

## PRODUCT CODE SYSTEM

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


Digit 1 to 3 Series code.
Digit 4 d.c. rated voltage:
$\mathrm{I}=250 \mathrm{~V} \quad \mathrm{M}=400 \mathrm{~V} \quad \mathrm{P}=630 \mathrm{~V}$
Digit 5
Pitch:
$D=7.5 \mathrm{~mm} ; F=10 \mathrm{~mm} ; I=15 \mathrm{~mm} ; N=22.5 \mathrm{~mm}$; $\mathrm{R}=27.5 \mathrm{~mm} ; W=37.5 \mathrm{~mm}$.
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/or packaging (table 1)
Digit 12 Identifies the dimensions and electrical characteristics.
Digit 13 Internal use.
Digit 14 Capacitance tolerance:
$H=2.5 \% ; J=5 \% ; K=10 \%$

MMKP Series
POLYPROPYLENE CAPACITOR WITH DOUBLE SIDED METALLIZED FILM ELECTRODES D.C. AND PULSE APPLICATIONS

Typical applications: deflection circuits in TV-sets (S-correction and fly-back tuning) and monitors, switching spikes suppression in SMPS, lamp capacitor for electronic ballast and compact lamps, SNUBBER and SCR commutating circuits, applications with high voltage and high current.
PRODUCT CODE: R76

## GENERAL TECHNICAL DATA

Dielectric: polypropylene film.
Plates: double sided metallized polyester film.
Winding: non-inductive type.
Leads: tinned wire.
Protection: plastic case, thermosetting resin filled. Box material is solvent resistant and flame retardant according to UL94 V0.
Marking: manufacturer's logo, series (R76), dielectric code (MKP), capacitance, tolerance, D.C. rated voltage, manufacturing date code.
Climatic category: 55/100/56 IEC 60068-1
Operating temperature range: -55 to $+105^{\circ} \mathrm{C}$
Related documents: IEC 60384-16

Table 1 (for more detailed information, please refer to pages 15 and 16).

| Standardpackaging style | Lead length <br> (mm) | Taping style |  |  | Ordering code |
| :---: | :---: | :---: | :---: | :---: | :---: |
|  |  | $\begin{aligned} & \mathbf{P}_{2} \\ & (\mathrm{~mm}) \end{aligned}$ | Fig. <br> (No.) | Pitch <br> (mm) | (Digit 10 to 11) |
| AMMO-PACK |  | 6.35 | 1 | 7.5 | DQ |
| AMMO-PACK |  | 12.70 | 2 | 10.0/15.0 | DQ |
| AMMO-PACK |  | 19.05 | 3 | 22.5 | DQ |
| REEL ® 355mm |  | 6.35 | 1 | 7.5 | CK |
| REEL $\oslash 355 \mathrm{~mm}$ |  | 12.70 | 2 | 10.0/15.0 | GY |
| REEL $\bigcirc 500 \mathrm{~mm}$ |  | 12.70 | 2 | 10.0/15.0 | CK |
| REEL © 500mm |  | 19.05 | 3 | 22.5/27.5 | CK |
| Loose, short leads | $4^{+2}$ |  |  |  | SE |
| Loose, long leads ( $p \leq 10 \mathrm{~mm}$ ) | $17^{+1 /-2}$ |  |  |  | Z3 |
| Loose, long leads | $30^{+5}$ |  |  |  | 40 |
| ( $\mathrm{p}>15 \mathrm{~mm}$ ) | $25^{+2 /-1}$ |  |  |  | 50 |



| Rated Cap. | 250Vdc / 180Vac |  |  |  |  | Max K ${ }_{0}$ | Part Number |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  | B | H | 1 | $p$ | (V/us) | $\left(V^{2} / \mu s\right)$ |  |
| 6800pF | 3.0 | 8.0 | 10.0 | 7.5 | 1100 | 55 E4 | R761D1680--3-- |
| 8200 pF | 3.0 | 8.0 | 10.0 | 7.5 | 1100 | 55 E 4 | R761D1820--3- |
| $0.010 \mu \mathrm{~F}$ | 3.0 | 8.0 | 10.0 | 7.5 | 1100 | 55 E4 | R761D2100--3-- |
| $0.012 \mu \mathrm{~F}$ | 3.5 | 8.5 | 10.5 | 7.5 | 1100 | 55 E 4 | R761D2120--3-- |
| 0.015 F | 3.5 | 8.5 | 10.5 | 7.5 | 1100 | 55 E4 | R761D2150--3-- |
| 0.018 uF | 3.5 | 8.5 | 10.5 | 7.5 | 1100 | 55 E4 | R76ID2180--3-- |
| 0.022uF | 4.0 | 9.0 | 10.5 | 7.5 | 1100 | 55 E4 | R761D2220--3-- |
| $0.027 \mu \mathrm{~F}$ | 5.0 | 11.0 | 10.5 | 7.5 | 1100 | 55 E4 | R76ID2270--3-- |
| $0.033 \mu \mathrm{~F}$ | 5.0 | 11.0 | 10.5 | 7.5 | 1100 | 55 E 4 | R76ID2330--3-- |
| $0.039 \mu \mathrm{~F}$ | 6.0 | 12.0 | 10.5 | 7.5 | 1100 | 55 E4 | R76ID2390--3-- |
| 0.047 uF | 6.0 | 12.0 | 10.5 | 7.5 | 1100 | 55 E4 | R76ID2470--3-- |
| $0.027 \mu \mathrm{~F}$ | 4.0 | 9.0 | 13.0 | 10.0 | 1000 | 50 E 4 | R76IF 2270--3-- |
| 0.033 | 4.0 | 9.0 | 13.0 | 10.0 | 1000 | 50 E4 | R76IF 2330--3-- |
| 0.039 F | 4.0 | 9.0 | 13.0 | 10.0 | 1000 | 50 E4 | R76IF 2390--3-- |
| 0.047 $\mu \mathrm{F}$ | 5.0 | 11.0 | 13.0 | 10.0 | 1000 | 50 E4 | R761F 2470--3-- |
| $0.056 \mu \mathrm{~F}$ | 5.0 | 11.0 | 13.0 | 10.0 | 1000 | 50 E4 | R761F 2560--3-- |
| $0.068 \mu \mathrm{~F}$ | 6.0 | 12.0 | 13.0 | 10.0 | 1000 | 50 E 4 | R761F 2680--3-- |
| $0.082 \mu \mathrm{~F}$ | 6.0 | 12.0 | 13.0 | 10.0 | 1000 | 50 E 4 | R761F2820--3-- |
| $0.068 \mu \mathrm{~F}$ | 5.0 | 11.0 | 18.0 | 15.0 | 550 | 28 E 4 | 7611 2680--3-- |
| $0.082 \mu \mathrm{~F}$ | 5.0 | 11.0 | 18.0 | 15.0 | 550 | 28 E4 | R7611 2820--3-- |
| 0.10 uF | 5.0 | 11.0 | 18.0 | 15.0 | 550 | 28 E4 | R76II 3100-3-- |
| $0.12 \mu \mathrm{~F}$ | 6.0 | 12.0 | 18.0 | 15.0 | 550 | 28 E4 | R76II 3120--3-- |
| 0.15 uF | 6.0 | 12.0 | 18.0 | 15.0 | 550 | 28 E4 | R76II 3150--3-- |
| $0.18 \mu$ | 7.5 | 13.5 | 18.0 | 15.0 | 550 | 28 E4 | R7611 3180-3-- |
| $0.18 \mu \mathrm{~F}$ | 9.0 | 12.5 | 18.0 | 15.0 | 550 | 28 E4 | R76II 3180--7-- |
| $0.22 \mu \mathrm{~F}$ | 7.5 | 13.5 | 18.0 | 15.0 | 550 | 28 E4 | R76II 3220--3-- |
| $0.22 \mu \mathrm{~F}$ | 9.0 | 12.5 | 18.0 | 15.0 | 550 | 28 E4 | R7611 3220-7-- |
| $0.27 \mu \mathrm{~F}$ | 8.5 | 14.5 | 18.0 | 15.0 | 550 | 28 E4 | R7611 3270--3-- |
| $0.27 \mu \mathrm{~F}$ | 9.0 | 12.5 | 18.0 | 15.0 | 550 | 28 E4 | R76II 3270-7-- |
| $0.33 \mu \mathrm{~F}$ | 10.0 | 16.0 | 18.0 | 15.0 | 550 | 28 E4 | R76II 3330--3-- |
| 0.33 $\mu \mathrm{F}$ | 13.0 | 12.0 | 18.0 | 15.0 | 550 | 28 E4 | R76II 3330-7-- |
| $0.39 \mu \mathrm{~F}$ | 10.0 | 16.0 | 18.0 | 15.0 | 550 | 28 E4 | R7611 3390--3-- |
| $0.47 \mu \mathrm{~F}$ | 11.0 | 19.0 | 18.0 | 15.0 | 550 | 28 E 4 | R7611 3470--3-- |


| Rated Cap. | 250Vdc / 180Vac |  |  |  | $\begin{aligned} & \text { Max } \\ & \mathrm{dv} / \mathrm{dt} \\ & (\mathrm{~V} / \mu \mathrm{s}) \end{aligned}$ | Max K $\mathbf{K}_{0}$ <br> (V2/ $/ \mathrm{s}$ ) | Part Number |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  | B | H | L | $p$ |  |  |  |
| $0.22 \mu \mathrm{~F}$ | 6.0 | 15.0 | 26.5 | 22.5 | 250 | 13 E4 | R761N 3220--0-- |
| $0.27 \mu \mathrm{~F}$ | 6.0 | 15.0 | 26.5 | 22.5 | 250 | 13 E4 | R76iN 3270--3-- |
| 0.33 uF | 6.0 | 15.0 | 26.5 | 22.5 | 250 | 13 E 4 | R76iN 3330--3-- |
| $0.39 \mu \mathrm{~F}$ | 7.0 | 16.0 | 26.5 | 22.5 | 250 | 13 E4 | R761N 3390--3-- |
| $0.47 \mu \mathrm{~F}$ | 7.0 | 16.0 | 26.5 | 22.5 | 250 | 13 E 4 | R76IN 3470--3-- |
| $0.56 \mu \mathrm{~F}$ | 8.5 | 17.0 | 26.5 | 22.5 | 250 | 13 E4 | R76IN 3560--3-- |
| $0.68 \mu \mathrm{~F}$ | 10.0 | 18.5 | 26.5 | 22.5 | 250 | 13 E4 | R76IN 3680--3-- |
| $0.82 \mu \mathrm{~F}$ | 10.0 | 18.5 | 26.5 | 22.5 | 250 | 13 E 4 | R76IN 3820--3-- |
| $1.0 \mu \mathrm{~F}$ | 11.0 | 20.0 | 26.5 | 22.5 | 250 | 13 E 4 | R76IN 4100--3-- |
| $1.2 \mu \mathrm{~F}$ | 13.0 | 22.0 | 26.5 | 22.5 | 250 | 13 E 4 | R76IN 4120--3-- |
| $0.82 \mu \mathrm{~F}$ | 9.0 | 17.0 | 32.0 | 27.5 | 200 | 10 E 4 | R761R 3820--3-- |
| $1.0 \mu \mathrm{~F}$ | 11.0 | 20.0 | 32.0 | 27.5 | 200 | 10 E 4 | R76IR 4100--3-- |
| ${ }^{*} 1.2 \mu \mathrm{~F}$ | 13.0 | 22.0 | 32.0 | 27.5 | 200 | 10 E 4 | R76IR 4120--3-- |
| ${ }^{*} 1.5 \mu \mathrm{~F}$ | 13.0 | 22.0 | 32.0 | 27.5 | 200 | 10 E 4 | R76IR 4150--3-- |
| ${ }^{*} 1.8 \mu \mathrm{~F}$ | 15.0 | 24.5 | 32.0 | 27.5 | 200 | 10 E 4 | R76IR 4180--3-- |
| *2.2 2 F | 15.0 | 24.5 | 32.0 | 27.5 | 200 | 10 E 4 | R76IR 4220--3-- |
| *2.7 $\mu \mathrm{F}$ | 18.0 | 33.0 | 32.0 | 27.5 | 200 | 10 E4 | R76IR 4270--3-- |
| *3.3ıF | 18.0 | 33.0 | 32.0 | 27.5 | 200 | 10 E 4 | R76IR 4330--3-- |
| *3.9uF | 18.0 | 33.0 | 32.0 | 27.5 | 200 | 10 E 4 | R761R 4390--3-- |
| * 4.7 uF | 22.0 | 37.0 | 32.0 | 27.5 | 200 | 10 E 4 | R76IR 4470--3-- |
| 5.6uF | 19.0 | 32.0 | 41.5 | 37.5 | 100 | 5 E 4 | R76IW4560--3-- |
| 6.84 F | 20.0 | 40.0 | 41.5 | 37.5 | 100 | 5 E4 | R76IW4680--3-- |
| $8.2 \mu \mathrm{~F}$ | 20.0 | 40.0 | 41.5 | 37.5 | 100 | 5 E4 | R76IW4820--3-- |
| 10.0 $\mu \mathrm{F}$ | 24.0 | 44.0 | 41.5 | 37.5 | 100 | 5 E4 | R76IW5100--3-- |

Mechanical version and packaging (Table 1)
Internal use
Tolerance: $\mathbf{H}( \pm 2.5 \%) ; J( \pm 5 \%) ; K( \pm 10 \%)$

Mechanical version and packaging (Table 1)
Internal use
Tolerance: $\mathrm{H}( \pm 2.5 \%) ; \mathrm{J}( \pm 5 \%) ; \mathrm{K}( \pm 10 \%)$

All dimensions are in mm .

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# MMKP Series <br> POLYPROPYLENE CAPACITOR WITH DOUBLE SIDED METALLIZED FILM ELECTRODES. D.C. AND PULSE APPLICATIONS 



| Rated Cap. | 400Vdc / 250Vac** |  |  |  | Max $\mathrm{dv} / \mathrm{dt}$ ( $\mathrm{V} / \mu \mathrm{s}$ ) | Max $\mathbf{K}_{0}$ <br> ( $\mathrm{V}^{2} / \mu \mathrm{s}$ ) | Part Num |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  | B | H | L | p |  |  |  |
| 2700pF | 3.0 | 8.0 | 10.0 | 7.5 | 1700 | 136 E 4 | R76MD 1270--3-- |
| 3300 pF | 3.0 | 8.0 | 10.0 | 7.5 | 1700 | 136 E4 | R76MD 1330--3-- |
| 3900pF | 3.0 | 8.0 | 10.0 | 7.5 | 1700 | 136 E4 | R76MD 1390--3-- |
| pF | 3.0 | 8.0 | 10.0 | 7.5 | 1700 | 136 E4 | R76MD 1470--3-- |
| 600p | 3.0 | 8.0 | 10.0 | 7.5 | 1700 | 136 E4 | 76MD 1560--3-- |
| 6800p | 3.5 | 8.5 | 10.5 | 7.5 | 1700 | 136 E4 | R76MD 1680--3-- |
| 8200pF | 3.5 | 8.5 | 10.5 | 7.5 | 1700 | 136 E4 | R76MD 1820--3-- |
| 0.010 $\mu$ | 3.5 | 8.5 | 10.5 | 7.5 | 1700 | 136 E4 | R76MD2100--3-- |
| 0.012 | 4.0 | 9.0 | 10.5 | 7.5 | 1700 | 136 E4 | R76MD2120--3-- |
| 0.015 $\mu$ | 5.0 | 11.0 | 10.5 | 7.5 | 1700 | 136 E4 | R76MD2150--3-- |
| $0.018 \mu \mathrm{~F}$ | 5.0 | 11.0 | 10.5 | 7.5 | 1700 | 136 E 4 | R76MD2180--3-- |
| 0.022 $\mu$ | 6.0 | 12.0 | 10.5 | 7.5 | 1700 | 136 E4 | R76MD2220--3-- |
| $0.027 \mu \mathrm{~F}$ | 6.0 | 12.0 | 10.5 | 7.5 | 1700 | 136 E4 | R76MD2270--3-- |
| $0.010 \mu \mathrm{~F}$ | 4.0 | 9. | 13.0 | 10 | 1500 | 120 | 6M |
| $0.012 \mu \mathrm{~F}$ | 4.0 | 9.0 | 13.0 | 10 | 1500 | 120 E4 | R76MF 2120--0-- |
| 0.015 | 4.0 | 9.0 | 13.0 | 10.0 | 1500 | 120 E4 | R76MF 2150--3-- |
| $0.018 \mu$ | 4.0 | 9.0 | 13.0 | 10.0 | 1500 | 120 E4 | R76MF 2180--3-- |
| $0.022 \mu$ | 4.0 | 9.0 | 13.0 | 10.0 | 1500 | 120 E4 | R76MF 2220--3-- |
| 0.027 $\mu$ | 5.0 | 11.0 | 13.0 | 10.0 | 1500 | 120 E4 | R76MF 2270--3-- |
| 0.033 $\mu$ | 5.0 | 11.0 | 13.0 | 10.0 | 1500 | 120 E 4 | R76MF 2330-3-- |
| $0.039 \mu$ | 6.0 | 12.0 | 13.0 | 10.0 | 1500 | 120 E4 | R76MF 2390--3-- |
| $0.047 \mu \mathrm{~F}$ | 6.0 | 12.0 | 13.0 | 10.0 | 1500 | 120 E4 | R76MF 2470--3-- |
| $0.033 \mu$ | 5.0 | 11.0 | 18.0 | 15. | 900 | 72 E 4 | 6M1 2330 |
| 0.039 | 5.0 | 11.0 | 18.0 | 15 | 900 | 72 E4 | R76MI 2390--3-- |
| $0.047 \mu$ | 5.0 | 11.0 | 18.0 | 15 | 900 | 72 E | 6MI 2470--3-- |
| $0.056 \mu$ | 5.0 | 11.0 | 18.0 | 15. | 900 | 72 E 4 | R76MI 2560--3-- |
| 0.068 | 6.0 | 12.0 | 18.0 | 15.0 | 900 | 72 E 4 | R76MI 2680--3-- |
| 0.082 $\mu \mathrm{F}$ | 6.0 | 12.0 | 18.0 | 15.0 | 900 | 72 E 4 | R76MI 2820--3-- |
| 0.10 | 7.5 | 13.5 | 18 | 15.0 | 900 | 72 E 4 | R76MI 3100-3-- |
| 0.1 | 9.0 | 12.5 | 18.0 | 15.0 | 900 | 72 E 4 | 6MI 3100-7-- |
| $0.12 \mu$ | 7.5 | 13.5 | 18.0 | 15.0 | 900 | 72 E4 | R76M1 3120--3-- |
| $0.12 \mu \mathrm{~F}$ | 9.0 | 12.5 | 18.0 | 15.0 | 900 | 72 E 4 | R76MI 3120--7-- |
| $0.15 \mu$ | 8.5 | 14 | 18 | 15 | 900 | 72 E 4 | R76MI 3150--3-- |
| $0.15 \mu$ | 13.0 | 12.0 | 18.0 | 15.0 | 900 | 72 E 4 | R76MI 3150--7- |
| 0.18 | 10.0 | 16.0 | 18.0 | 15.0 | 900 | 72 E 4 | R76M1 3180--3-- |
| 0.18 FF | 13.0 | 12.0 | 18.0 | 15.0 | 900 | 72 E 4 | R76MI 3180--7-- |
| $0.22 \mu \mathrm{~F}$ | 10.0 | 16.0 | 18.0 | 15.0 | 900 | 72 E 4 | R76MI 3220--3-- |
| $0.27 \mu \mathrm{~F}$ | 11.0 | 19.0 | 18.0 | 15.0 | 900 | 72 E4 | R76MI 3270-3-- |


| Rated Cap. | 400Vdc / 250Vac** |  |  |  | Max dv/dt (V/us) | Max $K_{0}$$\left(\mathrm{V}^{2} / \mu \mathrm{s}\right)$ | Part Number |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  | B | H | L | p |  |  |  |
| $0.12 \mu \mathrm{~F}$ | 6.0 | 15.0 | 26.5 | 22.5 | 500 | 40 E4 | R76MN 3120-3-- |
| $0.15 \mu \mathrm{~F}$ | 6.0 | 15.0 | 26.5 | 22.5 | 500 | 40 E4 | R76MN 3150--3-- |
| $0.18 \mu \mathrm{~F}$ | 6.0 | 15.0 | 26.5 | 22.5 | 500 | 40 E4 | R76MN 3180--3-- |
| $0.22 \mu \mathrm{~F}$ | 7.0 | 16.0 | 26.5 | 22.5 | 500 | 40 E4 | R76MN 3220-3-- |
| 0.27 LF | 8.5 | 17.0 | 26.5 | 22.5 | 500 | 40 E4 | R76MN 3270--3-- |
| $0.33 \mu \mathrm{~F}$ | 8.5 | 17.0 | 26.5 | 22.5 | 500 | 40 E4 | R76MN 3330-3-- |
| $0.39 \mu \mathrm{~F}$ | 10.0 | 18.5 | 26.5 | 22.5 | 500 | 40 E4 | R76MN 3390--3-- |
| $0.47 \mu \mathrm{~F}$ | 10.0 | 18.5 | 26.5 | 22.5 | 500 | 40 E4 | R76MN 3470-3-- |
| $0.56 \mu \mathrm{~F}$ | 11.0 | 20.0 | 26.5 | 22.5 | 500 | 40 E4 | R76MN 3560--3-- |
| $0.68 \mu \mathrm{~F}$ | 13.0 | 22.0 | 26.5 | 22.5 | 500 | 40 E4 | R76MN 3680--3-- |
| $0.39 \mu \mathrm{~F}$ | 9.0 | 17.0 | 32.0 | 27.5 | 300 | 24 E4 | R76MR 3390--3-- |
| $0.47 \mu \mathrm{~F}$ | 9.0 | 17.0 | 32.0 | 27.5 | 300 | 24 E4 | R76MR 3470--3-- |
| $0.56 \mu \mathrm{~F}$ | 11.0 | 20.0 | 32.0 | 27.5 | 300 | 24 E4 | R76MR 3560--3-- |
| $0.68 \mu \mathrm{~F}$ | 11.0 | 20.0 | 32.0 | 27.5 | 300 | 24 E4 | R76MR 3680--3-- |
| $0.82 \mu \mathrm{~F}$ | 13.0 | 22.0 | 32.0 | 27.5 | 300 | 24 E4 | R76MR 3820--3-- |
| *1.0رF | 15.0 | 24.5 | 32.0 | 27.5 | 300 | 24 E4 | R76MR 4100-3-- |
| * $1.2 \mu \mathrm{~F}$ | 15.0 | 24.5 | 32.0 | 27.5 | 300 | 24 E4 | R76MR 4120-3-- |
| *1.5 $\mu \mathrm{F}$ | 18.0 | 33.0 | 32.0 | 27.5 | 300 | 24 E4 | R76MR 4150-3-3 |
| * $1.8 \mu \mathrm{~F}$ | 18.0 | 33.0 | 32.0 | 27.5 | 300 | 24 E4 | R76MR 4180-3-- |
|  | 22.0 | 37.0 | 32.0 | 27.5 | 300 | 24 E4 | R76MR 4220-3-- |
| *2.7 $\mu \mathrm{F}$ | 22.0 | 37.0 | 32.0 | 27.5 | 300 | 24 E4 | R76MR 4270-3-- |
| $3.3 \mu \mathrm{~F}$ | 19.0 | 32.0 | 41.5 | 37.5 | 180 | 14 E4 | R76MW4330-3-- |
| 3.9uF | 20.0 | 40.0 | 41.5 | 37.5 | 180 | 14 E4 | R76MW4390--3-- |
| $4.7 \mu \mathrm{~F}$ | 20.0 | 40.0 | 41.5 | 37.5 | 180 | 14 E4 | R76MW4470-3-- |
| $5.6 \mu \mathrm{~F}$ | 24.0 | 44.0 | 41.5 | 37.5 | 180 | 14 E 4 | R76MW4560-3-- |

Mechanical version and packaging (Table 1)
Internal use
Tolerance: $\mathrm{H}( \pm 2.5 \%) ; \mathrm{J}( \pm 5 \%) ; \mathrm{K}( \pm 10 \%)$

Mechanical version and packaging (Table 1)
Internal use
Tolerance: $\mathrm{H}( \pm 2.5 \%) ; \mathrm{J}( \pm 5 \%) ; \mathrm{K}( \pm 10 \%)$
All dimensions are in mm .
Note: If the working voltage $(\mathrm{V})$ is lower than the rated voltage $\left(\mathrm{V}_{\mathrm{R}}\right)$, the capacitor may work at higher $\mathrm{dv} / \mathrm{dt}$. In this case the maximum value allowed is obtained multiplying the above value (see table dv/dt) with the ratio $\mathrm{V}_{\mathrm{R}} N$. The pulse characteristic $\mathrm{K}_{0}$ 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.

* These values are available in pitch 37.5 mm upon request.
${ }^{* *}$ Not suitable for across-the-line applications. Please refer to Interference Suppression Capacitors (page 109).


## POLYPROPYLENE CAPACITOR WITH DOUBLE SIDED METALLIZED FILM ELECTRODES. D.C. AND PULSE APPLICATIONS

## PRODUCT CODE: R76

| 1 section ( $630 \mathrm{Vdc} / 250 \mathrm{Vac}$ ) |  |  |  |  |  | double sided metallized polyester carrier film <br> polypropylene film dielectric |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  |  |  | da |  |  |  | Part Number |
|  | B | H | L | p | (V/ / ${ }^{\text {s }}$ ) | (v2/us) |  |
| OpF | 3.0 | 8.0 | 10.0 | 7.5 | 2800 | 353 E4 | R76PD0680-0-- |
| 820pF | 3.0 | 0 | 10.0 | 7.5 | 2800 | 35 | R76P |
| 1000pF | 3.0 | 8.0 | 10.0 | 7.5 | 280 | 353 E4 | R76PD1100-0-- |
| 1200pF | 3.0 | 8.0 | 10.0 | 7.5 | 2800 | 353 E4 | R76 |
| 1500pF | 3.0 | 8.0 | 10.0 | 7.5 | 2800 | 353 E | R76PD1150--0-- |
| 1800pF | 3.0 | 8.0 | 10.0 | 7.5 | 2800 | 353 | R76PD1180-0 |
| 2200pF | 3.0 | 8.0 | 10.0 | 7.5 | 2800 | 353 E4 | R76PD1220-0-- |
| 2700pF | 3.5 | 8.5 | 10.5 | 7.5 | 2800 | 353 E4 | R76PD1 |
| 3300pF | 3.5 | 8.5 | 10.5 | 7.5 | 2800 | 35 | R76 |
| 3900pF | 3.5 | 8.5 | 10.5 | 7.5 | 2800 | 353 E4 | R76PD1390--3- |
| 4700pF | 4.0 | 9.0 | 10.5 | 7.5 | 280 | 353 E | R76PD |
| 5600pF | 4.0 | 9.0 | 10.5 | 7.5 | 2800 | 353 E4 | R76PD1560-3-- |
| 6800pF | 5.0 | 11.0 | 10.5 | 7.5 | 2800 | 353 E4 | R76PD1680-3-- |
| 8200pF | 5.0 | 11.0 | 10.5 | 7.5 | 2800 | 353 E4 | R76PD1820-3-- |
| 0.010 FF | 6.0 | 12.0 | 10.5 | 7.5 | 2800 | 353 E4 | R76PD2100--3 |
| $0.012 \mu \mathrm{~F}$ | 6.0 | 12.0 | 10.5 | 7.5 | 2800 | 353 E 4 | R76 |

Mechanical version and packaging (Table 1)
Internal use
Tolerance: $\mathrm{H}( \pm 2.5 \%)$ for $\mathrm{C} \geqslant 1000 \mathrm{pF} ; \mathrm{J}( \pm 5 \%) ; \mathrm{K}( \pm 10 \%)$

All dimensions are in mm.
Note: If the working voltage $(\mathrm{V})$ is lower than the rated voltage $\left(V_{R}\right)$, the capacitor may work at higher dv/dt. In this case the maximum value allowed is obtained multiplying the above value (see table $\mathrm{dv} / \mathrm{dt}$ ) with the ratio $V_{R} N$. The pulse characteristic $K_{0}$ depends on the voltage wave-form and in any case it cannot overcome the value given in the above table. The $\mathrm{dv} / \mathrm{dt}$ test is carried out at 2 times the above values.

* These values are available in pitch 37.5 mm upon request.
** Not suitable for across-the-line applications. Please refer to Interference Suppression Capacitors (page109).


| Rated Cap. | 630Vdc / 400Vac |  |  |  | Max $d v / d t$ (V/us) | $\begin{aligned} & \operatorname{Max~K}_{0} \\ & \left(V^{2} / \mu s\right) \end{aligned}$ | Part Number |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  | B | H | L | $p$ |  |  |  |
| 3900 pF | 4.0 | 9.0 | 13.0 | 10.0 | 3000 | 378 E4 | R76PF1390-0-- |
| 4700pF | 4.0 | 9.0 | 13.0 | 10.0 | 3000 | 378 E4 | R76PF1470-0-- |
| 5600 pF | 4.0 | 9.0 | 13.0 | 10.0 | 3000 | 378 E4 | R76PF1560-0-- |
| 6800 pF | 4.0 | 9.0 | 13.0 | 10.0 | 3000 | 378 E4 | R76PF1680--0-- |
| 8200pF | 4.0 | 9.0 | 13.0 | 10.0 | 3000 | 378 E4 | R76PF1820--0-- |
| $0.010 \mu \mathrm{~F}$ | 5.0 | 11.0 | 13.0 | 10.0 | 3000 | 378 E4 | R76PF2100-3-- |
| $0.012 \mu \mathrm{~F}$ | 5.0 | 11.0 | 13.0 | 10.0 | 3000 | 378 E4 | R76PF2120--3-- |
| $0.015 \mu \mathrm{~F}$ | 6.0 | 12.0 | 13.0 | 10.0 | 3000 | 378 E4 | R76PF2150--3-- |
| $0.018 \mu \mathrm{~F}$ | 6.0 | 12.0 | 13.0 | 10.0 | 3000 | 378 E4 | R76PF2180--3-- |
| $0.012 \mu \mathrm{~F}$ | 5.0 | 11.0 | 18.0 | 15.0 | 2500 | 315 E4 | R76PI 2120-0-- |
| 0.015 uF | 5.0 | 11.0 | 18.0 | 15.0 | 2500 | 315 E4 | 76 Pl 2150-0-- |
| $0.018 \mu \mathrm{~F}$ | 5.0 | 11.0 | 18.0 | 15.0 | 2500 | 315 E4 | R76PI 2180-0-- |
| 0.022uF | 5.0 | 11.0 | 18.0 | 15.0 | 2500 | 315 E4 | R76PI 2220--3-- |
| $0.027 \mu \mathrm{~F}$ | 5.0 | 11.0 | 18.0 | 15.0 | 2500 | 315 E4 | R76PI 2270--3-- |
| $0.033 \mu \mathrm{~F}$ | 6.0 | 12.0 | 18.0 | 15.0 | 2500 | 315 E4 | R76PI 2330--3-- |
| $0.039 \mu \mathrm{~F}$ | 6.0 | 12.0 | 18.0 | 15.0 | 2500 | 315 E4 | R76PI 2390--3-- |
| $0.047 \mu \mathrm{~F}$ | 7.5 | 13.5 | 18.0 | 15.0 | 2500 | 315 E4 | R76PI 2470-3-- |
| $0.047 \mu \mathrm{~F}$ | 9.0 | 12.5 | 18.0 | 15.0 | 2500 | 315 E4 | R76PI 2470--7-- |
| $0.056 \mu \mathrm{~F}$ | 7.5 | 13.5 | 18.0 | 15.0 | 2500 | 315 E4 | R76PI 2560-3-- |
| $0.056 \mu \mathrm{~F}$ | 9.0 | 12.5 | 18.0 | 15.0 | 2500 | 315 E4 | R76PI 2560--7-- |
| $0.068 \mu \mathrm{~F}$ | 8.5 | 14.5 | 18.0 | 15.0 | 2500 | 315 E4 | R76PI 2680-3-- |
| $0.068 \mu \mathrm{~F}$ | 9.0 | 12.5 | 18.0 | 15.0 | 2500 | 315 E4 | R76PI 2680--7-- |
| $0.082 \mu \mathrm{~F}$ | 8.5 | 14.5 | 18.0 | 15.0 | 2500 | 315 E4 | R76Pl 2820--3-- |
| $0.082 \mu \mathrm{~F}$ | 13.0 | 12.0 | 18.0 | 15.0 | 2500 | 315 E4 | R76PI 2820--7-- |
| $0.10 \mu \mathrm{~F}$ | 10.0 | 16.0 | 18.0 | 15.0 | 2500 | 315 E4 | R76PI 3100--3-- |
| $0.12 \mu \mathrm{~F}$ | 11.0 | 19.0 | 18.0 | 15.0 | 2500 | 315 E4 | R76PI 3120-3-3- |
| $0.047 \mu \mathrm{~F}$ | 6.0 | 15.0 | 26.5 | 22.5 | 1500 | 189 E 4 | R76PN 2470 |
| $0.056 \mu \mathrm{~F}$ | 6.0 | 15.0 | 26.5 | 22.5 | 1500 | 189 E 4 | R76PN 2560-0-- |
| $0.068 \mu \mathrm{~F}$ | 6.0 | 15.0 | 26.5 | 22.5 | 1500 | 189 E 4 | R76PN 2680--0-- |
| $0.082 \mu \mathrm{~F}$ | 6.0 | 15.0 | 26.5 | 22.5 | 1500 | 189 E4 | R76PN 2820--3-- |
| $0.10 \mu \mathrm{~F}$ | 6.0 | 15.0 | 26.5 | 22.5 | 1500 | 189 E4 | R76PN 3100--3-- |
| $0.12 \mu \mathrm{~F}$ | 7.0 | 16.0 | 26.5 | 22.5 | 1500 | 189 E 4 | R76PN3120--3-- |
| $0.15 \mu \mathrm{~F}$ | 8.5 | 17.0 | 26.5 | 22.5 | 1500 | 189 E4 | R76PN 3150--3-- |
| $0.18 \mu \mathrm{~F}$ | 8.5 | 17.0 | 26.5 | 22.5 | 1500 | 189 E4 | R76PN 3180--3-- |
| $0.22 \mu \mathrm{~F}$ | 10.0 | 18.5 | 26.5 | 22.5 | 1500 | 189 E4 | R76PN 3220--3-- |
| $0.27 \mu \mathrm{~F}$ | 11.0 | 20.0 | 26.5 | 22.5 | 1500 | 189 E4 | R76PN 3270--3-- |
| $0.33 \mu \mathrm{~F}$ | 11.0 | 20.0 | 26.5 | 22.5 | 1500 | 189 E4 | R76PN 3330--3-- |
| $0.39 \mu \mathrm{~F}$ | 13.0 | 22.0 | 26.5 | 22.5 | 1500 | 189 E4 | R76PN 3390--3-- |
| $0.15 \mu \mathrm{~F}$ | 9. | 17.0 | 32.0 | 27.5 | 900 | 113 E4 | R76PR 3150--3-- |
| $0.18 \mu \mathrm{~F}$ | 9.0 | 17.0 | 32.0 | 27.5 | 900 | 113 E4 | R76PR 3180--3-- |
| $0.22 \mu \mathrm{~F}$ | 9.0 | 17.0 | 32.0 | 27.5 | 900 | 113 E4 | R76PR 3220--3-- |
| $0.27 \mu \mathrm{~F}$ | 9.0 | 17.0 | 32.0 | 27.5 | 900 | 113 E4 | R76PR 3270--3-- |
| ${ }^{*} 0.33 \mu \mathrm{~F}$ | 10.0 | 20.0 | 32.0 | 27.5 | 900 | 113 E4 | R76PR 3330--3-- |
| ${ }^{*} 0.39 \mu \mathrm{~F}$ | 11.0 | 20.0 | 32.0 | 27.5 | 900 | 113 E4 | R76PR 3390--3-- |
| ${ }^{*} 0.47 \mu \mathrm{~F}$ | 13.0 | 22.0 | 32.0 | 27.5 | 900 | 113 E4 | R76PR 3470--3-- |
| ${ }^{*} 0.56 \mu \mathrm{~F}$ | 13.0 | 22.0 | 32.0 | 27.5 | 900 | 113 E4 | R76PR 3560--3-- |
| *0.68uF | 15.0 | 24.5 | 32.0 | 27.5 | 900 | 113 E4 | R76PR 3680--3-- |
| ${ }^{*} 0.82 \mu \mathrm{~F}$ | 14.0 | 28.0 | 32.0 | 27.5 | 900 | 113 E4 | R76PR 3820--3-- |
| *1.0 $\mu \mathrm{F}$ | 18.0 | 33.0 | 32.0 | 27.5 | 900 | 113 E4 | R76PR 4100--3-- |
| ${ }^{*} 1.2 \mu \mathrm{~F}$ | 18.0 | 33.0 | 32.0 | 27.5 | 900 | 113 E4 | R76PR 4120--3-- |
| *1.5uF | 22.0 | 37.0 | 32.0 | 27.5 | 900 | 113 E4 | R76PR 4150--3-- |
| ${ }^{*} 1.8 \mu \mathrm{~F}$ | 22.0 | 37.0 | 32.0 | 27.5 | 900 | 113 E4 | R76PR 4180--3-- |
| $2.2 \mu \mathrm{~F}$ | 20.0 | 40.0 | 41.5 | 37.5 | 450 | 56 E4 | R76PW4220--3-- |
| $2.7 \mu \mathrm{~F}$ | 20.0 | 40.0 | 41.5 | 37.5 | 450 | 56 E4 | R76PW4270--3-- |
| 3.3uF | 24.0 | 44.0 | 41.5 | 37.5 | 450 | 56 E 4 | R76PW4330--3-- |

[^1]

| Rated Cap. | 1000Vde/400Vac |  |  |  | Max dv/dt |  | Part Number |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  | B | H | L | p | (V/ $/$ s) | $\left(V^{2} / \mu s\right)$ |  |
| 470pF | 3.0 | 8.0 | 10.0 | 7.5 | 6000 | 1200 E4 | R76QD0470--0-- |
| 560pF | 3.0 | 8.0 | 10.0 | 7.5 | 6000 | 1200 E4 | R76QD0560--0-- |
| 680pF | 3.5 | 8.5 | 10.5 | 7.5 | 6000 | 1200 E4 | R76QD0680--0-- |
| 820pF | 3.5 | 8.5 | 10.5 | 7.5 | 6000 | 1200 E4 | R760D0820--0-- |
| 1000pF | 3.5 | 8.5 | 10.5 | 7.5 | 6000 | 1200 E4 | R76QD1100--0-- |
| 1200pF | 4.0 | 9.0 | 10.5 | 7.5 | 6000 | 1200 E4 | R76QD1120--0-- |
| 1500pF | 5.0 | 11.0 | 10.5 | 7.5 | 6000 | 1200 E4 | R76QD1150--0-- |
| 1800pF | 5.0 | 11.0 | 10.5 | 7.5 | 6000 | 1200 E4 | R760D 1180--0-- |
| 2200 pF | 5.0 | 11.0 | 10.5 | 7.5 | 6000 | 1200 E4 | R76QD1220--0-- |
| 2700pF | 6.0 | 12.0 | 10.5 | 7.5 | 6000 | 1200 E4 | R76QD1270-0-- |
| 3300 pF | 6.0 | 12.0 | 10.5 | 7.5 | 6000 | 1200 E4 | R76QD1330--0-- |


| Rated Cap. | $1000 \mathrm{Vdc} / 600 \mathrm{Vac}$ |  |  |  | Max dv/dt |  | Part |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  | B | H | L | p | (V/us) | ( $V^{2} / \mu \mathrm{s}$ ) |  |
| 1000pF | 4.0 | 9.0 | 13.0 | 10.0 | 4800 | 960 E4 | R76QF1100--0-- |
| 1200pF | 4.0 | 9.0 | 13.0 | 10.0 | 4800 | 960 E4 | R76QF1120--0-- |
| 1500pF | 4.0 | 9.0 | 13.0 | 10.0 | 4800 | 960 E4 | R76QF1150-0-- |
| 1800pF | 4.0 | 9.0 | 13.0 | 10.0 | 4800 | 960 E4 | R76QF1180-0-- |
| 2200 pF | 4.0 | 9.0 | 13.0 | 10.0 | 4800 | 960 E4 | R76QF1220--0-- |
| 2700pF | 4.0 | 9.0 | 13.0 | 10.0 | 4800 | 960 E4 | R76QF1270-0-- |
| 3300 pF | 4.0 | 9.0 | 13.0 | 10.0 | 4800 | 960 E4 | R76QF1330-3-- |
| 3900 pF | 5.0 | 11.0 | 13.0 | 10.0 | 4800 | 960 E4 | R76QF1390--3-- |
| 4700pF | 5.0 | 11.0 | 13.0 | 10.0 | 4800 | 960 E4 | R76QF1470-3-- |
| 5600 pF | 6.0 | 12.0 | 13.0 | 10.0 | 4800 | 960 E4 | R76QF1560--3-- |
| 6800pF | 6.0 | 12.0 | 13.0 | 10.0 | 4800 | 960 E4 | R76QF1680--3-- |
| 8200 pF | 5.0 | 11.0 | 18.0 | 15.0 | 3300 | 660 E4 | R76Q1 1820-0-- |
| $0.010 \mu \mathrm{~F}$ | 5.0 | 11.0 | 18.0 | 15.0 | 3300 | 660 E4 | R76Q1 2100--3-- |
| $0.012 \mu \mathrm{~F}$ | 5.0 | 11.0 | 18.0 | 15.0 | 3300 | 660 E4 | R76Q1 2120-3-- |
| $0.015 \mu \mathrm{~F}$ | 6.0 | 12.0 | 18.0 | 15.0 | 3300 | 660 E4 | R76Q $2150-$-3-- |
| $0.018 \mu \mathrm{~F}$ | 7.5 | 13.5 | 18.0 | 15.0 | 3300 | 660 E4 | R76Q1 2180--0-- |
| $0.022 \mu \mathrm{~F}$ | 7.5 | 13.5 | 18.0 | 15.0 | 3300 | 660 E4 | R76Q1 2220-3-- |
| $0.022 \mu \mathrm{~F}$ | 9.0 | 12.5 | 18.0 | 15.0 | 3300 | 660 E4 | R76Q1 2220--7-- |
| $0.027 \mu \mathrm{~F}$ | 8.5 | 14.5 | 18.0 | 15.0 | 3300 | 660 E4 | R76Q1 2270--3-- |
| $0.027 \mu \mathrm{~F}$ | 9.0 | 12.5 | 18.0 | 15.0 | 3300 | 660 E4 | R76Q1 2270--7-- |
| $0.033 \mu \mathrm{~F}$ | 8.5 | 14.5 | 18.0 | 15.0 | 3300 | 660 E4 | R76Q1 2330--3-- |
| $0.033 \mu \mathrm{~F}$ | 13.0 | 12.0 | 18.0 | 15.0 | 3300 | 660 E4 | R76Q1 2330--7-- |
| $0.039 \mu \mathrm{~F}$ | 10.0 | 16.0 | 18.0 | 15.0 | 3300 | 660 E4 | R76Q1 2390--3-- |
| $0.047 \mu \mathrm{~F}$ | 11.0 | 19.0 | 18.0 | 15.0 | 3300 | 660 E4 | R76Q1 2470--3-- |


| Rated Cap. | 1000Vdc/600Va |  |  |  | $\begin{array}{\|c} \hline \begin{array}{c} \text { Max } \\ \mathrm{dv} / \mathrm{dtt} \\ (\mathrm{~V} / \mu \mathrm{s}) \end{array} \end{array}$ | $\begin{gathered} \operatorname{Max} K_{0} \\ \left(\mathrm{~V}^{2} / \mu \mathrm{s}\right) \end{gathered}$ | Part Number |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  | B | H | L | p |  |  |  |
| 0.0274F | 6.0 | 15.0 | 26.5 | 22.5 | 2100 | 420 E 4 | R76QN 2270-0-- |
| 0.033 4 F | 6.0 | 15.0 | 26.5 | 22.5 | 2100 | 420 E 4 | R76QN 2330-3-- |
| 0.039 uF | 6.0 | 15.0 | 26.5 | 22.5 | 2100 | 420 E4 | R760N 2390--3-- |
| 0.047 uF | 7.0 | 6.0 | . 5 | 22. | 2100 | 420 E 4 | R76QN 2470-3-- |
| 0.056uF | 7.0 | 16.0 | 6.5 | 22.5 | 2100 | 420 E4 | R76QN 2560--3-- |
| 0.0684 F | 8.5 | 17.0 | 26.5 | 22.5 | 2100 | 420 E 4 | R76QN 2680--3-- |
| 0.082uF | 10.0 | 18.5 | 26.5 | 22.5 | 2100 | 420 E4 | R760N 2820-3-- |
| 0.10 $\mathrm{F}^{2}$ | 10.0 | 18.5 | 26.5 | 22.5 | 2100 | 420 E 4 | R760N 3100-3-- |
| $0.12 \mu \mathrm{~F}$ | 11.0 | 20.0 | 6.5 | 22. | 2100 | 420 E4 | R76QN 3120-3-- |
| $0.15 \mu \mathrm{~F}$ | 13.0 | 22.0 | 6.5 | . 5 | 2100 | 420 E4 | R76QN 3150-3-- |
| 0.10 uF | 10.0 | 20.0 | 32.0 | 27.5 | 1000 | 200 E4 | R76QR 3100--3-- |
| $0.12 \mu \mathrm{~F}$ | 10 | 20.0 | 32.0 | 27.5 | 1000 | 200 E4 | R76QR 3120--3-- |
| 0.154 F | 11.0 | 20.0 | 32.0 | 27.5 | 1000 | 200 E4 | R76QR 3150--3-- |
| ${ }^{0} 0.18 \mu \mathrm{~F}$ | 13.0 | 22.0 | 32.0 | 27.5 | 1000 | 200 E4 | R76QR 3180-3-- |
| *0.22uF | 13.0 | 22.0 | 32.0 | 27.5 | 1000 | E4 | R76QR 3220-3-- |
| *0.27 F | 15.0 | 24.5 | 32.0 | 27.5 | 1000 | 200 E 4 | R76QR 3270-3-- |
| *0.33 $\mu \mathrm{F}$ | 14.0 | 28.0 | 32.0 | 27.5 | 1000 | 200 E4 | R76QR 3330--3- |
| *0.39 F | 18.0 | 33.0 | 32.0 | 27.5 | 1000 | 200 E4 | R760R 3390-3-- |
| *0.47 FF | 18.0 | 33.0 | 32.0 | 27.5 | 1000 | 200 E4 | R760R 3470-3-- |
| *0.56uF | 22.0 | 37.0 | 32.0 | 27.5 | 1000 | 200 E4 | R760R 3560-3-- |
| *0.684F | 22.0 | 37.0 | 32.0 | 27.5 | 1000 | 200 E4 | R76QR 3680--3-- |
| $0.82 \mu \mathrm{~F}$ | 20.0 | 0.0 | 41.5 | 37.5 | 500 | E4 | R760W3820-3-- |
| 1.0uF | 20.0 | 40.0 | 41.5 | 37.5 | 500 | 100 E 4 | R760W4100-3--- |
| 1.24 F | 24.0 | 44.0 | 41.5 | 37.5 | 500 | 100 E4 | R76QW4120-3-- |
| 1.54F | 24.0 | 44.0 | 41.5 | 37.5 | 500 | 100 E 4 | R76QW4150-3-- |

Mechanical version and packaging (Table 1)
Internal use
Tolerance: $\mathrm{H}( \pm 2.5 \%) ; \mathrm{J}( \pm 5 \%) ; \mathrm{K}( \pm 10 \%)$

Mechanical version and packaging (Table 1)
Internal use
Tolerance: $H( \pm 2.5 \%)$ for $C \geqslant 1000 \mathrm{pF} ; \mathrm{J}( \pm 5 \%) ; \mathrm{K}( \pm 10 \%)$

All dimensions are in mm .
Note: If the working voltage $(\mathrm{V})$ is lower than the rated voltage $\left(V_{R}\right)$, the capacitor may work at higher $\mathrm{dv} / \mathrm{dt}$. In this case the maximum value allowed is obtained multiplying the above value (see table dv/dt) with the ratio $\mathrm{V}_{\mathrm{R}} / N$. The pulse characteristic $\mathrm{K}_{0}$ 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.

* These values are available in pitch 37.5 mm upon request.

(1600Vdc)

| Rated Cap. | $1600 \mathrm{Vdc} / 650 \mathrm{Vac}$ |  |  |  | Max dv/dt <br> (V/ $/ \mathrm{s}$ ) | $\begin{aligned} & \operatorname{Max} K_{0} \\ & \left(V^{2} / \mu s\right) \end{aligned}$ | Part Number |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  | B | H | L | p |  |  |  |
| 3300 pF | 5.0 | 11.0 | 18.0 | 15.0 | 6000 | 1900 E4 | R76TI 1330-3-- |
| 3900 pF | 5.0 | 11.0 | 18.0 | 15.0 | 6000 | 1900 E4 | R76TI 1390-3-- |
| 4700pF | 5.0 | 11.0 | 18.0 | 15.0 | 6000 | 1900 E4 | R76TI 1470-3-- |
| 5600pF | 5.0 | 11.0 | 18.0 | 15.0 | 6000 | 1900 E4 | R76TI 1560-3-- |
| 6800 pF | 5.0 | 11.0 | 18.0 | 15.0 | 6000 | 1900 E4 | R76TI 1680--3-- |
| 8200pF | 6.0 | 12.0 | 18.0 | 15.0 | 6000 | 1900 E4 | R76TI 1820-3-- |
| $0.010 \mu \mathrm{~F}$ | 6.0 | 12.0 | 18.0 | 15.0 | 6000 | 1900 E4 | R76TI 2100-3-- |
| $0.012 \mu \mathrm{~F}$ | 7.5 | 13.5 | 18.0 | 15.0 | 6000 | 1900 E4 | R76TI 2120-3-- |
| $0.012 \mu \mathrm{~F}$ | 9.0 | 12.5 | 18.0 | 15.0 | 6000 | 1900 E4 | R76T1 2120-7-- |
| $0.015 \mu \mathrm{~F}$ | 7.5 | 13.5 | 18.0 | 15.0 | 6000 | 1900 E4 | R76TI 2150-3-- |
| $0.015 \mu \mathrm{~F}$ | 9.0 | 12.5 | 18.0 | 15.0 | 6000 | 1900 E4 | R76TI 2150-7-- |
| $0.018 \mu \mathrm{~F}$ | 8.5 | 14.5 | 18.0 | 15.0 | 6000 | 1900 E4 | R76TI 2180--3-- |
| $0.018 \mu \mathrm{~F}$ | 9.0 | 12.5 | 18.0 | 15.0 | 6000 | 1900 E4 | R76TI 2180-7-- |
| $0.022 \mu \mathrm{~F}$ | 8.5 | 14.5 | 18.0 | 15.0 | 6000 | 1900 E4 | R76TI 2220-3-- |
| $0.022 \mu \mathrm{~F}$ | 13.0 | 12.0 | 18.0 | 15.0 | 6000 | 1900 E4 | R76TI 2220-7-- |
| $0.027 \mu \mathrm{~F}$ | 10.0 | 16.0 | 18.0 | 15.0 | 6000 | 1900 E4 | R76TI 2270-3-- |
| $0.033 \mu \mathrm{~F}$ | 11.0 | 19.0 | 18.0 | 15.0 | 6000 | 1900 E4 | R76TI 2330-3-- |
| $0.015 \mu \mathrm{~F}$ | 6.0 | 15.0 | 26.5 | 22.5 | 3000 | 960 E4 | R76TN2150-3-- |
| $0.018 \mu \mathrm{~F}$ | 6.0 | 15.0 | 26.5 | 22.5 | 3000 | 960 E4 | R76TN2180--3-- |
| $0.022 \mu \mathrm{~F}$ | 6.0 | 15.0 | 26.5 | 22.5 | 3000 | 960 E4 | R76TN2220-3-- |
| $0.027 \mu \mathrm{~F}$ | 6.0 | 15.0 | 26.5 | 22.5 | 3000 | 960 E4 | R76TN2270-3-- |
| $0.033 \mu \mathrm{~F}$ | 7.0 | 16.0 | 26.5 | 22.5 | 3000 | 960 E4 | R76TN2330-3-- |
| $0.039 \mu \mathrm{~F}$ | 8.5 | 17.0 | 26.5 | 22.5 | 3000 | 960 E4 | R76TN2390-3-- |
| $0.047 \mu \mathrm{~F}$ | 10.0 | 18.5 | 26.5 | 22.5 | 3000 | 960 E4 | R76TN2470-3-- |
| $0.056 \mu \mathrm{~F}$ | 10.0 | 18.5 | 26.5 | 22.5 | 3000 | 960 E4 | R76TN2560-3-- |
| $0.068 \mu \mathrm{~F}$ | 11.0 | 20.0 | 26.5 | 22.5 | 3000 | 960 E4 | R76TN2680-3-- |
| $0.082 \mu \mathrm{~F}$ | 11.0 | 20.0 | 26.5 | 22.5 | 3000 | 960 E4 | R76TN2820-3-- |
| $0.10 \mu \mathrm{~F}$ | 13.0 | 22.0 | 26.5 | 22.5 | 3000 | 960 E4 | R76TN3100--3-- |

Mechanical version and packaging (Table 1)
Internal use
Tolerance: $\mathrm{H}( \pm 2.5 \%) ; \mathrm{J}( \pm 5 \%) ; \mathrm{K}( \pm 10 \%)$

| Rated Cap. | $1600 \mathrm{Vdc} / 650 \mathrm{Vac}$ |  |  |  | Max dv/dt | Max K0 |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  | B | H | L | p | $(\mathrm{V} / \mu \mathrm{s})$ | $\left(V^{2} / \mu s\right)$ |  |
| 0.039 ${ }^{\text {F }}$ | 9.0 | 17.0 | 32.0 | 27.5 | 2000 | 640 E4 | R76TR 2390-3-- |
| $0.047 \mu \mathrm{~F}$ | 9.0 | 17.0 | 32.0 | 27.5 | 2000 | 640 E4 | R76TR 2470--3-- |
| $0.056 \mu \mathrm{~F}$ | 9.0 | 17.0 | 32.0 | 27.5 | 2000 | 640 E4 | R76TR 2560--3-- |
| $0.068 \mu \mathrm{~F}$ | 9.0 | 17.0 | 32.0 | 27.5 | 2000 | 640 E4 | R76TR 2680--3-- |
| ${ }^{*} 0.082 \mu \mathrm{~F}$ | 11.0 | 20.0 | 32.0 | 27.5 | 2000 | 640 E4 | R76TR 2820--3-- |
| *0.10 ${ }^{\text {F }}$ | 11.0 | 20.0 | 32.0 | 27.5 | 2000 | 640 E4 | R76TR 3100--3-- |
| * $0.12 \mu \mathrm{~F}$ | 13.0 | 22.0 | 32.0 | 27.5 | 2000 | 640 E4 | R76TR 3120--3-- |
| *0.15 $\mu \mathrm{F}$ | 15.0 | 24.5 | 32.0 | 27.5 | 2000 | 640 E4 | R76TR 3150-3-- |
| *0.18uF | 15.0 | 24.5 | 32.0 | 27.5 | 2000 | 640 E4 | R76TR 3180--3-- |
| *0.22 2 F | 18.0 | 33.0 | 32.0 | 27.5 | 2000 | 640 E4 | R76TR 3220--3-- |
| ${ }^{*} 0.27 \mu \mathrm{~F}$ | 18.0 | 33.0 | 32.0 | 27.5 | 2000 | 640 E4 | R76TR 3270--3-- |
| ${ }^{*} 0.33 \mu \mathrm{~F}$ | 18.0 | 33.0 | 32.0 | 27.5 | 2000 | 640 E4 | R76TR 3330-3-- |
| ${ }^{*} 0.39 \mu \mathrm{~F}$ | 22.0 | 37.0 | 32.0 | 27.5 | 2000 | 640 E4 | R76TR 3390--3-- |
| ${ }^{*} 0.47 \mu \mathrm{~F}$ | 22.0 | 37.0 | 32.0 | 27.5 | 2000 | 640 E4 | R76TR 3470--3-- |
| $0.56 \mu \mathrm{~F}$ | 20.0 | 40.0 | 41.5 | 37.5 | 1200 | 384 E4 | R76TW3560--3-- |
| $0.68 .1{ }^{\text {F }}$ | 20.0 | 40.0 | 41.5 | 37.5 | 1200 | 384 E4 | R76TW3680--3-- |
| $0.82 \mu \mathrm{~F}$ | 24.0 | 44.0 | 41.5 | 37.5 | 1200 | 384 E 4 | R76TW3820--3-- |
| $1.0 \mu \mathrm{~F}$ | 24.0 | 44.0 | 41.5 | 37.5 | 1200 | 384 E4 | R76TW4100--3-- |

Mechanical version and packaging (Table 1)
Internal use
Tolerance: $\mathrm{H}( \pm 2.5 \%) ; \mathrm{J}( \pm 5 \%) ; \mathrm{K}( \pm 10 \%)$

All dimensions are in mm.

[^2]* These values are available in pitch 37.5 mm upon request.

(2000Vdc)

| Rated Cap. | 2000Vdc / 700Vac |  |  |  | Max dv/dt | Max K ${ }_{0}$ | Part Number |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  | B | H | L | p | $(\mathrm{V} / \mathrm{us})$ | ( $\mathrm{V}^{2} / \mu \mathrm{s}$ ) |  |
| 220pF | 5.0 | 11.0 | 18.0 | 15.0 | 9500 | 3800 E4 | R76UI 0220--0-- |
| 270pF | 5.0 | 11.0 | 18.0 | 15.0 | 9500 | 3800 E4 | R76Ul 0270--0-- |
| 330pF | 5.0 | 11.0 | 18.0 | 15.0 | 9500 | 3800 E4 | R76UI 0330-0-- |
| 390pF | 5.0 | 11.0 | 18.0 | 15.0 | 9500 | 3800 E4 | R76UI 0390--0-- |
| 470pF | 5.0 | 11.0 | 18.0 | 15.0 | 9500 | 3800 E4 | R76UI 0470-0-- |
| 560pF | 5.0 | 11.0 | 18.0 | 15.0 | 9500 | 3800 E4 | R76UI 0560-0-- |
| 680 pF | 5.0 | 11.0 | 18.0 | 15.0 | 9500 | 3800 E4 | R76UI 0680-0-- |
| 820pF | 5.0 | 11.0 | 18.0 | 15.0 | 9500 | 3800 E4 | R76Ul 0820--0-- |
| 1000pF | 5.0 | 11.0 | 18.0 | 15.0 | 9500 | 3800 E4 | R76Ul 1100--3-- |
| 1200pF | 5.0 | 11.0 | 18.0 | 15.0 | 9500 | 3800 E4 | R76UI 1120--3-- |
| 1500pF | 5.0 | 11.0 | 18.0 | 15.0 | 9500 | 3800 E4 | R76UI 1150--3-- |
| 1800pF | 5.0 | 11.0 | 18.0 | 15.0 | 9500 | 3800 E4 | R76Ul 1180--3-- |
| 2200pF | 5.0 | 11.0 | 18.0 | 15.0 | 9500 | 3800 E4 | R76Ul 1220--3-- |
| 2700 pF | 5.0 | 11.0 | 18.0 | 15.0 | 9500 | 3800 E4 | R76Ul 1270--3-- |
| 3300pF | 6.0 | 12.0 | 18.0 | 15.0 | 9500 | 3800 E4 | R76UI 1330--3-- |
| 3900pF | 6.0 | 12.0 | 18.0 | 15.0 | 9500 | 3800 E4 | R76UI 1390--3-- |
| 4700pF | 6.0 | 12.0 | 18.0 | 15.0 | 9500 | 3800 E4 | R76UI 1470--3-- |
| 5600pF | 7.5 | 13.5 | 18.0 | 15.0 | 9500 | 3800 E4 | R76UI 1560-3-3 |
| 5600pF | 9.0 | 12.5 | 18.0 | 15.0 | 9500 | 3800 E4 | R76UI 1560--7-- |
| 6800pF | 7.5 | 13.5 | 18.0 | 15.0 | 9500 | 3800 E4 | R76Ul 1680--3-- |
| 6800pF | 9.0 | 12.5 | 18.0 | 15.0 | 9500 | 3800 E4 | R76Ul 1680--7-- |
| 8200pF | 8.5 | 14.5 | 18.0 | 15.0 | 9500 | 3800 E4 | R76Ul 1820-3-- |
| 8200pF | 9.0 | 12.5 | 18.0 | 15.0 | 9500 | 3800 E4 | R76U 1820--7-- |
| 0.010 F | 10.0 | 16.0 | 18.0 | 15.0 | 9500 | 3800 E4 | R76UI 2100--3-- |
| $0.010 \mu \mathrm{~F}$ | 13.0 | 12.0 | 18.0 | 15.0 | 9500 | 3800 E4 | R76UI 2100--7-- |
| $0.012 \mu \mathrm{~F}$ | 10.0 | 16.0 | 18.0 | 15.0 | 9500 | 3800 E4 | R76Ul 2120--3-- |
| $0.015 \mu \mathrm{~F}$ | 11.0 | 19.0 | 18.0 | 15.0 | 9500 | 3800 E4 | R76Ul 2150--3-- |
| 1000pF | 6.0 | 15.0 | 26.5 | 22.5 | 3500 | 1400 E4 | R76UN1100-0-- |
| 1200pF | 6.0 | 15.0 | 26.5 | 22.5 | 3500 | 1400 E4 | R76UN1120-0-- |
| 1500pF | 6.0 | 15.0 | 26.5 | 22.5 | 3500 | 1400 E4 | R76UN1150-0-- |
| 1800pF | 6.0 | 15.0 | 26.5 | 22.5 | 3500 | 1400 E4 | R76UN1180-0-- |
| 2200pF | 6.0 | 15.0 | 26.5 | 22.5 | 3500 | 1400 E4 | R76UN1220--0-- |
| 2700pF | 6.0 | 15.0 | 26.5 | 22.5 | 3500 | 1400 E4 | R76UN1270-0-- |
| 3300 pF | 6.0 | 15.0 | 26.5 | 22.5 | 3500 | 1400 E4 | R76UN1330-0-- |
| 3900 pF | 6.0 | 15.0 | 26.5 | 22.5 | 3500 | 1400 E4 | R76UN1390--0-- |
| 4700pF | 6.0 | 15.0 | 26.5 | 22.5 | 3500 | 1400 E4 | R76UN1470--0-- |
| 5600pF | 6.0 | 15.0 | 26.5 | 22.5 | 3500 | 1400 E4 | R76UN1560--0-- |
| 6800 pF | 6.0 | 15.0 | 26.5 | 22.5 | 3500 | 1400 E4 | R76UN1680--0-- |
| 8200pF | 6.0 | 15.0 | 26.5 | 22.5 | 3500 | 1400 E4 | R76UN1820--3-- |
| 0.010 F | 6.0 | 15.0 | 26.5 | 22.5 | 3500 | 1400 E4 | R76UN2100--3-- |
| $0.012 \mu \mathrm{~F}$ | 6.0 | 15.0 | 26.5 | 22.5 | 3500 | 1400 E4 | R76UN2120--3-- |
| $0.015 \mu \mathrm{~F}$ | 7.0 | 16.0 | 26.5 | 22.5 | 3500 | 1400 E4 | R76UN2150-3.- |
| 0.018 $\mu \mathrm{F}$ | 7.0 | 16.0 | 26.5 | 22.5 | 3500 | 1400 E4 | R76UN2180--3-- |
| $0.022 \mu \mathrm{~F}$ | 8.5 | 17.0 | 26.5 | 22.5 | 3500 | 1400 E4 | R76UN2220-3-- |
| $0.027 \mu \mathrm{~F}$ | 10.0 | 18.5 | 26.5 | 22.5 | 3500 | 1400 E4 | R76UN2270--3-- |
| $0.033 \mu \mathrm{~F}$ | 10.0 | 18.5 | 26.5 | 22.5 | 3500 | 1400 E4 | R76UN2330-3-- |
| $0.039 \mu \mathrm{~F}$ | 11.0 | 20.0 | 26.5 | 22.5 | 3500 | 1400 E4 | R76UN2390--3-- |
| $0.047 \mu \mathrm{~F}$ | 13.0 | 22.0 | 26.5 | 22.5 | 3500 | 1400 E4 | R76UN2470--3-- |
| $0.056 \mu \mathrm{~F}$ | 13.0 | 22.0 | 26.5 | 22.5 | 3500 | 1400 E4 | R76UN2560--3-- |


| Rated Cap. | 2000Vdc/700Vac |  |  |  | Max dv/dt <br> ( $\mathrm{V} / \mathrm{Ls}$ ) | Max Ko ( $\mathrm{V}^{2} / \mu \mathrm{s}$ ) | Part Number |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  | B | H | L | p |  |  |  |
| 0.022uF | 9.0 | 17.0 | 32.0 | 27.5 | 2300 | 920 E4 | R76UR 2220--3-- |
| 0.027 $\mu$ | 9.0 | 17.0 | 32.0 | 27.5 | 2300 | 920 E4 | R76UR 2270-3-- |
| *0.033и | 9.0 | 17.0 | 32.0 | 27.5 | 2300 | 920 E4 | R76UR 2330--3-- |
| *0.03 | 10.0 | 20.0 | 32.0 | 27.5 | 2300 | 920 E4 | R76UR 2390--3-- |
| *0.047 | 11.0 | 20.0 | 32.0 | 27 | 2300 | 920 E4 | R76UR 2470--3-- |
| *0.056 $\mu \mathrm{F}$ | 13.0 | 22.0 | 32.0 | 27.5 | 2300 | 920 E4 | R76UR 2560--3-- |
| *0.068 $\mu$ | 13.0 | 22.0 | 32.0 | 27.5 | 2300 | 920 E4 | R76UR 2680--3-- |
| *0.082 $\mu \mathrm{F}$ | 15.0 | 24.5 | 32.0 | 27.5 | 2300 | 920 E4 | R76UR 2820--3-- |
| *0.10 $\mu \mathrm{F}$ | 14.0 | 28.0 | 32.0 | 27.5 | 2300 | 920 E4 | R76UR 3100--3-- |
| * $0.12 \mu \mathrm{~F}$ | 18.0 | 33.0 | 32.0 | 27.5 | 2300 | 920 E4 | R76UR 3120--3-- |
| *0.15 | 18.0 | 33.0 | 32.0 | 27.5 | 2300 | 920 E4 | R76UR 3150--3-- |
| * $0.18 \mu$ | 22.0 | 37.0 | 32.0 | 27.5 | 2300 | 920 E4 | R76UR 3180--3-- |
| *0.22 2 F | 22.0 | 37.0 | 32.0 | 27.5 | 2300 | 920 E4 | R76UR 3220--3-- |
| $0.27 \mu \mathrm{~F}$ | 20.0 | 40.0 | 41 | 37 | 1500 | 600 | 76UW3270--3-- |
| $0.33 \mu \mathrm{~F}$ | 20.0 | 40.0 | 41.5 | 37.5 | 1500 | 600 E4 | R76UW3330--3-- |
| $0.39 \mu$ | 24.0 | 44.0 | 41.5 | 37.5 | 1500 | 600 E4 | R76UW3390--3-- |
| $0.47 \mu \mathrm{~F}$ | 24.0 | 44.0 | 41.5 | 37.5 | 1500 | 600 E 4 | R76UW3470--3-- |

Mechanical version and packaging (Table 1)
Internal use
Tolerance: $\mathrm{H}( \pm 2.5 \%) ; \mathrm{J}( \pm 5 \%) ; \mathrm{K}( \pm 10 \%)$

All dimensions are in mm .
Note: If the working voltage ( V ) is lower than the rated voltage $\left(V_{R}\right)$, 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 $\mathrm{V}_{\mathrm{R}} N$. The pulse characteristic $K_{0}$ depends on the voltage waveform and in any case it cannot overcome the value given in the above table. The $\mathrm{dv} / \mathrm{dt}$ test is carried out at 2 times the above values.

* These values are available in pitch 37.5 mm upon request.

[^3]R76
MMKP Series
POLYPROPYLENE CAPACITOR WITH DOUBLE SIDED METALLIZED FILM ELECTRODES D.C. AND PULSE APPLICATIONS PRODUCT CODE: R76

## ELECTRICAL CHARACTERISTICS

Rated voltage ( $\mathrm{V}_{\mathrm{R}}$ ):
250 Vdc - $400 \mathrm{Vdc}-630 \mathrm{Vdc}$ for 1 section $630 \mathrm{Vdc}-1000 \mathrm{Vdc}-1600 \mathrm{Vdc}-2000 \mathrm{Vdc}$ for 2 sections. Rated temperature ( $T_{R}$ ):
$+85^{\circ} \mathrm{C}$ for $V_{\mathrm{R}}$ (d.c.)
$+75^{\circ} \mathrm{C}$ for $V_{\mathrm{R}}$ (a.c.)
Temperature derated voltage:
The following decreasing factor has to be applied on the rated voltage:
$+85^{\circ} \mathrm{C}$ to $+105^{\circ} \mathrm{C}: 1.25 \%$ per ${ }^{\circ} \mathrm{C}$ for $\mathrm{V}_{\mathrm{R}}$ (d.c.)
$+75^{\circ} \mathrm{C}$ to $+105^{\circ} \mathrm{C}: 1.35 \%$ per ${ }^{\circ} \mathrm{C}$ for $V_{\mathrm{R}}$ (a.c.)

## Capacitance range:

$\begin{array}{ll}680 \mathrm{pF} \text { to } 10 \mu \mathrm{~F} & 1 \text { section } \\ 220 \mathrm{pF} \text { to } 3.3 \mu \mathrm{~F} & 2 \text { sections }\end{array}$
Capacitance values:
E12 series (IEC 60063 Norm).
Capacitance tolerances (measured at 1 kHz ):
$\pm 5 \%$ ( J ); $\pm 10 \%$ ( K ) for $\mathrm{C}<1000 \mathrm{pF}$
$\pm 2.5 \%(\mathrm{H}) ; \pm 5 \%(\mathrm{~J}) ; \pm 10 \%(\mathrm{~K}) \quad$ for $\mathrm{C} \geqslant 1000 \mathrm{pF}$
Total self-inductance (L):
(Lead length $\sim 2 \mathrm{~mm}$ )
$\left[\begin{array}{cc|c|c|c|cc|}\hline \text { Pitch }(\mathrm{mm}) & 7.5 & 10 & 15 & 22.5 & 27.5 & 37.5 \\ \hline L(n H) \approx & 8 & 9 & 10 & 18 & 18 & 20 \\ \hline\end{array}\right]$

Dissipation factor (DF):
$\operatorname{tg} \delta \times 10^{-4}$ at $+25^{\circ} \mathrm{C} \pm 5^{\circ} \mathrm{C}$

| kHz | $\mathrm{C} \leq 0.1 \mu \mathrm{~F}$ | $0.1 \mu \mathrm{~F}<\mathrm{C} \leqslant 1.0 \mu \mathrm{~F}$ | $\mathrm{C}>1 \mu \mathrm{~F}$ |
| ---: | :---: | :---: | :---: |
| 1 | $\leq 3$ | $\leq 3$ | $\leq 4$ |
| 10 | $\leq 4$ | $\leq 6$ |  |
| 100 | $\leq 15$ |  |  |

Insulation resistance:
Test conditions
Temperature:
Voltage charge time: $\quad 1 \mathrm{~min}$
Voltage charge: $\quad 100 \mathrm{Vdc}$
Performance

$$
\begin{array}{ll}
\geq 1 \times 10^{5} \mathrm{M} \Omega \text { for } \mathrm{C} \leq 0.33 \mu \mathrm{~F} & \left(5 \times 10^{5} \mathrm{M} \Omega\right)^{\star} \\
\geq 30000 \mathrm{~s} \quad \text { for } \mathrm{C}>0.33 \mu \mathrm{~F} & (150000 \mathrm{~s})^{\star} \\
\text { * Typical value. }
\end{array}
$$

## Test voltage between terminations:

$1.6 \times \mathrm{V}_{\mathrm{R}}$ applied for 2 s at $+25^{\circ} \mathrm{C} \pm 5^{\circ} \mathrm{C}$

## TEST METHOD AND PERFORMANCE

Damp heat, steady state:
Test conditions

| Temperature: | $+40^{\circ} \mathrm{C} \pm 2^{\circ} \mathrm{C}$ |
| :--- | :--- |
| Relative humidity (RH): | $93 \% \pm 2 \%$ |
| Test duration: | 56 days |
| Performance |  |
| Capacitance change $\mid \triangle \mathrm{C} / \mathrm{Cl}:$ | $\leq 2 \%$ |
| DF change ( $\Delta \mathrm{tg} \delta$ ): | $\leq 10 \times 10^{-4}$ at 1 kHz |
| Insulation resistance: | $\geq 50 \%$ of initial limit. |

Endurance:
Test conditions
Temperature:
$+85^{\circ} \mathrm{C} \pm 2^{\circ} \mathrm{C}$
Test duration:
2000 h
Voltage applied:
$1.25 \times V_{\mathrm{R}}$ (d.c.)
Performance
Capacitance change $\mid \Delta \mathrm{C} / \mathrm{Cl}: \leq 2 \%$
DF change ( $\Delta \operatorname{tg} \delta$ ) : $\leq 10 \times 10^{-4}$ at 10 kHz for $\mathrm{C} \leq 1 \mu \mathrm{~F}$ $\leq 10 \times 10^{-4}$ at 1 kHz for $\mathrm{C}>1 \mu \mathrm{~F}$
Insulation resistance: $\quad \geq 50 \%$ of initial limit.
Resistance to soldering heat:

## Test conditions

Solder bath temperature: $\quad+260^{\circ} \mathrm{C} \pm 5^{\circ} \mathrm{C}$
Dipping time (with heat screen): $10 \mathrm{~s} \pm 1 \mathrm{~s}$
Performance
Capacitance change $|\Delta \mathrm{C} / \mathrm{C}|: \leq 1 \%$
DF change $(\Delta \operatorname{tg} \delta): \leq 10 \times 10^{-4}$ at 10 kHz for $\mathrm{C} \leq 1 \mu \mathrm{~F}$ $\leq 10 \times 10^{-4}$ at 1 kHz for $\mathrm{C}>1 \mu \mathrm{~F}$
Insulation resistance: $\geq$ initial limit.
Long term stability (after two years):
Storage: standard environmental conditions (see page 11).
Performance
Capacitance change $\mid \Delta \mathrm{C} / \mathrm{Cl}: \leq 0.5 \%$

POLYPROPYLENE CAPACITOR WITH DOUBLE SIDED METALLIZED FILM ELECTRODES D.C. AND PULSE APPLICATIONS

MAX. VOLTAGE (Vr.m.s.) VERSUS FREQUENCY (sinusoidal wave-form / $\mathrm{T}_{\mathrm{h}} \leq 40^{\circ} \mathrm{C}$ )




Note: p (pitch) in mm.





[^0]:    Note: If the working voltage $(V)$ is lower than the rated voltage $\left(V_{R}\right)$, the capacitor may work at higher $\mathrm{dv} / \mathrm{dt}$. In this case the maximum value allowed is obtained multiplying the above value (see table $d v / d t$ ) with the ratio $V_{R} N$. The pulse characteristic $K_{0}$ depends on the voltage wave-form and in any case it cannot overcome the value given in the above table.
    The $\mathrm{dv} / \mathrm{dt}$ test is carried out at 2 times the above values.

    * These values are available in pitch 37.5 mm upon request.

[^1]:    Mechanical version and packaging (Table 1)
    Internal use
    Tolerance: $\mathrm{H}( \pm 2.5 \%) ; \mathrm{J}( \pm 5 \%) ; \mathrm{K}( \pm 10 \%)$

[^2]:    Note: If the working voltage $(V)$ is lower than the rated voltage $\left(V_{R}\right)$, the capacitor may work at higher $\mathrm{dv} / \mathrm{dt}$. In this case the maximum value allowed is obtained multiplying the above value (see table $\mathrm{dv} / \mathrm{dt}$ ) with the ratio $\mathrm{V}_{\mathrm{R}} N$. The pulse characteristic $\mathrm{K}_{0}$ 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.

[^3]:    Mechanical version and packaging (Table 1)
    Internal use
    Tolerance: $\mathrm{H}( \pm 2.5 \%) ; \mathrm{J}( \pm 5 \%) ; \mathrm{K}( \pm 10 \%)$

