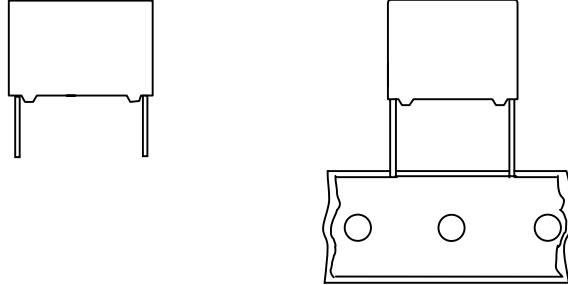


MKP RADIAL POTTED CAPACITORS

Pitch 10.0/15.0/22.5/27.5mm

**QUICK REFERENCE DATA**

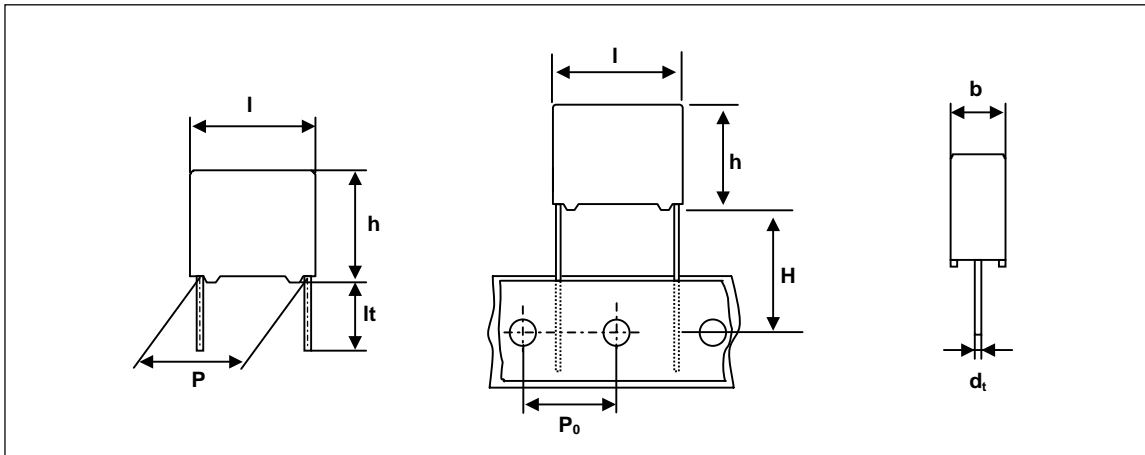
Capacitance range (E6 series) *	0.01 μ F to 2.2 μ F
Capacitance tolerance	$\pm 10\%$, $\pm 20\%$
Rated (AC) voltage 50 to 60 Hz	275 V
Climatic category	40/100/21
Temperature range	-40 ~ +100
Reference IEC specification	IEC 60384-14(3rd edition) and EN 60384-14
Safety approvals	UL1414 & CSA-C22.2 No. 1, ENEC, EK, CQC
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	APPLICATIONS
. 10 to 27.5 mm lead pitch	. For X2-electromagnetic interference suppression
. Supplied loose in box and taped on reel	. Specially designed to meet the NEW REQUIREMENTS of the new IEC 60384-14 specification(3rd edition)/EN 60384-14 requiring a 2.5kV peak pulse voltage test and the UL1414 and CSA-C22.2 No. 1 specification
. Consist of a low-inductive wound cell of Metallized Polypropylene film, potted in a flame retardant case	

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

Ordering Information



PCX2 335 M

X

XXX

Type series

Capacitance

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)			
J	Loose in box	$\pm 20\%$	$lt = 5.0 \pm 1.0mm$	-	10.0	15.0	22.5	27.5
K	Loose in box	$\pm 10\%$	$lt = 5.0 \pm 1.0mm$	-	10.0	15.0	22.5	27.5
L	Loose in box	$\pm 20\%$	$lt = 25.0 \pm 2.0mm$	-	10.0	15.0	22.5	27.5
M	Loose in box	$\pm 10\%$	$lt = 25.0 \pm 2.0mm$	-	10.0	15.0	22.5	27.5
R	Ammopack	$\pm 20\%$	$H = 18.5mm$	12.7mm	10.0	15.0	22.5	27.5
S	Ammopack	$\pm 10\%$	$H = 18.5mm$	12.7mm	10.0	15.0	22.5	27.5

** Some values is not following the coding rule.

SAFETY APPROVALS

SAFETY APPROVALS	Voltage	Value	File Number
UL1414 & CSA 22.2 No. 1 (cUL)	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 = 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 (100)

SPECIFIC REFERENCE DATA FOR 275 V_{AC}

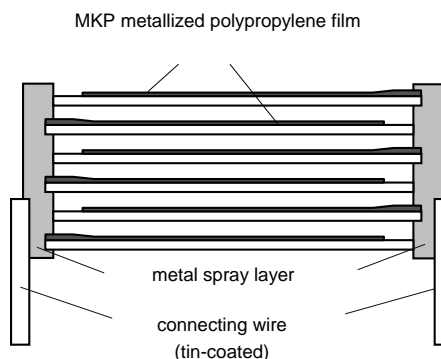
Tangent of loss angle	at 1 khz	at 10 khz
C 470 nF	10×10^{-4}	20×10^{-4}
470 nF < C 1 μ F	20×10^{-4}	70×10^{-4}
C > 1 μ F	30×10^{-4}	-
Rated voltage pulse slope (dV/dt) _R P = 10.0mm P = 15.0mm P = 22.5mm P = 27.5mm	550 V/ μ s 400 V/ μ s 200 V/ μ s 150 V/ μ s	
R between leads, for C \leq 0.33 μ F	> 30 000 M Ω	
RC between leads, for C > 0.33 μ F	> 10 000 s	
Withstanding(DC) Voltage (cut-off current 10mA) C 1 μ F 1 μ F < C 2.2 μ F	2250 V, 1 min 1850 V, 1 min	

V_{Rac} = 275 V X2

Cap. (μ F)	b x h x l (mm)	Mass (g)	CATALOGUE NUMBER				
			PCX2 335				
			loose in box				
			It = 5.0 \pm 1.0 mm		It = 25.0 \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				
0.01*	5.0 x 11.0 x 12.5	0.9	MJ201	MK201	ML201	MM201	
0.015 *			MJ301	MK301	ML301	MM301	
0.022 *			MJ401	MK401	ML401	MM401	
0.033 *	6.0 x 12.0 x 12.5	1.0	MJ501	MK501	ML501	MM501	
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	1.2	MJ103	MK103	ML103	MM103	
0.015			MJ153	MK153	ML153	MM153	
0.022			MJ223	MK223	ML223	MM223	
0.033			MJ333	MK333	ML333	MM333	
0.047			MJ473	MK473	ML473	MM473	
0.068			MJ683	-	ML683	-	
0.068	6.0 x 12.0 x 18.0	1.4	-	MK601	-	MM601	
0.1			MJ104	MK104	ML104	MM104	
0.15	8.5 x 15.0 x 18.0	2.6	MJ154	MK154	ML154	MM154	
0.22	10.0 x 16.5 x 18.0	3.1	MJ224	MK224	ML224	MM224	
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	MJ701	MK701	ML701	MM701	
0.22	7.0 x 16.5 x 26.0	3.2	MJ801	MK801	ML801	MM801	
0.33	8.5 x 18.0 x 26.0	4.4	MJ334	MK334	ML334	MM334	
0.47	10.0 x 19.5 x 26.0	5.5	MJ474	MK474	ML474	MM474	
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	MJ901	MK901	ML901	MM901	
0.68	11.0 x 21.0 x 31.0	7.8	MJ684	MK684	ML684	MM684	
1.0	13.0 x 23.0 x 31.0	10.4	MJ105	MK105	ML105	MM105	
1.5 *	18.0 x 28.0 x 31.0	17.2	MJ155	MK155	ML155	MM155	
2.2 *	21.0 x 31.0 x 31.0	20.4	MJ225	MK225	ML225	MM225	

* 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".

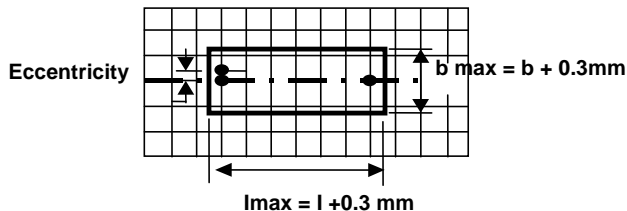
SPECIFIC METHOD OF MOUNTING TO WITHSTAND VIBRATION AND SHOCK

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 ;



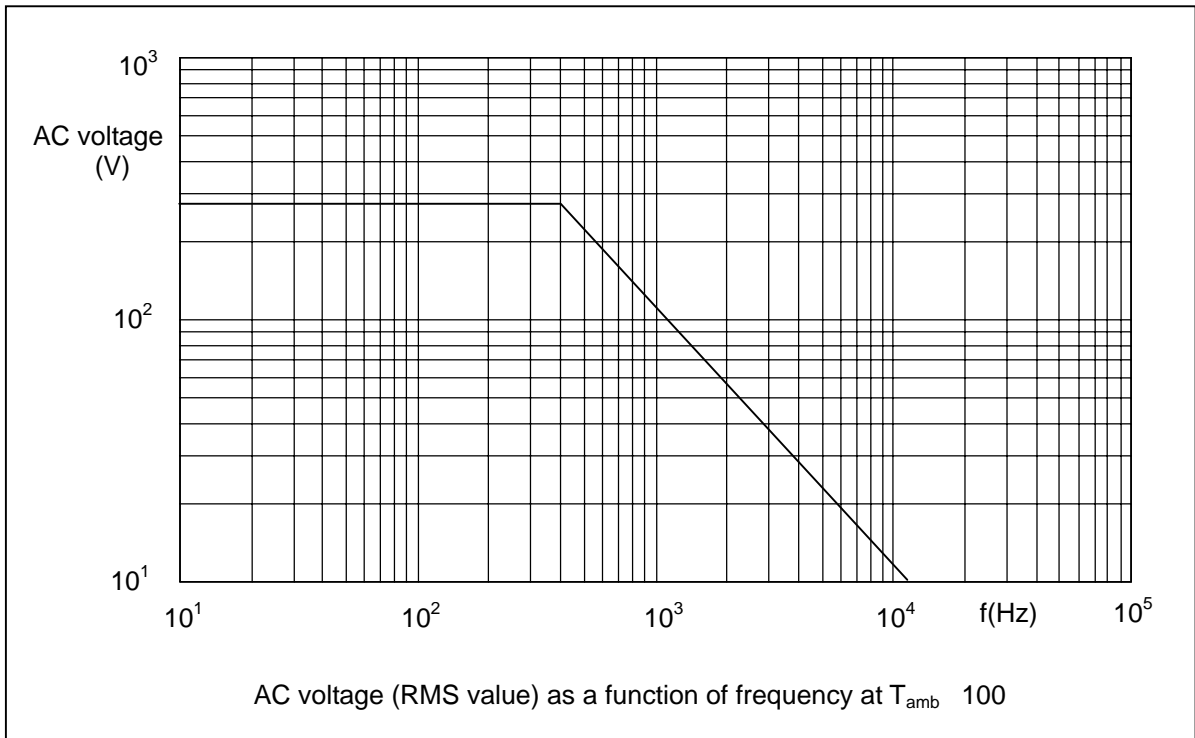
- Eccentricity as in drawing.
The maximum eccentricity is smaller than or equal to the lead diameter of the product concerned.
- Product height with seating plane as given by IEC 60717 as reference : $h_{max} \quad h + 0.3 \text{ mm}$

RATINGS AND CHARACTERISTICS

Unless otherwise specified all electrical values apply to an ambient temperature of 23 ± 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 ± 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 (335 M)
- 3.Rated capacitance in code according to IEC 60062
- 4.Rated (AC) voltage (275V~)
- 5.Sub class (X2)
- 6.Tolerance on rated capacitance M = ± 20 % K = ± 10 %
- 7.Climatic category (40/100/21)
- 8.Code for dielectric material (MKP)
- 9.Year and week of manufacturing (0901)
- 10.Safety approvals

Example of marking

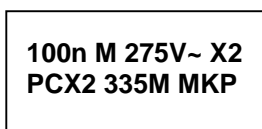
Pitch P = 10 mm



Marking on the side

Pitch P = 15 mm or 22.5mm or 27.5mm

(C ≤ 1uF)



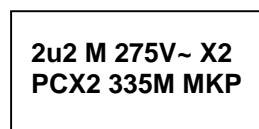
Marking on the top



Marking on the side

or

(C > 1uF)

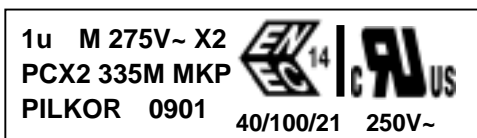


Marking on the top



Marking on the side

Pitch P = 22.5 mm or 27.5mm



Marking on the top(C ≤ 1uF)

or



Marking on the top(C > 1uF)