



# SURGE

# LSK Series

## Features

- Snap-in terminal type
- 105°C, 5,000 hours assured
- Suitable for medium to high voltage circuits
- RoHS compliance

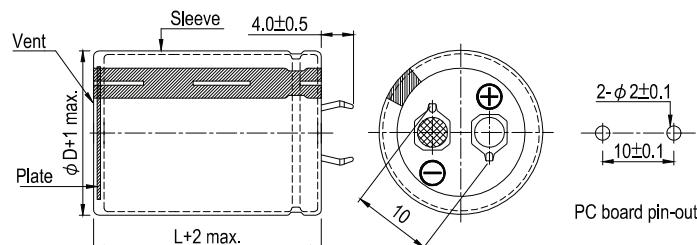


## Specifications

Items	Performance									
Category Temperature Range	-25°C ~ +105°C									
Capacitance Tolerance	$\pm 20\%$ (at 120 Hz, 20°C)									
Leakage Current (at 20°C)	$I = 3\sqrt{CV}$ or 1.5 mA whichever is smaller (after 5 minutes) Where, C = rated capacitance in $\mu\text{F}$ , V = rated DC Rated Voltage in V									
Tanδ (at 120 Hz, 20°C)	Rated Voltage	160	200	250	315	350	400	420	450	500
	Tanδ (max)	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15
Low Temperature Characteristics (at 120 Hz)	Impedance ratio shall not exceed the values given in the table below.									
	Rated Voltage	160	200	250	315	350	400	420	450	500
	Impedance Ratio	Z(-25°C)/Z(+20°C)	4	4	4	4	8	8	8	8
Endurance	Test Time	5,000 Hrs								
	Capacitance Change	Within $\pm 25\%$ of initial value								
	Tanδ	Less than 250% of specified value								
	Leakage Current	Within specified value								
* The above specifications shall be satisfied when the capacitors are restored to 20°C after the rated voltage applied with rated ripple current for 5,000 hours at 105°C.										
Shelf Life Test	Test Time	1,000 Hrs								
	Capacitance Change	Within $\pm 20\%$ of initial value								
	Tanδ	Less than 150% of specified value								
	Leakage Current	Within specified value								
Ripple Current and Frequency Multipliers	Frequency (Hz)	50 / 60	100 / 120	300	1k	10k up				
	Multiplier	0.8	1.0	1.1	1.3	1.4				
Failure percentage Failure rate	When the failure percentage / failure rate is required, please contact with us for further discussion.									

Diagram of Dimensions

Unit: mm





SURGE

LSK Series

## Dimension and Permissible Ripple Current

Rated Voltage V <sub>DC</sub>	Capacitance 120 Hz, 20°C μF	ϕ D×L mm	Ripple Current 120 Hz, 105°C A/rms	Tan δ at 120 Hz, 20°C	ESR 120 Hz, 20°C Ω	LC 5 minutes mA	Part Number
160	390	22 × 35	1.05	0.15	0.510	0.75	LSK391M2C--A2235
	470	20 × 40	1.16	0.15	0.423	0.82	LSK471M2C--A2040
	470	22 × 40	1.23	0.15	0.423	0.82	LSK471M2C--A2240
	470	25 × 30	1.17	0.15	0.423	0.82	LSK471M2C--A2530
	560	22 × 45	1.41	0.15	0.355	0.90	LSK561M2C--A2245
	560	25 × 35	1.36	0.15	0.355	0.90	LSK561M2C--A2535
	560	30 × 25	1.32	0.15	0.355	0.90	LSK561M2C--A3025
	680	22 × 50	1.63	0.15	0.293	0.99	LSK681M2C--A2250
	680	25 × 40	1.59	0.15	0.293	0.99	LSK681M2C--A2540
	680	30 × 30	1.56	0.15	0.293	0.99	LSK681M2C--A3030
	820	25 × 45	1.83	0.15	0.243	1.09	LSK821M2C--A2545
	820	30 × 35	1.83	0.15	0.243	1.09	LSK821M2C--A3035
	820	35 × 30	1.89	0.15	0.243	1.09	LSK821M2C--A3530
	1,000	25 × 50	2.12	0.15	0.199	1.20	LSK102M2C--A2550
	1,000	30 × 40	2.13	0.15	0.199	1.20	LSK102M2C--A3040
	1,000	35 × 30	2.08	0.15	0.199	1.20	LSK102M2C--A3530
	1,200	30 × 45	2.46	0.15	0.166	1.31	LSK122M2C--A3045
	1,200	35 × 35	2.42	0.15	0.166	1.31	LSK122M2C--A3535
	1,500	30 × 50	2.88	0.15	0.133	1.47	LSK152M2C--A3050
	1,500	35 × 40	2.86	0.15	0.133	1.47	LSK152M2C--A3540
	1,800	35 × 45	3.29	0.15	0.111	1.50	LSK182M2C--A3545
200	180	22 × 20	0.59	0.15	1.106	0.57	LSK181M2D--A2220
	220	22 × 25	0.72	0.15	0.905	0.63	LSK221M2D--A2225
	220	25 × 20	0.71	0.15	0.905	0.63	LSK221M2D--A2520
	270	22 × 30	0.81	0.15	0.737	0.70	LSK271M2D--A2230
	270	25 × 25	0.81	0.15	0.737	0.70	LSK271M2D--A2525
	330	22 × 35	0.92	0.15	0.603	0.77	LSK331M2D--A2235
	330	30 × 20	0.87	0.15	0.603	0.77	LSK331M2D--A3020
	390	22 × 40	1.02	0.15	0.510	0.84	LSK391M2D--A2240
	390	25 × 30	1.01	0.15	0.510	0.84	LSK391M2D--A2530
	390	30 × 25	1.01	0.15	0.510	0.84	LSK391M2D--A3025
	390	35 × 20	1.02	0.15	0.510	0.84	LSK391M2D--A3520
	470	22 × 45	1.10	0.15	0.423	0.92	LSK471M2D--A2245
	470	25 × 35	1.15	0.15	0.423	0.92	LSK471M2D--A2535
	470	35 × 20	1.12	0.15	0.423	0.92	LSK471M2D--A3520
	560	22 × 50	1.22	0.15	0.355	1.00	LSK561M2D--A2250
	560	25 × 40	1.19	0.15	0.355	1.00	LSK561M2D--A2540
	560	30 × 30	1.17	0.15	0.355	1.00	LSK561M2D--A3030
	560	35 × 25	1.31	0.15	0.355	1.00	LSK561M2D--A3525
	680	25 × 45	1.38	0.15	0.293	1.11	LSK681M2D--A2545
	680	30 × 35	1.37	0.15	0.293	1.11	LSK681M2D--A3035
	820	30 × 40	1.50	0.15	0.243	1.21	LSK821M2D--A3040
	820	35 × 30	1.46	0.15	0.243	1.21	LSK821M2D--A3530
250	1,000	30 × 50	1.91	0.15	0.199	1.34	LSK102M2D--A3050
	1,000	35 × 35	1.72	0.15	0.199	1.34	LSK102M2D--A3535
	1,200	35 × 40	1.93	0.15	0.166	1.47	LSK122M2D--A3540
	1,500	35 × 50	2.37	0.15	0.133	1.50	LSK152M2D--A3550
	1,800	35 × 55	2.70	0.15	0.111	1.50	LSK182M2D--A3555

**Dimension and Permissible Ripple Current**

Rated Voltage V <sub>DC</sub>	Capacitance 120 Hz, 20°C μF	ϕ D×L mm	Ripple Current 120 Hz, 105°C A/rms	Tan δ at 120 Hz, 20°C	ESR 120 Hz, 20°C Ω	LC 5 minutes mA	Part Number
250	470	35 × 25	1.10	0.15	0.423	1.03	LSK471M2E--A3525
	560	25 × 50	1.31	0.15	0.355	1.12	LSK561M2E--A2550
	560	30 × 35	1.25	0.15	0.355	1.12	LSK561M2E--A3035
	560	35 × 30	1.29	0.15	0.355	1.12	LSK561M2E--A3530
	680	30 × 40	1.36	0.15	0.293	1.24	LSK681M2E--A3040
	680	35 × 40	1.57	0.15	0.293	1.24	LSK681M2E--A3540
	820	30 × 50	1.65	0.15	0.243	1.36	LSK821M2E--A3050
	1,000	35 × 40	1.76	0.15	0.199	1.50	LSK102M2E--A3540
315	120	22 × 25	0.51	0.15	1.659	0.58	LSK121M2F--A2225
	150	22 × 30	0.62	0.15	1.327	0.65	LSK151M2F--A2230
	180	22 × 35	0.72	0.15	1.106	0.71	LSK181M2F--A2235
	180	25 × 30	0.73	0.15	1.106	0.71	LSK181M2F--A2530
	220	22 × 40	0.85	0.15	0.905	0.79	LSK221M2F--A2240
	220	25 × 35	0.86	0.15	0.905	0.79	LSK221M2F--A2535
	220	30 × 25	0.84	0.15	0.905	0.79	LSK221M2F--A3025
	270	22 × 45	0.99	0.15	0.737	0.87	LSK271M2F--A2245
	270	25 × 40	1.01	0.15	0.737	0.87	LSK271M2F--A2540
	270	30 × 30	1.00	0.15	0.737	0.87	LSK271M2F--A3030
	330	22 × 55	1.20	0.15	0.603	0.97	LSK331M2F--A2255
	330	25 × 45	1.18	0.15	0.603	0.97	LSK331M2F--A2545
	330	30 × 35	1.17	0.15	0.603	0.97	LSK331M2F--A3035
	330	35 × 25	1.13	0.15	0.603	0.97	LSK331M2F--A3525
	390	25 × 50	1.34	0.15	0.510	1.05	LSK391M2F--A2550
	390	30 × 40	1.35	0.15	0.510	1.05	LSK391M2F--A3040
	390	35 × 30	1.31	0.15	0.510	1.05	LSK391M2F--A3530
	470	30 × 45	1.56	0.15	0.423	1.15	LSK471M2F--A3045
	470	35 × 35	1.53	0.15	0.423	1.15	LSK471M2F--A3535
	560	30 × 50	1.78	0.15	0.355	1.26	LSK561M2F--A3050
	560	35 × 40	1.77	0.15	0.355	1.26	LSK561M2F--A3540
	680	35 × 45	2.04	0.15	0.293	1.39	LSK681M2F--A3545
	820	35 × 50	2.35	0.15	0.243	1.50	LSK821M2F--A3550
350	56	22 × 20	0.32	0.15	3.554	0.42	LSK560M2V--A2220
	68	22 × 25	0.39	0.15	2.927	0.46	LSK680M2V--A2225
	82	22 × 30	0.49	0.15	2.427	0.51	LSK820M2V--A2230
	82	25 × 20	0.44	0.15	2.427	0.51	LSK820M2V--A2520
	100	22 × 25	0.45	0.15	1.990	0.56	LSK101M2V--A2225
	100	25 × 25	0.49	0.15	1.990	0.56	LSK101M2V--A2525
	120	22 × 30	0.53	0.15	1.659	0.61	LSK121M2V--A2230
	120	25 × 30	0.55	0.15	1.659	0.61	LSK121M2V--A2530
	120	30 × 20	0.52	0.15	1.659	0.61	LSK121M2V--A3020
	150	22 × 35	0.58	0.15	1.327	0.69	LSK151M2V--A2235
	150	25 × 25	0.54	0.15	1.327	0.69	LSK151M2V--A2525
	150	30 × 25	0.63	0.15	1.327	0.69	LSK151M2V--A3025
	150	35 × 20	0.64	0.15	1.327	0.69	LSK151M2V--A3520
	180	22 × 40	0.67	0.15	1.106	0.75	LSK181M2V--A2240
	180	25 × 30	0.64	0.15	1.106	0.75	LSK181M2V--A2530
	220	22 × 45	0.78	0.15	0.905	0.83	LSK221M2V--A2245
	220	25 × 35	0.76	0.15	0.905	0.83	LSK221M2V--A2535
	220	30 × 25	0.73	0.15	0.905	0.83	LSK221M2V--A3025
	220	35 × 30	0.87	0.15	0.905	0.83	LSK221M2V--A3530
	270	22 × 50	0.88	0.15	0.737	0.92	LSK271M2V--A2250
	270	25 × 40	0.85	0.15	0.737	0.92	LSK271M2V--A2540
	270	30 × 30	0.84	0.15	0.737	0.92	LSK271M2V--A3030
	270	35 × 25	0.86	0.15	0.737	0.92	LSK271M2V--A3525
	330	25 × 45	0.99	0.15	0.603	1.02	LSK331M2V--A2545
	330	30 × 35	0.99	0.15	0.603	1.02	LSK331M2V--A3035
	390	30 × 40	1.14	0.15	0.510	1.11	LSK391M2V--A3040
	390	35 × 30	1.11	0.15	0.510	1.11	LSK391M2V--A3530
	470	30 × 45	1.19	0.15	0.423	1.22	LSK471M2V--A3045
	470	35 × 35	1.18	0.15	0.423	1.22	LSK471M2V--A3535
	560	30 × 50	1.32	0.15	0.355	1.33	LSK561M2V--A3050
	560	35 × 40	1.32	0.15	0.355	1.33	LSK561M2V--A3540
	680	35 × 45	1.52	0.15	0.293	1.46	LSK681M2V--A3545
	820	35 × 50	1.75	0.15	0.243	1.50	LSK821M2V--A3550



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LSK Series

## Dimension and Permissible Ripple Current

Rated Voltage V <sub>DC</sub>	Capacitance 120 Hz, 20°C μF	ϕ D×L mm	Ripple Current 120 Hz, 105°C A/rms	Tan δ at 120 Hz, 20°C	ESR 120 Hz, 20°C Ω	LC 5 minutes mA	Part Number
400	56	22 × 25	0.34	0.15	3.554	0.45	LSK560M2G-A2225
	68	25 × 20	0.37	0.15	2.927	0.49	LSK680M2G-A2520
	82	22 × 35	0.50	0.15	2.427	0.54	LSK820M2G-A2235
	82	30 × 20	0.50	0.15	2.427	0.54	LSK820M2G-A3020
	100	22 × 30	0.51	0.15	1.990	0.60	LSK101M2G-A2230
	100	25 × 25	0.51	0.15	1.990	0.60	LSK101M2G-A2525
	100	30 × 25	0.58	0.15	1.990	0.60	LSK101M2G-A3025
	120	22 × 35	0.59	0.15	1.659	0.66	LSK121M2G-A2235
	120	25 × 25	0.55	0.15	1.659	0.66	LSK121M2G-A2525
	120	35 × 20	0.65	0.15	1.659	0.66	LSK121M2G-A3520
	150	22 × 40	0.70	0.15	1.327	0.73	LSK151M2G-A2240
	150	25 × 30	0.67	0.15	1.327	0.73	LSK151M2G-A2530
	180	22 × 45	0.81	0.15	1.106	0.80	LSK181M2G-A2245
	180	25 × 35	0.78	0.15	1.106	0.80	LSK181M2G-A2535
	180	30 × 25	0.76	0.15	1.106	0.80	LSK181M2G-A3025
	220	22 × 50	0.94	0.15	0.905	0.89	LSK221M2G-A2250
	220	25 × 40	0.91	0.15	0.905	0.89	LSK221M2G-A2540
	220	30 × 30	0.90	0.15	0.905	0.89	LSK221M2G-A3030
	270	25 × 45	1.06	0.15	0.737	0.99	LSK271M2G-A2545
	270	30 × 35	1.06	0.15	0.737	0.99	LSK271M2G-A3035
	270	35 × 25	1.02	0.15	0.737	0.99	LSK271M2G-A3525
	330	25 × 50	1.23	0.15	0.603	1.09	LSK331M2G-A2550
	330	30 × 40	1.24	0.15	0.603	1.09	LSK331M2G-A3040
	330	35 × 30	1.21	0.15	0.603	1.09	LSK331M2G-A3530
	390	30 × 45	1.42	0.15	0.510	1.18	LSK391M2G-A3045
	390	35 × 35	1.40	0.15	0.510	1.18	LSK391M2G-A3535
	470	30 × 50	1.63	0.15	0.423	1.30	LSK471M2G-A3050
	470	35 × 40	1.62	0.15	0.423	1.30	LSK471M2G-A3540
	560	35 × 45	1.86	0.15	0.355	1.42	LSK561M2G-A3545
420	39	22 × 25	0.25	0.15	5.104	0.38	LSK390M2P-A2225
	68	25 × 25	0.36	0.15	2.927	0.51	LSK680M2P-A2525
	100	22 × 30	0.43	0.15	1.990	0.61	LSK101M2P-A2230
	100	25 × 25	0.43	0.15	1.990	0.61	LSK101M2P-A2525
	120	22 × 35	0.50	0.15	1.659	0.67	LSK121M2P-A2235
	120	35 × 25	0.59	0.15	1.659	0.67	LSK121M2P-A3525
	150	22 × 40	0.61	0.15	1.327	0.75	LSK151M2P-A2240
	150	25 × 30	0.58	0.15	1.327	0.75	LSK151M2P-A2530
	150	30 × 25	0.58	0.15	1.327	0.75	LSK151M2P-A3025
	180	22 × 45	0.70	0.15	1.106	0.82	LSK181M2P-A2245
	180	25 × 35	0.68	0.15	1.106	0.82	LSK181M2P-A2535
	180	30 × 30	0.71	0.15	1.106	0.82	LSK181M2P-A3030
	220	22 × 50	0.82	0.15	0.905	0.91	LSK221M2P-A2250
	220	25 × 40	0.80	0.15	0.905	0.91	LSK221M2P-A2540
	220	30 × 35	0.84	0.15	0.905	0.91	LSK221M2P-A3035
	220	35 × 25	0.78	0.15	0.905	0.91	LSK221M2P-A3525
	270	25 × 45	0.93	0.15	0.737	1.01	LSK271M2P-A2545
	270	30 × 40	0.98	0.15	0.737	1.01	LSK271M2P-A3040
	270	35 × 30	0.92	0.15	0.737	1.01	LSK271M2P-A3530
	330	25 × 55	1.12	0.15	0.603	1.12	LSK331M2P-A2555
	330	30 × 45	1.14	0.15	0.603	1.12	LSK331M2P-A3045
	330	35 × 35	1.09	0.15	0.603	1.12	LSK331M2P-A3535
	390	30 × 50	1.25	0.15	0.510	1.21	LSK391M2P-A3050
	390	35 × 40	1.25	0.15	0.510	1.21	LSK391M2P-A3540
	470	35 × 45	1.44	0.15	0.423	1.33	LSK471M2P-A3545
	560	35 × 50	1.64	0.15	0.355	1.45	LSK561M2P-A3550
450	39	22 × 25	0.37	0.15	5.104	0.40	LSK390M2W-A2225
	68	25 × 25	0.47	0.15	2.927	0.52	LSK680M2W-A2525
	82	22 × 30	0.61	0.15	2.427	0.58	LSK820M2W-A2230
	100	22 × 45	0.64	0.15	1.990	0.64	LSK101M2W-A2245
	100	25 × 25	0.67	0.15	1.990	0.64	LSK101M2W-A2525
	100	30 × 25	0.57	0.15	1.990	0.64	LSK101M2W-A3025
	120	22 × 35	0.72	0.15	1.659	0.70	LSK121M2W-A2235
	120	25 × 30	0.73	0.15	1.659	0.70	LSK121M2W-A2530
	150	25 × 35	0.87	0.15	1.327	0.78	LSK151M2W-A2535
	150	30 × 30	0.71	0.15	1.327	0.78	LSK151M2W-A3030

**DIMENSION and Permissible Ripple Current**

Rated Voltage V <sub>dc</sub>	Capacitance 120 Hz, 20°C μF	ϕ D×L mm	Ripple Current 120 Hz, 105°C A/rms	Tan δ at 120 Hz, 20°C	ESR 120 Hz, 20°C Ω	LC 5 minutes mA	Part Number
450	180	22 × 50	0.98	0.15	1.106	0.85	LSK181M2W--A2250
	180	25 × 40	1.01	0.15	1.106	0.85	LSK181M2W--A2540
	180	30 × 30	1.00	0.15	1.106	0.85	LSK181M2W--A3030
	220	25 × 45	1.07	0.15	0.905	0.94	LSK221M2W--A2545
	220	30 × 35	1.07	0.15	0.905	0.94	LSK221M2W--A3035
	220	35 × 25	1.03	0.15	0.905	0.94	LSK221M2W--A3525
	270	30 × 40	1.25	0.15	0.737	1.05	LSK271M2W--A3040
	270	35 × 30	1.30	0.15	0.737	1.05	LSK271M2W--A3530
	330	30 × 45	1.46	0.15	0.603	1.16	LSK331M2W--A3045
	330	35 × 35	1.44	0.15	0.603	1.16	LSK331M2W--A3535
	390	35 × 45	1.69	0.15	0.510	1.26	LSK391M2W--A3545
	470	35 × 50	1.87	0.15	0.423	1.38	LSK471M2W--A3550
500	47	22 × 25	0.30	0.15	4.235	0.46	LSK470M2H--A2225
	56	22 × 30	0.35	0.15	3.554	0.50	LSK560M2H--A2230
	56	25 × 25	0.35	0.15	3.554	0.50	LSK560M2H--A2525
	68	22 × 30	0.39	0.15	2.927	0.55	LSK680M2H--A2230
	68	25 × 30	0.42	0.15	2.927	0.55	LSK680M2H--A2530
	82	22 × 35	0.46	0.15	2.427	0.61	LSK820M2H--A2235
	82	25 × 30	0.46	0.15	2.427	0.61	LSK820M2H--A2530
	100	22 × 40	0.54	0.15	1.990	0.67	LSK101M2H--A2240
	100	25 × 35	0.54	0.15	1.990	0.67	LSK101M2H--A2535
	120	22 × 45	0.62	0.15	1.659	0.73	LSK121M2H--A2245
	120	25 × 40	0.63	0.15	1.659	0.73	LSK121M2H--A2540
	150	22 × 50	0.73	0.15	1.327	0.82	LSK151M2H--A2250
	150	25 × 45	0.75	0.15	1.327	0.82	LSK151M2H--A2545
	150	30 × 30	0.70	0.15	1.327	0.82	LSK151M2H--A3030
	180	25 × 50	0.86	0.15	1.106	0.90	LSK181M2H--A2550
	180	30 × 35	0.81	0.15	1.106	0.90	LSK181M2H--A3035
	220	25 × 50	0.95	0.15	0.905	0.99	LSK221M2H--A2550
	220	30 × 45	1.00	0.15	0.905	0.99	LSK221M2H--A3045
	220	35 × 30	0.93	0.15	0.905	0.99	LSK221M2H--A3530
	270	35 × 35	1.09	0.15	0.737	1.10	LSK271M2H--A3535
	330	35 × 40	1.28	0.15	0.603	1.22	LSK331M2H--A3540

**Part Numbering System**

LSK Series	100μF	±20%	400V	4.0±0.5mm	22 ϕ ×30L
<b>LSK</b>	<b>101</b>	<b>M</b>	<b>2G</b>	<b>--</b>	<b>A</b>
Series Name	Capacitance	Capacitance tolerance	Rated voltage	Terminal type	Terminal length
Example:		Example:	Example:	Example:	Example:
Cap.	Symbol	M = ±20% K = ±10%	Voltage Symbol	Type Symbol	ϕ D×L Code
56	560		400 2G	2 pins - -	22×30 2230
220	221		450 2W	5 pins L5	25×25 2525
470	471				30×40 3040

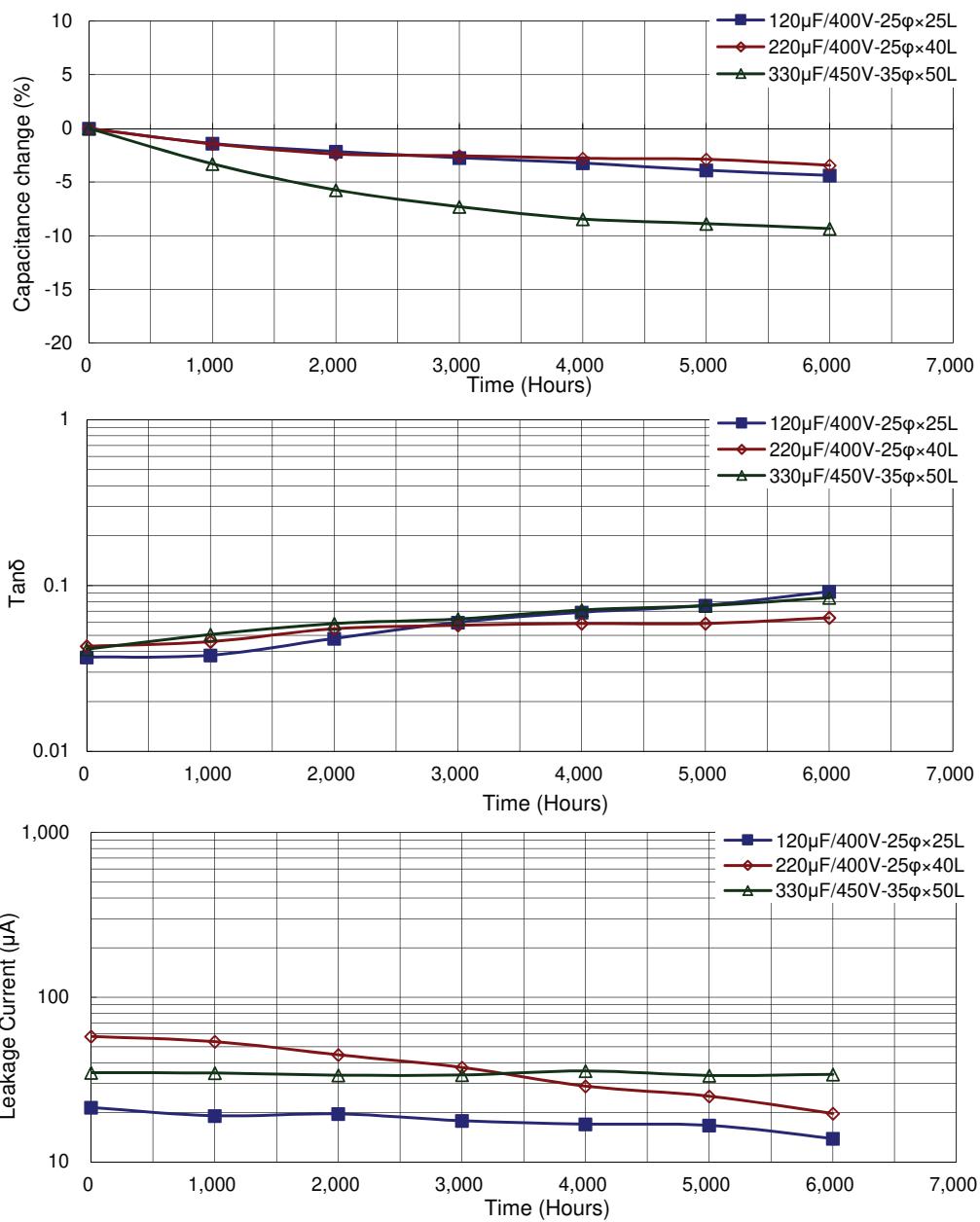
**XX**  
**S** = Standard  
**KS** = AEC-Q200 Qualified,  
Safety Critical Application  
**LS** = AEC-Q200 Qualified,  
Non-Safety Critical  
Application



SURGE

LSK Series

#### Typical Endurance Curves



#### Useful Life Chart

