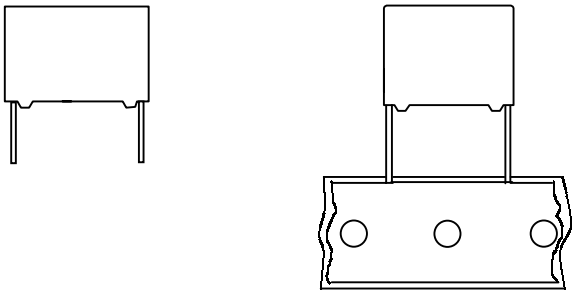
Interference Suppression film capacitors

PCX2 335M (85℃)

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	40/085/21
Rated temperature	85℃
Maximum application temperature	85℃
Reference IEC specification	IEC 60384-14 (2nd edition) and EN 132400
Safety approvals	SEMKO, UL 1414, CSA-C22.2 No 1, VDE, FI
	NEMKO, DEMKO, SEV, OVE, IMQ, EK, ENEC
Materials	Qualified in accordance with UL 94V-0
Safety class	X2

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

FEATURES

. 10 to 27.5 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

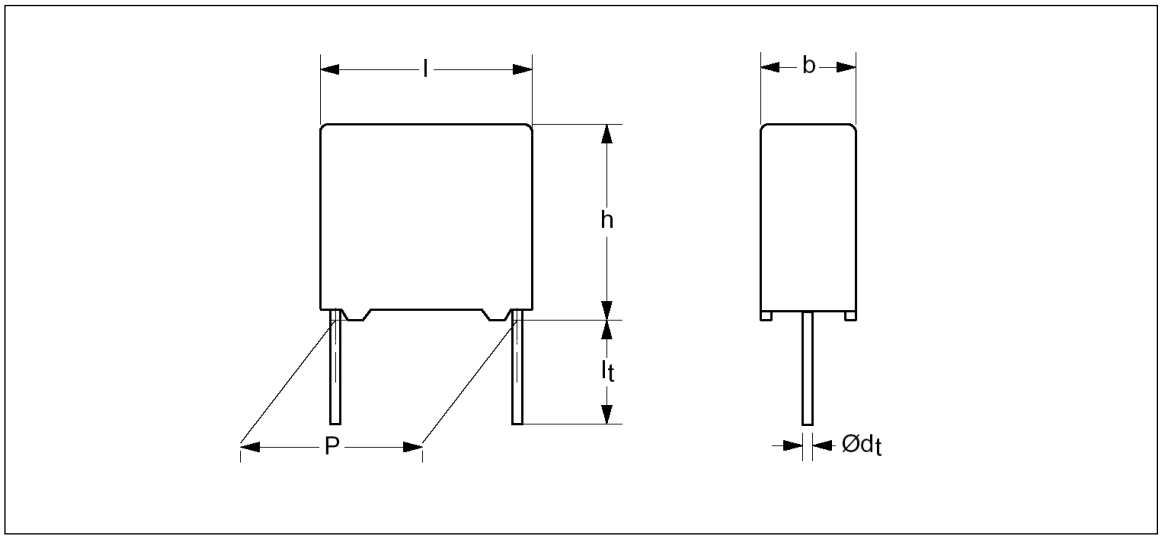
APPLICATIONS

. For X2 - electromagnetic Interference suppression.
. Special designed to meet the NEW REQUIREMENTS 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.

Interference Suppression film capacitors

PCX2 335M (85℃)

Ordering Information



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

Type series

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_0=12.7mm	C-tol ±20 %	PCX2 335 MExxx
F	Taped on reel	H = 18.5 mm* / P_0=12.7mm	C-tol ±10 %	PCX2 335 MFxxx
G	Ammopack	H = 18.5 mm* / P_0=12.7mm	C-tol ±20 %	PCX2 335 MGxxx
H	Ammopack	H = 18.5 mm* / P_0=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

UL 1414	E165646	NEMKO	P98100055
CSA-C22.2 No 1	LR103439	SEMKO	9740143/01
VDE	19798-4670-0006	DEMKO	305895
FI	10463	IMQ	V4350
SEV	98,7 70024,00	OVE	12876-002-02
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

Interference Suppression film capacitors

PCX2 335M (85℃)

SPECIFIC REFERENCE DATA FOR 275 V_{AC}

Tangent of loss angle	at 10 khz
C ≤ 100 nF	≤ 10 x 10^{-4}
100 nF < C ≤ 470 nF	≤ 20 x 10^{-4}
C > 470 nF	≤ 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) : rise time 100 V/s	
C ≤1 µF	2250 V, 1 min
1 µF < C ≤2.2 µF	1850 V, 1 min

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

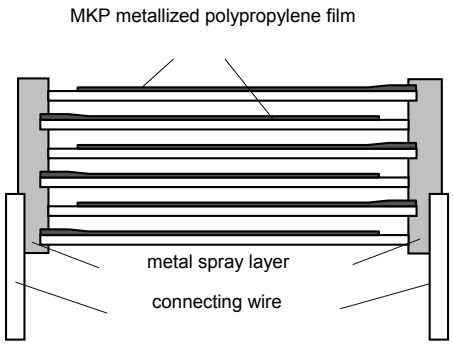
Cap. (µF)	b x h x l (mm)	Mass (g)	CATALOGUE NUMBER PCX2 335 ..... loose in box			
			lt = 5 ± 1.0 mm		lt = 25 ± 2.0 mm	
			C – tol. ±20 %	C – tol. ±10 %	C – tol. ±20 %	C – tol. ±10 %
Pitch = 10.0 ± 0.4 mm			dt = 0.6 +0.06/-0.05 mm			
0.010 *	5.0 x 11.0 x 12.5	0.9	M9201	M9202	M9203	M9204
0.015 *			M9301	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 ± 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	-	M9119	-	M9122
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 ± 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 ± 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	70.8	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.

Interference Suppression film capacitors

PCX2 335M (85℃)

CONSTRUCTION



MOUNTING

NORMAL USE

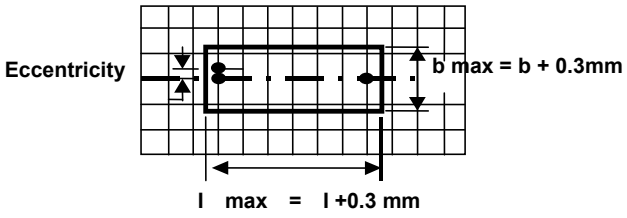
The capacitors are designed for mounting on printed-circuit boards.
The capacitors packed in bandoliers are designed for mounting on printed-circuit boards by means of automatic insertion machines.
For detailed specifications refer to chapter "PACKAGING".

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

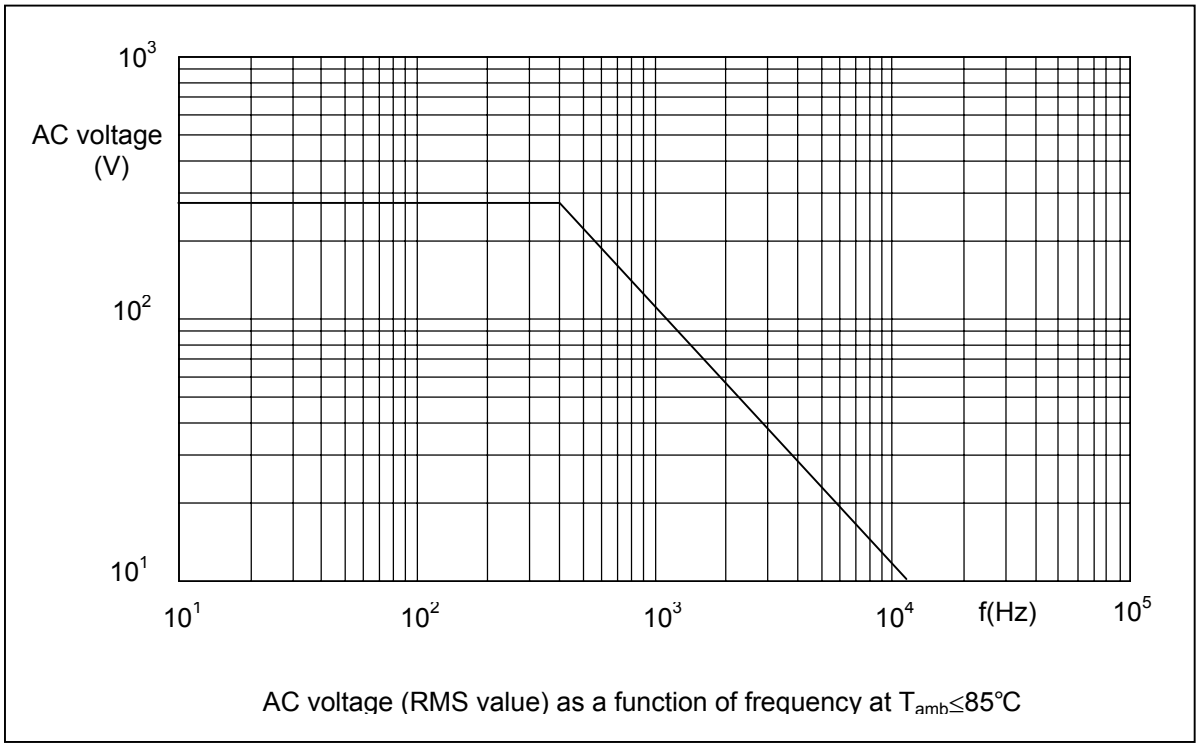
Interference Suppression film capacitors

PCX2 335M (85℃)

RATINGS AND CHARACTERISTICS

Unless otherwise specified all electrical values apply at 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 circuiting 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 $T_{amb} \leq 85°C$

Interference Suppression film capacitors

PCX2 335M (85℃)

PRODUCT MARKING

Capacitors are marked by laser print ; on the top (pitch ≥ 22.5 mm) or on the top and one side (pitch = 15mm) 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 = ±20 % K = ± 10 %
7.Climatic category (40/085/21)
8.Code for dielectric material (MKP)
9.Year and week of manufacturing (e.g. WK9801)
10.Safety approvals

Example of marking

Pitch P = 10mm (0.01 to 0.033µF)

22n M 275V~
335M X2 MKP

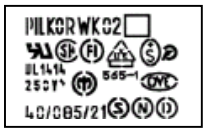
Marking on the top

Marking on the side

Pitch P = 15 or 22.5mm

100n M 275V~ X2
PCX2 335M MKP

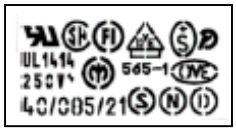
Marking on the top



Marking on the side

Pitch P = 22.5 or 27.5mm

470n M 275V~ X2
PCX2 335M MKP
PILKOR WK....



Marking on the top