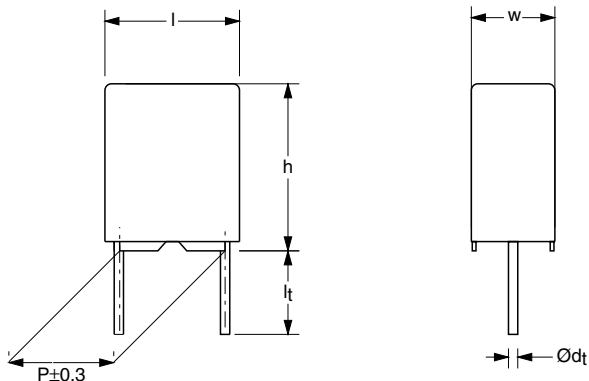


Metallized Polypropylene Film Capacitors

MKP Radial Potted Type



Dimensions in mm

APPLICATIONS

Low losses due to low contact resistance and low loss dielectric result in applications where high frequency occur or high stability is preferred. Their small dimensions make them suitable for circuits with high packaging density.

MARKING

C-value; rated voltage; tolerance; code for manufacturer; year and week of manufacture; manufacturers type designation

DIELECTRIC

Polypropylene film

ELECTRODES

Vacuum deposited aluminum

ENCAPSULATION

Flame retardant plastic case and epoxy resin (UL-class 94 V-0)

CONSTRUCTION

Wound mono construction

LEADS

Tinned wire

CAPACITANCE RANGE (E24 SERIES)

0.001 to 1.2 µF

FEATURES

5, 10 and 15 mm lead pitch. Supplied loose in box, in ammpack and taped on reel. Intermediate values are available of the E96 series

Lead (Pb)-free product

RoHS-compliant product

CAPACITANCE TOLERANCE

± 5 %; ± 2 %

RATED (DC) VOLTAGE

63 V; 160 V; 250 V; 400 V; 630 V

RATED (AC) VOLTAGE

25 V; 63 V; 100 V; 125 V; 160 V

RATED PEAK-TO-PEAK VOLTAGE

70 V; 180 V; 280 V; 350 V; 450 V

CLIMATIC CATEGORY

55/085/56

RATED TEMPERATURE (DC)

85 °C

RATED TEMPERATURE (AC)

85 °C

MAXIMUM APPLICATION TEMPERATURE

85 °C

REFERENCE SPECIFICATIONS

IEC 60384-16

PERFORMANCE GRADE

Grade 1 (long life)

STABILITY GRADE

Grade 1

DETAIL SPECIFICATION

For more detailed data and test requirements contact: filmcaps.roeselare@vishay.com



RoHS
COMPLIANT

COMPOSITION OF CATALOG NUMBER

| TYPE AND PITCHES | |
|------------------|------------------|
| 416 | 5.0/10.0/15.0 mm |
| 417 | 5.0/10.0/15.0 mm |
| 418 | 5.0/10.0/15.0 mm |
| 419 | 5.0/10.0/15.0 mm |
| 420 | 5.0/10.0/15.0 mm |

CAPACITANCE
(numerically)

| MULTIPLIER (nF) | |
|--------------------|---|
| 0.01 | 2 |
| 0.1 | 3 |
| 1 | 4 |

| | | | | |
|-------|-----|----|----|---|
| 2222 | 4.. | XX | XX | X |
| BFC2* | 4.. | XX | XX | X |

Example:

1004 = 100 x 1 = 100 nF

* Use this partnumber for those with access to the Vishay's SAP system and Partners website within the Americas

| TYPE | PACKAGING | PITCH (mm) | LEAD CONFIGURATION | PREFERRED TYPES | | | | | |
|------|-----------------|---------------|---------------------------------------|-----------------|------------|-------|-------|-------|-------|
| | | | | C-TOL | 63 V | 160 V | 250 V | 400 V | 630 V |
| 416 | Taped; see note | 5/10/15 | H = 18.5 mm; P ₀ = 12.7 mm | ± 2 % | 1 | | | | |
| | Loose in box | 15 | lead length 3.5 ± 0.3 mm | ± 2 % | 7 | | | | |
| 417 | Taped; see note | 5/10/15 | H = 18.5 mm; P ₀ = 12.7 mm | ± 2 % | | 1 | | | |
| | Loose in box | 15 | lead length 3.5 ± 0.3 mm | ± 2 % | | 7 | | | |
| 418 | Taped; see note | 5/10/15 | H = 18.5 mm; P ₀ = 12.7 mm | ± 2 % | | | 1 | | |
| | Loose in box | 15 | lead length 3.5 ± 0.3 mm | ± 2 % | | | 7 | | |
| 419 | Taped; see note | 5/10/15 | H = 18.5 mm; P ₀ = 12.7 mm | ± 2 % | | | | 1 | |
| | Loose in box | 15 | lead length 3.5 ± 0.3 mm | ± 2 % | | | | 7 | |
| 420 | Taped; see note | 5/10/15 | H = 18.5 mm; P ₀ = 12.7 mm | ± 2 % | | | | | 1 |
| | Loose in box | 15 | lead length 3.5 ± 0.3 mm | ± 2 % | | | | | 7 |
| | | | | | ON REQUEST | | | | |
| 416 | Taped; see note | 5/10/15 | H = 18.5 mm; P ₀ = 12.7 mm | ± 5 % | 0 | | | | |
| | | | | ± 5 % | 3 | | | | |
| | Loose in box | 5/10 | lead length 4.0 + 1.0/- 0.5 mm | ± 2 % | 4 | | | | |
| | | | | ± 5 % | 6 | | | | |
| 417 | Taped; see note | 5/10/15 | H = 18.5 mm; P ₀ = 12.7 mm | ± 5 % | | 0 | | | |
| | | | | ± 5 % | | 3 | | | |
| | Loose in box | 5/10 | lead length 4.0 + 1.0/- 0.5 mm | ± 2 % | | 4 | | | |
| | | | | ± 5 % | | 6 | | | |
| 418 | Taped; see note | 5/10/15 | H = 18.5 mm; P ₀ = 12.7 mm | ± 5 % | | | 0 | | |
| | | | | ± 5 % | | | 3 | | |
| | Loose in box | 5/10 | lead length 4.0 + 1.0/- 0.5 mm | ± 2 % | | | 4 | | |
| | | | | ± 5 % | | | 6 | | |
| 419 | Taped; see note | 5/10/15 | H = 18.5 mm; P ₀ = 12.7 mm | ± 5 % | | | | 0 | |
| | | | | ± 5 % | | | | 3 | |
| | Loose in box | 5/10 | lead length 4.0 + 1.0/- 0.5 mm | ± 2 % | | | | 4 | |
| | | | | ± 5 % | | | | 6 | |
| 420 | Taped; see note | 5/10/15 | H = 18.5 mm; P ₀ = 12.7 mm | ± 5 % | | | | | 0 |
| | | | | ± 5 % | | | | | 3 |
| | Loose in box | 5/10 | lead length 4.0 + 1.0/- 0.5 mm | ± 2 % | | | | | 4 |
| | | | | ± 5 % | | | | | 6 |

Note:

Pitch = 5 and 10 mm: taped on ammpack

Pitch = 15 mm: taped on reel with diameter = 356 mm

**SPECIFIC REFERENCE DATA**

| DESCRIPTION | VALUE | | | | |
|--|--------------------------|---------------------|--------------------------|---------------------|---------------------|
| Tangent of loss angle: $C \leq 0.0091 \mu\text{F}$ $0.0091 \mu\text{F} < C \leq 0.027 \mu\text{F}$ $0.027 \mu\text{F} < C \leq 0.075 \mu\text{F}$ $0.075 \mu\text{F} < C \leq 0.11 \mu\text{F}$ $0.11 \mu\text{F} < C \leq 0.18 \mu\text{F}$ $0.18 \mu\text{F} < C \leq 0.27 \mu\text{F}$ $0.27 \mu\text{F} < C \leq 0.39 \mu\text{F}$ $0.39 \mu\text{F} < C \leq 0.56 \mu\text{F}$ $0.56 \mu\text{F} < C \leq 0.75 \mu\text{F}$ $0.75 \mu\text{F} < C \leq 1.1 \mu\text{F}$ | at 10 kHz | | at 100 kHz | | |
| | $\leq 5 \times 10^{-4}$ | | $\leq 10 \times 10^{-4}$ | | |
| | $\leq 5 \times 10^{-4}$ | | $\leq 15 \times 10^{-4}$ | | |
| | $\leq 5 \times 10^{-4}$ | | $\leq 20 \times 10^{-4}$ | | |
| | $\leq 5 \times 10^{-4}$ | | $\leq 25 \times 10^{-4}$ | | |
| | $\leq 10 \times 10^{-4}$ | | $\leq 30 \times 10^{-4}$ | | |
| | $\leq 10 \times 10^{-4}$ | | $\leq 35 \times 10^{-4}$ | | |
| | $\leq 10 \times 10^{-4}$ | | $\leq 40 \times 10^{-4}$ | | |
| | $\leq 10 \times 10^{-4}$ | | $\leq 45 \times 10^{-4}$ | | |
| | $\leq 10 \times 10^{-4}$ | | $\leq 50 \times 10^{-4}$ | | |
| | $\leq 10 \times 10^{-4}$ | | $\leq 60 \times 10^{-4}$ | | |
| Rated voltage pulse slope (dU/dt) _R : P = 5 mm P = 10 mm P = 15 mm | at 63 V (DC) | at 100 V (DC) | at 250 V (DC) | at 400 V (DC) | at 630 V (DC) |
| | 50 V/ μs | 50 V/ μs | 50 V/ μs | 50 V/ μs | 50 V/ μs |
| | 20 V/ μs | 20 V/ μs | 20 V/ μs | 20 V/ μs | 50 V/ μs |
| | 50 V/ μs | 50 V/ μs | 50 V/ μs | 50 V/ μs | 50 V/ μs |
| R between leads, for $C \leq 0.33 \mu\text{F}$: at 50 V; 1 minute at 100 V; 1 minute | > 100000 M Ω | > 100000 M Ω | > 100000 M Ω | > 100000 M Ω | > 100000 M Ω |
| RC between leads, for $C > 0.33 \mu\text{F}$ at 10 V; 1 minute | > 30000 s | > 30000 s | > 30000 s | > 30000 s | |
| R between interconnecting leads and casing; 50 V; 1 minute | > 100000 M Ω | > 100000 M Ω | > 100000 M Ω | > 100000 M Ω | > 100000 M Ω |
| Withstanding (DC) voltage (cut off current 10 mA); rise time 100 V/s | 100 V; 1 minute | 260 V; 1 minute | 400 V; 1 minute | 640 V; 1 minute | 1000 V; 1 minute |
| Withstanding (DC) voltage between leads and case | 2840 V; 1 minute | 2840 V; 1 minute | 2840 V; 1 minute | 2840 V; 1 minute | 1260 V; 1 minute |

MKP 416 to 420



Vishay BCcomponents Metallized Polypropylene Film Capacitors MKP Radial Potted Type

$U_{Rdc} = 63 \text{ V}$; $U_{Rac} = 25 \text{ V}$; $U_{p-p} = 70 \text{ V}$

| C (E 24) (μF) | DIMENSIONS w × h × l (mm) | MASS (g) | CATALOG NUMBER 2222 416 AND PACKAGING | | | | | | | |
|--|---------------------------------|-------------|---|------|---------------------------------------|-------|--|-------|---------------------------------------|-----|
| | | | AMMOPACK | | LOOSE IN BOX | | REEL | | LOOSE IN BOX | |
| | | | H = 18.5 mm; P ₀ = 12.7 mm | | It = 4.0 + 1.0/– 0.5 mm | | H = 18.5 mm; P ₀ = 12.7 mm | | It = 3.5 ± 0.3 mm | |
| | | | C-tol = ± 2 % | SPQ | C-tol = ± 2 % | SPQ | C-tol = ± 2 % | SPQ | C-tol = ± 2 % | SPQ |
| | | | last 5 digits of catalog number | | last 5 digits of catalog number | | last 5 digits of catalog number | | last 5 digits of catalog number | |
| Pitch = 5.0 ± 0.3 mm; d _t = 0.50 ± 0.05 mm | | | | | | | | | | |
| 0.036 | 4.5 × 9.0 × 7.2 | 0.45 | 13603 | 1000 | 43603 | 2000 | | | | |
| 0.039 | | | 13903 | | 43903 | | | | | |
| 0.043 | | | 14303 | | 44303 | | | | | |
| 0.047 | | | 14703 | | 44703 | | | | | |
| 0.051 | 6.0 × 11.0 × 7.2 | 0.60 | 15103 | 750 | 45103 | 1500 | | | | |
| 0.056 | | | 15603 | | 45603 | | | | | |
| 0.062 | | | 16203 | | 46203 | | | | | |
| 0.068 | | | 16803 | | 46803 | | | | | |
| 0.075 | | | 17503 | | 47503 | | | | | |
| 0.082 | | | 18203 | | 48203 | | | | | |
| 0.091 | | | 19103 | | 49103 | | | | | |
| 0.1 | | | 11004 | | 41004 | | | | | |
| 0.11 | | | 11104 | | 41104 | | | | | |
| 0.12 | | | 11204 | | 41204 | | | | | |
| Pitch = 10.0 ± 0.4 mm; d _t = 0.60 ± 0.06 mm | | | | | | | | | | |
| 0.13 | 5.0 × 11.0 × 12.5 | 0.85 | 11304 | 600 | 41304 | 1000 | | | | |
| 0.15 | | | 11504 | | 41504 | | | | | |
| 0.16 | 6.0 × 12.0 × 12.5 | 1.10 | 11604 | 500 | 41604 | 750 | | | | |
| 0.18 | | | 11804 | | 41804 | | | | | |
| 0.20 | | | 12004 | | 42004 | | | | | |
| 0.22 | | | 12204 | | 42204 | | | | | |
| 0.24 | | | 12404 | | 42404 | | | | | |
| 0.27 | | | 12704 | | 42704 | | | | | |
| Pitch = 15.0 ± 0.4 mm; d _t = 0.60 ± 0.06 mm | | | | | | | | | | |
| 0.3 | 6.0 × 12.0 × 17.5 | 1.4 | | | | 13004 | 900 | 73004 | 1000 | |
| 0.33 | | | | | | 13304 | | 73304 | | |
| 0.36 | | | | | | 13604 | | 73604 | | |
| 0.39 | | | | | | 13904 | | 73904 | | |
| Pitch = 15.0 ± 0.4 mm; d _t = 0.80 ± 0.08 mm | | | | | | | | | | |
| 0.43 | 7.0 × 13.5 × 17.5 | 1.9 | | | | 14304 | 800 | 74304 | 750 | |
| 0.47 | | | | | | 14704 | | 74704 | | |
| 0.51 | | | | | | 15104 | | 75104 | | |
| 0.56 | | | | | | 15604 | | 75604 | | |
| 0.62 | 8.5 × 15.0 × 17.5 | 2.6 | | | | 16204 | 650 | 76204 | 750 | |
| 0.68 | | | | | | 16804 | | 76804 | | |
| 0.75 | | | | | | 17504 | | 77504 | | |
| 0.82 | | | | | | 18204 | | 78204 | | |
| 0.91 | 10.0 × 16.5 × 17.5 | 3.1 | | | | 19104 | 600 | 79104 | 500 | |
| 1.0 | | | | | | 11005 | | 71005 | | |
| 1.1 | | | | | | 11105 | | 71105 | | |



Metallized Polypropylene Film Capacitors Vishay BCcomponents

MKP Radial Potted Type

$U_{Rdc} = 160 \text{ V}$; $U_{Rac} = 63 \text{ V}$; $U_{p-p} = 180 \text{ V}$

| C (E 24) (μF) | DIMENSIONS w × h × l (mm) | MASS (g) | CATALOG NUMBER 2222 417 AND PACKAGING | | | | | | | | | | | |
|--|---------------------------------|-------------|---|------|---------------------------------------|-------|--|-------|---------------------------------------|-----|--|--|--|--|
| | | | AMMOPACK | | LOOSE IN BOX | | REEL | | LOOSE IN BOX | | | | | |
| | | | H = 18.5 mm; P ₀ = 12.7 mm | | It = 4.0 + 1.0/- 0.5 mm | | H = 18.5 mm; P ₀ = 12.7 mm | | It = 3.5 ± 0.3 mm | | | | | |
| | | | C-tol = ± 2 % | SPQ | C-tol = ± 2 % | SPQ | C-tol = ± 2 % | SPQ | C-tol = ± 2 % | SPQ | | | | |
| | | | last 5 digits of catalog number | | last 5 digits of catalog number | | last 5 digits of catalog number | | last 5 digits of catalog number | | | | | |
| Pitch = 5.0 ± 0.3 mm; d _t = 0.50 ± 0.05 mm | | | | | | | | | | | | | | |
| 0.024 | 4.5 × 9.0 × 7.2 | 0.45 | 12403 | 1000 | 42403 | 2000 | | | | | | | | |
| 0.027 | | | 12703 | | 42703 | | | | | | | | | |
| 0.03 | | | 13003 | | 43003 | | | | | | | | | |
| 0.033 | | | 13303 | | 43303 | | | | | | | | | |
| 0.036 | 6.0 × 11.0 × 7.2 | 0.60 | 13603 | 750 | 43603 | 1500 | | | | | | | | |
| 0.039 | | | 13903 | | 43903 | | | | | | | | | |
| 0.043 | | | 14303 | | 44303 | | | | | | | | | |
| 0.047 | | | 14703 | | 44703 | | | | | | | | | |
| 0.051 | | | 15103 | | 45103 | | | | | | | | | |
| 0.056 | | | 15603 | | 45603 | | | | | | | | | |
| 0.062 | | | 16203 | | 46203 | | | | | | | | | |
| 0.068 | | | 16803 | | 46803 | | | | | | | | | |
| Pitch = 10.0 ± 0.4 mm; d _t = 0.60 ± 0.06 mm | | | | | | | | | | | | | | |
| 0.075 | 4.0 × 10.0 × 12.5 | 0.60 | 17503 | 750 | 47503 | 1000 | | | | | | | | |
| 0.082 | | | 18203 | | 48203 | | | | | | | | | |
| 0.091 | | | 19103 | | 49103 | | | | | | | | | |
| 0.1 | | | 11004 | | 41004 | | | | | | | | | |
| 0.11 | 5.0 × 11.0 × 12.5 | 0.85 | 11104 | 600 | 41104 | 1000 | | | | | | | | |
| 0.12 | | | 11204 | | 41204 | | | | | | | | | |
| 0.13 | | | 11304 | | 41304 | | | | | | | | | |
| 0.15 | | | 11504 | | 41504 | | | | | | | | | |
| 0.16 | 6.0 × 12.0 × 12.5 | 1.10 | 11604 | 500 | 41604 | 750 | | | | | | | | |
| 0.18 | | | 11804 | | 41804 | | | | | | | | | |
| 0.20 | | | 12004 | | 42004 | | | | | | | | | |
| 0.22 | | | 12204 | | 42204 | | | | | | | | | |
| 0.24 | | | 12404 | | 42404 | | | | | | | | | |
| Pitch = 15.0 ± 0.4 mm; d _t = 0.60 ± 0.06 mm | | | | | | | | | | | | | | |
| 0.27 | 5.0 × 11.0 × 17.5 | 1.2 | | | | 12704 | 1100 | 72704 | 1250 | | | | | |
| 0.3 | 6.0 × 12.0 × 17.5 | 1.4 | | | | 13004 | 900 | 73004 | 1000 | | | | | |
| 0.33 | | | | | | 13304 | | 73304 | | | | | | |
| 0.36 | | | | | | 13604 | | 73604 | | | | | | |
| 0.39 | | | | | | 13904 | | 73904 | | | | | | |
| Pitch = 15.0 ± 0.4 mm; d _t = 0.80 ± 0.08 mm | | | | | | | | | | | | | | |
| 0.43 | 7.0 × 13.5 × 17.5 | 1.9 | | | | 14304 | 800 | 74304 | 750 | | | | | |
| 0.47 | | | | | | 14704 | | 74704 | | | | | | |
| 0.51 | | | | | | 15104 | | 75104 | | | | | | |
| 0.56 | | | | | | 15604 | | 75604 | | | | | | |
| 0.62 | 8.5 × 15.0 × 17.5 | 2.6 | | | | 16204 | 650 | 76204 | 750 | | | | | |
| 0.68 | | | | | | 16804 | | 76804 | | | | | | |
| 0.75 | | | | | | 17504 | | 77504 | | | | | | |
| 0.82 | | | | | | 18204 | | 78204 | | | | | | |
| 0.91 | 10.0 × 16.5 × 17.5 | 3.1 | | | | 19104 | 600 | 79104 | 500 | | | | | |
| 1.0 | | | | | | 11005 | | 71005 | | | | | | |
| 1.1 | | | | | | 11105 | | 71105 | | | | | | |

MKP 416 to 420

Vishay BCcomponents Metallized Polypropylene Film Capacitors
MKP Radial Potted Type



$U_{Rdc} = 250 \text{ V}$; $U_{Rac} = 25 \text{ V}$; $U_{p-p} = 70 \text{ V}$

| C (E 24) (μF) | DIMENSIONS w × h × l (mm) | MASS (g) | CATALOG NUMBER 2222 418 AND PACKAGING | | | | | | | | | | | | | | | |
|--|---------------------------------|-------------|--|------|--|----------------------------------|--|-----|--|-----|----------------------------------|----------------------------------|----------------------------------|-----|------|----------------|------|--|
| | | | AMMOPACK | | LOOSE IN BOX | | REEL | | LOOSE IN BOX | | | | | | | | | |
| | | | H = 18.5 mm; P ₀ = 12.7 mm | | It = 4.0 + 1.0/- 0.5 mm | | H = 18.5 mm; P ₀ = 12.7 mm | | It = 3.5 ± 0.3 mm | | | | | | | | | |
| | | | C-tol = ± 2 % last 5 digits of catalog number | SPQ | C-tol = ± 2 % last 5 digits of catalog number | SPQ | C-tol = ± 2 % last 5 digits of catalog number | SPQ | C-tol = ± 2 % last 5 digits of catalog number | SPQ | | | | | | | | |
| Pitch = 5.0 ± 0.3 mm; d _t = 0.50 ± 0.05 mm | | | | | | | | | | | | | | | | | | |
| 0.01 0.011 0.012 0.013 0.015 | 3.5 × 8.0 × 7.2 | 0.35 | 11003 11103 11203 11303 11503 | 1500 | 41003 41103 41203 41303 41503 | 3000 | | | | | | | | | | | | |
| 0.016 0.018 0.02 0.022 0.024 | 4.5 × 9.0 × 7.2 | 0.45 | 11603 11803 12003 12203 12403 | 1000 | 41603 41803 42003 42203 42403 | 2000 | | | | | | | | | | | | |
| 0.027 0.03 0.033 0.036 0.039 0.043 | 6.0 × 11.0 × 7.2 | 0.60 | 12703 13003 13303 13603 13903 14303 | 750 | 42703 43003 43303 43603 43903 44303 | 1500 | | | | | | | | | | | | |
| Pitch = 10.0 ± 0.4 mm; d _t = 0.60 ± 0.06 mm | | | | | | | | | | | | | | | | | | |
| 0.047 0.051 0.056 0.062 0.068 | 4.0 × 10.0 × 12.5 | 0.60 | 14703 15103 15603 16203 16803 | 750 | 44703 45103 45603 46203 46803 | 1000 | | | | | | | | | | | | |
| 0.075 0.082 0.091 | 5.0 × 11.0 × 12.5 | 0.85 | 17503 18203 19103 | 600 | 47503 48203 49103 | 1000 | | | | | | | | | | | | |
| 0.1 0.11 0.12 0.13 | 6.0 × 12.0 × 12.5 | 1.10 | 11004 11104 11204 11304 | 500 | 41004 41104 41204 41304 | 750 | | | | | | | | | | | | |
| Pitch = 15.0 ± 0.4 mm; d _t = 0.60 ± 0.06 mm | | | | | | | | | | | | | | | | | | |
| 0.15 0.16 | 5.0 × 11.0 × 17.5 | 1.2 | | | | 11504 11604 | | | | | | | | | 1100 | 71504 71604 | 1250 | |
| 0.18 0.2 0.22 0.24 | 6.0 × 12.0 × 17.5 | 1.4 | | | | 11804 12004 12204 12404 | | | | | 900 | 71804 72004 72204 72404 | 1000 | | | | | |
| Pitch = 15.0 ± 0.4 mm; d _t = 0.80 ± 0.08 mm | | | | | | | | | | | | | | | | | | |
| 0.27 0.3 0.33 0.36 | 7.0 × 13.5 × 17.5 | 1.9 | | | | | | | | | 12704 13004 13304 13604 | 800 | 72704 73004 73304 73604 | 750 | | | | |
| 0.39 0.43 0.47 0.51 | 8.5 × 15.0 × 17.5 | 2.6 | | | | | | | 13904 14304 14704 15104 | 650 | 73904 74304 74704 75104 | 750 | | | | | | |
| 0.56 0.62 0.68 | 10.0 × 16.5 × 17.5 | 3.1 | 15604 16204 16804 | 600 | 75604 76204 76804 | | | | 500 | | | | | | | | | |



Metallized Polypropylene Film Capacitors Vishay BCcomponents MKP Radial Potted Type

$U_{Rdc} = 400 \text{ V}$; $U_{Rac} = 125 \text{ V}$; $U_{p-p} = 350 \text{ V}$

| C (E 24) (μF) | DIMENSIONS w × h × l (mm) | MASS (g) | CATALOG NUMBER 2222 419 AND PACKAGING | | | | | | | |
|--|---------------------------------|-------------|---|------|---------------------------------------|------|--|-----|---------------------------------------|-----|
| | | | AMMOPACK | | LOOSE IN BOX | | REEL | | LOOSE IN BOX | |
| | | | H = 18.5 mm; P ₀ = 12.7 mm | | It = 4.0 + 1.0/– 0.5 mm | | H = 18.5 mm; P ₀ = 12.7 mm | | It = 3.5 ± 0.3 mm | |
| | | | C-tol = ± 2 % | SPQ | C-tol = ± 2 % | SPQ | C-tol = ± 2 % | SPQ | C-tol = ± 2 % | SPQ |
| | | | last 5 digits of catalog number | | last 5 digits of catalog number | | last 5 digits of catalog number | | last 5 digits of catalog number | |
| Pitch = 5.0 ± 0.3 mm; d _t = 0.50 ± 0.05 mm | | | | | | | | | | |
| 0.001 | 3.5 × 8.0 × 7.2 | 0.35 | 11002 | 1500 | 41002 | 3000 | | | | |
| 0.0011 | | | 11102 | | 41102 | | | | | |
| 0.0012 | | | 11202 | | 41202 | | | | | |
| 0.0013 | | | 11302 | | 41302 | | | | | |
| 0.0015 | | | 11502 | | 41502 | | | | | |
| 0.0016 | | | 11602 | | 41602 | | | | | |
| 0.0018 | | | 11802 | | 41802 | | | | | |
| 0.002 | | | 12002 | | 42002 | | | | | |
| 0.0022 | | | 12202 | | 42202 | | | | | |
| 0.0024 | | | 12402 | | 42402 | | | | | |
| 0.0027 | | | 12702 | | 42702 | | | | | |
| 0.003 | | | 13002 | | 43002 | | | | | |
| 0.0033 | | | 13302 | | 43302 | | | | | |
| 0.0036 | | | 13602 | | 43602 | | | | | |
| 0.0039 | | | 13902 | | 43902 | | | | | |
| 0.0043 | 4.5 × 9.0 × 7.2 | 0.45 | 14302 | 1000 | 44302 | 2000 | | | | |
| 0.0047 | | | 14702 | | 44702 | | | | | |
| 0.0051 | | | 15102 | | 45102 | | | | | |
| 0.0056 | | | 15602 | | 45602 | | | | | |
| 0.0062 | | | 16202 | | 46202 | | | | | |
| 0.0068 | | | 16802 | | 46802 | | | | | |
| 0.0075 | | | 17502 | | 47502 | | | | | |
| 0.0082 | | | 18202 | | 48202 | | | | | |
| 0.0091 | | | 19102 | | 49102 | | | | | |
| 0.01 | | | 11003 | | 41003 | | | | | |
| 0.011 | | | 11103 | | 41103 | | | | | |
| 0.012 | | | 11203 | | 41203 | | | | | |
| 0.013 | 6.0 × 11.0 × 7.2 | 0.60 | 11303 | 750 | 41303 | 1500 | | | | |
| 0.015 | | | 11503 | | 41503 | | | | | |
| 0.016 | | | 11603 | | 41603 | | | | | |
| 0.018 | | | 11803 | | 41803 | | | | | |
| 0.02 | | | 12003 | | 42003 | | | | | |
| Pitch = 10.0 ± 0.4 mm; d _t = 0.60 ± 0.06 mm | | | | | | | | | | |
| 0.022 | 4.0 × 10.0 × 12.5 | 0.60 | 12203 | 750 | 42203 | 1000 | | | | |
| 0.024 | | | 12403 | | 42403 | | | | | |
| 0.027 | | | 12703 | | 42703 | | | | | |
| 0.03 | | | 13003 | | 43003 | | | | | |
| 0.033 | | | 13303 | | 43303 | | | | | |
| 0.036 | 5.0 × 11.0 × 12.5 | 0.85 | 13603 | 600 | 43603 | 1000 | | | | |
| 0.039 | | | 13903 | | 43903 | | | | | |
| 0.043 | | | 14303 | | 44303 | | | | | |

MKP 416 to 420



Vishay BCcomponents Metallized Polypropylene Film Capacitors MKP Radial Potted Type

| C (E 24) (μF) | DIMENSIONS w × h × l (mm) | MASS (g) | CATALOG NUMBER 2222 419 AND PACKAGING | | | | | | | |
|--|---------------------------------|-------------|---|-----|---|-----|---|------|---|------|
| | | | AMMOPACK | | LOOSE IN BOX | | REEL | | LOOSE IN BOX | |
| | | | H = 18.5 mm; P ₀ = 12.7 mm | | It = 4.0 + 1.0/- 0.5 mm | | H = 18.5 mm; P ₀ = 12.7 mm | | It = 3.5 ± 0.3 mm | |
| | | | C-tol = ± 2 % | SPQ | C-tol = ± 2 % | SPQ | C-tol = ± 2 % | SPQ | C-tol = ± 2 % | SPQ |
| | | | last 5 digits of catalog number | | last 5 digits of catalog number | | last 5 digits of catalog number | | last 5 digits of catalog number | |
| 0.047 0.051 0.056 0.062 0.068 | 6.0 × 12.0 × 12.5 | 1.10 | 14703 15103 15603 16203 16803 | 500 | 44703 45103 45603 46203 46803 | 750 | | | | |
| Pitch = 15.0 ± 0.4 mm; d _t = 0.60 ± 0.06 mm | | | | | | | | | | |
| 0.075 0.082 | 5.0 × 11.0 × 17.5 | 1.2 | | | | | 17503 18203 | 1100 | 77503 78203 | 1250 |
| 0.091 0.1 0.11 0.12 0.13 | 6.0 × 12.0 × 17.5 | 1.4 | | | | | 19103 11004 11104 11204 11304 | 900 | 79103 71004 71104 71204 71304 | 1000 |
| Pitch = 15.0 ± 0.4 mm; d _t = 0.80 ± 0.08 mm | | | | | | | | | | |
| 0.15 0.16 0.18 | 7.0 × 13.5 × 17.5 | 1.9 | | | | | 11504 11604 11804 | 800 | 71504 71604 71804 | 750 |
| 0.2 0.22 0.24 0.27 | 8.5 × 15.0 × 17.5 | 2.6 | | | | | 12004 12204 12404 12704 | 650 | 72004 72204 72404 72704 | 750 |
| 0.3 0.33 0.36 | 10.0 × 16.5 × 17.5 | 3.1 | | | | | 13004 13304 13604 | 600 | 73004 73304 73604 | 500 |

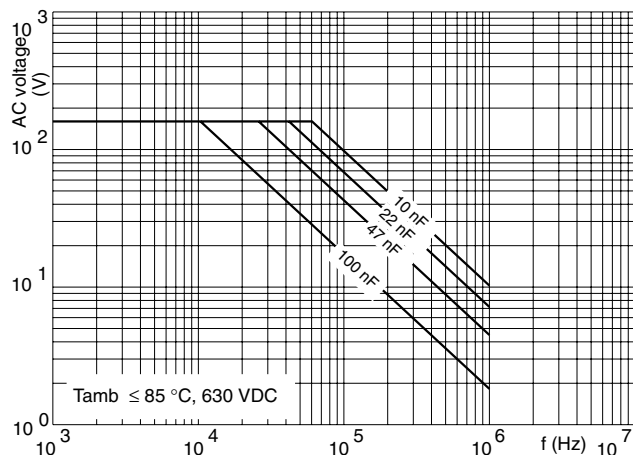
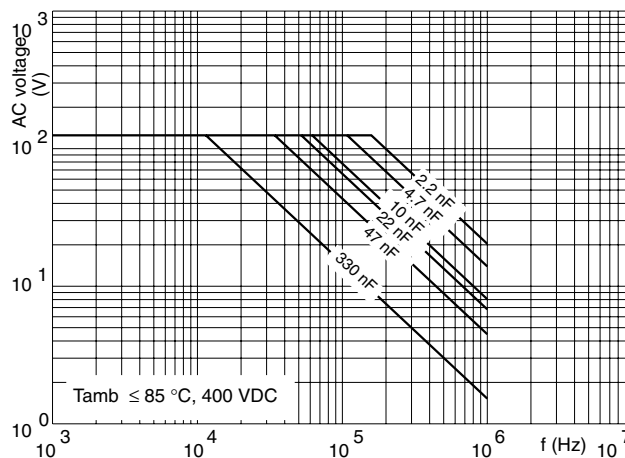
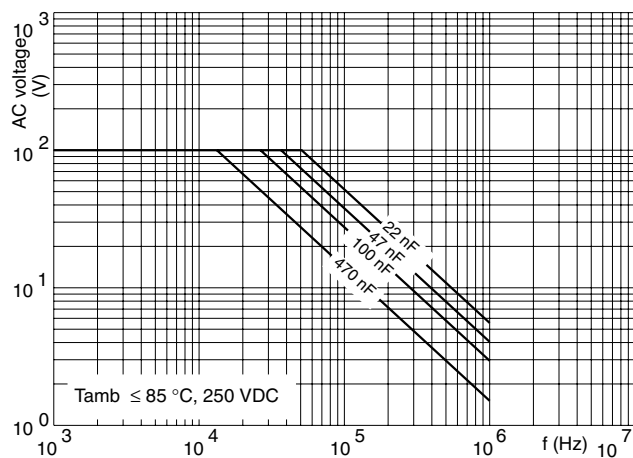
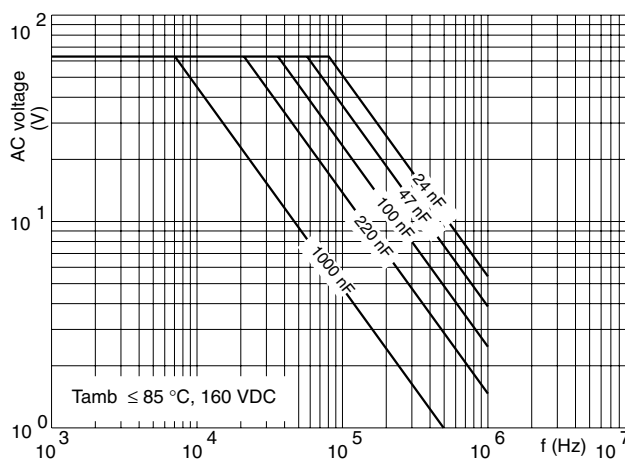
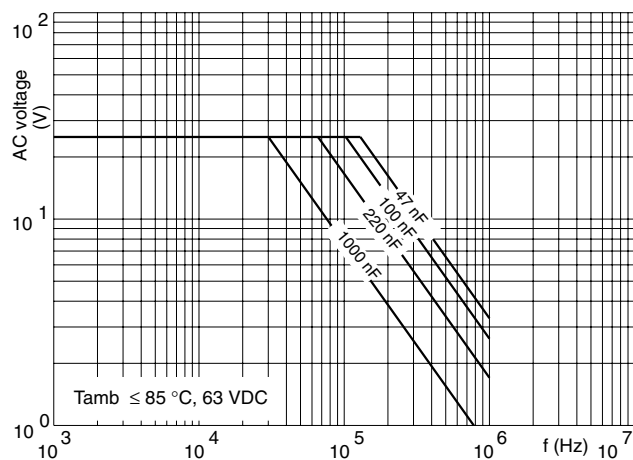


Metallized Polypropylene Film Capacitors Vishay BCcomponents MKP Radial Potted Type

$U_{Rdc} = 630 \text{ V}$; $U_{Rac} = 160 \text{ V}$; $U_{p-p} = 450 \text{ V}$

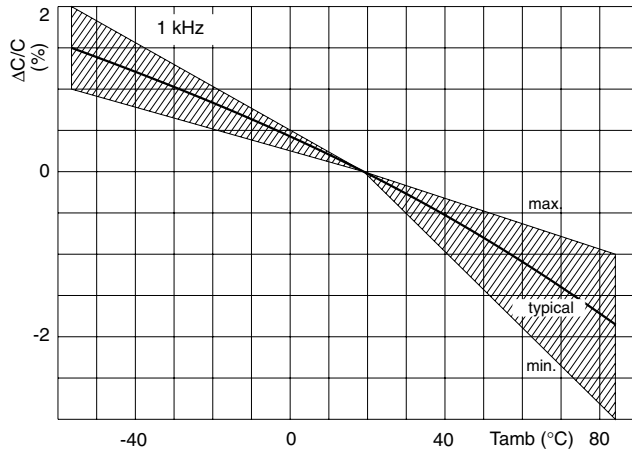
| C (E 24) (μF) | DIMENSIONS w × h × l (mm) | MASS (g) | CATALOG NUMBER 2222 420 AND PACKAGING | | | | | | | | | | | |
|--|---------------------------------|-------------|---|------|---------------------------------------|-------|--|-------|---------------------------------------|-----|--|--|--|--|
| | | | AMMOPACK | | LOOSE IN BOX | | REEL | | LOOSE IN BOX | | | | | |
| | | | H = 18.5 mm; P ₀ = 12.7 mm | | It = 4.0 + 1.0/– 0.5 mm | | H = 18.5 mm; P ₀ = 12.7 mm | | It = 3.5 ± 0.3 mm | | | | | |
| | | | C-tol = ± 2 % | SPQ | C-tol = ± 2 % | SPQ | C-tol = ± 2 % | SPQ | C-tol = ± 2 % | SPQ | | | | |
| | | | last 5 digits of catalog number | | last 5 digits of catalog number | | last 5 digits of catalog number | | last 5 digits of catalog number | | | | | |
| Pitch = 5.0 ± 0.3 mm; d _t = 0.50 ± 0.05 mm | | | | | | | | | | | | | | |
| 0.0015 | 3.5 × 8.0 × 7.2 | 0.35 | 11502 | 1500 | 41502 | 3000 | | | | | | | | |
| 0.0016 | | | 11602 | | 41602 | | | | | | | | | |
| 0.0018 | | | 11802 | | 41802 | | | | | | | | | |
| 0.002 | | | 12002 | | 42002 | | | | | | | | | |
| 0.0022 | | | 12202 | | 42202 | | | | | | | | | |
| 0.0024 | | | 12402 | | 42402 | | | | | | | | | |
| 0.0027 | | | 12702 | | 42702 | | | | | | | | | |
| 0.003 | 4.5 × 9.0 × 7.2 | 0.45 | 13002 | 1000 | 43002 | 2000 | | | | | | | | |
| 0.0033 | | | 13302 | | 43302 | | | | | | | | | |
| 0.0036 | | | 13602 | | 43602 | | | | | | | | | |
| 0.0039 | | | 13902 | | 43902 | | | | | | | | | |
| 0.0043 | 6.0 × 11.0 × 7.2 | 0.60 | 14302 | 750 | 44302 | 1500 | | | | | | | | |
| 0.0047 | | | 14702 | | 44702 | | | | | | | | | |
| 0.0051 | | | 15102 | | 45102 | | | | | | | | | |
| 0.0056 | | | 15602 | | 45602 | | | | | | | | | |
| 0.0062 | | | 16202 | | 46202 | | | | | | | | | |
| 0.0068 | | | 16802 | | 46802 | | | | | | | | | |
| Pitch = 10.0 ± 0.4 mm; d _t = 0.60 ± 0.06 mm | | | | | | | | | | | | | | |
| 0.01 | 4.0 × 10.0 × 12.5 | 0.60 | 11003 | 750 | 41003 | 1000 | | | | | | | | |
| 0.011 | | | 11103 | | 41103 | | | | | | | | | |
| 0.012 | | | 11203 | | 41203 | | | | | | | | | |
| 0.013 | | | 11303 | | 41303 | | | | | | | | | |
| 0.015 | | | 11503 | | 41503 | | | | | | | | | |
| 0.016 | | | 11603 | | 41603 | | | | | | | | | |
| 0.018 | 5.0 × 11.0 × 12.5 | 0.85 | 11803 | 600 | 41803 | 1000 | | | | | | | | |
| 0.02 | | | 12003 | | 42003 | | | | | | | | | |
| 0.022 | | | 12203 | | 42203 | | | | | | | | | |
| 0.024 | | | 12403 | | 42403 | | | | | | | | | |
| 0.027 | 6.0 × 12.0 × 12.5 | 1.10 | 12703 | 500 | 42703 | 750 | | | | | | | | |
| 0.03 | | | 13003 | | 43003 | | | | | | | | | |
| 0.033 | | | 13303 | | 43303 | | | | | | | | | |
| 0.036 | | | 13603 | | 43603 | | | | | | | | | |
| 0.039 | | | 13903 | | 43903 | | | | | | | | | |
| 0.043 | | | 14303 | | 44303 | | | | | | | | | |
| 0.047 | | | 14703 | | 44703 | | | | | | | | | |
| Pitch = 15.0 ± 0.4 mm; d _t = 0.60 ± 0.06 mm | | | | | | | | | | | | | | |
| 0.051 | 6.0 × 12.0 × 17.5 | 1.4 | | | | 15103 | 900 | 75103 | 1000 | | | | | |
| 0.056 | | | | | | 15603 | | 75603 | | | | | | |
| Pitch = 15.0 ± 0.4 mm; d _t = 0.80 ± 0.08 mm | | | | | | | | | | | | | | |
| 0.062 | 7.0 × 13.5 × 17.5 | 1.9 | | | | 16203 | 800 | 76203 | 750 | | | | | |
| 0.068 | | | | | | 16803 | | 76803 | | | | | | |
| 0.075 | | | | | | 17503 | | 77503 | | | | | | |
| 0.082 | | | | | | 18203 | | 78203 | | | | | | |
| 0.091 | 8.5 × 15.0 × 17.5 | 2.6 | | | | 19103 | 650 | 79103 | 750 | | | | | |
| 0.1 | | | | | | 11004 | | 71004 | | | | | | |
| 0.11 | | | | | | 11104 | | 71104 | | | | | | |
| 0.12 | | | | | | 11204 | | 71204 | | | | | | |
| 0.13 | 10.0 × 16.5 × 17.5 | 3.1 | | | | 11304 | 600 | 71304 | 500 | | | | | |
| 0.15 | | | | | | 11504 | | 71504 | | | | | | |
| 0.16 | | | | | | 11604 | | 71604 | | | | | | |
| | | | | | | | | | | | | | | |

MAXIMUM RMS VOLTAGE (SINEWAVE) AS A FUNCTION OF FREQUENCY

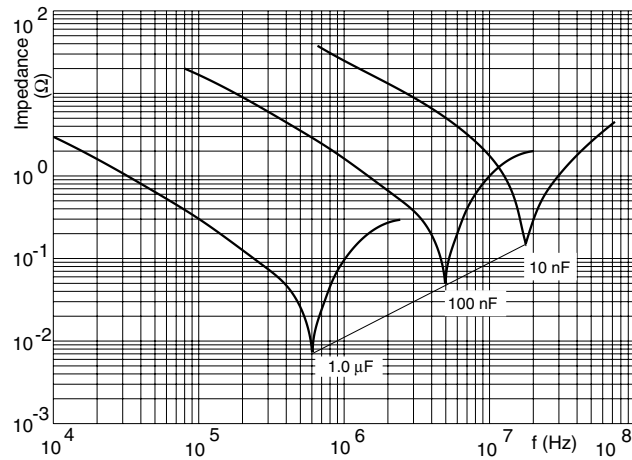




CAPACITANCE



IMPEDANCE





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