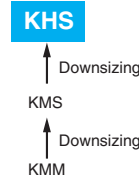


# KHS Series

- For solar power generation
- Endurance with ripple current : 3,000 hours at 105°C
- Rated voltage range:450 to 500V, Capacitance range:68 to 1,000μF
- Non solvent resistant type
- RoHS2 Compliant



**500V  
Lineup!**

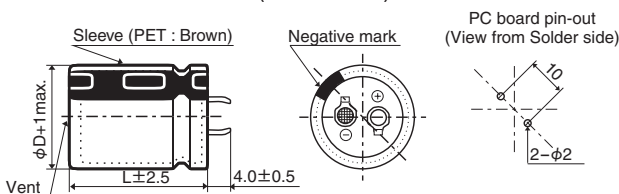


## ◆ SPECIFICATIONS

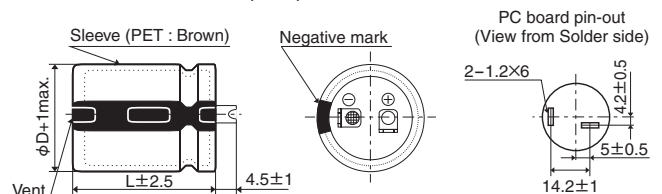
Items	Characteristics	
Category	-25 to +105°C	
Temperature Range	-25 to +105°C	
Rated Voltage Range	450 to 500V <sub>dc</sub>	
Capacitance Tolerance	±20% (M) (at 20°C, 120Hz)	
Leakage Current	I ≤ 3√CV Where, I : Max. leakage current (μA), C : Nominal capacitance (μF), V : Rated voltage (V) (at 20°C after 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 3,000 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

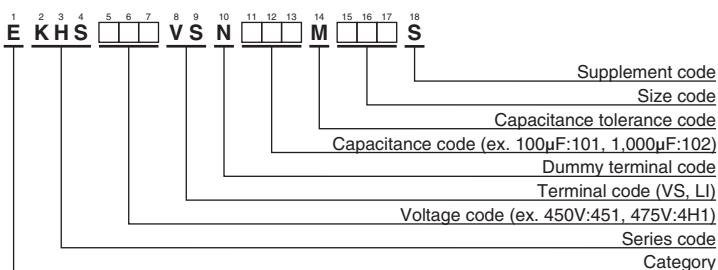


● Terminal Code : LI (φ35)



The standard design has no plastic disc.

## ◆ PART NUMBERING SYSTEM



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

KHS Series

◆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	EKHS451VSN101MP25S	475	220	22 × 60	0.20	1.31	EKHS4H1VSN221MP60S	
	150	22 × 30	0.20	0.91	EKHS451VSN151MP30S		220	25.4 × 45	0.20	1.31	EKHS4H1VSN221MQ45S	
	180	22 × 35	0.20	1.02	EKHS451VSN181MP35S		220	30 × 35	0.20	1.26	EKHS4H1VSN221MR35S	
	180	22 × 40	0.20	1.04	EKHS451VSN181MP40S		270	25.4 × 50	0.20	1.47	EKHS4H1VSN271MQ50S	
	180	25.4 × 25	0.20	1.02	EKHS451VSN181MQ25S		270	30 × 40	0.20	1.44	EKHS4H1VSN271MR40S	
	220	22 × 45	0.20	1.17	EKHS451VSN221MP45S		270	35 × 30	0.20	1.35	EKHS4H1VSN271MA30S	
	220	25.4 × 30	0.20	1.16	EKHS451VSN221MQ30S		330	25.4 × 60	0.20	1.67	EKHS4H1VSN331MQ60S	
	270	22 × 50	0.20	1.33	EKHS451VSN271MP50S		330	30 × 45	0.20	1.63	EKHS4H1VSN331MR45S	
	270	25.4 × 35	0.20	1.34	EKHS451VSN271MQ35S		330	35 × 35	0.20	1.51	EKHS4H1VSN331MA35S	
	270	30 × 25	0.20	1.28	EKHS451VSN271MR25S		390	30 × 50	0.20	1.80	EKHS4H1VSN391MR50S	
	270	35 × 25	0.20	1.24	EKHS451VSN271MA25S		390	35 × 40	0.20	1.70	EKHS4H1VSN391MA40S	
	330	22 × 60	0.20	1.54	EKHS451VSN331MP60S		470	30 × 60	0.20	2.05	EKHS4H1VSN471MR60S	
	330	25.4 × 40	0.20	1.51	EKHS451VSN331MQ40S		470	35 × 45	0.20	1.91	EKHS4H1VSN471MA45S	
	330	30 × 30	0.20	1.43	EKHS451VSN331MR30S		560	35 × 50	0.20	2.13	EKHS4H1VSN561MA50S	
	390	25.4 × 45	0.20	1.67	EKHS451VSN391MQ45S		680	35 × 60	0.20	2.44	EKHS4H1VSN681MA60S	
	390	30 × 35	0.20	1.59	EKHS451VSN391MR35S		500	68	22 × 25	0.20	0.61	EKHS501VSN680MP25S
	390	35 × 30	0.20	1.52	EKHS451VSN391MA30S			82	22 × 30	0.20	0.70	EKHS501VSN820MP30S
	470	25.4 × 50	0.20	1.86	EKHS451VSN471MQ50S			82	25.4 × 25	0.20	0.72	EKHS501VSN820MQ25S
	470	30 × 40	0.20	1.79	EKHS451VSN471MR40S			100	22 × 35	0.20	0.79	EKHS501VSN101MP35S
	470	35 × 35	0.20	1.69	EKHS451VSN471MA35S			120	22 × 40	0.20	0.89	EKHS501VSN121MP40S
	560	25.4 × 60	0.20	2.09	EKHS451VSN561MQ60S			120	25.4 × 30	0.20	0.89	EKHS501VSN121MQ30S
	560	30 × 45	0.20	2.01	EKHS451VSN561MR45S			120	30 × 25	0.20	0.90	EKHS501VSN121MR25S
	560	35 × 40	0.20	1.95	EKHS451VSN561MA40S			150	22 × 45	0.20	1.01	EKHS501VSN151MP45S
	680	30 × 50	0.20	2.25	EKHS451VSN681MR50S			150	25.4 × 35	0.20	1.04	EKHS501VSN151MQ35S
	680	35 × 45	0.20	2.16	EKHS451VSN681MA45S			180	22 × 50	0.20	1.13	EKHS501VSN181MP50S
	680	35 × 50	0.20	2.22	EKHS451VSN681MA50S			180	25.4 × 40	0.20	1.16	EKHS501VSN181MQ40S
	820	30 × 60	0.20	2.56	EKHS451VSN821MR60S			180	25.4 × 45	0.20	1.18	EKHS501VSN181MQ45S
	820	35 × 55	0.20	2.47	EKHS451VSN821MA55S			180	30 × 30	0.20	1.11	EKHS501VSN181MR30S
1,000	35 × 60	0.20	2.78	EKHS451VSN102MA60S	180	35 × 25		0.20	1.08	EKHS501VSN181MA25S		
475	82	22 × 25	0.20	0.67	EKHS4H1VSN820MP25S	220		22 × 60	0.20	1.31	EKHS501VSN221MP60S	
	100	22 × 30	0.20	0.78	EKHS4H1VSN101MP30S	220		25.4 × 50	0.20	1.33	EKHS501VSN221MQ50S	
	100	25.4 × 25	0.20	0.79	EKHS4H1VSN101MQ25S	220		30 × 35	0.20	1.26	EKHS501VSN221MR35S	
	120	22 × 35	0.20	0.87	EKHS4H1VSN121MP35S	220		35 × 30	0.20	1.22	EKHS501VSN221MA30S	
	120	25.4 × 30	0.20	0.89	EKHS4H1VSN121MQ30S	270		25.4 × 60	0.20	1.51	EKHS501VSN271MQ60S	
	150	22 × 40	0.20	0.99	EKHS4H1VSN151MP40S	270		30 × 40	0.20	1.44	EKHS501VSN271MR40S	
	150	22 × 45	0.20	1.01	EKHS4H1VSN151MP45S	270		30 × 45	0.20	1.47	EKHS501VSN271MR45S	
	150	30 × 25	0.20	1.01	EKHS4H1VSN151MR25S	270		35 × 35	0.20	1.37	EKHS501VSN271MA35S	
	180	22 × 50	0.20	1.13	EKHS4H1VSN181MP50S	330		30 × 50	0.20	1.66	EKHS501VSN331MR50S	
	180	25.4 × 35	0.20	1.14	EKHS4H1VSN181MQ35S	330		35 × 40	0.20	1.57	EKHS501VSN331MA40S	
	180	25.4 × 40	0.20	1.16	EKHS4H1VSN181MQ40S	390		30 × 60	0.20	1.87	EKHS501VSN391MR60S	
	180	30 × 30	0.20	1.11	EKHS4H1VSN181MR30S	390		35 × 45	0.20	1.74	EKHS501VSN391MA45S	
	180	35 × 25	0.20	1.08	EKHS4H1VSN181MA25S	470		35 × 50	0.20	1.95	EKHS501VSN471MA50S	
						560		35 × 60	0.20	2.22	EKHS501VSN561MA60S	

◆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.