

CHA Series

- Doesn't spark with DC over voltage
- Downsized from current KLG series
- Endurance with ripple current : 2,000 hours at 105°C
- Non solvent resistant type
- RoHS2 Compliant

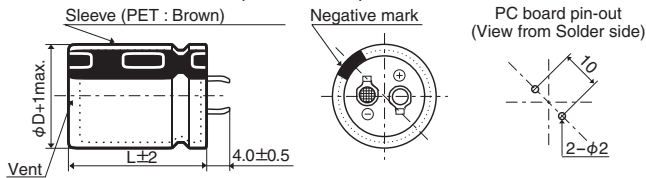


◆ SPECIFICATIONS

| Items | Characteristics | |
|--|---|---------------------------------------|
| Category Temperature Range | -25 to +105°C | |
| Rated Voltage Range | 200 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 _{dc}) (at 20°C after 5 minutes) | |
| Dissipation Factor (tan δ) | 200V _{dc} : 0.15 max. (0.20 max. for φD=35mm) 400V _{dc} : 0.15 max. (at 20°C, 120Hz) | |
| Low Temperature Characteristics (Max.Impedance Ratio) | Rated Voltage (V _{dc}) | 200 to 450V |
| | Z(-25°C) / Z(+20°C) | 4 |
| | (at 120Hz) | |
| ESL | 50nH max. (at 20°C, 1MHz) | |
| 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 |

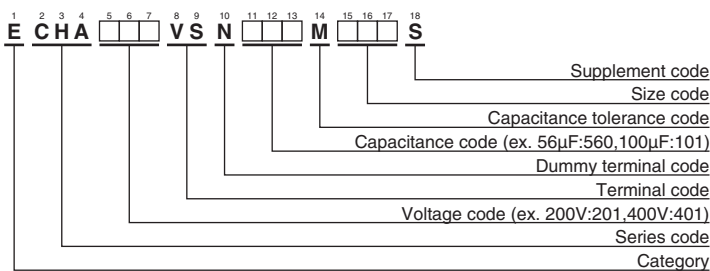
◆ DIMENSIONS [mm]

- Terminal Code : VS (φ22 to φ35)



The standard design has no plastic disc.

◆ PART NUMBERING SYSTEM



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

◆ RATED RIPPLE CURRENT MULTIPLIERS

- Frequency Multipliers

| Rated Voltage(V _{dc}) | Frequency(Hz) | | | | | |
|---------------------------------|---------------|------|------|------|------|------|
| | 50 | 120 | 300 | 1k | 10k | 50k |
| 200, 250 | 0.81 | 1.00 | 1.17 | 1.32 | 1.45 | 1.50 |
| 400, 450 | 0.77 | 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.

◆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. | |
|-----------------------|----------|--------------------|-------|--|--------------------|-----------------------|----------|--------------------|--------------------|--|--------------------|--------------------|
| 200 | 180 | 22 × 20 | 0.15 | 0.82 | ECHA201VSN181MP20S | 250 | 680 | 35 × 30 | 0.20 | 2.19 | ECHA251VSN681MA30S | |
| | 220 | 22 × 20 | 0.15 | 0.90 | ECHA201VSN221MP20S | | 820 | 30 × 45 | 0.15 | 2.39 | ECHA251VSN821MR45S | |
| | 270 | 22 × 25 | 0.15 | 1.02 | ECHA201VSN271MP25S | | 820 | 35 × 35 | 0.20 | 2.42 | ECHA251VSN821MA35S | |
| | 330 | 22 × 30 | 0.15 | 1.20 | ECHA201VSN331MP30S | | 400 | 56 | 22 × 20 | 0.15 | 0.45 | ECHA401VSN560MP20S |
| | 330 | 25.4 × 25 | 0.15 | 1.20 | ECHA201VSN331MQ25S | | | 68 | 22 × 20 | 0.15 | 0.51 | ECHA401VSN680MP20S |
| | 390 | 22 × 30 | 0.15 | 1.35 | ECHA201VSN391MP30S | | | 82 | 22 × 25 | 0.15 | 0.58 | ECHA401VSN820MP25S |
| | 390 | 25.4 × 25 | 0.15 | 1.35 | ECHA201VSN391MQ25S | | | 100 | 22 × 25 | 0.15 | 0.66 | ECHA401VSN101MP35S |
| | 470 | 22 × 35 | 0.15 | 1.45 | ECHA201VSN471MP35S | | | 100 | 25.4 × 25 | 0.15 | 0.66 | ECHA401VSN101MQ25S |
| | 470 | 25.4 × 30 | 0.15 | 1.45 | ECHA201VSN471MQ30S | | | 120 | 22 × 30 | 0.15 | 0.76 | ECHA401VSN121MP30S |
| | 470 | 30 × 25 | 0.15 | 1.47 | ECHA201VSN471MR25S | | | 120 | 25.4 × 25 | 0.15 | 0.76 | ECHA401VSN121MQ25S |
| | 560 | 22 × 40 | 0.15 | 1.62 | ECHA201VSN561MP40S | | | 150 | 22 × 35 | 0.15 | 0.85 | ECHA401VSN151MP35S |
| | 560 | 25.4 × 30 | 0.15 | 1.60 | ECHA201VSN561MQ30S | | | 150 | 25.4 × 30 | 0.15 | 0.85 | ECHA401VSN151MQ30S |
| | 560 | 30 × 25 | 0.15 | 1.60 | ECHA201VSN561MR25S | | | 150 | 30 × 25 | 0.15 | 0.85 | ECHA401VSN151MR25S |
| | 680 | 25.4 × 35 | 0.15 | 1.82 | ECHA201VSN681MQ35S | | | 180 | 22 × 40 | 0.15 | 0.94 | ECHA401VSN181MP40S |
| | 680 | 30 × 30 | 0.15 | 1.81 | ECHA201VSN681MR30S | | | 180 | 25.4 × 35 | 0.15 | 0.95 | ECHA401VSN181MQ35S |
| | 680 | 35 × 25 | 0.20 | 1.86 | ECHA201VSN681MA25S | | | 180 | 30 × 25 | 0.15 | 0.95 | ECHA401VSN181MR25S |
| | 820 | 25.4 × 45 | 0.15 | 2.11 | ECHA201VSN821MQ45S | | | 220 | 25.4 × 35 | 0.15 | 1.24 | ECHA401VSN221MQ35S |
| | 820 | 30 × 35 | 0.15 | 2.11 | ECHA201VSN821MR35S | | | 220 | 30 × 30 | 0.15 | 1.24 | ECHA401VSN221MR30S |
| | 820 | 35 × 25 | 0.20 | 2.11 | ECHA201VSN821MA25S | | | 220 | 35 × 25 | 0.15 | 1.24 | ECHA401VSN221MA25S |
| | 1,000 | 30 × 35 | 0.15 | 2.40 | ECHA201VSN102MR35S | | | 270 | 25.4 × 45 | 0.15 | 1.30 | ECHA401VSN271MQ45S |
| 1,000 | 35 × 30 | 0.20 | 2.40 | ECHA201VSN102MA30S | 270 | 30 × 35 | | 0.15 | 1.30 | ECHA401VSN271MR35S | | |
| 1,200 | 30 × 45 | 0.15 | 2.69 | ECHA201VSN122MR45S | 270 | 35 × 25 | | 0.15 | 1.30 | ECHA401VSN271MA25S | | |
| 1,200 | 35 × 35 | 0.20 | 2.65 | ECHA201VSN122MA35S | 330 | 30 × 35 | | 0.15 | 1.45 | ECHA401VSN331MR35S | | |
| 1,500 | 35 × 45 | 0.20 | 2.96 | ECHA201VSN152MA45S | 330 | 30 × 40 | 0.15 | 1.47 | ECHA401VSN331MR40S | | | |
| 250 | 120 | 22 × 20 | 0.15 | 0.68 | ECHA251VSN121MP20S | 330 | 35 × 30 | 0.15 | 1.47 | ECHA401VSN331MA30S | | |
| | 180 | 22 × 25 | 0.15 | 0.87 | ECHA251VSN181MP25S | 390 | 30 × 40 | 0.15 | 1.60 | ECHA401VSN391MR40S | | |
| | 180 | 25.4 × 20 | 0.15 | 0.93 | ECHA251VSN181MQ20S | 390 | 35 × 35 | 0.15 | 1.61 | ECHA401VSN391MA35S | | |
| | 220 | 22 × 30 | 0.15 | 1.00 | ECHA251VSN221MP30S | 470 | 35 × 40 | 0.15 | 1.84 | ECHA401VSN471MA40S | | |
| | 270 | 22 × 35 | 0.15 | 1.14 | ECHA251VSN271MP35S | 450 | 82 | 25.4 × 25 | 0.20 | 0.61 | ECHA451VSN820MQ25S | |
| | 270 | 25.4 × 25 | 0.15 | 1.13 | ECHA251VSN271MQ25S | | 120 | 25.4 × 30 | 0.20 | 0.76 | ECHA451VSN121MQ30S | |
| | 270 | 30 × 20 | 0.15 | 1.25 | ECHA251VSN271MR20S | | 120 | 30 × 25 | 0.20 | 0.77 | ECHA451VSN121MR25S | |
| | 330 | 22 × 40 | 0.15 | 1.28 | ECHA251VSN331MP40S | | 150 | 25.4 × 35 | 0.20 | 0.88 | ECHA451VSN151MQ35S | |
| | 330 | 25.4 × 30 | 0.15 | 1.29 | ECHA251VSN331MQ30S | | 180 | 25.4 × 40 | 0.20 | 0.99 | ECHA451VSN181MQ40S | |
| | 390 | 22 × 45 | 0.15 | 1.42 | ECHA251VSN391MP45S | | 180 | 30 × 30 | 0.20 | 0.97 | ECHA451VSN181MR30S | |
| | 390 | 25.4 × 35 | 0.15 | 1.46 | ECHA251VSN391MQ35S | | 180 | 30 × 35 | 0.20 | 1.00 | ECHA451VSN181MR35S | |
| | 390 | 30 × 25 | 0.15 | 1.52 | ECHA251VSN391MR25S | | 220 | 30 × 35 | 0.20 | 1.30 | ECHA451VSN221MR35S | |
| | 390 | 35 × 20 | 0.20 | 1.62 | ECHA251VSN391MA20S | | 220 | 35 × 25 | 0.20 | 1.20 | ECHA451VSN221MA25S | |
| | 470 | 25.4 × 40 | 0.15 | 1.64 | ECHA251VSN471MQ40S | | 270 | 30 × 35 | 0.20 | 1.22 | ECHA451VSN271MR35S | |
| | 470 | 30 × 30 | 0.15 | 1.67 | ECHA251VSN471MR30S | | 270 | 30 × 40 | 0.20 | 1.28 | ECHA451VSN271MR40S | |
| | 560 | 25.4 × 45 | 0.15 | 1.82 | ECHA251VSN561MQ45S | | 270 | 35 × 30 | 0.20 | 1.30 | ECHA451VSN271MA30S | |
| | 560 | 30 × 35 | 0.15 | 1.87 | ECHA251VSN561MR35S | | 330 | 35 × 35 | 0.20 | 1.40 | ECHA451VSN331MA35S | |
| | 560 | 35 × 25 | 0.20 | 1.99 | ECHA251VSN561MA25S | | 390 | 35 × 40 | 0.20 | 1.60 | ECHA451VSN391MA40S | |
| | 680 | 30 × 40 | 0.15 | 2.12 | ECHA251VSN681MR40S | | 420 | 35 × 50 | 0.20 | 1.56 | ECHA451VSN421MA50S | |

◆DC OVERVOLTAGE TEST CONDITIONS

The vent will operate and the capacitor shall become an open circuit without burning materials when the following test DC voltage is applied.

●Test DC voltage

| Rated Voltage | Nominal Capacitance | Current Limit | Test Voltage |
|--------------------|---------------------|---------------|------------------------|
| 200V _{dc} | <330μF | 4A | 300/375V _{dc} |
| | 330μF ≤ C < 470μF | 5A | |
| | ≥ 470μF | 7A | |
| 250V _{dc} | <330μF | 4A | 350/450V _{dc} |
| | 330μF ≤ C < 470μF | 5A | |
| | ≥ 470μF | 7A | |
| 400V _{dc} | <100μF | 2A | 500/600V _{dc} |
| | 100μF ≤ C < 220μF | 4A | |
| | ≥ 220μF | 7A | |
| 450V _{dc} | <100μF | 2A | 550/675V _{dc} |
| | 100μF ≤ C < 220μF | 4A | |
| | ≥ 220μF | 7A | |

●Test Circuit

