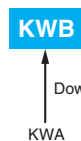


# KWB Series Upgrade!

- Ideal for low profile power supply applications
- Downsized form KWA series
- Rated voltage range : 400 to 450V<sub>dc</sub>, Capacitance range : 33 to 150μF
- Endurance with ripple current : 5,000 hours at 105°C
- Non solvent resistant type
- RoHS2 Compliant



**400V Upgrade!**

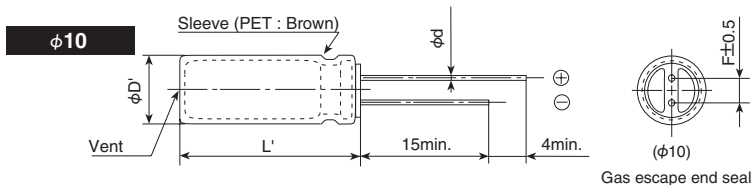


## SPECIFICATIONS

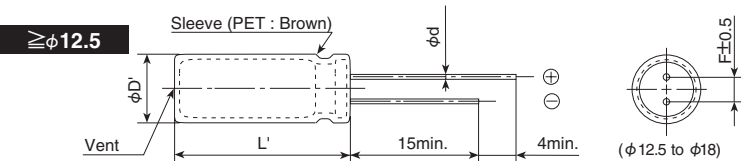
| Items   | Characteristics   |                                      |
|---|---|--------------------------------------|
| <b>Category</b>   | -40 to +105°C   |                                      |
| <b>Temperature Range</b>                                      | -40 to +105°C   |                                      |
| <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)<br>I=0.02CV+25 (after 5 minutes)<br>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> )  | 400 to 450V                          |
|   | Z(-25°C)/Z(+20°C)   | 6                                    |
|   | Z(-40°C)/Z(+20°C)   | 10 (at 120Hz)                        |
| <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]

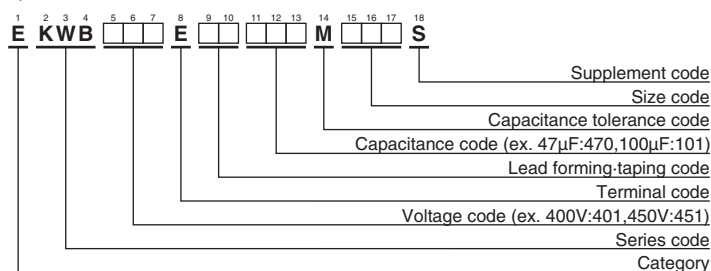
- Terminal Code : E



| 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<br>(V <sub>dc</sub> ) | Cap<br>(μF) | Case size<br>φD×L(mm) | tan δ | Rated ripple current<br>(mA <sub>rms</sub> /105°C, 120Hz) | Part No.           |
|--------------------------|-------------|-----------------------|-------|---|--------------------|
| 400                      | 39          | 10 × 30               | 0.20  | 365   | EKWB401E□□390MJ30S |
|                          | 47          | 10 × 35               | 0.20  | 425   | EKWB401E□□470MJ35S |
|                          | 56          | 10 × 40               | 0.20  | 485   | EKWB401E□□560MJ40S |
|                          | 68          | 10 × 45               | 0.20  | 555   | EKWB401E□□680MJ45S |
|                          | 68          | 12.5 × 30             | 0.20  | 530   | EKWB401E□□680MK30S |
|                          | 82          | 12.5 × 35             | 0.20  | 610   | EKWB401E□□820MK35S |
|                          | 100         | 12.5 × 40             | 0.20  | 705   | EKWB401E□□101MK40S |
|                          | 100         | 14.5 × 31.5           | 0.20  | 680   | EKWB401E□□101MUN3S |
|                          | 120         | 14.5 × 35             | 0.20  | 765   | EKWB401E□□121MU35S |
|                          | 120         | 16 × 31.5             | 0.20  | 790   | EKWB401E□□121MLN3S |
|                          | 120         | 18 × 25               | 0.20  | 755   | EKWB401E□□121MM25S |
|                          | 150         | 16 × 35               | 0.20  | 905   | EKWB401E□□151ML35S |
|                          | 150         | 18 × 31.5             | 0.20  | 915   | EKWB401E□□151MMN3S |
| 420                      | 39          | 10 × 30               | 0.20  | 365   | EKWB421E□□390MJ30S |
|                          | 56          | 10 × 40               | 0.20  | 485   | EKWB421E□□560MJ40S |
|                          | 68          | 12.5 × 30             | 0.20  | 530   | EKWB421E□□680MK30S |
|                          | 82          | 12.5 × 35             | 0.20  | 610   | EKWB421E□□820MK35S |
|                          | 82          | 14.5 × 31.5           | 0.20  | 615   | EKWB421E□□820MUN3S |
|                          | 100         | 14.5 × 35             | 0.20  | 700   | EKWB421E□□101MU35S |
|                          | 120         | 16 × 31.5             | 0.20  | 790   | EKWB421E□□121MLN3S |
|                          | 120         | 18 × 25               | 0.20  | 755   | EKWB421E□□121MM25S |
|                          | 150         | 18 × 31.5             | 0.20  | 915   | EKWB421E□□151MMN3S |
| 450                      | 33          | 10 × 30               | 0.20  | 335   | EKWB451E□□330MJ30S |
|                          | 39          | 10 × 35               | 0.20  | 385   | EKWB451E□□390MJ35S |
|                          | 47          | 10 × 40               | 0.20  | 445   | EKWB451E□□470MJ40S |
|                          | 56          | 10 × 45               | 0.20  | 505   | EKWB451E□□560MJ45S |
|                          | 56          | 12.5 × 30             | 0.20  | 480   | EKWB451E□□560MK30S |
|                          | 68          | 12.5 × 35             | 0.20  | 560   | EKWB451E□□680MK35S |
|                          | 82          | 14.5 × 31.5           | 0.20  | 615   | EKWB451E□□820MUN3S |
|                          | 100         | 14.5 × 35             | 0.20  | 700   | EKWB451E□□101MU35S |
|                          | 100         | 16 × 31.5             | 0.20  | 720   | EKWB451E□□101MLN3S |
|                          | 100         | 18 × 25               | 0.20  | 690   | EKWB451E□□101MM25S |
|                          | 120         | 16 × 35               | 0.20  | 810   | EKWB451E□□121ML35S |
|                          | 120         | 18 × 31.5             | 0.20  | 815   | EKWB451E□□121MMN3S |

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

**◆RATED RIPPLE CURRENT MULTIPLIERS**

## ● Frequency Multipliers

| Capacitance(μF) | Frequency(Hz) |      |      |      |
|-----------------|---------------|------|------|------|
|                 | 120           | 1k   | 10k  | 100k |
| 33 to 82        | 1.00          | 1.50 | 1.75 | 1.80 |
| 100 to 150      | 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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