

Metallized Polyester Film Capacitor Related Document: IEC 60384-2

MAIN APPLICATIONS:

Blocking, bypassing, filtering, timing, coupling and decoupling circuits, interference suppression in low voltage applications.

MARKING:

Manufacturer's logo/type/C-value/rated voltage/tolerance/date of manufacture

DIELECTRIC:

Polyester film

ELECTRODES:

Vacuum deposited aluminum

COATING:

Flame retardant plastic case (UL-class 94 V-0), green, epoxy resin sealed

Flame class B according to IEC 60065 available on request

CONSTRUCTION:

Extended metallized film (refer to general information)

LEADS:

Tinned wire

IEC TEST CLASSIFICATION:

55/100/56, according to IEC 60068

TEMPERATURE RANGE:

- 55°C to + 100°C

CAPACITANCE RANGE:

1000pF to 15µF

CAPACITANCE TOLERANCES:

± 20% (M), ± 10% (K), ± 5% (J)

RATED VOLTAGES (U_R):

63 VDC, 100 VDC, 250 VDC, 400 VDC, 630 VDC, 1000 VDC

PERMISSIBLE AC VOLTAGES (RMS) UP TO 60Hz:

40 VAC, 63 VAC, 160 VAC, 200 VAC, 220 VAC, 220 VAC

TEST VOLTAGE (ELECTRODE/ELECTRODE):

1.6 x U_R for 2 s

INSULATION RESISTANCE:

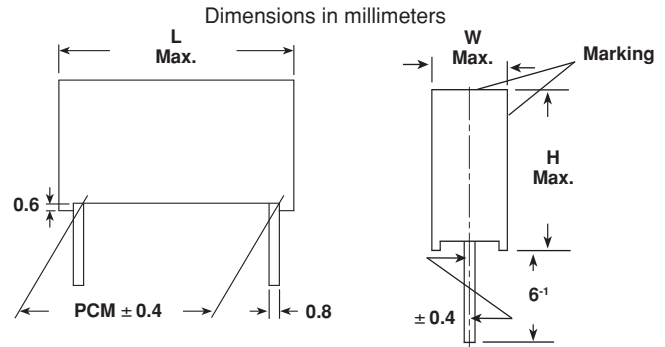
Measured at 100 VDC (63 VDC series measured at 50 VDC) after one minute

For C ≤ 0.33µF and U_R > 100 VDC:

30,000 MΩ minimum value (100,000 MΩ typical value)

For C ≤ 0.33µF and U_R ≤ 100 VDC:

15,000 MΩ minimum value (50,000 MΩ typical value)



TIME CONSTANT:

Measured at 100 VDC (63 VDC series measured at 50 VDC) after one minute

For C > 0.33µF and U_R > 100 VDC:

10,000 s minimum value (40,000 s typical value)

For C > 0.33µF and U_R ≤ 100 VDC:

5000 s minimum value (15,000 s typical value)

CAPACITANCE DRIFT:

Up to + 40°C, ± 1.5% for a period of two years

DERATING FOR DC AND AC.

CATEGORY VOLTAGE U_C:

At + 85°C: U_C = 1.0 U_R

At + 100°C: U_C = 0.8 U_R

SELF INDUCTANCE:

~ 6 nH measured with 2mm long leads

PULL TEST ON LEADS:

≥ 30 N in direction of leads according to IEC 60068-2-21

RELIABILITY:

Operational life > 300,000 h

Failure rate < 2 FIT (40°C and 0.5 x U_R)

For further details, please refer to the general information provided in this catalog.

MAXIMUM PULSE RISE TIME

| PCM (mm) | Maximum pulse rise time d _v /d _t [V/µs] | | | | | |
|-------------|---|---------|---------|---------|---------|----------|
| | 63 VDC | 100 VDC | 250 VDC | 400 VDC | 630 VDC | 1000 VDC |
| 10 | 11 | 13 | 22 | 37 | 60 | 130 |
| 15 | 7 | 8 | 13 | 21 | 33 | 65 |
| 22.5 | 4 | 5 | 8 | 13 | 19 | 34 |
| 27.5 | 3 | 4 | 6 | 10 | 14 | 25 |

If the maximum pulse voltage is less than the rated voltage higher dv/dt values can be permitted.

DISSIPATION FACTOR TAN δ

| MEASURED AT | C ≤ 0.1µF | 0.1µF < C ≤ 1.0µF | C > 1.0µF |
|----------------|-----------------------|-----------------------|-----------------------|
| 1kHz | 8 x 10 ⁻³ | 8 x 10 ⁻³ | 10 x 10 ⁻³ |
| 10kHz | 15 x 10 ⁻³ | 15 x 10 ⁻³ | — |
| 100kHz | 25 x 10 ⁻³ | — | — |
| Maximum values | | | |

| CAPACITANCE | CAPACITANCE CODE | VOLTAGE CODE 06 63 VDC/40 VAC | | | | VOLTAGE CODE 01 100 VDC/63 VAC | | | | VOLTAGE CODE 25 250 VDC/160 VAC | | | |
|-------------|------------------|----------------------------------|------|------|------|-----------------------------------|------|------|------|------------------------------------|------|------|------|
| | | W | H | L | PCM | W | H | L | PCM | W | H | L | PCM |
| 1000 pF | - 210 | — | — | — | — | — | — | — | — | — | — | — | — |
| 1500 pF | - 215 | — | — | — | — | — | — | — | — | — | — | — | — |
| 2200 pF | - 222 | — | — | — | — | — | — | — | — | — | — | — | — |
| 3300 pF | - 233 | — | — | — | — | — | — | — | — | — | — | — | — |
| 4700 pF | - 247 | — | — | — | — | — | — | — | — | — | — | — | — |
| 6800 pF | - 268 | — | — | — | — | — | — | — | — | — | — | — | — |
| 0.01 μF | - 310 | — | — | — | — | — | — | — | — | — | — | — | — |
| 0.015 μF | - 315 | — | — | — | — | — | — | — | — | — | — | — | — |
| 0.022 μF | - 322 | — | — | — | — | — | — | — | — | — | — | — | — |
| 0.033 μF | - 333 | — | — | — | — | — | — | — | — | 4.0 | 9.0 | 13.0 | 10 |
| 0.047 μF | - 347 | — | — | — | — | — | — | — | — | 4.0 | 9.0 | 13.0 | 10 |
| 0.068 μF | - 368 | — | — | — | — | 4.0 | 9.0 | 13.0 | 10 | 4.5 | 9.5 | 13.0 | 10 |
| 0.1 μF | - 410 | — | — | — | — | 4.0 | 9.0 | 13.0 | 10 | 5.5 | 10.5 | 18.0 | 15 |
| 0.15 μF | - 415 | — | — | — | — | 4.0 | 9.0 | 13.0 | 10 | 5.5 | 10.5 | 18.0 | 15 |
| 0.22 μF | - 422 | 4.0 | 9.0 | 13.0 | 10 | 4.5 | 9.5 | 13.0 | 10 | 5.5 | 10.5 | 18.0 | 15 |
| 0.33 μF | - 433 | 4.0 | 9.0 | 13.0 | 10 | 5.5 | 10.5 | 18.0 | 15 | 6.5 | 12.5 | 18.0 | 15 |
| 0.47 μF | - 447 | 5.5 | 10.5 | 13.0 | 10 | 5.5 | 10.5 | 18.0 | 15 | 6.5 | 14.5 | 26.5 | 22.5 |
| 0.68 μF | - 468 | 5.5 | 10.5 | 18.0 | 15 | 6.5 | 12.5 | 18.0 | 15 | 7.5 | 15.5 | 26.5 | 22.5 |
| 1.0 μF | - 510 | 5.5 | 10.5 | 18.0 | 15 | 7.5 | 13.5 | 18.0 | 15 | 8.5 | 16.5 | 26.5 | 22.5 |
| 1.5 μF | - 515 | 6.5 | 12.5 | 18.0 | 15 | 7.5 | 15.5 | 26.5 | 22.5 | 9.0 | 18.5 | 31.5 | 27.5 |
| 2.2 μF | - 522 | 7.5 | 13.5 | 18.0 | 15 | 8.5 | 16.5 | 26.5 | 22.5 | 11.5 | 20.5 | 31.5 | 27.5 |
| 3.3 μF | - 533 | 7.5 | 15.5 | 26.5 | 22.5 | 10.5 | 18.5 | 26.5 | 22.5 | 13.5 | 23.5 | 31.5 | 27.5 |
| 4.7 μF | - 547 | 8.5 | 16.5 | 26.5 | 22.5 | 11.5 | 20.5 | 31.5 | 27.5 | — | — | — | — |
| 6.8 μF | - 568 | 10.5 | 18.5 | 26.5 | 22.5 | 13.5 | 23.5 | 31.5 | 27.5 | — | — | — | — |
| 10.0 μF | - 610 | 11.5 | 20.5 | 31.5 | 27.5 | 15.0 | 24.5 | 31.5 | 27.5 | — | — | — | — |
| 15.0 μF | - 615 | 13.5 | 23.5 | 31.5 | 27.5 | 16.5 | 29.5 | 31.5 | 27.5 | — | — | — | — |

RECOMMENDED PACKAGING

| LETTER CODE | TYPE OF PACKAGING | HEIGHT (H) (mm) | REEL DIAMETER (mm) | ORDERING CODE EXAMPLE | PCM | PCM | PCM |
|-------------|-------------------|--------------------|-----------------------|-----------------------|-----|-----|-------------|
| | | | | | 10 | 15 | 22.5 - 27.5 |
| D | AMMO | 16.5 | S* | MKT 1822-422-065-D | X | X | — |
| G | AMMO | 18.5 | S* | MKT 1822-422-065-G | X | X | — |
| F | REEL | 16.5 | 350 | MKT 1822-422-065-F | X | X | — |
| W | REEL | 18.5 | 350 | MKT 1822-422-065-W | X | X | — |
| V | REEL | 18.5 | 500 | MKT 1822-510-255-V | — | X | X |
| G | AMMO | 18.5 | L* | MKT 1822-510-255-G | — | — | X |
| — | BULK | — | — | MKT 1822-510-255 | X | X | X |

*S = box size 55 x 210 x 340mm (W x H x L)

*L = box size 60 x 360 x 510mm (W x H x L)



| CAPACITANCE | CAPACITANCE CODE | VOLTAGE CODE 40 400 VDC/200 VAC | | | | VOLTAGE CODE 63* 630 VDC/220 VAC | | | | VOLTAGE CODE 10* 1000 VDC/220 VAC | | | |
|-------------|------------------|------------------------------------|------|------|------|-------------------------------------|------|------|------|--------------------------------------|------|------|------|
| | | W | H | L | PCM | W | H | L | PCM | W | H | L | PCM |
| 1000 pF | - 210 | 4.0 | 9.0 | 13.0 | 10 | 4.0 | 9.0 | 13.0 | 10 | 4.0 | 9.0 | 13.0 | 10 |
| 1500 pF | - 215 | 4.0 | 9.0 | 13.0 | 10 | 4.0 | 9.0 | 13.0 | 10 | 4.0 | 9.0 | 13.0 | 10 |
| 2200 pF | - 222 | 4.0 | 9.0 | 13.0 | 10 | 4.0 | 9.0 | 13.0 | 10 | 4.0 | 9.0 | 13.0 | 10 |
| 3300 pF | - 233 | 4.0 | 9.0 | 13.0 | 10 | 4.0 | 9.0 | 13.0 | 10 | 4.0 | 9.0 | 13.0 | 10 |
| 4700 pF | - 247 | 4.0 | 9.0 | 13.0 | 10 | 4.0 | 9.0 | 13.0 | 10 | 5.5 | 10.5 | 13.0 | 10 |
| 6800 pF | - 268 | 4.0 | 9.0 | 13.0 | 10 | 4.0 | 9.0 | 13.0 | 10 | 6.5 | 11.5 | 13.0 | 10 |
| 0.01 µF | - 310 | 4.0 | 9.0 | 13.0 | 10 | 4.0 | 9.0 | 13.0 | 10 | 5.5 | 10.5 | 18.0 | 15 |
| 0.015 µF | - 315 | 4.0 | 9.0 | 13.0 | 10 | 5.5 | 10.5 | 13.0 | 10 | 6.5 | 12.5 | 18.0 | 15 |
| 0.022 µF | - 322 | 4.0 | 9.0 | 13.0 | 10 | 6.5 | 11.5 | 13.0 | 10 | 7.5 | 13.5 | 18.0 | 15 |
| 0.033 µF | - 333 | 4.0 | 9.0 | 13.0 | 10 | 5.5 | 10.5 | 18.0 | 15 | 6.5 | 14.5 | 26.5 | 22.5 |
| 0.047 µF | - 347 | 5.5 | 10.5 | 18.0 | 15 | 6.5 | 12.5 | 18.0 | 15 | 7.5 | 15.5 | 26.5 | 22.5 |
| 0.068 µF | - 368 | 5.5 | 10.5 | 18.0 | 15 | 7.5 | 13.5 | 18.0 | 15 | 8.5 | 16.5 | 26.5 | 22.5 |
| 0.1 µF | - 410 | 5.5 | 10.5 | 18.0 | 15 | 6.5 | 14.5 | 26.5 | 22.5 | 10.5 | 18.5 | 26.5 | 22.5 |
| 0.15 µF | - 415 | 6.5 | 12.5 | 18.0 | 15 | 7.5 | 15.5 | 26.5 | 22.5 | 11.5 | 20.5 | 31.5 | 27.5 |
| 0.22 µF | - 422 | 7.5 | 15.5 | 26.5 | 22.5 | 8.5 | 16.5 | 26.5 | 22.5 | 13.5 | 23.5 | 31.5 | 27.5 |
| 0.33 µF | - 433 | 8.5 | 16.5 | 26.5 | 22.5 | 11.5 | 20.5 | 31.5 | 27.5 | 16.5 | 29.5 | 31.5 | 27.5 |
| 0.47 µF | - 447 | 10.5 | 18.5 | 26.5 | 22.5 | 11.5 | 20.5 | 31.5 | 27.5 | 20.0 | 35.0 | 31.5 | 27.5 |
| 0.68 µF | - 468 | 11.5 | 20.5 | 31.5 | 27.5 | 13.5 | 23.5 | 31.5 | 27.5 | — | — | — | — |
| 1.0 µF | - 510 | 11.5 | 20.5 | 31.5 | 27.5 | 15.0 | 24.5 | 31.5 | 27.5 | — | — | — | — |
| 1.5 µF | - 515 | 13.5 | 23.5 | 31.5 | 27.5 | — | — | — | — | — | — | — | — |
| 2.2 µF | - 522 | — | — | — | — | — | — | — | — | — | — | — | — |
| 3.3 µF | - 533 | — | — | — | — | — | — | — | — | — | — | — | — |
| 4.7 µF | - 547 | — | — | — | — | — | — | — | — | — | — | — | — |
| 6.8 µF | - 568 | — | — | — | — | — | — | — | — | — | — | — | — |
| 10.0 µF | - 610 | — | — | — | — | — | — | — | — | — | — | — | — |
| 15.0 µF | - 615 | — | — | — | — | — | — | — | — | — | — | — | — |

Further C-values upon request.

*Not suitable for mains applications.

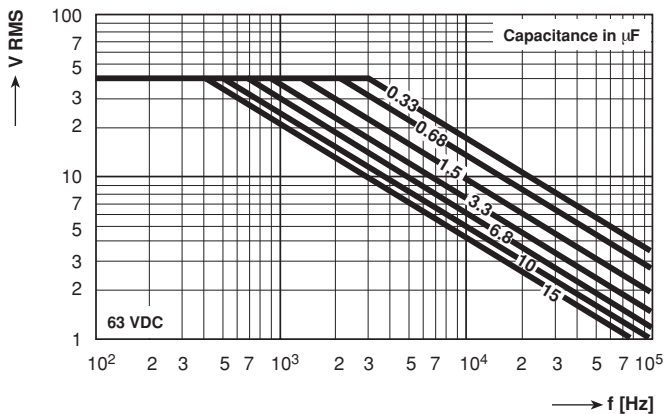
Please refer to X-capacitors in our catalog "RFI Suppression Components".

RECOMMENDED PACKAGING

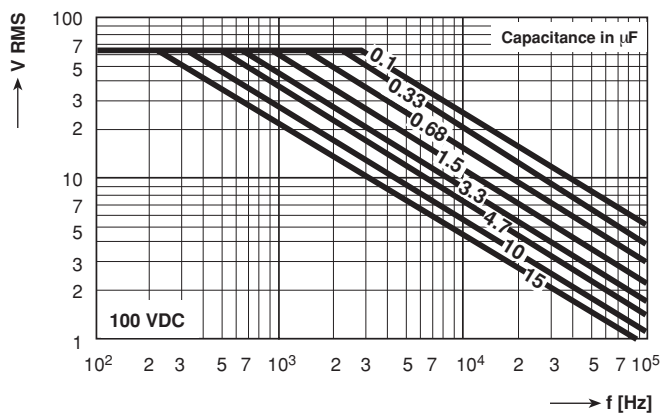
| LETTER CODE | TYPE OF PACKAGING | HEIGHT (H) (mm) | REEL DIAMETER (mm) | ORDERING CODE EXAMPLE | PCM | | |
|-------------|-------------------|--------------------|-----------------------|-----------------------|-----|----|-------------|
| | | | | | 10 | 15 | 22.5 - 27.5 |
| D | AMMO | 16.5 | S* | MKT 1822-422-065-D | X | X | — |
| G | AMMO | 18.5 | S* | MKT 1822-422-065-G | X | X | — |
| F | REEL | 16.5 | 350 | MKT 1822-422-065-F | X | X | — |
| W | REEL | 18.5 | 350 | MKT 1822-422-065-W | X | X | — |
| V | REEL | 18.5 | 500 | MKT 1822-510-255-V | — | X | X |
| G | AMMO | 18.5 | L* | MKT 1822-510-255-G | — | — | X |
| — | BULK | — | — | MKT 1822-522-255 | X | X | X |

*S = box size 55 x 210 x 340mm (W x H x L)

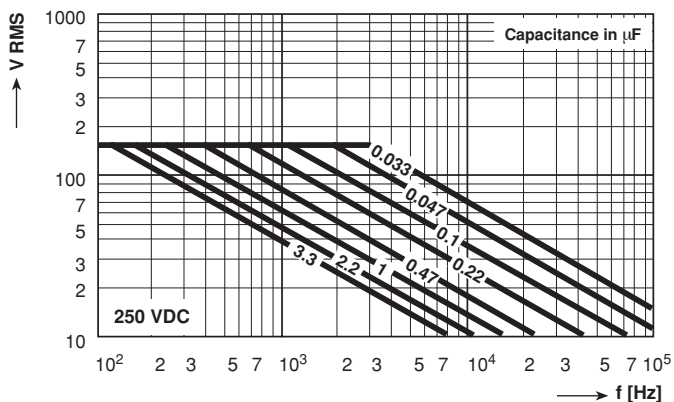
*L = box size 60 x 360 x 510mm (W x H x L)



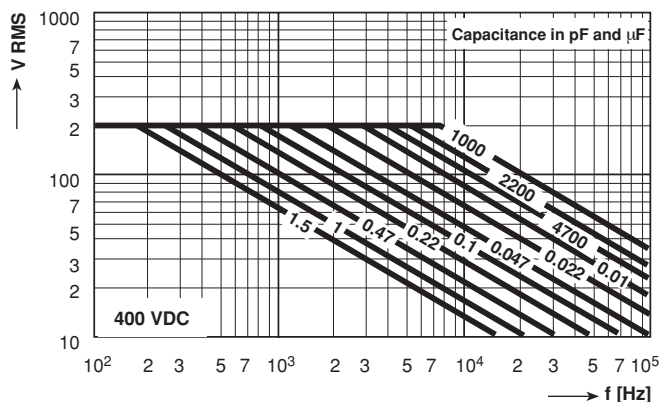
Permissible AC Voltage versus Frequency



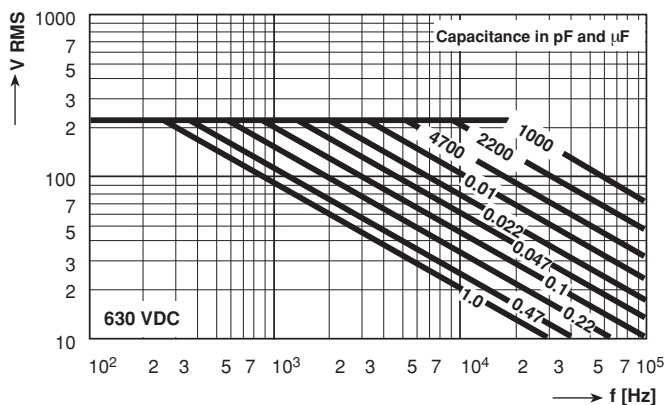
Permissible AC Voltage versus Frequency



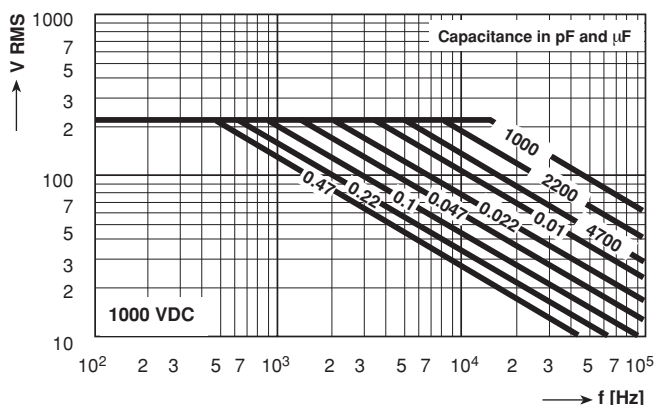
Permissible AC Voltage versus Frequency



Permissible AC Voltage versus Frequency



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