



LSR Series

Features

- Snap-in terminal type
- High Ripple current.
- 105°C, 3,000 hours assured
- RoHS Compliance



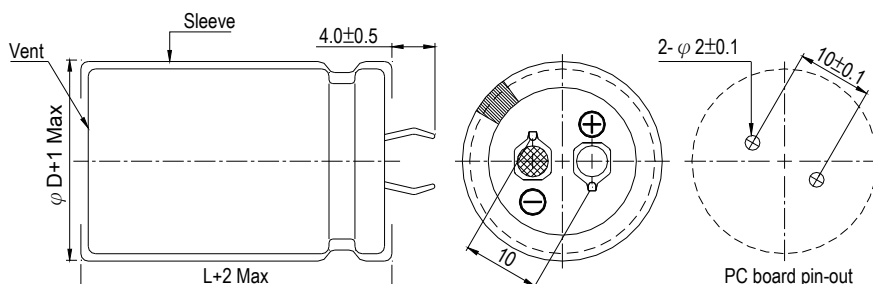
Sleeve & Marking Color: Black & White

Specifications

Items	Performance																
Category Temperature Range	400 ~ 450V																
	-25°C ~ +105°C																
Capacitance Tolerance	± 20% (at 120Hz, 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 μF V = rated DC working voltage in V																
Tan δ (at 120Hz, 20°C)	<table><tr><td>Rated Voltage</td><td>400</td><td>450</td></tr><tr><td>Tanδ(max)</td><td>0.15</td><td>0.15</td></tr></table>					Rated Voltage	400	450	Tan δ (max)	0.15	0.15						
Rated Voltage	400	450															
Tan δ (max)	0.15	0.15															
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>400</td><td>450</td></tr><tr><td>Impedance Ratio</td><td>Z(-25°C)/ Z(+20°C)</td><td>8</td><td>8</td></tr></table>					Rated Voltage		400	450	Impedance Ratio	Z(-25°C)/ Z(+20°C)	8	8				
Rated Voltage		400	450														
Impedance Ratio	Z(-25°C)/ Z(+20°C)	8	8														
Endurance	<table><tr><td>Test Time</td><td>3,000 Hrs</td></tr><tr><td>Capacitance Change</td><td>Within ±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> * The above Specifications shall be satisfied when the capacitors are restored to 20°C after the rated voltage applied with rated ripple current for 3,000 hours at 105°C.					Test Time	3,000 Hrs	Capacitance Change	Within ±20% of initial value	Tan δ	Less than 200% of specified value	Leakage Current	Within specified value				
Test Time	3,000 Hrs																
Capacitance Change	Within ±20% of initial value																
Tan δ	Less than 200% of specified value																
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Shelf Life Test	<table><tr><td>Test Time</td><td>1,000 Hrs</td></tr><tr><td>Capacitance Change</td><td>Within ±15% of initial value</td></tr><tr><td>Tanδ</td><td>Less than 150% 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°C after exposing them for 1,000 hours at 105°C without voltage applied. The rated voltage shall be applied to the capacitors before the measurements (Refer to JIS C 5101-4 4.1).					Test Time	1,000 Hrs	Capacitance Change	Within ±15% of initial value	Tan δ	Less than 150% of specified value	Leakage Current	Within specified value				
Test Time	1,000 Hrs																
Capacitance Change	Within ±15% of initial value																
Tan δ	Less than 150% of specified value																
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Ripple Current & Frequency Multipliers	<table><tr><td>Frequency (Hz)</td><td>50 / 60</td><td>100 / 120</td><td>300</td><td>1k</td><td>10k up</td></tr><tr><td>Multiplier</td><td>0.8</td><td>1.0</td><td>1.1</td><td>1.3</td><td>1.4</td></tr></table>					Frequency (Hz)	50 / 60	100 / 120	300	1k	10k up	Multiplier	0.8	1.0	1.1	1.3	1.4
Frequency (Hz)	50 / 60	100 / 120	300	1k	10k up												
Multiplier	0.8	1.0	1.1	1.3	1.4												
Failure percentage	≤ 3 % (During useful life)																
Failure rate	≤ 70 fit (70 10 ⁻⁹ /h)																

Diagram of Dimensions

Unit: mm





Dimension & Permissible Ripple Current

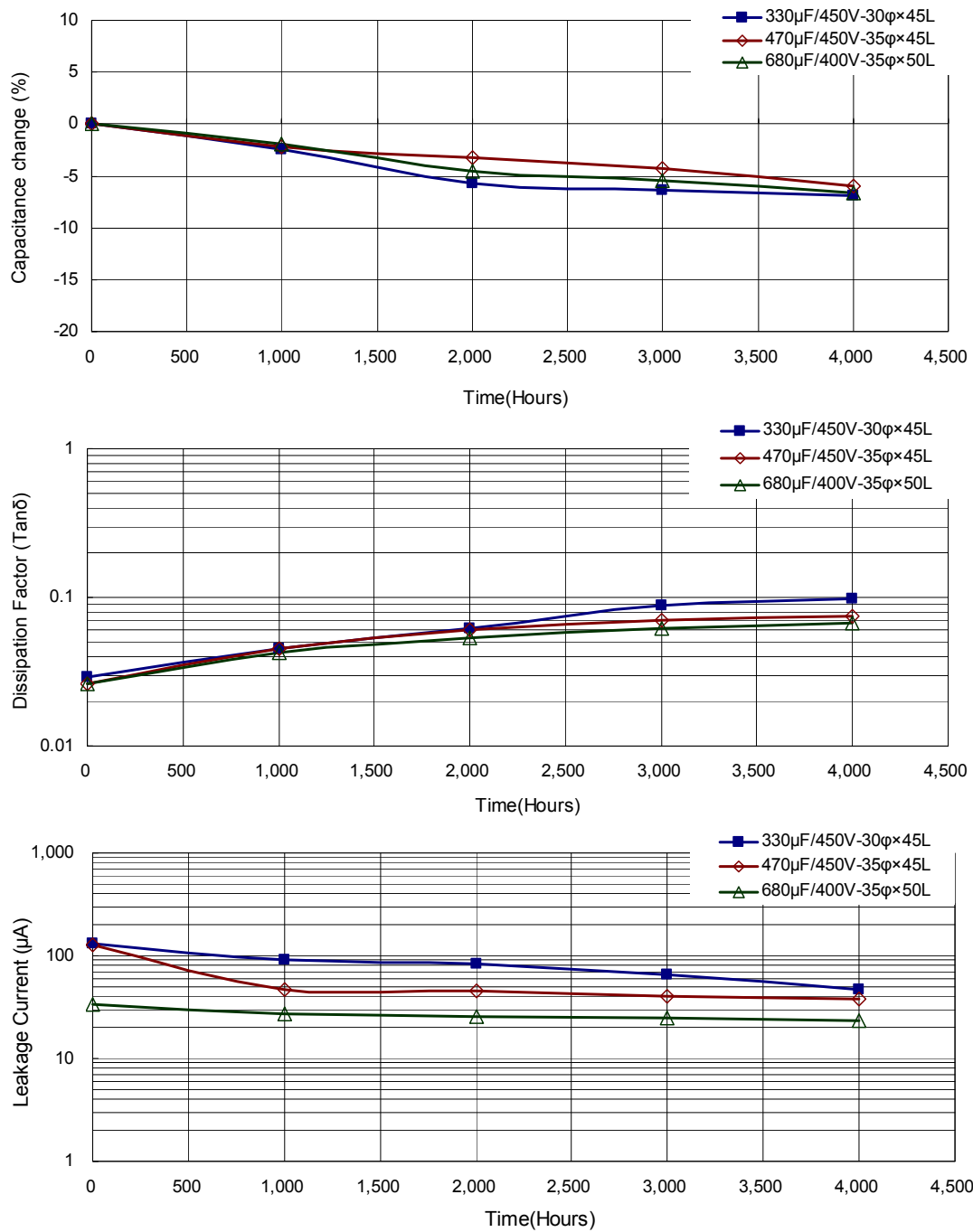
Working Voltage V. DC	Capacitance 120Hz, 20°C μF	φ D×L mm	Ripple Current 120 Hz, 105°C A/rms	Tan δ at 120Hz, 20°C	ESR 120Hz, 20°C Ω	LC 5 minutes mA	Part Number
400	100	22 × 25	1.02	0.15	1.194	0.60	LSR101M2G--A2225
	120	22 × 30	1.22	0.15	0.995	0.66	LSR121M2G--A2230
	120	25 × 25	1.22	0.15	0.995	0.66	LSR121M2G--A2525
	150	22 × 35	1.33	0.15	0.796	0.73	LSR151M2G--A2235
	180	22 × 40	1.43	0.15	0.664	0.80	LSR181M2G--A2240
	180	25 × 30	1.43	0.15	0.664	0.80	LSR181M2G--A2530
	180	30 × 25	1.68	0.15	0.664	0.80	LSR181M2G--A3025
	220	22 × 45	1.55	0.15	0.543	0.89	LSR221M2G--A2245
	220	25 × 35	1.65	0.15	0.543	0.89	LSR221M2G--A2535
	220	30 × 30	1.79	0.15	0.543	0.89	LSR221M2G--A3030
	270	22 × 50	1.68	0.15	0.442	0.99	LSR271M2G--A2250
	270	25 × 40	1.83	0.15	0.442	0.99	LSR271M2G--A2540
	270	30 × 35	2.12	0.15	0.442	0.99	LSR271M2G--A3035
	270	35 × 25	2.12	0.15	0.442	0.99	LSR271M2G--A3525
	330	25 × 50	2.12	0.15	0.362	1.09	LSR331M2G--A2550
	330	30 × 40	2.33	0.15	0.362	1.09	LSR331M2G--A3040
	330	35 × 30	2.33	0.15	0.362	1.09	LSR331M2G--A3530
	390	30 × 45	2.52	0.15	0.306	1.18	LSR391M2G--A3045
	390	35 × 35	2.52	0.15	0.306	1.18	LSR391M2G--A3535
	470	30 × 50	2.85	0.15	0.254	1.30	LSR471M2G--A3050
	470	35 × 40	2.85	0.15	0.254	1.30	LSR471M2G--A3540
450	560	35 × 45	3.18	0.15	0.213	1.42	LSR561M2G--A3545
	680	35 × 50	3.21	0.15	0.176	1.50	LSR681M2G--A3550
	82	22 × 25	0.96	0.15	1.456	0.58	LSR820M2W--A2225
	100	22 × 30	1.04	0.15	1.194	0.64	LSR101M2W--A2230
	100	25 × 25	1.04	0.15	1.194	0.64	LSR101M2W--A2525
	120	22 × 35	1.15	0.15	0.995	0.70	LSR121M2W--A2235
	120	25 × 30	1.22	0.15	0.995	0.70	LSR121M2W--A2530
	150	22 × 40	1.22	0.15	0.796	0.78	LSR151M2W--A2240
	150	25 × 35	1.31	0.15	0.796	0.78	LSR151M2W--A2535
	150	30 × 25	1.31	0.15	0.796	0.78	LSR151M2W--A3025
	180	22 × 45	1.35	0.15	0.664	0.85	LSR181M2W--A2245
	180	25 × 40	1.35	0.15	0.664	0.85	LSR181M2W--A2540
	180	30 × 30	1.60	0.15	0.664	0.85	LSR181M2W--A3030
	180	35 × 25	1.60	0.15	0.664	0.85	LSR181M2W--A3525
	220	25 × 45	1.55	0.15	0.543	0.94	LSR221M2W--A2545
	220	30 × 35	1.71	0.15	0.543	0.94	LSR221M2W--A3035
	270	25 × 50	1.74	0.15	0.442	1.05	LSR271M2W--A2550
	270	30 × 40	1.90	0.15	0.442	1.05	LSR271M2W--A3040
	270	35 × 30	1.90	0.15	0.442	1.05	LSR271M2W--A3530
	330	30 × 45	2.20	0.15	0.362	1.16	LSR331M2W--A3045
	330	35 × 35	2.20	0.15	0.362	1.16	LSR331M2W--A3535
	390	30 × 50	2.40	0.15	0.306	1.26	LSR391M2W--A3050
	390	35 × 40	2.42	0.15	0.306	1.26	LSR391M2W--A3540
	470	35 × 45	2.67	0.15	0.254	1.38	LSR471M2W--A3545
	560	35 × 50	2.85	0.15	0.213	1.50	LSR561M2W--A3550

Part Numbering System

LSR series	220μF	±20%	400V		4.0±0.5mm	30 ϕ ×30L	Pb-free Terminal + PET Sleeve																												
<u>LSR</u>	<u>221</u>	<u>M</u>	<u>2G</u>	- -	<u>A</u>	<u>3030</u>																													
Series name	Capacitance	Capacitance tolerance	Rated voltage	Terminal type	Terminal length	Case size	Terminal and Sleeve Type																												
Example:	Example:	Example:	Example:	Example:	Example:	Example:																													
<table><tr><td>Cap.</td><td>Symbol</td></tr><tr><td>56</td><td>560</td></tr><tr><td>220</td><td>221</td></tr><tr><td>470</td><td>471</td></tr></table>	Cap.	Symbol	56	560	220	221	470	471		M = ±20% K = ±10%	<table><tr><td>WV</td><td>Symbol</td></tr><tr><td>400</td><td>2G</td></tr><tr><td>450</td><td>2W</td></tr></table>	WV	Symbol	400	2G	450	2W	<table><tr><td>Type</td><td>Symbol</td></tr><tr><td>2 pins</td><td>- -</td></tr><tr><td>5 pins</td><td>L5</td></tr></table>	Type	Symbol	2 pins	- -	5 pins	L5	"A": 6.3±1.0 mm	<table><tr><td>ϕ D×L</td><td>Code</td></tr><tr><td>22×30</td><td>2230</td></tr><tr><td>25×25</td><td>2525</td></tr><tr><td>30×40</td><td>3040</td></tr></table>	ϕ D×L	Code	22×30	2230	25×25	2525	30×40	3040	
Cap.	Symbol																																		
56	560																																		
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Note: For more details, please refer to “Part Numbering System (Snap-in Type)” on page 21.

Typical Endurance Curves



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Authorized Distributor

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[LSR471M2W--A3055](#) [LSR271M2W--A2550](#) [LSR331M2G--A2550](#) [LSR101M2G--A2225](#) [LSR101M2W--A2525](#)
[LSR221M2W--A2545](#) [LSR331M2W--A3045](#) [LSR471M2G--A3050](#) [LSR681M2G--A3550](#) [LSR681M2W--A3555](#)
[LSR221M2P--A2535](#)