

# LHS Series Upgrade!

- The lower temperature range of the category temperature range has been expanded.
- For solar power generation
- Endurance with ripple current : 5,000 hours at 105°C
- Rated voltage range : 450 to 500V
- For inverter control, switching power supplies
- Non solvent resistant type
- RoHS2 Compliant



**500V  
Lineup!**



## SPECIFICATIONS

Items	Characteristics	
Category Temperature Range	-40 to +105°C	
Rated Voltage Range	450 to 500V <sub>dc</sub>	
Capacitance Tolerance	±20% (M) (at 20°C, 120Hz)	
Leakage Current	I ≤ 3√CV Where, I : Max. leakage current (µA), C : Nominal capacitance (µF), V : Rated voltage (V) (at 20°C after 5 minutes)	
Dissipation Factor (tan δ)	Rated voltage (V <sub>dc</sub> )	450 to 500V
	tan δ (Max.)	0.20 (at 20°C, 120Hz)
Low Temperature Characteristics (Max. Impedance Ratio)	Rated voltage (V <sub>dc</sub> )	450 to 500V
	Z(-25°C)/Z(+20°C)	8 (at 120Hz)
Endurance	The following specifications shall be satisfied when the capacitors are restored to 20°C 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°C.	
	Capacitance change	≤ ±20% of the initial value
	D.F. (tan δ)	≤ 200% of the initial specified value (475, 500V <sub>dc</sub> : ≤ 250%)
	Leakage current	≤ The initial specified value
Shelf Life	The following 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. 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 <sub>dc</sub> )	Cap (μF)	Case size φD×L(mm)	tan δ	Rated ripple current (Arms/105°C, 120Hz)	Part No.	WV (V <sub>dc</sub> )	Cap (μF)	Case size φD×L(mm)	tan δ	Rated ripple current (Arms/105°C, 120Hz)	Part No.	
450	100	22 × 25	0.20	0.71	ELHS451VSN101MP25S	475	150	30 × 25	0.20	1.01	ELHS4H1VSN151MR25S	
	120	22 × 30	0.20	0.81	ELHS451VSN121MP30S		180	30 × 30	0.20	1.11	ELHS4H1VSN181MR30S	
	150	22 × 35	0.20	0.93	ELHS451VSN151MP35S		180	35 × 25	0.20	1.08	ELHS4H1VSN181MA25S	
	150	25.4 × 25	0.20	0.93	ELHS451VSN151MQ25S		220	30 × 35	0.20	1.26	ELHS4H1VSN221MR35S	
	180	22 × 40	0.20	1.04	ELHS451VSN181MP40S		270	30 × 40	0.20	1.44	ELHS4H1VSN271MR40S	
	180	25.4 × 30	0.20	1.05	ELHS451VSN181MQ30S		270	35 × 30	0.20	1.35	ELHS4H1VSN271MA30S	
	220	22 × 45	0.20	1.17	ELHS451VSN221MP45S		330	30 × 45	0.20	1.63	ELHS4H1VSN331MR45S	
	220	25.4 × 35	0.20	1.21	ELHS451VSN221MQ35S		330	35 × 35	0.20	1.51	ELHS4H1VSN331MA35S	
	220	30 × 25	0.20	1.15	ELHS451VSN221MR25S		390	30 × 50	0.20	1.80	ELHS4H1VSN391MR50S	
	270	22 × 50	0.20	1.33	ELHS451VSN271MP50S		390	35 × 40	0.20	1.70	ELHS4H1VSN391MA40S	
	270	25.4 × 40	0.20	1.36	ELHS451VSN271MQ40S		470	30 × 60	0.20	2.05	ELHS4H1VSN471MR60S	
	270	30 × 30	0.20	1.29	ELHS451VSN271MR30S		470	35 × 45	0.20	1.91	ELHS4H1VSN471MA45S	
	270	35 × 25	0.20	1.25	ELHS451VSN271MA25S		470	35 × 50	0.20	1.95	ELHS4H1VSN471MA50S	
	330	22 × 60	0.20	1.54	ELHS451VSN331MP60S		560	35 × 60	0.20	2.21	ELHS4H1VSN561MA60S	
	330	25.4 × 45	0.20	1.54	ELHS451VSN331MQ45S		500	120	30 × 25	0.20	0.90	ELHS501VSN121MR25S
	330	25.4 × 50	0.20	1.56	ELHS451VSN331MQ50S			150	30 × 30	0.20	1.02	ELHS501VSN151MR30S
	330	30 × 35	0.20	1.46	ELHS451VSN331MR35S			150	35 × 25	0.20	0.99	ELHS501VSN151MA25S
	330	35 × 30	0.20	1.41	ELHS451VSN331MA30S			180	30 × 35	0.20	1.14	ELHS501VSN181MR35S
	390	25.4 × 60	0.20	1.74	ELHS451VSN391MQ60S			220	30 × 40	0.20	1.30	ELHS501VSN221MR40S
	390	30 × 40	0.20	1.63	ELHS451VSN391MR40S			220	35 × 30	0.20	1.22	ELHS501VSN221MA30S
	470	30 × 45	0.20	1.84	ELHS451VSN471MR45S			270	30 × 45	0.20	1.47	ELHS501VSN271MR45S
	470	30 × 50	0.20	1.87	ELHS451VSN471MR50S			270	35 × 35	0.20	1.37	ELHS501VSN271MA35S
	470	35 × 35	0.20	1.71	ELHS451VSN471MA35S			330	30 × 50	0.20	1.66	ELHS501VSN331MR50S
	560	35 × 40	0.20	1.95	ELHS451VSN561MA40S			330	35 × 40	0.20	1.57	ELHS501VSN331MA40S
560	35 × 45	0.20	1.99	ELHS451VSN561MA45S	390	30 × 60		0.20	1.87	ELHS501VSN391MR60S		
680	30 × 60	0.20	2.33	ELHS451VSN681MR60S	390	35 × 45		0.20	1.74	ELHS501VSN391MA45S		
680	35 × 50	0.20	2.22	ELHS451VSN681MA50S	470	35 × 50	0.20	1.95	ELHS501VSN471MA50S			
820	35 × 60	0.20	2.52	ELHS451VSN821MA60S	560	35 × 60	0.20	2.21	ELHS501VSN561MA60S			

◆RATED RIPPLE CURRENT MULTIPLIERS

● Frequency Multipliers

Frequency(Hz)	50	120	300	1k	10k	50k
450V <sub>dc</sub>	0.77	1.00	1.16	1.30	1.41	1.43
475, 500V <sub>dc</sub>	0.70	1.00	1.16	1.30	1.41	1.43

The endurance of capacitors is reduced with internal heating produced by ripple current at the rate of halving the lifetime with every 5°C rise. When long life performance is required in actual use, the rms ripple current has to be reduced.