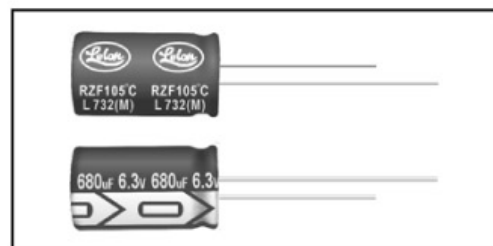


Feature

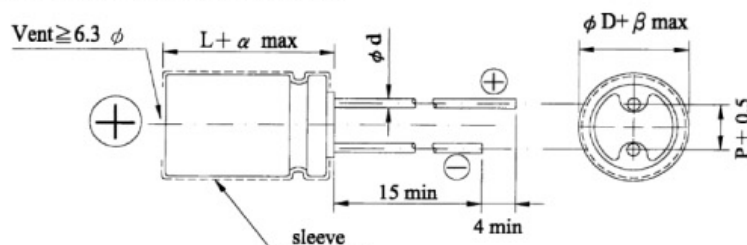
- Long life, 105°C, 3,000 ~ 10,000 hours assured
- Low impedance at 100KHz with selected materials
- RoHS Compliance



SPECIFICATIONS

Items	Performance																									
Operating Temperature Range	-55℃ ~ +105℃																									
Capacitance Tolerance	±20% (at 120Hz, 20℃)																									
Leakage Current (at 20℃)	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																									
Dissipation Factor (Tan δ at 120 Hz, 20℃)	<table><tr><td>Rated Voltage</td><td>6.3</td><td>10</td><td>16</td><td>25</td><td>35</td></tr><tr><td>Tan δ (max)</td><td>0.22</td><td>0.19</td><td>0.16</td><td>0.14</td><td>0.12</td></tr></table> When the capacitance exceeds 1,000 μF, 0.02 shall be added every 1,000 μF increase.	Rated Voltage	6.3	10	16	25	35	Tan δ (max)	0.22	0.19	0.16	0.14	0.12													
Rated Voltage	6.3	10	16	25	35																					
Tan δ (max)	0.22	0.19	0.16	0.14	0.12																					
Low Temperature Characteristics (at 120Hz)	Impedance ratio shall not exceed the values given in the table below. <table><tr><td colspan="2">Rated Voltage</td><td>6.3</td><td>10</td><td>16</td><td>25</td><td>35</td></tr><tr><td rowspan="2">Impedance Ratio</td><td>Z(-25℃) / Z(+20℃)</td><td>4</td><td>3</td><td>2</td><td>2</td><td>2</td></tr><tr><td>Z(-55℃) / Z(+20℃)</td><td>8</td><td>6</td><td>4</td><td>3</td><td>3</td></tr></table>	Rated Voltage		6.3	10	16	25	35	Impedance Ratio	Z(-25℃) / Z(+20℃)	4	3	2	2	2	Z(-55℃) / Z(+20℃)	8	6	4	3	3					
Rated Voltage		6.3	10	16	25	35																				
Impedance Ratio	Z(-25℃) / Z(+20℃)	4	3	2	2	2																				
	Z(-55℃) / Z(+20℃)	8	6	4	3	3																				
Load Life Test	<table><tr><td>Rated voltage(V)</td><td>6.3 ~ 10</td><td>16 ~ 35</td></tr><tr><td>Test Time</td><td>3,000 hrs for φ D ≤ 6.3 mm 6,000 hrs for φ D = 8 ~ 10 mm 8,000 hrs for φ D ≥ 12.5 mm</td><td>4,000 hrs for φ D ≤ 6.3 mm 6,000 hrs for φ D = 8 mm 8,000 hrs for φ D = 10 mm 10,000 hrs for φ D ≥ 12.5 mm</td></tr><tr><td>Capacitance Change</td><td colspan="2">Within ±25% of initial value</td></tr><tr><td>Dissipation Factor</td><td colspan="2">Less than 200% of specified value</td></tr><tr><td>Leakage Current</td><td colspan="2">Within specified value</td></tr></table> * The above specifications shall be satisfied when the capacitors are restored to 20℃ after the rated voltage applied with rated ripple current for test time at 105℃.	Rated voltage(V)	6.3 ~ 10	16 ~ 35	Test Time	3,000 hrs for φ D ≤ 6.3 mm 6,000 hrs for φ D = 8 ~ 10 mm 8,000 hrs for φ D ≥ 12.5 mm	4,000 hrs for φ D ≤ 6.3 mm 6,000 hrs for φ D = 8 mm 8,000 hrs for φ D = 10 mm 10,000 hrs for φ D ≥ 12.5 mm	Capacitance Change	Within ±25% of initial value		Dissipation Factor	Less than 200% of specified value		Leakage Current	Within specified value											
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Capacitance Change	Within ±25% of initial value																									
Dissipation Factor	Less than 200% of specified value																									
Leakage Current	Within specified value																									
Shelf Life Test	<table><tr><td>Test Time</td><td>1,000 hrs</td></tr><tr><td>Capacitance Change</td><td>Within ±25% of initial value</td></tr><tr><td>Dissipation Factor</td><td>Less than 200% of specified value</td></tr><tr><td>Leakage Current</td><td>Within specified value</td></tr></table> * The above specifications shall be satisfied when the capacitors are restored to 20℃ after exposing them for 1,000 hrs at 105℃ without voltage applied.	Test Time	1,000 hrs	Capacitance Change	Within ±25% of initial value	Dissipation Factor	Less than 200% of specified value	Leakage Current	Within specified value																	
Test Time	1,000 hrs																									
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Dissipation Factor	Less than 200% of specified value																									
Leakage Current	Within specified value																									
Ripple Current & Frequency Multipliers	<table><tr><td>Freq.(Hz) Cap.(μF)</td><td>120</td><td>1K</td><td>10K</td><td>100K up</td></tr><tr><td>Under 33</td><td>0.55</td><td>0.75</td><td>0.90</td><td>1.00</td></tr><tr><td>39 ~ 330</td><td>0.70</td><td>0.85</td><td>0.95</td><td>1.00</td></tr><tr><td>390 ~ 1,000</td><td>0.80</td><td>0.90</td><td>0.98</td><td>1.00</td></tr><tr><td>1,200 up above</td><td>0.90</td><td>0.95</td><td>1.00</td><td>1.00</td></tr></table>	Freq.(Hz) Cap.(μF)	120	1K	10K	100K up	Under 33	0.55	0.75	0.90	1.00	39 ~ 330	0.70	0.85	0.95	1.00	390 ~ 1,000	0.80	0.90	0.98	1.00	1,200 up above	0.90	0.95	1.00	1.00
Freq.(Hz) Cap.(μF)	120	1K	10K	100K up																						
Under 33	0.55	0.75	0.90	1.00																						
39 ~ 330	0.70	0.85	0.95	1.00																						
390 ~ 1,000	0.80	0.90	0.98	1.00																						
1,200 up above	0.90	0.95	1.00	1.00																						

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	1.0			1.5			
β	0.5						

Dimension: φ D×L(mm)

Ripple Current: mA/rms at 100K Hz, 105°C

DIMENSION & PERMISSIBLE RIPPLE CURRENT

V.DC φ D×L Item	6.3V (0J)					10V (1A)					16V (1C)				
	μF	Impedance (Ω, Max/100KHz)		Ripple Current (mA/rms, 105°C)		μF	Impedance (Ω, Max/100KHz)		Ripple Current (mA/rms, 105°C)		μF	Impedance (Ω, Max/100KHz)		Ripple Current (mA/rms, 105°C)	
		20°C	-10°C	120Hz	100KHz		20°C	-10°C	120Hz	100KHz		20°C	-10°C	120Hz	100KHz
5×11	120	0.72	1.8	116	165	82	0.72	1.8	116	165	56	0.72	1.8	116	165
6.3×11	220	0.38	0.95	179	255	180	0.38	0.95	179	255	120	0.38	0.95	179	255
6.3×15	330	0.27	0.68	231	330	270	0.27	0.68	231	330	180	0.27	0.68	231	330
8×11.5	390	0.20	0.50	332	415	330	0.20	0.50	291	415	270	0.20	0.50	291	415
8×15	560	0.16	0.40	396	495	470	0.16	0.40	396	495	330	0.16	0.40	347	495
8×20	820	0.11	0.28	512	640	680	0.11	0.28	512	640	470	0.11	0.28	512	640
10×12.5	470	0.12	0.30	500	625	390	0.12	0.30	500	625	270	0.12	0.30	438	625
10×16	680	0.084	0.21	660	825	680	0.084	0.21	660	825	470	0.084	0.21	660	825
10×20	1,200	0.062	0.16	936	1,040	1,000	0.062	0.16	832	1,040	680	0.062	0.16	832	1,040
10×25	1,500	0.052	0.13	1,134	1,260	1,200	0.052	0.13	1,134	1,260	820	0.052	0.13	1,008	1,260
10×30	2,200	0.044	0.11	1,296	1,440	1,500	0.044	0.11	1,296	1,440	1,200	0.044	0.11	1,296	1,440
12.5×20	2,200	0.046	0.12	1,206	1,340	1,800	0.046	0.12	1,206	1,340	1,200	0.046	0.12	1,206	1,340
12.5×25	2,700	0.034	0.085	1,521	1,690	2,200	0.034	0.085	1,521	1,690	1,500	0.034	0.080	1,521	1,690
12.5×30	3,900	0.030	0.075	1,755	1,950	2,700	0.030	0.075	1,755	1,950	2,200	0.030	0.075	1,755	1,950
12.5×35	4,700	0.027	0.068	1,980	2,200	3,300	0.027	0.068	1,980	2,200	2,700	0.027	0.068	1,980	2,200
12.5×40	5,600	0.024	0.060	2,151	2,390	3,900	0.024	0.060	2,151	2,390	3,300	0.024	0.060	2,151	2,390
16×25	5,600	0.028	0.070	1,863	2,070	3,900	0.028	0.070	1,863	2,070	2,700	0.028	0.070	1,863	2,070
16×31.5	6,800	0.025	0.063	2,115	2,350	5,600	0.025	0.063	2,115	2,350	3,900	0.025	0.063	2,115	2,350
16×35.5						6,800	0.022	0.055	2,295	2,550	4,700	0.022	0.055	2,295	2,550
16×40											5,600	0.018	0.045	2,610	2,900
18×35.5											6,800	0.021	0.053	2,394	2,660

V.DC φ D×L Item	25V (1E)					35V (1V)				
	μF	Impedance (Ω, Max/100KHz)		Ripple Current (mA/rms, 105°C)		μF	Impedance (Ω, Max/100KHz)		Ripple Current (mA/rms, 105°C)	
		20°C	-10°C	120Hz	100KHz		20°C	-10°C	120Hz	100KHz
5×11	39	0.72	1.8	116	165	27	0.72	1.8	91	165
6.3×11	82	0.38	0.95	179	255	56	0.38	0.95	179	255
6.3×15	120	0.27	0.68	231	330	82	0.27	0.68	231	330
8×11.5	150	0.20	0.50	291	415	120	0.20	0.50	291	415
8×15	220	0.16	0.40	347	495	180	0.16	0.40	347	495
8×20	330	0.11	0.28	448	640	220	0.11	0.28	448	640
10×12.5	180	0.12	0.30	438	625	120	0.12	0.30	438	625
10×16	330	0.084	0.21	578	825	220	0.084	0.21	578	825
10×20	470	0.062	0.16	832	1,040	330	0.062	0.16	728	1,040
10×25	560	0.052	0.13	1,008	1,260	390	0.052	0.13	1,008	1,260
10×30	820	0.044	0.11	1,152	1,440	560	0.040	0.11	1,152	1,440
12.5×20	820	0.046	0.12	1,072	1,340	560	0.046	0.12	1,072	1,340
12.5×25	1,000	0.034	0.085	1,352	1,690	680	0.034	0.085	1,352	1,690
12.5×30	1,500	0.030	0.075	1,755	1,950	1,000	0.030	0.075	1,560	1,950
12.5×35	1,800	0.027	0.068	1,980	2,200	1,200	0.027	0.068	1,980	2,200
12.5×40	2,200	0.024	0.060	2,151	2,390	1,500	0.024	0.060	2,151	2,390
16×25	1,800	0.028	0.070	1,863	2,070	1,200	0.028	0.070	1,863	2,070
16×31.5	2,700	0.025	0.063	2,115	2,350	1,800	0.025	0.063	2,115	2,350
16×35.5	3,300	0.022	0.055	2,295	2,550	2,200	0.022	0.055	2,295	2,550
16×40	3,900	0.018	0.045	2,610	2,900	2,700	0.018	0.045	2,610	2,900
18×35.5	3,900	0.021	0.053	2,394	2,660	2,700	0.021	0.053	2,394	2,660
18×40	4,700	0.017	0.043	2,709	3,010	3,300	0.010	0.043	2,709	3,010