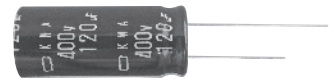


# KWA Series

- Ideal for low profile power supply applications
- Longer life form KHE series
- Rated voltage range : 400 to 450V<sub>dc</sub>, Capacitance range : 27 to 120μF
- Endurance with ripple current : 5,000 hours at 105°C
- Non solvent resistant type
- RoHS2 Compliant

KWA

↑ Longer life  
KHE

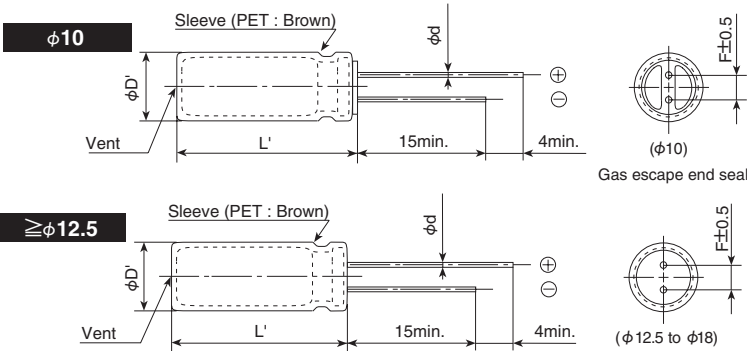


## ◆ SPECIFICATIONS

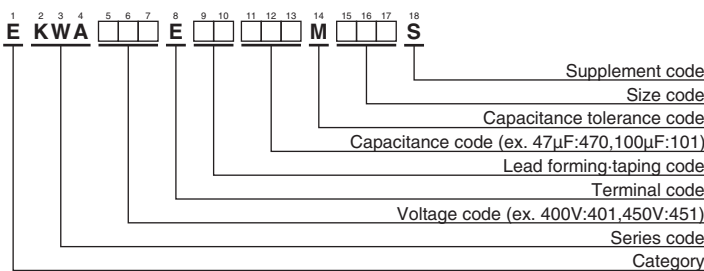
Items	Characteristics			
<b>Category Temperature Range</b>	-40 to +105°C			
<b>Rated Voltage Range</b>	400 to 450V <sub>dc</sub>			
<b>Capacitance Tolerance</b>	±20% (M) (at 20°C, 120Hz)			
<b>Leakage Current</b>	I=0.04CV+100 (after 1 minute) I=0.02CV+25 (after 5 minutes) Where, I : Max. leakage current(μA), C : Nominal capacitance (μF), V : Rated voltage (V) (at 20°C)			
<b>Dissipation Factor (tan δ)</b>	Rated voltage (V <sub>dc</sub> )	400 to 450V		
	tan δ (Max.)	0.20 (at 20°C, 120Hz)		
<b>Low Temperature Characteristics (Max. Impedance Ratio)</b>	Rated voltage (V <sub>dc</sub> )	400V	420V	450V
	Z(-25°C)/Z(+20°C)	5	6	6
	Z(-40°C)/Z(+20°C)	6	—	—
<b>Endurance</b>	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		
	Leakage current	≤The initial specified value		
<b>Shelf Life</b>	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	≤ ±20% of the initial value		
	D.F. (tan δ)	≤200% of the initial specified value		
	Leakage current	≤500% of the initial specified value		

## ◆ DIMENSIONS [mm]

● Terminal Code : E



## ◆ PART NUMBERING SYSTEM



Please refer to "Product code guide (radial lead type)"



## KWA Series

### ◆ STANDARD RATINGS

WV (V <sub>dc</sub> )	Cap (μF)	Case size φD×L(mm)	tan δ	Rated ripple current (mA <sub>rms</sub> /105°C, 120Hz)	Part No.	WV (V <sub>dc</sub> )	Cap (μF)	Case size φD×L(mm)	tan δ	Rated ripple current (mA <sub>rms</sub> /105°C, 120Hz)	Part No.
400	33	10×30	0.20	320	EKWA401E□□330MJ30S	450	27	10×30	0.20	290	EKWA451E□□270MJ30S
	39	10×35	0.20	370	EKWA401E□□390MJ35S		33	10×35	0.20	340	EKWA451E□□330MJ35S
	47	10×40	0.20	420	EKWA401E□□470MJ40S		39	10×40	0.20	380	EKWA451E□□390MJ40S
	56	10×45	0.20	480	EKWA401E□□560MJ45S		47	10×45	0.20	440	EKWA451E□□470MJ45S
	56	12.5×30	0.20	460	EKWA401E□□560MK30S		47	12.5×30	0.20	420	EKWA451E□□470MK30S
	68	12.5×35	0.20	530	EKWA401E□□680MK35S		56	12.5×35	0.20	480	EKWA451E□□560MK35S
	82	12.5×40	0.20	610	EKWA401E□□820MK40S		68	12.5×40	0.20	550	EKWA451E□□680MK40S
	82	14.5×31.5	0.20	590	EKWA401E□□820MUN3S		68	14.5×31.5	0.20	530	EKWA451E□□680MUN3S
	100	12.5×45	0.20	690	EKWA401E□□101MK45S		82	12.5×45	0.20	630	EKWA451E□□820MK45S
	100	14.5×40	0.20	700	EKWA401E□□101MU40S		82	14.5×35	0.20	620	EKWA451E□□820MU35S
	100	16×31.5	0.20	710	EKWA401E□□101MLN3S		82	16×31.5	0.20	640	EKWA451E□□820MLN3S
	120	14.5×45	0.20	790	EKWA401E□□121MU45S		100	14.5×45	0.20	720	EKWA451E□□101MU45S
120	16×35	0.20	800	EKWA401E□□121ML35S	100	16×35	0.20	730	EKWA451E□□101ML35S		
120	18×31.5	0.20	800	EKWA401E□□121MMN3S	120	18×31.5	0.20	800	EKWA451E□□121MMN3S		
420	33	10×30	0.20	320	EKWA421E□□330MJ30S						
	39	10×35	0.20	370	EKWA421E□□390MJ35S						
	47	10×40	0.20	420	EKWA421E□□470MJ40S						
	56	10×50	0.20	500	EKWA421E□□560MJ50S						
	56	12.5×30	0.20	460	EKWA421E□□560MK30S						
	68	12.5×35	0.20	530	EKWA421E□□680MK35S						
	68	14.5×31.5	0.20	530	EKWA421E□□680MUN3S						
	82	12.5×40	0.20	610	EKWA421E□□820MK40S						
	82	14.5×35	0.20	620	EKWA421E□□820MU35S						
	100	12.5×50	0.20	680	EKWA421E□□101MK50S						
	100	14.5×40	0.20	700	EKWA421E□□101MU40S						
	100	16×31.5	0.20	710	EKWA421E□□101MLN3S						
120	14.5×45	0.20	790	EKWA421E□□121MU45S							
120	16×35	0.20	800	EKWA421E□□121ML35S							
120	18×31.5	0.20	800	EKWA421E□□121MMN3S							

□□ : Enter the appropriate lead forming or taping code.

### ◆ RATED RIPPLE CURRENT MULTIPLIERS

#### ● Frequency Multipliers

Capacitance(μF)	Frequency(Hz)			
	120	1k	10k	100k
27 to 82	1.00	1.50	1.75	1.80
100 to 120	1.00	1.30	1.40	1.50

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.  
Please make sure that you take appropriate safety measures such as use of redundant design and malfunction prevention measures in order to prevent fatal accidents and/or fires in the event any of our products malfunction.
- 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](#)