



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> <td>Rated voltage</td> <td>≤ 100V</td> <td>> 100V</td> </tr> <tr> <td>Time</td> <td>after 2 minutes</td> <td>after 5 minutes</td> </tr> <tr> <td>Leakage Current</td> <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)																																																																				
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)																																																																												
Tanδ (at 120 Hz, 20°C)	<table border="1"> <tr> <td>Rated Voltage</td> <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><td>160</td><td>200</td><td>250</td><td>350</td><td>400</td><td>450</td> </tr> <tr> <td>Tanδ (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> </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																																															
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																																																																
Low Temperature Characteristics (at 120Hz)	<p>Impedance ratio shall not exceed the values given in the table below.</p> <table border="1"> <tr> <td colspan="2">Rated Voltage</td> <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><td>160</td><td>200</td><td>250</td><td>350</td><td>400</td><td>450</td> </tr> <tr> <td rowspan="4">Impedance Ratio</td> <td>Z(-25°C)</td> <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> <td>/Z(+20°C)</td> <td>φ D ≥ 16</td><td>8</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)</td> <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> <td>/Z(+20°C)</td> <td>φ D ≥ 16</td><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>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)	φ D < 16	6	4	3	3	2	2	2	3	6	8	12	14	16	/Z(+20°C)	φ D ≥ 16	8	6	4	4	3	3	3	4	8	10	16	18	20	Z(-40°C)	φ D < 16	10	8	6	6	4	3	3	4	8	10	16	18	20	/Z(+20°C)	φ D ≥ 16	18	16	12	10	8	8	6	6	8	10	16	18	20
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	6	4	3	3	2	2	2	3	6	8	12	14	16																																																															
	/Z(+20°C)	φ D ≥ 16	8	6	4	4	3	3	3	4	8	10	16	18	20																																																															
	Z(-40°C)	φ D < 16	10	8	6	6	4	3	3	4	8	10	16	18	20																																																															
	/Z(+20°C)	φ D ≥ 16	18	16	12	10	8	8	6	6	8	10	16	18	20																																																															
Endurance	<table border="1"> <tr> <td>Test Time</td> <td>2,000 Hrs for φD ≤ 8mm 3,000 Hrs for φD ≥ 10mm</td> </tr> <tr> <td>Capacitance Change</td> <td>With in ±20% of initial value</td> </tr> <tr> <td>Tanδ</td> <td>Less than 200% of specified value</td> </tr> <tr> <td>Leakage Current</td> <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 2,000 / 3,000 hours at 85°C.</p>	Test Time	2,000 Hrs for φD ≤ 8mm 3,000 Hrs for φD ≥ 10mm	Capacitance Change	With in ±20% of initial value	Tanδ	Less than 200% of specified value	Leakage Current	Within specified value																																																																					
Test Time	2,000 Hrs for φD ≤ 8mm 3,000 Hrs for φD ≥ 10mm																																																																													
Capacitance Change	With in ±20% of initial value																																																																													
Tanδ	Less than 200% of specified value																																																																													
Leakage Current	Within specified value																																																																													
Shelf Life Test	<table border="1"> <tr> <td>Test Time</td> <td>1,000 Hrs</td> </tr> <tr> <td>Capacitance Change</td> <td>With in ±20% of initial value</td> </tr> <tr> <td>Tanδ</td> <td>Less than 200% of specified value</td> </tr> <tr> <td>Leakage Current</td> <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 85°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).</p>	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																																																																					
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																																																																													
Ripple Current & Frequency Multipliers	<table border="1"> <tr> <td rowspan="4">Cap. (μF)</td> <td>Freq. (Hz)</td> <td>60 (50)</td><td>120</td><td>500</td><td>1k</td><td>10k up</td> </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																																																				
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:

