

LS2 Series

Features

- Snap-in terminal type
- 85°C, 2,000 hours assured
- Good safe characteristics which shall be failed with open mode without sparking and catching fire, when it is applied excess voltage
- RoHS Compliance



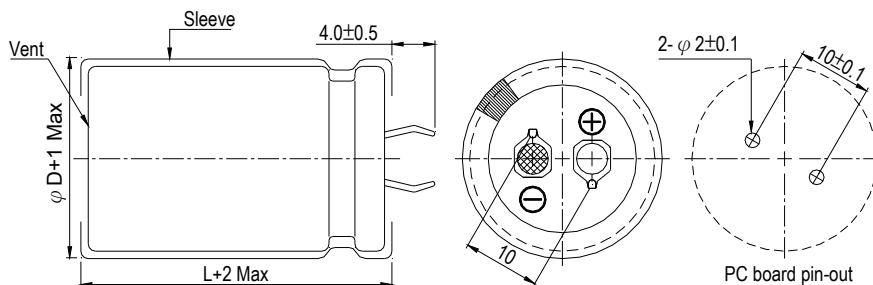
Sleeve & Marking Color: Black & White

Specifications

Items	Performance					
Category Temperature Range	200 ~ 400V			450V		
	-40°C ~ +85°C			-25°C ~ +85°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					
Tanδ (at 120Hz, 20°C)	Rated Voltage	200	250	400	450	
	Tanδ (max)	0.15	0.15	0.20	0.20	
Low Temperature Characteristics (at 120Hz)	Impedance ratio shall not exceed the values given in the table below.					
	Rated Voltage	200	250	400	450	
	Impedance Ratio	Z(-25°C)/Z(+20°C)	4	4	8	8
Endurance	Test Time	2,000 Hrs				
	Capacitance Change	Within ±20% of initial value				
	Tanδ	Less than 200% 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 2,000 hours at 85°C.					
Shelf Life Test	Test Time	1,000 Hrs				
	Capacitance Change	Within ±20% of initial value				
	Tanδ	Less than 150% of specified value				
	Leakage Current	Within specified value				
	* The above Specifications shall be satisfied when the capacitors are restored to 20°C after exposing them for 1,000 hours at 85°C without voltage applied. The rated voltage shall be applied to the capacitors before the measurements (Refer to JIS C 5101-4 4.1).					
Ripple Current & Frequency Multipliers	Frequency (Hz)	50 / 60	100 / 120	300	1k	10k up
	Multiplier	0.8	1.0	1.1	1.3	1.4
Safety Function Test Conditions	1. DC reverse voltage test: The capacitor is shall be connected in reverse polarity, and applied under specified working voltage. 2. DC over voltage test: The voltage of 1.2 times shall be applied to the capacitor.					
Failure percentage	≤ 3 % (During useful life)					
Failure rate	≤ 70 fit (70 10 ⁻⁹ /h)					

Diagram of Dimensions

Unit: mm





Dimension & Permissible Ripple Current

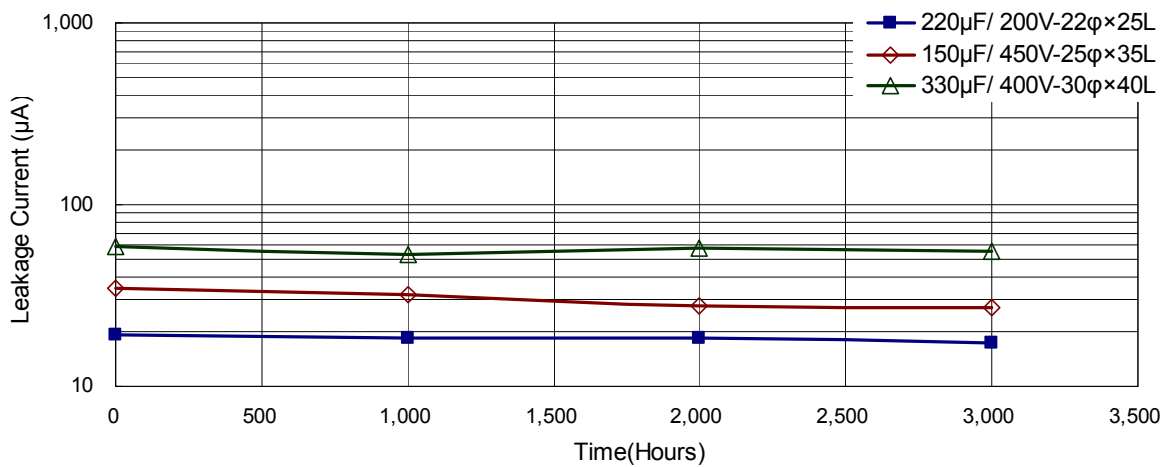
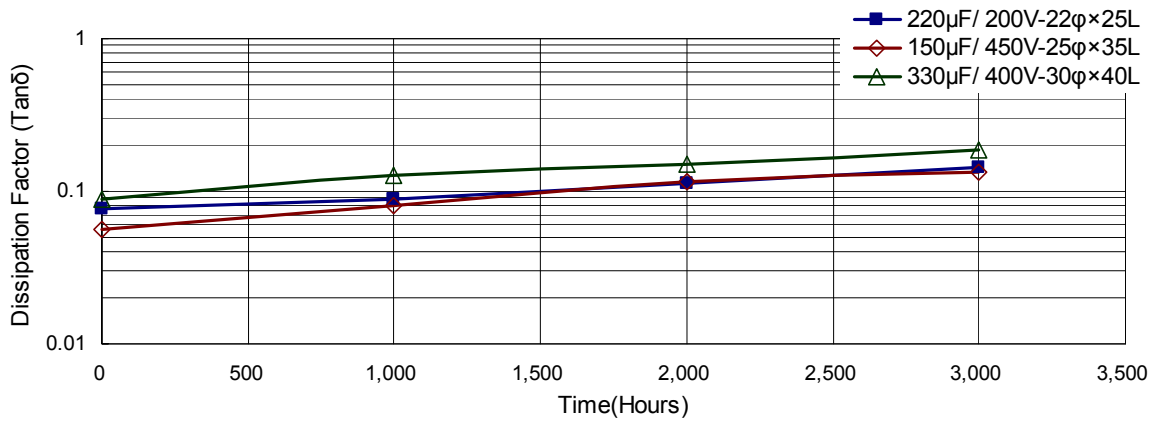
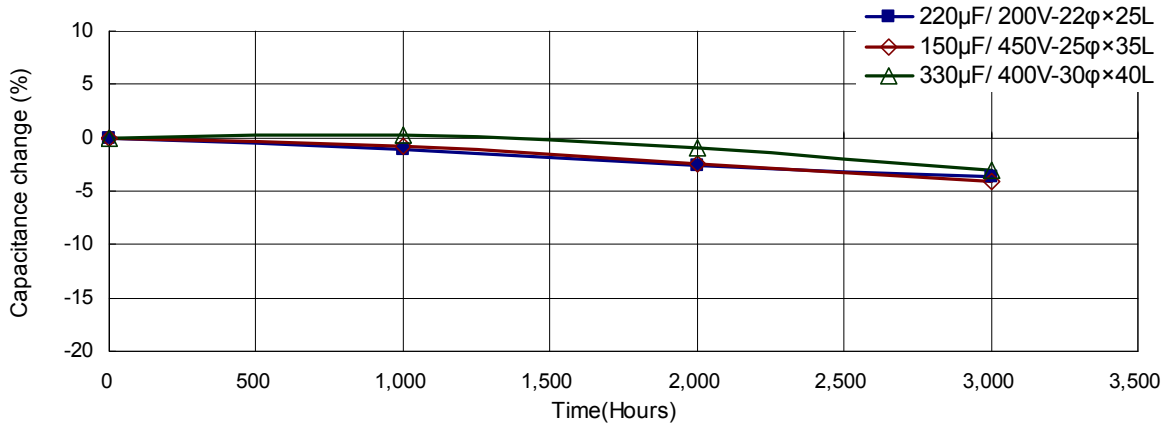
Working Voltage V. DC	Capacitance 120Hz, 20°C μF	φ D×L mm	Ripple Current 120 Hz, 85°C A/rms	Tan δ at 120Hz, 20°C	ESR 120Hz, 20°C Ω	LC 5 minutes mA	Part Number
200	560	35 × 20	2.08	0.15	0.355	1.00	LS2561M2D--A3520
	680	35 × 20	2.23	0.15	0.293	1.11	LS2681M2D--A3520
	680	35 × 25	2.30	0.15	0.293	1.11	LS2681M2D--A3525
	820	35 × 25	2.53	0.15	0.243	1.21	LS2821M2D--A3525
	1,000	35 × 30	2.96	0.15	0.199	1.34	LS2102M2D--A3530
	1,200	35 × 35	3.40	0.15	0.166	1.47	LS2122M2D--A3535
	1,500	35 × 40	3.87	0.15	0.133	1.50	LS2152M2D--A3540
	1,800	35 × 45	4.37	0.15	0.111	1.50	LS2182M2D--A3545
250	390	35 × 20	1.68	0.15	0.510	0.94	LS2391M2E--A3520
	470	35 × 20	1.85	0.15	0.423	1.03	LS2471M2E--A3520
	470	35 × 25	2.01	0.15	0.423	1.03	LS2471M2E--A3525
	560	35 × 25	2.21	0.15	0.355	1.12	LS2561M2E--A3525
	680	35 × 30	2.54	0.15	0.293	1.24	LS2681M2E--A3530
	820	35 × 35	2.9	0.15	0.243	1.36	LS2821M2E--A3535
	1,000	35 × 35	3.21	0.15	0.199	1.50	LS2102M2E--A3535
	1,200	35 × 40	3.56	0.15	0.166	1.50	LS2122M2E--A3540
	1,500	35 × 50	4.26	0.15	0.133	1.50	LS2152M2E--A3550
400	220	35 × 25	1.60	0.20	1.206	0.89	LS2221M2G--A3525
	270	35 × 30	1.75	0.20	0.983	0.99	LS2271M2G--A3530
	330	35 × 30	1.95	0.20	0.804	1.09	LS2331M2G--A3530
	390	35 × 35	2.17	0.20	0.680	1.18	LS2391M2G--A3535
	470	35 × 40	2.42	0.20	0.565	1.30	LS2471M2G--A3540
	560	35 × 45	2.71	0.20	0.474	1.42	LS2561M2G--A3545
450	120	35 × 20	1.11	0.20	2.212	0.70	LS2121M2W--A3520
	150	35 × 20	1.24	0.20	1.769	0.78	LS2151M2W--A3520
	150	35 × 25	1.35	0.20	1.769	0.78	LS2151M2W--A3525
	180	35 × 25	1.39	0.20	1.474	0.85	LS2181M2W--A3525
	220	35 × 30	1.61	0.20	1.206	0.94	LS2221M2W--A3530
	270	35 × 35	1.86	0.20	0.983	1.05	LS2271M2W--A3535
	330	35 × 35	2.06	0.20	0.804	1.16	LS2331M2W--A3535
	390	35 × 45	2.34	0.20	0.680	1.26	LS2391M2W--A3545
	470	35 × 50	2.63	0.20	0.565	1.38	LS2471M2W--A3550

Part Numbering System

LS2 series	220μF	±20%	400V	--	4.0±0.5mm	35 φ × 25L	Pb-free Terminal + PET Sleeve																											
LS2	221	M	2G	--	A	3525																												
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 border="1"> <tr><th>Cap.</th><th>Symbol</th></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	<table border="1"> <tr><th>WV</th><th>Symbol</th></tr> <tr><td>400</td><td>2G</td></tr> <tr><td>450</td><td>2W</td></tr> </table>	WV	Symbol	400	2G	450	2W	<p>M = ±20% K = ±10%</p>	<table border="1"> <tr><th>Type</th><th>Symbol</th></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	<p>“_”: 6.3±1.0 mm</p>	<table border="1"> <tr><th>φ D×L</th><th>Code</th></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	
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Note: For more details, please refer to "Part Numbering System (Snap-in Type)" on page 13.

Typical Endurance Curves



Useful Life Chart

