

KMG Series

● 105°C 1,000~2,000Hrs assured.

- General
- RoHS compliant.
- Halogen-free capacitors are also available.

Solvent-proof

WV ≤ 100V_{DC}

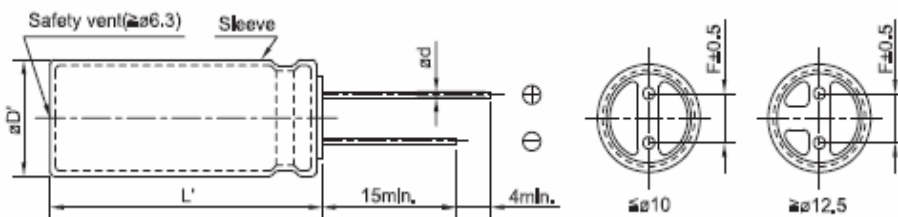


SPECCIFICATIONS

| Item | Characteristics | | | | | | | | | | | | | | |
|--|---|---|---------------------|----------------|----------------|----------------|------|--------|------|---------|----------------|-----------------|--------|------------------|-----------------|
| Rated Voltage Range | 6.3 ~ 100 V _{DC} | 160 ~ 400 V _{DC} | 450 V _{DC} | | | | | | | | | | | | |
| Operating Temperature Range | -55 ~ +105 °C | -40 ~ +105 °C | -25 ~ +105 °C | | | | | | | | | | | | |
| Capacitance Tolerance | ±20% (M) (at 20 °C, 120Hz) | | | | | | | | | | | | | | |
| Leakage Current | After 1 minute : I = 0.03CV or 4 μA, whichever is greater. | <table border="1"> <tr> <th>Time</th> <th>After 1 minute</th> <th>After 5 minute</th> </tr> <tr> <td>C-V</td> <td></td> <td></td> </tr> <tr> <td>≤ 1000</td> <td>I = 0.1CV + 40</td> <td>I = 0.03CV + 15</td> </tr> <tr> <td>> 1000</td> <td>I = 0.04CV + 100</td> <td>I = 0.02CV + 25</td> </tr> </table> | | Time | After 1 minute | After 5 minute | C-V | | | ≤ 1000 | I = 0.1CV + 40 | I = 0.03CV + 15 | > 1000 | I = 0.04CV + 100 | I = 0.02CV + 25 |
| | Time | | | After 1 minute | After 5 minute | | | | | | | | | | |
| C-V | | | | | | | | | | | | | | | |
| ≤ 1000 | I = 0.1CV + 40 | I = 0.03CV + 15 | | | | | | | | | | | | | |
| > 1000 | I = 0.04CV + 100 | I = 0.02CV + 25 | | | | | | | | | | | | | |
| | After 2 minute : I = 0.01CV or 3 μA, whichever is greater. | | | | | | | | | | | | | | |
| Where, I : Max. Leakage current(μA) C : Nominal capacitance(μF) V : Rated voltage(V _{DC}) (at 20 °C) | | | | | | | | | | | | | | | |
| Dissipation Factor (tan δ) | Rated Voltage(V _{DC}) | 6.3 | 10 | 16 | 25 | 35 | 50 | 63 | 100 | 160~250 | 350~450 | | | | |
| | Tanδ(Max.) | 0.34 | 0.24 | 0.2 | 0.16 | 0.14 | 0.12 | 0.10 | 0.09 | 0.20 | 0.24 | | | | |
| (at 20 °C, 120Hz) | | | | | | | | | | | | | | | |
| Temperature Characteristics (Capacitance change ratio) | Rated Voltage(V _{DC}) | 6.3 | 10 | 16 | 25 | 35 | 50 | 63~100 | 160 | 200~250 | 350~400 | 450 | | | |
| | Z(-25°C) / Z(+20°C) | 5 | 4 | 3 | 2 | 2 | 2 | 3 | 3 | 3 | 6 | 6 | | | |
| | Z(-40°C) / Z(+20°C) | 12 | 10 | 8 | 5 | 4 | 3 | 4 | 4 | 5 | 6 | - | | | |
| (at 120Hz) | | | | | | | | | | | | | | | |
| Load Life | The following specifications shall be satisfied when the capacitors are restored to 20 °C after the rated voltage is applied for 2,000 hours at 105 °C. (Where, 1,000 hours ≤ Φ8) Capacitance change ≤ ±20 % of the initial value 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. The rated voltage shall be applied to the capacitors for a minimum of 30 minutes, at least 24 hours and not more than 48 hours before the measurements. (Where, 500 hours ≤ Φ8) Capacitance change ≤ ±20 % of the initial value tan δ ≤ 200 % of the initial specified value Leakage current ≤ The initial specified value (Where, 200% for ≥ WV 160V _{DC}) | | | | | | | | | | | | | | |
| Others | Satisfied characteristics KS C IEC 60384-4 | | | | | | | | | | | | | | |

* Please refer each approval sheet for detail specification.

DIMENSIONS OF KMG Series



Unit (mm)

Marking : BROWN SLEEVE , WHITE INK

| | | | | | | | |
|-----|--------------|-----|-----|-------------|------|-----|-----|
| 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. | | | L + 2.0max. | | | |



RATINGS OF KMG Series

| μF V_{DC} | 6.3 | 10 | 16 | 25 | 35 | 50 | 63 | 100 | 160 | 200 | 250 | 350 | 400 | 450 |
|------------------|-----------------|---|-----------------|-----------------|-----------------|-----------------|-----------------|-----------------|----------------|----------------|----------------|----------------|----------------|----------------|
| 0.1 | | | | | | 5x11 2.1 | 5x11 3.2 | 5x11 3.6 | | | | | | |
| 0.22 | | | | | | 5x11 3.2 | 5x11 4.3 | 5x11 4.8 | | | | | | |
| 0.33 | | | | | | 5x11 6.3 | 5x11 7.2 | 5x11 7.8 | | | | | | |
| 0.47 | | | | | | 5x11 10 | 5x11 11 | 5x11 12 | 6.3x11 12 | 6.3x11 12 | 6.3x11 12 | 6.3x11 12 | | |
| 0.68 | | | | | | 5x11 12 | 5x11 13 | 5x11 14 | 6.3x11 14 | 6.3x11 15 | 6.3x11 15 | 6.3x11 15 | | |
| 1 | | | | | | 5x11 13 | 5x11 15 | 5x11 16 | 6.3x11 16 | 6.3x11 17 | 6.3x11 17 | 6.3x11 18 | 6.3x11 19 | 8x11.5 16 |
| 2.2 | | | | | | 5x11 18 | 5x11 19 | 5x11 21 | 6.3x11 22 | 6.3x11 24 | 6.3x11 27 | 8x11.5 29 | 8x11.5 30 | 10x12.5 28 |
| 3.3 | | | | | | 5x11 30 | 5x11 33 | 1 34 | 6.3x11 35 | 6.3x11 36 | 8x11.5 37 | 8x11.5 38 | 10x12.5 41 | 10x16 38 |
| 4.7 | | | | 5x11 25 | 5x11 27 | 5x11 37 | 5x11 39 | 5x11 40 | 6.3x11 41 | 8x11.5 42 | 8x11.5 45 | 10x12.5 47 | 10x16 49 | 10x20 45 |
| 6.8 | | | | 5x11 31 | 5x11 33 | 5x11 44 | 5x11 48 | 5x11 49 | 8x11.5 52 | 10x12.5 59 | 10x12.5 60 | 10x16 62 | 10x16 65 | 12.5x16 59 |
| 10 | | | 5x11 35 | 5x11 37 | 5x11 40 | 5x11 54 | 5x11 59 | 6.3x11 61 | 10x12.5 71 | 10x12.5 72 | 10x16 74 | 10x20 79 | 10x20 86 | 12.5x20 84 |
| 22 | | 5x11 48 | 5x11 53 | 5x11 56 | 5x11 57 | 5x11 79 | 5x11 87 | 6.3x11 100 | 10x20 117 | 10x20 119 | 10x20 127 | 12.5x20 150 | 12.5x25 163 | 16x25 151 |
| 33 | 5x11 52 | 5x11 56 | 5x11 60 | 5x11 75 | 5x11 80 | 5x11 97 | 6.3x11 122 | 8x11.5 144 | 10x20 156 | 10x20 158 | 12.5x20 184 | 16x25 200 | 16x25 222 | 16x31.5 203 |
| 47 | 5x11 61 | 5x11 66 | 5x11 77 | 5x11 80 | 5x11 101 | 6.3x11 133 | 6.3x11 146 | 10x12.5 199 | 12.5x20 218 | 12.5x20 220 | 12.5x25 238 | 16x25 265 | 16x31.5 290 | 16x35.5 254 |
| 68 | 5x11 69 | 5x11 83 | 5x11 92 | 5x11 113 | 6.3x11 138 | 8x11.5 189 | 8x11.5 207 | 10x16 264 | 12.5x25 287 | 16x20 293 | 16x25 318 | 16x31.5 348 | 18x35.5 392 | |
| 100 | 5x11 90 | 5x11 100 | 5x11 119 | 6.3x11 159 | 6.3x11 168 | 8x11.5 229 | 10x12.5 251 | 10x20 349 | 12.5x25 360 | 16x25 386 | 16x31.5 422 | 18x31.5 450 | | |
| 220 | 5x11 153 | 5x11 170 | 6.3x11 213 | 8x11.5 277 | 8x11.5 294 | 10x12.5 395 | 10x16 474 | 12.5x25 662 | 16x31.5 680 | 18x35.5 705 | 18x40 730 | | | |
| 330 | 6.3x11 216 | 6.3x11 239 | 8x11.5 308 | 8x11.5 340 | 10x12.5 419 | 10x16 529 | 10x20 633 | 16x20 810 | 18x35.5 863 | | | | | |
| 470 | 6.3x11 258 | 6.3x11 286 | 8x11.5 366 | 10x12.5 471 | 10x16 547 | 10x20 690 | 12.5x20 886 | 16x25 1072 | | | | | | |
| 680 | 8x11.5 365 | 10x12.5 472 | 10x12.5 480 | 10x16 620 | 12.5x16 777 | 12.5x20 973 | 12.5x25 1160 | 18x31.5 1410 | | | | | | |
| 1000 | 8x11.5 443 | 10x12.5 571 | 10x16 680 | 10x20 821 | 12.5x20 1023 | 12.5x25 1287 | 16x25 1565 | 18x40 2020 | | | | | | |
| 2200 | 10x20 817 | 10x20 886 | 10x30 1170 | 12.5x25 1297 | 16x25 1497 | 16x35.5 1884 | | | | | | | | |
| 3300 | 10x20 1032 | 12.5x20 1205 | 12.5x25 1389 | 16x25 1646 | 16x35.5 1950 | 18x35.5 2260 | | | | | | | | |
| 4700 | 12.5x20 1280 | 12.5x25 1492 | 16x25 1740 | 16x31.5 2012 | 18x35.5 2335 | | | | | | | | | |
| 6800 | 12.5x25 1554 | 16x25 1824 | 16x31.5 2081 | 18x35.5 2452 | | | | | | | | | | |
| 10000 | 16x25 1897 | 16x35.5 2201 | 18x35.5 2527 | | | | | | | | | | | |
| 15000 | 16x35.5 2344 | 18x35.5 2606 | | | | | | | | | | | | |
| 22000 | 18x40 2787 | ← Case Size $\varnothing D \times L$ (mm) ← Rated Ripple Current (mA rms/105°C, 120Hz) | | | | | | | | | | | | |

RIPPLE CURRENT MULTIPLIERS

Frequency Multipliers

| Cap. (μF) \ Freq. (Hz) | 120 | 1k | 10k | 50k | 100k |
|-------------------------------|------|------|------|------|------|
| 0.1 ~ 6.8 | 1.00 | 1.75 | 2.30 | 2.40 | 2.50 |
| 10 ~ 68 | 1.00 | 1.50 | 1.75 | 1.77 | 1.80 |
| 100 ~ 1000 | 1.00 | 1.30 | 1.40 | 1.45 | 1.50 |
| 2200 ~ 22000 | 1.00 | 1.05 | 1.08 | 1.09 | 1.10 |

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