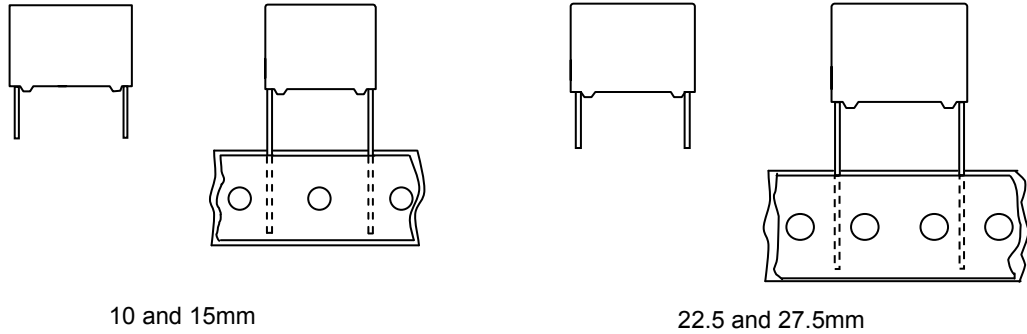


MKP RADIAL POTTED CAPACITORS

Pitch 10.0/15.0/22.5/27.5mm



10 and 15mm

22.5 and 27.5mm

QUICK REFERENCE DATA

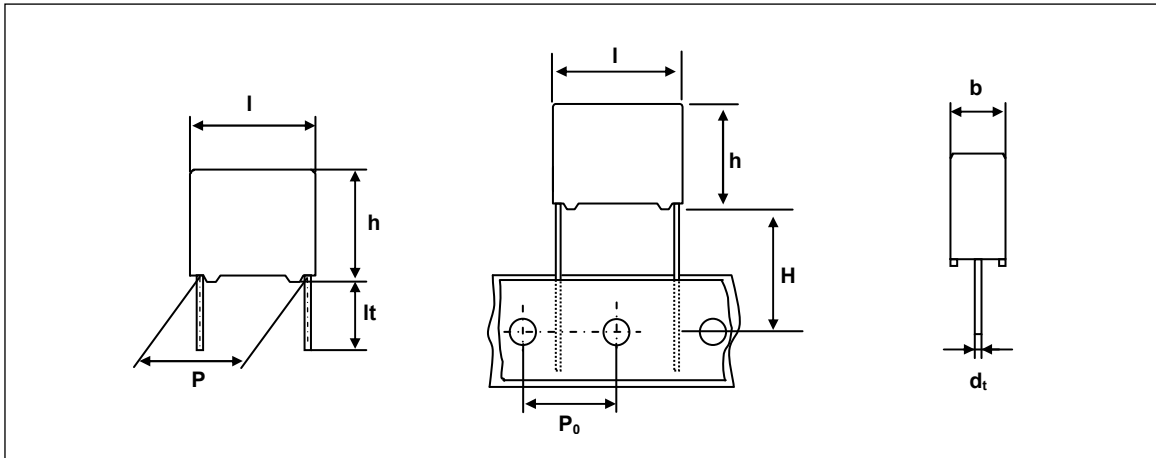
Capacitance range (E6 series) *	0.001 μ F to 3.3 μ F
Capacitance tolerance	$\pm 10\%$, $\pm 20\%$
Rated (AC) voltage 50 to 60 Hz	305 V \sim
Climatic category	55/105/21
Temperature range	-55 $^{\circ}$ C ~ +105 $^{\circ}$ C
Reference IEC specification	IEC 60384-14(3rd edition) and EN 60384-14
Safety approvals	UL60384-14 & CSA E60384-14:09(cUL), 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

<p>FEATURES</p> <ul style="list-style-type: none"> . 10 to 27.5 mm lead pitch . Supplied loose in box and taped on reel . Consist of a low-inductive wound cell of Metallized (PP) film . potted in a flame retardant case 	<p>APPLICATIONS</p> <ul style="list-style-type: none"> . For X2-electromagnetic interference suppression . Specially designed to meet the NEW REQUIREMENTS of new IEC 60384-14 Specification(3rd edition)/ EN 60384-14/UL60384-14 requiring a 2.5kV peak pulse voltage test . Not for use in series with the mains
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• 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 X

Type series

Capacitance

Code	Version & Voltage
3	Standard / 305V

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	± 20%	lt = 5.0 ± 1.0mm	-	10.0	15.0	22.5	27.5
1	Loose in box	± 10%	lt = 5.0 ± 1.0mm	-	10.0	15.0	22.5	27.5
4	Loose in box	± 20%	lt = 25.0 ± 2.0mm	-	10.0	15.0	22.5	27.5
5	Loose in box	± 10%	lt = 25.0 ± 2.0mm	-	10.0	15.0	22.5	27.5
6	Ammopack	± 20%	H = 18.5mm*	12.7mm	10.0	15.0	22.5	27.5
7	Ammopack	± 10%	H = 18.5mm*	12.7mm	10.0	15.0	22.5	27.5

* H ; intape height ; for detailed specifications refer to chapter PACKAGING

** Some values is not following the coding rule.

**EMI Suppression
film capacitors****PCX2 339x3
(Standard)****SAFETY APPROVALS**

SAFETY APPROVALS	Voltage	Value	File Number
UL 60384-14 & CSA E60384-14:09(cUL)	305V(AC)	1nF to 3.3 μ F	E165646
ENEC(SEMKO) *	305V(AC)	1nF to 3.3 μ F	SE/0256-4
EK	305V(AC)	C \leq 0.1 μ F 0.1 μ F < C \leq 0.33 μ F 0.33 μ F < C \leq 1.0 μ F 1.0 μ F < C \leq 3.0 μ F	SH03001-9001 SH03001-8001 SH03001-13001 SH03001-13002
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

EMI Suppression film capacitors

PCX2 339x3 (Standard)

SPECIFIC REFERENCE DATA FOR 305 V_{AC}

Tangent of loss angle	at 1 khz	at 10 khz
$C \leq 470 \text{ nF}$ $470 \text{ nF} < C \leq 1 \text{ } \mu\text{F}$ $C > 1 \text{ } \mu\text{F}$	$\leq 10 \times 10^{-4}$ $\leq 20 \times 10^{-4}$ $\leq 30 \times 10^{-4}$	$\leq 20 \times 10^{-4}$ $\leq 70 \times 10^{-4}$ -
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 $C \leq 0.33 \text{ } \mu\text{F}$	$> 15\,000 \text{ M}\Omega$	
RC between leads, for $C > 0.33 \text{ } \mu\text{F}$	$> 5\,000 \text{ s}$	
Withstanding(DC) Voltage (cut-off current 10mA) $C \leq 1 \text{ } \mu\text{F}$ $C > 1 \text{ } \mu\text{F}$	2250 V ; 1 min 1850 V ; 1 min	
Withstanding(AC) Voltage between leads and case	2400 V ; 1 min	

V_{Rac} = 305 V X2
loose and taped

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 = 10.0 \pm 0.4 mm			dt = 0.6 +0.06/-0.05 mm			
0.001	4.0 x 10.0 x 12.5	0.8	D30102	D31102	D34102	D35102
0.0015	4.0 x 10.0 x 12.5	0.8	D30152	D31152	D34152	D35152
0.0022	4.0 x 10.0 x 12.5	0.8	D30222	D31222	D34222	D35222
0.0033	4.0 x 10.0 x 12.5	0.8	D30332	D31332	D34332	D35332
0.0047	4.0 x 10.0 x 12.5	0.8	D30472	D31472	D34472	D35472
0.0068	4.0 x 10.0 x 12.5	0.8	D30682	D31682	D34682	D35682
0.01	4.0 x 10.0 x 12.5	0.8	D30103	D31103	D34103	D35103
0.015	4.0 x 10.0 x 12.5	0.8	D30153	D31153	D34153	D35153
0.022	4.0 x 10.0 x 12.5	0.8	D30223	D31223	D34223	D35223
0.033	5.0 x 11.0 x 12.5	0.9	D30333	D31333	D34333	D35333
0.047	5.0 x 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

**EMI Suppression
film capacitors**
**PCX2 339x3
(Standard)**
 $V_{Rac} = 305 V \text{ X2}$

loose and taped

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 339D3xxxx	PCX2 339 3xxxx	PCX2 339 50474 => PCX2 339J30474
15.0mm	PCX2 339F3xxxx	PCX2 339 4xxxx	
22.5mm	PCX2 339J3xxxx	PCX2 339 5xxxx	
27.5mm	PCX2 339L3xxxx	PCX2 339 6xxxx	

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

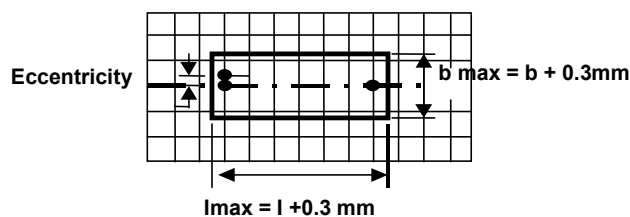
In order to withstand vibration and shock tests, it must be ensured that the stand-off pins are in good contact with the printed-circuit board.

. 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 : $h_{max} \leq h + 0.3 \text{ mm}$

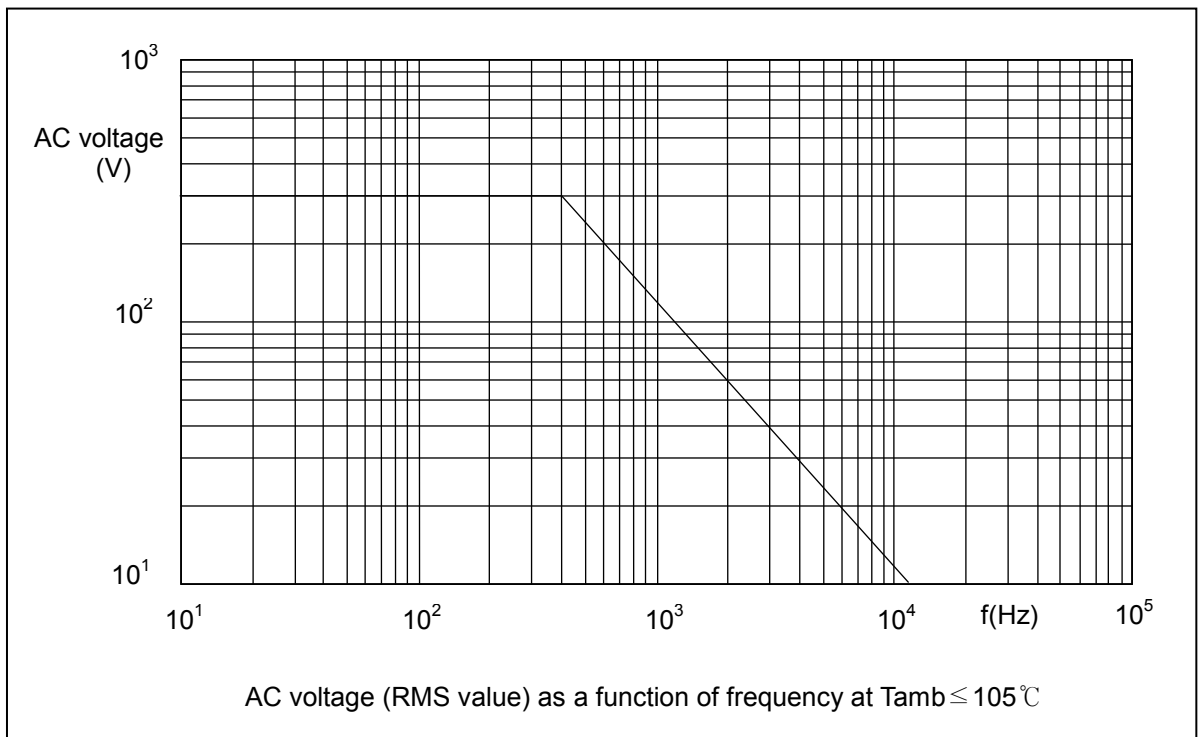
STORAGE TEMPERATURE

. Storage temperature : $T_{stg} = -25 \text{ to } +40 \text{ }^\circ\text{C}$ with RH maximum 80% without condensation.

RATINGS AND CHARACTERISTICS

Unless otherwise specified all electrical values apply to an ambient temperature of $23 \pm 1^\circ\text{C}$, 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

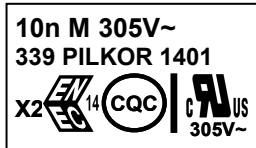
PRODUCT MARKING

Capacitors are marked as 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 =± 20 % K = ± 10 %
- 7.Climatic category (55/105/21)
- 8.Code for dielectric material (MKP)
- 9.Year and week of manufacturing (e.g. 1401)
- 10.Safety approvals

Example of marking

Pitch P = 10mm or 15.0mm



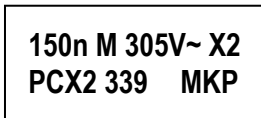
Marking on the side

or

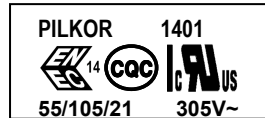


Marking on the side

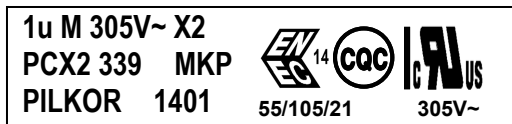
Pitch P = 15.0mm or P = 22.5 mm or P = 27.5mm



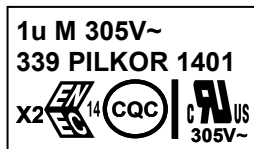
Marking on the top



Marking on the side



Marking on headface



Marking on the top