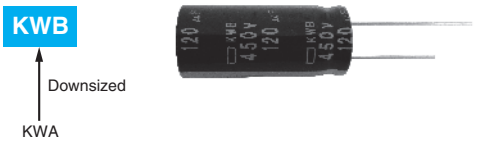
# KWB Series Upgrade!

- Ideal for low profile power supply applications
- Downsized form KWA series
- Rated voltage range : 400 to 450Vdc, Capacitance range : 18 to 270μF
- Endurance with ripple current : 5,000 hours at 105℃
- Non solvent resistant type
- RoHS2 Compliant

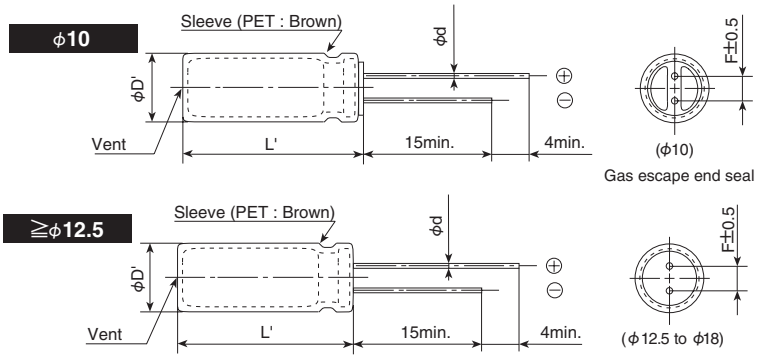



## ◆SPECIFICATIONS

| Items | Characteristics | | |
|---|---|---|---|
| Category Temperature Range | -40 to +105℃ | | |
| Rated Voltage Range | 400 to 450Vdc | | |
| Capacitance Tolerance | ±20% (M) | | (at 20℃, 120Hz) |
| Leakage Current | 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℃) |
| Dissipation Factor (tan δ ) | Rated voltage (Vdc) | 400 to 450V | |
| | tan δ (Max.) | 0.20 | (at 20℃, 120Hz) |
| Low Temperature Characteristics (Max. Impedance Ratio) | Rated voltage (Vdc) | 400 to 450V | |
| | Z(-25℃)/Z(+20℃) | 6 | |
| | Z(-40℃)/Z(+20℃) | 10 | (at 120Hz) |
| 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 5,000 hours at 105℃. | | |
| | 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℃ 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 | ≦±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

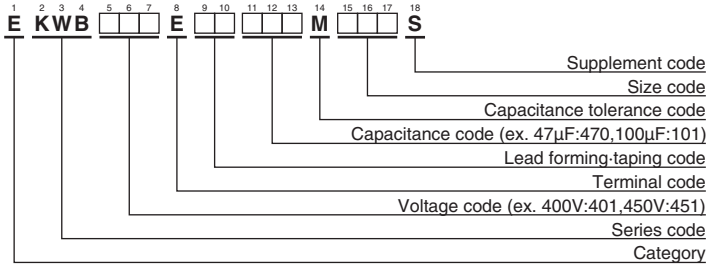






| φD | 10 | 12.5 | 14.5 | 16 | 18 |
|---|---|---|---|---|---|
| φd | 0.6 | 0.6 | 0.8 | 0.8 | 0.8 |
| F | 5.0 | 5.0 | 7.5 | 7.5 | 7.5 |
| φD' | φD+0.5 max. | | | | |
| L' | L+2.0 max. | | | | |

## ◆PART NUMBERING SYSTEM




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

# KWB Upgrade! Series

## ◆STANDARD RATINGS

| WV (Vdc) | Cap (μF) | Case size φD×L(mm) | tan δ | Rated ripple current (mArms/105℃, 120Hz) | Part No. |
|---|---|---|---|---|---|
| 400 | 22 | 10×20 | 0.20 | 235 | EKWB401E□□220MJ20S |
| | 27 | 10×25 | 0.20 | 285 | EKWB401E□□270MJ25S |
| | 39 | 10×30 | 0.20 | 365 | EKWB401E□□390MJ30S |
| | 39 | 12.5×20 | 0.20 | 345 | EKWB401E□□390MK20S |
| | 47 | 10×35 | 0.20 | 425 | EKWB401E□□470MJ35S |
| | 56 | 10×40 | 0.20 | 485 | EKWB401E□□560MJ40S |
| | 56 | 12.5×25 | 0.20 | 450 | EKWB401E□□560MK25S |
| | 68 | 10×45 | 0.20 | 555 | EKWB401E□□680MJ45S |
| | 68 | 10×50 | 0.20 | 575 | EKWB401E□□680MJ50S |
| | 68 | 12.5×30 | 0.20 | 530 | EKWB401E□□680MK30S |
| | 68 | 16×20 | 0.20 | 510 | EKWB401E□□680ML20S |
| | 82 | 12.5×35 | 0.20 | 610 | EKWB401E□□820MK35S |
| | 82 | 18×20 | 0.20 | 585 | EKWB401E□□820MM20S |
| | 100 | 12.5×40 | 0.20 | 705 | EKWB401E□□101MK40S |
| | 100 | 14.5×31.5 | 0.20 | 680 | EKWB401E□□101MUN3S |
| | 100 | 16×25 | 0.20 | 670 | EKWB401E□□101ML25S |
| | 120 | 12.5×45 | 0.20 | 800 | EKWB401E□□121MK45S |
| | 120 | 12.5×50 | 0.20 | 820 | EKWB401E□□121MK50S |
| | 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 |
| | 180 | 16×40 | 0.20 | 1,020 | EKWB401E□□181ML40S |
| | 180 | 16×45 | 0.20 | 1,040 | EKWB401E□□181ML45S |
| | 180 | 18×31.5 | 0.20 | 1,000 | EKWB401E□□181MMN3S |
| | 180 | 18×35 | 0.20 | 1,020 | EKWB401E□□181MM35S |
| | 220 | 16×50 | 0.20 | 1,170 | EKWB401E□□221ML50S |
| | 220 | 18×40 | 0.20 | 1,160 | EKWB401E□□221MM40S |
| | 270 | 18×45 | 0.20 | 1,310 | EKWB401E□□271MM45S |
| | 270 | 18×50 | 0.20 | 1,310 | EKWB401E□□271MM50S |
| 420 | 22 | 10×20 | 0.20 | 235 | EKWB421E□□220MJ20S |
| | 27 | 10×25 | 0.20 | 285 | EKWB421E□□270MJ25S |
| | 33 | 12.5×20 | 0.20 | 320 | EKWB421E□□330MK20S |
| | 39 | 10×30 | 0.20 | 365 | EKWB421E□□390MJ30S |
| | 47 | 10×35 | 0.20 | 425 | EKWB421E□□470MJ35S |
| | 47 | 12.5×25 | 0.20 | 415 | EKWB421E□□470MK25S |
| | 56 | 10×40 | 0.20 | 485 | EKWB421E□□560MJ40S |
| | 56 | 10×45 | 0.20 | 505 | EKWB421E□□560MJ45S |
| | 56 | 10×50 | 0.20 | 520 | EKWB421E□□560MJ50S |
| | 68 | 12.5×30 | 0.20 | 530 | EKWB421E□□680MK30S |
| | 68 | 16×20 | 0.20 | 510 | EKWB421E□□680ML20S |
| | 82 | 12.5×35 | 0.20 | 610 | EKWB421E□□820MK35S |
| | 82 | 12.5×40 | 0.20 | 640 | EKWB421E□□820MK40S |
| | 82 | 14.5×31.5 | 0.20 | 615 | EKWB421E□□820MUN3S |
| | 82 | 16×25 | 0.20 | 605 | EKWB421E□□820ML25S |
| | 82 | 18×20 | 0.20 | 585 | EKWB421E□□820MM20S |
| | 100 | 12.5×45 | 0.20 | 730 | EKWB421E□□101MK45S |
| | 100 | 14.5×35 | 0.20 | 700 | EKWB421E□□101MU35S |
| | 120 | 12.5×50 | 0.20 | 820 | EKWB421E□□121MK50S |
| | 120 | 16×31.5 | 0.20 | 790 | EKWB421E□□121MLN3S |
| | 120 | 18×25 | 0.20 | 755 | EKWB421E□□121MM25S |
| | 150 | 16×35 | 0.20 | 905 | EKWB421E□□151ML35S |
| | 150 | 16×40 | 0.20 | 935 | EKWB421E□□151ML40S |
| | 150 | 18×31.5 | 0.20 | 915 | EKWB421E□□151MMN3S |
| | 180 | 16×45 | 0.20 | 1,040 | EKWB421E□□181ML45S |
| | 180 | 16×50 | 0.20 | 1,060 | EKWB421E□□181ML50S |
| | 180 | 18×35 | 0.20 | 1,020 | EKWB421E□□181MM35S |
| | 180 | 18×40 | 0.20 | 1,050 | EKWB421E□□181MM40S |
| | 220 | 18×45 | 0.20 | 1,190 | EKWB421E□□221MM45S |
| | 270 | 18×50 | 0.20 | 1,310 | EKWB421E□□271MM50S |

| WV (Vdc) | Cap (μF) | Case size φD×L(mm) | tan δ | Rated ripple current (mArms/105℃, 120Hz) | Part No. |
|---|---|---|---|---|---|
| 450 | 18 | 10×20 | 0.20 | 210 | EKWB451E□□180MJ20S |
| | 27 | 10×25 | 0.20 | 285 | EKWB451E□□270MJ25S |
| | 33 | 10×30 | 0.20 | 335 | EKWB451E□□330MJ30S |
| | 33 | 12.5×20 | 0.20 | 320 | EKWB451E□□330MK20S |
| | 39 | 10×35 | 0.20 | 385 | EKWB451E□□390MJ35S |
| | 47 | 10×40 | 0.20 | 445 | EKWB451E□□470MJ40S |
| | 47 | 12.5×25 | 0.20 | 415 | EKWB451E□□470MK25S |
| | 56 | 10×45 | 0.20 | 505 | EKWB451E□□560MJ45S |
| | 56 | 10×50 | 0.20 | 520 | EKWB451E□□560MJ50S |
| | 56 | 12.5×30 | 0.20 | 480 | EKWB451E□□560MK30S |
| | 56 | 16×20 | 0.20 | 460 | EKWB451E□□560ML20S |
| | 68 | 12.5×35 | 0.20 | 560 | EKWB451E□□680MK35S |
| | 82 | 12.5×40 | 0.20 | 640 | EKWB451E□□820MK40S |
| | 82 | 12.5×45 | 0.20 | 660 | EKWB451E□□820MK45S |
| | 82 | 14.5×31.5 | 0.20 | 615 | EKWB451E□□820MUN3S |
| | 82 | 16×25 | 0.20 | 605 | EKWB451E□□820ML25S |
| | 82 | 18×20 | 0.20 | 585 | EKWB451E□□820MM20S |
| | 100 | 12.5×50 | 0.20 | 750 | EKWB451E□□101MK50S |
| | 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 |
| | 150 | 16×40 | 0.20 | 935 | EKWB451E□□151ML40S |
| | 150 | 16×45 | 0.20 | 950 | EKWB451E□□151ML45S |
| | 150 | 18×31.5 | 0.20 | 915 | EKWB451E□□151MMN3S |
| | 150 | 18×35 | 0.20 | 935 | EKWB451E□□151MM35S |
| | 180 | 16×50 | 0.20 | 1,060 | EKWB451E□□181ML50S |
| | 180 | 18×40 | 0.20 | 1,050 | EKWB451E□□181MM40S |
| | 220 | 18×45 | 0.20 | 1,190 | EKWB451E□□221MM45S |
| | 220 | 18×50 | 0.20 | 1,190 | EKWB451E□□221MM50S |

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

## ◆RATED RIPPLE CURRENT MULTIPLIERS

●Frequency Multipliers

| Capacitance(μF) \ Frequency(Hz) | 120 | 1k | 10k | 100k |
|---|---|---|---|---|
| 18 to 82 | 1.00 | 1.50 | 1.75 | 1.80 |
| 100 to 270 | 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.





CAT. No. E1001X 2023

# Mouser Electronics

Authorized Distributor

Click to View Pricing, Inventory, Delivery & Lifecycle Information:

Chemi-Con:

EKWB401ELL121MLN3S EKWB401ELL151ML35S EKWB401ELL151MMN3S EKWB421ELL121MLN3S EKWB421ELL151MMN3S EKWB451ELL101MLN3S EKWB451ELL121ML35S EKWB451ELL121MMN3S