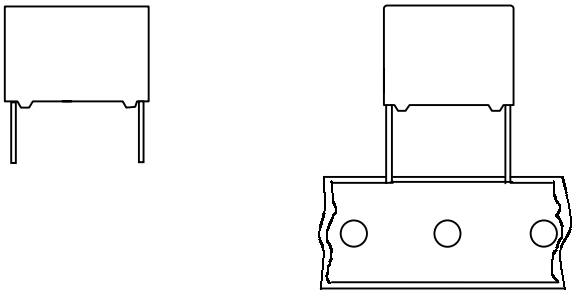
Interference Suppression film capacitors

PCX2 335M (100℃)

MKP RADIAL POTTED CAPACITORS **Pitch 10.0/15.0/22.5/27.5 mm**



QUICK REFERENCE DATA

Capacitance range (E6 series) *	0.01μF to 2.2μF
Capacitance tolerance	±10 %, ±20 %
Rated (AC) voltage 50 to 60 Hz	275 V~
Climatic category	40/100/21
Rated temperature	100 °C
Maximum application temperature	100 °C
Reference IEC specification	IEC 60384-14(2nd edition) and EN132400
Safety approvals ;	
250 V~ (85°C)	UL1414, CSA-C22.2 No 1
275 V~ (100°C)	SEMKO, VDE, FIMKO, NEMKO, DEMKO, SEV, OVE, IMQ, EK, ENEC
Materials	Qualified in accordance with UL 94V-O
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 NEWREQUIREMENTS of the new IEC 60384-14 specification(2nd edition)/EN 132400 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	

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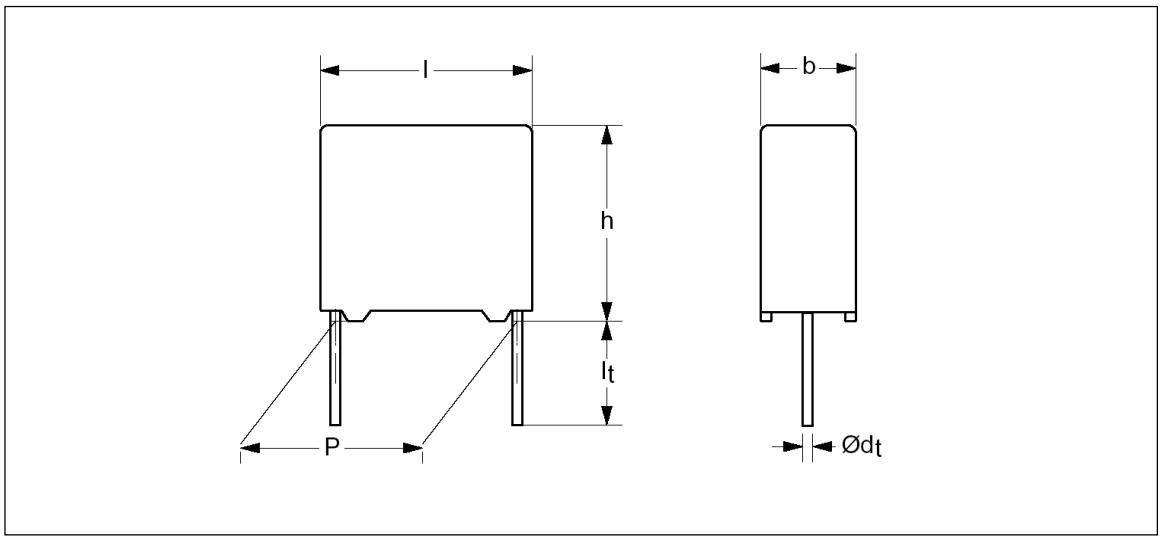
Ordering Information



PCX2 335M **X** **XXX**

Type series

Capacitance

code	Packing method	Lead configuration	C - tol	12NC**
J	Loose in box	lt = 5.0 ±1.0mm	C-tol ±20 %	PCX2 335 MJxxx
K	Loose in box	lt = 5.0 ±1.0mm	C-tol ±10 %	PCX2 335 MKxxx
L	Loose in box	lt = 25 ±2.0mm	C-tol ±20 %	PCX2 335 MLxxx
M	Loose in box	lt = 25 ±2.0mm	C-tol ±10 %	PCX2 335 MMxxx
N	Taped on reel	H = 18.5 mm* / P_0=12.7mm	C-tol ±20%	PCX2 335 MNxxx
Q	Taped on reel	H = 18.5 mm* / P_0=12.7mm	C-tol ±10%	PCX2 335 MQxxx
R	Ammopack	H = 18.5 mm* / P_0=12.7mm	C-tol ±20%	PCX2 335 MRxxx
S	Ammopack	H = 18.5 mm* / P_0=12.7mm	C-tol ±10%	PCX2 335 MSxxx
X	Loose in box	lt = 3.2 ±0.3mm	C-tol ±20%	PCX2 335 MXxxx
Y	Loose in box	lt = 3.2 ±0.3mm	C-tol ±10%	PCX2 335 MYxxx

* : intape height ; for detailed specifications refer to chapter PACKAGING.
** Some values is not following the coding rule..

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SAFETY APPROVALS

UL 1414	E165646	NEMKO	P01100680
CSA-C22.2 No 1	LR103439	SEMKO	0030098/01
VDE	135808	DEMKO	310555/01
FI	FI 10463	IMQ	V4350
SEV	01, 1240	OVE	12876-002-03
EK	SH03001-2002	ENEC *	SE/0256-2
CQC	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	
DIMENSIONS	**lt = 5 ± 1.0 mm**	**lt = 25 ± 2.0 mm**
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

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SPECIFIC REFERENCE DATA FOR 275 V_{AC}

Tangent of loss angle	at 10 kHz
C ≤ 100 nF 100 nF < C ≤ 470 nF C > 470 nF	≤ 10 x 10^{-4} ≤ 20 x 10^{-4} ≤ 70 x 10^{-4}
Rated voltage pulse slope $(dV/dt)_R$	100 V/µs
R between leads, for C ≤ 0.33 µF	> 30 000 MΩ
RC between leads, for C > 0.33 µF	> 10 000 s
Test voltage (DC) on line : rise time 100V/s C ≤ 1 µF 1 µF < C ≤ 2.2 µF	 2250 V, 1 min 1850 V, 1 min

V_{Rac} = 275 V~ X2 **loose and taped**

Cap. (µF)	b x h x l (mm)	Mass (g)	CATALOGUE NUMBER PCX2 335 ..... 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 = 10.0 ± 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 ± 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 ± 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 ± 0.4 mm			dt_t = 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.

Interference Suppression film capacitors

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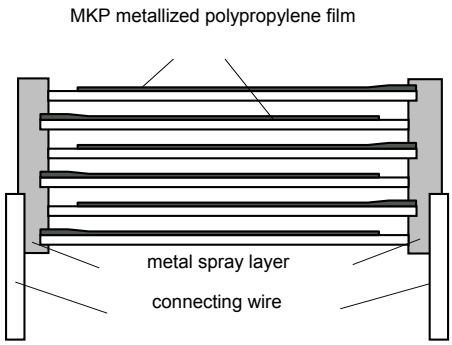
CONSTRUCTION



MOUNTING

NORMAL USE

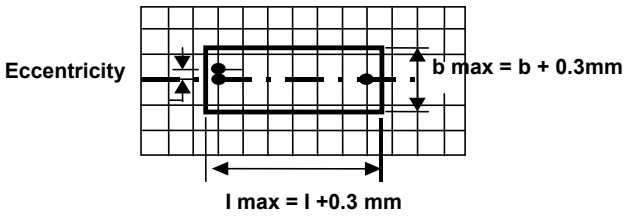
The capacitors are designed for mounting on printed-circuit boards.
The capacitors packed in bandoliers are designed for mounting on printed-circuit boards by means of automatic insertion machines.
For detailed specifications refer to chapter "PACKAGING".

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

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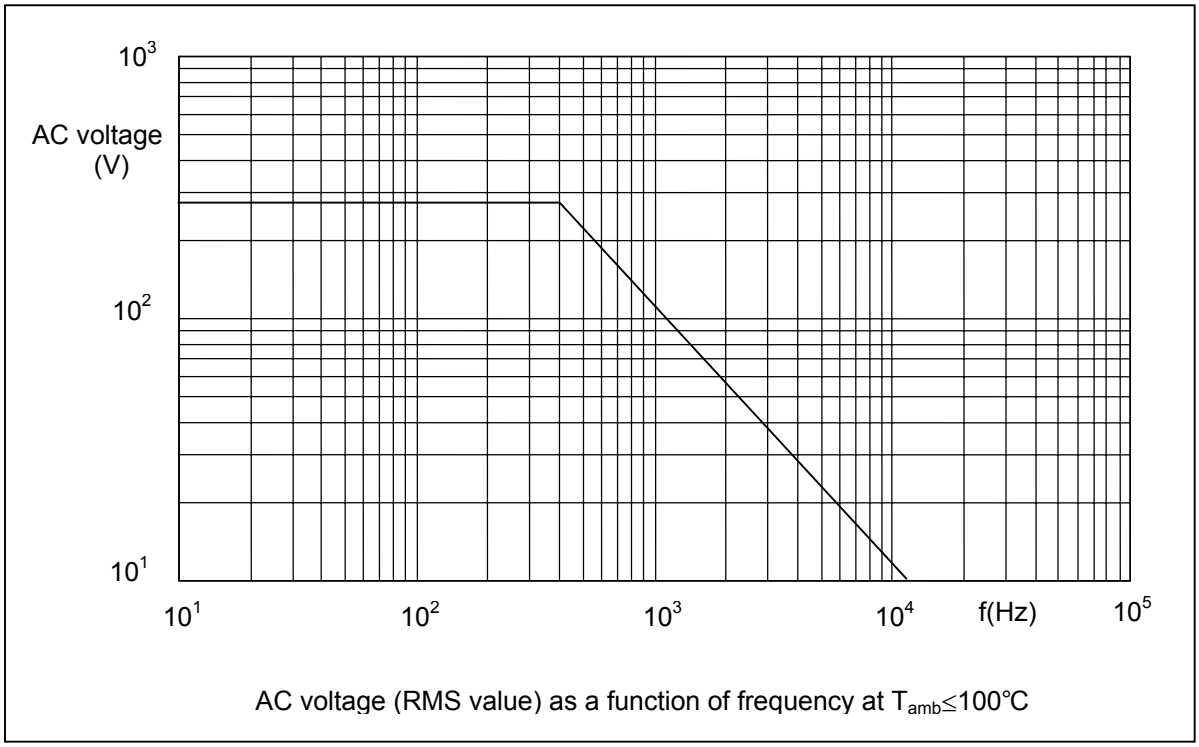
RATINGS AND CHARACTERISTICS

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±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



AC voltage (RMS value) as a function of frequency at $T_{amb} \leq 100℃$

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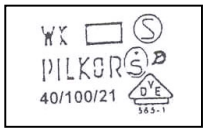
PRODUCT MARKING

Capacitors are marked by laser print ; on the top (pitch ≥ 22.5 mm) or on the top and one side (pitch = 15mm/10mm) 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 (e.g. WK0411)
10.Safety approvals

Example of marking

Pitch P = 10mm (0.01 to 0.033 µF)

10n M 275V~ 335M X2 MKP	
Marking on the top	Marking on the side

or

Pitch P = 15 or 22.5mm

22n M 275V~ X2 PCX2 335 M MKP	
Marking on the top	Marking on the side

or

Pitch P = 22.5mm or 27.5 mm.

470n M 275V~ X2 PCX2 335 M MKP PILKOR WK....
Marking on the top