

KMQ Series

- Downsized from current standard KMG series
- Solvent resistant type except 160 to 450V_{dc}
(see PRECAUTIONS AND GUIDELINES)
- RoHS Compliant



SPECIFICATIONS

| Items | Characteristics | | | | | | | | | | | | | |
|--|---|--------------------------------------|------|------|------|------|------|--------------------------------------|-------------|-------------|-------------|------|----------------------------|---|
| Category | -55 to +105°C(6.3 to 100V _{dc}) -40 to +105°C(160 to 400V _{dc}) -25 to +105°C(450V _{dc}) | | | | | | | | | | | | | |
| Temperature Range | | | | | | | | | | | | | | |
| Rated Voltage Range | 6.3 to 450V _{dc} | | | | | | | | | | | | | |
| Capacitance Tolerance | ±20% (M) (at 20°C, 120Hz) | | | | | | | | | | | | | |
| Leakage Current | 6.3 to 100V _{dc} | | | | | | | | | | | | 160 to 450V _{dc} | |
| | I=0.03CV or 4μA, whichever is greater. | | | | | | | | | | | | CV≤1,000 I=0.1CV+40 max. | |
| | | | | | | | | | | | | | CV>1,000 I=0.04CV+100 max. | |
| Where, I : Max. leakage current (μA), C : Nominal capacitance (μF), V : Rated voltage (V) (at 20°C after 1 minute) | | | | | | | | | | | | | | |
| Dissipation Factor (tan δ) | Rated voltage (V _{dc}) | 6.3V | 10V | 16V | 25V | 35V | 50V | 63V | 100V | 160 to 250V | 350 to 400V | 450V | | |
| | tan δ (Max.) | 0.28 | 0.24 | 0.20 | 0.16 | 0.14 | 0.12 | 0.10 | 0.08 | 0.20 | 0.24 | 0.24 | | |
| When nominal capacitance exceeds 1,000μF, add 0.02 to the value above for each 1,000μF increase. (at 20°C, 120Hz) | | | | | | | | | | | | | | |
| Low Temperature Characteristics (Max. Impedance Ratio) | Rated voltage (V _{dc}) | 6.3V | 10V | 16V | 25V | 35V | 50V | 63 to 100V | 160 to 200V | 250V | 350V | 400V | 450V | |
| | Z(-25°C)/Z(+20°C) | ≤φ8 | 5 | 4 | 3 | 2 | 2 | 2 | 2 | 3 | 3 | 4 | 4 | 6 |
| | | ≥φ10 | 5 | 4 | 3 | 2 | 2 | 2 | 2 | 3 | 3 | 4 | 4 | 6 |
| | Z(-40°C)/Z(+20°C) | ≤φ8 | 10 | 8 | 6 | 4 | 3 | 3 | 3 | 8 | 10 | 8 | 8 | — |
| ≥φ10 | | 10 | 8 | 6 | 4 | 3 | 3 | 3 | 4 | 4 | 6 | 6 | — | |
| (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 1,000 hours (2,000 hours for φ 10 and more at 105°C). | | | | | | | | | | | | | |
| | Capacitance change | ≤ ±20% of the initial value | | | | | | | | | | | | |
| | D.F. (tan δ) | ≤200% of the initial specified value | | | | | | | | | | | | |
| | Leakage current | ≤The initial specified value | | | | | | | | | | | | |
| Shelf Life | The following specifications shall be satisfied when the capacitors are restored to 20°C after exposing them for 1,000 hours at 105°C without voltage applied. Before the measurement, the capacitor shall be preconditioned by applying voltage according to Item 4.1 of JIS C 5101-4. | | | | | | | | | | | | | |
| | Rated voltage | 6.3 to 100V _{dc} | | | | | | 160 to 450V _{dc} | | | | | | |
| | Capacitance change | ≤ ±20% of the initial value | | | | | | ≤ ±20% of the initial value | | | | | | |
| | D.F. (tan δ) | ≤200% of the initial specified value | | | | | | ≤200% of the initial specified value | | | | | | |
| | Leakage current | ≤The initial specified value | | | | | | ≤500% of the initial specified value | | | | | | |

DIMENSIONS [mm]

- Terminal Code : E



| φD | 5 | 6.3 | 8 | 10 | 12.5 | 16 | 18 |
|-----|------------|-----|-----|-----|------|-----|-----|
| φd | 0.5 | 0.5 | 0.6 | 0.6 | 0.6 | 0.8 | 0.8 |
| F | 2.0 | 2.5 | 3.5 | 5.0 | 5.0 | 7.5 | 7.5 |
| φD' | φD+0.5max. | | | | | | |
| L' | L+1.5max. | | | | | | |

PART NUMBERING SYSTEM



Please refer to "Product code guide (radial lead type)"

◆ STANDARD RATINGS

□ is not solvent resistant.

| WV (V _{dc}) | Cap (μF) | Case size φD×L(mm) | tan δ | Rated ripple current (mArms/105°C, 120Hz) | Part No. | WV (V _{dc}) | Cap (μF) | Case size φD×L(mm) | tan δ | Rated ripple current (mArms/105°C, 120Hz) | Part No. |
|-----------------------|-----------|--------------------|-------|---|-------------------|-----------------------|-----------|--------------------|-------|---|-------------------|
| 6.3 | 1,000 | 8 × 11.5 | 0.28 | 390 | EKMQR3E□□102MHB5D | 63 | 33 | 6.3 × 11 | 0.10 | 100 | EKMQR3E□□330MF11D |
| | 2,200 | 10 × 16 | 0.30 | 635 | EKMQR3E□□222MJ16S | | 47 | 6.3 × 11 | 0.10 | 120 | EKMQR3E□□470MF11D |
| | 3,300 | 10 × 20 | 0.32 | 840 | EKMQR3E□□332MJ20S | | 68 | 8 × 11.5 | 0.10 | 155 | EKMQR3E□□680MHB5D |
| | 4,700 | 12.5 × 20 | 0.34 | 1,090 | EKMQR3E□□472MK20S | | 100 | 8 × 11.5 | 0.10 | 200 | EKMQR3E□□101MHB5D |
| | 6,800 | 12.5 × 25 | 0.38 | 1,350 | EKMQR3E□□682MK25S | | 220 | 10 × 16 | 0.10 | 335 | EKMQR3E□□221MJ16S |
| | 10,000 | 16 × 25 | 0.46 | 1,650 | EKMQR3E□□103ML25S | | 330 | 10 × 20 | 0.10 | 510 | EKMQR3E□□331MJ20S |
| | 15,000 | 16 × 31.5 | 0.56 | 1,820 | EKMQR3E□□153MLN3S | | 470 | 12.5 × 20 | 0.10 | 640 | EKMQR3E□□471MK20S |
| | 22,000 | 18 × 35.5 | 0.70 | 2,280 | EKMQR3E□□223MMP1S | | 1,000 | 16 × 25 | 0.10 | 930 | EKMQR3E□□102ML25S |
| 10 | 220 | 5 × 11 | 0.24 | 155 | EKMQR3E□□221ME11D | 2,200 | 18 × 35.5 | 0.12 | 1,650 | EKMQR3E□□222MMP1S | |
| | 330 | 6.3 × 11 | 0.24 | 210 | EKMQR3E□□331MF11D | 100 | 1.0 | 5 × 11 | 0.08 | 15 | EKMQR3E□□1R0ME11D |
| | 470 | 6.3 × 11 | 0.24 | 250 | EKMQR3E□□471MF11D | | 2.2 | 5 × 11 | 0.08 | 21 | EKMQR3E□□2R2ME11D |
| | 1,000 | 10 × 12.5 | 0.24 | 460 | EKMQR3E□□102MJC5S | | 3.3 | 5 × 11 | 0.08 | 29 | EKMQR3E□□3R3ME11D |
| | 2,200 | 10 × 16 | 0.26 | 705 | EKMQR3E□□222MJ16S | | 4.7 | 5 × 11 | 0.08 | 32 | EKMQR3E□□4R7ME11D |
| | 3,300 | 12.5 × 20 | 0.28 | 1,000 | EKMQR3E□□332MK20S | | 10 | 5 × 11 | 0.08 | 50 | EKMQR3E□□100ME11D |
| | 4,700 | 12.5 × 25 | 0.30 | 1,260 | EKMQR3E□□472MK25S | | 22 | 6.3 × 11 | 0.08 | 93 | EKMQR3E□□220MF11D |
| | 6,800 | 16 × 25 | 0.34 | 1,570 | EKMQR3E□□682ML25S | | 33 | 8 × 11.5 | 0.08 | 130 | EKMQR3E□□330MHB5D |
| 10,000 | 16 × 31.5 | 0.42 | 1,820 | EKMQR3E□□103MLN3S | 47 | | 8 × 11.5 | 0.08 | 140 | EKMQR3E□□470MHB5D | |
| 16 | 15,000 | 16 × 35.5 | 0.52 | 2,050 | EKMQR3E□□153MLP1S | 68 | 10 × 12.5 | 0.08 | 190 | EKMQR3E□□680MJC5S | |
| | 22,000 | 18 × 40 | 0.66 | 2,420 | EKMQR3E□□223MM40S | 100 | 10 × 16 | 0.08 | 240 | EKMQR3E□□101MJ16S | |
| | 220 | 6.3 × 11 | 0.20 | 190 | EKMQR3E□□221MF11D | 220 | 12.5 × 20 | 0.08 | 390 | EKMQR3E□□221MK20S | |
| | 330 | 6.3 × 11 | 0.20 | 225 | EKMQR3E□□331MF11D | 330 | 12.5 × 25 | 0.08 | 540 | EKMQR3E□□331MK25S | |
| | 470 | 8 × 11.5 | 0.20 | 315 | EKMQR3E□□471MHB5D | 470 | 16 × 25 | 0.08 | 715 | EKMQR3E□□471ML25S | |
| | 1,000 | 10 × 12.5 | 0.20 | 500 | EKMQR3E□□102MJC5S | 1,000 | 18 × 35.5 | 0.08 | 960 | EKMQR3E□□102MMP1S | |
| | 2,200 | 10 × 20 | 0.22 | 710 | EKMQR3E□□222MJ20S | 160 | 10 | 8 × 11.5 | 0.20 | 41 | EKMQR3E□□100MHB5D |
| | 3,300 | 12.5 × 25 | 0.24 | 1,170 | EKMQR3E□□332MK25S | | 22 | 10 × 12.5 | 0.20 | 92 | EKMQR3E□□220MJC5S |
| 4,700 | 16 × 25 | 0.26 | 1,500 | EKMQR3E□□472ML25S | 33 | | 10 × 16 | 0.20 | 125 | EKMQR3E□□330MJ16S | |
| 6,800 | 16 × 25 | 0.30 | 1,600 | EKMQR3E□□682ML25S | 47 | | 10 × 20 | 0.20 | 150 | EKMQR3E□□470MJ20S | |
| 10,000 | 16 × 35.5 | 0.38 | 1,930 | EKMQR3E□□103MLP1S | 68 | | 12.5 × 20 | 0.20 | 250 | EKMQR3E□□680MK20S | |
| 15,000 | 18 × 40 | 0.48 | 2,210 | EKMQR3E□□153MM40S | 100 | | 12.5 × 25 | 0.20 | 310 | EKMQR3E□□101MK25S | |
| 25 | 100 | 5 × 11 | 0.16 | 125 | EKMQR3E□□101ME11D | | 220 | 16 × 31.5 | 0.20 | 540 | EKMQR3E□□221MLN3S |
| | 220 | 6.3 × 11 | 0.16 | 200 | EKMQR3E□□221MF11D | | 330 | 18 × 35.5 | 0.20 | 705 | EKMQR3E□□331MMP1S |
| | 330 | 8 × 11.5 | 0.16 | 310 | EKMQR3E□□331MHB5D | 470 | 18 × 40 | 0.20 | 855 | EKMQR3E□□471MM40S | |
| | 470 | 10 × 12.5 | 0.16 | 380 | EKMQR3E□□471MJC5S | 200 | 1.0 | 6.3 × 11 | 0.20 | 16 | EKMQR3E□□1R0MF11D |
| | 1,000 | 10 × 16 | 0.16 | 610 | EKMQR3E□□102MJ16S | | 2.2 | 6.3 × 11 | 0.20 | 25 | EKMQR3E□□2R2MF11D |
| | 2,200 | 12.5 × 25 | 0.18 | 1,090 | EKMQR3E□□222MK25S | | 3.3 | 6.3 × 11 | 0.20 | 30 | EKMQR3E□□3R3MF11D |
| | 3,300 | 16 × 25 | 0.20 | 1,400 | EKMQR3E□□332ML25S | | 4.7 | 6.3 × 11 | 0.20 | 35 | EKMQR3E□□4R7MF11D |
| | 4,700 | 16 × 25 | 0.22 | 1,570 | EKMQR3E□□472ML25S | | 10 | 8 × 11.5 | 0.20 | 57 | EKMQR3E□□100MHB5D |
| 6,800 | 16 × 35.5 | 0.26 | 1,850 | EKMQR3E□□682MLP1S | 22 | | 10 × 16 | 0.20 | 105 | EKMQR3E□□220MJ16S | |
| 10,000 | 18 × 40 | 0.34 | 2,000 | EKMQR3E□□103MM40S | 33 | | 10 × 20 | 0.20 | 140 | EKMQR3E□□330MJ20S | |
| 35 | 47 | 5 × 11 | 0.14 | 93 | EKMQR3E□□470ME11D | | 47 | 12.5 × 20 | 0.20 | 195 | EKMQR3E□□470MK20S |
| | 68 | 6.3 × 11 | 0.14 | 110 | EKMQR3E□□680MF11D | 68 | 12.5 × 25 | 0.20 | 250 | EKMQR3E□□680MK25S | |
| | 100 | 6.3 × 11 | 0.14 | 150 | EKMQR3E□□101MF11D | 100 | 16 × 25 | 0.20 | 335 | EKMQR3E□□101ML25S | |
| | 220 | 8 × 11.5 | 0.14 | 270 | EKMQR3E□□221MHB5D | 220 | 16 × 35.5 | 0.20 | 500 | EKMQR3E□□221MLP1S | |
| | 330 | 10 × 12.5 | 0.14 | 350 | EKMQR3E□□331MJC5S | 330 | 18 × 40 | 0.20 | 675 | EKMQR3E□□331MM40S | |
| | 470 | 10 × 16 | 0.14 | 460 | EKMQR3E□□471MJ16S | 250 | 3.3 | 6.3 × 11 | 0.20 | 28 | EKMQR3E□□3R3MF11D |
| | 1,000 | 12.5 × 20 | 0.14 | 810 | EKMQR3E□□102MK20S | | 4.7 | 6.3 × 11 | 0.20 | 35 | EKMQR3E□□4R7MF11D |
| | 2,200 | 16 × 25 | 0.16 | 1,260 | EKMQR3E□□222ML25S | | 10 | 10 × 12.5 | 0.20 | 71 | EKMQR3E□□100MJC5S |
| 3,300 | 16 × 31.5 | 0.18 | 1,500 | EKMQR3E□□332MLN3S | 22 | | 10 × 20 | 0.20 | 105 | EKMQR3E□□220MJ20S | |
| 4,700 | 16 × 35.5 | 0.20 | 1,780 | EKMQR3E□□472MLP1S | 33 | | 10 × 20 | 0.20 | 140 | EKMQR3E□□330MJ20S | |
| 6,800 | 18 × 40 | 0.24 | 2,000 | EKMQR3E□□682MM40S | 47 | | 12.5 × 20 | 0.20 | 190 | EKMQR3E□□470MK20S | |
| 50 | 1.0 | 5 × 11 | 0.12 | 13 | EKMQR3E□□1R0ME11D | | 68 | 16 × 25 | 0.20 | 270 | EKMQR3E□□680ML25S |
| | 2.2 | 5 × 11 | 0.12 | 20 | EKMQR3E□□2R2ME11D | | 100 | 16 × 25 | 0.20 | 310 | EKMQR3E□□101ML25S |
| | 3.3 | 5 × 11 | 0.12 | 25 | EKMQR3E□□3R3ME11D | 220 | 18 × 35.5 | 0.20 | 485 | EKMQR3E□□221MMP1S | |
| | 4.7 | 5 × 11 | 0.12 | 30 | EKMQR3E□□4R7ME11D | 350 | 2.2 | 6.3 × 11 | 0.24 | 21 | EKMQR3E□□2R2MF11D |
| | 10 | 5 × 11 | 0.12 | 46 | EKMQR3E□□100ME11D | | 3.3 | 8 × 11.5 | 0.24 | 30 | EKMQR3E□□3R3MHB5D |
| | 22 | 5 × 11 | 0.12 | 68 | EKMQR3E□□220ME11D | | 4.7 | 8 × 11.5 | 0.24 | 39 | EKMQR3E□□4R7MHB5D |
| | 33 | 5 × 11 | 0.12 | 90 | EKMQR3E□□330ME11D | | 10 | 10 × 12.5 | 0.24 | 64 | EKMQR3E□□100MJC5S |
| | 47 | 6.3 × 11 | 0.12 | 115 | EKMQR3E□□470MF11D | | 22 | 12.5 × 20 | 0.24 | 130 | EKMQR3E□□220MK20S |
| 68 | 6.3 × 11 | 0.12 | 150 | EKMQR3E□□680MF11D | 33 | | 12.5 × 25 | 0.24 | 170 | EKMQR3E□□330MK25S | |
| 100 | 8 × 11.5 | 0.12 | 190 | EKMQR3E□□101MHB5D | 47 | | 16 × 25 | 0.24 | 230 | EKMQR3E□□470ML25S | |
| 220 | 10 × 12.5 | 0.12 | 300 | EKMQR3E□□221MJC5S | 68 | | 16 × 25 | 0.24 | 285 | EKMQR3E□□680ML25S | |
| 63 | 330 | 10 × 16 | 0.12 | 410 | EKMQR3E□□331MJ16S | 100 | 18 × 31.5 | 0.24 | 375 | EKMQR3E□□101MMN3S | |
| | 470 | 10 × 20 | 0.12 | 540 | EKMQR3E□□471MJ20S | 400 | 1.0 | 6.3 × 11 | 0.24 | 15 | EKMQR3E□□1R0MF11D |
| | 1,000 | 12.5 × 25 | 0.12 | 950 | EKMQR3E□□102MK25S | | 2.2 | 8 × 11.5 | 0.24 | 27 | EKMQR3E□□2R2MHB5D |
| | 2,200 | 16 × 31.5 | 0.14 | 1,410 | EKMQR3E□□222MLN3S | | 3.3 | 8 × 11.5 | 0.24 | 34 | EKMQR3E□□3R3MHB5D |
| | 3,300 | 18 × 35.5 | 0.16 | 1,770 | EKMQR3E□□332MMP1S | | 4.7 | 10 × 12.5 | 0.24 | 42 | EKMQR3E□□4R7MJC5S |
| 22 | 5 × 11 | 0.10 | 71 | EKMQR3E□□220ME11D | 10 | | 10 × 16 | 0.24 | 64 | EKMQR3E□□100MJ16S | |

□ □ : Enter the appropriate lead forming or taping code.

◆STANDARD RATINGS

is not solvent resistant.

| WV (V _{dc}) | Cap (μF) | Case size φD×L(mm) | tan δ | Rated ripple current (mA _{rms} /105°C, 120Hz) | Part No. | WV (V _{dc}) | Cap (μF) | Case size φD×L(mm) | tan δ | Rated ripple current (mA _{rms} /105°C, 120Hz) | Part No. |
|-----------------------|----------|--------------------|-------|--|--------------------|-----------------------|----------|--------------------|-------|--|--------------------|
| 400 | 22 | 12.5 × 25 | 0.24 | 145 | EKMQ401E□□220MK25S | 450 | 4.7 | 10 × 12.5 | 0.24 | 32 | EKMQ451E□□4R7MJC5S |
| | 33 | 16 × 25 | 0.24 | 195 | EKMQ401E□□330ML25S | | 10 | 10 × 20 | 0.24 | 56 | EKMQ451E□□100MJ20S |
| | 47 | 16 × 25 | 0.24 | 200 | EKMQ401E□□470ML25S | | 22 | 12.5 × 25 | 0.24 | 100 | EKMQ451E□□220MK25S |
| | 68 | 16 × 31.5 | 0.24 | 240 | EKMQ401E□□680MLN3S | | 33 | 16 × 25 | 0.24 | 125 | EKMQ451E□□330ML25S |
| | 100 | 18 × 35.5 | 0.24 | 310 | EKMQ401E□□101MMP1S | | 47 | 16 × 31.5 | 0.24 | 155 | EKMQ451E□□470MLN3S |
| 450 | 2.2 | 8 × 11.5 | 0.24 | 20 | EKMQ451E□□2R2MHB5D | | 68 | 18 × 35.5 | 0.24 | 185 | EKMQ451E□□680MMP1S |
| | 3.3 | 10 × 12.5 | 0.24 | 28 | EKMQ451E□□3R3MJC5S | | 100 | 18 × 40 | 0.24 | 200 | EKMQ451E□□101MM40S |

□□ : Enter the appropriate lead forming or taping code.

◆RATED RIPPLE CURRENT MULTIPLIERS

● Frequency Multipliers

| Capacitance(μF) | Frequency(Hz) | 50 | 120 | 300 | 1k | 10k | 100k |
|-----------------|---------------|------|------|------|------|------|------|
| 1.0 to 4.7 | | 0.65 | 1.00 | 1.35 | 1.75 | 2.30 | 2.50 |
| 10 to 68 | | 0.75 | 1.00 | 1.25 | 1.50 | 1.75 | 1.80 |
| 100 to 1,000 | | 0.80 | 1.00 | 1.15 | 1.30 | 1.40 | 1.50 |
| 2,200 to | | 0.85 | 1.00 | 1.03 | 1.05 | 1.08 | 1.08 |

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.

Компания «Океан Электроники» предлагает заключение долгосрочных отношений при поставках импортных электронных компонентов на взаимовыгодных условиях!

Наши преимущества:

- Поставка оригинальных импортных электронных компонентов напрямую с производств Америки, Европы и Азии, а так же с крупнейших складов мира;
- Широкая линейка поставок активных и пассивных импортных электронных компонентов (более 30 млн. наименований);
- Поставка сложных, дефицитных, либо снятых с производства позиций;
- Оперативные сроки поставки под заказ (от 5 рабочих дней);
- Экспресс доставка в любую точку России;
- Помощь Конструкторского Отдела и консультации квалифицированных инженеров;
- Техническая поддержка проекта, помощь в подборе аналогов, поставка прототипов;
- Поставка электронных компонентов под контролем ВП;
- Система менеджмента качества сертифицирована по Международному стандарту ISO 9001;
- При необходимости вся продукция военного и аэрокосмического назначения проходит испытания и сертификацию в лаборатории (по согласованию с заказчиком);
- Поставка специализированных компонентов военного и аэрокосмического уровня качества (Xilinx, Altera, Analog Devices, Intersil, Interpoint, Microsemi, Actel, Aeroflex, Peregrine, VPT, Syfer, Eurofarad, Texas Instruments, MS Kennedy, Miteq, Cobham, E2V, MA-COM, Hittite, Mini-Circuits, General Dynamics и др.);

Компания «Океан Электроники» является официальным дистрибьютором и эксклюзивным представителем в России одного из крупнейших производителей разъемов военного и аэрокосмического назначения «JONHON», а так же официальным дистрибьютором и эксклюзивным представителем в России производителя высокотехнологичных и надежных решений для передачи СВЧ сигналов «FORSTAR».



JONHON

«JONHON» (основан в 1970 г.)

Разъемы специального, военного и аэрокосмического назначения:

(Применяются в военной, авиационной, аэрокосмической, морской, железнодорожной, горно- и нефтедобывающей отраслях промышленности)

«FORSTAR» (основан в 1998 г.)

ВЧ соединители, коаксиальные кабели,
кабельные сборки и микроволновые компоненты:

(Применяются в телекоммуникациях гражданского и специального назначения, в средствах связи, РЛС, а так же военной, авиационной и аэрокосмической отраслях промышленности).



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