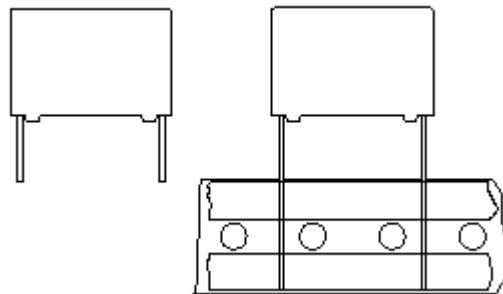


MKP RADIAL POTTED

Pitch 15.0/22.5/27.5/37.5mm



QUICK REFERENCE DATA

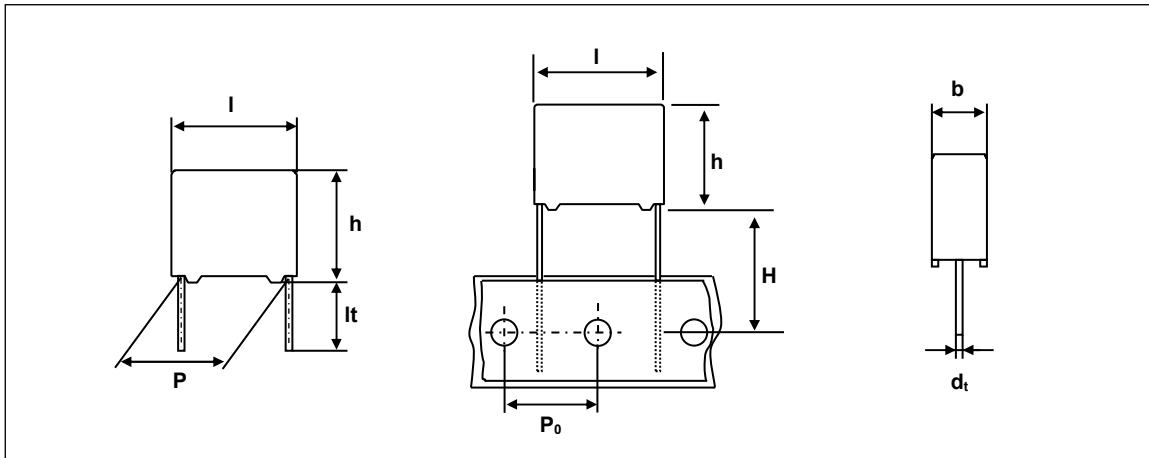
Capacitance range (E6 series) *	0.01 μ F to 4.7 μ F
Capacitance tolerance	$\pm 10\%$, $\pm 20\%$
Rated (AC) voltage 50 to 60 Hz	480 V~
Climatic category	55/110/21
Temperature range	-55 $^{\circ}$ C ~ +110 $^{\circ}$ C
Reference IEC specification	IEC 60384-14(4th edition) and EN 60384-14
Safety approvals	UL60384-14 & CSA E60384-14(cUL) ENEC (SEMKO)
Potting & Encapsulation material	Qualified in accordance with UL 94V-0
Safety class	X1

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

FEATURES	APPLICATIONS
<ul style="list-style-type: none"> . 15 to 37.5 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 	<ul style="list-style-type: none"> . For X1-electromagnetic interference suppression . Specially designed to meet the NEW REQUIREMENTS in new IEC 60384-14 specification(4th edition)/EN 60384-14/UL60384-14 requiring for X1 a 4kV peak pulse voltage test . Not for use in series with the mains

• Design and specifications are subjected to change without notice. Please refer to caution and warning at <http://www.pilkor.co.kr/sub/download/Introductions.pdf> before using these products.

Ordering Information



PCX1 331 X X X X X X

Type series

Capacitance

Code	Voltage
8	480V

Code	Original pitch
F	15.0mm
J	22.5mm
L	27.5mm
Q	37.5mm

Available versions					Product (I _{max})			
code	Packing method	C - tol.	Lead length & Height	Hole to hole (P ₀)	18.0	26.0	31.0	42.0
					Pitch (P)			
0	Loose in box	± 20%	It = 5.0 ± 1.0mm		15.0	22.5	27.5	
1	Loose in box	± 10%	It = 5.0 ± 1.0mm		15.0	22.5	27.5	
0	Arrange Pack.	± 20%	It = 5.0 ± 1.0mm					37.5
1	Arrange Pack.	± 10%	It = 5.0 ± 1.0mm					37.5
4	Loose in box	± 20%	It = 25.0 ± 2.0mm		15.0	22.5	27.5	37.5
5	Loose in box	± 10%	It = 25.0 ± 2.0mm		15.0	22.5	27.5	37.5
6	Ammopack	± 20%	H = 18.5mm*	12.7mm	15.0	22.5	27.5	
7	Ammopack	± 10%	H = 18.5mm*	12.7mm	15.0	22.5	27.5	

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

** Some values is not following the coding rule

SAFETY APPROVALS

SAFETY APPROVALS	Voltage	Value	File Number
UL 60384-14 & CSA E60384-14:09(cUL)	480V(AC)	10nF to 4.7uF	E165646
ENEC(SEMKO)*	480V(AC)	10nF to 4.7uF	SE/0256-6

* 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	
	$l_t = 5.0 \pm 1.0 \text{ mm}$	$l_t = 25 \pm 2.0 \text{ mm}$
DIMENSIONS		
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
8.5 x 18.0 x 26.0	500	500
10.0 x 19.5 x 26.0	500	500
11.5 x 21.0 x 26.0	500	500
16.5 x 22.0 x 26.0	250	250
13.0 x 23.0 x 31.0	250	250
15.0 x 25.0 x 31.0	250	250
19.0 x 29.0 x 31.0	200	250
21.0 x 31.0 x 31.0	150	150
17.0 x 30.0 x 42.0	105*	150
20.0 x 34.0 x 42.0	90*	100
28.0 x 42.5 x 42.0	65*	70
30.0 x 45.0 x 42.0	60*	70
33.0 x 48.0 x 42.0	55*	70

* Arrange Packing

SPECIFIC REFERENCE DATA FOR 480 V_{AC}

Tangent of loss angle	at 1 kHz	at 10 kHz	At 100kHz
C ≤ 470 nF	≤ 10 x 10 ⁻⁴	≤ 20 x 10 ⁻⁴	≤ 100 x 10 ⁻⁴
C > 470 nF	≤ 20 x 10 ⁻⁴	≤ 70 x 10 ⁻⁴	-
Rated voltage pulse slope (dV/dt) _R P = 15.0 mm P = 22.5 mm P = 27.5, 37.5 mm	250 V/us 150 V/us 100 V/us		
R between leads, for C ≤ 0.33 μF at 100V 1min	> 15 000 MΩ		
RC between leads, for C > 0.33 μF at 100V 1min	> 5000 s		
R between leads and case ; 100V 1min	> 30 000 MΩ		
Withstanding(DC) Voltage (cut-off current 10mA) C ≤ 1 μF C > 1 μF	3400 V ; 1 min 2700 V ; 1 min		
Withstanding(AC) Voltage between leads and case	2400 V ; 1 min		

V_{Rac} = 480V~ X1

loose and taped

Cap. (μF)	b x h x l (mm)	MASS (g)	CATALOGUE NUMBER PCX1 331			
			loose in box			
			Lt = 5 ± 1.0 mm		lt = 25 ± 2.0 mm	
			C - tol ± 20 %	C - tol ± 10 %	C - tol ± 20 %	C - tol ± 10 %
Pitch = 15.0 ± 0.4 mm			d _t = 0.8 +0.08/-0.05 mm			
0.01	5.0 x 11.0 x 18.0	1.2	F80103	F81103	F84103	F85103
0.015	5.0 x 11.0 x 18.0	1.2	F80153	F81153	F84153	F85153
0.022	6.0 x 12.0 x 18.0	1.4	F80223	F81223	F84223	F85223
0.033	7.0 x 13.5 x 18.0	1.9	F80333	F81333	F84333	F85333
0.047	8.5 x 15.0 x 18.0	2.6	F80473	F81473	F84473	F85473
0.068	10.0 x 16.5 x 18.0	3.1	F80683	F81683	F84683	F85683
0.1	11.0 x 18.5 x 18.0	4.1	F80104	F81104	F84104	F85104
Pitch = 22.5 ± 0.4 mm			d _t = 0.8 +0.08/-0.05 mm			
0.1	8.5 x 18.0 x 26.0	4.4	J80104	J81104	J84104	J85104
0.15	10.0 x 19.5 x 26.0	5.5	J80154	J81154	J84154	J85154
0.22	11.5 x 21.0 x 26.0	6.7	J80224	J81224	J84224	J85224
0.33	16.5 x 22.0 x 26.0	10.0	J80334	J81334	J84334	J85334
Pitch = 27.5 ± 0.4 mm			d _t = 0.8 +0.08/-0.05 mm			
0.33	13.0 x 23.0 x 31.0	10.4	L80334	L81334	L84334	L85334
0.47	15.0 x 25.0 x 31.0	12.8	L80474	L81474	L84474	L85474
0.68	19.0 x 29.0 x 31.0	18.0	L80684	L81684	L84684	L85684
1.0	21.0 x 31.0 x 31.0	20.4	L80105	L81105	L84105	L85105
Pitch = 37.5 ± 0.7 mm			d _t = 1.0 +0.1/-0.1 mm			
1.0	17.0 x 30.0 x 42.0	25.3	Q80105*	Q81105*	Q84105	Q85105
1.5	20.0 x 34.0 x 42.0	33.6	Q80155*	Q81155*	Q84155	Q85155
2.2	28.0 x 42.5 x 42.0	51.9	Q80225*	Q81225*	Q84225	Q85225
3.3	30.0 x 45.0 x 42.0	59.5	Q80335*	Q81335*	Q84335	Q85335
4.7	33.0 x 48.0 x 42.0	72.9	Q80475*	-	Q84475	-

*** Arrange Packing**

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".

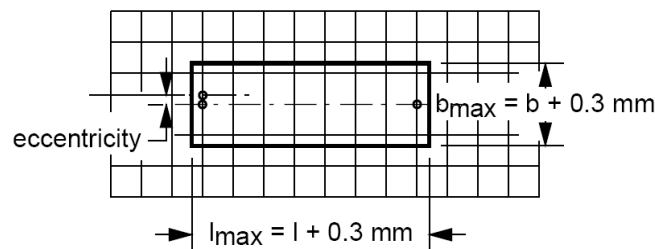
SPECIFIC METHOD OF MOUNTING TO WITHSTAND VIBRATION AND SHOCK

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

STORAGE TEMPERATURE

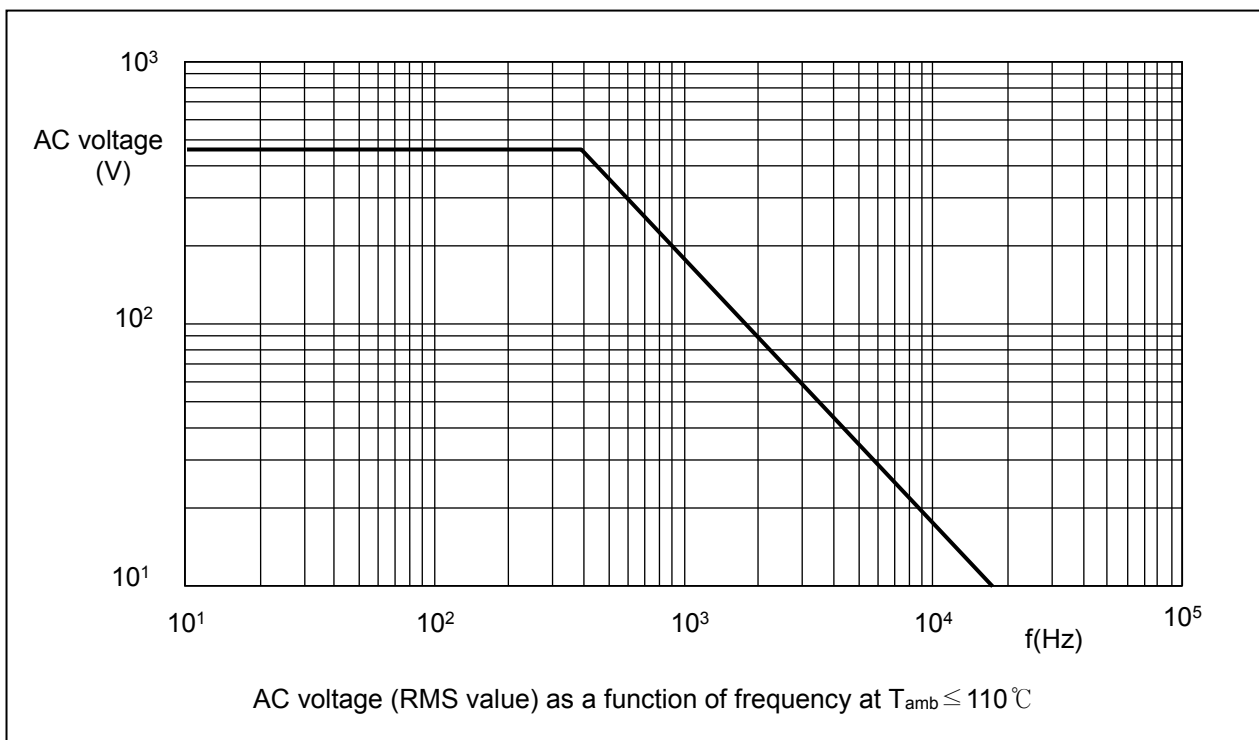
. Storage temperature : $T_{stg} = -25$ to $+40$ °C with RH maximum 80% without condensation.

RATINGS AND CHARACTERISTICS

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

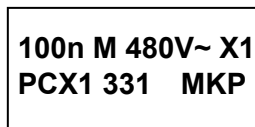
Capacitors are marked with the following information;

1. Manufacturer (PILKOR) for capacitors
 2. Manufacturer's type designation (PCX1 331 or 331)
 3. Rated capacitance in code according to IEC 60062
 4. Rated (AC) voltage (480V~)
 5. Sub class (X1)
 6. Tolerance on rated capacitance M = ± 20 % K = ± 10 %
 7. Climatic category (55/110/21)
 8. Code for dielectric material (MKP) for capacitors with original pitch
 9. Year and week of manufacturing (1701)
 10. Safety approvals
- * white or black color

Example of marking



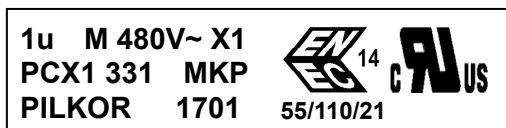
Marking on the side



Marking on the top



Marking on the side



Marking on headface



Marking on the Top