



RGA Series

Features

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

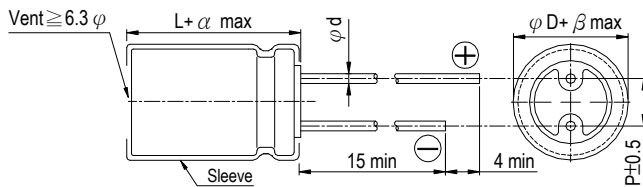


Sleeve & Marking Color: Black & White

Specifications

Items	Performance															
Category Temperature Range	6.3~400V	450V														
	-40°C ~ +105°C	-25°C ~ +105°C														
Capacitance Tolerance	±20% (at 120Hz, 20°C)															
Leakage Current (at 20°C)	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°C)	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	
When the capacitance exceeds 1,000μF, 0.02 shall be added every 1,000μF increase.																
Low Temperature Characteristics (at 120Hz)	Impedance ratio shall not exceed the values given in the table below.															
	Rated Voltage	6.3	10	16	25	35	50	63	100	160	200	250	350	400	450	
	Impedance Ratio	Z(-25°C)	φ D < 16	4	3	3	2	2	2	2	3	6	8	12	14	16
		/Z(+20°C)	φ D ≥ 16	6	4	4	3	3	3	3	4	8	10	16	18	-
		Z(-40°C)	φ D < 16	8	6	6	4	4	3	3	4	8	10	16	18	-
/Z(+20°C)		φ D ≥ 16	12	10	8	8	8	8	6	6	8	10	16	18	-	
Endurance	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°C after the rated voltage applied with rated ripple current for 2,000 hours at 105°C.																
Shelf Life Test	Test Time	1,000 Hrs														
	Capacitance Change	With in ±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°C after exposing them for 1,000 hours at 105°C 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).																
Ripple Current & Frequency Multipliers	Cap. (μF)	Freq. (Hz)														
		60 (50)	120	500	1k	10k up										
		Under 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 up above	0.80	1.00	1.10	1.12	1.15											

Diagram of Dimensions

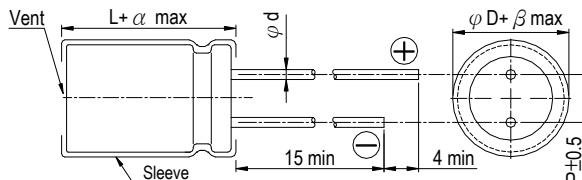


Lead Spacing and Diameter

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:  $\phi D \times L(\text{mm})$   
Ripple Current: mA/rms at 120 Hz, 105°C

Dimension & Permissible Ripple Current

$\mu\text{F}$	Contents	6.3V (0J)		10V (1A)		16V (1C)		25V (1E)		35V (1V)		50V (1H)		63V (1J)		100V (2A)	
		$\phi D \times L$	mA	$\phi D \times L$	mA	$\phi D \times L$	mA	$\phi D \times L$	mA	$\phi D \times L$	mA	$\phi D \times L$	mA	$\phi D \times L$	mA	$\phi D \times L$	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	93
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	130	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	265
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	440
330	331			6.3×11	200	8×11.5	270	8×11.5	310	10×12.5	350	10×16	410	10×20	510	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	530	12.5×20	640	16×31.5	715
1,000	102	8×11.5	380	10×12.5	460	10×16	560	10×20	680	12.5×20	810	12.5×25	950	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	1,260	16×35.5	1,470	18×40	2,280	25×45	2,400
3,300	332	10×20	840	12.5×20	1,100	12.5×25	1,170	16×25	1,440	16×31.5	1,420	18×35.5	1,770	22×40	2,510		
4,700	472	12.5×20	1,090	12.5×25	1,260	16×20	1,185	16×31.5	1,650	18×35.5	1,900	22×40	2,340	25×40	3,000		
6,800	682	12.5×25	1,460	16×20	1,270	16×31.5	1,930	16×40	2,000	18×40	2,250	25×40	2,530				
10,000	103	16×20	1,340	16×31.5	2,220	16×35.5	2,210	22×40	2,720								
15,000	153	16×31.5	2,365	18×25	1,800	18×31.5	2,330	18×45	2,410								
22,000	223	16×40	2,800	18×35.5	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										

$\mu\text{F}$	Contents	160V (2C)		200V (2D)		250V (2E)		350V (2V)		400V (2G)		450V (2W)	
		$\phi D \times L$	mA	$\phi D \times L$	mA	$\phi D \times L$	mA	$\phi D \times L$	mA	$\phi D \times L$	mA	$\phi D \times L$	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	55	8×11.5	55	8×11.5	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	215	16×20	225	16×20	225
47	470	10×20	195	12.5×16	215	12.5×20	230	16×20	255	16×25	295	16×25	280
68	680	12.5×20	275	12.5×20	265	16×20	320	18×25	360	18×25	360	16×35.5	400
100	101	12.5×25	355	16×20	365	16×25	425	16×31.5	460	18×35.5	540	18×31.5	420
150	151	16×25	470	18×20	510	16×31.5	550	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	865	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	10×20	1,130	25×40	1,325						

Part Numbering System

RGA series    470 $\mu\text{F}$      $\pm 20\%$     6.3V    Bulk Package    Gas Type    6.3  $\phi \times 11\text{L}$     Pb-free and PET coating case

**RGA**    **471**    **M**    **0J**    **BK**    -    **0611**

Series    Capacitance    Capacitance Tolerance    Rated Voltage    Lead Configuration & Package    Rubber Type    Case Size    Lead Wire and Coating Type

Note: For more details, please refer to "Part Numbering System (Radial Type)" on page 10.