

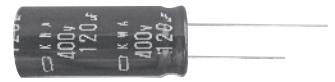
# KWA Series

- 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

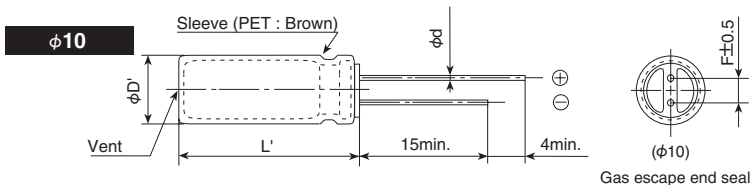


## ◆ SPECIFICATIONS

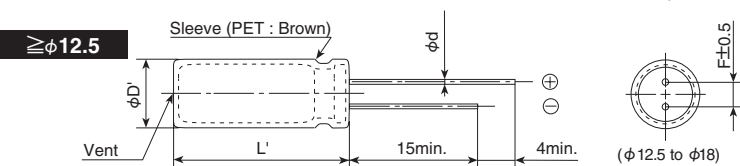
Items	Characteristics			
<b>Category Temperature Range</b>	-40 to +105°C			
<b>Rated Voltage Range</b>	400 to 450V <sub>dc</sub>			
<b>Capacitance Tolerance</b>	±20% (M) (at 20°C, 120Hz)			
<b>Leakage Current</b>	I=0.04CV+100 (after 1 minute) I=0.02CV+25 (after 5 minutes) Where, I : Max. leakage current(μA), 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]

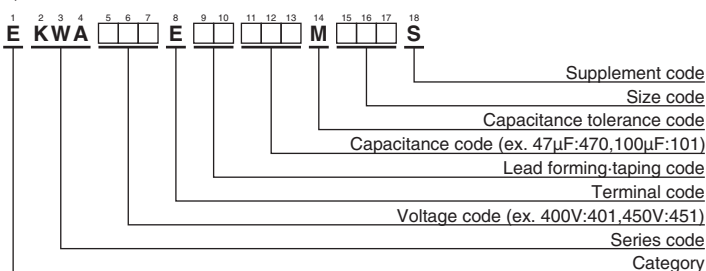
- Terminal Code : E



φD	10	12.5	14.5	16	18
φd	0.6	0.6	0.8	0.8	0.8
F	5.0	5.0	7.5	7.5	7.5
φD'	φD+0.5 max.				
L'	L+2.0 max.				



## ◆ PART NUMBERING SYSTEM



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

◆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 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.

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