x 7.7	0.34	300	8 x 10.5	0.34	350
68	6.3 x 7.7	0.34	300	8 x 10.5	0.17	600	8 x 10.5	0.34	350
100	8 x 10.5	0.17	600	8 x 10.5	0.17	600	10 x 10.5	0.18	670
	6.3 x 7.7	0.34	300				8 x 10.5	0.34	350
150	8 x 10.5	0.17	600	10 x 10.5	0.09	850	10 x 13.5	0.14	780
	6.3 x 7.7	0.34	300				10 x 10.5	0.18	670
220	8 x 10.5	0.17	600	10 x 10.5	0.09	850	10 x 13.5	0.14	780
				8 x 10.5	0.17	600	10 x 10.5	0.26	750
330	10 x 10.5	0.09	850	10 x 13.5	0.07	950	12.5 x 13.5	0.12	900
	8 x 10.5	0.17	600	10 x 10.5	0.10	850			

Impedance: (Ω) max. at 20°C 100KHz Ripple current (mA) at 105°C 100KHz

Dφ x L (mm)

WV(SV) Cap (μF)	25 (32)			35 (44)			50 (63)		
	D x L	Imp.	R.C.	D x L	Imp.	R.C.	D x L	Imp.	R.C.
470	10 x 13.5	0.07	950	12.5 x 13.5	0.06	1100	16 x 16.5	0.08	1250
	10 x 10.5	0.09	850	10 x 13.5	0.07	1000	12.5 x 16	0.10	1050
680				10 x 10.5	0.10	950	12.5 x 13.5	0.08	1100
	12.5 x 13.5	0.06	1100	12.5 x 16	0.055	1200	16 x 16.5	0.073	1250
1000				12.5 x 13.5	0.06	1100			
	16 x 16.5	0.05	1450	16 x 16.5	0.05	1450	18 x 16.5	0.073	1250
	12.5 x 16	0.055	1200						
	12.5 x 13.5	0.06	1100						
1500	16 x 16.5	0.05	1450	18 x 16.5	0.048	1500	18 x 16.5	0.066	1500
2200	16 x 16.5	0.05	1450	18 x 18.5	0.038	1750			
3300	18 x 16.5	0.048	1500				Case size	Impedance	Ripple current

WV(SV) Cap (μF)	63 (75)			80 (100)			100 (125)		
	D x L	Imp.	R.C.	D x L	Imp.	R.C.	D x L	Imp.	R.C.
3.3				5 x 5.8	5.0	25			
4.7	5 x 5.8	3.0	50	6.3 x 5.8	3.0	40			
10	6.3 x 7.7	1.2	120	6.3 x 7.7	2.4	60	8 x 10.5	1.30	130
	6.3 x 5.8	1.5	80						
22	8 x 10.5	0.65	250	8 x 10.5	1.3	130	10 x 10.5	0.7	200
	6.3 x 7.7	1.2	120				8 x 10.5	1.3	160
33	8 x 10.5	0.65	250	10 x 10.5	0.7	200	10 x 13.5	0.7	200
47	10 x 10.5	0.5	300	10 x 13.5	0.45	300	12.5 x 13.5	0.32	500
	8 x 10.5	0.65	250	12.5 x 13.5	0.22	500			
68	12.5 x 13.5	0.16	800	12.5 x 13.5	0.32	500	12.5 x 13.5	0.32	500
	10 x 10.5	0.5	300						
100	12.5 x 13.5	0.16	800	12.5 x 13.5	0.32	500	16 x 16.5	0.17	795
	10 x 13.5	0.25	400	10 x 13.5	0.18	750	12.5 x 16	0.26	550
	10 x 10.5	0.5	300				12.5 x 13.5	0.32	500
150	12.5 x 13.5	0.16	800	12.5 x 13.5	0.32	500	12.5 x 16	0.26	550
	10 x 13.5	0.25	400						
220	12.5 x 13.5	0.16	800	12.5 x 16	0.26	550	18 x 16.5	0.15	850
				12.5 x 13.5	0.12	900			
330	16 x 16.5	0.082	900	16 x 16.5	0.17	795	18 x 16.5	0.15	850
470	16 x 16.5	0.082	900	18 x 16.5	0.15	850	18 x 18.5	0.15	950
680	18 x 16.5	0.08	1150	18 x 18.5	0.15	950			
1000	18 x 18.5	0.06	1250				Case size	Impedance	Ripple current

Impedance: (Ω) max. at 20°C 100KHz Ripple current (mA) at 105 °C 100KHz

• Frequency coefficient of allowable ripple current

Coefficient	Diameter	Cap(μF) / Frequency	50 Hz	120 Hz	300 Hz	1KHz	10 KHz~
			φ 4~ φ10	4.7 ~ 68 μF	0.35	0.50	0.64
100 ~ 1,500 μF	0.40	0.55		0.70	0.85	1.00	
φ12.5~φ18	~ 68 μF	0.45	0.65	0.70	0.85	1.00	
	100 ~ 680 μF	0.45	0.65	0.80	0.90	1.00	
	1000 ~ 8,200 μF	0.65	0.85	0.95	1.00	1.00	