

LSL Series

Features

- Snap-in terminal type
- 105°C, 2,000 hours assured
- Low profile size
- RoHS compliant

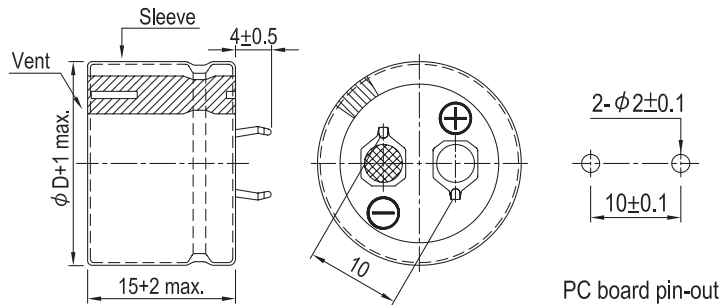


Specifications

Items	Performance														
Category Temperature Range	160 ~ 400V -25°C ~ +105°C														
Capacitance Tolerance	± 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 µF, V = rated DC Rated Voltage in V														
Tanδ (at 120 Hz, 20°C)	<table border="1"> <thead> <tr> <th>Rated Voltage</th> <th>160</th> <th>180</th> <th>200</th> <th>250</th> <th>315</th> <th>400</th> </tr> </thead> <tbody> <tr> <td>Tanδ(max)</td> <td>0.15</td> <td>0.15</td> <td>0.15</td> <td>0.15</td> <td>0.15</td> <td>0.15</td> </tr> </tbody> </table>	Rated Voltage	160	180	200	250	315	400	Tanδ(max)	0.15	0.15	0.15	0.15	0.15	0.15
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Low Temperature Characteristics (at 120 Hz)	<p>Impedance ratio shall not exceed the values given in the table below.</p> <table border="1"> <thead> <tr> <th>Rated Voltage</th> <th>160</th> <th>180</th> <th>200</th> <th>250</th> <th>315</th> <th>400</th> </tr> </thead> <tbody> <tr> <td>Impedance Ratio Z(-25°C)/ Z(+20°C)</td> <td>4</td> <td>4</td> <td>4</td> <td>4</td> <td>8</td> <td>8</td> </tr> </tbody> </table>	Rated Voltage	160	180	200	250	315	400	Impedance Ratio Z(-25°C)/ Z(+20°C)	4	4	4	4	8	8
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Endurance	<table border="1"> <thead> <tr> <th>Test Time</th> <th>2,000 Hrs</th> </tr> </thead> <tbody> <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> </tbody> </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 hours at 105°C.</p>	Test Time	2,000 Hrs	Capacitance Change	Within ±20% of initial value	Tanδ	Less than 200% of specified value	Leakage Current	Within specified value						
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Shelf Life Test	<table border="1"> <thead> <tr> <th>Test Time</th> <th>1,000 Hrs</th> </tr> </thead> <tbody> <tr> <td>Capacitance Change</td> <td>Within ±20% 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> </tbody> </table> <p>* 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).</p>	Test Time	1,000 Hrs	Capacitance Change	Within ±20% of initial value	Tanδ	Less than 150% of specified value	Leakage Current	Within specified value						
Test Time	1,000 Hrs														
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Ripple Current and Frequency Multipliers	<table border="1"> <thead> <tr> <th>Frequency (Hz)</th> <th>50 / 60</th> <th>100 / 120</th> <th>300</th> <th>1k</th> <th>10k up</th> </tr> </thead> <tbody> <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> </tbody> </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 Failure rate	When the failure percentage / failure rate is required, please contact with us for further discussion.														

Diagram of Dimensions

Unit: mm



Snap-in



Dimension and Permissible Ripple Current

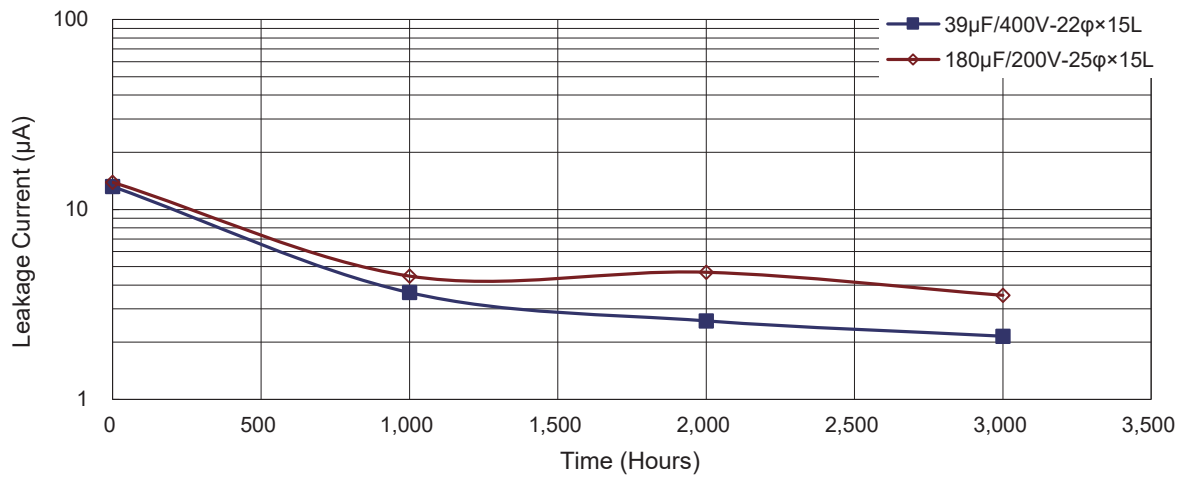
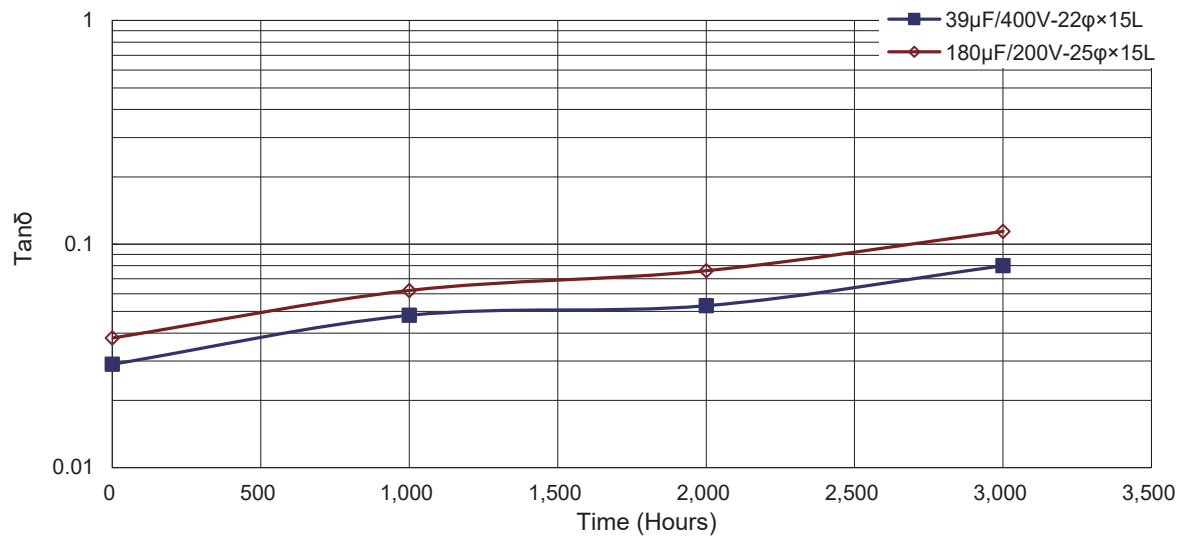
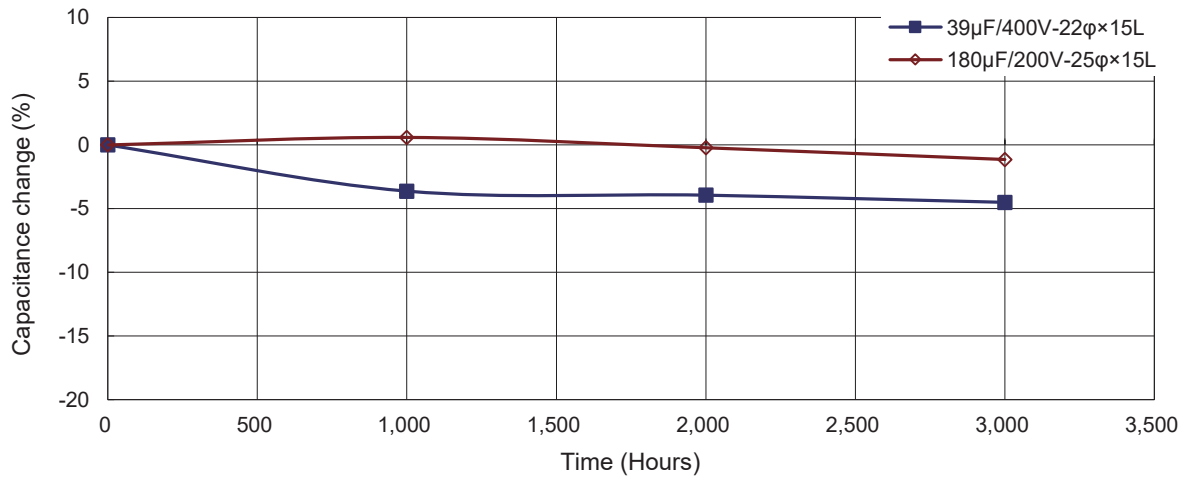
Rated Voltage V _{DC}	Capacitance 120 Hz, 20°C μF	φ D×L mm	Ripple Current 120 Hz, 105°C A/rms	Tan δ at 120 Hz, 20°C	ESR 120 Hz, 20°C Ω	LC 5 minutes mA	Part Number
160	150	20 × 15	0.55	0.15	1.327	0.46	LSL151M2C--A2015N
	180	22 × 15	0.65	0.15	1.106	0.50	LSL181M2C--A2215N
	220	25 × 15	0.80	0.15	0.905	0.56	LSL221M2C--A2515N
	270	30 × 15	0.95	0.15	0.737	0.62	LSL271M2C--A3015N
	330	30 × 15	1.00	0.15	0.603	0.68	LSL331M2C--A3015N
	390	35 × 15	1.20	0.15	0.510	0.74	LSL391M2C--A3515N
180	120	20 × 15	0.50	0.15	1.659	0.44	LSL121M2S--A2015N
	150	22 × 15	0.60	0.15	1.327	0.49	LSL151M2S--A2215N
	180	25 × 15	0.75	0.15	1.106	0.54	LSL181M2S--A2515N
	220	30 × 15	0.85	0.15	0.905	0.59	LSL221M2S--A3015N
	270	30 × 15	1.00	0.15	0.737	0.66	LSL271M2S--A3015N
	330	35 × 15	1.10	0.15	0.603	0.73	LSL331M2S--A3515N
	390	35 × 15	1.20	0.15	0.510	0.79	LSL391M2S--A3515N
200	100	20 × 15	0.45	0.15	1.990	0.42	LSL101M2D--A2015N
	120	22 × 15	0.55	0.15	1.659	0.46	LSL121M2D--A2215N
	150	25 × 15	0.65	0.15	1.327	0.51	LSL151M2D--A2515N
	180	25 × 15	0.75	0.15	1.106	0.56	LSL181M2D--A2515N
	220	30 × 15	0.90	0.15	0.905	0.62	LSL221M2D--A3015N
	270	30 × 15	1.00	0.15	0.737	0.69	LSL271M2D--A3015N
	330	35 × 15	1.10	0.15	0.603	0.77	LSL331M2D--A3515N
250	100	22 × 15	0.50	0.15	1.990	0.47	LSL101M2E--A2215N
	120	25 × 15	0.60	0.15	1.659	0.51	LSL121M2E--A2515N
	150	30 × 15	0.70	0.15	1.327	0.58	LSL151M2E--A3015N
	180	30 × 15	0.75	0.15	1.106	0.63	LSL181M2E--A3015N
	220	35 × 15	0.90	0.15	0.905	0.70	LSL221M2E--A3515N
	270	35 × 15	1.00	0.15	0.737	0.77	LSL271M2E--A3515N
315	56	22 × 15	0.35	0.15	3.554	0.39	LSL560M2F--A2215N
	68	25 × 15	0.40	0.15	2.927	0.43	LSL680M2F--A2515N
	82	30 × 15	0.45	0.15	2.427	0.48	LSL820M2F--A3015N
	100	30 × 15	0.50	0.15	1.990	0.53	LSL101M2F--A3015N
	120	35 × 15	0.55	0.15	1.659	0.58	LSL121M2F--A3515N
	150	35 × 15	0.60	0.15	1.327	0.65	LSL151M2F--A3515N
400	39	22 × 15	0.30	0.15	5.104	0.37	LSL390M2G--A2215N
	47	25 × 15	0.35	0.15	4.235	0.41	LSL470M2G--A2515N
	56	30 × 15	0.40	0.15	3.554	0.44	LSL560M2G--A3015N
	68	30 × 15	0.45	0.15	2.927	0.49	LSL680M2G--A3015N
	82	35 × 15	0.50	0.15	2.427	0.54	LSL820M2G--A3515N
	100	35 × 15	0.55	0.15	1.990	0.60	LSL101M2G--A3515N

Part Numbering System

LSL Series	100μF	±20%	400V		4.0±0.5mm	35 φ × 15L	General Purpose																												
LSL	101	M	2G	--	A	3515																													
Series Name	Capacitance	Capacitance tolerance	Rated voltage	Terminal type	Terminal length	Case size	Application																												
Example:	Example:	Example:	Example:	Example:	Example:	Example:																													
<table border="1"> <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>390</td><td>391</td></tr> </table>	Cap.	Symbol	56	560	220	221	390	391	<table border="1"> <tr><td>Voltage</td><td>Symbol</td></tr> <tr><td>315</td><td>2F</td></tr> <tr><td>400</td><td>2G</td></tr> </table>	Voltage	Symbol	315	2F	400	2G	<table border="1"> <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	<table border="1"> <tr><td>φ D×L</td><td>Code</td></tr> <tr><td>20×15</td><td>2015</td></tr> <tr><td>25×15</td><td>2515</td></tr> <tr><td>35×15</td><td>3515</td></tr> </table>	φ D×L	Code	20×15	2015	25×15	2515	35×15	3515				
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		M = ±20% K = ±10%			6.3±1.0 mm																														

Note: For more details, please refer to "Part Numbering System - Snap-in Type" on page 188.

Typical Endurance Curves



Snap-In