LS2 Series

Features

- Snap-in terminal type
- 85℃, 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

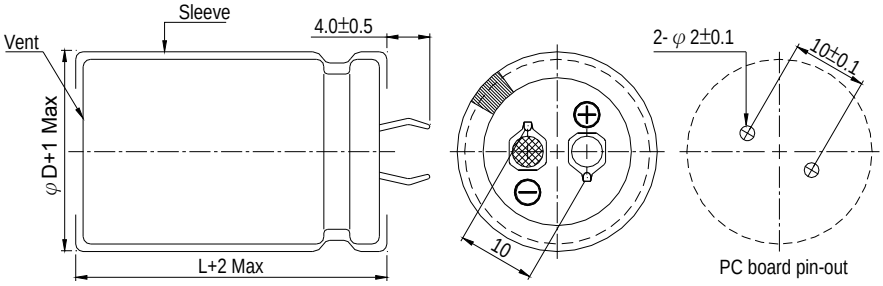
Sleeve & Marking Color: Black & White

Specifications

Items	Performance
Category Temperature Range	-40℃ ~ +85℃
Capacitance Tolerance	±20% (at 120Hz, 20℃)
Leakage Current (at 20℃)	$I = 3\sqrt{CV}$ or 1.5 mA whichever is smaller (after 5 minutes) Where, C = rated capacitance in μF V = rated DC working voltage in V
Dissipation Factor (Tanδ at 120Hz, 20℃)	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℃)/Z(+20℃): 4 / 4 / 8 / 8 Impedance Ratio Z(-40℃)/Z(+20℃): 8 / 10 / 18 / 20
Endurance	Test Time: 2,000 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 the rated voltage applied with rated ripple current for 2,000 hours at 85℃.
Shelf Life Test	Test Time: 1,000 Hrs Capacitance Change: Within ±20% of initial value Dissipation Factor: Less than 150% 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 hours at 85℃ 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 Failure rate	≦ 3 % (During useful life) ≦ 70 fit (70 10^{-9}/h)

Diagram of Dimensions

Unit: mm



Dimension & Permissible Ripple Current

Working Voltage V. DC	Capacitance 120Hz, 20℃ μF	ϕD×L mm	Ripple Current 120 Hz, 85℃ A/rms	Tan δ at 120Hz, 20℃	ESR 120Hz, 20℃ Ω	LC 5 miniutes 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	35ϕ×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:

Cap.	Symbol
56	560
220	221
470	471

M = ±20%
K = ±10%

Example:

WV	Symbol
400	2G
450	2W

Example:

Type	Symbol
2 pins	--
5 pins	L5

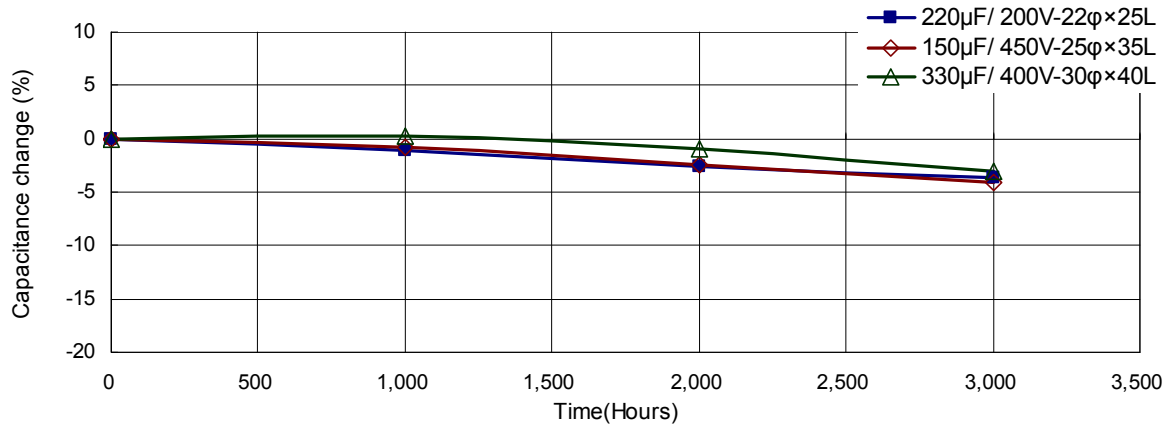
"-":
6.3±1.0 mm

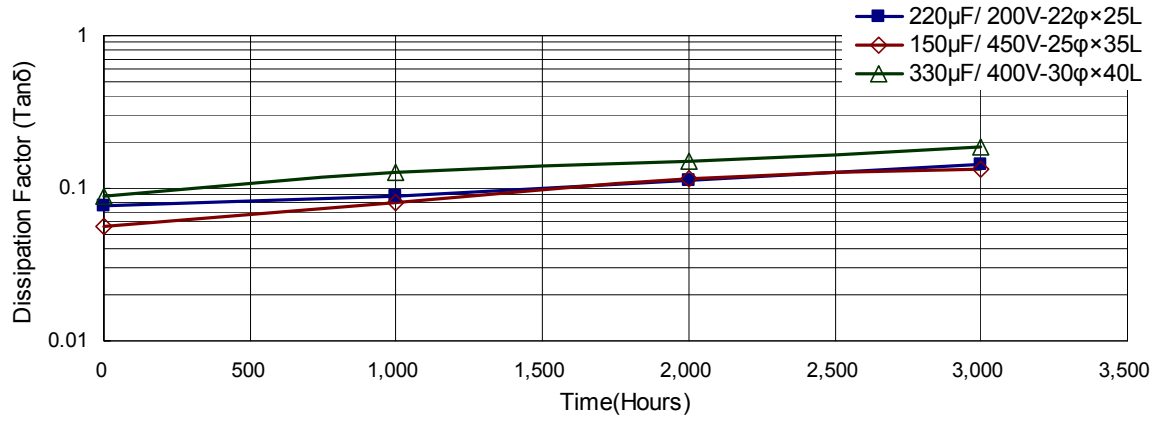
Example:

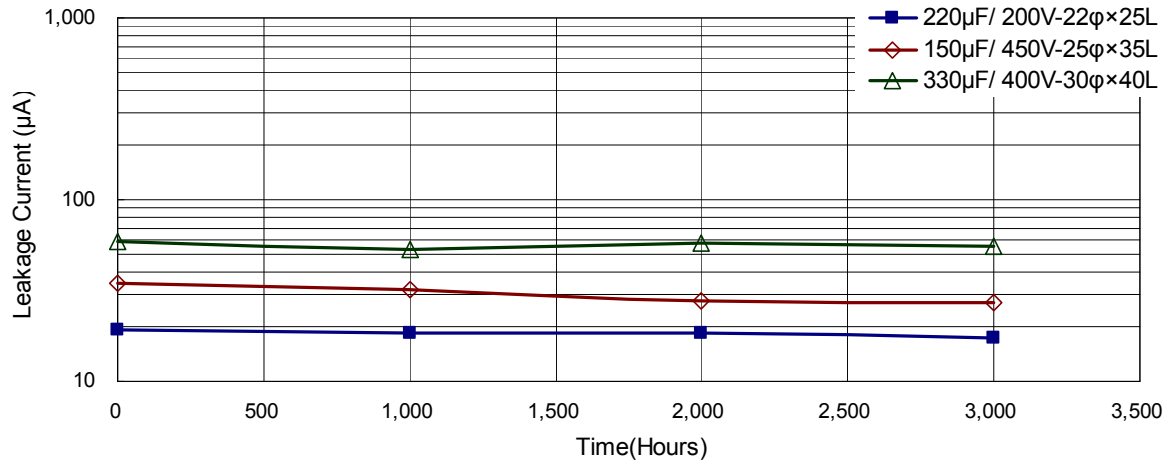
ϕD×L	Code
22×30	2230
25×25	2525
30×40	3040

Note: For more details, please refer to "Part Numbering System (Snap-in Type)" on page 13.

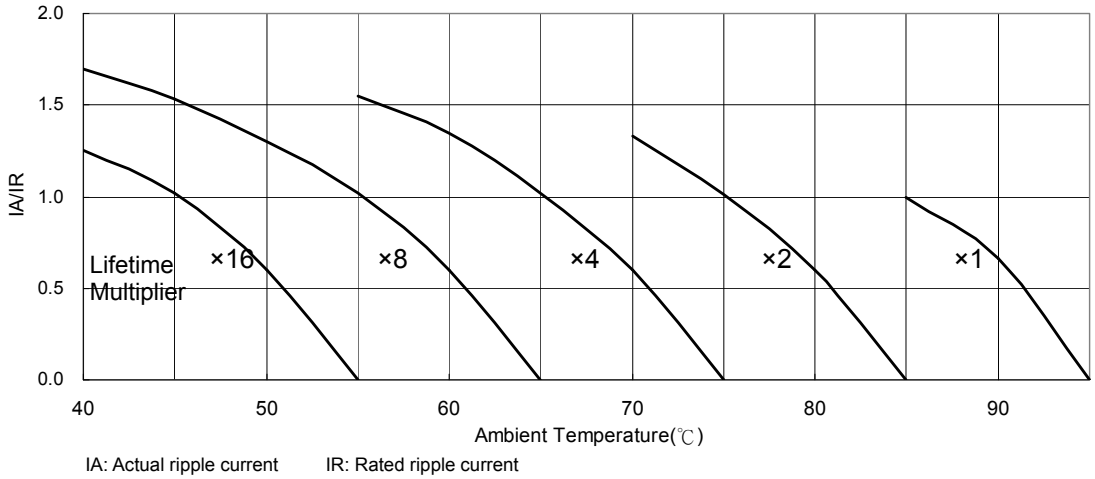
Typical Endurance Curves







Useful Life Chart



IA: Actual ripple current IR: Rated ripple current