

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

KHS

↑ Downsizing

KMS

↑ Downsizing

KMM

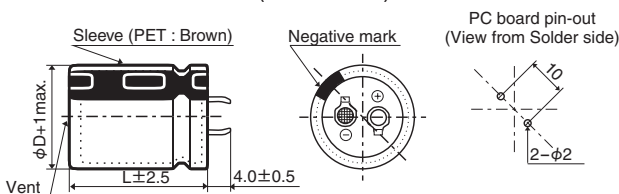


SPECIFICATIONS

Items	Characteristics		
Category	-40 to +105℃ (450, 475V _{dc}), -25 to +105℃ (500V _{dc})		
Temperature Range			
Rated Voltage Range	450 to 500V _{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})	450 to 500V	(at 20℃, 120Hz)
	tan δ (Max.)	0.20	
Low Temperature Characteristics (Max. Impedance Ratio)	Rated voltage (V _{dc})	450 to 500V	(at 120Hz)
	Z(-25℃)/Z(+20℃)	8	
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 3,000 hours at 105℃.		
	Capacitance change	≤ ±20% of the initial value	
	D.F. (tan δ)	≤ 200% of the initial specified value (500V _{dc} : ≤ 250%)	
	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	

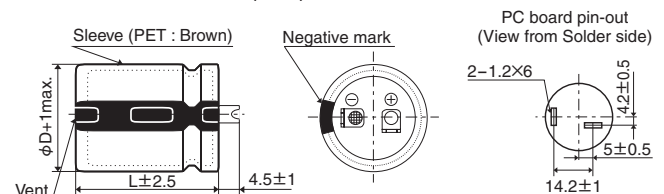
DIMENSIONS [mm]

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

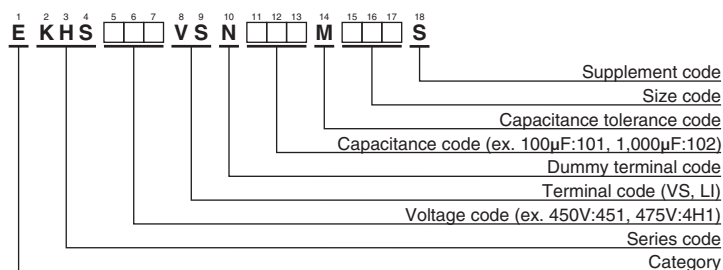


The standard design has no plastic disc.

● Terminal Code : LI (φ35)



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.
450	100	22 × 25	0.20	0.71	EKHS451VSN101MP25S	475	330	30 × 35	0.20	1.53	EKHS4H1VSN331MR35S
	150	22 × 30	0.20	0.91	EKHS451VSN151MP30S		350	25.4 × 50	0.20	1.63	EKHS4H1VSN351MQ50S
	180	22 × 35	0.20	1.02	EKHS451VSN181MP35S		360	35 × 30	0.20	1.56	EKHS4H1VSN361MA30S
	180	22 × 40	0.20	1.04	EKHS451VSN181MP40S		390	30 × 40	0.20	1.71	EKHS4H1VSN391MR40S
	180	25.4 × 25	0.20	1.02	EKHS451VSN181MQ25S		400	25.4 × 55	0.20	1.77	EKHS4H1VSN401MQ55S
	220	22 × 45	0.20	1.17	EKHS451VSN221MP45S		440	25.4 × 60	0.20	1.89	EKHS4H1VSN441MQ60S
	220	25.4 × 30	0.20	1.16	EKHS451VSN221MQ30S		440	35 × 35	0.20	1.75	EKHS4H1VSN441MA35S
	270	22 × 50	0.20	1.33	EKHS451VSN271MP50S		450	30 × 45	0.20	1.89	EKHS4H1VSN451MR45S
	270	25.4 × 35	0.20	1.34	EKHS451VSN271MQ35S		510	30 × 50	0.20	2.04	EKHS4H1VSN511MR50S
	270	30 × 25	0.20	1.28	EKHS451VSN271MR25S		530	35 × 40	0.20	1.99	EKHS4H1VSN531MA40S
	270	35 × 25	0.20	1.24	EKHS451VSN271MA25S		560	35 × 50	0.20	2.13	EKHS4H1VSN561MA50S
	330	22 × 60	0.20	1.54	EKHS451VSN331MP60S		570	30 × 55	0.20	2.20	EKHS4H1VSN571MR55S
	330	25.4 × 40	0.20	1.51	EKHS451VSN331MQ40S		610	35 × 45	0.20	2.18	EKHS4H1VSN611MA45S
	330	30 × 30	0.20	1.43	EKHS451VSN331MR30S		640	30 × 60	0.20	2.38	EKHS4H1VSN641MR60S
	390	25.4 × 45	0.20	1.67	EKHS451VSN391MA45S		700	35 × 50	0.20	2.39	EKHS4H1VSN701MA50S
	390	30 × 35	0.20	1.59	EKHS451VSN391MR35S		790	35 × 55	0.20	2.59	EKHS4H1VSN791MA55S
	390	35 × 30	0.20	1.52	EKHS451VSN391MA30S		870	35 × 60	0.20	2.77	EKHS4H1VSN871MA60S
	470	25.4 × 50	0.20	1.86	EKHS451VSN471MQ50S	500	68	22 × 25	0.20	0.61	EKHS501VSN680MP25S
	470	30 × 40	0.20	1.79	EKHS451VSN471MR40S		82	22 × 30	0.20	0.70	EKHS501VSN820MP30S
	470	35 × 35	0.20	1.69	EKHS451VSN471MA35S		82	25.4 × 25	0.20	0.72	EKHS501VSN820MQ25S
	560	25.4 × 60	0.20	2.09	EKHS451VSN561MQ60S		100	22 × 35	0.20	0.79	EKHS501VSN101MP35S
	560	30 × 45	0.20	2.01	EKHS451VSN561MR45S		120	22 × 40	0.20	0.89	EKHS501VSN121MP40S
	560	35 × 40	0.20	1.95	EKHS451VSN561MA40S		120	25.4 × 30	0.20	0.89	EKHS501VSN121MQ30S
	680	30 × 50	0.20	2.25	EKHS451VSN681MR50S		120	30 × 25	0.20	0.90	EKHS501VSN121MR25S
	680	35 × 45	0.20	2.16	EKHS451VSN681MA45S		150	22 × 45	0.20	1.01	EKHS501VSN151MP45S
	680	35 × 50	0.20	2.22	EKHS451VSN681MA50S		150	25.4 × 35	0.20	1.04	EKHS501VSN151MQ35S
	820	30 × 60	0.20	2.56	EKHS451VSN821MR60S		180	22 × 50	0.20	1.13	EKHS501VSN181MP50S
	820	35 × 55	0.20	2.47	EKHS451VSN821MA55S		180	25.4 × 40	0.20	1.16	EKHS501VSN181MQ40S
	1,000	35 × 60	0.20	2.78	EKHS451VSN102MA60S		180	25.4 × 45	0.20	1.18	EKHS501VSN181MQ45S
475	100	22 × 25	0.20	0.76	EKHS4H1VSN101MP25S		180	30 × 30	0.20	1.11	EKHS501VSN181MR30S
	130	22 × 30	0.20	0.90	EKHS4H1VSN131MP30S		180	35 × 25	0.20	1.08	EKHS501VSN181MA25S
	140	25.4 × 25	0.20	0.91	EKHS4H1VSN141MQ25S		220	22 × 60	0.20	1.31	EKHS501VSN221MP60S
	160	22 × 35	0.20	1.03	EKHS4H1VSN161MP35S		220	25.4 × 50	0.20	1.33	EKHS501VSN221MQ50S
	180	25.4 × 30	0.20	1.06	EKHS4H1VSN181MQ30S		220	30 × 35	0.20	1.26	EKHS501VSN221MR35S
	190	22 × 40	0.20	1.14	EKHS4H1VSN191MP40S		220	35 × 30	0.20	1.22	EKHS501VSN221MA30S
	200	30 × 25	0.20	1.15	EKHS4H1VSN201MR25S		270	25.4 × 60	0.20	1.51	EKHS501VSN271MQ60S
	220	22 × 45	0.20	1.25	EKHS4H1VSN221MP45S		270	30 × 40	0.20	1.44	EKHS501VSN271MR40S
	230	25.4 × 35	0.20	1.25	EKHS4H1VSN231MQ35S		270	30 × 45	0.20	1.47	EKHS501VSN271MR45S
	250	22 × 50	0.20	1.37	EKHS4H1VSN251MP50S		270	35 × 35	0.20	1.37	EKHS501VSN271MA35S
	270	25.4 × 40	0.20	1.38	EKHS4H1VSN271MQ40S		330	30 × 50	0.20	1.66	EKHS501VSN331MR50S
	270	30 × 30	0.20	1.35	EKHS4H1VSN271MR30S		330	35 × 40	0.20	1.57	EKHS501VSN331MA40S
	270	35 × 25	0.20	1.33	EKHS4H1VSN271MA25S		390	30 × 60	0.20	1.87	EKHS501VSN391MR60S
	290	22 × 55	0.20	1.50	EKHS4H1VSN291MP55S		390	35 × 45	0.20	1.74	EKHS501VSN391MA45S
	310	25.4 × 45	0.20	1.51	EKHS4H1VSN311MQ45S		470	35 × 50	0.20	1.95	EKHS501VSN471MA50S
	320	22 × 60	0.20	1.60	EKHS4H1VSN321MP60S		560	35 × 60	0.20	2.22	EKHS501VSN561MA60S

◆RATED RIPPLE CURRENT MULTIPLIERS

●Frequency Multipliers

Frequency(Hz)	50	120	300	1k	10k	50k
450V _{dc}	0.77	1.00	1.16	1.30	1.41	1.43
475V _{dc}	0.77	1.00	1.11	1.20	1.25	1.33
500V _{dc}	0.70	1.00	1.16	1.30	1.41	1.43

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.