

# 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](mailto:filmcaps.roeselare@vishay.com)



**RoHS**  
COMPLIANT

# MKP 416 to 420

Vishay BCcomponents Metallized Polypropylene Film Capacitors  
MKP Radial Potted Type



## 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<br>(nF) |   |
|--------------------|---|
| 0.01               | 2 |
| 0.1                | 3 |
| 1                  | 4 |

Example:  
1004 = 100 x 1 = 100 nF

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

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

| TYPE | PACKAGING       | PITCH<br>(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 <sub>0</sub> = 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 <sub>0</sub> = 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 <sub>0</sub> = 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 <sub>0</sub> = 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 <sub>0</sub> = 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 <sub>0</sub> = 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 <sub>0</sub> = 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 <sub>0</sub> = 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 <sub>0</sub> = 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 <sub>0</sub> = 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:<br>$C \leq 0.0091 \mu\text{F}$<br>$0.0091 \mu\text{F} < C \leq 0.027 \mu\text{F}$<br>$0.027 \mu\text{F} < C \leq 0.075 \mu\text{F}$<br>$0.075 \mu\text{F} < C \leq 0.11 \mu\text{F}$<br>$0.11 \mu\text{F} < C \leq 0.18 \mu\text{F}$<br>$0.18 \mu\text{F} < C \leq 0.27 \mu\text{F}$<br>$0.27 \mu\text{F} < C \leq 0.39 \mu\text{F}$<br>$0.39 \mu\text{F} < C \leq 0.56 \mu\text{F}$<br>$0.56 \mu\text{F} < C \leq 0.75 \mu\text{F}$<br>$0.75 \mu\text{F} < C \leq 1.1 \mu\text{F}$ | 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 $(dU/dt)_R$ :<br>$P = 5 \text{ mm}$<br>$P = 10 \text{ mm}$<br>$P = 15 \text{ mm}$                                                                                                                                                                                                                                                                                                                                                                                                | at 63 V (DC)               | at 100 V (DC)              | at 250 V (DC)              | at 400 V (DC)              | at 630 V (DC)              |
|                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            | 50 V/ $\mu\text{s}$        | 50 V/ $\mu\text{s}$        | 50 V/ $\mu\text{s}$        | 50 V/ $\mu\text{s}$        | 50 V/ $\mu\text{s}$        |
|                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            | 20 V/ $\mu\text{s}$        | 20 V/ $\mu\text{s}$        | 20 V/ $\mu\text{s}$        | 20 V/ $\mu\text{s}$        | 50 V/ $\mu\text{s}$        |
|                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            | 50 V/ $\mu\text{s}$        | 50 V/ $\mu\text{s}$        | 50 V/ $\mu\text{s}$        | 50 V/ $\mu\text{s}$        | 50 V/ $\mu\text{s}$        |
| R between leads, for $C \leq 0.33 \mu\text{F}$ :<br>at 50 V; 1 minute<br>at 100 V; 1 minute                                                                                                                                                                                                                                                                                                                                                                                                                | $> 100000 \text{ M}\Omega$ | $> 100000 \text{ M}\Omega$ | $> 100000 \text{ M}\Omega$ | $> 100000 \text{ M}\Omega$ | $> 100000 \text{ M}\Omega$ |
| RC between leads, for $C > 0.33 \mu\text{F}$ at 10 V;<br>1 minute                                                                                                                                                                                                                                                                                                                                                                                                                                          | $> 30000 \text{ s}$        | $> 30000 \text{ s}$        | $> 30000 \text{ s}$        | $> 30000 \text{ s}$        |                            |
| R between interconnecting leads and casing;<br>50 V; 1 minute                                                                                                                                                                                                                                                                                                                                                                                                                                              | $> 100000 \text{ M}\Omega$ | $> 100000 \text{ M}\Omega$ | $> 100000 \text{ M}\Omega$ | $> 100000 \text{ M}\Omega$ | $> 100000 \text{ M}\Omega$ |
| Withstanding (DC) voltage (cut off current 10 mA);<br>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<br>(E 24)<br>(μF)                                    | DIMENSIONS<br>w × h × l<br>(mm) | MASS<br>(g) | CATALOG NUMBER 2222 416 ..... AND PACKAGING |      |                                       |       |                                          |       |                                       |     |
|--------------------------------------------------------|---------------------------------|-------------|---------------------------------------------|------|---------------------------------------|-------|------------------------------------------|-------|---------------------------------------|-----|
|                                                        |                                 |             | AMMOPACK                                    |      | LOOSE IN BOX                          |       | REEL                                     |       | LOOSE IN BOX                          |     |
|                                                        |                                 |             | H = 18.5 mm;<br>P <sub>0</sub> = 12.7 mm    |      | It =<br>4.0 + 1.0/– 0.5 mm            |       | H = 18.5 mm;<br>P <sub>0</sub> = 12.7 mm |       | It =<br>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<br>catalog<br>number       |      | last 5 digits of<br>catalog<br>number |       | last 5 digits of<br>catalog<br>number    |       | last 5 digits of<br>catalog<br>number |     |
| Pitch = 5.0 ± 0.3 mm; d <sub>t</sub> = 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 <sub>t</sub> = 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 <sub>t</sub> = 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 <sub>t</sub> = 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<br>(E 24)<br>(μF)                                    | DIMENSIONS<br>w × h × l<br>(mm) | MASS<br>(g) | CATALOG NUMBER 2222 417 ..... AND PACKAGING |      |                                       |       |                                          |       |                                       |     |  |  |  |  |
|--------------------------------------------------------|---------------------------------|-------------|---------------------------------------------|------|---------------------------------------|-------|------------------------------------------|-------|---------------------------------------|-----|--|--|--|--|
|                                                        |                                 |             | AMMOPACK                                    |      | LOOSE IN BOX                          |       | REEL                                     |       | LOOSE IN BOX                          |     |  |  |  |  |
|                                                        |                                 |             | H = 18.5 mm;<br>P <sub>0</sub> = 12.7 mm    |      | It =<br>4.0 + 1.0/- 0.5 mm            |       | H = 18.5 mm;<br>P <sub>0</sub> = 12.7 mm |       | It =<br>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<br>catalog<br>number       |      | last 5 digits of<br>catalog<br>number |       | last 5 digits of<br>catalog<br>number    |       | last 5 digits of<br>catalog<br>number |     |  |  |  |  |
| Pitch = 5.0 ± 0.3 mm; d <sub>t</sub> = 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 <sub>t</sub> = 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 <sub>t</sub> = 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 <sub>t</sub> = 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<br>(E 24)<br>(μF)                                    | DIMENSIONS<br>w × h × l<br>(mm) | MASS<br>(g) | CATALOG NUMBER 2222 418 ..... AND PACKAGING |      |                                       |       |                                          |       |                                       |     |
|--------------------------------------------------------|---------------------------------|-------------|---------------------------------------------|------|---------------------------------------|-------|------------------------------------------|-------|---------------------------------------|-----|
|                                                        |                                 |             | AMMOPACK                                    |      | LOOSE IN BOX                          |       | REEL                                     |       | LOOSE IN BOX                          |     |
|                                                        |                                 |             | H = 18.5 mm;<br>P <sub>0</sub> = 12.7 mm    |      | It =<br>4.0 + 1.0/- 0.5 mm            |       | H = 18.5 mm;<br>P <sub>0</sub> = 12.7 mm |       | It =<br>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<br>catalog<br>number       |      | last 5 digits of<br>catalog<br>number |       | last 5 digits of<br>catalog<br>number    |       | last 5 digits of<br>catalog<br>number |     |
| Pitch = 5.0 ± 0.3 mm; d <sub>t</sub> = 0.50 ± 0.05 mm  |                                 |             |                                             |      |                                       |       |                                          |       |                                       |     |
| 0.01                                                   | 3.5 × 8.0 × 7.2                 | 0.35        | 11003                                       | 1500 | 41003                                 | 3000  |                                          |       |                                       |     |
| 0.011                                                  |                                 |             | 11103                                       |      | 41103                                 |       |                                          |       |                                       |     |
| 0.012                                                  |                                 |             | 11203                                       |      | 41203                                 |       |                                          |       |                                       |     |
| 0.013                                                  |                                 |             | 11303                                       |      | 41303                                 |       |                                          |       |                                       |     |
| 0.015                                                  |                                 |             | 11503                                       |      | 41503                                 |       |                                          |       |                                       |     |
| 0.016                                                  | 4.5 × 9.0 × 7.2                 | 0.45        | 11603                                       | 1000 | 41603                                 | 2000  |                                          |       |                                       |     |
| 0.018                                                  |                                 |             | 11803                                       |      | 41803                                 |       |                                          |       |                                       |     |
| 0.02                                                   |                                 |             | 12003                                       |      | 42003                                 |       |                                          |       |                                       |     |
| 0.022                                                  |                                 |             | 12203                                       |      | 42203                                 |       |                                          |       |                                       |     |
| 0.024                                                  |                                 |             | 12403                                       |      | 42403                                 |       |                                          |       |                                       |     |
| 0.027                                                  | 6.0 × 11.0 × 7.2                | 0.60        | 12703                                       | 750  | 42703                                 | 1500  |                                          |       |                                       |     |
| 0.03                                                   |                                 |             | 13003                                       |      | 43003                                 |       |                                          |       |                                       |     |
| 0.033                                                  |                                 |             | 13303                                       |      | 43303                                 |       |                                          |       |                                       |     |
| 0.036                                                  |                                 |             | 13603                                       |      | 43603                                 |       |                                          |       |                                       |     |
| 0.039                                                  |                                 |             | 13903                                       |      | 43903                                 |       |                                          |       |                                       |     |
| 0.043                                                  |                                 |             | 14303                                       |      | 44303                                 |       |                                          |       |                                       |     |
| Pitch = 10.0 ± 0.4 mm; d <sub>t</sub> = 0.60 ± 0.06 mm |                                 |             |                                             |      |                                       |       |                                          |       |                                       |     |
| 0.047                                                  | 4.0 × 10.0 × 12.5               | 0.60        | 14703                                       | 750  | 44703                                 | 1000  |                                          |       |                                       |     |
| 0.051                                                  |                                 |             | 15103                                       |      | 45103                                 |       |                                          |       |                                       |     |
| 0.056                                                  |                                 |             | 15603                                       |      | 45603                                 |       |                                          |       |                                       |     |
| 0.062                                                  |                                 |             | 16203                                       |      | 46203                                 |       |                                          |       |                                       |     |
| 0.068                                                  |                                 |             | 16803                                       |      | 46803                                 |       |                                          |       |                                       |     |
| 0.075                                                  | 5.0 × 11.0 × 12.5               | 0.85        | 17503                                       | 600  | 47503                                 | 1000  |                                          |       |                                       |     |
| 0.082                                                  |                                 |             | 18203                                       |      | 48203                                 |       |                                          |       |                                       |     |
| 0.091                                                  |                                 |             | 19103                                       |      | 49103                                 |       |                                          |       |                                       |     |
| 0.1                                                    | 6.0 × 12.0 × 12.5               | 1.10        | 11004                                       | 500  | 41004                                 | 750   |                                          |       |                                       |     |
| 0.11                                                   |                                 |             | 11104                                       |      | 41104                                 |       |                                          |       |                                       |     |
| 0.12                                                   |                                 |             | 11204                                       |      | 41204                                 |       |                                          |       |                                       |     |
| 0.13                                                   |                                 |             | 11304                                       |      | 41304                                 |       |                                          |       |                                       |     |
| Pitch = 15.0 ± 0.4 mm; d <sub>t</sub> = 0.60 ± 0.06 mm |                                 |             |                                             |      |                                       |       |                                          |       |                                       |     |
| 0.15                                                   | 5.0 × 11.0 × 17.5               | 1.2         |                                             |      |                                       | 11504 | 1100                                     | 71504 | 1250                                  |     |
| 0.16                                                   |                                 |             |                                             |      |                                       | 11604 |                                          | 71604 |                                       |     |
| 0.18                                                   | 6.0 × 12.0 × 17.5               | 1.4         |                                             |      |                                       | 11804 | 900                                      | 71804 | 1000                                  |     |
| 0.2                                                    |                                 |             |                                             |      |                                       | 12004 |                                          | 72004 |                                       |     |
| 0.22                                                   |                                 |             |                                             |      |                                       | 12204 |                                          | 72204 |                                       |     |
| 0.24                                                   |                                 |             |                                             |      |                                       | 12404 |                                          | 72404 |                                       |     |
| Pitch = 15.0 ± 0.4 mm; d <sub>t</sub> = 0.80 ± 0.08 mm |                                 |             |                                             |      |                                       |       |                                          |       |                                       |     |
| 0.27                                                   | 7.0 × 13.5 × 17.5               | 1.9         |                                             |      |                                       | 12704 | 800                                      | 72704 | 750                                   |     |
| 0.3                                                    |                                 |             |                                             |      |                                       | 13004 |                                          | 73004 |                                       |     |
| 0.33                                                   |                                 |             |                                             |      |                                       | 13304 |                                          | 73304 |                                       |     |
| 0.36                                                   |                                 |             |                                             |      |                                       | 13604 |                                          | 73604 |                                       |     |
| 0.39                                                   | 8.5 × 15.0 × 17.5               | 2.6         |                                             |      |                                       | 13904 | 650                                      | 73904 | 750                                   |     |
| 0.43                                                   |                                 |             |                                             |      |                                       | 14304 |                                          | 74304 |                                       |     |
| 0.47                                                   |                                 |             |                                             |      |                                       | 14704 |                                          | 74704 |                                       |     |
| 0.51                                                   |                                 |             |                                             |      |                                       | 15104 |                                          | 75104 |                                       |     |
| 0.56                                                   | 10.0 × 16.5 × 17.5              | 3.1         |                                             |      |                                       | 15604 | 600                                      | 75604 | 500                                   |     |
| 0.62                                                   |                                 |             |                                             |      |                                       | 16204 |                                          | 76204 |                                       |     |
| 0.68                                                   |                                 |             |                                             |      |                                       | 16804 |                                          | 76804 |                                       |     |



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



# Metallized Polypropylene Film Capacitors Vishay BCcomponents

## MKP Radial Potted Type

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

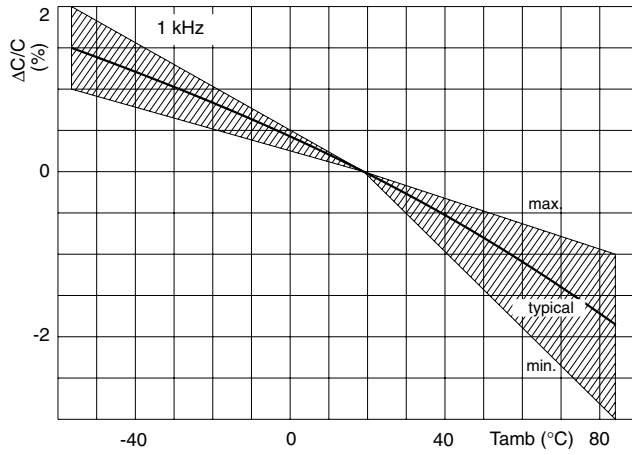
| C<br>(E 24)<br>(μF)                                    | DIMENSIONS<br>w × h × l<br>(mm) | MASS<br>(g) | CATALOG NUMBER 2222 420 ..... AND PACKAGING |      |                                       |       |                                          |       |                                       |     |  |  |  |  |
|--------------------------------------------------------|---------------------------------|-------------|---------------------------------------------|------|---------------------------------------|-------|------------------------------------------|-------|---------------------------------------|-----|--|--|--|--|
|                                                        |                                 |             | AMMOPACK                                    |      | LOOSE IN BOX                          |       | REEL                                     |       | LOOSE IN BOX                          |     |  |  |  |  |
|                                                        |                                 |             | H = 18.5 mm;<br>P <sub>0</sub> = 12.7 mm    |      | It =<br>4.0 + 1.0/– 0.5 mm            |       | H = 18.5 mm;<br>P <sub>0</sub> = 12.7 mm |       | It =<br>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<br>catalog<br>number       |      | last 5 digits of<br>catalog<br>number |       | last 5 digits of<br>catalog<br>number    |       | last 5 digits of<br>catalog<br>number |     |  |  |  |  |
| Pitch = 5.0 ± 0.3 mm; d <sub>t</sub> = 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 <sub>t</sub> = 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 <sub>t</sub> = 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 <sub>t</sub> = 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





## Disclaimer

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