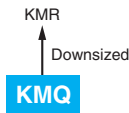


# KMQ Series

- Endurance with ripple current : 2,000 hours at 105°C
- Non solvent resistant type
- RoHS2 Compliant

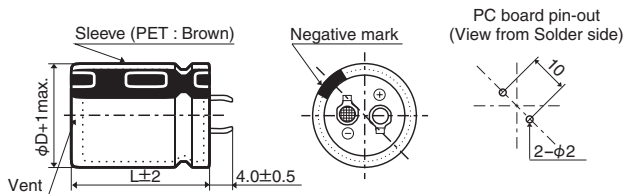


## SPECIFICATIONS

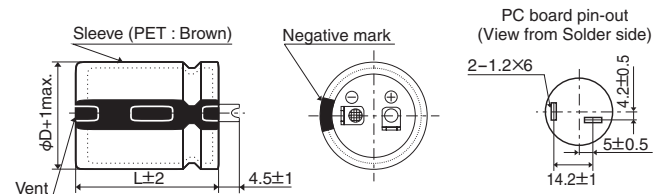
| Items                                                  | Characteristics                                                                                                                                                                                                                                                                       |                                      |      |                   |      |             |             |            |                 |
|--------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------------------|------|-------------------|------|-------------|-------------|------------|-----------------|
| Category                                               |                                                                                                                                                                                                                                                                                       |                                      |      |                   |      |             |             |            |                 |
| Temperature Range                                      | -40 to +105℃ (35&50V <sub>dc</sub> ), -25 to +105℃ (160 to 450V <sub>dc</sub> )                                                                                                                                                                                                       |                                      |      |                   |      |             |             |            |                 |
| Rated Voltage Range                                    | 35&50V <sub>dc</sub> , 160 to 450V <sub>dc</sub>                                                                                                                                                                                                                                      |                                      |      |                   |      |             |             |            |                 |
| Capacitance Tolerance                                  | ± 20% (M) (at 20℃, 120Hz)                                                                                                                                                                                                                                                             |                                      |      |                   |      |             |             |            |                 |
| Leakage Current                                        | I≤ 3/√CV<br>Where, I : Max. leakage current (μA), C : Nominal capacitance (μF), V : Rated voltage (V) (at 20℃ after 5 minutes)                                                                                                                                                        |                                      |      |                   |      |             |             |            |                 |
| Dissipation Factor (tan δ)                             | Rated voltage (V <sub>ac</sub> )                                                                                                                                                                                                                                                      | 35V                                  |      | 50V               |      | 160 to 250V | 315 to 400V | 420 & 450V | (at 20℃, 120Hz) |
|                                                        | Nominal capacitance (μF)                                                                                                                                                                                                                                                              | 10,000>C C≥10,000                    |      | 10,000>C C≥10,000 |      | —           | —           | —          |                 |
|                                                        | tan δ (Max.)                                                                                                                                                                                                                                                                          | 0.30                                 | 0.35 | 0.25              | 0.30 | 0.15        | 0.15        | 0.20       |                 |
| Low Temperature Characteristics (Max. Impedance Ratio) | Rated voltage (V <sub>ac</sub> )                                                                                                                                                                                                                                                      | 35&50V                               |      | 160 to 250V       |      | 315 to 450V |             | (at 120Hz) |                 |
|                                                        | Z(-25℃)/Z(+20℃)                                                                                                                                                                                                                                                                       | 4                                    |      | 4                 |      | 8           |             |            |                 |
|                                                        | Z(-40℃)/Z(+20℃)                                                                                                                                                                                                                                                                       | 10                                   |      | —                 |      | —           |             |            |                 |
|                                                        |                                                                                                                                                                                                                                                                                       |                                      |      |                   |      |             |             |            |                 |
| 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 2,000 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                                                                                                                                                                                                                                                                    | ≤ ± 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

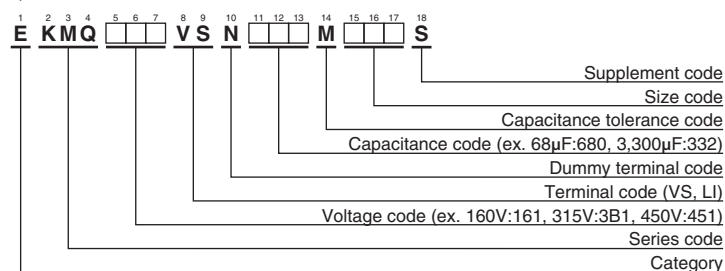


- Terminal Code : LI (φ35)



The standard design has no plastic disc.

## PART NUMBERING SYSTEM



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

## ◆STANDARD RATINGS

| WV<br>(V <sub>dc</sub> ) | Cap<br>(μF) | Case size<br>φD×L(mm) | tan δ | Rated ripple<br>current<br>(Arms/<br>105°C, 120Hz) | Part No.           | WV<br>(V <sub>dc</sub> ) | Cap<br>(μF) | Case size<br>φD×L(mm) | tan δ | Rated ripple<br>current<br>(Arms/<br>105°C, 120Hz) | Part No.           |
|--------------------------|-------------|-----------------------|-------|----------------------------------------------------|--------------------|--------------------------|-------------|-----------------------|-------|----------------------------------------------------|--------------------|
| 35                       | 4,700       | 22 × 25               | 0.30  | 1.87                                               | EKMQ350VSN472MP25S | 160                      | 1,800       | 30 × 40               | 0.15  | 2.70                                               | EKMQ161VSN182MR40S |
|                          | 5,600       | 22 × 25               | 0.30  | 2.04                                               | EKMQ350VSN562MP25S |                          | 1,800       | 35 × 30               | 0.15  | 2.70                                               | EKMQ161VSN182MA30S |
|                          | 5,600       | 25.4 × 25             | 0.30  | 2.00                                               | EKMQ350VSN562MQ25S |                          | 2,200       | 30 × 45               | 0.15  | 2.90                                               | EKMQ161VSN222MR45S |
|                          | 6,800       | 22 × 30               | 0.30  | 2.36                                               | EKMQ350VSN682MP30S |                          | 2,200       | 35 × 35               | 0.15  | 2.90                                               | EKMQ161VSN222MA35S |
|                          | 6,800       | 25.4 × 25             | 0.30  | 2.21                                               | EKMQ350VSN682MQ25S |                          | 2,700       | 30 × 50               | 0.15  | 3.10                                               | EKMQ161VSN272MR50S |
|                          | 8,200       | 22 × 35               | 0.30  | 2.65                                               | EKMQ350VSN822MP35S |                          | 2,700       | 35 × 40               | 0.15  | 3.10                                               | EKMQ161VSN272MA40S |
|                          | 8,200       | 25.4 × 30             | 0.30  | 2.49                                               | EKMQ350VSN822MQ30S |                          | 3,300       | 35 × 50               | 0.15  | 3.30                                               | EKMQ161VSN332MA50S |
|                          | 8,200       | 30 × 25               | 0.30  | 2.62                                               | EKMQ350VSN822MR25S |                          | 390         | 22 × 25               | 0.15  | 1.30                                               | EKMQ181VSN391MP25S |
|                          | 10,000      | 22 × 40               | 0.35  | 3.00                                               | EKMQ350VSN103MP40S |                          | 470         | 22 × 30               | 0.15  | 1.40                                               | EKMQ181VSN471MP30S |
|                          | 10,000      | 25.4 × 35             | 0.35  | 2.88                                               | EKMQ350VSN103MQ35S | 180                      | 560         | 22 × 30               | 0.15  | 1.50                                               | EKMQ181VSN561MP30S |
|                          | 10,000      | 30 × 25               | 0.35  | 2.90                                               | EKMQ350VSN103MR25S |                          | 560         | 25.4 × 25             | 0.15  | 1.50                                               | EKMQ181VSN561MQ25S |
|                          | 12,000      | 22 × 50               | 0.35  | 3.47                                               | EKMQ350VSN123MP50S |                          | 680         | 22 × 35               | 0.15  | 1.70                                               | EKMQ181VSN681MP35S |
|                          | 12,000      | 25.4 × 35             | 0.35  | 3.15                                               | EKMQ350VSN123MQ35S |                          | 680         | 25.4 × 30             | 0.15  | 1.70                                               | EKMQ181VSN681MQ30S |
|                          | 12,000      | 30 × 30               | 0.35  | 3.25                                               | EKMQ350VSN123MR30S |                          | 820         | 22 × 40               | 0.15  | 2.00                                               | EKMQ181VSN821MP40S |
|                          | 12,000      | 35 × 25               | 0.35  | 3.20                                               | EKMQ350VSN123MA25S |                          | 820         | 25.4 × 30             | 0.15  | 2.00                                               | EKMQ181VSN821MQ30S |
|                          | 15,000      | 25.4 × 40             | 0.35  | 3.61                                               | EKMQ350VSN153MQ40S |                          | 820         | 30 × 25               | 0.15  | 2.00                                               | EKMQ181VSN821MR25S |
|                          | 15,000      | 30 × 35               | 0.35  | 3.78                                               | EKMQ350VSN153MR35S |                          | 1,000       | 22 × 45               | 0.15  | 2.20                                               | EKMQ181VSN102MP45S |
|                          | 15,000      | 35 × 25               | 0.35  | 3.60                                               | EKMQ350VSN153MA25S |                          | 1,000       | 25.4 × 40             | 0.15  | 2.20                                               | EKMQ181VSN102MQ40S |
|                          | 18,000      | 25.4 × 50             | 0.35  | 4.14                                               | EKMQ350VSN183MQ50S |                          | 1,000       | 30 × 30               | 0.15  | 2.20                                               | EKMQ181VSN102MR30S |
|                          | 18,000      | 30 × 40               | 0.35  | 4.30                                               | EKMQ350VSN183MR40S |                          | 1,000       | 35 × 25               | 0.15  | 2.20                                               | EKMQ181VSN102MA25S |
|                          | 18,000      | 35 × 30               | 0.35  | 4.10                                               | EKMQ350VSN183MA30S |                          | 1,200       | 25.4 × 45             | 0.15  | 2.30                                               | EKMQ181VSN122MQ45S |
|                          | 22,000      | 30 × 50               | 0.35  | 5.00                                               | EKMQ350VSN223MR50S |                          | 1,200       | 30 × 35               | 0.15  | 2.30                                               | EKMQ181VSN122MR35S |
|                          | 22,000      | 35 × 35               | 0.35  | 4.64                                               | EKMQ350VSN223MA35S |                          | 1,200       | 35 × 30               | 0.15  | 2.30                                               | EKMQ181VSN122MA30S |
|                          | 27,000      | 35 × 40               | 0.35  | 5.37                                               | EKMQ350VSN273MA40S |                          | 1,500       | 25.4 × 50             | 0.15  | 2.50                                               | EKMQ181VSN152MQ50S |
|                          | 33,000      | 35 × 50               | 0.35  | 6.00                                               | EKMQ350VSN333MA50S |                          | 1,500       | 30 × 40               | 0.15  | 2.50                                               | EKMQ181VSN152MR40S |
|                          | 2,700       | 22 × 25               | 0.25  | 1.65                                               | EKMQ500VSN272MP25S |                          | 1,500       | 35 × 30               | 0.15  | 2.50                                               | EKMQ181VSN152MA30S |
| 50                       | 3,300       | 22 × 30               | 0.25  | 1.92                                               | EKMQ500VSN332MP30S | 200                      | 1,800       | 30 × 45               | 0.15  | 2.70                                               | EKMQ181VSN182MR45S |
|                          | 3,300       | 25.4 × 25             | 0.25  | 1.76                                               | EKMQ500VSN332MQ25S |                          | 1,800       | 35 × 35               | 0.15  | 2.70                                               | EKMQ181VSN182MA35S |
|                          | 3,900       | 22 × 30               | 0.25  | 2.08                                               | EKMQ500VSN392MP30S |                          | 2,200       | 30 × 50               | 0.15  | 2.90                                               | EKMQ181VSN222MR50S |
|                          | 3,900       | 25.4 × 25             | 0.25  | 2.04                                               | EKMQ500VSN392MQ25S |                          | 2,200       | 35 × 40               | 0.15  | 2.90                                               | EKMQ181VSN222MA40S |
|                          | 4,700       | 22 × 35               | 0.25  | 2.43                                               | EKMQ500VSN472MP35S |                          | 2,700       | 35 × 50               | 0.15  | 3.10                                               | EKMQ181VSN272MA50S |
|                          | 4,700       | 25.4 × 30             | 0.25  | 2.50                                               | EKMQ500VSN472MQ30S | 250                      | 390         | 22 × 25               | 0.15  | 1.31                                               | EKMQ201VSN391MP25S |
|                          | 4,700       | 30 × 25               | 0.25  | 2.29                                               | EKMQ500VSN472MR25S |                          | 470         | 22 × 30               | 0.15  | 1.45                                               | EKMQ201VSN471MP30S |
|                          | 5,600       | 22 × 40               | 0.25  | 2.63                                               | EKMQ500VSN562MP40S |                          | 560         | 22 × 30               | 0.15  | 1.67                                               | EKMQ201VSN561MP30S |
|                          | 5,600       | 25.4 × 35             | 0.25  | 2.61                                               | EKMQ500VSN562MQ35S |                          | 560         | 25.4 × 25             | 0.15  | 1.67                                               | EKMQ201VSN561MQ25S |
|                          | 5,600       | 30 × 25               | 0.25  | 2.80                                               | EKMQ500VSN562MR25S |                          | 680         | 22 × 40               | 0.15  | 1.75                                               | EKMQ201VSN681MP40S |
|                          | 6,800       | 22 × 50               | 0.25  | 3.05                                               | EKMQ500VSN682MP50S |                          | 680         | 25.4 × 30             | 0.15  | 1.75                                               | EKMQ201VSN681MQ30S |
|                          | 6,800       | 25.4 × 40             | 0.25  | 2.94                                               | EKMQ500VSN682MQ40S |                          | 820         | 22 × 45               | 0.15  | 2.04                                               | EKMQ201VSN821MP45S |
|                          | 6,800       | 30 × 30               | 0.25  | 3.30                                               | EKMQ500VSN682MR30S |                          | 820         | 25.4 × 35             | 0.15  | 2.04                                               | EKMQ201VSN821MQ35S |
|                          | 6,800       | 35 × 25               | 0.25  | 2.77                                               | EKMQ500VSN682MA25S |                          | 820         | 30 × 25               | 0.15  | 2.04                                               | EKMQ201VSN821MR25S |
|                          | 8,200       | 25.4 × 45             | 0.25  | 3.60                                               | EKMQ500VSN822MQ45S |                          | 1,000       | 22 × 50               | 0.15  | 2.30                                               | EKMQ201VSN102MP50S |
|                          | 8,200       | 30 × 35               | 0.25  | 3.60                                               | EKMQ500VSN822MR35S |                          | 1,000       | 25.4 × 45             | 0.15  | 2.30                                               | EKMQ201VSN102MQ45S |
|                          | 8,200       | 35 × 30               | 0.25  | 3.60                                               | EKMQ500VSN822MA30S |                          | 1,000       | 30 × 30               | 0.15  | 2.30                                               | EKMQ201VSN102MR30S |
|                          | 10,000      | 25.4 × 50             | 0.30  | 4.00                                               | EKMQ500VSN103MQ50S |                          | 1,000       | 35 × 25               | 0.15  | 2.30                                               | EKMQ201VSN102MA25S |
|                          | 10,000      | 30 × 40               | 0.30  | 4.00                                               | EKMQ500VSN103MR40S |                          | 1,200       | 25.4 × 50             | 0.15  | 2.65                                               | EKMQ201VSN122MQ50S |
|                          | 10,000      | 35 × 30               | 0.30  | 4.00                                               | EKMQ500VSN103MA30S |                          | 1,200       | 30 × 35               | 0.15  | 2.65                                               | EKMQ201VSN122MR35S |
|                          | 12,000      | 30 × 50               | 0.30  | 4.29                                               | EKMQ500VSN123MR50S |                          | 1,200       | 35 × 30               | 0.15  | 2.65                                               | EKMQ201VSN122MA30S |
|                          | 12,000      | 35 × 35               | 0.30  | 4.37                                               | EKMQ500VSN123MA35S |                          | 1,500       | 30 × 40               | 0.15  | 2.80                                               | EKMQ201VSN152MR40S |
|                          | 15,000      | 35 × 40               | 0.30  | 4.50                                               | EKMQ500VSN153MA40S |                          | 1,500       | 35 × 30               | 0.15  | 2.80                                               | EKMQ201VSN152MA30S |
|                          | 18,000      | 35 × 50               | 0.30  | 5.30                                               | EKMQ500VSN183MA50S |                          | 1,800       | 30 × 45               | 0.15  | 3.08                                               | EKMQ201VSN182MR45S |
| 160                      | 470         | 22 × 25               | 0.15  | 1.40                                               | EKMQ161VSN471MP25S |                          | 1,800       | 35 × 40               | 0.15  | 3.08                                               | EKMQ201VSN182MA40S |
|                          | 560         | 22 × 30               | 0.15  | 1.50                                               | EKMQ161VSN561MP30S |                          | 2,200       | 35 × 45               | 0.15  | 3.48                                               | EKMQ201VSN222MA45S |
|                          | 680         | 22 × 30               | 0.15  | 1.70                                               | EKMQ161VSN681MP30S | 250                      | 220         | 22 × 25               | 0.15  | 1.00                                               | EKMQ251VSN221MP25S |
|                          | 680         | 25.4 × 25             | 0.15  | 1.70                                               | EKMQ161VSN681MQ25S |                          | 270         | 22 × 25               | 0.15  | 1.10                                               | EKMQ251VSN271MP25S |
|                          | 820         | 22 × 35               | 0.15  | 2.00                                               | EKMQ161VSN821MP35S |                          | 330         | 22 × 30               | 0.15  | 1.20                                               | EKMQ251VSN331MP30S |
|                          | 820         | 25.4 × 30             | 0.15  | 2.00                                               | EKMQ161VSN821MQ30S |                          | 330         | 25.4 × 25             | 0.15  | 1.20                                               | EKMQ251VSN331MQ25S |
|                          | 820         | 30 × 25               | 0.15  | 2.00                                               | EKMQ161VSN821MR25S |                          | 390         | 22 × 35               | 0.15  | 1.30                                               | EKMQ251VSN391MP35S |
|                          | 1,000       | 22 × 40               | 0.15  | 2.20                                               | EKMQ161VSN102MP40S |                          | 390         | 25.4 × 25             | 0.15  | 1.30                                               | EKMQ251VSN391MQ25S |
|                          | 1,000       | 25.4 × 35             | 0.15  | 2.20                                               | EKMQ161VSN102MQ35S |                          | 470         | 22 × 40               | 0.15  | 1.40                                               | EKMQ251VSN471MP40S |
|                          | 1,000       | 30 × 25               | 0.15  | 2.20                                               | EKMQ161VSN102MR25S |                          | 470         | 25.4 × 30             | 0.15  | 1.40                                               | EKMQ251VSN471MQ30S |
|                          | 1,200       | 25.4 × 40             | 0.15  | 2.30                                               | EKMQ161VSN122MQ40S |                          | 470         | 30 × 25               | 0.15  | 1.40                                               | EKMQ251VSN471MR25S |
|                          | 1,200       | 30 × 30               | 0.15  | 2.30                                               | EKMQ161VSN122MR30S |                          | 560         | 22 × 45               | 0.15  | 1.50                                               | EKMQ251VSN561MP45S |
|                          | 1,200       | 35 × 25               | 0.15  | 2.30                                               | EKMQ161VSN122MA25S |                          | 560         | 25.4 × 35             | 0.15  | 1.50                                               | EKMQ251VSN561MQ35S |
|                          | 1,500       | 25.4 × 45             | 0.15  | 2.50                                               | EKMQ161VSN152MQ45S |                          | 560         | 30 × 25               | 0.15  | 1.50                                               | EKMQ251VSN561MR25S |
|                          | 1,500       | 30 × 35               | 0.15  | 2.50                                               | EKMQ161VSN152MR35S |                          | 680         | 22 × 50               | 0.15  | 1.70                                               | EKMQ251VSN681MP50S |
|                          | 1,500       | 35 × 30               | 0.15  | 2.50                                               | EKMQ161VSN152MA30S |                          | 680         | 25.4 × 40             | 0.15  | 1.70                                               | EKMQ251VSN681MQ40S |
|                          | 1,800       | 25.4 × 50             | 0.15  | 2.70                                               | EKMQ161VSN182MQ50S |                          | 680         | 30 × 30               | 0.15  | 1.70                                               | EKMQ251VSN681MR30S |

## ◆STANDARD RATINGS

| WV<br>(V <sub>dc</sub> ) | Cap<br>(μF) | Case size<br>φD×L(mm) | tan δ | Rated ripple<br>current<br>(Arms/<br>105°C, 120Hz) | Part No.          | WV<br>(V <sub>dc</sub> ) | Cap<br>(μF) | Case size<br>φD×L(mm) | tan δ | Rated ripple<br>current<br>(Arms/<br>105°C, 120Hz) | Part No.          |
|--------------------------|-------------|-----------------------|-------|----------------------------------------------------|-------------------|--------------------------|-------------|-----------------------|-------|----------------------------------------------------|-------------------|
| 250                      | 680         | 35 × 25               | 0.15  | 1.70                                               | EKM251VSN681MA25S | 400                      | 270         | 25.4 × 40             | 0.15  | 1.22                                               | EKM401VSN271MQ40S |
|                          | 820         | 25.4 × 45             | 0.15  | 2.00                                               | EKM251VSN821MQ45S |                          | 270         | 30 × 30               | 0.15  | 1.22                                               | EKM401VSN271MR30S |
|                          | 820         | 30 × 35               | 0.15  | 2.00                                               | EKM251VSN821MR35S |                          | 270         | 35 × 25               | 0.15  | 1.22                                               | EKM401VSN271MA25S |
|                          | 820         | 35 × 30               | 0.15  | 2.00                                               | EKM251VSN821MA30S |                          | 330         | 25.4 × 45             | 0.15  | 1.44                                               | EKM401VSN331MQ45S |
|                          | 1,000       | 30 × 40               | 0.15  | 2.20                                               | EKM251VSN102MR40S |                          | 330         | 30 × 35               | 0.15  | 1.44                                               | EKM401VSN331MR35S |
|                          | 1,000       | 35 × 30               | 0.15  | 2.20                                               | EKM251VSN102MA30S |                          | 330         | 35 × 30               | 0.15  | 1.44                                               | EKM401VSN331MA30S |
|                          | 1,200       | 30 × 45               | 0.15  | 2.30                                               | EKM251VSN122MR45S |                          | 390         | 25.4 × 50             | 0.15  | 1.55                                               | EKM401VSN391MQ50S |
|                          | 1,200       | 35 × 35               | 0.15  | 2.30                                               | EKM251VSN122MA35S |                          | 390         | 30 × 40               | 0.15  | 1.55                                               | EKM401VSN391MR40S |
|                          | 1,500       | 35 × 45               | 0.15  | 2.50                                               | EKM251VSN152MA45S |                          | 390         | 35 × 30               | 0.15  | 1.55                                               | EKM401VSN391MA30S |
|                          | 1,800       | 35 × 50               | 0.15  | 2.70                                               | EKM251VSN182MA50S |                          | 470         | 30 × 45               | 0.15  | 1.68                                               | EKM401VSN471MR45S |
| 315                      | 150         | 22 × 25               | 0.15  | 0.82                                               | EKM315VSN151MP25S | 420                      | 470         | 35 × 35               | 0.15  | 1.68                                               | EKM401VSN471MA35S |
|                          | 180         | 22 × 30               | 0.15  | 0.90                                               | EKM315VSN181MP30S |                          | 560         | 30 × 50               | 0.15  | 1.90                                               | EKM401VSN561MR50S |
|                          | 220         | 22 × 30               | 0.15  | 1.00                                               | EKM315VSN221MP30S |                          | 560         | 35 × 40               | 0.15  | 1.90                                               | EKM401VSN561MA40S |
|                          | 220         | 25.4 × 25             | 0.15  | 1.00                                               | EKM315VSN221MQ25S |                          | 680         | 35 × 45               | 0.15  | 2.12                                               | EKM401VSN681MA45S |
|                          | 270         | 22 × 35               | 0.15  | 1.10                                               | EKM315VSN271MP35S |                          | 82          | 22 × 25               | 0.20  | 0.64                                               | EKM421VSN820MP25S |
|                          | 270         | 25.4 × 30             | 0.15  | 1.10                                               | EKM315VSN271MQ30S |                          | 100         | 22 × 25               | 0.20  | 0.66                                               | EKM421VSN101MP25S |
|                          | 330         | 22 × 45               | 0.15  | 1.20                                               | EKM315VSN331MP45S |                          | 100         | 25.4 × 25             | 0.20  | 0.66                                               | EKM421VSN101MQ25S |
|                          | 330         | 25.4 × 35             | 0.15  | 1.20                                               | EKM315VSN331MQ35S |                          | 120         | 22 × 30               | 0.20  | 0.81                                               | EKM421VSN121MP30S |
|                          | 330         | 30 × 25               | 0.15  | 1.20                                               | EKM315VSN331MR25S |                          | 120         | 25.4 × 25             | 0.20  | 0.81                                               | EKM421VSN121MQ25S |
|                          | 390         | 22 × 45               | 0.15  | 1.30                                               | EKM315VSN391MP45S |                          | 150         | 22 × 35               | 0.20  | 0.84                                               | EKM421VSN151MP35S |
|                          | 390         | 25.4 × 40             | 0.15  | 1.30                                               | EKM315VSN391MQ40S |                          | 150         | 25.4 × 30             | 0.20  | 0.84                                               | EKM421VSN151MQ30S |
|                          | 390         | 30 × 30               | 0.15  | 1.30                                               | EKM315VSN391MR30S |                          | 150         | 30 × 25               | 0.20  | 0.84                                               | EKM421VSN151MR25S |
|                          | 390         | 35 × 25               | 0.15  | 1.30                                               | EKM315VSN391MA25S |                          | 180         | 22 × 40               | 0.20  | 0.91                                               | EKM421VSN181MP40S |
|                          | 470         | 25.4 × 45             | 0.15  | 1.40                                               | EKM315VSN471MQ45S |                          | 180         | 25.4 × 30             | 0.20  | 0.91                                               | EKM421VSN181MQ30S |
|                          | 470         | 30 × 35               | 0.15  | 1.40                                               | EKM315VSN471MR35S |                          | 180         | 30 × 25               | 0.20  | 0.91                                               | EKM421VSN181MR25S |
|                          | 470         | 35 × 25               | 0.15  | 1.40                                               | EKM315VSN471MA25S |                          | 220         | 22 × 45               | 0.20  | 1.05                                               | EKM421VSN221MP45S |
|                          | 560         | 25.4 × 50             | 0.15  | 1.50                                               | EKM315VSN561MQ50S |                          | 220         | 25.4 × 35             | 0.20  | 1.05                                               | EKM421VSN221MQ35S |
|                          | 560         | 30 × 40               | 0.15  | 1.50                                               | EKM315VSN561MR40S |                          | 220         | 30 × 30               | 0.20  | 1.05                                               | EKM421VSN221MR30S |
|                          | 560         | 35 × 30               | 0.15  | 1.50                                               | EKM315VSN561MA30S |                          | 220         | 35 × 25               | 0.20  | 1.05                                               | EKM421VSN221MA25S |
|                          | 680         | 30 × 45               | 0.15  | 1.70                                               | EKM315VSN681MR45S | 450                      | 270         | 25.4 × 40             | 0.20  | 1.25                                               | EKM421VSN271MQ40S |
|                          | 680         | 35 × 35               | 0.15  | 1.70                                               | EKM315VSN681MA35S |                          | 270         | 30 × 30               | 0.20  | 1.25                                               | EKM421VSN271MR30S |
|                          | 820         | 30 × 50               | 0.15  | 2.00                                               | EKM315VSN821MR50S |                          | 270         | 35 × 25               | 0.20  | 1.25                                               | EKM421VSN271MA25S |
|                          | 820         | 35 × 40               | 0.15  | 2.00                                               | EKM315VSN821MA40S |                          | 330         | 25.4 × 50             | 0.20  | 1.42                                               | EKM421VSN331MQ50S |
|                          | 1,000       | 35 × 45               | 0.15  | 2.30                                               | EKM315VSN102MA45S |                          | 330         | 30 × 35               | 0.20  | 1.42                                               | EKM421VSN331MR35S |
| 350                      | 120         | 22 × 25               | 0.15  | 0.75                                               | EKM351VSN121MP25S |                          | 330         | 35 × 30               | 0.20  | 1.42                                               | EKM421VSN331MA30S |
|                          | 150         | 22 × 30               | 0.15  | 0.82                                               | EKM351VSN151MP30S |                          | 390         | 30 × 40               | 0.20  | 1.61                                               | EKM421VSN391MR40S |
|                          | 180         | 22 × 30               | 0.15  | 0.90                                               | EKM351VSN181MP30S |                          | 390         | 35 × 35               | 0.20  | 1.61                                               | EKM421VSN391MA35S |
|                          | 180         | 25.4 × 25             | 0.15  | 0.90                                               | EKM351VSN181MQ25S |                          | 470         | 30 × 45               | 0.20  | 1.86                                               | EKM421VSN471MR45S |
|                          | 220         | 22 × 35               | 0.15  | 1.00                                               | EKM351VSN221MP35S |                          | 470         | 35 × 40               | 0.20  | 1.86                                               | EKM421VSN471MA40S |
|                          | 220         | 25.4 × 30             | 0.15  | 1.00                                               | EKM351VSN221MQ30S |                          | 560         | 35 × 45               | 0.20  | 2.10                                               | EKM421VSN561MA45S |
|                          | 270         | 22 × 40               | 0.15  | 1.10                                               | EKM351VSN271MP40S |                          | 680         | 35 × 50               | 0.20  | 2.20                                               | EKM421VSN681MA50S |
|                          | 270         | 25.4 × 30             | 0.15  | 1.10                                               | EKM351VSN271MQ30S |                          | 68          | 22 × 25               | 0.20  | 0.50                                               | EKM451VSN680MP25S |
|                          | 270         | 30 × 25               | 0.15  | 1.10                                               | EKM351VSN271MR25S |                          | 82          | 22 × 30               | 0.20  | 0.56                                               | EKM451VSN820MP30S |
|                          | 330         | 22 × 45               | 0.15  | 1.20                                               | EKM351VSN331MP45S |                          | 100         | 22 × 30               | 0.20  | 0.64                                               | EKM451VSN101MP30S |
|                          | 330         | 25.4 × 40             | 0.15  | 1.20                                               | EKM351VSN331MQ40S |                          | 100         | 25.4 × 25             | 0.20  | 0.64                                               | EKM451VSN101MQ25S |
|                          | 330         | 30 × 30               | 0.15  | 1.20                                               | EKM351VSN331MR30S |                          | 120         | 22 × 35               | 0.20  | 0.72                                               | EKM451VSN121MP35S |
|                          | 390         | 25.4 × 45             | 0.15  | 1.30                                               | EKM351VSN391MQ45S |                          | 120         | 25.4 × 30             | 0.20  | 0.72                                               | EKM451VSN121MQ30S |
|                          | 390         | 30 × 35               | 0.15  | 1.30                                               | EKM351VSN391MR35S |                          | 150         | 22 × 40               | 0.20  | 0.79                                               | EKM451VSN151MP40S |
|                          | 470         | 25.4 × 50             | 0.15  | 1.40                                               | EKM351VSN471MQ50S |                          | 150         | 25.4 × 30             | 0.20  | 0.79                                               | EKM451VSN151MQ30S |
|                          | 470         | 30 × 35               | 0.15  | 1.40                                               | EKM351VSN471MR35S |                          | 150         | 30 × 25               | 0.20  | 0.79                                               | EKM451VSN151MR25S |
|                          | 470         | 35 × 30               | 0.15  | 1.40                                               | EKM351VSN471MA30S |                          | 180         | 22 × 45               | 0.20  | 0.87                                               | EKM451VSN181MP45S |
|                          | 560         | 30 × 45               | 0.15  | 1.50                                               | EKM351VSN561MR45S |                          | 180         | 25.4 × 40             | 0.20  | 0.87                                               | EKM451VSN181MQ40S |
|                          | 560         | 35 × 35               | 0.15  | 1.50                                               | EKM351VSN561MA35S |                          | 180         | 30 × 30               | 0.20  | 0.87                                               | EKM451VSN181MR30S |
|                          | 680         | 30 × 50               | 0.15  | 1.70                                               | EKM351VSN681MR50S |                          | 220         | 25.4 × 45             | 0.20  | 1.00                                               | EKM451VSN221MQ45S |
|                          | 680         | 35 × 40               | 0.15  | 1.70                                               | EKM351VSN681MA40S |                          | 220         | 30 × 30               | 0.20  | 1.00                                               | EKM451VSN221MR30S |
|                          | 820         | 35 × 45               | 0.15  | 1.90                                               | EKM351VSN821MA45S |                          | 220         | 35 × 25               | 0.20  | 1.00                                               | EKM451VSN221MA25S |
| 400                      | 100         | 22 × 25               | 0.15  | 0.70                                               | EKM401VSN101MP25S |                          | 270         | 25.4 × 50             | 0.20  | 1.19                                               | EKM451VSN271MQ50S |
|                          | 120         | 22 × 30               | 0.15  | 0.75                                               | EKM401VSN121MP30S |                          | 270         | 30 × 40               | 0.20  | 1.19                                               | EKM451VSN271MR40S |
|                          | 150         | 22 × 30               | 0.15  | 0.88                                               | EKM401VSN151MP30S |                          | 270         | 35 × 30               | 0.20  | 1.19                                               | EKM451VSN271MA30S |
|                          | 150         | 25.4 × 25             | 0.15  | 0.88                                               | EKM401VSN151MQ25S |                          | 330         | 30 × 45               | 0.20  | 1.38                                               | EKM451VSN331MQ45S |
|                          | 180         | 22 × 35               | 0.15  | 0.95                                               | EKM401VSN181MP35S |                          | 330         | 35 × 35               | 0.20  | 1.38                                               | EKM451VSN331MA35S |
|                          | 180         | 25.4 × 30             | 0.15  | 0.95                                               | EKM401VSN181MQ30S |                          | 390         | 30 × 50               | 0.20  | 1.55                                               | EKM451VSN391MR50S |
|                          | 220         | 22 × 45               | 0.15  | 1.10                                               | EKM401VSN221MP45S |                          | 390         | 35 × 40               | 0.20  | 1.55                                               | EKM451VSN391MA40S |
|                          | 220         | 25.4 × 35             | 0.15  | 1.10                                               | EKM401VSN221MQ35S |                          | 470         | 35 × 45               | 0.20  | 1.74                                               | EKM451VSN471MA45S |
|                          | 220         | 30 × 25               | 0.15  | 1.10                                               | EKM401VSN221MR25S |                          | 560         | 35 × 50               | 0.20  | 1.90                                               | EKM451VSN561MA50S |
|                          | 270         | 22 × 50               | 0.15  | 1.22                                               | EKM401VSN271MP50S |                          |             |                       |       |                                                    |                   |



## KMQ Series

### ◆ RATED RIPPLE CURRENT MULTIPLIERS

#### ● Frequency Multipliers

| Frequency(Hz)             | 50   | 120  | 300  | 1k   | 10k  | 50k  |
|---------------------------|------|------|------|------|------|------|
| 35, 50V <sub>dc</sub>     | 0.95 | 1.00 | 1.03 | 1.05 | 1.08 | 1.08 |
| 160 to 250V <sub>dc</sub> | 0.81 | 1.00 | 1.17 | 1.32 | 1.45 | 1.50 |
| 315 to 450V <sub>dc</sub> | 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.