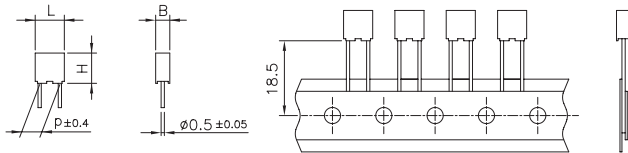


Loose

Taped


**METALLIZED POLYPROPYLENE FILM CAPACITOR  
 MULTIPURPOSE APPLICATIONS**
**Typical applications:** timing, oscillator circuits, high frequency coupling and decoupling.

 PRODUCT CODE: **R79**
**p = 5mm**

All dimensions are in mm.

| Pitch<br>(mm) | Box thickness<br>(mm) | Maximum dimensions (mm) |        |        |
|---------------|-----------------------|-------------------------|--------|--------|
|               |                       | B max                   | H max  | L max  |
| 5.0           | <4.5                  | B +0.1                  | H +0.1 | L +0.2 |
| 5.0           | ≥4.5                  | B +0.1                  | H +0.1 | L +0.3 |

**PRODUCT CODE SYSTEM**

The part number, comprising 14 digits, is formed as follows:

|   |   |   |   |   |   |   |   |   |    |    |    |    |    |
|---|---|---|---|---|---|---|---|---|----|----|----|----|----|
| 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 |
| R | 7 | 9 |   | C |   |   |   |   |    |    |    | -  |    |

Digit 1 to 3 Series code

Digit 4 d.c. rated voltage:

 G = 160V I = 250V  
 M = 400V P = 630V

Digit 5 Pitch: C = 5mm

Digit 6 to 9 Digits 7 - 8 - 9 indicate the first three digits of Capacitance value and the 6th digit indicates the number of zeros that must be added to obtain the Rated Capacitance in pF.

Digit 10 to 11 Mechanical version and packaging (table 1)

Digit 12 Identifies the dimensions and electrical characteristics.

Digit 13 Internal use.

 Digit 14 Capacitance tolerance:  
 H=2.5%; J=5%; K=10%

**GENERAL TECHNICAL DATA**
**Dielectric:** polypropylene film.

**Plates:** aluminium layer deposited by evaporation under vacuum.

**Winding:** non-inductive type.

**Leads:** tinned wire, low thermal conductivity.

**Protection:** plastic case, thermosetting resin filled.  
 Box material is solvent resistant and flame retardant according to UL94.

**Marking:** manufacturer's logo, series (R79), capacitance, tolerance, D.C. rated voltage.

**Climatic category:** 55/105/56 IEC 60068-1

**Operating temperature range:** -55 to +105°C

**Related documents:** IEC 60384-16

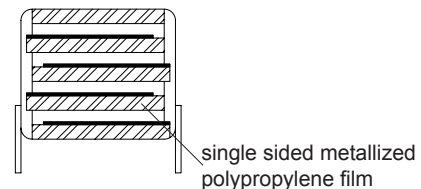
**Winding scheme**


Table 1 (for more detailed information, please refer to page 14)

| Standard packaging style | Lead length<br>(mm) | Ordering code<br>(Digit 10 to 11) |
|--------------------------|---------------------|-----------------------------------|
| AMMO-PACK                |                     | DQ                                |
| REEL Ø 355mm             |                     | CK                                |
| Loose, short leads       | 4 <sup>+1.5</sup>   | AA                                |
| Loose, long leads        | 17 <sup>+1/-2</sup> | Z3                                |

Note: Ammo-pack is the preferred packaging for taped version.

**METALLIZED POLYPROPYLENE FILM CAPACITOR  
 MULTIPURPOSE APPLICATIONS**

p = 5 mm

PRODUCT CODE: R79

| Rated Cap. | 160Vdc/70Vac<br>Std dimensions |      |     |     | Max dv/dt<br>(V/μs) | Max K <sub>0</sub><br>(V <sup>2</sup> /μs) | Part Number   |
|------------|--------------------------------|------|-----|-----|---------------------|--------------------------------------------|---------------|
|            | B                              | H    | L   | p   |                     |                                            |               |
| 0.039 μF   | 3.5                            | 7.5  | 7.2 | 5.0 | 100                 | 32 E3                                      | R79GC2390-4-- |
| 0.047 μF   | 4.5                            | 9.5  | 7.2 | 5.0 | 100                 | 32 E3                                      | R79GC2470-4-- |
| 0.056 μF   | 4.5                            | 9.5  | 7.2 | 5.0 | 100                 | 32 E3                                      | R79GC2560-4-- |
| 0.068 μF   | 4.5                            | 9.5  | 7.2 | 5.0 | 100                 | 32 E3                                      | R79GC2680-4-- |
| 0.082 μF   | 5.0                            | 10.0 | 7.2 | 5.0 | 100                 | 32 E3                                      | R79GC2820-4-- |
| 0.10 μF    | 5.0                            | 10.0 | 7.2 | 5.0 | 100                 | 32 E3                                      | R79GC3100-4-- |
| 0.12 μF    | 6.0                            | 11.0 | 7.2 | 5.0 | 100                 | 32 E3                                      | R79GC3120-4-- |
| 0.15 μF    | 6.0                            | 11.0 | 7.2 | 5.0 | 100                 | 32 E3                                      | R79GC3150-4-- |
| 0.18 μF    | 7.2                            | 13.0 | 7.2 | 5.0 | 100                 | 32 E3                                      | R79GC3180-4-- |
| 0.22 μF    | 7.2                            | 13.0 | 7.2 | 5.0 | 100                 | 32 E3                                      | R79GC3220-4-- |

Mechanical version and packaging (Table1)

Internal use

Tolerance: J (±5%); K (±10%)

| Rated Cap. | 400Vdc/200Vac<br>Std dimensions |      |     |     | Max dv/dt<br>(V/μs) | Max K <sub>0</sub><br>(V <sup>2</sup> /μs) | Part Number   |
|------------|---------------------------------|------|-----|-----|---------------------|--------------------------------------------|---------------|
|            | B                               | H    | L   | p   |                     |                                            |               |
| 3900 pF    | 3.5                             | 7.5  | 7.2 | 5.0 | 400                 | 320 E3                                     | R79MC1390-4-- |
| 4700 pF    | 3.5                             | 7.5  | 7.2 | 5.0 | 400                 | 320 E3                                     | R79MC1470-4-- |
| 5600 pF    | 3.5                             | 7.5  | 7.2 | 5.0 | 400                 | 320 E3                                     | R79MC1560-4-- |
| 6800 pF    | 3.5                             | 7.5  | 7.2 | 5.0 | 400                 | 320 E3                                     | R79MC1680-4-- |
| 8200 pF    | 3.5                             | 7.5  | 7.2 | 5.0 | 400                 | 320 E3                                     | R79MC1820-4-- |
| 0.010 μF   | 3.5                             | 7.5  | 7.2 | 5.0 | 400                 | 320 E3                                     | R79MC2100-4-- |
| 0.012 μF   | 4.5                             | 9.5  | 7.2 | 5.0 | 400                 | 320 E3                                     | R79MC2120-4-- |
| 0.015 μF   | 4.5                             | 9.5  | 7.2 | 5.0 | 400                 | 320 E3                                     | R79MC2150-4-- |
| 0.018 μF   | 5.0                             | 10.0 | 7.2 | 5.0 | 400                 | 320 E3                                     | R79MC2180-4-- |
| 0.022 μF   | 5.0                             | 10.0 | 7.2 | 5.0 | 400                 | 320 E3                                     | R79MC2220-4-- |
| 0.027 μF   | 6.0                             | 11.0 | 7.2 | 5.0 | 400                 | 320 E3                                     | R79MC2270-4-- |
| 0.033 μF   | 6.0                             | 11.0 | 7.2 | 5.0 | 400                 | 320 E3                                     | R79MC2330-4-- |
| 0.039 μF   | 7.2                             | 13.0 | 7.2 | 5.0 | 400                 | 320 E3                                     | R79MC2390-4-- |
| 0.047 μF   | 7.2                             | 13.0 | 7.2 | 5.0 | 400                 | 320 E3                                     | R79MC2470-4-- |

| Rated Cap. | 250Vdc/160Vac<br>Std dimensions |      |     |     | Max dv/dt<br>(V/μs) | Max K <sub>0</sub><br>(V <sup>2</sup> /μs) | Part Number   |
|------------|---------------------------------|------|-----|-----|---------------------|--------------------------------------------|---------------|
|            | B                               | H    | L   | p   |                     |                                            |               |
| 0.012 μF   | 3.5                             | 7.5  | 7.2 | 5.0 | 250                 | 125 E3                                     | R79IC2120-4-- |
| 0.015 μF   | 3.5                             | 7.5  | 7.2 | 5.0 | 250                 | 125 E3                                     | R79IC2150-4-- |
| 0.018 μF   | 3.5                             | 7.5  | 7.2 | 5.0 | 250                 | 125 E3                                     | R79IC2180-4-- |
| 0.022 μF   | 3.5                             | 7.5  | 7.2 | 5.0 | 250                 | 125 E3                                     | R79IC2220-4-- |
| 0.027 μF   | 3.5                             | 7.5  | 7.2 | 5.0 | 250                 | 125 E3                                     | R79IC2270-4-- |
| 0.033 μF   | 3.5                             | 7.5  | 7.2 | 5.0 | 250                 | 125 E3                                     | R79IC2330-4-- |
| 0.039 μF   | 4.5                             | 9.5  | 7.2 | 5.0 | 250                 | 125 E3                                     | R79IC2390-4-- |
| 0.047 μF   | 4.5                             | 9.5  | 7.2 | 5.0 | 250                 | 125 E3                                     | R79IC2470-4-- |
| 0.056 μF   | 4.5                             | 9.5  | 7.2 | 5.0 | 250                 | 125 E3                                     | R79IC2560-4-- |
| 0.068 μF   | 5.0                             | 10.0 | 7.2 | 5.0 | 250                 | 125 E3                                     | R79IC2680-4-- |
| 0.082 μF   | 6.0                             | 11.0 | 7.2 | 5.0 | 250                 | 125 E3                                     | R79IC2820-4-- |
| 0.10 μF    | 6.0                             | 11.0 | 7.2 | 5.0 | 250                 | 125 E3                                     | R79IC3100-4-- |
| 0.12 μF    | 7.2                             | 13.0 | 7.2 | 5.0 | 250                 | 125 E3                                     | R79IC3120-4-- |
| 0.15 μF    | 7.2                             | 13.0 | 7.2 | 5.0 | 250                 | 125 E3                                     | R79IC3150-4-- |

Mechanical version and packaging (Table1)

Internal use

Tolerance: H (±2.5%); J (±5%); K (±10%)

| Rated Cap. | 630Vdc/220Vac*<br>Std dimensions |      |     |     | Max dv/dt<br>(V/μs) | Max K <sub>0</sub><br>(V <sup>2</sup> /μs) | Part Number   |
|------------|----------------------------------|------|-----|-----|---------------------|--------------------------------------------|---------------|
|            | B                                | H    | L   | p   |                     |                                            |               |
| 1000 pF    | 3.5                              | 7.5  | 7.2 | 5.0 | 500                 | 630 E3                                     | R79PC1100-4-- |
| 1200 pF    | 3.5                              | 7.5  | 7.2 | 5.0 | 500                 | 630 E3                                     | R79PC1120-4-- |
| 1500 pF    | 3.5                              | 7.5  | 7.2 | 5.0 | 500                 | 630 E3                                     | R79PC1150-4-- |
| 1800 pF    | 3.5                              | 7.5  | 7.2 | 5.0 | 500                 | 630 E3                                     | R79PC1180-4-- |
| 2200 pF    | 3.5                              | 7.5  | 7.2 | 5.0 | 500                 | 630 E3                                     | R79PC1220-4-- |
| 2700 pF    | 3.5                              | 7.5  | 7.2 | 5.0 | 500                 | 630 E3                                     | R79PC1270-4-- |
| 3300 pF    | 3.5                              | 7.5  | 7.2 | 5.0 | 500                 | 630 E3                                     | R79PC1330-4-- |
| 3900 pF    | 4.5                              | 9.5  | 7.2 | 5.0 | 600                 | 630 E3                                     | R79PC1390-4-- |
| 4700 pF    | 4.5                              | 9.5  | 7.2 | 5.0 | 600                 | 630 E3                                     | R79PC1470-4-- |
| 5600 pF    | 4.5                              | 9.5  | 7.2 | 5.0 | 600                 | 630 E3                                     | R79PC1560-4-- |
| 6800 pF    | 5.0                              | 10.0 | 7.2 | 5.0 | 600                 | 630 E3                                     | R79PC1680-4-- |
| 8200 pF    | 5.0                              | 10.0 | 7.2 | 5.0 | 600                 | 630 E3                                     | R79PC1820-4-- |
| 0.010 μF   | 6.0                              | 11.0 | 7.2 | 5.0 | 600                 | 630 E3                                     | R79PC2100-4-- |
| 0.012 μF   | 6.0                              | 11.0 | 7.2 | 5.0 | 600                 | 630 E3                                     | R79PC2120-4-- |
| 0.015 μF   | 7.2                              | 13.0 | 7.2 | 5.0 | 600                 | 630 E3                                     | R79PC2150-4-- |
| 0.018 μF   | 7.2                              | 13.0 | 7.2 | 5.0 | 600                 | 630 E3                                     | R79PC2180-4-- |

Mechanical version and packaging (Table1)

Internal use

Tolerance: H (±2.5%); J (±5%); K (±10%)

All dimensions are in mm.

Note: If the working voltage (V) is lower than the rated voltage (V<sub>R</sub>), the capacitor may work at higher dv/dt. In this case the maximum value allowed is obtained multiplying the above value (see table dv/dt) with the ratio V<sub>R</sub>/V.

The pulse characteristic K<sub>0</sub> depends on the voltage wave-form and in any case it cannot overcome the value given in the above table. The dv/dt test is carried out at 2 times the above values.

\*Not suitable for across-the-line applications. Please refer to Interference Suppression Capacitors (page 145).

**METALLIZED POLYPROPYLENE FILM CAPACITOR  
 MULTIPURPOSE APPLICATIONS**

p = 5 mm

PRODUCT CODE: R79

**ELECTRICAL CHARACTERISTICS**

**Rated voltage ( $V_R$ ):** 160Vdc - 250 Vdc 400 Vdc - 630 Vdc

**Rated temperature ( $T_R$ ):** +85°C

**Temperature derated voltage:**

for temperatures between +85°C and +105°C a decreasing factor of 1.25% per degree C on the rated voltage  $V_R$  (d.c. and a.c.) has to be applied.

**Capacitance range:** 1000pF to 0.22  $\mu$ F

**Capacitance values:**

E12 series (IEC 60063 Norm).

**Capacitance tolerances** (measured at 1 kHz):  
 $\pm 2.5\%$  (H);  $\pm 5\%$  (J);  $\pm 10\%$  (K).

**Total self-inductance (L):**  $\approx 6$  nH  
 (lead length  $\approx 2$  mm).

**Temperature coefficient** (ppm/°C):  
 -200 (typical value).

**Dissipation factor (DF):**

$\text{tg} \delta 10^{-4}$  at +25°C  $\pm 5^\circ\text{C}$

| kHz | MKP C $\leq 0.1 \mu$ F            | MKP C $> 0.1 \mu$ F               |
|-----|-----------------------------------|-----------------------------------|
|     | $\text{tg} \delta \times 10^{-4}$ | $\text{tg} \delta \times 10^{-4}$ |
| 1   | $\leq 6$                          | $\leq 6$                          |
| 10  | $\leq 10$                         | $\leq 10$                         |
| 100 | $\leq 30$                         |                                   |

**Dielectric absorption (DA):** 0.05%

**Insulation resistance:**

**Test conditions**

Temperature: +25°C  $\pm 5^\circ\text{C}$

Voltage charge time: 1 min

Voltage charge: 100Vdc

**Performance**

$\geq 1 \times 10^5 \text{ M}\Omega$  (Typ.value:  $5 \times 10^5 \text{ M}\Omega$ )

**Test voltage between terminations:**

$1.6 \times V_R$  applied for 2 s at +25°C  $\pm 5^\circ\text{C}$ .

**TEST METHOD AND PERFORMANCE**

**Damp heat, steady state:**

**Test conditions**

Temperature: +40°C  $\pm 2^\circ\text{C}$

Relative humidity (RH): 93%  $\pm 2\%$

Test duration: 56 days

**Performance**

Capacitance change  $|\Delta C/C|$ :  $\leq 3\%$

DF change ( $\Delta \text{tg} \delta$ ):  $\leq 10 \times 10^{-4}$  at 1kHz

Insulation resistance:  $\geq 50\%$  of initial limit.

**Endurance:**

**Test conditions**

Temperature: +85°C  $\pm 2^\circ\text{C}$

Test duration: 1000 h

Voltage applied:  $1.25 \times V_R$

**Performance**

Capacitance change  $|\Delta C/C|$ :  $\leq 3\%$

DF change ( $\Delta \text{tg} \delta$ ):  $\leq 10 \times 10^{-4}$  at 10kHz

Insulation resistance:  $\geq 50\%$  of initial limit.

**Resistance to soldering heat:**

**Test conditions**

Solder bath temperature: +260°C  $\pm 5^\circ\text{C}$

Dipping time (with heat screen): 10 s  $\pm 1$  s

**Performance**

Capacitance change  $|\Delta C/C|$ :  $\leq 2\%$

DF change ( $\Delta \text{tg} \delta$ ):  $\leq 10 \times 10^{-4}$  at 10kHz

Insulation resistance:  $\geq$  initial limit.

**Long term stability (after two years):**

**Storage:** standard environmental conditions (see page 12).

**Performance**

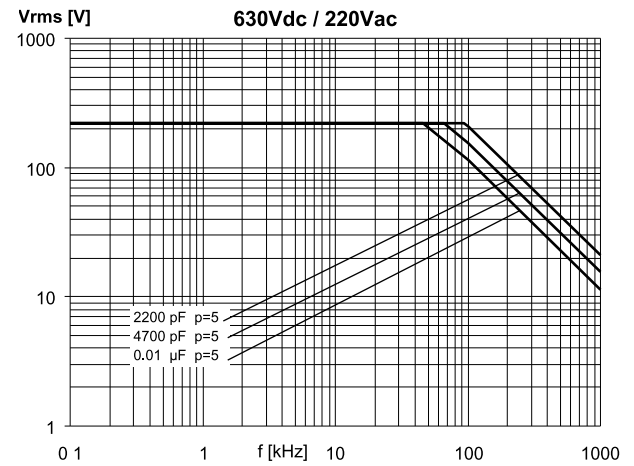
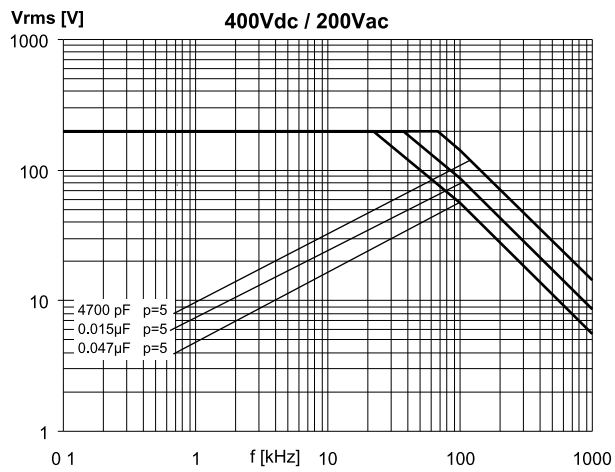
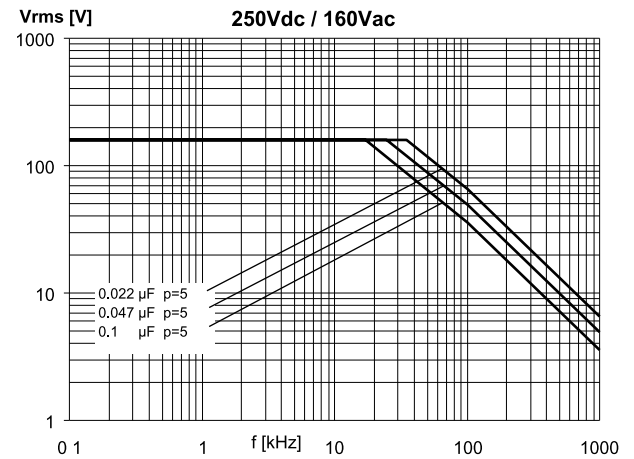
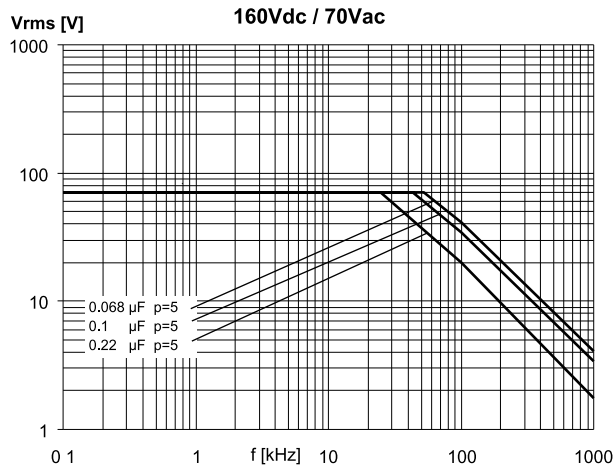
Capacitance change  $|\Delta C/C|$ :  $\leq 0.5\%$

**METALLIZED POLYPROPYLENE FILM CAPACITOR  
MULTIPURPOSE APPLICATIONS**

**p = 5 mm**

**PRODUCT CODE: R79**

**MAX. VOLTAGE (Vr.m.s.) VERSUS FREQUENCY (sinusoidal wave-form /  $T_h \leq 40^\circ\text{C}$ )**



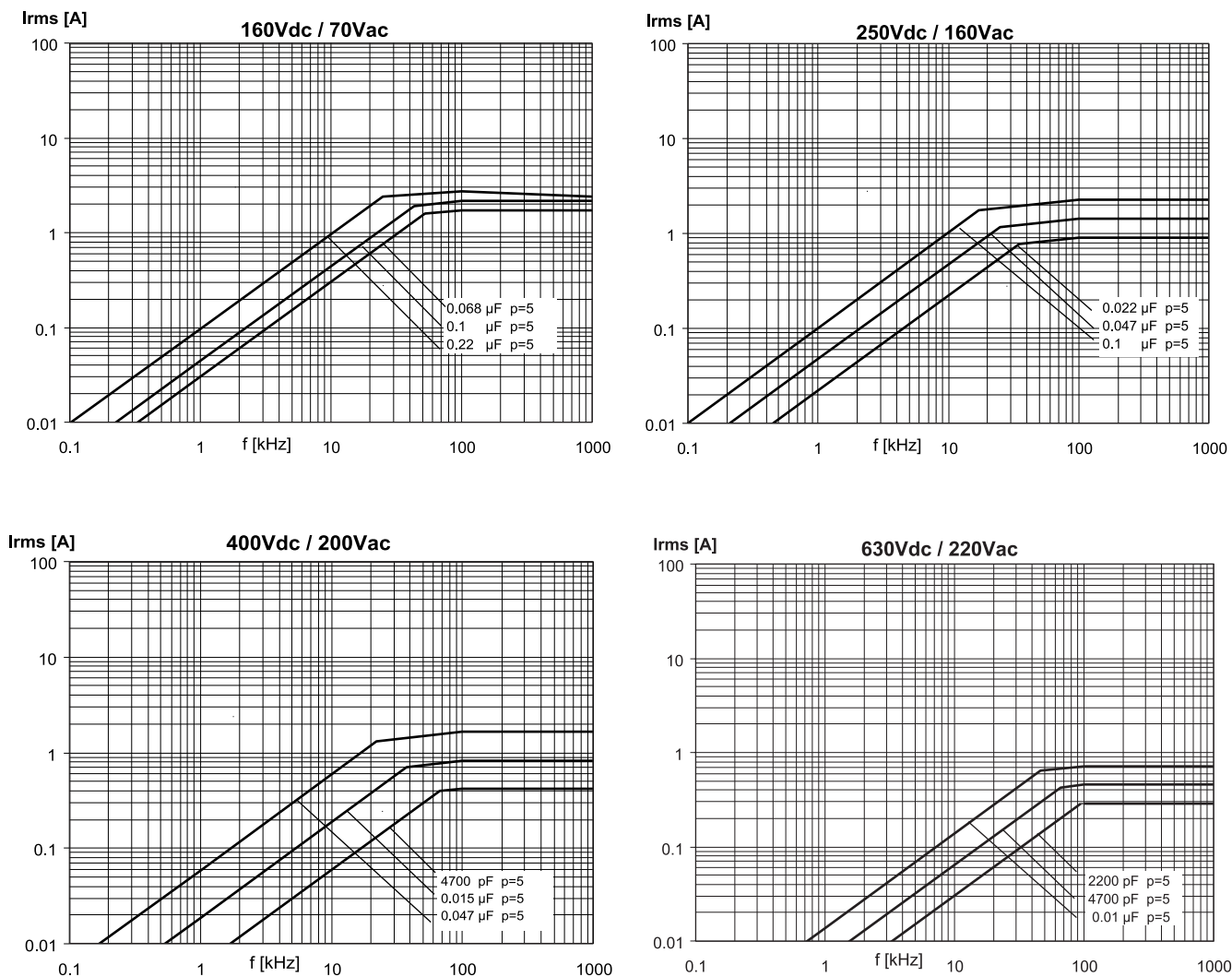
Note: p (pitch) in mm.

**METALLIZED POLYPROPYLENE FILM CAPACITOR  
MULTIPURPOSE APPLICATIONS**

**p = 5 mm**

**PRODUCT CODE: R79**

**MAX. CURRENT ( $I_{r.m.s.}$ ) VERSUS FREQUENCY (sinusoidal wave-form /  $T_h \leq 40^\circ\text{C}$ )**



Note: p (pitch) in mm.

Statements of suitability for certain applications are based on our knowledge of typical operating conditions for such applications, but are not intended to constitute – and we specifically disclaim – any warranty concerning suitability for a specific customer application or use. This Information is intended for use only by customers who have the requisite experience and capability to determine the correct products for their application. Any technical advice inferred from this Information or otherwise provided by us with reference to the use of our products is given gratis, and we assume no obligation or liability for the advice given or results obtained.

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- При необходимости вся продукция военного и аэрокосмического назначения проходит испытания и сертификацию в лаборатории (по согласованию с заказчиком);
- Поставка специализированных компонентов военного и аэрокосмического уровня качества (Xilinx, Altera, Analog Devices, Intersil, Interpoint, Microsemi, Actel, Aeroflex, Peregrine, VPT, Syfer, Eurofarad, Texas Instruments, MS Kennedy, Miteq, Cobham, E2V, MA-COM, Hittite, Mini-Circuits, General Dynamics и др.);

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## JONHON

«JONHON» (основан в 1970 г.)

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(Применяются в военной, авиационной, аэрокосмической, морской, железнодорожной, горно- и нефтедобывающей отраслях промышленности)

«FORSTAR» (основан в 1998 г.)

ВЧ соединители, коаксиальные кабели,  
кабельные сборки и микроволновые компоненты:

(Применяются в телекоммуникациях гражданского и специального назначения, в средствах связи, РЛС, а так же военной, авиационной и аэрокосмической отраслях промышленности).



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