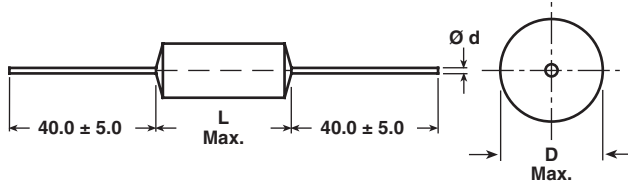


Metallized Polypropylene Film Capacitor

Related Document: IEC 60384-16

Dimensions in millimeters



| D | Ø d |
|--------|-----|
| ≤ 7.0 | 0.7 |
| < 16.0 | 0.8 |
| ≥ 16.0 | 1.0 |

MAIN APPLICATIONS

High voltage, high current and high pulse operations, deflection circuits in TV sets (S-correction and fly-back tuning). Protection circuits in SMPS's. Snubber and electronic ballast circuits. Input and output filtering in SPS designs, storage, timing and integrating circuits.

MARKING

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

DIELECTRIC

Polypropylene film

ELECTRODES

Vacuum deposited aluminum

COATING

Metal-foil-wrapped, insulated, epoxy resin sealed, flame retardant

CONSTRUCTION

Extended double-sided metallized polyester film, internal series connection (630 to 2000 VDC), double-sided metallized polyester carrier film, (refer to general information)

LEADS

Tinned wire

IEC TEST CLASSIFICATION

55/100/56, according to IEC 60068

OPERATING TEMPERATURE RANGE

- 55 °C to + 100 °C

MAXIMUM PULSE RISE TIME

| CAPACITOR LENGTH (MM) | Maximum Pulse Rise Time d_v/d_t [V/μs] | | | | | | |
|-----------------------|------------------------------------------|---------|---------|---------|----------|----------|----------|
| | 160 VDC | 250 VDC | 400 VDC | 630 VDC | 1000 VDC | 1600 VDC | 2000 VDC |
| 17 | 900 | 1140 | 1840 | — | — | — | — |
| 22 | 450 | 560 | 910 | 3430 | — | — | — |
| 29 | 260 | 320 | 520 | 2120 | 2800 | 3800 | 6200 |
| 34 | 202 | 240 | 400 | 1524 | 2000 | 2680 | 4200 |
| 44 | 140 | 170 | 280 | 980 | 1280 | 1690 | 2600 |

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

CAPACITANCE RANGE

1000 pF to 4.7 μF

FEATURES

Product is completely lead (Pb)-free.
Product is RoHS compliant.



RoHS
COMPLIANT

CAPACITANCE TOLERANCES

± 20 % (M), ± 10 % (K), ± 5 % (J)

RATED VOLTAGES (U_R):

160 VDC, 250 VDC, 400 VDC, 630 VDC,
1000 VDC, 1600 VDC, 2000 VDC

PERMISSIBLE AC VOLTAGES (RMS) UP TO 60Hz

100 VAC, 160 VAC, 220 VAC, 400 VAC, 600 VAC, 650 VAC,
700 VAC

TEST VOLTAGE (ELECTRODE/ELECTRODE)

1.6 x U_R for 2 s

INSULATION RESISTANCE

Measured at 100 VDC after one minute

For C ≤ 0.33 μF:

100000 MΩ minimum value (150000 MΩ typical value)

TIME CONSTANT

Measured at 100 VDC after one minute

For C > 0.33 μF:

30000 s minimum value (50000 s typical value)

TEMPERATURE COEFFICIENT

- 250 x 10⁻⁶/°C (typical value)

CAPACITANCE DRIFT

Up to + 40 °C, ± 0.5 % 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 = 0.7 U_R

SELF INDUCTANCE

~ 12 nH measured with 6mm long leads

PULL TEST ON LEADS

≥ 20 N in direction of leads according to IEC 60068-2-21

BEND TEST ON LEADS

2 bends through 90 °C with half of the force used in pull test

RELIABILITY

Operational life > 300000 h

Failure rate < 10 FIT (40 °C and 0.5 x U_R)

For further details, please refer to the general information available at www.vishay.com/?26033.



DISSIPATION FACTOR TAN δ

| MEASURED AT | $C \leq 0.1 \mu\text{F}$ | $0.1 \mu\text{F} < C \leq 1.0 \mu\text{F}$ | $C > 1.0 \mu\text{F}$ |
|----------------|--------------------------|--------------------------------------------|-----------------------|
| 1 kHz | 0.3×10^{-3} | 0.3×10^{-3} | 0.3×10^{-3} |
| 10 kHz | 0.4×10^{-3} | 0.4×10^{-3} | - |
| 100 kHz | 1.5×10^{-3} | - | - |
| Maximum values | | | |

| CAPACITANCE | CAPACITANCE CODE | VOLTAGE CODE 16 160 VDC/100 VAC | | VOLTAGE CODE 25 250 VDC/160 VAC | | VOLTAGE CODE 40 400 VDC/220 VAC | | VOLTAGE CODE 63 630 VDC/250 VAC | |
|---------------------|------------------|------------------------------------|------|------------------------------------|------|------------------------------------|------|------------------------------------|------|
| | | D | L | D | L | D | L | D | L |
| 1000 pF | - 210 | - | - | - | - | - | - | - | - |
| 1500 pF | - 215 | - | - | - | - | - | - | - | - |
| 2200 pF | - 222 | - | - | - | - | - | - | - | - |
| 3300 pF | - 233 | - | - | - | - | - | - | - | - |
| 4700 pF | - 247 | - | - | - | - | - | - | - | - |
| 6800 pF | - 268 | - | - | - | - | - | - | - | - |
| 0.01 μF | - 310 | - | - | - | - | 6.0 | 17.0 | 7.0 | 22.0 |
| 0.015 μF | - 315 | - | - | - | - | 6.5 | 17.0 | 8.0 | 22.0 |
| 0.022 μF | - 322 | - | - | 6.0 | 17.0 | 7.5 | 17.0 | 9.5 | 22.0 |
| 0.033 μF | - 333 | 6.0 | 17.0 | 7.0 | 17.0 | 7.0 | 22.0 | 9.0 | 29.0 |
| 0.047 μF | - 347 | 6.5 | 17.0 | 8.0 | 17.0 | 8.0 | 22.0 | 10.5 | 29.0 |
| 0.068 μF | - 368 | 7.5 | 17.0 | 7.0 | 22.0 | 9.0 | 22.0 | 12.5 | 29.0 |
| 0.1 μF | - 410 | 7.0 | 22.0 | 8.0 | 22.0 | 11.0 | 22.0 | 12.5 | 34.0 |
| 0.15 μF | - 415 | 8.0 | 22.0 | 9.5 | 22.0 | 10.0 | 29.0 | 15.0 | 34.0 |
| 0.22 μF | - 422 | 9.5 | 22.0 | 9.0 | 29.0 | 12.0 | 29.0 | 14.5 | 44.0 |
| 0.33 μF | - 433 | 9.0 | 29.0 | 10.5 | 29.0 | 13.5 | 29.0 | 17.5 | 44.0 |
| 0.47 μF | - 447 | 10.0 | 29.0 | 12.0 | 29.0 | 15.0 | 34.0 | 21.0 | 44.0 |
| 0.68 μF | - 468 | 12.0 | 29.0 | 13.0 | 34.0 | 17.5 | 34.0 | 25.0 | 44.0 |
| 1.0 μF | - 510 | 12.5 | 34.0 | 15.5 | 34.0 | 17.5 | 44.0 | - | - |
| 1.5 μF | - 515 | 15.5 | 34.0 | 15.5 | 44.0 | 21.5 | 44.0 | - | - |
| 2.2 μF | - 522 | 15.5 | 44.0 | 18.5 | 44.0 | 26.0 | 44.0 | - | - |
| 3.3 μF | - 533 | 18.5 | 44.0 | 22.5 | 44.0 | - | - | - | - |
| 4.7 μF | - 547 | 22.0 | 44.0 | - | - | - | - | - | - |

Further C-values on request.

pcm = L + 3.5.

RECOMMENDED PACKAGING

| LETTER CODE | TYPE OF PACKAGING | REEL DIAMETER (mm) | ORDERING CODE EXAMPLES | |
|-------------|-------------------------|--------------------|------------------------|---|
| G | AMMO | - | MKP 1845-310-135-G | X |
| R | REEL | 350 | MKP 1845-310-135-R | X |
| - | BULK for L > 31.5 mm | - | MKP 1845-410-135 | X |

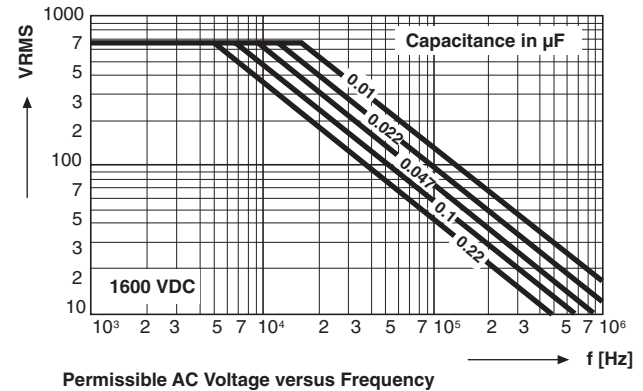
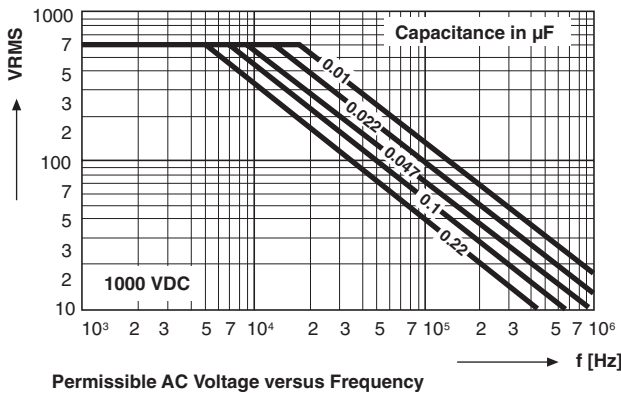
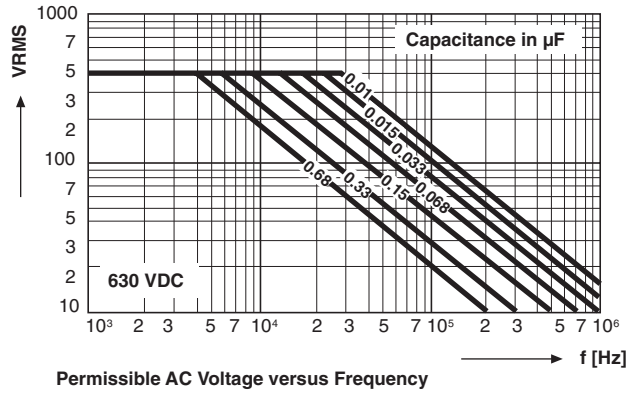
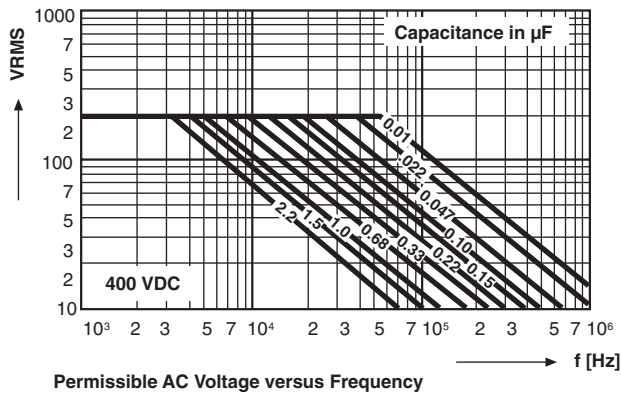
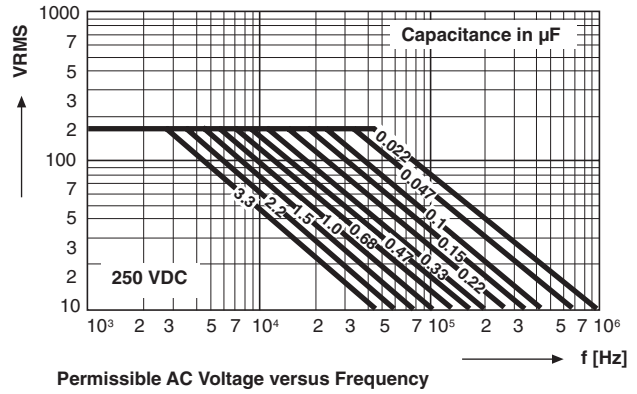
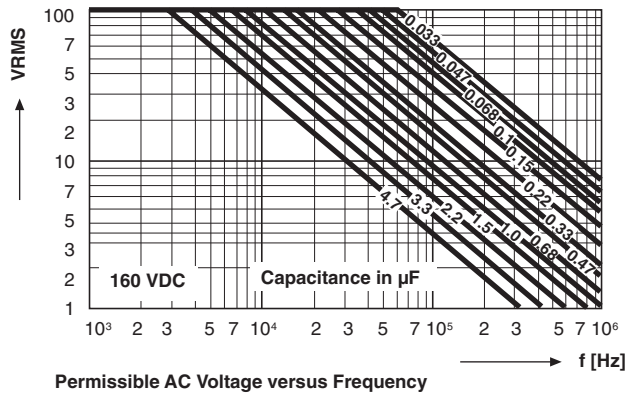


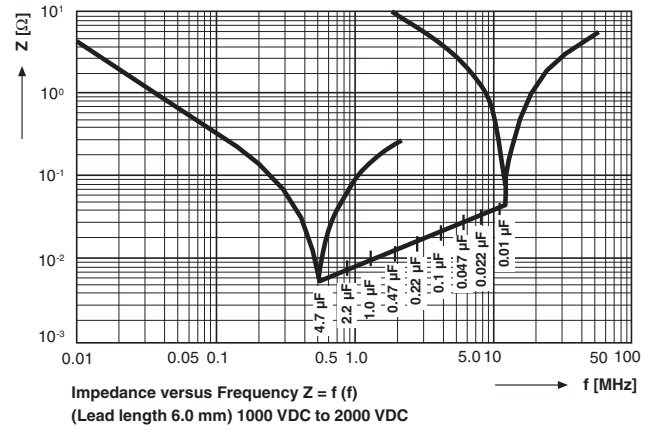
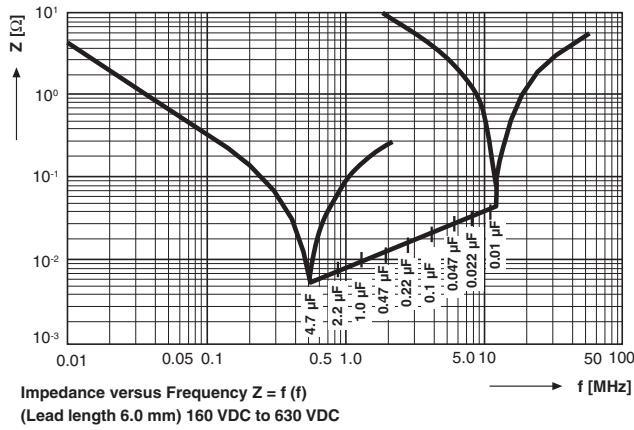
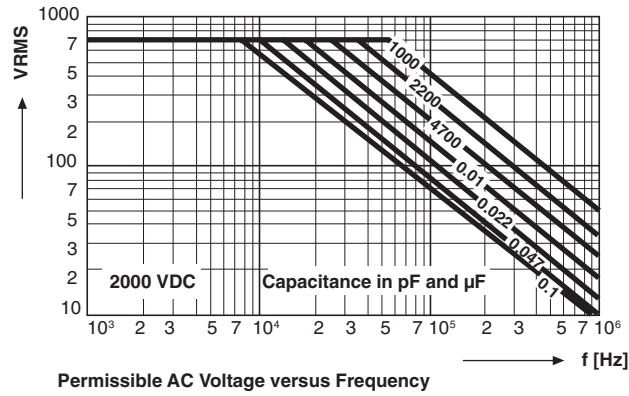
| CAPACITANCE | CAPACITANCE CODE | VOLTAGE CODE 10 1000 VDC/600VAC | | VOLTAGE CODE 13 1600 VDC/650 VAC | | VOLTAGE CODE 20 2000 VDC/700 VAC | |
|-------------|------------------|------------------------------------|------|-------------------------------------|------|-------------------------------------|------|
| | | D | L | D | L | D | L |
| 1000 pF | - 210 | - | - | - | - | 6.5 | 29.0 |
| 1500 pF | - 215 | - | - | - | - | 6.5 | 29.0 |
| 2200 pF | - 222 | - | - | - | - | 6.5 | 29.0 |
| 3300 pF | - 233 | - | - | - | - | 7.0 | 29.0 |
| 4700 pF | - 247 | - | - | - | - | 8.0 | 29.0 |
| 6800 pF | - 268 | - | - | - | - | 9.5 | 29.0 |
| 0.01 µF | - 310 | 6.5 | 29.0 | 8.0 | 29.0 | 11.0 | 29.0 |
| 0.015 µF | - 315 | 8.0 | 29.0 | 9.5 | 29.0 | 11.5 | 34.0 |
| 0.022 µF | - 322 | 9.0 | 29.0 | 11.0 | 29.0 | 13.0 | 34.0 |
| 0.033 µF | - 333 | 11.0 | 29.0 | 11.5 | 34.0 | 16.0 | 34.0 |
| 0.047 µF | - 347 | 11.0 | 34.0 | 13.5 | 34.0 | 15.0 | 44.0 |
| 0.068 µF | - 368 | 13.0 | 34.0 | 16.0 | 34.0 | 18.0 | 44.0 |
| 0.1 µF | - 410 | 15.5 | 34.0 | 15.0 | 44.0 | 21.0 | 44.0 |
| 0.15 µF | - 415 | 15.0 | 44.0 | 18.5 | 44.0 | - | - |
| 0.22 µF | - 422 | 18.0 | 44.0 | 22.0 | 44.0 | - | - |
| 0.33 µF | - 433 | - | - | - | - | - | - |
| 0.47 µF | - 447 | - | - | - | - | - | - |
| 0.68 µF | - 468 | - | - | - | - | - | - |
| 1.0 µF | - 510 | - | - | - | - | - | - |
| 1.5 µF | - 515 | - | - | - | - | - | - |
| 2.2 µF | - 522 | - | - | - | - | - | - |
| 3.3 µF | - 533 | - | - | - | - | - | - |
| 4.7 µF | - 547 | - | - | - | - | - | - |

Further C-values on request.
pcm = L + 3.5.

RECOMMENDED PACKAGING

| LETTER CODE | TYPE OF PACKAGING | REEL DIAMETER (mm) | ORDERING CODE EXAMPLES | |
|-------------|-------------------------|--------------------|------------------------|---|
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| R | REEL | 350 | MKP 1845-310-135-R | X |
| - | BULK for L > 31.5 mm | - | MKP 1845-410-135 | X |







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