

A-05-11-01

REB M88-20(GXA)

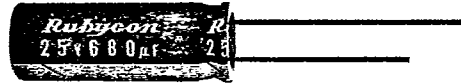
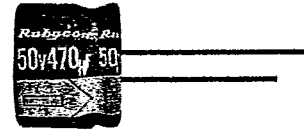
MINIATURE ALUMINUM ELECTROLYTIC CAPACITORS

■ **GXA** SERIES [-55°C to +105°C Low Impedance at High-Frequency]

GXA series has been designed for application in the smoothing circuit of switching power supplies and other high frequency equipment, and not only exhibits substantially enhanced temperature, frequency and high temperature load characteristics but also contributes to the higher stability of end products by providing vastly reduced high frequency impedance.

■ **FEATURES**

- Exhibits substantially promised low impedances at high-frequency through miniaturized dimension.
- Exhibits stable characteristics across a wide temperature range(-55°C to +105°C)
- Various case sizes are available including lower profile.
- Solvent proof type

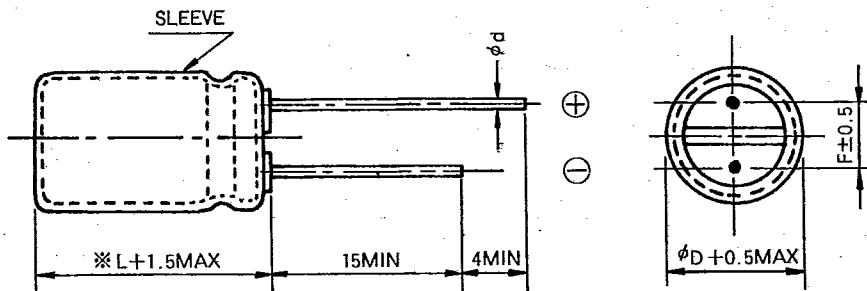


Rinsing Conditions
Withstand either a 5-minute duration of any one of the immersion, ultrasonic and vapor process employing Freon TE, Freon TES or Freon TF, or a combination of these process totaling 5 minutes or less in duration. The duration of rinsing for 7mm L parts & 4mm diameter with 12mm L parts shall be 3 minutes or less. (Not 5 minutes)

■ **SPECIFICATION TABLE**

1	OPERATING TEMPERATURE RANGE	-55°C to +105°C														
2	RATED VOLTAGE RANGE	6.3~50V.DC														
3	CAPACITANCE TOLERANCE (120Hz)	-20%~+20% (20°C)														
4	LEAKAGE CURRENT	I = 0.03CV or 4μA whichever is greater (Apply rated WV for 1 minute before test) I = 0.01CV or 3μA whichever is greater (Apply rated WV for 2 minutes before test) I = Leakage Current(μA) C = Nominal Capacitance(μF) V = Rated Voltage(V)														
5	DISSIPATION FACTOR (max) at 120Hz	<table border="1"> <tr> <th>RATED VOLTAGE(V)</th> <td>6.3</td> <td>10</td> <td>16</td> <td>25</td> <td>35</td> <td>50</td> </tr> <tr> <th>DF (tan δ)</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> </tr> </table> (20°C) For capacitors whose capacitance exceeds 1000μF, the value of DF (tan δ) is increased by 0.02 for every addition of 1000μF.	RATED VOLTAGE(V)	6.3	10	16	25	35	50	DF (tan δ)	0.22	0.19	0.16	0.14	0.12	0.10
RATED VOLTAGE(V)	6.3	10	16	25	35	50										
DF (tan δ)	0.22	0.19	0.16	0.14	0.12	0.10										
6	LIFE TEST AT 105°C AND RATED VOLTAGE	TEST HOURS	2000 hours (1000 hours which diameter φ8mm and under)													
		LAKAGE CURRENT	Less than the value given in column 4													
		CAPACITANCE CHANGE	Within ±20% of the initial value													
		DF(tan δ)	Less than 200% of the value given in column 5													
7	LOW TEMPERATURE STABILITY (Impedance ratio against +20°C at 120Hz)	<table border="1"> <tr> <th>RATED VOLTAGE(V)</th> <td>6.3</td> <td>10</td> <td>16</td> <td>25</td> <td>35</td> <td>50</td> </tr> <tr> <th>Z(-55°C)/Z(+20°C)</th> <td>3</td> <td>3</td> <td>3</td> <td>3</td> <td>3</td> <td>3</td> </tr> </table>	RATED VOLTAGE(V)	6.3	10	16	25	35	50	Z(-55°C)/Z(+20°C)	3	3	3	3	3	3
RATED VOLTAGE(V)	6.3	10	16	25	35	50										
Z(-55°C)/Z(+20°C)	3	3	3	3	3	3										
8	OTHERS	Comply with JIS-C-5141 characteristic W														

■ **DIMENSIONS**



φD	4	5	6.3	8	10	12.5	16	18
φd	0.45	※0.5	※0.5	0.6	0.6	0.6	0.8	0.8
F	1.5	2.0	2.5	3.5	5.0	5.0	7.5	7.5

*For the parts with 7mm L dimensions, the actual length shall be L+1.0max instead of L+1.5max and its lead wire diameter shall be 0.45 instead of 0.5.



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STANDARD CASE SIZES

RATED VOLTAGE (V.DC) NOMINAL CAPACITANCE(μF)	6.3 (0J)	10 (1A)	16 (1C)	25 (1E)	35 (1V)	50 (1H)
4.7						4x7
6.8					4x7	
8.2						5x7
10				4x7		4x12
12					5x7	
15			4x7		4x12	
18						5x11 6.3x7
22		4x7		4x12 5x7		
27	4x7		5x7		5x11 6.3x7	5x15
33			4x12			
39		5x7		5x11 6.3x7	5x15	6.3x11
47		4x12				
56	5x7		5x11 6.3x7	5x15	6.3x11	6.3x15
68	4x12					8x12.5
82		5x11 6.3x7	5x15	6.3x11	6.3x15	8x16 10x12
100					8x12.5	10x15
120	5x11 6.3x7	5x15	6.3x11	6.3x15	10x12	8x20
150	5x15			8x12.5	8x16	
180		6.3x11	6.3x15	10x12	10x15	10x20 12.5x16
220	6.3x11		8x12.5	8x16	8x20	10x23
270		6.3x15	10x12	8x20 10x15		
330	6.3x15	8x12.5	8x16		10x20 12.5x16	10x28 16x15 12.5x20
390	8x12.5	10x12	10x15		10x23	
470	10x12	8x16	8x20	10x20 12.5x16	10x28	12.5x25 18x15
560	8x16	8x20 10x15		10x23	12.5x20 16x15	12.5x30
680	10x15		10x20 12.5x16	10x28	12.5x25	12.5x35 16x20.5
820	8x20	10x20	10x23	12.5x20 16x15	18x15	12.5x40 16.5x25.5 18x20.5
1000		12.5x16	10x28	12.5x25	12.5x30 16x20.5	16x30.5 18x25.5
1200	10x20 12.5x16	10x23	12.5x20 16x15	18x15	12.5x35 16x25.5	16x35.5
1500	10x23	10x28 16x15	12.5x25 18x15	12.5x30 16x20.5	12.5x40 18x20.5	16x40.5 18x30.5
1800		12.5x20		12.5x35 16x25.5	16x30.5 18x25.5	18x35.5
2200	10x28 12.5x20 16x15	12.5x25 18x15	12.5x30 16x20.5	12.5x40 18x20.5	16x35.5 18x30.5	18x40.5
2700	12.5x25	12.5x30	12.5x35 16x25.5	16x30.5 18x25.5	16x40.5 18x35.5	
3300	18x15	12.5x35 16x20.5	12.5x40 18x20.5	16x35.5 18x30.5	18x40.5	
3900	12.5x30 16x20.5	12.5x40 16x25.5 18x20.5	16x30.5 18x25.5	16x40.5 18x35.5		
4700	12.5x35	16x30.5 18x25.5	16x35.5 18x30.5	18x40.5		
5600	12.5x40 16x25.5 18x20.5		16x40.5			
6800	16x30.5 18x25.5	16x35.5 18x30.5	18x35.5			
8200	16x35.5	16x40.5 18x35.5	18x40.5			
10000	16x40.5 18x30.5	18x40.5				
12000	18x35.5					
15000	18x40.5					

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MINIATURE ALUMINUM ELECTROLYTIC CAPACITORS

LIST OF STANDARD PRODUCTS

RATED VOLTAGE (SURGE VOLTAGE) (V.DC)	NOMINAL CAPACITANCE (μF)	PART NUMBER	DF (tan δ) at 120Hz 20°C	ESR (Ω MAX) at 120Hz 20°C	IMPEDANCE (Ω MAX.) at 100kHz 20°C	IMPEDANCE (Ω MAX.) at 100kHz -10°C	LEAKAGE CURRENT (μA MAX.) at 2min	RIPPLE CURRENT (mA MAX.) at 100kHz 105°C	DIMENSIONS(mm)			
									φ _D	L	F	φ _d
6.3 (8)	27	6.3 GXA 27	0.22	10.8	5.5	14.3	3.0	47	4	7	1.5	0.45
	56	6.3 GXA 56	0.22	5.21	3.4	8.8	3.5	97	5	7	2.0	0.45
	68	6.3 GXA 68	0.22	4.29	2.2	5.7	4.2	107	4	12	1.5	0.45
	120	6.3 GXA 120	0.22	2.43	1.3	3.4	7.5	121	5	11	2.0	0.5
	120	6.3 GXA 120	0.22	2.43	1.4	3.6	7.5	106	6.3	7	2.5	0.45
	150	6.3 GXA 150	0.22	1.95	0.93	2.5	9.4	135	5	15	2.0	0.5
	220	6.3 GXA 220	0.22	1.33	0.61	1.6	13.8	148	6.3	11	2.5	0.5
	330	6.3 GXA 330	0.22	0.88	0.40	1.0	20.7	163	6.3	15	2.5	0.5
	390	6.3 GXA 390	0.22	0.75	0.34	0.87	24.5	290	8	12.5	3.5	0.6
	470	6.3 GXA 470	0.22	0.62	0.28	0.72	29.6	361	10	12	5.0	0.6
	560	6.3 GXA 560	0.22	0.52	0.24	0.61	35.2	370	8	16	3.5	0.6
	680	6.3 GXA 680	0.22	0.43	0.22	0.56	42.8	434	10	15	5.0	0.6
	820	6.3 GXA 820	0.22	0.36	0.19	0.48	51.6	480	8	20	3.5	0.6
	1200	6.3 GXA 1200	0.22	0.24	0.14	0.36	75.6	606	10	20	5.0	0.6
	1200	6.3 GXA 1200	0.22	0.24	0.13	0.33	75.6	677	12.5	16	5.0	0.6
	1500	6.3 GXA 1500	0.22	0.19	0.12	0.31	94.5	689	10	23	5.0	0.6
	2200	6.3 GXA 2200	0.24	0.14	0.094	0.25	138	829	10	28	5.0	0.6
	2200	6.3 GXA 2200	0.24	0.14	0.090	0.23	138	823	12.5	20	5.0	0.6
	2200	6.3 GXA 2200	0.24	0.14	0.10	0.26	138	944	16	15	7.5	0.8
	2700	6.3 GXA 2700	0.24	0.12	0.075	0.20	170	968	12.5	25	5.0	0.6
	3300	6.3 GXA 3300	0.26	0.10	0.081	0.21	207	1130	18	15	7.5	0.8
	3900	6.3 GXA 3900	0.26	0.09	0.065	0.17	245	1130	12.5	30	5.0	0.6
	3900	6.3 GXA 3900	0.26	0.09	0.075	0.20	245	1230	16	20.5	7.5	0.8
	4700	6.3 GXA 4700	0.28	0.08	0.055	0.14	296	1290	12.5	35	5.0	0.6
	5600	6.3 GXA 5600	0.30	0.07	0.046	0.12	352	1380	12.5	40	5.0	0.6
	5600	6.3 GXA 5600	0.30	0.07	0.065	0.17	352	1440	16	25.5	7.5	0.8
	5600	6.3 GXA 5600	0.30	0.07	0.063	0.16	352	1440	18	20.5	7.5	0.8
	6800	6.3 GXA 6800	0.32	0.06	0.055	0.14	428	1690	16	30.5	7.5	0.8
	6800	6.3 GXA 6800	0.32	0.06	0.055	0.14	428	1620	18	25.5	7.5	0.8
	8200	6.3 GXA 8200	0.36	0.06	0.047	0.12	516	1900	16	35.5	7.5	0.8
10000	6.3 GXA 10000	0.40	0.05	0.040	0.10	630	2130	16	40.5	7.5	0.8	
10000	6.3 GXA 10000	0.40	0.05	0.047	0.12	630	1850	18	30.5	7.5	0.8	
12000	6.3 GXA 12000	0.44	0.05	0.042	0.11	756	2120	18	35.5	7.5	0.8	
15000	6.3 GXA 15000	0.50	0.04	0.037	0.095	945	2300	18	40.5	7.5	0.8	

RMS RIPPLE CURRENT COEFFICIENT

(1) TEMPERATURE COEFFICIENT

AMBIENT TEMPERATURE(°C)	105	85	65 & under
TEMPERATURE COEFFICIENT	1.00	1.70	2.12

(2) FREQUENCY COEFFICIENT

NOMINAL CAPACITANCE(μF)	FREQUENCY(Hz)				
	50	120	1k	10k	100k
~ 4.7	0.35	0.42	0.60	0.80	1.0
5.6 ~ 33	0.45	0.55	0.75	0.90	1.0
39 ~ 330	0.60	0.70	0.85	0.95	1.0
390 ~ 1000	0.65	0.75	0.90	0.98	1.0
1200 ~	0.75	0.80	0.95	1.0	1.0



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LIST OF STANDARD PRODUCTS

RATED VOLTAGE (SURGE VOLTAGE) (V.DC)	NOMINAL CAPACITANCE (μF)	PART NUMBER	DF (tan δ) at 120Hz 20°C	ESR (Ω MAX) at 120Hz 20°C	IMPEDANCE (Ω MAX.) at 100kHz 20°C	IMPEDANCE (Ω MAX.) at 100kHz -10°C	LEAKAGE CURRENT (μA MAX.) at 2min	RIPPLE CURRENT (mA MAX.) at 100kHz 105°C	DIMENSIONS(mm)			
									φD	L	F	φd
10 (13)	22	10 GXA 22	0.19	11.5	5.4	14.0	3.0	42	4	7	1.5	0.45
	39	10 GXA 39	0.19	6.46	3.3	8.6	3.9	95	5	7	2.0	0.45
	47	10 GXA 47	0.19	5.36	2.2	5.7	4.7	109	4	12	1.5	0.45
	82	10 GXA 82	0.19	3.07	1.3	3.4	8.2	121	5	11	2.0	0.5
	82	10 GXA 82	0.19	3.07	1.4	3.6	8.2	80	6.3	7	2.5	0.45
	120	10 GXA 120	0.19	2.10	0.91	2.4	12.0	129	5	15	2.0	0.5
	180	10 GXA 180	0.19	1.40	0.59	1.5	18.0	145	6.3	11	2.5	0.5
	270	10 GXA 270	0.19	0.93	0.40	1.0	27.0	153	6.3	15	2.5	0.5
	330	10 GXA 330	0.19	0.76	0.33	0.86	33.0	294	8	12.5	3.5	0.6
	390	10 GXA 390	0.19	0.65	0.27	0.70	39.0	365	10	12	5.0	0.6
	470	10 GXA 470	0.19	0.54	0.24	0.61	47.0	373	8	16	3.5	0.6
	560	10 GXA 560	0.19	0.45	0.19	0.48	56.0	477	8	20	3.5	0.6
	560	10 GXA 560	0.19	0.45	0.22	0.56	56.0	438	10	15	5.0	0.6
	820	10 GXA 820	0.19	0.31	0.14	0.36	82.0	600	10	20	5.0	0.6
	1000	10 GXA 1000	0.19	0.25	0.12	0.32	100	681	12.5	16	5.0	0.6
	1200	10 GXA 1200	0.19	0.21	0.12	0.31	120	696	10	23	5.0	0.6
	1500	10 GXA 1500	0.19	0.17	0.093	0.24	150	836	10	28	5.0	0.6
	1500	10 GXA 1500	0.19	0.17	0.10	0.26	150	949	16	15	7.5	0.8
	1800	10 GXA 1800	0.19	0.14	0.088	0.23	180	832	12.5	20	5.0	0.6
	2200	10 GXA 2200	0.21	0.13	0.074	0.19	220	983	12.5	25	5.0	0.6
	2200	10 GXA 2200	0.21	0.13	0.080	0.21	220	1130	18	15	7.5	0.8
	2700	10 GXA 2700	0.21	0.10	0.064	0.17	270	1140	12.5	30	5.0	0.6
	3300	10 GXA 3300	0.23	0.09	0.053	0.14	330	1310	12.5	35	5.0	0.6
	3300	10 GXA 3300	0.23	0.09	0.075	0.20	330	1250	16	20.5	7.5	0.8
	3900	10 GXA 3900	0.23	0.08	0.046	0.12	390	1390	12.5	40	5.0	0.6
	3900	10 GXA 3900	0.23	0.08	0.065	0.17	390	1440	16	25.5	7.5	0.8
	3900	10 GXA 3900	0.23	0.08	0.062	0.16	390	1450	18	20.5	7.5	0.8
	4700	10 GXA 4700	0.25	0.07	0.054	0.14	470	1700	16	30.5	7.5	0.8
	4700	10 GXA 4700	0.25	0.07	0.053	0.14	470	1640	18	25.5	7.5	0.8
	6800	10 GXA 6800	0.29	0.06	0.046	0.12	680	1930	16	35.5	7.5	0.8
6800	10 GXA 6800	0.29	0.06	0.046	0.12	680	1870	18	30.5	7.5	0.8	
8200	10 GXA 8200	0.33	0.05	0.038	0.098	820	2150	16	40.5	7.5	0.8	
8200	10 GXA 8200	0.33	0.05	0.041	0.11	820	2090	18	35.5	7.5	0.8	
10000	10 GXA 10000	0.37	0.05	0.037	0.095	1000	2330	18	40.5	7.5	0.8	

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LIST OF STANDARD PRODUCTS

RATED VOLTAGE (SURGE VOLTAGE) (V.DC)	NOMINAL CAPACITANCE (μF)	PART NUMBER	DF (tan δ) at 120Hz 20°C	ESR (Ω MAX) at 120Hz 20°C	IMPEDANCE (Ω MAX.) at 100kHz 20°C	IMPEDANCE (Ω MAX.) at 100kHz -10°C	LEAKAGE CURRENT (μA MAX.) at 2min	RIPPLE CURRENT (mA MAX.) at 100kHz 105°C	DIMENSIONS(mm)			
									φD	L	F	φd
16 (20)	15	16 GXA 15	0.16	14.1	5.3	13.8	3.0	39	4	7	1.5	0.45
	27	16 GXA 27	0.16	7.86	3.3	8.6	4.3	98	5	7	2.0	0.45
	33	16 GXA 33	0.16	6.43	2.1	5.5	5.2	113	4	12	1.5	0.45
	56	16 GXA 56	0.16	3.79	1.3	3.4	8.9	110	5	11	2.0	0.5
	56	16 GXA 56	0.16	3.79	1.4	3.6	8.9	88	6.3	7	2.5	0.45
	82	16 GXA 82	0.16	2.59	0.89	2.3	13.1	127	5	15	2.0	0.5
	120	16 GXA 120	0.16	1.77	0.58	1.5	19.2	115	6.3	11	2.5	0.5
	180	16 GXA 180	0.16	1.18	0.39	1.0	28.8	125	6.3	15	2.5	0.5
	220	16 GXA 220	0.16	0.96	0.33	0.86	35.2	298	8	12.5	3.5	0.6
	270	16 GXA 270	0.16	0.79	0.27	0.70	43.2	368	10	12	5.0	0.6
	330	16 GXA 330	0.16	0.64	0.23	0.60	52.8	392	8	16	3.5	0.6
	390	16 GXA 390	0.16	0.54	0.21	0.55	62.4	445	10	15	5.0	0.6
	470	16 GXA 470	0.16	0.45	0.18	0.47	75.2	481	8	20	3.5	0.6
	680	16 GXA 680	0.16	0.31	0.14	0.36	108	612	10	20	5.0	0.6
	680	16 GXA 680	0.16	0.31	0.12	0.32	108	687	12.5	16	5.0	0.6
	820	16 GXA 820	0.16	0.26	0.12	0.31	131	702	10	23	5.0	0.6
	1000	16 GXA 1000	0.16	0.21	0.092	0.24	160	844	10	28	5.0	0.6
	1200	16 GXA 1200	0.16	0.18	0.086	0.22	192	841	12.5	20	5.0	0.6
	1200	16 GXA 1200	0.16	0.18	0.099	0.26	192	963	16	15	7.5	0.8
	1500	16 GXA 1500	0.16	0.14	0.072	0.19	240	987	12.5	25	5.0	0.6
	1500	16 GXA 1500	0.16	0.14	0.080	0.20	240	1140	18	15	7.5	0.8
	2200	16 GXA 2200	0.18	0.11	0.063	0.16	352	1150	12.5	30	5.0	0.6
	2200	16 GXA 2200	0.18	0.11	0.073	0.19	352	1240	16	20.5	7.5	0.8
	2700	16 GXA 2700	0.18	0.09	0.051	0.13	432	1320	12.5	35	5.0	0.6
	2700	16 GXA 2700	0.18	0.09	0.063	0.16	432	1450	16	25.5	7.5	0.8
	3300	16 GXA 3300	0.20	0.08	0.045	0.12	528	1420	12.5	40	5.0	0.6
	3300	16 GXA 3300	0.20	0.08	0.060	0.16	528	1440	18	20.5	7.5	0.8
	3900	16 GXA 3900	0.20	0.07	0.053	0.14	624	1700	16	30.5	7.5	0.8
	3900	16 GXA 3900	0.20	0.07	0.052	0.14	624	1650	18	25.5	7.5	0.8
	4700	16 GXA 4700	0.22	0.06	0.046	0.12	752	1910	16	35.5	7.5	0.8
4700	16 GXA 4700	0.22	0.06	0.046	0.12	752	1870	18	30.5	7.5	0.8	
5600	16 GXA 5600	0.24	0.06	0.038	0.097	896	2170	16	40.5	7.5	0.8	
6800	16 GXA 6800	0.26	0.05	0.040	0.10	1088	2080	18	35.5	7.5	0.8	
8200	16 GXA 8200	0.30	0.05	0.036	0.094	1312	2340	18	40.5	7.5	0.8	



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MINIATURE ALUMINUM ELECTROLYTIC CAPACITORS

LIST OF STANDARD PRODUCTS

RATED VOLTAGE (SURGE VOLTAGE) (V.DC)	NOMINAL CAPACITANCE (μF)	PART NUMBER	DF (tan δ) at 120Hz 20°C	ESR (Ω MAX) at 120Hz 20°C	IMPEDANCE (Ω MAX.) at 100kHz 20°C	IMPEDANCE (Ω MAX.) at 100kHz -10°C	LEAKAGE CURRENT (μA MAX.) at 2min	RIPPLE CURRENT (mA MAX.) at 100kHz 105°C	DIMENSIONS(mm)			
									φD	L	F	φd
25 (32)	10	25 GXA 10	0.14	18.6	5.3	13.8	3.0	47	4	7	1.5	0.45
	22	25 GXA 22	0.14	8.44	2.1	5.5	5.5	101	4	12	1.5	0.45
	22	25 GXA 22	0.14	8.44	3.3	8.6	5.5	89	5	7	2.0	0.45
	39	25 GXA 39	0.14	4.76	1.3	3.4	9.7	103	5	11	2.0	0.5
	39	25 GXA 39	0.14	4.76	1.4	3.6	9.7	79	6.3	7	2.5	0.45
	56	25 GXA 56	0.14	3.32	0.88	2.3	14.0	118	5	15	2.0	0.5
	82	25 GXA 82	0.14	2.26	0.58	1.5	20.5	112	6.3	11	2.5	0.5
	120	25 GXA 120	0.14	1.55	0.39	1.0	30.0	121	6.3	15	2.5	0.5
	150	25 GXA 150	0.14	1.24	0.33	0.86	37.5	298	8	12.5	3.5	0.6
	180	25 GXA 180	0.14	1.03	0.27	0.69	45.0	370	10	12	5.0	0.6
	220	25 GXA 220	0.14	0.84	0.23	0.60	55.0	374	8	16	3.5	0.6
	270	25 GXA 270	0.14	0.69	0.18	0.47	67.5	484	8	20	3.5	0.6
	270	25 GXA 270	0.14	0.69	0.21	0.55	67.5	447	10	15	5.0	0.6
	470	25 GXA 470	0.14	0.40	0.14	0.36	117	616	10	20	5.0	0.6
	470	25 GXA 470	0.14	0.40	0.12	0.32	117	693	12.5	16	5.0	0.6
	560	25 GXA 560	0.14	0.33	0.12	0.31	140	706	10	23	5.0	0.6
	680	25 GXA 680	0.14	0.27	0.091	0.23	170	848	10	28	5.0	0.6
	820	25 GXA 820	0.14	0.23	0.085	0.22	205	846	12.5	20	5.0	0.6
	820	25 GXA 820	0.14	0.23	0.098	0.25	205	966	16	15	7.5	0.8
	1000	25 GXA 1000	0.14	0.19	0.071	0.18	250	992	12.5	25	5.0	0.6
	1200	25 GXA 1200	0.14	0.15	0.078	0.20	300	1150	18	15	7.5	0.8
	1500	25 GXA 1500	0.14	0.12	0.062	0.16	375	1150	12.5	30	5.0	0.6
	1500	25 GXA 1500	0.14	0.12	0.072	0.19	375	1260	16	20.5	7.5	0.8
	1800	25 GXA 1800	0.14	0.10	0.051	0.13	450	1330	12.5	35	5.0	0.6
	1800	25 GXA 1800	0.14	0.10	0.063	0.16	450	1450	16	25.5	7.5	0.8
	2200	25 GXA 2200	0.16	0.10	0.045	0.12	550	1410	12.5	40	5.0	0.6
	2200	25 GXA 2200	0.16	0.10	0.060	0.16	550	1460	18	20.5	7.5	0.8
	2700	25 GXA 2700	0.16	0.08	0.052	0.14	675	1710	16	30.5	7.5	0.8
	2700	25 GXA 2700	0.16	0.08	0.051	0.13	675	1660	18	25.5	7.5	0.8
	3300	25 GXA 3300	0.18	0.07	0.045	0.12	825	1930	16	35.5	7.5	0.8
	3300	25 GXA 3300	0.18	0.07	0.046	0.12	825	1880	18	30.5	7.5	0.8
	3900	25 GXA 3900	0.18	0.06	0.038	0.096	975	2180	16	40.5	7.5	0.8
3900	25 GXA 3900	0.18	0.06	0.040	0.10	975	2090	18	35.5	7.5	0.8	
4700	25 GXA 4700	0.20	0.06	0.036	0.094	1175	2350	18	40.5	7.5	0.8	

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MINIATURE ALUMINUM ELECTROLYTIC CAPACITORS

LIST OF STANDARD PRODUCTS

RATED VOLTAGE (SURGE VOLTAGE) (V.DC)	NOMINAL CAPACITANCE (μF)	PART NUMBER	DF (tan δ) at 120Hz 20°C	ESR (Ω MAX) at 120Hz 20°C	IMPEDANCE (Ω MAX.) at 100kHz 20°C	IMPEDANCE (Ω MAX.) at 100kHz -10°C	LEAKAGE CURRENT (μA MAX.) at 2min	RIPPLE CURRENT (mA MAX.) at 100kHz 105°C	DIMENSIONS(mm)			
									φD	L	F	φd
35 (44)	6.8	35 GXA 6R8	0.12	23.4	5.2	13.4	3.0	43	4	7	1.5	0.45
	12	35 GXA 12	0.12	13.3	3.2	8.3	4.2	69	5	7	2.0	0.45
	15	35 GXA 15	0.12	10.6	2.1	5.4	5.2	90	4	12	1.5	0.45
	27	35 GXA 27	0.12	5.89	1.2	3.1	9.4	102	5	11	2.0	0.5
	27	35 GXA 27	0.12	5.89	1.3	3.4	9.4	74	6.3	7	2.5	0.45
	39	35 GXA 39	0.12	4.08	0.87	2.3	13.6	121	5	15	2.0	0.5
	56	35 GXA 56	0.12	2.84	0.57	1.5	19.6	108	6.3	11	2.5	0.5
	82	35 GXA 82	0.12	1.94	0.38	0.97	28.7	119	6.3	15	2.5	0.5
	100	35 GXA 100	0.12	1.59	0.32	0.83	35.0	301	8	12.5	3.5	0.6
	120	35 GXA 120	0.12	1.33	0.27	0.69	42.0	373	10	12	5.0	0.6
	150	35 GXA 150	0.12	1.06	0.23	0.60	52.5	378	8	16	3.5	0.6
	180	35 GXA 180	0.12	0.88	0.21	0.55	63.0	450	10	15	5.0	0.6
	220	35 GXA 220	0.12	0.72	0.18	0.47	77.0	489	8	20	3.5	0.6
	330	35 GXA 330	0.12	0.48	0.13	0.34	115	630	10	20	5.0	0.6
	330	35 GXA 330	0.12	0.48	0.12	0.30	115	703	12.5	16	5.0	0.6
	390	35 GXA 390	0.12	0.41	0.11	0.29	136	712	10	23	5.0	0.6
	470	35 GXA 470	0.12	0.34	0.091	0.23	164	856	10	28	5.0	0.6
	560	35 GXA 560	0.12	0.28	0.083	0.22	196	851	12.5	20	5.0	0.6
	560	35 GXA 560	0.12	0.28	0.096	0.25	196	972	16	15	7.5	0.8
	680	35 GXA 680	0.12	0.23	0.071	0.18	238	1010	12.5	25	5.0	0.6
	820	35 GXA 820	0.12	0.19	0.076	0.20	287	1160	18	15	7.5	0.8
	1000	35 GXA 1000	0.12	0.16	0.061	0.16	350	1160	12.5	30	5.0	0.6
	1000	35 GXA 1000	0.12	0.16	0.071	0.18	350	1270	16	20.5	7.5	0.8
	1200	35 GXA 1200	0.12	0.13	0.050	0.13	420	1340	12.5	35	5.0	0.6
	1200	35 GXA 1200	0.12	0.13	0.062	0.16	420	1460	16	25.5	7.5	0.8
	1500	35 GXA 1500	0.12	0.11	0.044	0.12	525	1430	12.5	40	5.0	0.6
	1500	35 GXA 1500	0.12	0.11	0.059	0.15	525	1460	18	20.5	7.5	0.8
	1800	35 GXA 1800	0.12	0.09	0.052	0.14	630	1710	16	30.5	7.5	0.8
	1800	35 GXA 1800	0.12	0.09	0.051	0.13	630	1670	18	25.5	7.5	0.8
	2200	35 GXA 2200	0.14	0.08	0.044	0.11	770	1930	16	35.5	7.5	0.8
	2200	35 GXA 2200	0.14	0.08	0.045	0.11	770	1900	18	30.5	7.5	0.8
	2700	35 GXA 2700	0.14	0.07	0.037	0.094	945	2190	16	40.5	7.5	0.8
	2700	35 GXA 2700	0.14	0.07	0.040	0.10	945	2100	18	35.5	7.5	0.8
3300	35 GXA 3300	0.16	0.06	0.035	0.091	1155	2360	18	40.5	7.5	0.8	

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MINIATURE ALUMINUM ELECTROLYTIC CAPACITORS

■ LIST OF STANDARD PRODUCTS

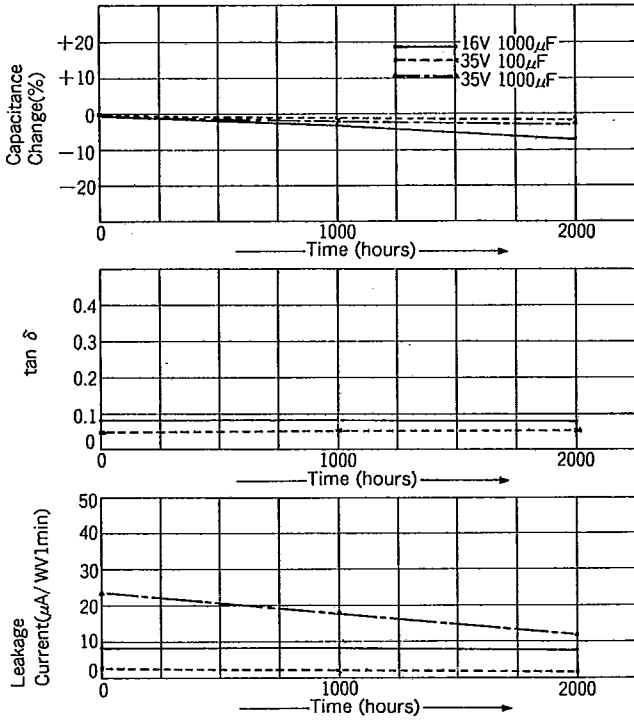
RATED VOLTAGE (SURGE VOLTAGE) (V.DC)	NOMINAL CAPACITANCE (μF)	PART NUMBER	DF (tan δ) at 120Hz 20°C	ESR (Ω MAX) at 120Hz 20°C	IMPEDANCE (Ω MAX.) at 100kHz 20°C	IMPEDANCE (Ω MAX.) at 100kHz -10°C	LEAKAGE CURRENT (μA MAX.) at 2min	RIPPLE CURRENT (mA MAX.) at 100kHz 105°C	DIMENSIONS(mm)				
									φ _D	L	F	φ _d	
	4.7	50 GXA 4R7	0.10	28.2	5.0	13.0	3.0	48	4	7	1.5	0.45	
	8.2	50 GXA 8R2	0.10	16.2	3.1	8.1	4.1	68	5	7	2.0	0.45	
	10	50 GXA 10	0.10	13.3	2.0	5.3	5.0	88	4	12	1.5	0.45	
	18	50 GXA 18	0.10	7.37	1.2	3.1	9.0	99	5	11	2.0	0.5	
	18	50 GXA 18	0.10	7.37	1.3	3.4	9.0	74	6.3	7	2.5	0.45	
	27	50 GXA 27	0.10	4.91	0.84	2.2	13.5	105	5	15	2.0	0.5	
	39	50 GXA 39	0.10	3.40	0.55	1.4	19.5	105	6.3	11	2.5	0.5	
	56	50 GXA 56	0.10	2.37	0.37	0.95	28.0	116	6.3	15	2.5	0.5	
	68	50 GXA 68	0.10	1.95	0.31	0.81	34.0	305	8	12.5	3.5	0.6	
	82	50 GXA 82	0.10	1.62	0.23	0.59	41.0	384	8	16	3.5	0.6	
	82	50 GXA 82	0.10	1.62	0.27	0.67	41.0	379	10	12	5.0	0.6	
	100	50 GXA 100	0.10	1.33	0.20	0.54	50.0	454	10	15	5.0	0.6	
	120	50 GXA 120	0.10	1.11	0.18	0.45	60.0	498	8	20	3.5	0.6	
	180	50 GXA 180	0.10	0.74	0.13	0.34	90.0	630	10	20	5.0	0.6	
	180	50 GXA 180	0.10	0.74	0.12	0.30	90.0	708	12.5	16	5.0	0.6	
	220	50 GXA 220	0.10	0.60	0.11	0.29	110	725	10	23	5.0	0.6	
	50 (63)	330	50 GXA 330	0.10	0.40	0.088	0.23	165	875	10	28	5.0	0.6
		330	50 GXA 330	0.10	0.40	0.081	0.22	165	865	12.5	20	5.0	0.6
		330	50 GXA 330	0.10	0.40	0.093	0.22	165	987	16	15	7.5	0.8
		470	50 GXA 470	0.10	0.28	0.068	0.18	235	1020	12.5	25	5.0	0.6
		470	50 GXA 470	0.10	0.28	0.074	0.19	235	1190	18	15	7.5	0.8
		560	50 GXA 560	0.10	0.24	0.060	0.16	280	1160	12.5	30	5.0	0.6
		680	50 GXA 680	0.10	0.20	0.050	0.13	340	1360	12.5	35	5.0	0.6
		680	50 GXA 680	0.10	0.20	0.069	0.16	340	1290	16	20.5	7.5	0.8
		820	50 GXA 820	0.10	0.16	0.043	0.12	410	1450	12.5	40	5.0	0.6
		820	50 GXA 820	0.10	0.16	0.060	0.13	410	1480	16	25.5	7.5	0.8
		820	50 GXA 820	0.10	0.16	0.057	0.15	410	1490	18	20.5	7.5	0.8
		1000	50 GXA 1000	0.10	0.13	0.050	0.13	500	1730	16	30.5	7.5	0.8
		1000	50 GXA 1000	0.10	0.13	0.050	0.13	500	1700	18	25.5	7.5	0.8
		1200	50 GXA 1200	0.10	0.11	0.043	0.11	600	1950	16	35.5	7.5	0.8
		1500	50 GXA 1500	0.10	0.09	0.036	0.093	750	2240	16	40.5	7.5	0.8
		1500	50 GXA 1500	0.10	0.09	0.044	0.11	750	1930	18	30.5	7.5	0.8
		1800	50 GXA 1800	0.10	0.07	0.038	0.099	900	2140	18	35.5	7.5	0.8
		2200	50 GXA 2200	0.12	0.07	0.034	0.088	1100	2400	18	40.5	7.5	0.8

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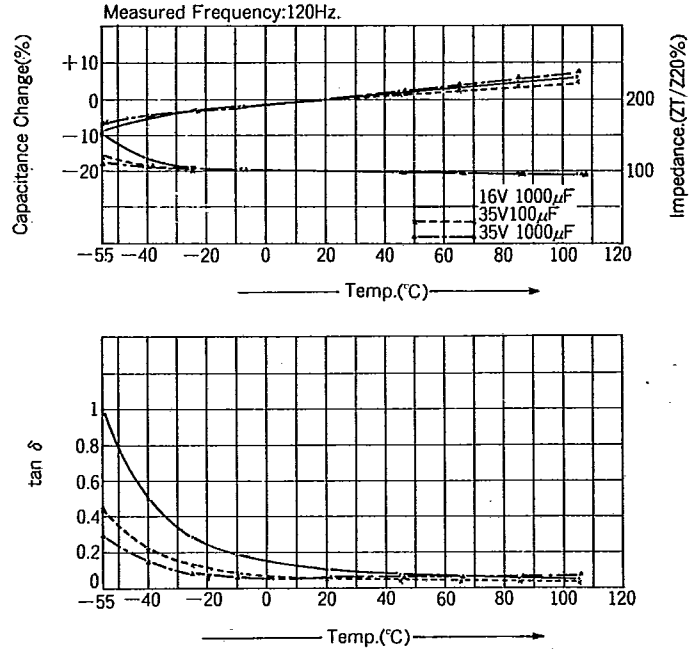
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MINIATURE ALUMINUM ELECTROLYTIC CAPACITORS

■ Load Life at 105°C



■ Temperature Characteristics



■ Frequency Characteristics

