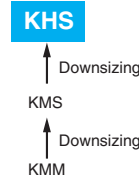


KHS Series

- For solar power generation
- Endurance with ripple current : 3,000 hours at 105°C
- Rated voltage range:450 to 500V, Capacitance range:68 to 1,000μF
- Non solvent resistant type
- RoHS2 Compliant



**500V
Lineup!**



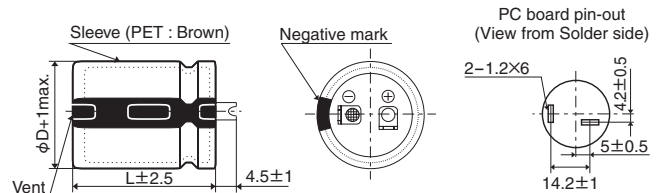
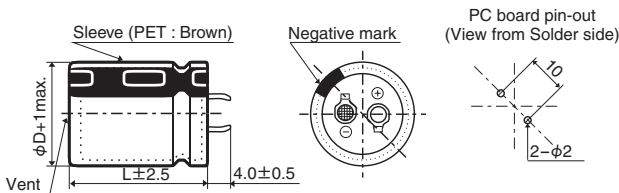
◆ SPECIFICATIONS

| Items | Characteristics | |
|--|---|--|
| Category | -25 to +105°C | |
| Temperature Range | | |
| Rated Voltage Range | 450 to 500V _{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}) | 450 to 500V |
| | tan δ (Max.) | 0.20 (at 20°C, 120Hz) |
| Low Temperature Characteristics (Max. Impedance Ratio) | Rated voltage (V _{dc}) | 450 to 500V |
| | 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 3,000 hours at 105°C. | |
| | Capacitance change | ≤ ±20% of the initial value |
| | D.F. (tan δ) | ≤ 200% of the initial specified value (475, 500V _{dc} : ≤ 250%) |
| | 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]

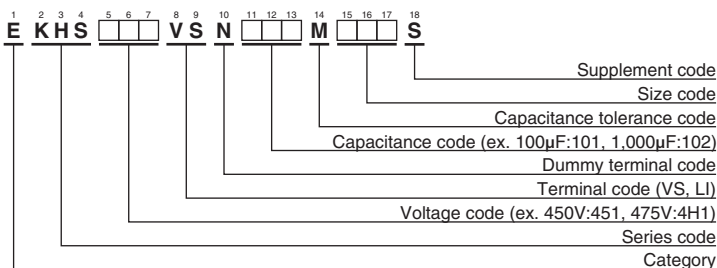
● Terminal Code : VS (φ22 to φ35) : Standard

● Terminal Code : LI (φ35)



The standard design has no plastic disc.

◆ PART NUMBERING SYSTEM



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

KHS Series

◆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. | |
|-----------------------|----------|--------------------|-------|--|--------------------|-----------------------|----------|--------------------|-----------|--|--------------------|--------------------|
| 450 | 100 | 22 × 25 | 0.20 | 0.71 | EKHS451VSN101MP25S | 475 | 220 | 22 × 60 | 0.20 | 1.31 | EKHS4H1VSN221MP60S | |
| | 150 | 22 × 30 | 0.20 | 0.91 | EKHS451VSN151MP30S | | 220 | 25.4 × 45 | 0.20 | 1.31 | EKHS4H1VSN221MQ45S | |
| | 180 | 22 × 35 | 0.20 | 1.02 | EKHS451VSN181MP35S | | 220 | 30 × 35 | 0.20 | 1.26 | EKHS4H1VSN221MR35S | |
| | 180 | 22 × 40 | 0.20 | 1.04 | EKHS451VSN181MP40S | | 270 | 25.4 × 50 | 0.20 | 1.47 | EKHS4H1VSN271MQ50S | |
| | 180 | 25.4 × 25 | 0.20 | 1.02 | EKHS451VSN181MQ25S | | 270 | 30 × 40 | 0.20 | 1.44 | EKHS4H1VSN271MR40S | |
| | 220 | 22 × 45 | 0.20 | 1.17 | EKHS451VSN221MP45S | | 270 | 35 × 30 | 0.20 | 1.35 | EKHS4H1VSN271MA30S | |
| | 220 | 25.4 × 30 | 0.20 | 1.16 | EKHS451VSN221MQ30S | | 330 | 25.4 × 60 | 0.20 | 1.67 | EKHS4H1VSN331MQ60S | |
| | 270 | 22 × 50 | 0.20 | 1.33 | EKHS451VSN271MP50S | | 330 | 30 × 45 | 0.20 | 1.63 | EKHS4H1VSN331MR45S | |
| | 270 | 25.4 × 35 | 0.20 | 1.34 | EKHS451VSN271MQ35S | | 330 | 35 × 35 | 0.20 | 1.51 | EKHS4H1VSN331MA35S | |
| | 270 | 30 × 25 | 0.20 | 1.28 | EKHS451VSN271MR25S | | 390 | 30 × 50 | 0.20 | 1.80 | EKHS4H1VSN391MR50S | |
| | 270 | 35 × 25 | 0.20 | 1.24 | EKHS451VSN271MR40S | | 390 | 35 × 40 | 0.20 | 1.70 | EKHS4H1VSN391MA40S | |
| | 330 | 22 × 60 | 0.20 | 1.54 | EKHS451VSN331MP60S | | 470 | 30 × 60 | 0.20 | 2.05 | EKHS4H1VSN471MR60S | |
| | 330 | 25.4 × 40 | 0.20 | 1.51 | EKHS451VSN331MQ40S | | 470 | 35 × 45 | 0.20 | 1.91 | EKHS4H1VSN471MA45S | |
| | 330 | 30 × 30 | 0.20 | 1.43 | EKHS451VSN331MR30S | | 560 | 35 × 50 | 0.20 | 2.13 | EKHS4H1VSN561MA50S | |
| | 390 | 25.4 × 45 | 0.20 | 1.67 | EKHS451VSN391MQ45S | | 680 | 35 × 60 | 0.20 | 2.44 | EKHS4H1VSN681MA60S | |
| | 390 | 30 × 35 | 0.20 | 1.59 | EKHS451VSN391MR35S | | 500 | 68 | 22 × 25 | 0.20 | 0.61 | EKHS501VSN680MP25S |
| | 390 | 35 × 30 | 0.20 | 1.52 | EKHS451VSN391MA30S | | | 82 | 22 × 30 | 0.20 | 0.70 | EKHS501VSN820MP30S |
| | 470 | 25.4 × 50 | 0.20 | 1.86 | EKHS451VSN471MQ50S | | | 82 | 25.4 × 25 | 0.20 | 0.72 | EKHS501VSN820MQ25S |
| | 470 | 30 × 40 | 0.20 | 1.79 | EKHS451VSN471MR40S | | | 100 | 22 × 35 | 0.20 | 0.79 | EKHS501VSN101MP35S |
| | 470 | 35 × 35 | 0.20 | 1.69 | EKHS451VSN471MA35S | | | 120 | 22 × 40 | 0.20 | 0.89 | EKHS501VSN121MP40S |
| | 560 | 25.4 × 60 | 0.20 | 2.09 | EKHS451VSN561MQ60S | | | 120 | 25.4 × 30 | 0.20 | 0.89 | EKHS501VSN121MQ30S |
| | 560 | 30 × 45 | 0.20 | 2.01 | EKHS451VSN561MR45S | | | 120 | 30 × 25 | 0.20 | 0.90 | EKHS501VSN121MR25S |
| | 560 | 35 × 40 | 0.20 | 1.95 | EKHS451VSN561MA40S | | | 150 | 22 × 45 | 0.20 | 1.01 | EKHS501VSN151MP45S |
| | 680 | 30 × 50 | 0.20 | 2.25 | EKHS451VSN681MR50S | | | 150 | 25.4 × 35 | 0.20 | 1.04 | EKHS501VSN151MQ35S |
| | 680 | 35 × 45 | 0.20 | 2.16 | EKHS451VSN681MA45S | | | 180 | 22 × 50 | 0.20 | 1.13 | EKHS501VSN181MP50S |
| | 680 | 35 × 50 | 0.20 | 2.22 | EKHS451VSN681MA50S | | | 180 | 25.4 × 40 | 0.20 | 1.16 | EKHS501VSN181MQ40S |
| | 820 | 30 × 60 | 0.20 | 2.56 | EKHS451VSN821MR60S | | | 180 | 25.4 × 45 | 0.20 | 1.18 | EKHS501VSN181MQ45S |
| | 820 | 35 × 55 | 0.20 | 2.47 | EKHS451VSN821MA55S | | | 180 | 30 × 30 | 0.20 | 1.11 | EKHS501VSN181MR30S |
| 1,000 | 35 × 60 | 0.20 | 2.78 | EKHS451VSN102MA60S | 180 | 35 × 25 | | 0.20 | 1.08 | EKHS501VSN181MA25S | | |
| 475 | 82 | 22 × 25 | 0.20 | 0.67 | EKHS4H1VSN820MP25S | 220 | | 22 × 60 | 0.20 | 1.31 | EKHS501VSN221MP60S | |
| | 100 | 22 × 30 | 0.20 | 0.78 | EKHS4H1VSN101MP30S | 220 | | 25.4 × 50 | 0.20 | 1.33 | EKHS501VSN221MQ50S | |
| | 100 | 25.4 × 25 | 0.20 | 0.79 | EKHS4H1VSN101MQ25S | 220 | | 30 × 35 | 0.20 | 1.26 | EKHS501VSN221MR35S | |
| | 120 | 22 × 35 | 0.20 | 0.87 | EKHS4H1VSN121MP35S | 220 | | 35 × 30 | 0.20 | 1.22 | EKHS501VSN221MA30S | |
| | 120 | 25.4 × 30 | 0.20 | 0.89 | EKHS4H1VSN121MQ30S | 270 | | 25.4 × 60 | 0.20 | 1.51 | EKHS501VSN271MQ60S | |
| | 150 | 22 × 40 | 0.20 | 0.99 | EKHS4H1VSN151MP40S | 270 | | 30 × 40 | 0.20 | 1.44 | EKHS501VSN271MR40S | |
| | 150 | 22 × 45 | 0.20 | 1.01 | EKHS4H1VSN151MP45S | 270 | | 30 × 45 | 0.20 | 1.47 | EKHS501VSN271MR45S | |
| | 150 | 30 × 25 | 0.20 | 1.01 | EKHS4H1VSN151MR25S | 270 | | 35 × 35 | 0.20 | 1.37 | EKHS501VSN271MA35S | |
| | 180 | 22 × 50 | 0.20 | 1.13 | EKHS4H1VSN181MP50S | 330 | | 30 × 50 | 0.20 | 1.66 | EKHS501VSN331MR50S | |
| | 180 | 25.4 × 35 | 0.20 | 1.14 | EKHS4H1VSN181MQ35S | 330 | | 35 × 40 | 0.20 | 1.57 | EKHS501VSN331MA40S | |
| | 180 | 25.4 × 40 | 0.20 | 1.16 | EKHS4H1VSN181MQ40S | 390 | | 30 × 60 | 0.20 | 1.87 | EKHS501VSN391MR60S | |
| | 180 | 30 × 30 | 0.20 | 1.11 | EKHS4H1VSN181MR30S | 390 | | 35 × 45 | 0.20 | 1.74 | EKHS501VSN391MA45S | |
| | 180 | 35 × 25 | 0.20 | 1.08 | EKHS4H1VSN181MA25S | 470 | | 35 × 50 | 0.20 | 1.95 | EKHS501VSN471MA50S | |
| | | | | | | 560 | | 35 × 60 | 0.20 | 2.22 | EKHS501VSN561MA60S | |

◆RATED RIPPLE CURRENT MULTIPLIERS

●Frequency Multipliers

| Frequency(Hz) | 50 | 120 | 300 | 1k | 10k | 50k |
|-------------------------|------|------|------|------|------|------|
| 450V _{dc} | 0.77 | 1.00 | 1.16 | 1.30 | 1.41 | 1.43 |
| 475, 500V _{dc} | 0.70 | 1.00 | 1.16 | 1.30 | 1.41 | 1.43 |

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.