

LHX Series (New!)

- The LXS series has been improved to have a higher capacitance and ripple current.
- Endurance with ripple current : 5,000 hours at 105°C
- Rated voltage range : 350 to 400V, Capacitance range: 190 to 1,530μF
- Suitable for use in switching power supply equipment and inverters.
- Non solvent resistant type
- The logo mark printed on the sleeve will be changed.
- RoHS2 Compliant

LHX
↑
Downsizing
Higher ripple
LXS

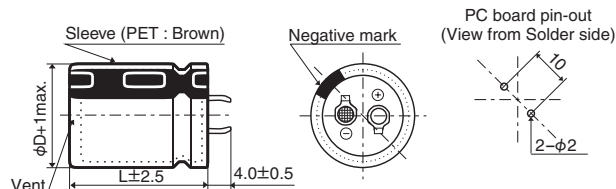


SPECIFICATIONS

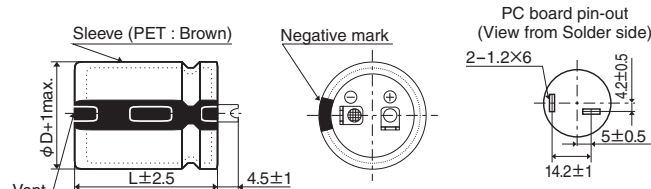
Items	Characteristics		
Category	-40 to +105℃		
Temperature Range			
Rated Voltage Range	350 to 400V _{dc}		
Capacitance Tolerance	± 20% (M)		(at 20℃, 120Hz)
Leakage Current	I ≤ 3√CV Where, I : Max. leakage current (μA), C : Nominal capacitance (μF), V : Rated voltage (V) (at 20℃ after 5 minutes)		
Dissipation Factor (tan δ)	Rated voltage (V _{dc})	350 to 400V	(at 20℃, 120Hz)
	tan δ (Max.)	0.15	
Low Temperature Characteristics (Max. Impedance Ratio)	Rated voltage (V _{dc})	350 to 400V	(at 120Hz)
	Z(-25℃)/Z(+20℃)	5	
	Z(-40℃)/Z(+20℃)	20	
Endurance	The following specifications shall be satisfied when the capacitors are restored to 20℃ after subjected to DC voltage with the rated ripple current is applied (the peak voltage shall not exceed the rated voltage) for 5,000 hours at 105℃.		
	Capacitance change	≤ ±20% of the initial value	
	D.F. (tan δ)	≤200% of the initial specified value	
	Leakage current	≤ The initial specified value	
Shelf Life	The following specifications shall be satisfied when the capacitors are restored to 20℃ after exposing them for 1,000 hours at 105℃ without voltage applied. Before the measurement, the capacitor shall be preconditioned by applying voltage according to Item 4.1 of JIS C 5101-4.		
	Capacitance change	≤ ± 15% of the initial value	
	D.F. (tan δ)	≤150% of the initial specified value	
	Leakage current	≤ The initial specified value	

DIMENSIONS [mm]

• Terminal Code : VS (φ22 to φ35) : Standard

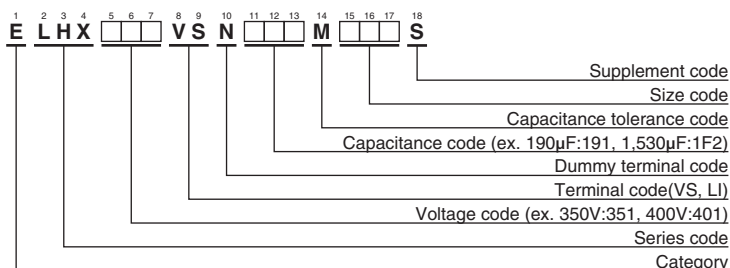


• Terminal Code : LI (φ30, φ35)



The standard design has no plastic disc.

PART NUMBERING SYSTEM



Please refer to "Product code guide (snap-in type)"



◆STANDARD RATINGS

WV (V _{dc})	Cap (μF)	Case size φD×L(mm)	tan δ	Rated ripple current (Arms/ 105°C, 120Hz)	Part No.	WV (V _{dc})	Cap (μF)	Case size φD×L(mm)	tan δ	Rated ripple current (Arms/ 105°C, 120Hz)	Part No.
350	230	22 × 30	0.15	1.70	ELHX351VSN231MP30S	375	560	25.4 × 50	0.15	2.85	ELHX3H1VSN561MQ50S
	280	22 × 35	0.15	1.92	ELHX351VSN281MP35S		580	35 × 30	0.15	2.45	ELHX3H1VSN581MA30S
	320	25.4 × 30	0.15	1.95	ELHX351VSN321MQ30S		630	25.4 × 55	0.15	3.07	ELHX3H1VSN631MQ55S
	330	22 × 40	0.15	2.13	ELHX351VSN331MP40S		650	30 × 40	0.15	2.94	ELHX3H1VSN651MR40S
	370	30 × 25	0.15	2.08	ELHX351VSN371MR25S		700	25.4 × 60	0.15	3.30	ELHX3H1VSN701MQ60S
	380	22 × 45	0.15	2.33	ELHX351VSN381MP45S		720	35 × 35	0.15	2.77	ELHX3H1VSN721MA35S
	390	25.4 × 35	0.15	2.25	ELHX351VSN391MQ35S		750	30 × 45	0.15	3.24	ELHX3H1VSN751MR45S
	440	22 × 50	0.15	2.56	ELHX351VSN441MP50S		850	30 × 50	0.15	3.50	ELHX3H1VSN851MR50S
	460	25.4 × 40	0.15	2.49	ELHX351VSN461MQ40S		860	35 × 40	0.15	3.13	ELHX3H1VSN861MA40S
	480	30 × 30	0.15	2.40	ELHX351VSN481MR30S		960	30 × 55	0.15	3.80	ELHX3H1VSN961MR55S
	480	35 × 25	0.15	2.19	ELHX351VSN481MA25S		1,000	35 × 45	0.15	3.47	ELHX3H1VSN102MA45S
	490	22 × 55	0.15	2.75	ELHX351VSN491MP55S		1,060	30 × 60	0.15	4.07	ELHX3H1VSN1A2MR60S
	540	22 × 60	0.15	2.94	ELHX351VSN541MP60S		1,140	35 × 50	0.15	3.78	ELHX3H1VSN1B2MA50S
	540	25.4 × 45	0.15	2.76	ELHX351VSN541MQ45S		1,280	35 × 55	0.15	4.09	ELHX3H1VSN132MA55S
	590	30 × 35	0.15	2.72	ELHX351VSN591MR35S		1,410	35 × 60	0.15	4.37	ELHX3H1VSN142MA60S
	610	25.4 × 50	0.15	2.98	ELHX351VSN611MQ50S	400	190	22 × 30	0.15	1.54	ELHX401VSN191MP30S
	630	35 × 30	0.15	2.56	ELHX351VSN631MA30S		240	22 × 35	0.15	1.78	ELHX401VSN241MP35S
	680	25.4 × 55	0.15	3.19	ELHX351VSN681MQ55S		270	25.4 × 30	0.15	1.80	ELHX401VSN271MQ30S
	710	30 × 40	0.15	3.07	ELHX351VSN711MR40S		290	22 × 40	0.15	1.99	ELHX401VSN291MP40S
	760	25.4 × 60	0.15	3.43	ELHX351VSN761MQ60S		320	30 × 25	0.15	1.93	ELHX401VSN321MR25S
	780	35 × 35	0.15	2.89	ELHX351VSN781MA35S		330	22 × 45	0.15	2.17	ELHX401VSN331MP45S
	820	30 × 45	0.15	3.38	ELHX351VSN821MR45S		340	25.4 × 35	0.15	2.10	ELHX401VSN341MQ35S
	930	30 × 50	0.15	3.67	ELHX351VSN931MR50S		380	22 × 50	0.15	2.38	ELHX401VSN381MP50S
	930	35 × 40	0.15	3.26	ELHX351VSN931MA40S		400	25.4 × 40	0.15	2.33	ELHX401VSN401MQ40S
	1,040	30 × 55	0.15	3.95	ELHX351VSN1A2MR55S		410	35 × 25	0.15	2.03	ELHX401VSN411MA25S
	1,080	35 × 45	0.15	3.60	ELHX351VSN112MA45S		420	22 × 55	0.15	2.55	ELHX401VSN421MP55S
	1,150	30 × 60	0.15	4.24	ELHX351VSN1B2MR60S		420	30 × 30	0.15	2.24	ELHX401VSN421MR30S
	1,230	35 × 50	0.15	3.93	ELHX351VSN1C2MA50S		460	25.4 × 45	0.15	2.54	ELHX401VSN461MQ45S
	1,380	35 × 55	0.15	4.25	ELHX351VSN142MA55S		470	22 × 60	0.15	2.74	ELHX401VSN471MP60S
	1,530	35 × 60	0.15	4.55	ELHX351VSN1F2MA60S		510	30 × 35	0.15	2.53	ELHX401VSN511MR35S
375	210	22 × 30	0.15	1.62	ELHX3H1VSN211MP30S		530	25.4 × 50	0.15	2.77	ELHX401VSN531MQ50S
	260	22 × 35	0.15	1.85	ELHX3H1VSN261MP35S		540	35 × 30	0.15	2.37	ELHX401VSN541MA30S
	290	25.4 × 30	0.15	1.86	ELHX3H1VSN291MQ30S		590	25.4 × 55	0.15	2.97	ELHX401VSN591MQ55S
	310	22 × 40	0.15	2.06	ELHX3H1VSN311MP40S		610	30 × 40	0.15	2.85	ELHX401VSN611MR40S
	350	22 × 45	0.15	2.23	ELHX3H1VSN351MP45S		650	25.4 × 60	0.15	3.18	ELHX401VSN651MQ60S
	350	30 × 25	0.15	2.02	ELHX3H1VSN351MR25S		670	35 × 35	0.15	2.68	ELHX401VSN671MA35S
	360	25.4 × 35	0.15	2.16	ELHX3H1VSN361MQ35S		700	30 × 45	0.15	3.13	ELHX401VSN701MR45S
	400	22 × 50	0.15	2.44	ELHX3H1VSN401MP50S		800	30 × 50	0.15	3.40	ELHX401VSN801MR50S
	430	25.4 × 40	0.15	2.41	ELHX3H1VSN431MQ40S		800	35 × 40	0.15	3.02	ELHX401VSN801MA40S
	440	35 × 25	0.15	2.10	ELHX3H1VSN441MA25S		900	30 × 55	0.15	3.68	ELHX401VSN901MR55S
	450	22 × 55	0.15	2.64	ELHX3H1VSN451MP55S		930	35 × 45	0.15	3.34	ELHX401VSN931MA45S
	450	30 × 30	0.15	2.32	ELHX3H1VSN451MR30S		990	30 × 60	0.15	3.93	ELHX401VSN991MR60S
	500	22 × 60	0.15	2.83	ELHX3H1VSN501MP60S		1,060	35 × 50	0.15	3.65	ELHX401VSN1A2MA50S
	500	25.4 × 45	0.15	2.65	ELHX3H1VSN501MQ45S		1,190	35 × 55	0.15	3.94	ELHX401VSN122MA55S
	550	30 × 35	0.15	2.63	ELHX3H1VSN551MR35S		1,320	35 × 60	0.15	4.23	ELHX401VSN132MA60S

◆ HIGHER RIPPLE CURRENT RATINGS

WV (V _{dc})	Cap (μF)	Case size φD×L(mm)	tan δ	Rated ripple current (Arms/ 105°C, 120Hz)	Part No.	WV (V _{dc})	Cap (μF)	Case size φD×L(mm)	tan δ	Rated ripple current (Arms/ 105°C, 120Hz)	Part No.
350	330	30 × 25	0.15	2.43	ELHX351VSN331MR25S	375	790	30 × 50	0.15	4.18	ELHX3H1VSN791MR50S
	440	30 × 30	0.15	2.84	ELHX351VSN441MR30S		820	35 × 40	0.15	4.05	ELHX3H1VSN821MA40S
	460	35 × 25	0.15	2.84	ELHX351VSN461MA25S		890	30 × 55	0.15	4.52	ELHX3H1VSN891MR55S
	540	30 × 35	0.15	3.22	ELHX351VSN541MR35S		950	35 × 45	0.15	4.47	ELHX3H1VSN951MA45S
	600	35 × 30	0.15	3.30	ELHX351VSN601MA30S		990	30 × 60	0.15	4.86	ELHX3H1VSN991MR60S
	650	30 × 40	0.15	3.64	ELHX351VSN651MR40S		1,080	35 × 50	0.15	4.87	ELHX3H1VSN112MA50S
	740	35 × 35	0.15	3.72	ELHX351VSN741MA35S		1,220	35 × 55	0.15	5.28	ELHX3H1VSN122MA55S
	750	30 × 45	0.15	4.00	ELHX351VSN751MR45S		1,350	35 × 60	0.15	5.66	ELHX3H1VSN1D2MA60S
	860	30 × 50	0.15	4.36	ELHX351VSN861MR50S	400	290	30 × 25	0.15	2.28	ELHX401VSN291MR25S
	890	35 × 40	0.15	4.22	ELHX351VSN891MA40S		380	30 × 30	0.15	2.64	ELHX401VSN381MR30S
	970	30 × 55	0.15	4.72	ELHX351VSN971MR55S		390	35 × 25	0.15	2.62	ELHX401VSN391MA25S
	1,030	35 × 45	0.15	4.66	ELHX351VSN1A2MA45S		470	30 × 35	0.15	3.00	ELHX401VSN471MR35S
	1,070	30 × 60	0.15	5.05	ELHX351VSN1A2MR60S		520	35 × 30	0.15	3.07	ELHX401VSN521MA30S
	1,180	35 × 50	0.15	5.09	ELHX351VSN122MA50S		560	30 × 40	0.15	3.37	ELHX401VSN561MR40S
	1,320	35 × 55	0.15	5.50	ELHX351VSN132MA55S		640	35 × 35	0.15	3.46	ELHX401VSN641MA35S
	1,460	35 × 60	0.15	5.89	ELHX351VSN1E2MA60S		650	30 × 45	0.15	3.73	ELHX401VSN651MR45S
375	310	30 × 25	0.15	2.36	ELHX3H1VSN311MR25S		740	30 × 50	0.15	4.04	ELHX401VSN741MR50S
	400	30 × 30	0.15	2.71	ELHX3H1VSN401MR30S		770	35 × 40	0.15	3.92	ELHX401VSN771MA40S
	420	35 × 25	0.15	2.72	ELHX3H1VSN421MA25S		830	30 × 55	0.15	4.37	ELHX401VSN831MR55S
	500	30 × 35	0.15	3.10	ELHX3H1VSN501MR35S		890	35 × 45	0.15	4.33	ELHX401VSN891MA45S
	550	35 × 30	0.15	3.16	ELHX3H1VSN551MA30S		920	30 × 60	0.15	4.69	ELHX401VSN921MR60S
	600	30 × 40	0.15	3.49	ELHX3H1VSN601MR40S		1,020	35 × 50	0.15	4.73	ELHX401VSN102MA50S
	690	35 × 35	0.15	3.59	ELHX3H1VSN691MA35S		1,140	35 × 55	0.15	5.11	ELHX401VSN1B2MA55S
	700	30 × 45	0.15	3.87	ELHX3H1VSN701MR45S		1,260	35 × 60	0.15	5.47	ELHX401VSN1C2MA60S

◆ RATED RIPPLE CURRENT MULTIPLIERS

● Frequency Multipliers

Frequency(Hz)	50	120	300	1k	10k	50k
350 to 400V _{dc}	0.70	1.00	1.10	1.17	1.25	1.31

The deterioration of aluminum electrolytic capacitors accelerates their life due to the internal heating produced by ripple current. For details, refer to Section "5-3 Ripple Current Effect on Lifetime" in the catalog, Technical Note.



- Always read "Notes on Use" before using the product in order to enable you to use the product correctly and prevent any faults and accidents from occurring.
- Request the Product Specification on the product of NIPPON CHEMI-CON CORPORATION to refer to it as well as this brochure prior to the order of the products. Some specific notes on use of the ordered product may be described in the specifications.
- The products listed in this catalog are designed and manufactured for general electronics equipment use and are not intended for use in applications that can adversely affect human life; where the malfunction of equipment may cause damage to life or property. In addition, our products are not intended to be used in specific applications that may cause a major social impact. Please consult with us in advance of usage of our products in the following listed applications. ① Aerospace equipment ② Power generation equipment such as thermal power, nuclear power etc. ③ Medical equipment ④ Transport equipment (automobiles, trains, ships, etc.) ⑤ Transportation control equipment ⑥ Disaster prevention / crime prevention equipment ⑦ Highly publicized information processing equipment ⑧ Submarine equipment ⑨ Other applications that are not considered general-purpose applications.
- The circuits described as examples in this catalog and the "delivery specifications" are featured in order to show the operations and usage of our products, however, this fact does not guarantee that the circuits are available to function in your equipment systems. We are not in any case responsible for any failures or damage caused by the use of information contained herein. You should examine our products, of which the characteristics are described in the "delivery specifications" and other documents, and determine whether or not our products suit your requirements according to the specifications of your equipment systems. Therefore, you bear final responsibility regarding the use of our products.
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- We strongly recommend our customers to purchase Nippon Chemi-Con products only through our official sales channels. We assume no responsibility for any defects or damages caused by using products purchased from outside our official sales channel or of counterfeit goods. In addition, we will ask the customer to pay the investigation cost for products purchased outside our official sales channel.
- We reserve the right to discontinue production and delivery of products. We do not guarantee that all the products included in this catalog will be available in the future.
The aforementioned does not apply in the case of individual agreements deviating from the foregoing for customer-specific products
- We continually strive to improve the quality and reliability of our products, but in any case that our product does not meet our published specifications, please stop using it promptly and contact us immediately. As for compensation for non-conforming goods delivered by Chemi-Con, we will limit it only to goods found in non-compliance of our published specifications. This may be accomplished by a no cost replacement of non-conforming individual products, a credit of the piece price paid per each individual non-conforming product, or in other ways deemed necessary.
In addition, we have an established system with enhanced traceability, therefore we will limit the applicable lot items for any potential compensation.

[Part Numbering System](#)

[Part Numbering System \(Appendix\)](#)

[Standardization](#)

[Available Items by Manufacturing Locations](#)

[Environmental Measures](#)

[Technical Note](#)

[Precautions and Guidelines](#)

[Recommended Soldering Conditions](#)

[Taping, Lead-preforming and Packaging](#)

[Available Terminals for Snap-in and Screw Mount Type](#)