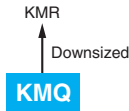


# KMQ Series

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



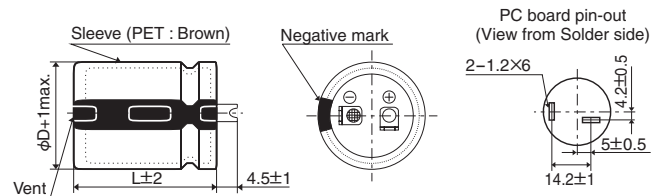
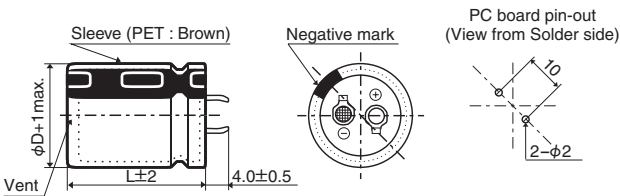
## SPECIFICATIONS

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

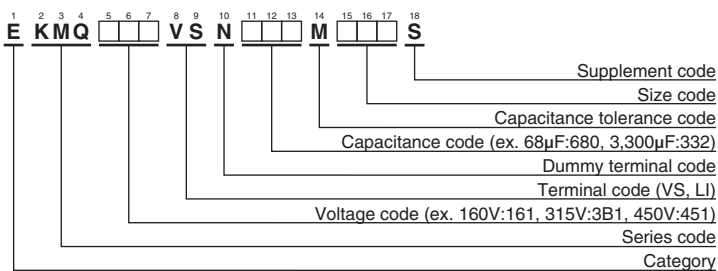
● Terminal Code : VS (φ22 to φ35) : Standard

● Terminal Code : LI (φ35)



The standard design has no plastic disc.

## PART NUMBERING SYSTEM



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

◆ 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 |                          | 180         | 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 |                          |             | 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                                               | EKMQ181VSN102MR25S |                    |
|                          | 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                                               | EKMQ181VSN102MR30S |                    |
|                          | 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 |                                                    |                    |                    |
| 50                       | 2,700       | 22 × 25               | 0.25  | 1.65                                               | EKMQ500VSN272MP25S | 1,500                    | 35 × 30     | 0.15                  | 2.50               | EKMQ181VSN152MA30S                                 |                    |                    |
|                          | 3,300       | 22 × 30               | 0.25  | 1.92                                               | EKMQ500VSN332MP30S | 1,800                    | 30 × 45     | 0.15                  | 2.70               | EKMQ181VSN102MR45S                                 |                    |                    |
|                          | 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 | 200                      | 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 (V <sub>dc</sub> ) | Cap (μF) | Case size φD×L(mm) | tan δ | Rated ripple current (Arms/105°C, 120Hz) | Part No.           | WV (V <sub>dc</sub> ) | Cap (μF)  | Case size φD×L(mm) | tan δ              | Rated ripple current (Arms/105°C, 120Hz) | Part No.           |
|-----------------------|----------|--------------------|-------|------------------------------------------|--------------------|-----------------------|-----------|--------------------|--------------------|------------------------------------------|--------------------|
| 250                   | 680      | 35 × 25            | 0.15  | 1.70                                     | EKMQ251VSN681MA25S | 400                   | 270       | 25.4 × 40          | 0.15               | 1.22                                     | EKMQ401VSN271MQ40S |
|                       | 820      | 25.4 × 45          | 0.15  | 2.00                                     | EKMQ251VSN821MQ45S |                       | 270       | 30 × 30            | 0.15               | 1.22                                     | EKMQ401VSN271MR30S |
|                       | 820      | 30 × 35            | 0.15  | 2.00                                     | EKMQ251VSN821MR35S |                       | 270       | 35 × 25            | 0.15               | 1.22                                     | EKMQ401VSN271MA25S |
|                       | 820      | 35 × 30            | 0.15  | 2.00                                     | EKMQ251VSN821MA30S |                       | 330       | 25.4 × 45          | 0.15               | 1.44                                     | EKMQ401VSN331MQ45S |
|                       | 1,000    | 30 × 40            | 0.15  | 2.20                                     | EKMQ251VSN102MR40S |                       | 330       | 30 × 35            | 0.15               | 1.44                                     | EKMQ401VSN331MR35S |
|                       | 1,000    | 35 × 30            | 0.15  | 2.20                                     | EKMQ251VSN102MA30S |                       | 330       | 35 × 30            | 0.15               | 1.44                                     | EKMQ401VSN331MA30S |
|                       | 1,200    | 30 × 45            | 0.15  | 2.30                                     | EKMQ251VSN122MR45S |                       | 390       | 25.4 × 50          | 0.15               | 1.55                                     | EKMQ401VSN391MQ50S |
|                       | 1,200    | 35 × 35            | 0.15  | 2.30                                     | EKMQ251VSN122MA35S |                       | 390       | 30 × 40            | 0.15               | 1.55                                     | EKMQ401VSN391MR40S |
|                       | 1,500    | 35 × 45            | 0.15  | 2.50                                     | EKMQ251VSN152MA45S |                       | 390       | 35 × 30            | 0.15               | 1.55                                     | EKMQ401VSN391MA30S |
|                       | 1,800    | 35 × 50            | 0.15  | 2.70                                     | EKMQ251VSN182MA50S |                       | 470       | 30 × 45            | 0.15               | 1.68                                     | EKMQ401VSN471MR45S |
| 315                   | 150      | 22 × 25            | 0.15  | 0.82                                     | EKMQ3B1VSN151MP25S | 470                   | 35 × 35   | 0.15               | 1.68               | EKMQ401VSN471MA35S                       |                    |
|                       | 180      | 22 × 30            | 0.15  | 0.90                                     | EKMQ3B1VSN181MP30S | 560                   | 30 × 50   | 0.15               | 1.90               | EKMQ401VSN561MR50S                       |                    |
|                       | 220      | 22 × 30            | 0.15  | 1.00                                     | EKMQ3B1VSN221MP30S | 560                   | 35 × 40   | 0.15               | 1.90               | EKMQ401VSN561MA40S                       |                    |
|                       | 220      | 25.4 × 25          | 0.15  | 1.00                                     | EKMQ3B1VSN221MQ25S | 680                   | 35 × 45   | 0.15               | 2.12               | EKMQ401VSN681MA45S                       |                    |
|                       | 270      | 22 × 35            | 0.15  | 1.10                                     | EKMQ3B1VSN271MP35S | 82                    | 22 × 25   | 0.20               | 0.64               | EKMQ421VSN820MP25S                       |                    |
|                       | 270      | 25.4 × 30          | 0.15  | 1.10                                     | EKMQ3B1VSN271MQ30S | 100                   | 22 × 25   | 0.20               | 0.66               | EKMQ421VSN101MP25S                       |                    |
|                       | 330      | 22 × 45            | 0.15  | 1.20                                     | EKMQ3B1VSN331MP45S | 100                   | 25.4 × 25 | 0.20               | 0.66               | EKMQ421VSN101MQ25S                       |                    |
|                       | 330      | 25.4 × 35          | 0.15  | 1.20                                     | EKMQ3B1VSN331MQ35S | 120                   | 22 × 30   | 0.20               | 0.81               | EKMQ421VSN121MP30S                       |                    |
|                       | 330      | 30 × 25            | 0.15  | 1.20                                     | EKMQ3B1VSN331MR25S | 120                   | 25.4 × 25 | 0.20               | 0.81               | EKMQ421VSN121MQ25S                       |                    |
|                       | 390      | 22 × 45            | 0.15  | 1.30                                     | EKMQ3B1VSN391MP45S | 150                   | 22 × 35   | 0.20               | 0.84               | EKMQ421VSN151MP35S                       |                    |
|                       | 390      | 25.4 × 40          | 0.15  | 1.30                                     | EKMQ3B1VSN391MQ40S | 150                   | 25.4 × 30 | 0.20               | 0.84               | EKMQ421VSN151MQ30S                       |                    |
|                       | 390      | 30 × 30            | 0.15  | 1.30                                     | EKMQ3B1VSN391MR30S | 150                   | 30 × 25   | 0.20               | 0.84               | EKMQ421VSN151MR25S                       |                    |
|                       | 390      | 35 × 25            | 0.15  | 1.30                                     | EKMQ3B1VSN391MA25S | 180                   | 22 × 40   | 0.20               | 0.91               | EKMQ421VSN181MP40S                       |                    |
|                       | 470      | 25.4 × 45          | 0.15  | 1.40                                     | EKMQ3B1VSN471MQ45S | 180                   | 25.4 × 30 | 0.20               | 0.91               | EKMQ421VSN181MQ30S                       |                    |
|                       | 470      | 30 × 35            | 0.15  | 1.40                                     | EKMQ3B1VSN471MR35S | 180                   | 30 × 25   | 0.20               | 0.91               | EKMQ421VSN181MR25S                       |                    |
|                       | 470      | 35 × 25            | 0.15  | 1.40                                     | EKMQ3B1VSN471MA25S | 220                   | 22 × 45   | 0.20               | 1.05               | EKMQ421VSN221MP45S                       |                    |
|                       | 560      | 25.4 × 50          | 0.15  | 1.50                                     | EKMQ3B1VSN561MQ50S | 220                   | 25.4 × 35 | 0.20               | 1.05               | EKMQ421VSN221MQ35S                       |                    |
|                       | 560      | 30 × 40            | 0.15  | 1.50                                     | EKMQ3B1VSN561MR40S | 220                   | 30 × 30   | 0.20               | 1.05               | EKMQ421VSN221MR30S                       |                    |
|                       | 560      | 35 × 30            | 0.15  | 1.50                                     | EKMQ3B1VSN561MA30S | 220                   | 35 × 25   | 0.20               | 1.05               | EKMQ421VSN221MA25S                       |                    |
|                       | 680      | 30 × 45            | 0.15  | 1.70                                     | EKMQ3B1VSN681MR45S | 270                   | 25.4 × 40 | 0.20               | 1.25               | EKMQ421VSN271MQ40S                       |                    |
| 680                   | 35 × 35  | 0.15               | 1.70  | EKMQ3B1VSN681MA35S                       | 270                | 30 × 30               | 0.20      | 1.25               | EKMQ421VSN271MR30S |                                          |                    |
| 820                   | 30 × 50  | 0.15               | 2.00  | EKMQ3B1VSN821MR50S                       | 270                | 35 × 25               | 0.20      | 1.25               | EKMQ421VSN271MA25S |                                          |                    |
| 820                   | 35 × 40  | 0.15               | 2.00  | EKMQ3B1VSN821MA40S                       | 330                | 25.4 × 50             | 0.20      | 1.42               | EKMQ421VSN331MQ50S |                                          |                    |
| 1,000                 | 35 × 45  | 0.15               | 2.30  | EKMQ3B1VSN102MA45S                       | 330                | 30 × 35               | 0.20      | 1.42               | EKMQ421VSN331MR35S |                                          |                    |
| 350                   | 120      | 22 × 25            | 0.15  | 0.75                                     | EKMQ351VSN121MP25S | 330                   | 35 × 30   | 0.20               | 1.42               | EKMQ421VSN331MA30S                       |                    |
|                       | 150      | 22 × 30            | 0.15  | 0.82                                     | EKMQ351VSN151MP30S | 390                   | 30 × 40   | 0.20               | 1.61               | EKMQ421VSN391MR40S                       |                    |
|                       | 180      | 22 × 30            | 0.15  | 0.90                                     | EKMQ351VSN181MP30S | 390                   | 35 × 35   | 0.20               | 1.61               | EKMQ421VSN391MA35S                       |                    |
|                       | 180      | 25.4 × 25          | 0.15  | 0.90                                     | EKMQ351VSN181MQ25S | 470                   | 30 × 45   | 0.20               | 1.86               | EKMQ421VSN471MR45S                       |                    |
|                       | 220      | 22 × 35            | 0.15  | 1.00                                     | EKMQ351VSN221MP35S | 470                   | 35 × 40   | 0.20               | 1.86               | EKMQ421VSN471MA40S                       |                    |
|                       | 220      | 25.4 × 30          | 0.15  | 1.00                                     | EKMQ351VSN221MQ30S | 560                   | 35 × 45   | 0.20               | 2.10               | EKMQ421VSN561MA45S                       |                    |
|                       | 270      | 22 × 40            | 0.15  | 1.10                                     | EKMQ351VSN271MP40S | 680                   | 35 × 50   | 0.20               | 2.20               | EKMQ421VSN681MA50S                       |                    |
|                       | 270      | 25.4 × 30          | 0.15  | 1.10                                     | EKMQ351VSN271MQ30S | 68                    | 22 × 25   | 0.20               | 0.50               | EKMQ451VSN680MP25S                       |                    |
|                       | 270      | 30 × 25            | 0.15  | 1.10                                     | EKMQ351VSN271MR25S | 82                    | 22 × 30   | 0.20               | 0.56               | EKMQ451VSN820MP30S                       |                    |
|                       | 330      | 22 × 45            | 0.15  | 1.20                                     | EKMQ351VSN331MP45S | 100                   | 22 × 30   | 0.20               | 0.64               | EKMQ451VSN101MP30S                       |                    |
|                       | 330      | 25.4 × 40          | 0.15  | 1.20                                     | EKMQ351VSN331MQ40S | 100                   | 25.4 × 25 | 0.20               | 0.64               | EKMQ451VSN101MQ25S                       |                    |
|                       | 330      | 30 × 30            | 0.15  | 1.20                                     | EKMQ351VSN331MR30S | 120                   | 22 × 35   | 0.20               | 0.72               | EKMQ451VSN121MP35S                       |                    |
|                       | 390      | 25.4 × 45          | 0.15  | 1.30                                     | EKMQ351VSN391MQ45S | 120                   | 25.4 × 30 | 0.20               | 0.72               | EKMQ451VSN121MQ30S                       |                    |
|                       | 390      | 30 × 35            | 0.15  | 1.30                                     | EKMQ351VSN391MR35S | 150                   | 22 × 40   | 0.20               | 0.79               | EKMQ451VSN151MP40S                       |                    |
|                       | 470      | 25.4 × 50          | 0.15  | 1.40                                     | EKMQ351VSN471MQ50S | 150                   | 25.4 × 30 | 0.20               | 0.79               | EKMQ451VSN151MQ30S                       |                    |
|                       | 470      | 30 × 35            | 0.15  | 1.40                                     | EKMQ351VSN471MR35S | 150                   | 30 × 25   | 0.20               | 0.79               | EKMQ451VSN151MR25S                       |                    |
|                       | 470      | 35 × 30            | 0.15  | 1.40                                     | EKMQ351VSN471MA30S | 180                   | 22 × 45   | 0.20               | 0.87               | EKMQ451VSN181MP45S                       |                    |
|                       | 560      | 30 × 45            | 0.15  | 1.50                                     | EKMQ351VSN561MR45S | 180                   | 25.4 × 40 | 0.20               | 0.87               | EKMQ451VSN181MQ40S                       |                    |
|                       | 560      | 35 × 35            | 0.15  | 1.50                                     | EKMQ351VSN561MA35S | 180                   | 30 × 30   | 0.20               | 0.87               | EKMQ451VSN181MR30S                       |                    |
|                       | 680      | 30 × 50            | 0.15  | 1.70                                     | EKMQ351VSN681MR50S | 220                   | 25.4 × 45 | 0.20               | 1.00               | EKMQ451VSN221MQ45S                       |                    |
| 680                   | 35 × 40  | 0.15               | 1.70  | EKMQ351VSN681MA40S                       | 220                | 30 × 30               | 0.20      | 1.00               | EKMQ451VSN221MR30S |                                          |                    |
| 820                   | 35 × 45  | 0.15               | 1.90  | EKMQ351VSN821MA45S                       | 220                | 35 × 25               | 0.20      | 1.00               | EKMQ451VSN221MA25S |                                          |                    |
| 400                   | 100      | 22 × 25            | 0.15  | 0.70                                     | EKMQ401VSN101MP25S | 270                   | 25.4 × 50 | 0.20               | 1.19               | EKMQ451VSN271MQ50S                       |                    |
|                       | 120      | 22 × 30            | 0.15  | 0.75                                     | EKMQ401VSN121MP30S | 270                   | 30 × 40   | 0.20               | 1.19               | EKMQ451VSN271MR40S                       |                    |
|                       | 150      | 22 × 30            | 0.15  | 0.88                                     | EKMQ401VSN151MP30S | 270                   | 35 × 30   | 0.20               | 1.19               | EKMQ451VSN271MA30S                       |                    |
|                       | 150      | 25.4 × 25          | 0.15  | 0.88                                     | EKMQ401VSN151MQ25S | 330                   | 30 × 45   | 0.20               | 1.38               | EKMQ451VSN331MQ45S                       |                    |
|                       | 180      | 22 × 35            | 0.15  | 0.95                                     | EKMQ401VSN181MP35S | 330                   | 35 × 35   | 0.20               | 1.38               | EKMQ451VSN331MA35S                       |                    |
|                       | 180      | 25.4 × 30          | 0.15  | 0.95                                     | EKMQ401VSN181MQ30S | 390                   | 30 × 50   | 0.20               | 1.55               | EKMQ451VSN391MR50S                       |                    |
|                       | 220      | 22 × 45            | 0.15  | 1.10                                     | EKMQ401VSN221MP45S | 390                   | 35 × 40   | 0.20               | 1.55               | EKMQ451VSN391MA40S                       |                    |
|                       | 220      | 25.4 × 35          | 0.15  | 1.10                                     | EKMQ401VSN221MQ35S | 470                   | 35 × 45   | 0.20               | 1.74               | EKMQ451VSN471MA45S                       |                    |
|                       | 220      | 30 × 25            | 0.15  | 1.10                                     | EKMQ401VSN221MR25S | 560                   | 35 × 50   | 0.20               | 1.90               | EKMQ451VSN561MA50S                       |                    |
|                       | 270      | 22 × 50            | 0.15  | 1.22                                     | EKMQ401VSN271MP50S |                       |           |                    |                    |                                          |                    |



## 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.