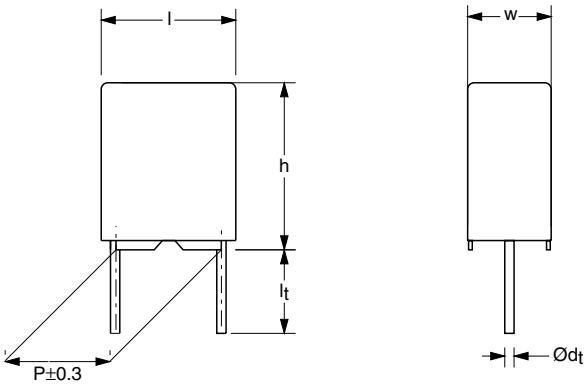
# MKP 422

Vishay BCcomponents

# Metallized Polypropylene Filter Film Capacitors
# MKP Radial Potted Type
# for Surge Voltage Applications




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 0.047 µF

## FEATURES

7.5 and 10 mm lead pitch. Supplied loose in box and ammopack. Withstand surge voltages up to 1.5 kV.

Lead (Pb)-free product

RoHS-compliant product

Pb-free

e3

RoHS COMPLIANT

## CAPACITANCE TOLERANCE

± 5 %; ± 2 %

## RATED (DC) VOLTAGE

630 V

## RATED (AC) VOLTAGE

160 V

## RATED PEAK-TO-PEAK VOLTAGE

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

# Metallized Polypropylene Filter Film Capacitors Vishay BCcomponents
## MKP Radial Potted Type
## for Surge Voltage Applications

### COMPOSITION OF CATALOG NUMBER

| TYPE AND PITCHES | |
|---|---|
| 422 | 7.5 mm |
| | 10.0 mm |

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

**CAPACITANCE (numerically)**

Example:
103 = 100 x 1 = 100 nF

| | | | | |
|---|---|---|---|---|
| 2222 | 422 | XX | XX | X |
| BFC2* | 422 | XX | XX | X |

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

| TYPE | PACKAGING | LEAD CONFIGURATION | PREFERRED TYPES | |
|---|---|---|---|---|
| | | | C-TOL | 630 V |
| 422 | Ammopack | H = 18.5 mm; $P_0$ = 12.7 mm | ± 2 % | 1 |
| | | | | ON REQUEST |
| 422 | Ammopack | H = 18.5 mm; $P_0$ = 12.7 mm | ± 5 % | 0 |
| | Loose in box | lead length 4.0 +1.0/–0.5 mm | ± 5 % | 3 |
| | | | ± 2 % | 4 |

### SPECIFIC REFERENCE DATA

| DESCRIPTION | VALUE | |
|---|---|---|
| Tangent of loss angle: | at 10 kHz | at 100 kHz |
| C ≤ 0.0047 µF | $\leq 5 \times 10^{-4}$ | $\leq 15 \times 10^{-4}$ |
| Rated voltage pulse slope $(dU/dt)_R$ at 630 V (DC) | 50 V/µs | |
| R between leads at 500 V; 1 minute | > 100000 MΩ | |
| R between interconnected leads and case at 500 V; 1 minute | > 100000 MΩ | |
| Withstanding (DC) voltage (cut off current 10 mA); rise time 100 V/s | 1000 V; 1 minute | |
| Withstanding (DC) voltage between leads and case | 2840 V; 1 minute | |

# Vishay BCcomponents Metallized Polypropylene Filter Film Capacitors
## MKP Radial Potted Type
## for Surge Voltage Applications

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

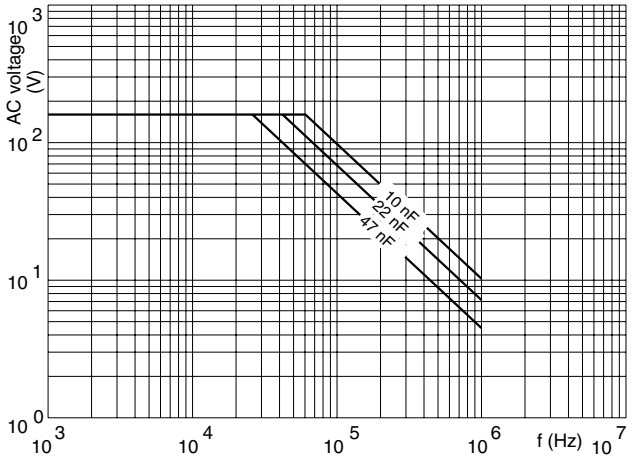
| C (E 24) (µF) | DIMENSIONS b × h × l (mm) | MASS (g) | CATALOGUE NUMBER AND PACKAGING | | |
|---|---|---|---|---|---|
| | | | AMMOPACK | | LOOSE IN BOX |
| | | | H = 18.5 mm | | lt = 4.0 + 1.0/– 0.5 mm |
| | | | C-tol = ± 2 % | | |
| | | | last 5 digits of catalog number | SPQ | SPQ |
| **Pitch = 7.5 ± 0.4 mm; $d_t$ = 0.50 ± 0.05 mm** | | | | | |
| 0.001 | 4.0 × 9.0 × 10.0 | 0.50 | 11002 | 1250 | 1500 |
| 0.0011 | | | 11102 | | |
| 0.0012 | | | 11202 | | |
| 0.0013 | | | 11302 | | |
| 0.0015 | | | 11502 | | |
| 0.0016 | | | 11602 | | |
| 0.0018 | | | 11802 | | |
| 0.002 | | | 12002 | | |
| 0.0022 | | | 12202 | | |
| 0.0024 | | | 12402 | | |
| 0.0027 | | | 12702 | | |
| 0.003 | 5.0 × 10.5 × 10.0 | 0.90 | 13002 | 1000 | 1000 |
| 0.0033 | | | 13302 | | |
| 0.0036 | | | 13602 | | |
| 0.0039 | | | 13902 | | |
| 0.0043 | 6.0 × 11.5 × 10.0 | 1.0 | 14302 | 750 | 750 |
| 0.0047 | | | 14702 | | |
| **Pitch = 10.0 ± 0.4 mm; $d_t$ = 0.60 ± 0.06 mm** | | | | | |
| 0.0051 | 4.0 × 10.0 × 12.5 | 0.60 | 15102 | 750 | 1000 |
| 0.0056 | | | 15602 | | |
| 0.0062 | | | 16202 | | |
| 0.0068 | | | 16802 | | |
| 0.0075 | | | 17502 | | |
| 0.0082 | | | 18202 | | |
| 0.01 | | | 11003 | | |
| 0.011 | | | 11103 | | |
| 0.012 | | | 11203 | | |
| 0.013 | | | 11303 | | |
| 0.015 | | | 11503 | | |
| 0.016 | | | 11603 | | |
| 0.018 | 5.0 × 11.0 × 12.5 | 0.85 | 11803 | 600 | 1000 |
| 0.02 | | | 12003 | | |
| 0.022 | | | 12203 | | |
| 0.024 | | | 12403 | | |
| 0.027 | 6.0 × 12.0 × 12.5 | 1.10 | 12703 | 500 | 750 |
| 0.03 | | | 13003 | | |
| 0.033 | | | 13303 | | |
| 0.036 | | | 13603 | | |
| 0.039 | | | 13903 | | |
| 0.043 | | | 14303 | | |
| 0.047 | | | 14703 | | |



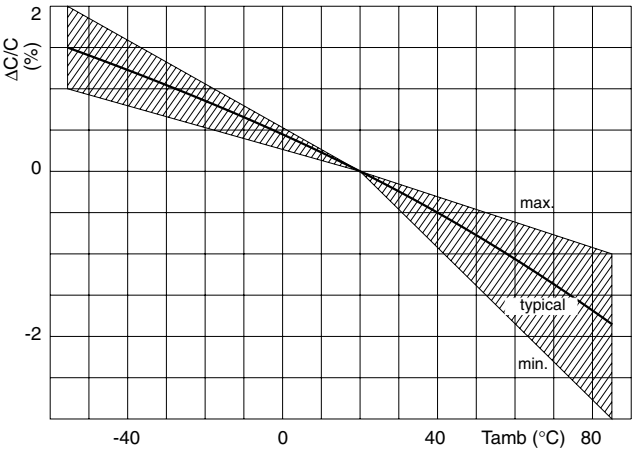
For technical questions contact: filmcaps.roeselare@vishay.com

Document Number: 28151
Revision: 21-Nov-05

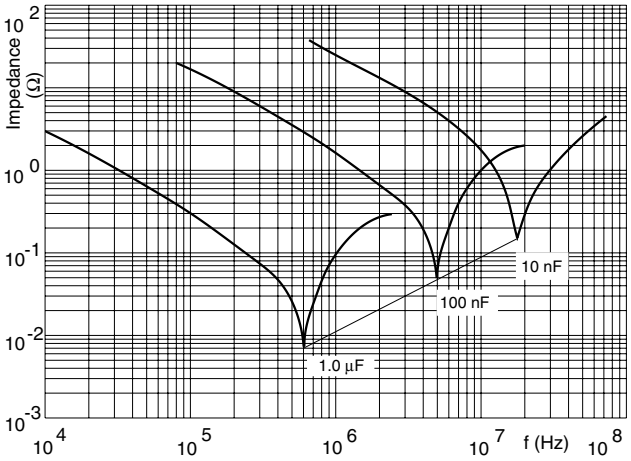
## MAXIMUM RMS VOLTAGE (SINEWAVE) AS A FUNCTION OF FREQUENCY




## CAPACITANCE




## IMPEDANCE



# Disclaimer

ALL PRODUCT, PRODUCT SPECIFICATIONS AND DATA ARE SUBJECT TO CHANGE WITHOUT NOTICE TO IMPROVE RELIABILITY, FUNCTION OR DESIGN OR OTHERWISE.

Vishay Intertechnology, Inc., its affiliates, agents, and employees, and all persons acting on its or their behalf (collectively, “Vishay”), disclaim any and all liability for any errors, inaccuracies or incompleteness contained in any datasheet or in any other disclosure relating to any product.

Vishay makes no warranty, representation or guarantee regarding the suitability of the products for any particular purpose or the continuing production of any product. To the maximum extent permitted by applicable law, Vishay disclaims (i) any and all liability arising out of the application or use of any product, (ii) any and all liability, including without limitation special, consequential or incidental damages, and (iii) any and all implied warranties, including warranties of fitness for particular purpose, non-infringement and merchantability.

Statements regarding the suitability of products for certain types of applications are based on Vishay's knowledge of typical requirements that are often placed on Vishay products in generic applications. Such statements are not binding statements about the suitability of products for a particular application. It is the customer's responsibility to validate that a particular product with the properties described in the product specification is suitable for use in a particular application. Parameters provided in datasheets and / or specifications may vary in different applications and performance may vary over time. All operating parameters, including typical parameters, must be validated for each customer application by the customer's technical experts. Product specifications do not expand or otherwise modify Vishay's terms and conditions of purchase, including but not limited to the warranty expressed therein.

Hyperlinks included in this datasheet may direct users to third-party websites. These links are provided as a convenience and for informational purposes only. Inclusion of these hyperlinks does not constitute an endorsement or an approval by Vishay of any of the products, services or opinions of the corporation, organization or individual associated with the third-party website. Vishay disclaims any and all liability and bears no responsibility for the accuracy, legality or content of the third-party website or for that of subsequent links.

Except as expressly indicated in writing, Vishay products are not designed for use in medical, life-saving, or life-sustaining applications or for any other application in which the failure of the Vishay product could result in personal injury or death. Customers using or selling Vishay products not expressly indicated for use in such applications do so at their own risk. Please contact authorized Vishay personnel to obtain written terms and conditions regarding products designed for such applications.

No license, express or implied, by estoppel or otherwise, to any intellectual property rights is granted by this document or by any conduct of Vishay. Product names and markings noted herein may be trademarks of their respective owners.