

REA Series

Features

- 85°C, 2,000 ~ 3,000 hours assured
- Standard series for general purposes
- RoHS Compliance

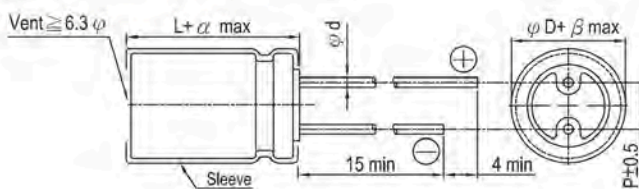


Sleeve & Marking Color: Blue & Black

Specifications

Items	Performance																																																																													
Category Temperature Range	-40°C ~ +85°C																																																																													
Capacitance Tolerance	±20% (at 120Hz, 20°C)																																																																													
Leakage Current (at 20°C)	<table border="1"> <tr> <th>Rated voltage</th> <th>≤ 100V</th> <th>> 100V</th> </tr> <tr> <th>Time</th> <td>after 2 minutes</td> <td>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) CV > 1,000 I = 0.02CV + 25(μA)</td> </tr> </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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Tanδ (at 120 Hz, 20°C)	<table border="1"> <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> <tr> <th>Tanδ (max)</th> <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> </table> <p>When the capacitance exceeds 1,000μF, 0.02 shall be added every 1,000μF increase.</p>	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																																															
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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"> <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> <tr> <th rowspan="4">Impedance Ratio</th> <th>Z(-25°C) / Z(+20°C)</th> <td>φ D < 16</td> <td>6</td> <td>4</td> <td>3</td> <td>3</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> <th rowspan="2">φ D ≥ 16</th> <td>8</td> <td>6</td> <td>4</td> <td>4</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> <th>Z(-40°C) / Z(+20°C)</th> <td>φ D < 16</td> <td>10</td> <td>8</td> <td>6</td> <td>6</td> <td>4</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> <th>φ D ≥ 16</th> <td>18</td> <td>16</td> <td>12</td> <td>10</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> </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	6	4	3	3	2	2	2	3	6	8	12	14	16	φ D ≥ 16	8	6	4	4	3	3	3	3	4	8	10	16	18	20	Z(-40°C) / Z(+20°C)	φ D < 16	10	8	6	6	4	3	3	4	8	10	16	18	20	φ D ≥ 16	18	16	12	10	8	8	6	6	4	8	10	16	18	20
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Ripple Current and Frequency Multipliers	<table border="1"> <tr> <th rowspan="2">Cap. (μF)</th> <th colspan="6">Freq. (Hz)</th> </tr> <tr> <th>60 (50)</th> <th>120</th> <th>500</th> <th>1k</th> <th>10k up</th> </tr> <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> </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

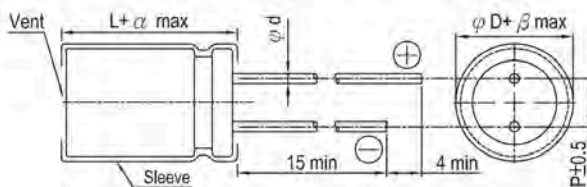


Lead Spacing and Diameter

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	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:



All product specifications in the catalog are subject to change without notice. (CAT. 2017E1)

Dimension and Permissible Ripple Current

Dimension: $\phi D \times L(\text{mm})$

Ripple Current: mA/rms at 120 Hz, 85°C

μF	V. DC 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	29			5×11	33
3.3	3R3											5×11	35			5×11	40
4.7	4R7											5×11	42			5×11	48
10	100											5×11	65	5×11	70	5×11	59
22	220											5×11	95	6.3×11	115	6.3×11	115
															8×11.5	135	
33	330									5×11	108	6.3×11	136	6.3×11	140	8×11.5	145
												5×11	125				
47	470							5×11	115	5×11	130	6.3×11	165	6.3×11	170	10×12.5	235
100	101					5×11	160	6.3×11	190	6.3×11	210	8×11.5	260	8×11.5	245	10×16	325
												10×12.5	320	10×12.5	320		
220	221			5×11	220	6.3×11	260	8×11.5	320	8×11.5	385	10×12.5	455	10×16	490	12.5×20	640
															16×16	625	
330	331			6.3×11	290	6.3×11	290	8×11.5	440	10×12.5	490	10×16	585	10×20	710	16×20	695
														12.5×16	675	18×16	685
470	471			6.3×11	350	8×11.5	440	10×12.5	545	10×16	740	10×20	755	16×16	910	16×25	910
												12.5×16	610	12.5×20	900		
1,000	102	8×11.5	540	10×12.5	650	10×12.5	635	10×20	955	12.5×20	1,145	12.5×25	1,340	16×20	1,260	18×40	1,820
				8×11.5	550			12.5×16	830	16×16	1,010	16×20	1,160				
2,200	222	10×16	845	10×20	1,070	12.5×16	930	12.5×25	1,540	16×20	1,390	16×35.5	1,960	18×31.5	2,040		
				12.5×16	970	16×16	1,160	16×16	1,150								
3,300	332	10×20	1,185	12.5×20	1,420	12.5×20	1,450	16×20	1,490	16×31.5	2,070	18×35.5	2,500	18×40	2,575		
		12.5×16	960	16×16	1,240	16×16	1,240	18×25	1,970	18×25	1,970						
4,700	472	12.5×20	1,545	12.5×25	1,780	16×20	1,600	16×25	2,100	18×35.5	2,700	22×40	3,040				
				16×16	1,420	18×16	1,820	18×25	2,170								
6,800	682	12.5×25	1,880	16×20	1,700	16×25	2,280	16×35.5	2,475	22×40	2,900	22×45	3,185				
				18×20	1,870	18×20	1,890	18×31.5	2,550								
10,000	103	16×20	2,000	16×25	2,150	18×31.5	2,590	18×40	3,080	22×45	3,400						
		18×20	2,020	18×25	2,370	16×35.5	2,450										
15,000	153	16×31.5	2,460	16×40	2,730	18×40	3,100	22×45	3,780								
		18×25	2,375	18×31.5	2,620			25×40	3,850								
22,000	223	18×31.5	2,780	18×40	3,370	22×40	3,900	25×45	4,290								
33,000	333	22×40	3,700														

μF	V. DC 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					5×11	18	5×11	18	5×11	22	6.3×11	25
2.2	2R2			5×11	29	6.3×11	33	6.3×11	33	6.3×11	33	8×11.5	45
3.3	3R3			6.3×11	46	6.3×11	46	8×11.5	50	8×11.5	50	10×12.5	65
4.7	4R7			6.3×11	50	8×11.5	55	8×11.5	60	8×11.5	55	8×11.5	55
										10×12.5	80	10×12.5	80
10	100	8×11.5	75	8×11.5	81	10×12.5	100	10×16	110	10×16	110	10×20	140
22	220	10×12.5	130	10×12.5	135	10×16	150	12.5×16	185	12.5×20	200	12.5×20	200
33	330	10×16	175	10×16	180	10×20	215	12.5×20	245	16×16	260	16×20	270
						12.5×16	220	16×16	260				
47	470	10×20	230	10×20	240	12.5×20	290	16×20	340	16×20	340	16×31.5	390
		12.5×16	250	12.5×16	250			18×16	310				
68	680	12.5×20	330	12.5×20	330	12.5×25	370	16×25	420	16×31.5	435	16×35.5	460
				16×16	370			18×20	410				
100	101	12.5×25	440	16×20	460	16×25	510	16×31.5	540	16×40	560	18×35.5	570
				18×16	450			18×25	520	18×35.5	570		
150	151	16×25	620	16×25	620	16×31.5	625	18×35.5	640	18×40	670	22×45	800
				18×20	605	18×25	630						
220	221	16×31.5	790	16×35.5	830	16×40	840	22×40	920	22×45	960	25×45	1,030
		18×25	760			18×35.5	890			25×40	980		
330	331	18×35.5	985	18×40	1,150	22×40	1,200	25×45	1,270				
470	471	18×40	1,150	22×40	1,400	22×45	1,470						

Radial

Part Numbering System

REA Series 470 μF $\pm 20\%$ 16V Bulk Package Gas Type 8 $\phi \times 11.5\text{L}$ Pb-free and PET sleeve

REA **471** **M** **1C** **BK** **-** **0811** **S**
 Series Name Capacitance Capacitance Tolerance Rated Voltage Lead Configuration & Package Rubber Type Case Size Lead Wire and Sleeve type Supplement Code

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