

Features

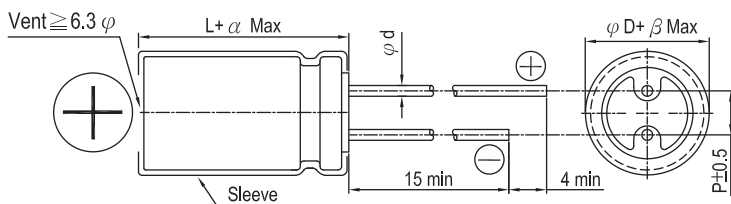
- 105°C, for general purpose, standard series
- RoHS Compliance
- If there is any requirement on ESR, it's suggested to use low ESR series instead of RGA. Please consult our contact window for any inquiry.



SPECIFICATIONS

Items	Performance																																																																														
Operating Temperature Range	-40°C ~ +105°C																																																																														
Capacitance Tolerance	±20% (at 120Hz, 20°C)																																																																														
Leakage Current (at 20°C)	<table border="1"> <thead> <tr> <th>Rated voltage</th> <th>≤ 100V</th> <th colspan="2">> 100V</th> </tr> <tr> <th>Time</th> <td>after 2 minutes</td> <td colspan="2">after 5 minutes</td> </tr> <tr> <th>Leakage Current</th> <td>I = 0.01CV or 3 (μA) whichever is greater</td> <td>CV ≤ 1,000 I = 0.03CV+15(μA)</td> <td>CV > 1,000 I = 0.02CV+25(μA)</td> </tr> </thead> </table> <p>Where, C = rated capacitance in μF V = rated DC working voltage in V</p>	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)																																																																		
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Dissipation Factor (Tan δ at 120 Hz, 20°C)	<table border="1"> <thead> <tr> <th>Rated Voltage</th> <th>6.3</th> <th>10</th> <th>16</th> <th>25</th> <th>35</th> <th>50</th> <th>63</th> <th>100</th> <th>160</th> <th>200</th> <th>250</th> <th>350</th> <th>400</th> <th>450</th> </tr> </thead> <tbody> <tr> <td>Tan δ (max)</td> <td>0.23</td> <td>0.20</td> <td>0.16</td> <td>0.14</td> <td>0.12</td> <td>0.10</td> <td>0.09</td> <td>0.08</td> <td>0.12</td> <td>0.14</td> <td>0.17</td> <td>0.20</td> <td>0.25</td> <td>0.25</td> </tr> </tbody> </table> <p>When the capacitance exceeds 1,000 μF, 0.02 shall be added every 1,000 μF increase.</p>	Rated Voltage	6.3	10	16	25	35	50	63	100	160	200	250	350	400	450	Tan δ (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																																																
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Low Temperature Characteristics (at 120Hz)	<p>Impedance ratio shall not exceed the values given in the table below.</p> <table border="1"> <thead> <tr> <th colspan="2">Rated Voltage</th> <th>6.3</th> <th>10</th> <th>16</th> <th>25</th> <th>35</th> <th>50</th> <th>63</th> <th>100</th> <th>160</th> <th>200</th> <th>250</th> <th>350</th> <th>400</th> <th>450</th> </tr> </thead> <tbody> <tr> <td rowspan="2">Impedance Ratio</td> <td>Z(-25°C) / Z(+20°C) φ D < 16</td> <td>4</td> <td>3</td> <td>3</td> <td>2</td> <td>2</td> <td>2</td> <td>2</td> <td>2</td> <td>3</td> <td>6</td> <td>8</td> <td>12</td> <td>14</td> <td>16</td> </tr> <tr> <td>Z(-25°C) / Z(+20°C) φ D ≥ 16</td> <td>6</td> <td>4</td> <td>4</td> <td>3</td> <td>3</td> <td>3</td> <td>3</td> <td>3</td> <td>4</td> <td>8</td> <td>10</td> <td>16</td> <td>18</td> <td>20</td> </tr> <tr> <td rowspan="2">Impedance Ratio</td> <td>Z(-40°C) / Z(+20°C) φ D < 16</td> <td>8</td> <td>6</td> <td>6</td> <td>4</td> <td>4</td> <td>3</td> <td>3</td> <td>3</td> <td>4</td> <td>8</td> <td>10</td> <td>16</td> <td>18</td> <td>20</td> </tr> <tr> <td>Z(-40°C) / Z(+20°C) φ D ≥ 16</td> <td>12</td> <td>10</td> <td>8</td> <td>8</td> <td>8</td> <td>8</td> <td>6</td> <td>6</td> <td>4</td> <td>8</td> <td>10</td> <td>16</td> <td>18</td> <td>20</td> </tr> </tbody> </table>	Rated Voltage		6.3	10	16	25	35	50	63	100	160	200	250	350	400	450	Impedance Ratio	Z(-25°C) / Z(+20°C) φ D < 16	4	3	3	2	2	2	2	2	3	6	8	12	14	16	Z(-25°C) / Z(+20°C) φ D ≥ 16	6	4	4	3	3	3	3	3	4	8	10	16	18	20	Impedance Ratio	Z(-40°C) / Z(+20°C) φ D < 16	8	6	6	4	4	3	3	3	4	8	10	16	18	20	Z(-40°C) / Z(+20°C) φ D ≥ 16	12	10	8	8	8	8	6	6	4	8	10	16	18	20
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Ripple Current & Frequency Multipliers	<table border="1"> <thead> <tr> <th>Cap.(μF) \ Freq.(Hz)</th> <th>60(50)</th> <th>120</th> <th>500</th> <th>1K</th> <th>10K up</th> </tr> </thead> <tbody> <tr> <td>Under 100</td> <td>0.70</td> <td>1.00</td> <td>1.30</td> <td>1.40</td> <td>1.50</td> </tr> <tr> <td>100 < C ≤ 1,000</td> <td>0.75</td> <td>1.00</td> <td>1.20</td> <td>1.30</td> <td>1.35</td> </tr> <tr> <td>1,000 up above</td> <td>0.80</td> <td>1.00</td> <td>1.10</td> <td>1.12</td> <td>1.15</td> </tr> </tbody> </table>	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																																																						
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DIAGRAM OF DIMENSIONS



LEAD SPACING AND DIAMETER Unit: mm

φ D	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
φ d	0.5			0.6		0.8		1.0	
α	1.0			1.5			2.0		
β	0.5								

Dimension: φ D × L (mm)

Ripple Current: mA/rms at 120 Hz, 105°C

DIMENSION & PERMISSIBLE RIPPLE CURRENT

μF	V. DC Contents	6.3V (0J)				10V (1A)				16V (1C)				25V (1E)			
		φ D×L	mA	*φ D×L	mA	φ D×L	mA	*φ D×L	mA	φ D×L	mA	*φ D×L	mA	φ D×L	mA	*φ D×L	mA
4.7	4R7													5×11	26		
10	100									5×11	35			5×11	43		
22	220					5×11	49			5×11	58			5×11	62		
33	330	5×11	54			5×11	60			5×11	71			5×11	76		
47	470	5×11	65			5×11	76			5×11	85			5×11	97		
100	101	5×11	95			5×11	105			6.3×11	133	5×11	110	6.3×11	142		
220	221	6.3×11	160	5×11	140	6.3×11	175			8×11.5	215	6.3×11	190	8×11.5	236		
330	331	8×11.5	195	6.3×11	190	8×11.5	245	6.3×11	200	8×11.5	270			10×12.5	335	8×11.5	310
470	471	8×11.5	270	6.3×11	230	8×11.5	290			10×12.5	370	8×11.5	310	10×16	440	10×12.5	380
1,000	102	10×12.5	460	8×11.5	380	10×16	550	10×12.5	460	10×20	640	10×16	560	10×20 12.5×20	680 770	12.5×16	590
2,200	222	10×16 10×20	690 710	12.5×16	700	10×20 12.5×20	760 860	12.5×16	690	12.5×20 12.5×25	920 1,000	16×16	830	12.5×25 16×25	1,110 1,170	16×20	970
3,300	332	12.5×20	960	10×20	840	12.5×20	1,100	16×16	940	12.5×25 16×25	1,170 1,300	16×16 16×20	950 1,050	16×25 16×31.5	1,440 1,460	18×20	1,220
4,700	472	12.5×20 16×25	1,090 1,330	16×16	1,010	12.5×25 16×25	1,260 1,400	16×16 16×20	1,060 1,120	16×25 16×31.5	1,480 1,600	16×20 18×20	1,185 1,260	16×31.5 18×35.5	1,710 1,780	18×25	1,470
6,800	682	12.5×25 16×25	1,460 1,640	16×20	1,190	16×25 16×31.5	1,690 1,880	16×20 18×20	1,270 1,330	16×31.5 18×35.5	1,930 2,170	18×25	1,650	18×40	2,280	18×35.5	2,160
10,000	103	16×25 16×31.5	1,990 2,200	16×20 18×20	1,340 1,440	16×31.5 16×35.5	2,220 2,400	18×25	1,800	18×35.5	2,640	18×31.5	2,330	22×40	2,720		
15,000	153	18×35.5	2,780	16×35.5	2,500	18×35.5	2,780	16×35.5	2,500	18×40	2,950						
22,000	223	18×40	3,100	18×35.5	2,930	18×40	3,100			22×40	3,460						

μF	V. DC Contents	35V (1V)				50V (1H)				63V (1J)				100V (2A)			
		φ D×L	mA	*φ D×L	mA	φ D×L	mA	*φ D×L	mA	φ D×L	mA	*φ D×L	mA	φ D×L	mA	*φ D×L	mA
0.1	0R1					5×11	3.2			5×11	3.5			5×11	4		
0.22	R22					5×11	4.9			5×11	5.1			5×11	6		
0.33	R33					5×11	6			5×11	7.5			5×11	8		
0.47	R47					5×11	7.1			5×11	9			5×11	9		
1	010					5×11	13			5×11	15			5×11	15		
2.2	2R2					5×11	20			5×11	30			5×11	30		
3.3	3R3					5×11	30			5×11	31			5×11	31		
4.7	4R7	5×11	30			5×11	33			5×11	36			6.3×11	40		
10	100	5×11	46			5×11	50			5×11	54			8×11.5	66	6.3×11	54
22	220	5×11	71			5×11	78			6.3×11	86			8×11.5	99	6.3×11	93
33	330	6.3×11	90	5×11	75	6.3×11	96	5×11	90	8×11.5	114	6.3×11	100	10×12.5	148	8×11.5	130
47	470	6.3×11	110	5×11	90	6.3×11	120			8×11.5	141	6.3×11	130	10×16	180	10×12.5	165
100	101	8×11.5	180	6.3×11	150	8×11.5	188			10×12.5	235			12.5×20	320	10×20	265
220	221	10×12.5	300	8×11.5	270	10×16	300	10×12.5	240	10×20	450	10×16	335	16×25	570	12.5×25	440
330	331	10×16	400	10×12.5	350	10×20	460	10×16	410	12.5×20	540	10×20	510	16×31.5	700	16×25	540
470	471	10×20	520	10×16	460	10×20 12.5×25	530 610	12.5×16 16×16	425 535	12.5×25	720	12.5×20	640	18×35.5	880	16×31.5	715
1,000	102	12.5×20 12.5×25	810 920	12.5×16 16×16	600 720	12.5×25 16×25	950 1,080	16×20	830	16×31.5	1,210	16×25	930	22×40	1,760	18×40	985
2,200	222	16×25 16×31.5	1,260 1,340	18×20	1,110	18×35.5	1,600	16×35.5	1,470	18×40	2,340						
3,300	332	16×31.5 16×35.5	1,420 1,610	18×25	1,570	22×40	2,290	18×35.5	1,770	22×40	2,510						
4,700	472	18×40	1,920	18×35.5	1,900	25×40	2,610	22×40	2,340	25×40	3,000						

Remark: The Case size 12.5×16, 16×16, 16×20, 18×20 and 18×25 are used flat type rubber bung. Case size in mark of "*" is downsize.



Aluminum Electrolytic Capacitors

RGA

Dimension: $\phi D \times L$ (mm)

Ripple Current: mA/rms at 120 Hz, 105°C

DIMENSION & PERMISSIBLE RIPPLE CURRENT

μF	V. DC Contents	160V (2C)				200V (2D)				250V (2E)				350V (2V)			
		$\phi D \times L$	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
0.47	R47	6.3×11	13	5×11	11	6.3×11	14	5×11	12	8×11.5	18	5×11	11	8×11.5	18	6.3×11	16
1	010	6.3×11	20	5×11	17	6.3×11	21	5×11	18	8×11.5	27	5×11	16	8×11.5	27	6.3×11	23
2.2	2R2	6.3×11	29	5×11	25	8×11.5	37	6.3×11	30	8×11.5	41	6.3×11	35	10×16	53	8×11.5	41
3.3	3R3	8×11.5	42	6.3×11	36	8×11.5	45	6.3×11	39	8×11.5	50	6.3×11	40	10×12.5	59	8×11.5	50
4.7	4R7	8×11.5	50	6.3×11	43	8×11.5	54	6.3×11	43	10×16	93	8×11.5	60	10×16	93	10×12.5	65
10	100	10×12.5	87	8×11.5	73	10×20	115	10×12.5	94	10×16	115	10×12.5	92	10×20	125	10×16	115
22	220	10×20	158	10×16	135	10×20	170	10×16	142	10×20 12.5×20	200 220	12.5×16	200	12.5×25	235	12.5×20	220
33	330	12.5×20	225	10×20	190	12.5×20 12.5×25	240 265	12.5×16 16×16	215 250	12.5×20 12.5×25	315 348	16×16	250	16×31.5	365	16×25	325
47	470	12.5×20 12.5×25	265 295	12.5×16 16×16	230 275	12.5×20 12.5×25	270 315	16×16 16×20	275 300	12.5×25 16×25	350 365	16×20	320	16×31.5	395	16×25	365
68	680			16×20	330	18×20	350	16×20	330			18×20	350				
100	101	12.5×25 16×25	425 485	16×20 18×20	395 420	16×25 16×35.5	485 565	18×25	420	16×35.5	610			18×40	530	16×31.5	450
150	151			18×25	510												
220	221	18×35.5	750	16×31.5	660	18×40	885	18×35.5	835	18×40	885	18×35.5	835				
330	331	18×40	865	18×35.5	820												

μF	V. DC Contents	400V (2G)				450V (2W)			
		$\phi D \times L$	mA	* $\phi D \times L$	mA	$\phi D \times L$	mA	* $\phi D \times L$	mA
0.47	R47	8×11.5	18	6.3×11	15	10×12.5	22	8×11.5	18
1	010	8×11.5	27	6.3×11	21	10×12.5	32	8×11.5	27
2.2	2R2	10×12.5	48	8×11.5	39	10×12.5	48	8×11.5	39
3.3	3R3	10×16	65	8×11.5	47	10×16	65	10×12.5	55
4.7	4R7	10×20	86	10×12.5	70	10×20	86	10×16	75
10	100	10×20 12.5×20	125 145	12.5×16 16×16	120 150	12.5×25	160	12.5×20	145
22	220	10×25 16×25	205 265	16×20	220	16×25	265	12.5×20	200
27	270	16×25	310			16×31.5	340	12.5×25	235
33	330	16×25 16×31.5	325 360	18×20	270	16×31.5	360	16×25	325
39	390	16×31.5	375	16×25	340	16×35.5	400		
47	470	16×25 16×35.5	370 420	18×25	350	18×40	430		
56	560	18×25	460	16×25	400	18×31.5	480		
68	680	16×25	440						
82	820	18×31.5	500	16×31.5	475	22×40	600		
100	101	20×40	600			20×45	690		
120	121	20×40	720			20×50	780		
150	151	22×40	850			22×50	930	20×40	850
180	181	20×50	960						
220	221	22×50	1,130	20×45	950				

Remark: The Case size 12.5×16, 16×16, 16×20, 18×20 and 18×25 are used flat type rubber bung.
Case size in mark of "*" is downsize.