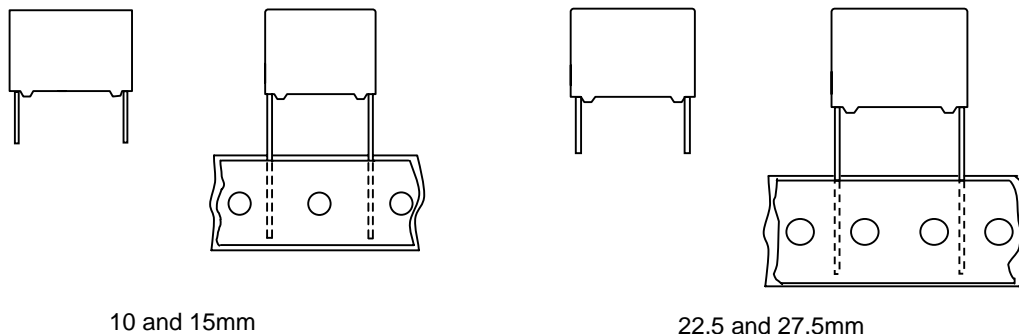


MKP RADIAL POTTED CAPACITORS

Pitch 10.0/15.0/22.5/27.5mm



QUICK REFERENCE DATA

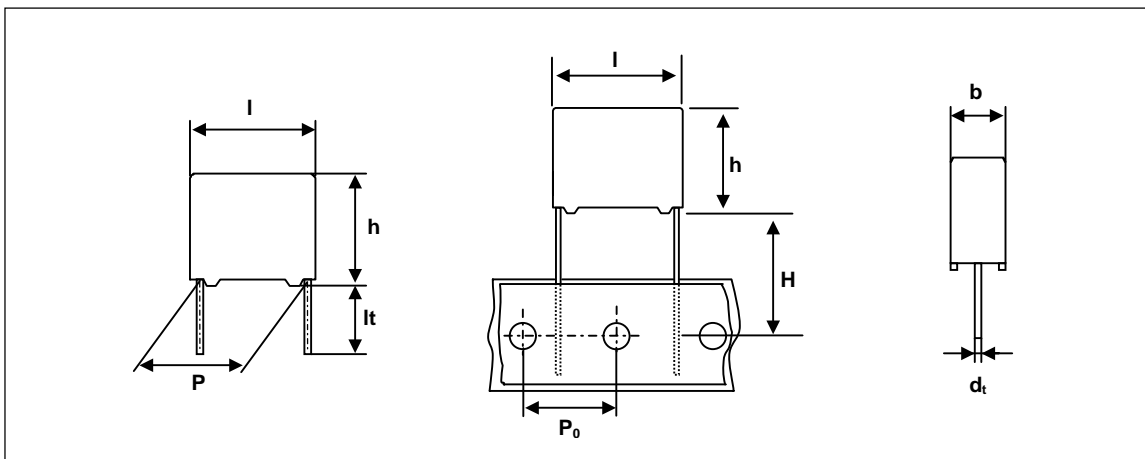
| | |
|----------------------------------|---|
| Capacitance range (E6 series) * | 0.001 μ F to 3.3 μ F |
| Capacitance tolerance | $\pm 10\%$, $\pm 20\%$ |
| Rated (AC) voltage 50 to 60 Hz | 305 V ⁻ |
| Climatic category | 55/105/21 |
| Temperature range | -55 ~ +105 |
| Reference IEC specification | IEC 60384-14(3rd edition) and EN 60384-14 |
| Safety approvals | UL 1283 & CSA-C 22.2 NO. 8 ENEC, UL1414 & CSA-C 22.2 NO. 1 |
| Potting & Encapsulation material | Qualified in accordance with UL 94V-0 |
| Safety class | X2 |

* Intermediate values of the E12 series are available to special order

| | |
|--|--|
| FEATURES <ul style="list-style-type: none"> . 7.5 to 27.5 mm lead pitch . Supplied loose in box and taped on reel . Consist of a low-inductive wound cell of Metallized Polypropylene film, potted in a flame retardant case | APPLICATIONS <ul style="list-style-type: none"> . For X2-electromagnetic interference suppression . Specially designed to meet the NEW REQUIREMENTS in new IEC 60384-14 specification(3rd edition)/EN 60384-14 requiring for X2 a 2.5kV peak pulse voltage test and the UL1414 and CSA-C22.2 No 1 specification |
|--|--|

- Please refer to caution and warning at <http://www.pilkor.co.kr/download/Introductions.pdf> before using these products.

Ordering Information



PCX2 339 X X X X X

Type series

Capacitance

| | |
|------|---------|
| Code | Voltage |
| 3 | 305Vac |

| | |
|------|----------------|
| Code | Original pitch |
| D | 10.0mm |
| F | 15.0mm |
| J | 22.5mm |
| L | 27.5mm |

| Available versions | | | | | Product (l_{max}) | | | |
|--------------------|----------------|------------|-------------------------------|------------------------|-----------------------|------|------|------|
| code | Packing method | C – tol. | Lead length & Height | Hole to hole (P_0) | 12.5 | 18.0 | 26.0 | 31.0 |
| | | | | | Pitch (P) | | | |
| 0 | Loose in box | $\pm 20\%$ | $l_t = 5.0 \pm 1.0\text{mm}$ | - | 10.0 | 15.0 | 22.5 | 27.5 |
| 1 | Loose in box | $\pm 10\%$ | $l_t = 5.0 \pm 1.0\text{mm}$ | - | 10.0 | 15.0 | 22.5 | 27.5 |
| 4 | Loose in box | $\pm 20\%$ | $l_t = 25.0 \pm 2.0\text{mm}$ | - | 10.0 | 15.0 | 22.5 | 27.5 |
| 5 | Loose in box | $\pm 10\%$ | $l_t = 25.0 \pm 2.0\text{mm}$ | - | 10.0 | 15.0 | 22.5 | 27.5 |
| 6 | Ammopack | $\pm 20\%$ | $H = 18.5\text{mm}$ | 12.7mm | 10.0 | 15.0 | 22.5 | 27.5 |
| 7 | Ammopack | $\pm 10\%$ | $H = 18.5\text{mm}$ | 12.7mm | 10.0 | 15.0 | 22.5 | 27.5 |

Interference Suppression film capacitors

PCX2 339

SAFETY APPROVALS

| SAFETY APPROVALS | Voltage | Value | File Number |
|-----------------------------------|----------|--------------------|----------------|
| UL1283 & CSA-C22.2 No. 8 (cUL) | 305V(AC) | 1nF to 3.3 μ F | E208404 |
| UL1414 & CSA-C22.2 No. 1 | 250V(AC) | 1nF to 1.0 μ F | E165646 |
| ENEC(SEMKO) * | 305V(AC) | 1nF to 3.3 μ F | SE/0256-4 |
| CQC | 305V(AC) | 1nF to 3.3 μ F | CQC08001023138 |

* The ENEC-approval together with the CB-Certificate replace all national approval marks of the following countries(they have already signed the ENEC-Agreement): Austria; Belgium; Czech. Republic; Denmark; Finland; France; Germany; Greece; Hungary; Ireland; Italy; Luxembourg; Netherlands; Norway; Portugal; Slovenian; Spain; Sweden; Switzerland and United Kingdom

Packaging Information

| SMALLEST PACKING QUANTITIES (SPQ) | LOOSE IN BOX | |
|--------------------------------------|-----------------------|----------------------|
| | It = 5.0 \pm 1.0 mm | It = 25 \pm 2.0 mm |
| DIMENSIONS | | |
| 4.0 x 10.0 x 12.5 | 2000 | 1200 |
| 5.0 x 11.0 x 12.5 | 1500 | 1000 |
| 6.0 x 12.0 x 12.5 | 1000 | 1000 |
| 5.0 x 11.0 x 18.0 | 1000 | 1000 |
| 6.0 x 12.0 x 18.0 | 1000 | 1000 |
| 7.0 x 13.5 x 18.0 | 1000 | 1000 |
| 8.5 x 15.0 x 18.0 | 1000 | 1000 |
| 10.0 x 16.5 x 18.0 | 1000 | 1000 |
| 11.0 x 18.5 x 18.0 | 1000 | 1000 |
| 6.0 x 15.5 x 26.0 | 1000 | 1000 |
| 7.0 x 16.5 x 26.0 | 1000 | 1000 |
| 8.5 x 18.0 x 26.0 | 500 | 500 |
| 10.0 x 19.5 x 26.0 | 500 | 500 |
| 13.0 x 23.0 x 26.0 | 500 | 500 |
| 11.0 x 21.0 x 31.0 | 500 | 250 |
| 13.0 x 23.0 x 31.0 | 250 | 250 |
| 15.0 x 25.0 x 31.0 | 250 | 250 |
| 18.0 x 28.0 x 31.0 | 200 | 200 |
| 21.0 x 31.0 x 31.0 | 150 | 150 |

Interference Suppression film capacitors

PCX2 339

SPECIFIC REFERENCE DATA FOR 305 V_{AC}

| Tangent of loss angle | at 1 khz | at 10 khz |
|--|--|---|
| $C < 470 \text{ nF}$ $470 \text{ nF} < C < 1 \text{ } \mu\text{F}$ $C > 1 \text{ } \mu\text{F}$ | 10×10^{-4} 20×10^{-4} 30×10^{-4} | 20×10^{-4} 70×10^{-4} - |
| Rated voltage pulse slope (dV/dt) _R P = 10.0mm P = 15.0mm P = 22.5mm P = 27.5mm | 550 V/ μ s 400 V/ μ s 200 V/ μ s 150 V/ μ s | |
| R between leads, for C < 0.33 μ F | 15 000 M Ω | |
| RC between leads, for C > 0.33 μ F | 5 000 s | |
| Withstanding(DC) Voltage (cut-off current 10mA) C < 1 μ F C > 1 μ F | 2250 V ; 1 min 1850 V ; 1 min | |

V_{Rac} = 305 V⁻ X2

| Cap. (μ F) | b x h x l (mm) | MASS (g) | CATALOGUE NUMBER | | | |
|---------------------------|-------------------|-------------|-------------------------|------------------------|------------------------|------------------------|
| | | | PCX2 339 | | | |
| | | | loose in box | | | |
| | | | lt = 5 \pm 1.0 mm | | lt = 25 \pm 2.0 mm | |
| | | | C - tol. ± 20 % | C - tol. ± 10 % | C - tol. ± 20 % | C - tol. ± 10 % |
| Pitch = 10.0 \pm 0.4 mm | | | dt = 0.6 +0.06/-0.05 mm | | | |
| 0.001 | 4.0x 10.0x 12.5 | 0.8 | D30102 | D31102 | D34102 | D35102 |
| 0.0015 | 4.0x 10.0x 12.5 | 0.8 | D30152 | D31152 | D34152 | D35152 |
| 0.0022 | 4.0x 10.0x 12.5 | 0.8 | D30222 | D31222 | D34222 | D35222 |
| 0.0033 | 4.0x 10.0x 12.5 | 0.8 | D30332 | D31332 | D34332 | D35332 |
| 0.0047 | 4.0x 10.0x 12.5 | 0.8 | D30472 | D31472 | D34472 | D35472 |
| 0.0068 | 4.0x 10.0x 12.5 | 0.8 | D30682 | D31682 | D34682 | D35682 |
| 0.01 | 4.0x 10.0x 12.5 | 0.8 | D30103 | D31103 | D34103 | D35103 |
| 0.015 | 4.0x 10.0x 12.5 | 0.8 | D30153 | D31153 | D34153 | D35153 |
| 0.022 | 4.0x 10.0x 12.5 | 0.8 | D30223 | D31223 | D34223 | D35223 |
| 0.033 | 5.0x 11.0 x 12.5 | 0.9 | D30333 | D31333 | D34333 | D35333 |
| 0.047 | 5.0x 11.0 x 12.5 | 0.9 | D30473 | D31473 | D34473 | D35473 |
| 0.068 | 6.0 x 12.0 x 12.5 | 1.0 | D30683 | D31683 | D34683 | D35683 |
| 0.1 | 6.0 x 12.0 x 12.5 | 1.0 | D30104 | D31104 | D34104 | D35104 |

Interference Suppression film capacitors

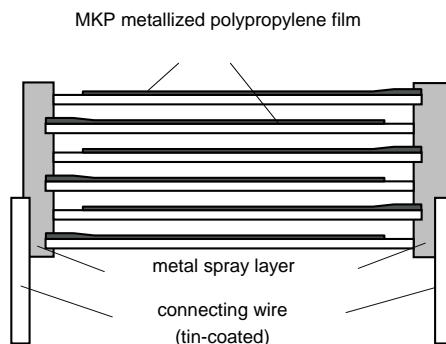
PCX2 339

 $V_{Rac} = 305 V \sim X2$

| Cap. (μF) | b x h x l (mm) | MASS (g) | CATALOGUE NUMBER | | | |
|---------------------------|--------------------|-------------|-------------------------|-------------------------|-------------------------|-------------------------|
| | | | PCX2 339 | | | |
| | | | loose in box | | | |
| | | | lt = 5 \pm 1.0 mm | | lt = 25 \pm 2.0 mm | |
| | | | C - tol. $\pm 20 \%$ | C - tol. $\pm 10 \%$ | C - tol. $\pm 20 \%$ | C - tol. $\pm 10 \%$ |
| Pitch = 15.0 \pm 0.4 mm | | | dt = 0.8 +0.08/-0.05 mm | | | |
| 0.01 | 5.0 x 11.0 x 18.0 | 1.6 | F30103 | F31103 | F34103 | F35103 |
| 0.015 | 5.0 x 11.0 x 18.0 | 1.6 | F30153 | F31153 | F34153 | F35153 |
| 0.022 | 5.0 x 11.0 x 18.0 | 1.6 | F30223 | F31223 | F34223 | F35223 |
| 0.033 | 5.0 x 11.0 x 18.0 | 1.6 | F30333 | F31333 | F34333 | F35333 |
| 0.047 | 5.0 x 11.0 x 18.0 | 1.6 | F30473 | F31473 | F34473 | F35473 |
| 0.068 | 5.0 x 11.0 x 18.0 | 1.6 | F30683 | F31683 | F34683 | F35683 |
| 0.1 | 5.0 x 11.0 x 18.0 | 1.6 | F30104 | - | F34104 | - |
| 0.1 | 6.0 x 12.0 x 18.0 | 1.8 | - | F31104 | - | F35104 |
| 0.15 | 7.0 x 13.5 x 18.0 | 1.9 | F30154 | F31154 | F34154 | F35154 |
| 0.22 | 8.5 x 15.0 x 18.0 | 2.6 | F30224 | F31224 | F34224 | F35224 |
| 0.33 | 10.0 x 16.5 x 18.0 | 3.1 | F30334 | F31334 | F34334 | F35334 |
| 0.47 | 11.0 x 18.5 x 18.0 | 4.1 | F30474 | F31474 | F34474 | F35474 |
| Pitch = 22.5 \pm 0.4 mm | | | dt = 0.8 +0.08/-0.05 mm | | | |
| 0.22 | 6.0 x 15.5 x 26.0 | 3.0 | J30224 | J31224 | J34224 | J35224 |
| 0.33 | 7.0 x 16.5 x 26.0 | 3.5 | J30334 | J31334 | J34334 | J35334 |
| 0.47 | 8.5 x 18.0 x 26.0 | 4.4 | J30474 | J31474 | J34474 | J35474 |
| 0.68 | 10.0 x 19.5 x 26.0 | 5.5 | J30684 | J31684 | J34684 | J35684 |
| 1.0 | 13.0 x 23.0 x 26.0 | 8.0 | J30105 | J31105 | J34105 | J35105 |
| Pitch = 27.5 \pm 0.4 mm | | | dt = 0.8 +0.08/-0.05 mm | | | |
| 0.68 | 11.0 x 21.0 x 31.0 | 7.8 | L30684 | L31684 | L34684 | L35684 |
| 1.0 | 13.0 x 23.0 x 31.0 | 10.4 | L30105 | L31105 | L34105 | L35105 |
| 1.5 | 15.0 x 25.0 x 31.0 | 12.8 | L30155 | L31155 | L34155 | L35155 |
| 2.2 | 18.0 x 28.0 x 31.0 | 17.2 | L30225 | L31225 | L34225 | L35225 |
| 3.3 | 21.0 x 31.0 x 31.0 | 20.4 | L30335 | L31335 | L34335 | L35335 |

| Original pitch | New Code | Old Code | Example |
|----------------|----------------|----------------|-------------------------------------|
| 10.0mm | PCX2 339Dxxxxx | PCX2 339 3xxxx | PCX2 339 50474 => PCX2 339J30474 |
| 15.0mm | PCX2 339Fxxxxx | PCX2 339 4xxxx | |
| 22.5mm | PCX2 339Jxxxxx | PCX2 339 5xxxx | |
| 27.5mm | PCX2 339Lxxxxx | PCX2 339 6xxxx | |

CONSTRUCTION



MOUNTING

NORMAL USE

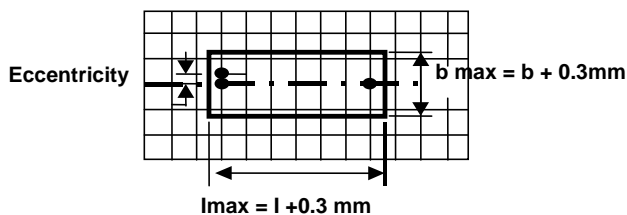
The capacitors are designed for mounting on printed-circuit boards.
 The capacitors packed in bandoliers are designed for mounting on printed-circuit boards by means of automatic insertion machines.
 For detailed specifications refer to chapter "PACKAGING".

SPECIFIC METHOD OF MOUNTING TO WITHSTAND VIBRATION AND SHOCK

In order to withstand vibration and shock tests, it must be ensured that the stand-off pips are in good contact with the printed-circuit board.
 . For pitches of 15mm the capacitors shall be mechanically fixed by leads.
 . For larger pitches the capacitors shall be mounted in the same way and the body clamped.

SPACE REQUIREMENTS ON PRINTED-CIRCUIT BOARD

The maximum length and width of film capacitors are shown in the following drawing ;

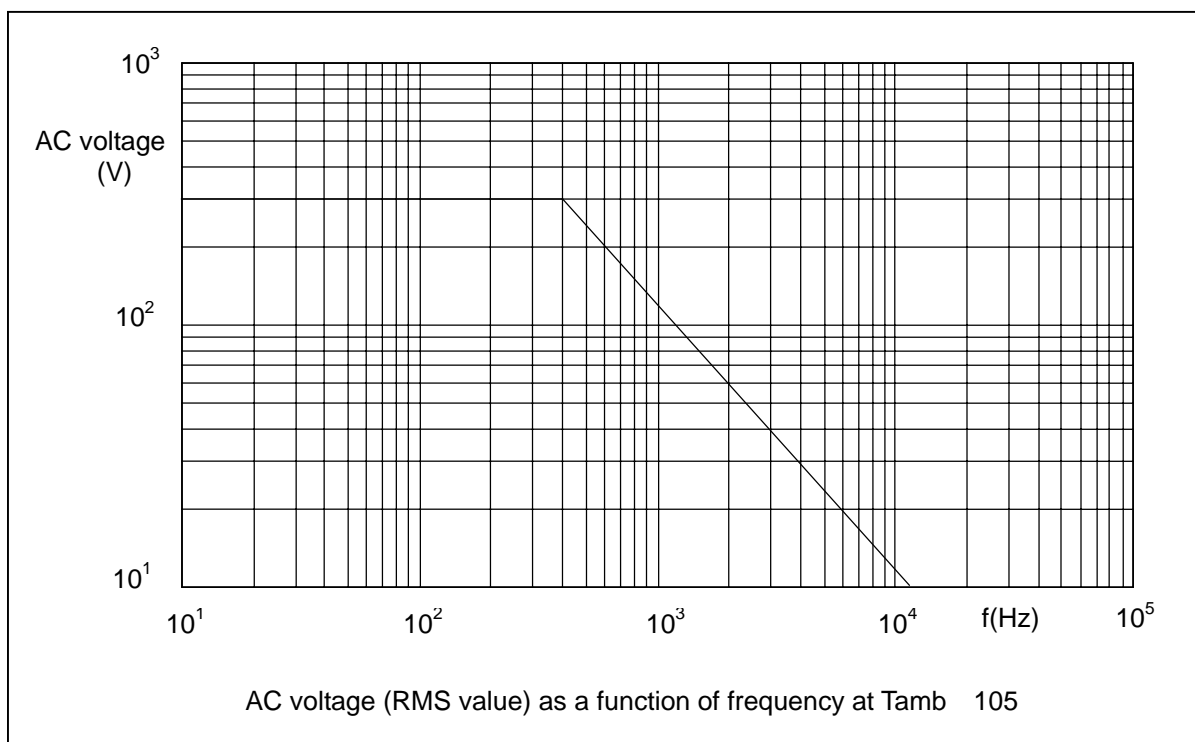


- Eccentricity as in drawing.
 The maximum eccentricity is smaller than or equal to the lead diameter of the product concerned.
- Product height with seating plane as given by IEC 60717 as reference : $h_{max} \quad h+0.3\text{mm}$

RATINGS AND CHARACTERISTICS

Unless otherwise specified all electrical values apply to an ambient temperature of 23 ± 1 °C, an atmospheric pressure of 86 to 106kPa and a relative humidity $50 \pm 2\%$.

For reference testing, a conditioning period shall be applied of 96 ± 4 hours by heating the products in a circulating air oven at the rated temperature and a relative humidity not exceeding 20%.

Maximum RMS Voltage as a function of frequency

Interference Suppression film capacitors

PCX2 339

PRODUCT MARKING

Capacitors are marked with having following information;

- 1.Manufacturer (PILKOR)
- 2.Manufacturer's type designation (PCX2 339)
- 3.Rated capacitance in code according to IEC 60062
- 4.Rated (AC) voltage (305V~)
- 5.Sub class (X2)
- 6.Tolerance on rated capacitance M = $\pm 20\%$ K = $\pm 10\%$
- 7.Climatic category (55/105/21)
- 8.Code for dielectric material (MKP)
- 9.Year and week of manufacturing (e.g. 0901)
- 10.Safety approvals

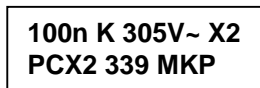
Example of marking

Pitch P = 7.5mm, 10mm



Marking on the side

Pitch P = 15mm or 22.5mm or 27.5mm



Marking on the top



Marking on the side

Pitch P = 22.5mm or 27.5mm



Marking on the top