

# KHE Series

- Upgraded capacitance rating
- Endurance with ripple current : 2,000 hours at 105°C
- Rated voltage range : 400 to 450V<sub>dc</sub>, Capacitance range : 210 to 1,500μF
- Non solvent resistant type
- RoHS2 Compliant

KHE

↓  
Downsized

KMZ



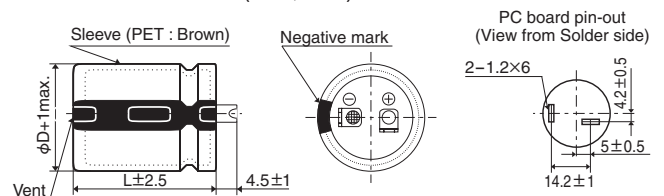
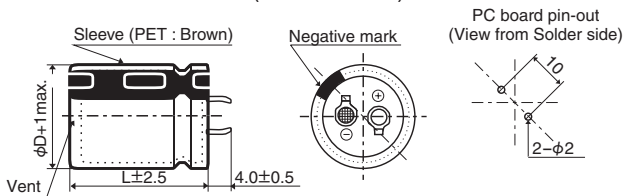
## ◆ SPECIFICATIONS

Items	Characteristics	
Category	-40 to +105°C	
Temperature Range		
Rated Voltage Range	400 to 450V <sub>dc</sub>	
Capacitance Tolerance	±20% (M) (at 20°C, 120Hz)	
Leakage Current	$I \leq 3\sqrt{CV}$ 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> )	400 to 450V
	tan δ (Max.)	0.20 (at 20°C, 120Hz)
Low Temperature Characteristics (Max. Impedance Ratio)	Rated voltage (V <sub>dc</sub> )	400 to 450V
	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 2,000 hours at 105°C.	
	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°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]

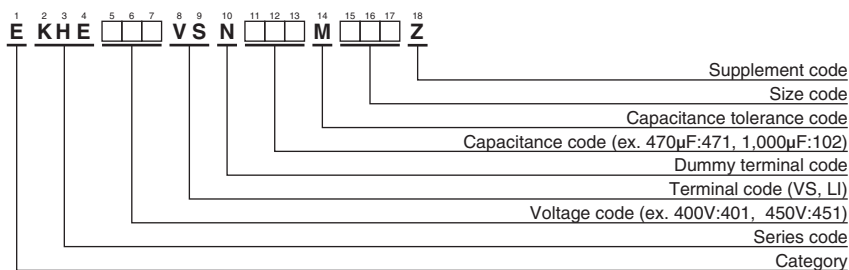
● Terminal Code : VS (φ25.4 to φ35) : Standard

● Terminal Code : LI (φ30, φ35)



The standard design has no plastic disc.

## ◆ PART NUMBERING SYSTEM



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



## KHE 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.	
400	240	25.4 × 25	0.20	1.17	EKHE401VSN241MQ25Z	420	670	30 × 40	0.20	2.15	EKHE421VSN671MR40Z	
	310	25.4 × 30	0.20	1.37	EKHE401VSN311MQ30Z		720	25.4 × 60	0.20	2.42	EKHE421VSN721MQ60Z	
	370	30 × 25	0.20	1.50	EKHE401VSN371MR25Z		730	35 × 35	0.20	2.00	EKHE421VSN731MA35Z	
	390	25.4 × 35	0.20	1.60	EKHE401VSN391MQ35Z		770	30 × 45	0.20	2.36	EKHE421VSN771MR45Z	
	460	25.4 × 40	0.20	1.77	EKHE401VSN461MQ40Z		870	35 × 40	0.20	2.26	EKHE421VSN871MA40Z	
	470	35 × 25	0.20	1.55	EKHE401VSN471MA25Z		880	30 × 50	0.20	2.57	EKHE421VSN881MR50Z	
	480	30 × 30	0.20	1.73	EKHE401VSN481MR30Z		980	30 × 55	0.20	2.76	EKHE421VSN981MR55Z	
	530	25.4 × 45	0.20	1.94	EKHE401VSN531MQ45Z		1,010	35 × 45	0.20	2.49	EKHE421VSN102MA45Z	
	590	30 × 35	0.20	1.96	EKHE401VSN591MR35Z		1,080	30 × 60	0.20	2.96	EKHE421VSN112MR60Z	
	600	25.4 × 50	0.20	2.10	EKHE401VSN601MQ50Z		1,150	35 × 50	0.20	2.71	EKHE421VSN112B2MA50Z	
	620	35 × 30	0.20	1.81	EKHE401VSN621MA30Z		1,290	35 × 55	0.20	2.90	EKHE421VSN132MA55Z	
	680	25.4 × 55	0.20	2.30	EKHE401VSN681MQ55Z		1,430	35 × 60	0.20	3.07	EKHE421VSN1E2MA60Z	
	700	30 × 40	0.20	2.20	EKHE401VSN701MR40Z		450	210	25.4 × 25	0.20	1.10	EKHE451VSN211MQ25Z
	750	25.4 × 60	0.20	2.47	EKHE401VSN751MQ60Z			270	25.4 × 30	0.20	1.28	EKHE451VSN271MQ30Z
	760	35 × 35	0.20	2.04	EKHE401VSN761MA35Z			320	30 × 25	0.20	1.39	EKHE451VSN321MR25Z
	810	30 × 45	0.20	2.42	EKHE401VSN811MR45Z			330	25.4 × 35	0.20	1.48	EKHE451VSN331MQ35Z
	910	35 × 40	0.20	2.31	EKHE401VSN911MA40Z			400	25.4 × 40	0.20	1.65	EKHE451VSN401MQ40Z
	930	30 × 50	0.20	2.64	EKHE401VSN931MR50Z			400	35 × 25	0.20	1.43	EKHE451VSN401MA25Z
	1,030	30 × 55	0.20	2.83	EKHE401VSN1A2MR55Z			410	30 × 30	0.20	1.59	EKHE451VSN411MR30Z
	1,060	35 × 45	0.20	2.55	EKHE401VSN1A2MA45Z			460	25.4 × 45	0.20	1.81	EKHE451VSN461MQ45Z
1,140	30 × 60	0.20	3.04	EKHE401VSN1B2MR60Z	510	30 × 35		0.20	1.82	EKHE451VSN511MR35Z		
1,210	35 × 50	0.20	2.78	EKHE401VSN122MA50Z	520	25.4 × 50		0.20	1.95	EKHE451VSN521MQ50Z		
1,350	35 × 55	0.20	2.97	EKHE401VSN1D2MA55Z	530	35 × 30		0.20	1.67	EKHE451VSN531MA30Z		
1,500	35 × 60	0.20	3.15	EKHE401VSN152MA60Z	580	25.4 × 55		0.20	2.13	EKHE451VSN581MQ55Z		
420	230	25.4 × 25	0.20	1.15	EKHE421VSN231MQ25Z	600		30 × 40	0.20	2.03	EKHE451VSN601MR40Z	
	300	25.4 × 30	0.20	1.35	EKHE421VSN301MQ30Z	640		25.4 × 60	0.20	2.28	EKHE451VSN641MQ60Z	
	350	30 × 25	0.20	1.46	EKHE421VSN351MR25Z	660		35 × 35	0.20	1.90	EKHE451VSN661MA35Z	
	370	25.4 × 35	0.20	1.56	EKHE421VSN371MQ35Z	690		30 × 45	0.20	2.23	EKHE451VSN691MR45Z	
	440	25.4 × 40	0.20	1.74	EKHE421VSN441MQ40Z	780		35 × 40	0.20	2.14	EKHE451VSN781MA40Z	
	440	35 × 25	0.20	1.51	EKHE421VSN441MA25Z	790		30 × 50	0.20	2.43	EKHE451VSN791MR50Z	
	460	30 × 30	0.20	1.68	EKHE421VSN461MR30Z	890		30 × 55	0.20	2.63	EKHE451VSN891MR55Z	
	510	25.4 × 45	0.20	1.90	EKHE421VSN511MQ45Z	910		35 × 45	0.20	2.36	EKHE451VSN911MA45Z	
	560	30 × 35	0.20	1.91	EKHE421VSN561MR35Z	1,000	30 × 60	0.20	2.83	EKHE451VSN102MR60Z		
	570	25.4 × 50	0.20	2.05	EKHE421VSN571MQ50Z	1,040	35 × 50	0.20	2.58	EKHE451VSN1A2MA50Z		
	580	35 × 30	0.20	1.75	EKHE421VSN581MA30Z	1,160	35 × 55	0.20	2.75	EKHE451VSN1B2MA55Z		
	640	25.4 × 55	0.20	2.23	EKHE421VSN641MQ55Z	1,290	35 × 60	0.20	2.92	EKHE451VSN132MA60Z		

### ◆ RATED RIPPLE CURRENT MULTIPLIERS

● Frequency Multipliers

Frequency(Hz)	50	120	300	1k	10k	50k
Multipliers	0.77	1.00	1.10	1.21	1.32	1.33

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 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](#)