

KHE New!
Series

- Downsized from KMZ series
- Endurance with ripple current : 2,000 hours at 105°C
- Rated voltage range : 400 to 450V_{dc}, Capacitance range : 200 to 1,300μF
- Non solvent resistant type
- RoHS2 Compliant

KHE

↓
Downsized
↑
KMZ



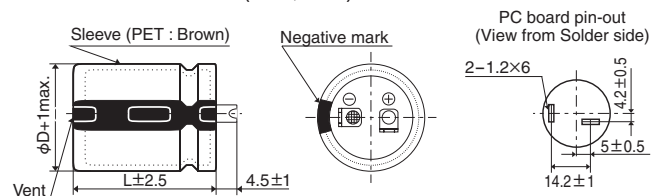
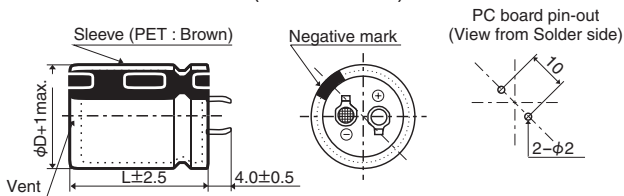
◆ SPECIFICATIONS

| Items | Characteristics | |
|--|---|---------------------------------------|
| Category | -40 to +105°C | |
| Temperature Range | | |
| Rated Voltage Range | 400 to 450V _{dc} | |
| Capacitance Tolerance | ±20% (M) (at 20°C, 120Hz) | |
| Leakage Current | I ≤ 3.√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 _{dc}) | 400 to 450V |
| | tan δ (Max.) | 0.20 (at 20°C, 120Hz) |
| Low Temperature Characteristics (Max. Impedance Ratio) | Rated voltage (V _{dc}) | 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]

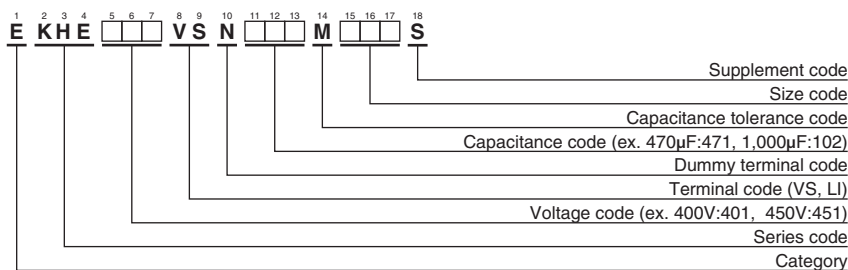
● Terminal Code : VS (φ25.4 to φ35) : Standard

● Terminal Code : LI (φ30, φ35)



The standard design has no plastic disc.

◆ PART NUMBERING SYSTEM



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

◆STANDARD RATINGS

| WV (V _{dc}) | Cap (μF) | Case size φD×L(mm) | tan δ | Rated ripple current (Arms/105°C, 120Hz) | Part No. | WV (V _{dc}) | Cap (μF) | Case size φD×L(mm) | tan δ | Rated ripple current (Arms/105°C, 120Hz) | Part No. | |
|-----------------------|----------|--------------------|-------|--|--------------------|-----------------------|----------|--------------------|-----------|--|--------------------|--------------------|
| 400 | 220 | 25.4 × 25 | 0.20 | 1.13 | EKHE401VSN221MQ25S | 420 | 620 | 30 × 40 | 0.20 | 2.06 | EKHE421VSN621MR40S | |
| | 300 | 25.4 × 30 | 0.20 | 1.35 | EKHE401VSN301MQ30S | | 680 | 25.4 × 60 | 0.20 | 2.35 | EKHE421VSN681MQ60S | |
| | 330 | 30 × 25 | 0.20 | 1.41 | EKHE401VSN331MR25S | | 680 | 30 × 45 | 0.20 | 2.21 | EKHE421VSN681MR45S | |
| | 360 | 25.4 × 35 | 0.20 | 1.54 | EKHE401VSN361MQ35S | | 680 | 35 × 35 | 0.20 | 1.95 | EKHE421VSN681MA35S | |
| | 430 | 25.4 × 40 | 0.20 | 1.72 | EKHE401VSN431MQ40S | | 820 | 30 × 50 | 0.20 | 2.47 | EKHE421VSN821MR50S | |
| | 430 | 30 × 30 | 0.20 | 1.63 | EKHE401VSN431MR30S | | 820 | 35 × 40 | 0.20 | 2.22 | EKHE421VSN821MA40S | |
| | 430 | 35 × 25 | 0.20 | 1.51 | EKHE401VSN431MA25S | | 910 | 30 × 55 | 0.20 | 2.65 | EKHE421VSN911MR55S | |
| | 510 | 25.4 × 45 | 0.20 | 1.91 | EKHE401VSN511MQ45S | | 910 | 35 × 45 | 0.20 | 2.40 | EKHE421VSN911MA45S | |
| | 510 | 30 × 35 | 0.20 | 1.82 | EKHE401VSN511MR35S | | 1,000 | 30 × 60 | 0.20 | 2.83 | EKHE421VSN102MR60S | |
| | 560 | 25.4 × 50 | 0.20 | 2.03 | EKHE401VSN561MQ50S | | 1,100 | 35 × 50 | 0.20 | 2.69 | EKHE421VSN112MA50S | |
| | 560 | 35 × 30 | 0.20 | 1.75 | EKHE401VSN561MA30S | | 1,200 | 35 × 55 | 0.20 | 2.86 | EKHE421VSN122MA55S | |
| | 620 | 25.4 × 55 | 0.20 | 2.20 | EKHE401VSN621MQ55S | | 1,300 | 35 × 60 | 0.20 | 3.03 | EKHE421VSN132MA60S | |
| | 620 | 30 × 40 | 0.20 | 2.06 | EKHE401VSN621MR40S | | 450 | 200 | 25.4 × 25 | 0.20 | 1.07 | EKHE451VSN201MQ25S |
| | 680 | 25.4 × 60 | 0.20 | 2.35 | EKHE401VSN681MQ60S | | | 240 | 25.4 × 30 | 0.20 | 1.21 | EKHE451VSN241MQ30S |
| | 680 | 30 × 45 | 0.20 | 2.21 | EKHE401VSN681MR45S | | | 270 | 30 × 25 | 0.20 | 1.28 | EKHE451VSN271MR25S |
| | 680 | 35 × 35 | 0.20 | 1.95 | EKHE401VSN681MA35S | | | 330 | 25.4 × 35 | 0.20 | 1.48 | EKHE451VSN331MQ35S |
| | 820 | 30 × 50 | 0.20 | 2.47 | EKHE401VSN821MR50S | | | 390 | 25.4 × 40 | 0.20 | 1.64 | EKHE451VSN391MQ40S |
| | 820 | 35 × 40 | 0.20 | 2.22 | EKHE401VSN821MA40S | | | 390 | 30 × 30 | 0.20 | 1.55 | EKHE451VSN391MR30S |
| | 910 | 30 × 55 | 0.20 | 2.65 | EKHE401VSN911MR55S | | | 390 | 35 × 25 | 0.20 | 1.43 | EKHE451VSN391MA25S |
| | 1,000 | 30 × 60 | 0.20 | 2.83 | EKHE401VSN102MR60S | | | 430 | 25.4 × 45 | 0.20 | 1.75 | EKHE451VSN431MQ45S |
| 1,000 | 35 × 45 | 0.20 | 2.51 | EKHE401VSN102MA45S | 470 | 25.4 × 50 | | 0.20 | 1.86 | EKHE451VSN471MQ50S | | |
| 1,100 | 35 × 50 | 0.20 | 2.69 | EKHE401VSN112MA50S | 470 | 30 × 35 | | 0.20 | 1.74 | EKHE451VSN471MR35S | | |
| 1,200 | 35 × 55 | 0.20 | 2.86 | EKHE401VSN122MA55S | 510 | 35 × 30 | | 0.20 | 1.67 | EKHE451VSN511MA30S | | |
| 1,300 | 35 × 60 | 0.20 | 3.03 | EKHE401VSN132MA60S | 560 | 25.4 × 55 | | 0.20 | 2.09 | EKHE451VSN561MQ55S | | |
| 420 | 220 | 25.4 × 25 | 0.20 | 1.13 | EKHE421VSN221MQ25S | 560 | | 30 × 40 | 0.20 | 1.96 | EKHE451VSN561MR40S | |
| | 270 | 25.4 × 30 | 0.20 | 1.28 | EKHE421VSN271MQ30S | 620 | | 25.4 × 60 | 0.20 | 2.25 | EKHE451VSN621MQ60S | |
| | 330 | 30 × 25 | 0.20 | 1.41 | EKHE421VSN331MR25S | 620 | | 30 × 45 | 0.20 | 2.11 | EKHE451VSN621MR45S | |
| | 360 | 25.4 × 35 | 0.20 | 1.54 | EKHE421VSN361MQ35S | 620 | | 35 × 35 | 0.20 | 1.86 | EKHE451VSN621MA35S | |
| | 390 | 25.4 × 40 | 0.20 | 1.64 | EKHE421VSN391MQ40S | 680 | | 30 × 50 | 0.20 | 2.25 | EKHE451VSN681MR50S | |
| | 390 | 30 × 30 | 0.20 | 1.55 | EKHE421VSN391MR30S | 750 | | 35 × 40 | 0.20 | 2.13 | EKHE451VSN751MA40S | |
| | 430 | 35 × 25 | 0.20 | 1.51 | EKHE421VSN431MA25S | 820 | | 30 × 55 | 0.20 | 2.52 | EKHE451VSN821MR55S | |
| | 470 | 25.4 × 45 | 0.20 | 1.83 | EKHE421VSN471MQ45S | 820 | | 35 × 45 | 0.20 | 2.27 | EKHE451VSN821MA45S | |
| | 510 | 30 × 35 | 0.20 | 1.82 | EKHE421VSN511MR35S | 910 | 30 × 60 | 0.20 | 2.70 | EKHE451VSN911MR60S | | |
| | 560 | 25.4 × 50 | 0.20 | 2.03 | EKHE421VSN561MQ50S | 1,000 | 35 × 50 | 0.20 | 2.56 | EKHE451VSN102MA50S | | |
| | 560 | 35 × 30 | 0.20 | 1.75 | EKHE421VSN561MA30S | 1,100 | 35 × 55 | 0.20 | 2.74 | EKHE451VSN112MA55S | | |
| | 620 | 25.4 × 55 | 0.20 | 2.20 | EKHE421VSN621MQ55S | 1,200 | 35 × 60 | 0.20 | 2.92 | EKHE451VSN122MA60S | | |

◆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 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.