

## RXW Series

### Features

- 105°C, 4,000 ~ 7,000 hours assured
- Low ESR, suitable for switching power supplies
- Smaller size with large permissible ripple current
- RoHS Compliance



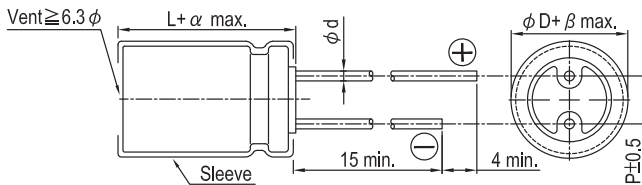
Sleeve & Marking Color: Black & Golden

### Specifications

Items	Performance																															
Category Temperature Range	6.3 ~ 63V -55°C ~ +105°C	100V -40°C ~ +105°C																														
Capacitance Tolerance	± 20 % (at 120Hz, 20°C)																															
Leakage Current (at 20°C)	I = 0.01CV or 3 (μA) whichever is greater (after 2 minutes) Where, C = rated capacitance in μF, V = rated DC working voltage in V																															
Tanδ (at 120 Hz, 20°C)	<table border="1"> <tr> <th>Rated Voltage</th> <td>6.3</td> <td>10</td> <td>16</td> <td>25</td> <td>35</td> <td>50</td> <td>63</td> <td>100</td> </tr> <tr> <th>Tanδ (max)</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> <td>0.09</td> <td>0.08</td> </tr> </table> <p>When the capacitance exceeds 1000μF, 0.02 shall be added every 1000μF increase.</p>		Rated Voltage	6.3	10	16	25	35	50	63	100	Tanδ (max)	0.22	0.19	0.16	0.14	0.12	0.10	0.09	0.08												
Rated Voltage	6.3	10	16	25	35	50	63	100																								
Tanδ (max)	0.22	0.19	0.16	0.14	0.12	0.10	0.09	0.08																								
Low Temperature Characteristics (at 120Hz)	<p>Impedance ratio shall not exceed the values given in the table below.</p> <table border="1"> <tr> <th>Rated Voltage</th> <td>6.3</td> <td>10</td> <td>16</td> <td>25</td> <td>35</td> <td>50</td> <td>63</td> <td>100</td> </tr> <tr> <th>Impedance Ratio</th> <td>Z(-55°C/-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> </tr> </table>		Rated Voltage	6.3	10	16	25	35	50	63	100	Impedance Ratio	Z(-55°C/-40°C) / Z(+20°C)	3	3	3	3	3	3	3												
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Endurance	<table border="1"> <tr> <th>Test Time</th> <td>4,000 Hrs for φ D ≤ 6.3 mm; 5,000 Hrs for φ D = 8 mm; 6,000 Hrs for φ D = 10 mm; 7,000 Hrs for φ D ≥ 12.5 mm</td> </tr> <tr> <th>Capacitance Change</th> <td>Within ±25% of initial value</td> </tr> <tr> <th>Tanδ</th> <td>Less than 200% of specified value</td> </tr> <tr> <th>Leakage Current</th> <td>Within specified value</td> </tr> </table> <p>* The above specifications shall be satisfied when the capacitors are restored to 20°C after the rated voltage applied with rated ripple current for 4,000 ~ 7,000 hours at 105°C.</p>		Test Time	4,000 Hrs for φ D ≤ 6.3 mm; 5,000 Hrs for φ D = 8 mm; 6,000 Hrs for φ D = 10 mm; 7,000 Hrs for φ D ≥ 12.5 mm	Capacitance Change	Within ±25% of initial value	Tanδ	Less than 200% of specified value	Leakage Current	Within specified value																						
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Shelf Life Test	<table border="1"> <tr> <th>Test Time</th> <td>1,000 Hrs</td> </tr> <tr> <th>Capacitance Change</th> <td>Within ±25% of initial value</td> </tr> <tr> <th>Tanδ</th> <td>Less than 200% of specified value</td> </tr> <tr> <th>Leakage Current</th> <td>Within specified value</td> </tr> </table> <p>* 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.</p>		Test Time	1,000 Hrs	Capacitance Change	Within ±25% of initial value	Tanδ	Less than 200% of specified value	Leakage Current	Within specified value																						
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Ripple Current and Frequency Multipliers	<table border="1"> <tr> <th>Cap.(μF) \ Freq.(Hz)</th> <th>120</th> <th>1k</th> <th>10k</th> <th>100k up</th> </tr> <tr> <td>under ~ 33</td> <td>0.42</td> <td>0.70</td> <td>0.90</td> <td>1.0</td> </tr> <tr> <td>39 ~ 270</td> <td>0.5</td> <td>0.73</td> <td>0.92</td> <td>1.0</td> </tr> <tr> <td>330 ~ 680</td> <td>0.55</td> <td>0.77</td> <td>0.94</td> <td>1.0</td> </tr> <tr> <td>820 ~ 1,800</td> <td>0.6</td> <td>0.80</td> <td>0.96</td> <td>1.0</td> </tr> <tr> <td>2,200 ~ 15,000</td> <td>0.7</td> <td>0.85</td> <td>0.98</td> <td>1.0</td> </tr> </table>		Cap.(μF) \ Freq.(Hz)	120	1k	10k	100k up	under ~ 33	0.42	0.70	0.90	1.0	39 ~ 270	0.5	0.73	0.92	1.0	330 ~ 680	0.55	0.77	0.94	1.0	820 ~ 1,800	0.6	0.80	0.96	1.0	2,200 ~ 15,000	0.7	0.85	0.98	1.0
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Radial

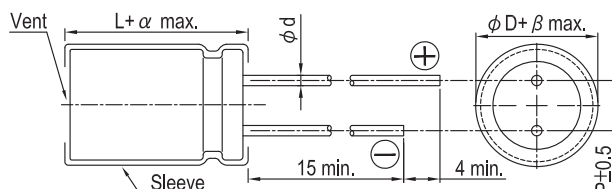
### Diagram of Dimensions



Lead Spacing and Diameter Unit: mm

φ D	5	6.3	8	10	12.5	16	18
P	2.0	2.5	3.5	5.0	5.0	7.5	7.5
φ d	0.5		0.6		0.8		
α	L < 20: 1.5, L ≥ 20: 2.0						
β	0.5						

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





Dimension:  $\phi D \times L$ (mm)  
Ripple Current: mA/rms at 100k Hz, 105°C

Dimension and Permissible Ripple Current

Rated Volt. $V_{DC}$ Contents Cap. ( $\mu F$ )	6.3V (0J)				10V (1A)				16V (1C)				25V (1E)			
	$\phi D \times L$	Impedance ( $\Omega$ , max./100kHz)		Ripple Current (mA/rms, 105°C)	$\phi D \times L$	Impedance ( $\Omega$ , max./100kHz)		Ripple Current (mA/rms, 105°C)	$\phi D \times L$	Impedance ( $\Omega$ , max./100kHz)		Ripple Current (mA/rms, 105°C)	$\phi D \times L$	Impedance ( $\Omega$ , max./100kHz)		Ripple Current (mA/rms, 105°C)
		20°C	-10°C	100k Hz		20°C	-10°C	100k Hz		20°C	-10°C	100k Hz		20°C	-10°C	100k Hz
4.7													5×11	0.6	1.2	180
10									5×11	0.6	1.2	180	5×11	0.6	1.2	180
22	5×11	0.6	1.2	180	5×11	0.6	1.2	180	5×11	0.6	1.2	180	5×11	0.6	1.2	180
33	5×11	0.6	1.2	180	5×11	0.6	1.2	180	5×11	0.6	1.2	180	5×11	0.6	1.2	180
39													5×11	0.6	1.2	180
47	5×11	0.6	1.2	180	5×11	0.6	1.2	180	5×11	0.6	1.2	180	5×11	0.6	1.2	180
56									5×11	0.6	1.2	180				
82					5×11	0.6	1.2	180					6.3×11	0.25	0.50	290
100	5×11	0.6	1.2	180	5×11	0.6	1.2	180	6.3×11	0.25	0.5	290	6.3×11	0.25	0.50	290
120									6.3×11	0.25	0.5	290	6.3×15	0.23	0.46	430
150	6.3×11	0.25	0.5	290	6.3×11	0.25	0.5	290	6.3×11	0.25	0.5	290	8×11.5	0.117	0.234	555
180					6.3×11	0.25	0.5	290	6.3×15	0.23	0.46	430				
220	6.3×11	0.25	0.5	290	6.3×11 6.3×15	0.25 0.23	0.5 0.46	290 430	8×11.5	0.117	0.234	555	8×11.5	0.117	0.234	555
330	6.3×11 6.3×15	0.25 0.23	0.50 0.46	290 430	8×11.5	0.117	0.234	555	8×11.5	0.117	0.234	555	8×15 10×12.5	0.085 0.090	0.17 0.18	730 755
470	8×11.5	0.117	0.234	555	8×11.5	0.117	0.234	555	8×15 10×12.5	0.085 0.090	0.17 0.18	730 755	8×20 10×16 10×20	0.065 0.068 0.052	0.130 0.136 0.104	995 1,050 1,220
560	8×11.5	0.117	0.234	555												
680	10×12.5	0.090	0.180	755	8×15 10×12.5	0.085 0.090	0.170 0.180	730 755	8×20 10×16	0.065 0.068	0.130 0.136	995 1,050	10×20	0.052	0.104	1,220
820	8×15 10×12.5	0.085 0.090	0.170 0.180	730 755					10×20	0.052	0.104	1,220	10×25	0.045	0.090	1,440
1,000	10×12.5	0.090	0.180	755	8×20 10×16	0.065 0.068	0.130 0.136	995 1,050	10×20	0.052	0.104	1,220	10×30 12.5×20	0.035 0.038	0.070 0.076	1,815 1,655
1,200	8×20 10×16	0.065 0.068	0.130 0.136	955 1,050	10×20	0.052	0.104	1,220	10×25	0.045	0.090	1,440				
1,500	10×20	0.052	0.104	1,220	10×20 10×25	0.052 0.045	0.104 0.090	1,220 1,440	12.5×20 10×30	0.038 0.035	0.076 0.070	1,655 1,815	12.5×25 16×25	0.030 0.022	0.060 0.044	1,945 2,555
1,800													12.5×30 16×20	0.025 0.029	0.050 0.058	2,310 2,205
2,200	10×25 12.5×20	0.045 0.038	0.090 0.076	1,440 1,615	10×30 12.5×20	0.035 0.038	0.070 0.076	1,815 1,655	12.5×25	0.030	0.06	1,945	12.5×35 16×25 18×20	0.022 0.022 0.028	0.044 0.044 0.056	2,510 2,555 2,490
2,700	10×30	0.035	0.070	1,815	12.5×25	0.030	0.060	1,945	12.5×30 16×20	0.025 0.029	0.05 0.058	2,310 2,205	16×25	0.022	0.044	2,555
3,300	12.5×20	0.038	0.076	1,655	12.5×25 12.5×30	0.030 0.025	0.060 0.050	1,945 2,310	16×25 12.5×35	0.022 0.022	0.044 0.044	2,555 2,510	16×31.5 18×25	0.018 0.020	0.036 0.040	3,010 2,740
3,900	12.5×25	0.030	0.060	1,945	12.5×35 16×20	0.022 0.029	0.044 0.058	2,510 2,205	16×25 18×20	0.022 0.028	0.044 0.056	2,555 2,490	16×35.5 18×31.5	0.016 0.016	0.032 0.032	3,150 3,635
4,700	12.5×30 16×25	0.025 0.022	0.050 0.044	2,310 2,555	16×25	0.022	0.044	2,555	16×31.5 18×25	0.018 0.020	0.036 0.040	3,010 2,740	18×35.5	0.015	0.030	3,680
5,600	12.5×35 16×20	0.022 0.029	0.044 0.058	2,510 2,205	16×25 18×20	0.022 0.028	0.044 0.056	2,555 2,490	16×35.5 18×31.5	0.016 0.016	0.032 0.032	3,150 3,635				
6,800	16×25 18×20	0.022 0.028	0.044 0.056	2,555 2,490	16×31.5 18×25	0.018 0.020	0.036 0.040	3,010 2,740	18×35.5	0.015	0.030	3,680	18×40	0.014	0.028	3,800
8,200	16×31.5	0.018	0.036	3,010	16×35.5 18×31.5	0.016 0.016	0.032 0.032	3,150 3,635	18×35.5	0.015	0.030	3,680				
10,000	16×31.5 18×25	0.016 0.020	0.032 0.040	3,150 2,740	18×35.5	0.015	0.030	3,680	18×40	0.014	0.028	3,800				
12,000	18×31.5	0.016	0.032	3,635												
15,000	18×35.5	0.015	0.030	3,680	18×40	0.014	0.028	3,800								

Radial



Dimension:  $\phi D \times L$ (mm)  
Ripple Current: mA/rms at 100k Hz, 105°C

Dimension and Permissible Ripple Current

Rated Volt. $V_{DC}$	Contents	35V (1V)			50V (1H)			63V (1J)			100V (2A)					
		$\phi D \times L$	Impedance ( $\Omega$ , max./100kHz)		Ripple Current (mA/rms, 105°C)	$\phi D \times L$	Impedance ( $\Omega$ , max./100kHz)		Ripple Current (mA/rms, 105°C)	$\phi D \times L$	Impedance ( $\Omega$ , max./100kHz)		Ripple Current (mA/rms, 105°C)			
			20°C	-10°C	100k Hz		20°C	-10°C	100k Hz		20°C	-10°C	100k Hz	20°C	-10°C	100k Hz
2.2													5×11	9.8	19.6	44
3.3													5×11	6.6	13.2	58
4.7	5×11	0.6	1.2	180	5×11	2.3	4.6	90	5×11	4.7	9.4	68	5×11	4.6	9.2	74
6.8									5×11	2.5	5.0	95	5×11	3.5	7.0	95
10	5×11	0.6	1.2	180	5×11	1.4	2.8	120	5×11	2.1	4.2	110	6.3×11	1.8	3.6	130
12									5×11	2.0	4.0	145				
15									6.3×11	1.2	2.4	160	8×11.5	0.83	1.66	180
18					5×11	1.3	2.6	155					6.3×15	0.80	1.60	200
22	5×11	0.6	1.2	180	5×11	1.2	2.4	170	6.3×11	0.71	1.42	250	8×11.5	0.68	1.36	230
27	5×11	0.6	1.2	180												
33	5×11	0.6	1.2	180	6.3×11	0.43	0.86	300	6.3×11	0.71	1.42	250	8×15 10×12.5	0.45 0.46	0.90 0.92	360 320
39									6.3×15	0.70	1.40	330				
47	6.3×11	0.25	0.5	290	6.3×11	0.43	0.86	300	8×11.5	0.342	0.684	405	10×16 8×20	0.37 0.37	0.74 0.74	420 420
56	6.3×11	0.25	0.5	290	6.3×15	0.40	0.80	360								
68									8×11.5	0.342	0.684	405	10×20	0.30	0.60	490
82	6.3×15	0.23	0.46	430	8×11.5	0.234	0.468	485					10×25	0.25	0.50	540
100	8×11.5	0.117	0.234	555	8×11.5	0.234	0.468	485	10×12.5 8×15	0.256 0.230	0.512 0.460	535 535	12.5×20	0.18	0.36	580
120					8×15 10×12.5	0.155 0.162	0.310 0.324	635 615	10×16	0.194	0.388	600				
150	8×11.5	0.117	0.234	555	10×12.5	0.162	0.324	615	10×16	0.194	0.388	660	12.5×25	0.13	0.26	710
180					8×20 10×16	0.120 0.119	0.240 0.238	860 850	10×20 12.5×16	0.147 0.150	0.294 0.300	885 1,020	12.5×30 16×20	0.12 0.13	0.24 0.26	790 750
220	8×15 10×12.5	0.085 0.090	0.17 0.18	730 755	10×16 10×20	0.119 0.090	0.238 0.180	850 1,030	10×20 10×25	0.147 0.130	0.294 0.260	885 1,050	16×25 18×20	0.10 0.11	0.20 0.22	890 850
270					10×25	0.082	0.164	1,200	16×16	0.090	0.180	1,410				
330	8×20 10×16	0.065 0.068	0.130 0.136	995 1,050	10×20 10×30	0.090 0.060	0.180 0.120	1,030 1,610	12.5×20	0.085	0.170	1,285	16×25	0.090	0.180	1,080
390	10×20	0.052	0.104	1,220	12.5×20	0.063	0.126	1,480	12.5×25 18×16	0.070 0.086	0.140 0.172	1,720 1,690	18×25	0.083	0.166	1,260
470	10×20	0.052	0.104	1,220	12.5×20	0.060	0.120	1,500	12.5×25 12.5×30 16×20	0.070 0.055 0.059	0.140 0.110 0.118	1,720 2,090 1,765	16×31.5	0.076	0.152	1,310
560	10×25	0.045	0.090	1,440	12.5×25	0.050	0.100	1,832	16×25	0.050	0.100	2,160	18×31.5 18×35.5	0.068 0.064	0.136 0.128	1,370 1,410
680	10×30 12.5×20	0.035 0.038	0.070 0.076	1,815 1,655	12.5×25 16×20	0.050 0.048	0.100 0.096	1,832 1,835	12.5×35 18×20	0.047 0.055	0.094 0.110	2,265 2,290				
820					12.5×35 18×20	0.034 0.042	0.068 0.084	2,285 2,200	16×31.5 18×25	0.043 0.043	0.086 0.086	2,670 2,585	18×40	0.047	0.094	1,520
1,000	12.5×25	0.030	0.060	1,945	16×25	0.034	0.068	2,235	16×31.5 16×35.5	0.043 0.036	0.086 0.072	2,670 2,770				
1,200	12.5×30 16×20	0.025 0.029	0.050 0.058	2,310 2,205	16×31.5 18×25	0.028 0.029	0.056 0.058	2,700 2,610	18×31.5	0.032	0.064	2,950				
1,500	12.5×35 16×25	0.022 0.022	0.044 0.044	2,510 2,555	16×31.5 16×35.5	0.028 0.025	0.056 0.050	2,700 2,790	18×35.5	0.030	0.060	3,095				
1,800	16×25 18×20	0.022 0.028	0.044 0.056	2,555 2,490	18×31.5	0.025	0.05	3,000								
2,200	16×31.5 18×25	0.018 0.020	0.036 0.040	3,010 2,740	18×35.5	0.023	0.046	3,100	18×40	0.028	0.056	3,200				
2,700	16×35.5 18×31.5	0.016 0.016	0.032 0.032	3,150 3,635												
3,300	18×35.5	0.015	0.030	3,680												
4,700	18×40	0.014	0.028	3,800												

Part Numbering System

RXW Series    470 $\mu$ F     $\pm 20\%$     6.3V    Bulk Package    Gas Type    8 $\phi$ ×11.5L    Pb-free and PET sleeve

**RXW**    **471**    **M**    **OJ**    **BK**    -    **0811**

Series Name    Capacitance    Capacitance Tolerance    Rated Voltage    Lead Configuration & Package    Rubber Type    Case Size    Lead Wire and Sleeve type

Note: For more details, please refer to "Part Numbering System (Radial Type)" on page 13.

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[EKMG350ETD471MJ16S](#) [35YXA330MEFC10X12.5](#) [RGA221M2ABK-1320G](#) [ERR1HM1R0D11OT](#) [ERR1CM222W20OT](#)  
[TM1081EMF202RB](#) [RXQ271M2EBK-1836](#) [RXW103M1CBK-1840](#) [B41896C5278M](#) [B41851A8107M000](#) [EKMA160ETD470MF07D](#)  
[510D476M035CC3DE3](#) [SK228M025AH5AAKPLP](#) [LKMK2502W101MF](#)