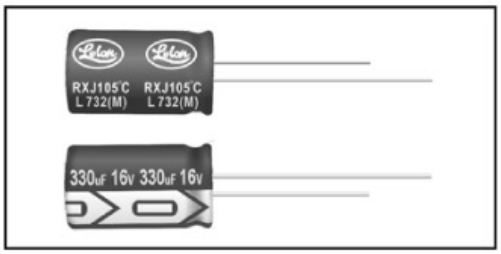
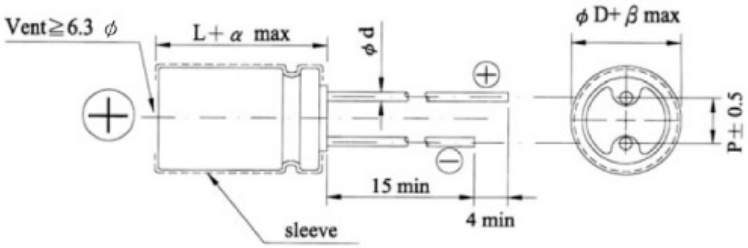
Features
- 105℃, 2,000 ~ 5,000 hours assured
- Low ESR, suitable for switching power supplies
- Smaller size with large permissible ripple current
- RoHS Compliance



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 120Hz, 20℃)	Rated Voltage: 6.3, 10, 16, 25, 35, 50, 63, 100 Tan δ (max): 0.22, 0.19, 0.16, 0.14, 0.12, 0.10, 0.08, 0.05 When the capacitance exceeds 1,000 μF, 0.02 shall be added every 1,000 μF increase.
Low Temperature Characteristics (at 120Hz)	Impedance ratio shall not exceed the values given in the table below. Rated Voltage: 6.3, 10, 16, 25, 35, 50, 63, 100 Impedance Ratio Z(-55℃)/Z(+20℃): 4, 4, 3, 3, 3, 3, 3, 3
Load Life Test	Test Time: 2,000 hrs for φD ≦ 8 mm; 5,000 hrs for φD ≧ 10 mm Capacitance Change: Within ±20% of initial value Dissipation Factor: Less than 200% of specified value Leakage Current: Within specified value * The above specifications shall be satisfied when the capacitors are restored to 20℃ after the rated voltage applied with rated ripple current for 2,000/5,000 hrs at 105℃.
Shelf Life Test	Test Time: 1,000 Hrs Capacitance Change: Within ±20% of initial value Dissipation Factor: Less than 200% of specified value Leakage Current: Within specified value * 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.
Ripple Current & Frequency Multipliers	Freq.(Hz) / Cap.(μF): 60 (50), 120, 500, 1K, 10K, 100K Under 33: 0.40, 0.55, 0.65, 0.80, 0.90, 1.00 39 ~ 330: 0.60, 0.70, 0.80, 0.90, 0.95, 1.00 390 ~ 1,000: 0.65, 0.80, 0.85, 0.98, 1.00, 1.00 1,200 up above: 0.80, 0.90, 0.95, 0.98, 1.00, 1.00

DIAGRAM OF DIMENSIONS



LEAD SPACING AND DIAMETER Unit: mm

φD	5	6.3	8	10	12.5	16	18
P	2.0	2.5	3.5	5.0	5.0	7.5	7.5
φd	0.5		0.6			0.8	
α	1.0			1.5			
β	0.5						

Dimension: φD × L(mm)
Ripple Current: mA/rms at 100K Hz, 105°C

DIMENSION & PERMISSIBLE RIPPLE CURRENT

V. DC / Item / μF	6.3V (0J)					10V (1A)					16V (1C)				
	φD×L	Impedance (Ω, Max/100K Hz)		Ripple Current (mA/rms, 105℃)		φD×L	Impedance (Ω, Max/100K Hz)		Ripple Current (mA/rms, 105℃)		φD×L	Impedance (Ω, Max/100K Hz)		Ripple Current (mA/rms, 105℃)	
		20℃	-10℃	120 Hz	100K Hz		20℃	-10℃	120 Hz	100K Hz		20℃	-10℃	120 Hz	100K Hz
33											5×11	1.30	3.90	108	154
39											5×11	1.30	3.90	108	154
47						5×11	2.10	5.50	78	111	6.3×11	0.60	1.80	182	260
56						5×11	1.90	4.80	85	121	6.3×11	0.60	1.80	182	260
68						5×11	1.30	3.90	108	154	6.3×11	0.60	1.80	182	260
100	5×11	1.30	3.90	108	154	6.3×11	0.60	1.80	182	260	6.3×11	0.60	1.80	182	260
220	6.3×11	0.60	1.80	182	260	8×11.5	0.33	0.99	280	400	8×11.5	0.33	0.99	320	400
330	8×11.5	0.33	0.88	280	400	8×11.5	0.33	0.99	280	400	10×12.5	0.25	0.75	360	510
390	8×11.5	0.33	0.88	320	400	10×12.5	0.27	0.75	410	510	10×16	0.19	0.57	510	635
470	10×12.5	0.25	0.75	410	510	10×12.5	0.25	0.75	410	510	10×16	0.19	0.57	510	635
560	10×12.5	0.25	0.75	410	510	10×16	0.19	0.57	510	635	10×20	0.14	0.42	775	860
680	10×16	0.19	0.57	510	635	10×16	0.19	0.57	510	635	10×20	0.14	0.42	775	860
1,000	10×20	0.14	0.42	690	860	10×20	0.14	0.37	690	860	12.5×20	0.085	0.26	1,000	1,250
1,200	10×20	0.14	0.42	775	860	10×25	0.12	0.30	930	1,030	12.5×20	0.085	0.26	1,125	1,250
2,200	12.5×20	0.085	0.26	1,125	1,250	12.5×25	0.070	0.21	1,200	1,355	12.5×25	0.070	0.21	1,200	1,355
3,300	12.5×25	0.070	0.21	1,200	1,355	12.5×25	0.070	0.21	1,200	1,355	16×31.5	0.048	0.14	1,830	2,030
4,700	16×25	0.060	0.18	1,595	1,770	16×31.5	0.048	0.14	1,830	2,030	16×35.5	0.044	0.13	2,065	2,295

V. DC / Item / μF	25V (1E)					35V (1V)					50V (1H)				
	φD×L	Impedance (Ω, Max/100K Hz)		Ripple Current (mA/rms, 105℃)		φD×L	Impedance (Ω, Max/100K Hz)		Ripple Current (mA/rms, 105℃)		φD×L	Impedance (Ω, Max/100K Hz)		Ripple Current (mA/rms, 105℃)	
		20℃	-10℃	120 Hz	100K Hz		20℃	-10℃	120 Hz	100K Hz		20℃	-10℃	120 Hz	100K Hz
1											5×11	5.0	15.0	43	78
2.2											5×11	4.0	12.0	48	88
3.3											5×11	3.50	11.0	52	94
4.7											5×11	3.00	9.00	55	100
6.8											5×11	3.00	9.00	55	100
10											5×11	2.00	6.00	68	124
22						5×11	1.30	3.90	108	154	6.3×11	0.60	1.80	143	260
33	5×11	1.30	3.90	108	154	6.3×11	0.60	1.80	182	260	6.3×11	0.60	1.80	143	260
39	6.3×11	0.60	1.80	182	260	6.3×11	0.60	1.80	182	260	6.3×11	0.60	1.80	182	260
47	6.3×11	0.60	1.80	182	260	6.3×11	0.60	1.80	182	260	8×11.5	0.33	0.99	320	400
56	6.3×11	0.60	1.80	182	260	6.3×11	0.60	1.80	182	260	8×11.5	0.33	0.99	320	400
68	6.3×11	0.60	1.80	182	260	6.3×11	0.60	1.80	182	260	8×11.5	0.33	0.99	320	400
100	8×11.5	0.33	0.99	320	400	8×11.5	0.33	0.99	320	400	10×16	0.19	0.57	445	635
220	10×12.5	0.25	0.75	360	510	10×16	0.19	0.57	445	635	10×25	0.12	0.30	825	1,030
330	10×16	0.19	0.57	445	635	10×20	0.12	0.42	600	860	12.5×20	0.085	0.26	875	1,250
390	10×20	0.14	0.42	775	965	10×25	0.12	0.30	930	1,030	12.5×25	0.070	0.21	1,085	1,355
470	10×20	0.14	0.42	775	965	12.5×20	0.085	0.26	1,000	1,250	12.5×25	0.070	0.21	1,085	1,355
560	10×25	0.12	0.30	930	1,030	12.5×20	0.085	0.26	1,000	1,250	12.5×25	0.070	0.21	1,085	1,355
680	12.5×20	0.085	0.26	1,000	1,250	12.5×25	0.070	0.21	1,085	1,355	16×25	0.060	0.18	1,415	1,770
1,000	12.5×25	0.070	0.23	1,080	1,355	12.5×25	0.070	0.21	1,085	1,355	16×25	0.060	0.18	1,595	1,770
1,200	12.5×25	0.070	0.21	1,200	1,355	12.5×25	0.070	0.21	1,200	1,355	16×31.5	0.048	0.14	1,830	2,030
2,200	16×25	0.060	0.18	1,595	1,770	16×35.5	0.044	0.13	2,065	2,295	18×40	0.037	0.10	2,465	2,740
3,300	16×35.5	0.044	0.13	2,065	2,295	18×40	0.037	0.10	2,465	2,740					
4,700	18×40	0.037	0.10	2,465	2,740										

Dimension: φD×L(mm)
Ripple Current: mA/rms at 100K Hz, 105℃

DIMENSION & PERMISSIBLE RIPPLE CURRENT

V. DC / Item / μF	63V (1J)					100V (2A)				
	φD×L	Impedance (Ω, Max/100K Hz)		Ripple Current (mA/rms, 105℃)		φD×L	Impedance (Ω, Max/100K Hz)		Ripple Current (mA/rms, 105℃)	
		20℃	-10℃	120 Hz	100K Hz		20℃	-10℃	120 Hz	100K Hz
1						5×11	7.0	25.0	36	66
2.2						5×11	6.00	21.0	40	72
3.3						5×11	5.00	18.0	43	78
4.7						6.3×11	1.20	4.20	100	180
6.8						6.3×11	1.20	4.20	100	180
10	6.3×11	1.20	4.20	100	180	8×11.5	0.56	2.00	168	305
22	6.3×11	1.20	4.20	100	180	8×11.5	0.56	2.00	168	308
33	8×11.5	0.56	2.00	170	305	10×12.5	0.50	1.80	210	380
39	8×11.5	0.56	2.00	170	305	10×16	0.32	1.10	350	500
47	8×11.5	0.56	2.00	170	305	10×20	0.27	0.95	435	620
56	10×12.5	0.50	1.80	265	380	10×20	0.27	0.95	435	620
68	10×12.5	0.50	1.80	265	380	10×25	0.21	0.63	530	760
100	10×20	0.27	0.95	435	620	12.5×20	0.16	0.56	625	890
220	12.5×20	0.094	0.24	570	820	16×25	0.090	0.32	1,010	1,440
330	12.5×25	0.073	0.21	770	1,100	16×31.5	0.060	0.17	1,255	1,790
390	12.5×25	0.073	0.21	770	1,100	16×35.5	0.056	0.14	1,650	2,065
470	16×25	0.060	0.18	1,420	1,770					
560	16×31.5	0.048	0.14	1,625	2,030					
680	16×31.5	0.048	0.14	1,625	2,030					
1,000	18×35.5	0.041	0.11	1,790	2,240					