

# KMM Series

- Longer life from KMQ series
- Endurance with ripple current : 2,000 to 3,000 hours at 105°C
- Non solvent resistant type
- RoHS Compliant



## ◆ SPECIFICATIONS

| Items  | Characteristics   |                                       |
|--|---|---------------------------------------|
| Category   | Temperature Range   |                                       |
| Temperature Range                                      | -25 to +105°C   |                                       |
| Rated Voltage Range                                    | 160 to 450V <sub>dc</sub>   |                                       |
| Capacitance Tolerance                                  | ±20% (M) (at 20°C, 120Hz)   |                                       |
| Leakage Current  | I ≤ 3√CV<br>Where, I : Max. leakage current (µA), C : Nominal capacitance (µF), V : Rated voltage (V) (at 20°C after 5 minutes)   |                                       |
| Dissipation Factor (tanδ)                              | Rated voltage (V <sub>dc</sub> )  | 160 to 400V 420 & 450V                |
|  | tanδ (Max.)   | 0.15 0.20 (at 20°C, 120Hz)            |
| Low Temperature Characteristics (Max. Impedance Ratio) | Rated voltage (V <sub>dc</sub> )  | 160 to 400V 420 & 450V                |
|  | Z(-25°C)/Z(+20°C)   | 4 8 (at 120Hz)                        |
| Endurance  | The following specifications shall be satisfied when the capacitors are restored to 20°C after subjected to DC voltage with the rated ripple current is applied (the peak voltage shall not exceed the rated voltage) for 3,000 hours (2,000 hours for φ20×20L products) at 105°C.      |                                       |
|  | Capacitance change  | ≤ ±20% of the initial value           |
|  | D.F. (tanδ)   | ≤ 200% of the initial specified value |
|  | Leakage current   | ≤ The initial specified value         |
| Shelf Life   | The following specifications shall be satisfied when the capacitors are restored to 20°C after exposing them for 1,000 hours at 105°C without voltage applied. Before the measurement, the capacitor shall be preconditioned by applying voltage according to Item 4.1 of JIS C 5101-4. |                                       |
|  | Capacitance change  | ≤ ±15% of the initial value           |
|  | D.F. (tanδ)   | ≤ 150% of the initial specified value |
|  | Leakage current   | ≤ The initial specified value         |

## ◆ DIMENSIONS [mm]

● Terminal Code : VS (φ20 to φ35) : Standard



● Terminal Code : LI (φ35)



\* φD=35mm : 3.5±0.5mm

The standard design has no plastic disc.

## ◆ PART NUMBERING SYSTEM



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

KMM Series

◆ STANDARD RATINGS

| WV<br>(Vdc) | Cap<br>(µF) | Case size<br>φD×L(mm) | tanδ  | Rated ripple<br>current<br>(Arms/<br>105°C,120Hz) | Part No.           | WV<br>(Vdc) | Cap<br>(µF)        | Case size<br>φD×L(mm) | tanδ    | Rated ripple<br>current<br>(Arms/<br>105°C,120Hz) | Part No.           |                    |
|-------------|-------------|-----------------------|-------|---|--------------------|-------------|--------------------|-----------------------|---------|---|--------------------|--------------------|
|             |             |                       |       |   |                    |             |                    |                       |         |   |                    |                    |
| 160         | 180         | 20×20                 | 0.15  | 0.68  | EKMM161VSN181MN20S | 180         | 560                | 20×45                 | 0.15    | 1.55  | EKMM181VSN561MN45S |                    |
|             | 220         | 20×25                 | 0.15  | 0.85  | EKMM161VSN221MN25S |             | 560                | 22×40                 | 0.15    | 1.67  | EKMM181VSN561MP40S |                    |
|             | 220         | 22×20                 | 0.15  | 0.81  | EKMM161VSN221MP20S |             | 560                | 25.4×30               | 0.15    | 1.67  | EKMM181VSN561MQ30S |                    |
|             | 270         | 20×25                 | 0.15  | 1.10  | EKMM161VSN271MN25S |             | 560                | 30×25                 | 0.15    | 1.67  | EKMM181VSN561MR25S |                    |
|             | 270         | 25.4×20               | 0.15  | 0.98  | EKMM161VSN271MQ20S |             | 560                | 35×20                 | 0.15    | 1.43  | EKMM181VSN561MA20S |                    |
|             | 330         | 20×30                 | 0.15  | 1.20  | EKMM161VSN331MN30S |             | 680                | 20×50                 | 0.15    | 1.75  | EKMM181VSN681MN50S |                    |
|             | 330         | 22×25                 | 0.15  | 1.20  | EKMM161VSN331MP25S |             | 680                | 22×45                 | 0.15    | 1.78  | EKMM181VSN681MP45S |                    |
|             | 330         | 25.4×20               | 0.15  | 1.02  | EKMM161VSN331MQ20S |             | 680                | 25.4×35               | 0.15    | 1.78  | EKMM181VSN681MQ35S |                    |
|             | 390         | 20×30                 | 0.15  | 1.30  | EKMM161VSN391MN30S |             | 680                | 30×30                 | 0.15    | 1.78  | EKMM181VSN681MR30S |                    |
|             | 390         | 22×25                 | 0.15  | 1.30  | EKMM161VSN391MP25S |             | 680                | 35×25                 | 0.15    | 1.83  | EKMM181VSN681MA25S |                    |
|             | 390         | 25.4×25               | 0.15  | 1.26  | EKMM161VSN391MQ25S |             | 820                | 22×50                 | 0.15    | 2.04  | EKMM181VSN821MP50S |                    |
|             | 390         | 30×20                 | 0.15  | 1.25  | EKMM161VSN391MR20S |             | 820                | 25.4×40               | 0.15    | 2.04  | EKMM181VSN821MQ40S |                    |
|             | 470         | 20×35                 | 0.15  | 1.34  | EKMM161VSN471MN35S |             | 820                | 30×30                 | 0.15    | 2.04  | EKMM181VSN821MR30S |                    |
|             | 470         | 22×30                 | 0.15  | 1.55  | EKMM161VSN471MP30S |             | 820                | 35×25                 | 0.15    | 2.04  | EKMM181VSN821MA25S |                    |
|             | 470         | 25.4×25               | 0.15  | 1.55  | EKMM161VSN471MQ25S |             | 1,000              | 25.4×45               | 0.15    | 2.30  | EKMM181VSN102MQ45S |                    |
|             | 470         | 30×20                 | 0.15  | 1.30  | EKMM161VSN471MR20S |             | 1,000              | 30×35                 | 0.15    | 2.30  | EKMM181VSN102MR35S |                    |
|             | 560         | 20×40                 | 0.15  | 1.50  | EKMM161VSN561MN40S |             | 1,000              | 35×30                 | 0.15    | 2.30  | EKMM181VSN102MA30S |                    |
|             | 560         | 22×35                 | 0.15  | 1.67  | EKMM161VSN561MP35S |             | 1,200              | 25.4×50               | 0.15    | 2.55  | EKMM181VSN122MQ50S |                    |
|             | 560         | 25.4×30               | 0.15  | 1.67  | EKMM161VSN561MQ30S |             | 1,200              | 30×40                 | 0.15    | 2.55  | EKMM181VSN122MR40S |                    |
|             | 560         | 30×25                 | 0.15  | 1.67  | EKMM161VSN561MR25S |             | 1,200              | 35×30                 | 0.15    | 2.55  | EKMM181VSN122MA30S |                    |
|             | 560         | 35×20                 | 0.15  | 1.46  | EKMM161VSN561MA20S |             | 1,500              | 30×45                 | 0.15    | 2.90  | EKMM181VSN152MR45S |                    |
|             | 680         | 20×45                 | 0.15  | 1.70  | EKMM161VSN681MN45S |             | 1,500              | 35×35                 | 0.15    | 2.90  | EKMM181VSN152MA35S |                    |
|             | 680         | 22×40                 | 0.15  | 1.82  | EKMM161VSN681MP40S |             | 1,800              | 30×60                 | 0.15    | 3.49  | EKMM181VSN182MR60S |                    |
|             | 680         | 25.4×30               | 0.15  | 1.82  | EKMM161VSN681MQ30S |             | 1,800              | 35×40                 | 0.15    | 3.30  | EKMM181VSN182MA40S |                    |
|             | 680         | 30×25                 | 0.15  | 1.82  | EKMM161VSN681MR25S |             | 2,200              | 35×50                 | 0.15    | 3.65  | EKMM181VSN222MA50S |                    |
|             | 680         | 35×20                 | 0.15  | 1.51  | EKMM161VSN681MA20S |             | 2,700              | 35×60                 | 0.15    | 4.19  | EKMM181VSN272MA60S |                    |
|             | 820         | 22×45                 | 0.15  | 2.04  | EKMM161VSN821MP45S |             | 120                | 20×20                 | 0.15    | 0.56  | EKMM201VSN121MN20S |                    |
|             | 820         | 25.4×35               | 0.15  | 2.04  | EKMM161VSN821MQ35S |             | 150                | 20×25                 | 0.15    | 0.71  | EKMM201VSN151MN25S |                    |
|             | 820         | 30×30                 | 0.15  | 2.04  | EKMM161VSN821MR30S |             | 150                | 22×20                 | 0.15    | 0.73  | EKMM201VSN151MP20S |                    |
|             | 820         | 35×25                 | 0.15  | 2.04  | EKMM161VSN821MA25S |             | 180                | 20×25                 | 0.15    | 0.77  | EKMM201VSN181MN25S |                    |
|             | 1,000       | 22×50                 | 0.15  | 2.25  | EKMM161VSN102MP50S |             | 180                | 22×20                 | 0.15    | 0.80  | EKMM201VSN181MP20S |                    |
|             | 1,000       | 25.4×40               | 0.15  | 2.25  | EKMM161VSN102MQ40S |             | 220                | 20×25                 | 0.15    | 1.00  | EKMM201VSN221MN25S |                    |
|             | 1,000       | 30×30                 | 0.15  | 2.25  | EKMM161VSN102MR30S |             | 220                | 25.4×20               | 0.15    | 0.85  | EKMM201VSN221MQ20S |                    |
|             | 1,000       | 35×25                 | 0.15  | 2.25  | EKMM161VSN102MA25S |             | 270                | 20×30                 | 0.15    | 1.10  | EKMM201VSN271MN30S |                    |
|             | 1,200       | 25.4×45               | 0.15  | 2.49  | EKMM161VSN122MP45S |             | 270                | 22×25                 | 0.15    | 1.10  | EKMM201VSN271MP25S |                    |
|             | 1,200       | 30×35                 | 0.15  | 2.49  | EKMM161VSN122MR35S |             | 270                | 30×20                 | 0.15    | 1.05  | EKMM201VSN271MR20S |                    |
|             | 1,200       | 35×30                 | 0.15  | 2.49  | EKMM161VSN122MA30S |             | 330                | 20×35                 | 0.15    | 1.20  | EKMM201VSN331MN35S |                    |
|             | 1,500       | 25.4×60               | 0.15  | 2.97  | EKMM161VSN152MQ60S |             | 330                | 22×30                 | 0.15    | 1.25  | EKMM201VSN331MP30S |                    |
|             | 1,500       | 30×40                 | 0.15  | 2.84  | EKMM161VSN152MR40S |             | 330                | 25.4×25               | 0.15    | 1.25  | EKMM201VSN331MQ25S |                    |
|             | 1,500       | 35×30                 | 0.15  | 2.84  | EKMM161VSN152MA30S |             | 330                | 30×20                 | 0.15    | 1.10  | EKMM201VSN331MR20S |                    |
|             | 1,800       | 30×45                 | 0.15  | 3.32  | EKMM161VSN182MR45S |             | 390                | 20×40                 | 0.15    | 1.31  | EKMM201VSN391MN40S |                    |
|             | 1,800       | 35×35                 | 0.15  | 3.00  | EKMM161VSN182MA35S |             | 390                | 22×30                 | 0.15    | 1.35  | EKMM201VSN391MP30S |                    |
|             | 2,200       | 30×60                 | 0.15  | 3.86  | EKMM161VSN222MR60S |             | 390                | 25.4×25               | 0.15    | 1.35  | EKMM201VSN391MQ25S |                    |
|             | 2,200       | 35×45                 | 0.15  | 3.50  | EKMM161VSN222MA45S |             | 390                | 35×20                 | 0.15    | 1.30  | EKMM201VSN391MA20S |                    |
|             | 2,700       | 35×50                 | 0.15  | 4.00  | EKMM161VSN272MA50S |             | 470                | 20×45                 | 0.15    | 1.45  | EKMM201VSN471MN45S |                    |
|             | 3,300       | 35×60                 | 0.15  | 4.63  | EKMM161VSN332MA60S |             | 470                | 22×35                 | 0.15    | 1.50  | EKMM201VSN471MP35S |                    |
|             | 180         | 150                   | 20×20 | 0.15  | 0.62               |             | EKMM181VSN151MN20S | 470                   | 25.4×30 | 0.15  | 1.50               | EKMM201VSN471MQ30S |
|             |             | 180                   | 20×25 | 0.15  | 0.77               |             | EKMM181VSN181MN25S | 470                   | 30×25   | 0.15  | 1.50               | EKMM201VSN471MR25S |
| 180         |             | 22×20                 | 0.15  | 0.80  | EKMM181VSN181MP20S | 470         | 35×20              | 0.15                  | 1.41    | EKMM201VSN471MA20S                                |                    |                    |
| 220         |             | 20×25                 | 0.15  | 1.00  | EKMM181VSN221MN25S | 560         | 20×50              | 0.15                  | 1.58    | EKMM201VSN561MN50S                                |                    |                    |
| 220         |             | 25.4×20               | 0.15  | 0.90  | EKMM181VSN221MQ20S | 560         | 22×40              | 0.15                  | 1.67    | EKMM201VSN561MP40S                                |                    |                    |
| 270         |             | 20×30                 | 0.15  | 1.10  | EKMM181VSN271MN30S | 560         | 25.4×30            | 0.15                  | 1.67    | EKMM201VSN561MQ30S                                |                    |                    |
| 270         |             | 22×25                 | 0.15  | 1.00  | EKMM181VSN271MP25S | 560         | 30×25              | 0.15                  | 1.67    | EKMM201VSN561MR25S                                |                    |                    |
| 270         |             | 25.4×20               | 0.15  | 0.95  | EKMM181VSN271MQ20S | 680         | 22×45              | 0.15                  | 1.78    | EKMM201VSN681MP45S                                |                    |                    |
| 330         |             | 20×30                 | 0.15  | 1.20  | EKMM181VSN331MN30S | 680         | 25.4×35            | 0.15                  | 1.78    | EKMM201VSN681MQ35S                                |                    |                    |
| 330         |             | 22×25                 | 0.15  | 1.20  | EKMM181VSN331MP25S | 680         | 30×30              | 0.15                  | 1.78    | EKMM201VSN681MR30S                                |                    |                    |
| 330         |             | 25.4×25               | 0.15  | 1.16  | EKMM181VSN331MQ25S | 680         | 35×25              | 0.15                  | 1.78    | EKMM201VSN681MA25S                                |                    |                    |
| 330         |             | 30×20                 | 0.15  | 1.15  | EKMM181VSN331MR20S | 820         | 25.4×45            | 0.15                  | 2.04    | EKMM201VSN821MQ45S                                |                    |                    |
| 390         |             | 20×35                 | 0.15  | 1.30  | EKMM181VSN391MN35S | 820         | 30×30              | 0.15                  | 2.04    | EKMM201VSN821MR30S                                |                    |                    |
| 390         |             | 22×30                 | 0.15  | 1.35  | EKMM181VSN391MP30S | 820         | 35×25              | 0.15                  | 2.04    | EKMM201VSN821MA25S                                |                    |                    |
| 390         |             | 25.4×25               | 0.15  | 1.35  | EKMM181VSN391MQ25S | 1,000       | 25.4×50            | 0.15                  | 2.30    | EKMM201VSN102MQ50S                                |                    |                    |
| 390         |             | 30×20                 | 0.15  | 1.20  | EKMM181VSN391MR20S | 1,000       | 30×35              | 0.15                  | 2.30    | EKMM201VSN102MR35S                                |                    |                    |
| 470         |             | 20×40                 | 0.15  | 1.40  | EKMM181VSN471MN40S | 1,000       | 35×30              | 0.15                  | 2.30    | EKMM201VSN102MA30S                                |                    |                    |
| 470         |             | 22×35                 | 0.15  | 1.50  | EKMM181VSN471MP35S | 1,200       | 25.4×60            | 0.15                  | 2.66    | EKMM201VSN122MQ60S                                |                    |                    |
| 470         |             | 25.4×30               | 0.15  | 1.50  | EKMM181VSN471MQ30S | 1,200       | 30×40              | 0.15                  | 2.65    | EKMM201VSN122MR40S                                |                    |                    |
| 470         |             | 30×25                 | 0.15  | 1.50  | EKMM181VSN471MR25S | 1,200       | 35×35              | 0.15                  | 2.65    | EKMM201VSN122MA35S                                |                    |                    |
| 470         |             | 35×20                 | 0.15  | 1.36  | EKMM181VSN471MA20S | 1,500       | 30×50              | 0.15                  | 3.08    | EKMM201VSN152MR50S                                |                    |                    |

KMM Series

◆ STANDARD RATINGS

| WV (Vdc) | Cap (μF) | Case size φD×L(mm) | tanδ | Rated ripple current (Arms/105°C,120Hz) | Part No.           | WV (Vdc) | Cap (μF) | Case size φD×L(mm) | tanδ    | Rated ripple current (Arms/105°C,120Hz) | Part No.           |                    |
|----------|----------|--------------------|------|---|--------------------|----------|----------|--------------------|---------|---|--------------------|--------------------|
| 200      | 1,500    | 35×40              | 0.15 | 3.08                                    | EKMM201VSN152MA40S | 250      | 330      | 30×25              | 0.15    | 1.30                                    | EKMM251VSN331MR25S |                    |
|          | 1,800    | 30×60              | 0.15 | 3.49                                    | EKMM201VSN182MR60S |          | 330      | 35×20              | 0.15    | 1.16                                    | EKMM251VSN331MA20S |                    |
|          | 1,800    | 35×45              | 0.15 | 3.48                                    | EKMM201VSN182MA45S |          | 390      | 20×50              | 0.15    | 1.45                                    | EKMM251VSN391MN50S |                    |
|          | 2,200    | 35×50              | 0.15 | 3.78                                    | EKMM201VSN222MA50S |          | 390      | 22×40              | 0.15    | 1.49                                    | EKMM251VSN391MP40S |                    |
| 220      | 120      | 20×20              | 0.15 | 0.56                                    | EKMM221VSN121MN20S |          | 390      | 25.4×35            | 0.15    | 1.49                                    | EKMM251VSN391MQ35S |                    |
|          | 150      | 20×25              | 0.15 | 0.73                                    | EKMM221VSN151MN25S |          | 390      | 30×25              | 0.15    | 1.49                                    | EKMM251VSN391MR25S |                    |
|          | 150      | 22×20              | 0.15 | 0.67                                    | EKMM221VSN151MP20S |          | 470      | 22×45              | 0.15    | 1.65                                    | EKMM251VSN471MP45S |                    |
|          | 180      | 20×25              | 0.15 | 0.90                                    | EKMM221VSN181MN25S |          | 470      | 25.4×35            | 0.15    | 1.65                                    | EKMM251VSN471MQ35S |                    |
|          | 180      | 25.4×20            | 0.15 | 0.76                                    | EKMM221VSN181MQ20S |          | 470      | 30×30              | 0.15    | 1.65                                    | EKMM251VSN471MR30S |                    |
|          | 220      | 20×30              | 0.15 | 1.00                                    | EKMM221VSN221MN30S |          | 470      | 35×25              | 0.15    | 1.65                                    | EKMM251VSN471MA25S |                    |
|          | 220      | 22×25              | 0.15 | 1.00                                    | EKMM221VSN221MP25S |          | 560      | 22×50              | 0.15    | 1.67                                    | EKMM251VSN561MP50S |                    |
|          | 220      | 25.4×20            | 0.15 | 0.84                                    | EKMM221VSN221MQ20S |          | 560      | 25.4×40            | 0.15    | 1.80                                    | EKMM251VSN561MQ40S |                    |
|          | 270      | 20×35              | 0.15 | 1.15                                    | EKMM221VSN271MN35S |          | 560      | 30×30              | 0.15    | 1.80                                    | EKMM251VSN561MR30S |                    |
|          | 270      | 22×30              | 0.15 | 1.15                                    | EKMM221VSN271MP30S |          | 560      | 35×25              | 0.15    | 1.80                                    | EKMM251VSN821MA25S |                    |
|          | 270      | 25.4×25            | 0.15 | 1.08                                    | EKMM221VSN271MQ25S |          | 680      | 25.4×50            | 0.15    | 2.00                                    | EKMM251VSN681MQ50S |                    |
|          | 270      | 30×20              | 0.15 | 0.98                                    | EKMM221VSN271MR20S |          | 680      | 30×35              | 0.15    | 2.00                                    | EKMM251VSN681MR35S |                    |
|          | 330      | 20×40              | 0.15 | 1.25                                    | EKMM221VSN331MN40S |          | 680      | 35×30              | 0.15    | 2.00                                    | EKMM251VSN681MA30S |                    |
|          | 330      | 22×35              | 0.15 | 1.25                                    | EKMM221VSN331MP35S |          | 820      | 25.4×60            | 0.15    | 2.20                                    | EKMM251VSN821MQ60S |                    |
|          | 330      | 25.4×25            | 0.15 | 1.25                                    | EKMM221VSN331MQ25S |          | 820      | 30×40              | 0.15    | 2.30                                    | EKMM251VSN821MR40S |                    |
|          | 330      | 35×20              | 0.15 | 1.13                                    | EKMM221VSN331MA20S |          | 820      | 35×35              | 0.15    | 2.30                                    | EKMM251VSN821MA35S |                    |
|          | 390      | 20×45              | 0.15 | 1.40                                    | EKMM221VSN391MN45S |          | 1,000    | 30×50              | 0.15    | 2.47                                    | EKMM251VSN102MR50S |                    |
|          | 390      | 22×35              | 0.15 | 1.40                                    | EKMM221VSN391MP35S |          | 1,000    | 35×40              | 0.15    | 2.47                                    | EKMM251VSN102MA40S |                    |
|          | 390      | 25.4×30            | 0.15 | 1.40                                    | EKMM221VSN391MQ30S |          | 1,200    | 30×60              | 0.15    | 2.85                                    | EKMM251VSN122MR60S |                    |
|          | 390      | 30×25              | 0.15 | 1.36                                    | EKMM221VSN391MR25S |          | 1,200    | 35×45              | 0.15    | 2.60                                    | EKMM251VSN122MA45S |                    |
|          | 390      | 35×20              | 0.15 | 1.23                                    | EKMM221VSN391MA20S |          | 1,500    | 35×50              | 0.15    | 3.00                                    | EKMM251VSN152MA50S |                    |
|          | 470      | 20×50              | 0.15 | 1.51                                    | EKMM221VSN471MN50S |          | 1,800    | 35×60              | 0.15    | 3.42                                    | EKMM251VSN182MA60S |                    |
|          | 470      | 22×40              | 0.15 | 1.51                                    | EKMM221VSN471MP40S |          | 315      | 56                 | 20×20   | 0.15                                    | 0.38               | EKMM3B1VSN560MN20S |
|          | 470      | 25.4×35            | 0.15 | 1.54                                    | EKMM221VSN471MQ35S |          |          | 68                 | 20×25   | 0.15                                    | 0.47               | EKMM3B1VSN680MN25S |
|          | 470      | 30×25              | 0.15 | 1.50                                    | EKMM221VSN471MR25S |          |          | 68                 | 22×20   | 0.15                                    | 0.45               | EKMM3B1VSN680MP20S |
|          | 560      | 22×45              | 0.15 | 1.70                                    | EKMM221VSN561MP45S |          |          | 82                 | 20×25   | 0.15                                    | 0.64               | EKMM3B1VSN820MN25S |
|          | 560      | 25.4×40            | 0.15 | 1.72                                    | EKMM221VSN561MQ40S |          |          | 82                 | 22×20   | 0.15                                    | 0.47               | EKMM3B1VSN820MP20S |
|          | 560      | 30×30              | 0.15 | 1.70                                    | EKMM221VSN561MR30S |          |          | 100                | 20×30   | 0.15                                    | 0.69               | EKMM3B1VSN101MN30S |
|          | 560      | 35×25              | 0.15 | 1.71                                    | EKMM221VSN561MA25S |          |          | 100                | 22×25   | 0.15                                    | 0.61               | EKMM3B1VSN101MP25S |
|          | 680      | 25.4×45            | 0.15 | 1.94                                    | EKMM221VSN681MQ45S |          |          | 100                | 25.4×20 | 0.15                                    | 0.56               | EKMM3B1VSN101MQ20S |
|          | 680      | 30×35              | 0.15 | 1.93                                    | EKMM221VSN681MR35S |          |          | 120                | 20×30   | 0.15                                    | 0.75               | EKMM3B1VSN121MN30S |
|          | 680      | 35×25              | 0.15 | 1.89                                    | EKMM221VSN681MA25S |          |          | 120                | 22×25   | 0.15                                    | 0.75               | EKMM3B1VSN121MP25S |
|          | 820      | 25.4×50            | 0.15 | 2.18                                    | EKMM221VSN821MQ50S |          |          | 120                | 25.4×20 | 0.15                                    | 0.62               | EKMM3B1VSN121MQ20S |
|          | 820      | 30×40              | 0.15 | 2.19                                    | EKMM221VSN821MR40S |          |          | 120                | 30×20   | 0.15                                    | 0.65               | EKMM3B1VSN121MR20S |
|          | 820      | 35×30              | 0.15 | 2.16                                    | EKMM221VSN821MA30S |          |          | 150                | 20×35   | 0.15                                    | 0.82               | EKMM3B1VSN151MN35S |
|          | 1,000    | 25.4×60            | 0.15 | 2.54                                    | EKMM221VSN102MQ60S |          |          | 150                | 22×30   | 0.15                                    | 0.82               | EKMM3B1VSN151MP30S |
|          | 1,000    | 30×45              | 0.15 | 2.50                                    | EKMM221VSN102MR45S |          |          | 150                | 25.4×25 | 0.15                                    | 0.82               | EKMM3B1VSN151MQ25S |
|          | 1,000    | 35×35              | 0.15 | 2.44                                    | EKMM221VSN102MA35S |          |          | 150                | 30×20   | 0.15                                    | 0.70               | EKMM3B1VSN151MR20S |
|          | 1,200    | 30×50              | 0.15 | 2.81                                    | EKMM221VSN122MR50S |          |          | 150                | 35×20   | 0.15                                    | 0.76               | EKMM3B1VSN151MA20S |
|          | 1,200    | 35×40              | 0.15 | 2.79                                    | EKMM221VSN122MA40S |          |          | 180                | 20×40   | 0.15                                    | 0.90               | EKMM3B1VSN181MN40S |
| 1,500    | 30×60    | 0.15               | 3.30 | EKMM221VSN152MR60S                      | 180                | 22×35    |          | 0.15               | 0.92    | EKMM3B1VSN181MP35S                      |                    |                    |
| 1,500    | 35×45    | 0.15               | 3.22 | EKMM221VSN152MA45S                      | 180                | 25.4×25  |          | 0.15               | 0.92    | EKMM3B1VSN181MQ25S                      |                    |                    |
| 1,800    | 35×50    | 0.15               | 3.63 | EKMM221VSN182MA50S                      | 180                | 30×25    |          | 0.15               | 0.90    | EKMM3B1VSN181MR25S                      |                    |                    |
| 2,200    | 35×60    | 0.15               | 4.23 | EKMM221VSN222MA60S                      | 180                | 35×20    |          | 0.15               | 0.85    | EKMM3B1VSN181MA20S                      |                    |                    |
| 250      | 100      | 20×20              | 0.15 | 0.51                                    | EKMM251VSN101MN20S | 220      |          | 20×50              | 0.15    | 1.00                                    | EKMM3B1VSN221MN50S |                    |
|          | 120      | 20×25              | 0.15 | 0.58                                    | EKMM251VSN121MN25S | 220      |          | 22×40              | 0.15    | 1.04                                    | EKMM3B1VSN221MP40S |                    |
|          | 120      | 22×20              | 0.15 | 0.60                                    | EKMM251VSN121MP20S | 220      |          | 25.4×30            | 0.15    | 1.04                                    | EKMM3B1VSN221MQ30S |                    |
|          | 150      | 20×25              | 0.15 | 0.79                                    | EKMM251VSN151MN25S | 220      |          | 30×25              | 0.15    | 1.04                                    | EKMM3B1VSN221MR25S |                    |
|          | 150      | 25.4×20            | 0.15 | 0.74                                    | EKMM251VSN151MQ20S | 220      |          | 35×20              | 0.15    | 0.90                                    | EKMM3B1VSN221MA20S |                    |
|          | 180      | 20×30              | 0.15 | 0.90                                    | EKMM251VSN181MN30S | 270      |          | 22×45              | 0.15    | 1.16                                    | EKMM3B1VSN271MP45S |                    |
|          | 180      | 22×25              | 0.15 | 0.78                                    | EKMM251VSN181MP25S | 270      |          | 25.4×35            | 0.15    | 1.16                                    | EKMM3B1VSN271MQ35S |                    |
|          | 180      | 25.4×20            | 0.15 | 0.75                                    | EKMM251VSN181MQ20S | 270      |          | 30×25              | 0.15    | 1.16                                    | EKMM3B1VSN271MR25S |                    |
|          | 220      | 20×30              | 0.15 | 1.00                                    | EKMM251VSN221MN30S | 270      |          | 35×25              | 0.15    | 1.15                                    | EKMM3B1VSN271MA25S |                    |
|          | 220      | 22×25              | 0.15 | 1.00                                    | EKMM251VSN221MP25S | 330      |          | 22×50              | 0.15    | 1.33                                    | EKMM3B1VSN331MP50S |                    |
|          | 220      | 25.4×25            | 0.15 | 0.95                                    | EKMM251VSN221MQ25S | 330      |          | 25.4×40            | 0.15    | 1.33                                    | EKMM3B1VSN331MQ40S |                    |
|          | 220      | 30×20              | 0.15 | 0.95                                    | EKMM251VSN221MR20S | 330      |          | 30×30              | 0.15    | 1.33                                    | EKMM3B1VSN331MR30S |                    |
|          | 270      | 20×35              | 0.15 | 1.10                                    | EKMM251VSN271MN35S | 330      |          | 35×25              | 0.15    | 1.33                                    | EKMM3B1VSN331MA25S |                    |
|          | 270      | 22×30              | 0.15 | 1.18                                    | EKMM251VSN271MP30S | 390      |          | 25.4×45            | 0.15    | 1.47                                    | EKMM3B1VSN391MQ45S |                    |
|          | 270      | 25.4×25            | 0.15 | 1.18                                    | EKMM251VSN271MQ25S | 390      | 30×35    | 0.15               | 1.47    | EKMM3B1VSN391MR35S                      |                    |                    |
|          | 270      | 30×20              | 0.15 | 1.00                                    | EKMM251VSN271MR20S | 390      | 35×30    | 0.15               | 1.47    | EKMM3B1VSN391MA30S                      |                    |                    |
|          | 330      | 20×40              | 0.15 | 1.20                                    | EKMM251VSN331MN40S | 470      | 25.4×50  | 0.15               | 1.70    | EKMM3B1VSN471MQ50S                      |                    |                    |
|          | 330      | 22×35              | 0.15 | 1.30                                    | EKMM251VSN331MP35S | 470      | 30×40    | 0.15               | 1.70    | EKMM3B1VSN471MR40S                      |                    |                    |
|          | 330      | 25.4×30            | 0.15 | 1.30                                    | EKMM251VSN331MQ30S | 470      | 35×30    | 0.15               | 1.70    | EKMM3B1VSN471MA30S                      |                    |                    |

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## KMM Series

### ◆ STANDARD RATINGS

| WV (Vdc) | Cap (μF) | Case size φD×L(mm) | tanδ  | Rated ripple current (Arms/105°C,120Hz) | Part No.           | WV (Vdc) | Cap (μF)           | Case size φD×L(mm) | tanδ  | Rated ripple current (Arms/105°C,120Hz) | Part No.           |
|----------|----------|--------------------|-------|---|--------------------|----------|--------------------|--------------------|-------|---|--------------------|
| 315      | 560      | 30×45              | 0.15  | 2.05                                    | EKMM3B1VSN561MR45S | 400      | 100                | 30×20              | 0.15  | 0.60                                    | EKMM401VSN101MR20S |
|          | 560      | 35×35              | 0.15  | 2.05                                    | EKMM3B1VSN561MA35S |          | 120                | 20×40              | 0.15  | 0.75                                    | EKMM401VSN121MN40S |
|          | 680      | 30×50              | 0.15  | 2.17                                    | EKMM3B1VSN681MR50S |          | 120                | 22×35              | 0.15  | 0.75                                    | EKMM401VSN121MP35S |
|          | 680      | 35×40              | 0.15  | 2.17                                    | EKMM3B1VSN681MA40S |          | 120                | 25.4×25            | 0.15  | 0.75                                    | EKMM401VSN121MQ25S |
|          | 820      | 35×45              | 0.15  | 2.20                                    | EKMM3B1VSN821MA45S |          | 120                | 30×25              | 0.15  | 0.73                                    | EKMM401VSN121MR25S |
|          | 1,000    | 35×60              | 0.15  | 2.55                                    | EKMM3B1VSN102MA60S |          | 120                | 35×20              | 0.15  | 0.75                                    | EKMM401VSN121MA20S |
| 350      | 47       | 20×20              | 0.15  | 0.35                                    | EKMM351VSN470MN20S |          | 150                | 20×45              | 0.15  | 0.83                                    | EKMM401VSN151MN45S |
|          | 56       | 20×25              | 0.15  | 0.43                                    | EKMM351VSN560MN25S |          | 150                | 22×40              | 0.15  | 0.88                                    | EKMM401VSN151MP40S |
|          | 56       | 22×20              | 0.15  | 0.41                                    | EKMM351VSN560MP20S |          | 150                | 25.4×30            | 0.15  | 0.88                                    | EKMM401VSN151MQ30S |
|          | 68       | 20×25              | 0.15  | 0.47                                    | EKMM351VSN680MN25S |          | 150                | 30×25              | 0.15  | 0.88                                    | EKMM401VSN151MR25S |
|          | 68       | 25.4×20            | 0.15  | 0.46                                    | EKMM351VSN680MQ20S |          | 150                | 35×20              | 0.15  | 0.80                                    | EKMM401VSN151MA20S |
|          | 82       | 20×30              | 0.15  | 0.54                                    | EKMM351VSN820MN30S |          | 180                | 22×45              | 0.15  | 0.98                                    | EKMM401VSN181MP45S |
|          | 82       | 22×25              | 0.15  | 0.55                                    | EKMM351VSN820MP25S |          | 180                | 25.4×35            | 0.15  | 0.98                                    | EKMM401VSN181MQ35S |
|          | 82       | 25.4×20            | 0.15  | 0.51                                    | EKMM351VSN820MQ20S |          | 180                | 30×30              | 0.15  | 0.98                                    | EKMM401VSN181MR30S |
|          | 100      | 20×30              | 0.15  | 0.60                                    | EKMM351VSN101MN30S |          | 180                | 35×25              | 0.15  | 0.98                                    | EKMM401VSN181MA25S |
|          | 100      | 22×25              | 0.15  | 0.69                                    | EKMM351VSN101MP25S |          | 220                | 22×50              | 0.15  | 1.10                                    | EKMM401VSN221MP50S |
|          | 100      | 30×20              | 0.15  | 0.60                                    | EKMM351VSN101MR20S |          | 220                | 25.4×40            | 0.15  | 1.10                                    | EKMM401VSN221MQ40S |
|          | 120      | 20×35              | 0.15  | 0.68                                    | EKMM351VSN121MN35S |          | 220                | 30×30              | 0.15  | 1.10                                    | EKMM401VSN221MR30S |
|          | 120      | 22×30              | 0.15  | 0.75                                    | EKMM351VSN121MP30S |          | 220                | 35×25              | 0.15  | 1.10                                    | EKMM401VSN221MA25S |
|          | 120      | 25.4×25            | 0.15  | 0.75                                    | EKMM351VSN121MQ25S |          | 270                | 25.4×45            | 0.15  | 1.22                                    | EKMM401VSN271MQ45S |
|          | 120      | 30×20              | 0.15  | 0.65                                    | EKMM351VSN121MR20S |          | 270                | 30×35              | 0.15  | 1.22                                    | EKMM401VSN271MR35S |
|          | 150      | 20×40              | 0.15  | 0.78                                    | EKMM351VSN151MN40S |          | 270                | 35×30              | 0.15  | 1.22                                    | EKMM401VSN271MA30S |
|          | 150      | 22×35              | 0.15  | 0.82                                    | EKMM351VSN151MP35S |          | 330                | 25.4×50            | 0.15  | 1.44                                    | EKMM401VSN331MQ50S |
|          | 150      | 25.4×30            | 0.15  | 0.83                                    | EKMM351VSN151MQ30S |          | 330                | 30×40              | 0.15  | 1.44                                    | EKMM401VSN331MR40S |
|          | 150      | 30×25              | 0.15  | 0.82                                    | EKMM351VSN151MR25S | 330      | 35×30              | 0.15               | 1.44  | EKMM401VSN331MA30S                      |                    |
|          | 150      | 35×20              | 0.15  | 0.76                                    | EKMM351VSN151MA20S | 390      | 25.4×60            | 0.15               | 1.51  | EKMM401VSN391MQ60S                      |                    |
|          | 180      | 20×45              | 0.15  | 0.87                                    | EKMM351VSN181MN45S | 390      | 30×45              | 0.15               | 1.60  | EKMM401VSN391MR45S                      |                    |
|          | 180      | 22×40              | 0.15  | 0.92                                    | EKMM351VSN181MP40S | 390      | 35×35              | 0.15               | 1.60  | EKMM401VSN391MA35S                      |                    |
|          | 180      | 25.4×30            | 0.15  | 0.92                                    | EKMM351VSN181MQ30S | 470      | 30×50              | 0.15               | 1.90  | EKMM401VSN471MR50S                      |                    |
|          | 180      | 30×25              | 0.15  | 0.90                                    | EKMM351VSN181MR25S | 470      | 35×40              | 0.15               | 1.90  | EKMM401VSN471MA40S                      |                    |
|          | 220      | 20×50              | 0.15  | 1.00                                    | EKMM351VSN221MN50S | 560      | 30×60              | 0.15               | 2.10  | EKMM401VSN561MR60S                      |                    |
|          | 220      | 22×45              | 0.15  | 1.05                                    | EKMM351VSN221MP45S | 560      | 35×45              | 0.15               | 2.12  | EKMM401VSN561MA45S                      |                    |
|          | 220      | 25.4×35            | 0.15  | 1.04                                    | EKMM351VSN221MQ35S | 680      | 35×60              | 0.15               | 2.27  | EKMM401VSN681MA60S                      |                    |
|          | 220      | 30×30              | 0.15  | 1.02                                    | EKMM351VSN221MR30S | 420      | 39                 | 20×20              | 0.20  | 0.32                                    | EKMM421VSN390MN20S |
|          | 220      | 35×25              | 0.15  | 1.04                                    | EKMM351VSN221MA25S |          | 47                 | 20×25              | 0.20  | 0.39                                    | EKMM421VSN470MN25S |
|          | 270      | 22×50              | 0.15  | 1.16                                    | EKMM351VSN271MP50S |          | 47                 | 22×20              | 0.20  | 0.37                                    | EKMM421VSN470MP20S |
|          | 270      | 25.4×40            | 0.15  | 1.18                                    | EKMM351VSN271MQ40S |          | 56                 | 20×25              | 0.20  | 0.51                                    | EKMM421VSN560MN25S |
|          | 270      | 30×30              | 0.15  | 1.17                                    | EKMM351VSN271MR30S |          | 56                 | 25.4×20            | 0.20  | 0.42                                    | EKMM421VSN560MQ20S |
|          | 270      | 35×25              | 0.15  | 1.20                                    | EKMM351VSN271MA25S |          | 68                 | 20×30              | 0.20  | 0.56                                    | EKMM421VSN680MN30S |
|          | 330      | 25.4×45            | 0.15  | 1.29                                    | EKMM351VSN331MQ45S |          | 68                 | 22×25              | 0.20  | 0.50                                    | EKMM421VSN680MP25S |
|          | 330      | 30×35              | 0.15  | 1.34                                    | EKMM351VSN331MR35S |          | 68                 | 25.4×20            | 0.20  | 0.46                                    | EKMM421VSN680MQ20S |
|          | 330      | 35×30              | 0.15  | 1.22                                    | EKMM351VSN331MA30S |          | 82                 | 20×35              | 0.20  | 0.64                                    | EKMM421VSN820MN35S |
|          | 390      | 25.4×50            | 0.15  | 1.51                                    | EKMM351VSN391MQ50S |          | 82                 | 22×25              | 0.20  | 0.64                                    | EKMM421VSN820MP25S |
|          | 390      | 30×40              | 0.15  | 1.51                                    | EKMM351VSN391MR40S |          | 82                 | 25.4×25            | 0.20  | 0.58                                    | EKMM421VSN820MQ25S |
|          | 390      | 35×35              | 0.15  | 1.47                                    | EKMM351VSN391MA35S |          | 82                 | 30×20              | 0.20  | 0.53                                    | EKMM421VSN820MR20S |
|          | 470      | 25.4×60            | 0.15  | 1.66                                    | EKMM351VSN471MQ60S |          | 100                | 20×35              | 0.20  | 0.70                                    | EKMM421VSN101MN35S |
|          | 470      | 30×45              | 0.15  | 1.65                                    | EKMM351VSN471MR45S |          | 100                | 22×30              | 0.20  | 0.70                                    | EKMM421VSN101MP30S |
|          | 470      | 35×35              | 0.15  | 1.69                                    | EKMM351VSN471MA35S |          | 100                | 25.4×25            | 0.20  | 0.70                                    | EKMM421VSN101MQ25S |
|          | 560      | 30×50              | 0.15  | 1.85                                    | EKMM351VSN561MR50S |          | 100                | 30×20              | 0.20  | 0.59                                    | EKMM421VSN101MR20S |
|          | 560      | 35×40              | 0.15  | 1.90                                    | EKMM351VSN561MA40S |          | 120                | 20×40              | 0.20  | 0.75                                    | EKMM421VSN121MN40S |
|          | 680      | 30×60              | 0.15  | 2.15                                    | EKMM351VSN681MR60S |          | 120                | 22×35              | 0.20  | 0.75                                    | EKMM421VSN121MP35S |
|          | 680      | 35×50              | 0.15  | 1.99                                    | EKMM351VSN681MA50S |          | 120                | 25.4×30            | 0.20  | 0.75                                    | EKMM421VSN121MQ30S |
|          | 820      | 35×60              | 0.15  | 2.31                                    | EKMM351VSN821MA60S |          | 120                | 30×25              | 0.20  | 0.73                                    | EKMM421VSN121MR25S |
|          | 400      | 39                 | 20×20 | 0.15                                    | 0.32               |          | EKMM401VSN390MN20S | 120                | 35×20 | 0.20                                    | 0.67               |
| 47       |          | 20×25              | 0.15  | 0.39                                    | EKMM401VSN470MN25S |          | 150                | 20×50              | 0.20  | 0.88                                    | EKMM421VSN151MN50S |
| 47       |          | 22×20              | 0.15  | 0.37                                    | EKMM401VSN470MP20S |          | 150                | 22×40              | 0.20  | 0.88                                    | EKMM421VSN151MP40S |
| 56       |          | 20×25              | 0.15  | 0.51                                    | EKMM401VSN560MN25S |          | 150                | 25.4×35            | 0.20  | 0.88                                    | EKMM421VSN151MQ35S |
| 56       |          | 25.4×20            | 0.15  | 0.42                                    | EKMM401VSN560MQ20S |          | 150                | 30×25              | 0.20  | 0.88                                    | EKMM421VSN151MR25S |
| 68       |          | 20×30              | 0.15  | 0.56                                    | EKMM401VSN680MN30S |          | 180                | 22×45              | 0.20  | 0.95                                    | EKMM421VSN181MP45S |
| 68       |          | 22×25              | 0.15  | 0.50                                    | EKMM401VSN680MP25S |          | 180                | 25.4×35            | 0.20  | 0.95                                    | EKMM421VSN181MQ35S |
| 68       |          | 25.4×20            | 0.15  | 0.46                                    | EKMM401VSN680MQ20S |          | 180                | 30×30              | 0.20  | 0.95                                    | EKMM421VSN181MR30S |
| 82       |          | 20×30              | 0.15  | 0.64                                    | EKMM401VSN820MN30S |          | 180                | 35×25              | 0.20  | 0.94                                    | EKMM421VSN181MA25S |
| 82       |          | 22×25              | 0.15  | 0.64                                    | EKMM401VSN820MP25S |          | 220                | 22×50              | 0.20  | 1.10                                    | EKMM421VSN221MP50S |
| 82       |          | 30×20              | 0.15  | 0.55                                    | EKMM401VSN820MR20S |          | 220                | 25.4×45            | 0.20  | 1.10                                    | EKMM421VSN221MQ45S |
| 100      |          | 20×35              | 0.15  | 0.70                                    | EKMM401VSN101MN35S |          | 220                | 30×35              | 0.20  | 1.10                                    | EKMM421VSN221MR35S |
| 100      |          | 22×30              | 0.15  | 0.70                                    | EKMM401VSN101MP30S |          | 220                | 35×25              | 0.20  | 1.10                                    | EKMM421VSN221MA25S |
| 100      |          | 25.4×25            | 0.15  | 0.70                                    | EKMM401VSN101MQ25S |          | 270                | 25.4×50            | 0.20  | 1.22                                    | EKMM421VSN271MQ50S |

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◆STANDARD RATINGS

| WV (V <sub>dc</sub> ) | Cap (μF) | Case size φD×L(mm) | tanδ | Rated ripple current (Arms/105°C,120Hz) | Part No.           | WV (V <sub>dc</sub> ) | Cap (μF) | Case size φD×L(mm) | tanδ | Rated ripple current (Arms/105°C,120Hz) | Part No.           |
|-----------------------|----------|--------------------|------|---|--------------------|-----------------------|----------|--------------------|------|---|--------------------|
| 420                   | 270      | 30×40              | 0.20 | 1.22                                    | EKMM421VSN271MR40S | 450                   | 120      | 20×50              | 0.20 | 0.75                                    | EKMM451VSN121MN50S |
|                       | 270      | 35×30              | 0.20 | 1.22                                    | EKMM421VSN271MA30S |                       | 120      | 22×40              | 0.20 | 0.80                                    | EKMM451VSN121MP40S |
|                       | 330      | 25.4×60            | 0.20 | 1.41                                    | EKMM421VSN331MQ60S |                       | 120      | 25.4×30            | 0.20 | 0.80                                    | EKMM451VSN121MQ30S |
|                       | 330      | 30×45              | 0.20 | 1.45                                    | EKMM421VSN331MR45S |                       | 120      | 30×25              | 0.20 | 0.80                                    | EKMM451VSN121MR25S |
|                       | 330      | 35×35              | 0.20 | 1.45                                    | EKMM421VSN331MA35S |                       | 120      | 35×25              | 0.20 | 0.73                                    | EKMM451VSN121MA25S |
|                       | 390      | 30×50              | 0.20 | 1.55                                    | EKMM421VSN391MR50S |                       | 150      | 22×45              | 0.20 | 0.88                                    | EKMM451VSN151MP45S |
|                       | 390      | 35×40              | 0.20 | 1.55                                    | EKMM421VSN391MA40S |                       | 150      | 25.4×35            | 0.20 | 0.88                                    | EKMM451VSN151MQ35S |
|                       | 470      | 30×60              | 0.20 | 1.79                                    | EKMM421VSN471MR60S |                       | 150      | 30×30              | 0.20 | 0.88                                    | EKMM451VSN151MR30S |
|                       | 470      | 35×45              | 0.20 | 1.90                                    | EKMM421VSN471MA45S |                       | 150      | 35×25              | 0.20 | 0.75                                    | EKMM451VSN151MA25S |
|                       | 560      | 35×50              | 0.20 | 2.15                                    | EKMM421VSN561MA50S |                       | 180      | 22×50              | 0.20 | 1.00                                    | EKMM451VSN181MP50S |
|                       | 680      | 35×60              | 0.20 | 2.27                                    | EKMM421VSN681MA60S |                       | 180      | 25.4×40            | 0.20 | 1.00                                    | EKMM451VSN181MQ40S |
| 450                   | 39       | 20×25              | 0.20 | 0.34                                    | EKMM451VSN390MN25S |                       | 180      | 30×30              | 0.20 | 1.00                                    | EKMM451VSN181MR30S |
|                       | 47       | 20×25              | 0.20 | 0.39                                    | EKMM451VSN470MN25S |                       | 220      | 25.4×45            | 0.20 | 1.12                                    | EKMM451VSN221MQ45S |
|                       | 56       | 20×30              | 0.20 | 0.51                                    | EKMM451VSN560MN30S |                       | 220      | 30×35              | 0.20 | 1.12                                    | EKMM451VSN221MR35S |
|                       | 56       | 22×25              | 0.20 | 0.40                                    | EKMM451VSN560MP25S |                       | 220      | 35×30              | 0.20 | 1.12                                    | EKMM451VSN221MA30S |
|                       | 68       | 20×35              | 0.20 | 0.56                                    | EKMM451VSN680MN35S |                       | 270      | 25.4×60            | 0.20 | 1.18                                    | EKMM451VSN271MQ60S |
|                       | 68       | 22×30              | 0.20 | 0.53                                    | EKMM451VSN680MP30S |                       | 270      | 30×40              | 0.20 | 1.28                                    | EKMM451VSN271MR40S |
|                       | 68       | 25.4×25            | 0.20 | 0.50                                    | EKMM451VSN680MQ25S |                       | 270      | 35×35              | 0.20 | 1.28                                    | EKMM451VSN271MA35S |
|                       | 82       | 20×35              | 0.20 | 0.64                                    | EKMM451VSN820MN35S |                       | 330      | 30×50              | 0.20 | 1.45                                    | EKMM451VSN331MR50S |
|                       | 82       | 22×30              | 0.20 | 0.64                                    | EKMM451VSN820MP30S |                       | 330      | 35×40              | 0.20 | 1.45                                    | EKMM451VSN331MA40S |
|                       | 82       | 25.4×25            | 0.20 | 0.64                                    | EKMM451VSN820MQ25S |                       | 390      | 30×60              | 0.20 | 1.51                                    | EKMM451VSN391MR60S |
|                       | 100      | 20×45              | 0.20 | 0.69                                    | EKMM451VSN101MN45S | 390                   | 35×40    | 0.20               | 1.55 | EKMM451VSN391MA40S                      |                    |
|                       | 100      | 22×35              | 0.20 | 0.69                                    | EKMM451VSN101MP35S | 470                   | 35×50    | 0.20               | 1.85 | EKMM451VSN471MA50S                      |                    |
|                       | 100      | 25.4×30            | 0.20 | 0.69                                    | EKMM451VSN101MQ30S | 560                   | 35×60    | 0.20               | 1.91 | EKMM451VSN561MA60S                      |                    |
|                       | 100      | 30×25              | 0.20 | 0.64                                    | EKMM451VSN101MR25S |                       |          |                    |      |   |                    |

◆RATED RIPPLE CURRENT MULTIPLIERS

●Frequency Multipliers

| Frequency (Hz)            | 50   | 120  | 300  | 1k   | 10k  | 50k  |
|---------------------------|------|------|------|------|------|------|
| 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.