RGA Series

Features

- 105℃, 2,000 hours assured
- 105℃ standard series for general purposes
- RoHS compliant
- If there is any requirement on ESR, it's suggested to use low ESR series instead of RGA. Please consult us for any inquiry.

Specifications

Items	Performance
Category Temperature Range	6.3~400V: -40℃ ~ +105℃ / 450V: -25℃ ~ +105℃
Capacitance Tolerance	± 20% (at 120 Hz, 20℃)
Leakage Current (at 20℃)	Rated voltage: ≦100V / >100V; Time: after 2 minutes / after 5 minutes; Leakage Current: I = 0.01CV or 3 (μA) whichever is greater / CV ≦ 1,000 I = 0.03CV + 15(μA) / CV > 1,000 I = 0.02CV + 25(μA). Where, C = rated capacitance in μF, V = rated DC working voltage in V
Tanδ (at 120 Hz, 20℃)	See table below. When the capacitance exceeds 1,000μF, 0.02 shall be added every 1,000μF increase.
Low Temperature Characteristics (at 120 Hz)	Impedance ratio shall not exceed the values given in the table below.
Endurance	See table below.
Shelf Life Test	See table below.
Ripple Current and Frequency Multipliers	See table below.

Rated Voltage	6.3	10	16	25	35	50	63	100	160	200	250	350	400	450
Tanδ (max.)	0.23	0.20	0.16	0.14	0.12	0.10	0.09	0.08	0.12	0.14	0.17	0.20	0.25	0.25

Rated Voltage			6.3	10	16	25	35	50	63	100	160	200	250	350	400	450
Impedance Ratio	Z(-25℃) / Z(+20℃)	φD<16	4	3	3	2	2	2	2	2	3	6	8	12	14	16
		φD≧16	6	4	4	3	3	3	3	3						
	Z(-40℃) / Z(+20℃)	φD<16	8	6	6	4	4	3	3	3	4	8	10	16	18	-
		φD≧16	12	10	8	8	8	8	6	6						

Test Time	2,000 Hrs
Capacitance Change	Within ± 20% of initial value
Tanδ	Less than 200% of specified value
Leakage Current	Within specified value

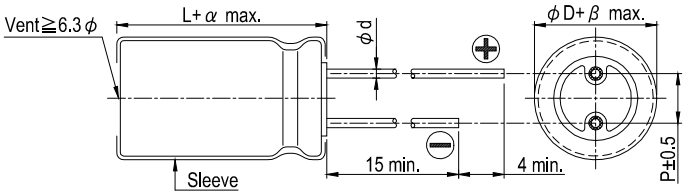
* The above specifications shall be satisfied when the capacitors are restored to 20℃ after the rated voltage applied with rated ripple current for 2,000 hours at 105℃.

Test Time	1,000 Hrs
Capacitance Change	Within ± 20% of initial value
Tanδ	Less than 200% of specified value
Leakage Current	Within specified value

* The above specifications shall be satisfied when the capacitors are restored to 20℃ after exposing them for 1,000 hours at 105℃ without voltage applied. The rated voltage shall be applied to the capacitors before the measurements for 160 ~ 450V (Refer to JIS C 5101-4 4.1).

Freq. (Hz) / Cap. (μF)	60 (50)	120	500	1k	10k up
≦ 100	0.70	1.00	1.30	1.40	1.50
100 < C ≦ 1,000	0.75	1.00	1.20	1.30	1.35
1,000 <	0.80	1.00	1.10	1.12	1.15

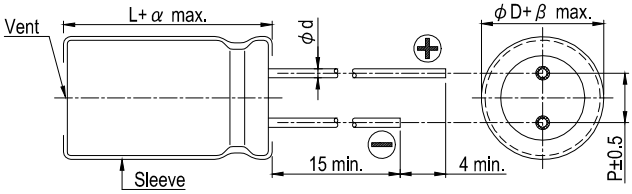
Diagram of Dimensions



Lead Spacing and Diameter Unit: mm

φD	5	6.3	8	10	12.5	16	18	22	25
P	2.0	2.5	3.5	5.0	5.0	7.5	7.5	10	12.5
φd	0.5		0.6			0.8		1.0	
α	L<20: 1.5, L≧20: 2.0							2.0	
β	0.5								

The case size of 12.5×16, 16×16, 16×20, 18×16, 18×20 and 18×25 are suitable for below diagram:



Dimension: ϕD × L(mm)

Dimension and Permissible Ripple Current

Ripple Current: mA/rms at 120 Hz, 105℃

Rated Volt. (VDC) / Cap.(μF)	Contents	6.3V (0J)		10V (1A)		16V (1C)		25V (1E)		35V (1V)		50V (1H)		63V (1J)		100V (2A)	
		ϕD×L	mA	ϕD×L	mA	ϕD×L	mA	ϕD×L	mA	ϕD×L	mA	ϕD×L	mA	ϕD×L	mA	ϕD×L	mA
2.2	2R2											5×11	20			5×11	30
3.3	3R3											5×11	30			5×11	31
4.7	4R7											5×11	33			5×11	36
10	100											5×11	50			6.3×11	54
22	220											5×11	78	6.3×11	86	6.3×11 8×11.5	93 99
33	330									5×11	75	5×11	90	6.3×11	100	8×11.5	130
47	470							5×11	97	5×11	90	6.3×11	120	6.3×11 8×11.5	130 141	10×12.5	165
100	101					5×11	110	6.3×11	142	6.3×11	150	8×11.5	188	10×12.5	235	10×20 12.5×16	265 290
220	221	5×11	140	6.3×11	175	6.3×11	190	8×11.5	236	8×11.5	270	10×12.5	300	10×16	335	12.5×25 16×16	440 420
330	331			6.3×11	200	8×11.5	270	8×11.5 10×12.5	310 335	10×12.5	350	10×16	410	10×20 12.5×16	510 460	16×25	620
470	471	6.3×11	230	8×11.5	290	8×11.5	310	10×12.5	380	10×16	460	10×20 12.5×16	530 425	12.5×20 16×16	640 665	16×31.5 18×25	715 745
1,000	102	8×11.5	380	10×12.5	460	10×16	560	10×20 12.5×16	680 590	12.5×20 16×16	810 720	12.5×25 16×20	950 830	16×25	930	18×40	1,275
2,200	222	10×16	690	10×20	760	12.5×16	780	12.5×25	1,110	16×25 18×20	1,260 1,110	16×35.5 18×31.5	1,470 1,520	18×40	2,280	25×45	2,400
3,300	332	10×20 12.5×16	840 850	12.5×20 16×16	1,100 940	12.5×25 16×16	1,170 950	16×25 18×20	1,440 1,220	16×31.5 18×25	1,420 1,570	18×35.5	1,770	22×40	2,510		
4,700	472	12.5×20 16×16	1,090 1,010	12.5×25 16×16	1,260 1,060	16×20 18×16	1,185 1,290	16×31.5 18×25	1,650 1,550	18×35.5	1,900	22×40	2,340	25×40	3,000		
6,800	682	12.5×25 16×20	1,460 1,190	16×20	1,270	16×31.5 18×20	1,930 1,585	16×40 18×35.5	2,000 2,160	18×40	2,250	25×40	2,530				
10,000	103	16×20	1,340	16×31.5 18×25	2,220 1,800	16×35.5 18×31.5	2,210 2,330	22×40 18×45	2,720 2,410								
15,000	153	16×31.5 18×25	2,365 2,290	18×31.5 16×35.5	2,620 2,590	18×40	2,950	25×40	3,200								
22,000	223	16×40 18×35.5	2,800 2,930	18×40	3,230	22×40	3,460										
33,000	333	18×45	3,080	22×40	4,090	25×45	4,500										

Rated Volt. (VDC) / Cap.(μF)	Contents	160V (2C)		200V (2D)		250V (2E)		350V (2V)		400V (2G)		450V (2W)	
		ϕD×L	mA	ϕD×L	mA	ϕD×L	mA	ϕD×L	mA	ϕD×L	mA	ϕD×L	mA
1	010									6.3×11	21	8×11.5	27
2.2	2R2			6.3×11	30	6.3×11	35	6.3×11	35	8×11.5	39	8×11.5	39
3.3	3R3			6.3×11	39	6.3×11	40	8×11.5	43	8×11.5	45	8×11.5	45
4.7	4R7			6.3×11	43	8×11.5	45	8×11.5 10×12.5	45 55	8×11.5 10×12.5	50 55	8×11.5 10×12.5	50 55
10	100	8×11.5	65	8×11.5	65	10×12.5	92	10×16	95	10×16	95	10×20	105
22	220	10×12.5	110	10×16	140	10×16	140	12.5×20	220	12.5×20	160	12.5×20	160
33	330	10×16	150	10×20	170	12.5×16	175	12.5×25 16×16	215 205	16×20	225	16×20 18×16	225 220
47	470	10×20	195	12.5×16	215	12.5×20 16×16	230 245	16×20	255	16×25	295	16×25 18×20	280 285
68	680	12.5×20	275	12.5×20 16×16	265 290	16×20	320	18×25 16×31.5	360 370	18×25 16×31.5	360 375	16×35.5 18×31.5	400 420
100	101	12.5×25	355	16×20 18×16	365 360	16×25 18×20	425 415	18×31.5 16×35.5	460 430	18×35.5	540	18×40	560
150	151	16×25	470	18×20	510	16×31.5 18×25	550 535	18×40	600	22×40	730	22×40	770
220	221	16×31.5	660	18×31.5	750	18×35.5	760	25×40 22×45	865 850	22×45	930		
330	331	18×35.5	820	18×40	965	22×40	1,140	25×45	1,070				
470	471	22×40	1,130	22×40	1,130	25×40	1,325						

Part Numbering System

RGA Series	470μF	± 20%	6.3V	Bulk Package	Gas Type	6.3ϕ×11L	General Purpose
RGA	**471**	**M**	**0J**	**BK**	**-**	**0611**	
Series Name	Capacitance	Capacitance Tolerance	Rated Voltage	Lead Configuration and Package	Rubber Type	Case Size	Application

Note: For more details, please refer to “Part Numbering System - Radial Type” on page 139.