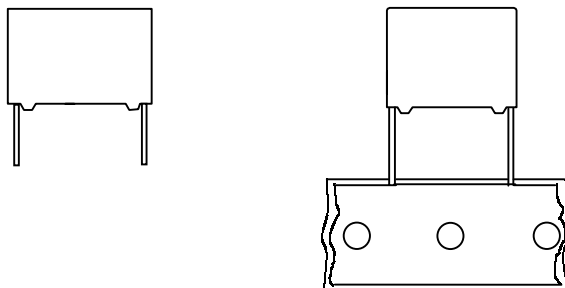


MKP RADIAL POTTED CAPACITORS

Pitch 10.0/15.0/22.5/27.5mm



**QUICK REFERENCE DATA**

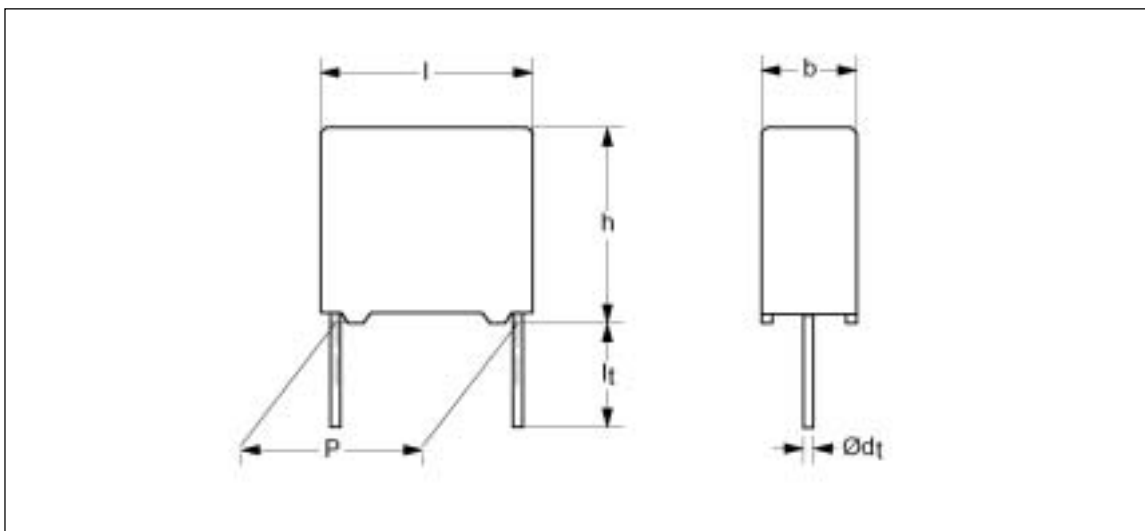
Capacitance range (E6 series) *	0.01 $\mu$ F to 2.2 $\mu$ F
Capacitance tolerance	$\pm 10\%$ , $\pm 20\%$
Rated (AC) voltage 50 to 60 Hz	275 V <sup>-</sup>
Climatic category	40/085/21
Rated temperature	85
Maximum application temperature	85
Reference IEC specification	IEC 60384-14 (2nd edition) and EN 132400
Safety approvals	UL 1414 & CSA-C22.2 No 1, ENEC, EK, CQC
Materials	Qualified in accordance with UL 94V-0
Safety class	X2

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

FEATURES	APPLICATIONS
<ul style="list-style-type: none"> <li>. 10 to 27.5 mm lead pitch</li> <li>. Supplied loose in box and taped on reel</li> <li>. Consist of a low-inductive wound cell of metallized polypropylene film, potted in a flame retardant case</li> </ul>	<ul style="list-style-type: none"> <li>. For X2 - electromagnetic Interference suppression.</li> <li>. Special designed to meet the <b>NEW REQUIREMENTS</b> of the new IEC 60384-14 specification (2nd edition)/EN132400 requiring a 2.5 KV peak pulse voltage test and the UL1414 and CSA-C 22.2 No. 1 specification.</li> </ul>

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

## Ordering Information



PCX2 335 M

Type series

X

XXX

Capacitance

Code	Packing method	Lead configuration	C - tol	12NC**
A	Loose in box	lt = 5.0 ± 1.0mm	C-tol ± 20 %	PCX2 335 MAxxx
B	Loose in box	lt = 5.0 ± 1.0mm	C-tol ± 10 %	PCX2 335 MBxxx
C	Loose in box	lt = 25 ± 2.0mm	C-tol ± 20 %	PCX2 335 MCxxx
D	Loose in box	lt = 25 ± 2.0mm	C-tol ± 10 %	PCX2 335 MDxxx
E	Taped on reel	H = 18.5 mm* / P <sub>0</sub> =12.7mm	C-tol ± 20 %	PCX2 335 MExxx
F	Taped on reel	H = 18.5 mm* / P <sub>0</sub> =12.7mm	C-tol ± 10 %	PCX2 335 MFxxx
G	Ammopack	H = 18.5 mm* / P <sub>0</sub> =12.7mm	C-tol ± 20 %	PCX2 335 MGxxx
H	Ammopack	H = 18.5 mm* / P <sub>0</sub> =12.7mm	C-tol ± 10 %	PCX2 335 MHxxx
V	Loose in box	lt = 3.2 ± 0.3mm	C-tol ± 20 %	PCX2 335 MVxxx
W	Loose in box	lt = 3.2 ± 0.3mm	C-tol ± 10 %	PCX2 335 MWxxx

\* : intape height ; for detailed specifications refer to chapter PACKAGING.

\*\* Some values is not following the coding rule.

**Interference Suppression  
film capacitors**
**PCX2 335M  
(85 )**
**SAFETY APPROVALS**

SAFETY APPROVALS	Voltage	Value	File Number
UL1414 & CSA 22.2 No 1	250V(AC)	10nF to 1uF	E165646
ENEC(SEMKO)*	275V(AC)	10nF to 2.2uF	SE/0256-2
EK	275V(AC)	10nF to 2.2uF	SH03001-2002
CQC	275V(AC)	10nF to 2.2uF	CQC04001009333

\* 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 = 3.2 ± 0.3 mm It = 5.0 ± 1.0 mm	It = 25 ± 2.0 mm
DIMENSIONS		
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
6.0 x 15.5 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
9.0 x 19.0 x 31.0	500	500
11.0 x 21.0 x 31.0	500	250
13.0 x 23.0 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 335M (85 )

## SPECIFIC REFERENCE DATA FOR 275 V<sub>AC</sub>

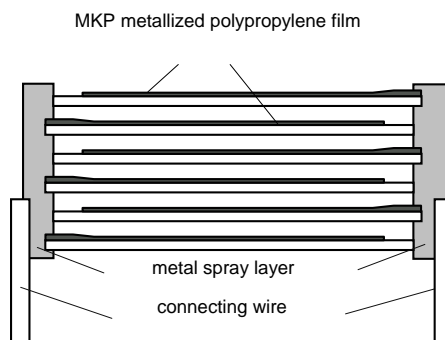
Tangent of loss angle	at 1 khz	at 10 khz
C < 470 nF	$10 \times 10^{-4}$	$20 \times 10^{-4}$
470 nF < C < 1 $\mu$ F	$20 \times 10^{-4}$	$70 \times 10^{-4}$
C > 1 $\mu$ F	$30 \times 10^{-4}$	-
Rated voltage pulse slope (dV/dt) <sub>R</sub>	100 V/ $\mu$ s	
R between leads, for C < 0.33 $\mu$ F	> 30 000 M	
RC between leads, for C > 0.33 $\mu$ F	> 10 000 s	
Test voltage (DC) : rise time 100 V/s		
C < 1 $\mu$ F	2250 V, 1 min	
1 $\mu$ F < C < 2.2 $\mu$ F	1850 V, 1 min	

V<sub>Rac</sub> = 275 V $\sim$  X2

loose and taped

Cap. ( $\mu$ F)	b x h x l (mm)	Mass (g)	CATALOGUE NUMBER			
			PCX2 335 .....			
			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 = 10.0 $\pm$ 0.4 mm			dt = 0.6 +0.06/-0.05 mm			
0.010 *	5.0 x 11.0 x 12.5	0.9	M9201	M9202	M9203	M9204
0.015 *			M9301	M9302	M9303	M9304
0.022 *			M9401	M9402	M9403	M9404
0.033 *	6.0 x 12.0 x 12.5	1.0	M9501	M9502	M9503	M9504
Pitch = 15.0 $\pm$ 0.4 mm			dt = 0.8 +0.08/-0.05 mm			
0.010	5.0 x 11.0 x 18.0	1.2	MA103	MB103	MC103	MD103
0.015			MA153	MB153	MC153	MD153
0.022			MA223	MB223	MC223	MD223
0.033			MA333	MB333	MC333	MD333
0.047			MA473	MB473	MC473	MD473
0.068			MA683	-	MC683	-
0.068	6.0 x 12.0 x 18.0	1.4	-	MB683	-	MD683
0.10			MA104	MB104	MC104	MD104
0.15	8.5 x 15.0 x 18.0	2.6	MA154	MB154	MC154	MD154
0.22	10.0 x 16.5 x 18.0	3.1	MA224	MB224	MC224	MD224
Pitch = 22.5 $\pm$ 0.4 mm			dt = 0.8 +0.08/-0.05 mm			
0.15	6.0 x 15.5 x 26.0	2.9	M9127	M9128	M9129	M9131
0.22	7.0 x 16.5 x 26.0	3.2	M9132	M9133	M9134	M9135
0.33	8.5 x 18.0 x 26.0	4.4	MA334	MB334	MC334	MD334
0.47	10.0 x 19.5 x 26.0	5.5	MA474	MB474	MC474	MD474
Pitch = 27.5 $\pm$ 0.4 mm			dt = 0.8 +0.08/-0.05 mm			
0.47	9.0 x 19.0 x 31.0	5.5	M9136	M9137	M9138	M9139
0.68	11.0 x 21.0 x 31.0	7.8	MA684	MB684	MC684	MD684
1.0	13.0 x 23.0 x 31.0	10.4	MA105	MB105	MC105	MD105
1.5 *	18.0 x 28.0 x 31.0	17.2	MA155	MB155	MC155	MD155
2.2 *	21.0 x 31.0 x 31.0	20.4	MA225	MB225	MC225	MD225

\* not approved UL, CSA safety approvals.

**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".

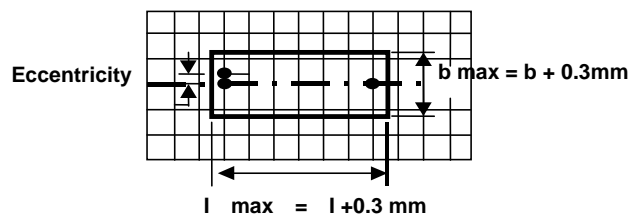
**SPECIFIC METHOD OF MOUNTING TO WITHSTAND VIBRATION AND SHOCK**

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.

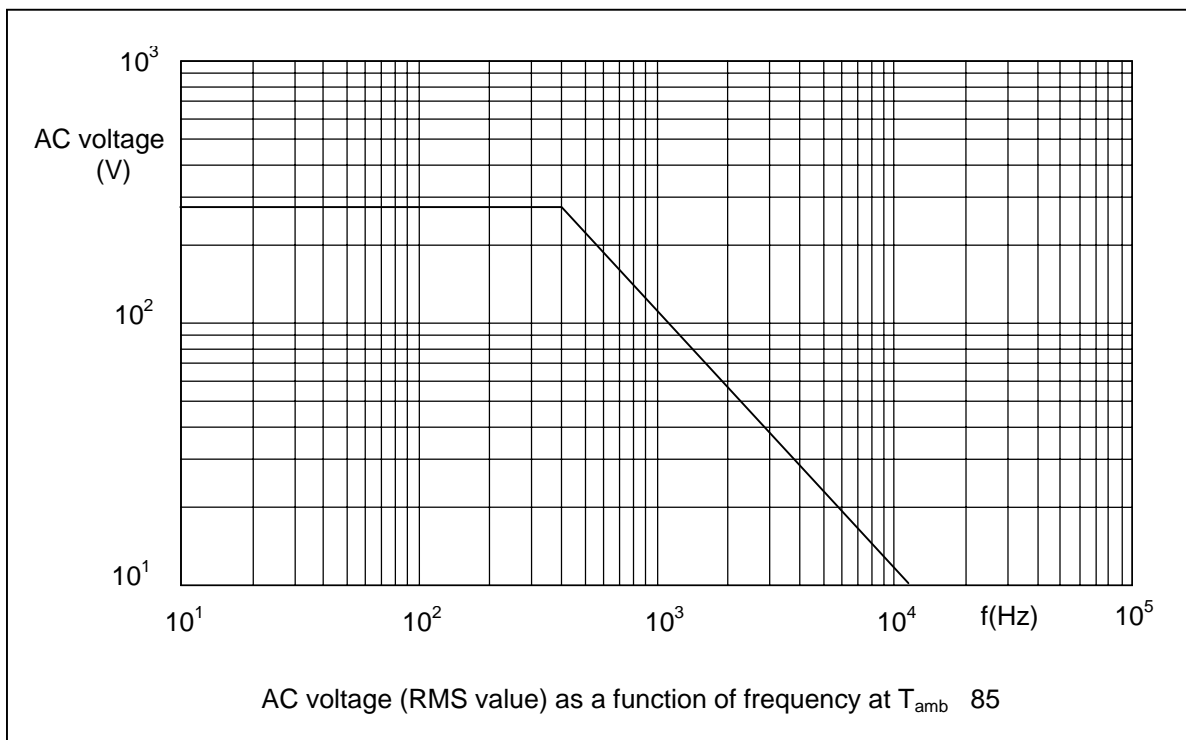
- Product height with seating plane as given by IEC 60717 as reference :  $h_{max} = h + 0.3 \text{ mm}$

**RATINGS AND CHARACTERISTICS**

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

For reference testing, a conditioning period shall be applied of  $96 \pm 4$  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**



**PRODUCT MARKING**

Capacitors are marked with the following information ;

- 1.Manufacturer (PILKOR)
- 2.Manufacturer's type designation (PCX2 335M)
- 3.Rated capacitance in code according to IEC 60062
- 4.Rated (AC) voltage (275V~)
- 5.Sub class (X2)
- 6.Tolerance on rated capacitance M =  $\pm 20\%$  K =  $\pm 10\%$
- 7.Climatic category (40/085/21)
- 8.Code for dielectric material (MKP)
- 9.Year and week of manufacturing (0638)
- 10.Safety approvals

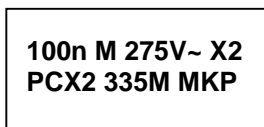
Example of marking

Pitch P = 10 mm



Marking on the side

Pitch P = 15 mm or 22.5mm

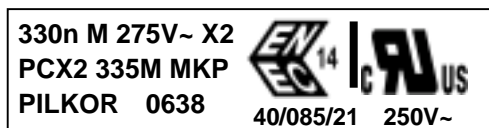


Marking on the top

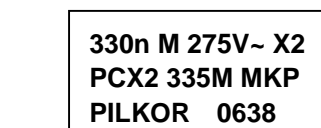


Marking on the side

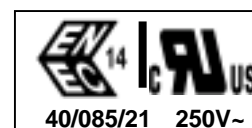
Pitch P = 22.5 mm



Marking on the top

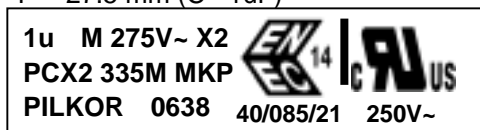


or Marking on the top



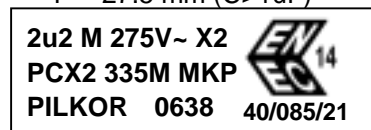
Marking on the side

Pitch P = 27.5 mm (C < 1uF)



Marking on the top

P = 27.5 mm (C > 1uF)



Marking on the top