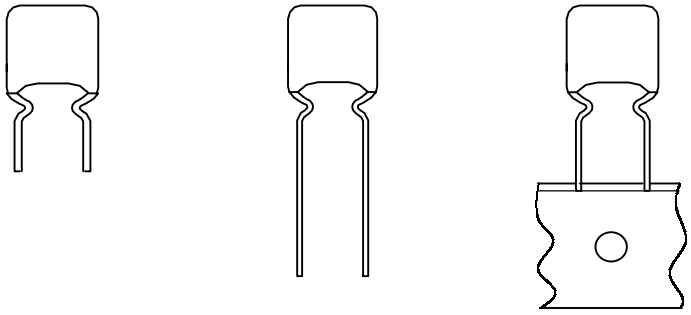
Metallized Polyester film capacitors

PCMT 368

MKT RADIAL LACQUERED CAPACITORS (Dipped Type)

Pitch 10.0/15.0/22.5/27.5mm

(reduced pitch : 7.5mm)



QUICK REFERENCE DATA

Capacitance range (E12 series)	0.01 to 6.8μF
Capacitance tolerance	±10%, ±5%
Rated voltage V_{Rdc}	100 V, 250 V, 400 V, 630 V
Climatic category	55/105/56
Rated temperature	85℃
Maximum application temperature	105℃
Reference specification	IEC 60384-2

FEATURES	APPLICATIONS
. Low inductive wound cell of Metallized (PETP) film	. Blocking and coupling
. Cell protected by epoxy lacquer	. Bypass and energy reservoir application
. Radial leads of solder coated wire	
. Resistant to solvents and rinsing liquids	

Metallized Polyester film capacitors

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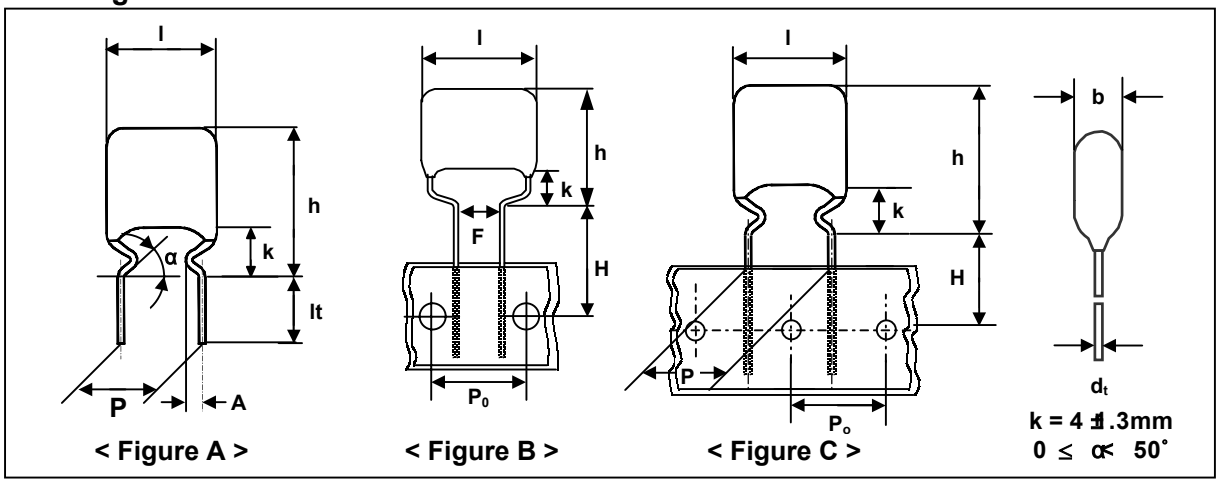
Ordering Information



PCMT 368 X X XXX

- PCMT 368: Type series
- X X: Capacitance

Code	Voltage
2	100V
4	250V
5	400V
6	630V

Available versions						Product (l_{max})			
Code	Packing method	C-tol.	Lead Figure	Lead length & Height	Hole to hole (P_o)	12.5	18.0	26.0	31.0
						Pitch (P)			
1	Loose in box	±10%	A	lt = 25.0±2.0mm	-	10.0	15.0	22.5	27.5
2	Loose in box	± 5%	A	lt = 25.0±2.0mm	-	10.0	15.0	22.5	27.5
3	Loose in box	±10%	A	lt = 5.0±1.0mm	-	10.0	15.0	22.5	27.5
4	Loose in box	± 5%	A	lt = 5.0±1.0mm	-	10.0	15.0	22.5	27.5
A	Loose in box	±10%	A	lt = 25.0±2.0mm	-	7.5	7.5	20.0	20.0
B	Loose in box	± 5%	A	lt = 25.0±2.0mm	-	7.5	7.5	20.0	20.0
C	Loose in box	±10%	A	lt = 5.0±1.0mm	-	7.5	7.5	20.0	20.0
D	Loose in box	± 5%	A	lt = 5.0±1.0mm	-	7.5	7.5	20.0	20.0
5	Ammo packing	±10%	C	H=16mm	12.7mm	10.0	15.0	22.5	27.5
6	Ammo packing	± 5%	C	H=16mm	12.7mm	10.0	15.0	22.5	27.5
7	Ammo packing	±10%	C	H=16mm	15.0mm	10.0	15.0	22.5	27.5
8	Ammo packing	± 5%	C	H=16mm	15.0mm	10.0	15.0	22.5	27.5
E	Ammo packing	±10%	C	H=16mm	12.7mm	7.5	7.5	20.0	20.0
F	Ammo packing	± 5%	C	H=16mm	12.7mm	7.5	7.5	20.0	20.0
G	Ammo packing	±10%	C	H=16mm	15.0mm	7.5	7.5	20.0	20.0
H	Ammo packing	± 5%	C	H=16mm	15.0mm	7.5	7.5	20.0	20.0
K	Taped on reel	±10%	C	H=16mm	15.0mm	10.0	15.0	22.5	27.5
L	Taped on reel	± 5%	C	H=16mm	15.0mm	10.0	15.0	22.5	27.5
M	Taped on reel	±10%	C	H=16mm	15.0mm	7.5	7.5	20.0	20.0
N	Taped on reel	± 5%	C	H=16mm	15.0mm	7.5	7.5	20.0	20.0
P	Ammo packing	±10%	B	H=16mm	15.0mm	-	7.5	-	-
Q	Ammo packing	± 5%	B	H=16mm	15.0mm	-	7.5	-	-

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Packaging Information

SMALLEST PACKING QUANTITIES (SPQ)	Loose in box	
	lt = 25±2.0 mm	lt = 5±1.0 mm
DIMENSIONS	SPQ	SPQ
4.5 x 15.5 x 12.5	1000	1000
4.5 x 16.5 x 12.5	1000	1000
5.0 x 16.0 x 12.5	1000	1000
5.0 x 17.0 x 12.5	1000	1000
5.5 x 16.5 x 12.5	1000	1000
5.5 x 17.5 x 12.5	1000	1000
6.0 x 17.0 x 12.5	1000	1000
6.0 x 18.0 x 12.5	1000	1000
6.5 x 17.5 x 12.5	1000	1000
6.5 x 18.5 x 12.5	1000	1000
5.0 x 16.5 x 18.0	1000	1000
5.5 x 17.0 x 18.0	1000	1000
6.0 x 17.5 x 18.0	1000	1000
6.5 x 18.0 x 18.0	1000	1000
7.0 x 18.5 x 18.0	1000	1000
7.0 x 21.5 x 18.0	1000	1000
7.5 x 19.0 x 18.0	1000	1000
7.5 x 22.0 x 18.0	1000	1000
8.0 x 19.5 x 18.0	1000	1000
8.0 x 22.5 x 18.0	1000	1000
8.5 x 20.0 x 18.0	1000	1000
6.0 x 20.0 x 26.0	1000	1000
6.5 x 20.5 x 26.0	1000	1000
7.5 x 21.5 x 26.0	1000	1000
8.0 x 22.0 x 26.0	1000	1000
8.5 x 22.5 x 26.0	500	500
9.5 x 23.5 x 26.0	500	500
10.5 x 24.5 x 26.0	500	500
11.5 x 25.5 x 26.0	500	500
13.0 x 27.0 x 26.0	500	500
14.5 x 28.5 x 26.0	500	500
10.5 x 24.5 x 31.0	250	250
12.0 x 26.0 x 31.0	250	250
13.5 x 27.5 x 31.0	250	250
14.5 x 28.5 x 31.0	250	250
15.5 x 29.5 x 31.0	250	250

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V_{Rdc} = 100 V V_{Rac} = 63 V~

Cap. (µF)	b x h x l (mm)	Mass (g)	CATALOGUE NUMBER PCMT 368 ..... loose in box C-tol. ± 5%	
			lt = 25±2.0	lt = 5±1.0
	Pitch = 10.0 ± 0.4 mm	dt = 0.6 mm +0.06 / -0.05	A = 2.0 +1.0/-0.5 mm	
0.39	5.0 x 16.0 x 12.5	0.5	PCMT 368 22394	PCMT 368 24394
0.47	5.5 x 16.5 x 12.5	1.0	PCMT 368 22474	PCMT 368 24474
0.56	6.0 x 17.0 x 12.5	1.2	PCMT 368 22564	PCMT 368 24564
0.68	6.5 x 17.5 x 12.5	1.2	PCMT 368 22684	PCMT 368 24684
	Pitch = 15.0 ± 0.4 mm	dt = 0.8 mm +0.08 / -0.05	A = 2.5 +1.0/-0.5 mm	
0.82	5.5 x 17.0 x 18.0	1.5	PCMT 368 22824	PCMT 368 24824
1.0	6.0 x 17.5 x 18.0	1.5	PCMT 368 22105	PCMT 368 24105
1.2	6.5 x 18.0 x 18.0	1.6	PCMT 368 22125	PCMT 368 24125
1.5	7.0 x 18.5 x 18.0	1.6	PCMT 368 22155	PCMT 368 24155
1.8	7.5 x 19.0 x 18.0	1.8	PCMT 368 22185	PCMT 368 24185
2.2	8.5 x 20.0 x 18.0	2.4	PCMT 368 22225	PCMT 368 24225
	Pitch = 22.5 ± 0.4 mm	dt = 0.8 mm +0.08 / -0.05	A = 2.5 +1.0/-0.5 mm	
2.7	6.5 x 20.5 x 26.0	3.2	PCMT 368 22275	PCMT 368 24275
3.3	7.5 x 21.5 x 26.0	3.8	PCMT 368 22335	PCMT 368 24335
3.9	8.0 x 22.0 x 26.0	4.2	PCMT 368 22395	PCMT 368 24395
4.7	8.5 x 22.5 x 26.0	4.4	PCMT 368 22475	PCMT 368 24475
5.6	9.5 x 23.5 x 26.0	5.0	PCMT 368 22565	PCMT 368 24565
6.8	10.5 x 24.5 x 26.0	5.4	PCMT 368 22685	PCMT 368 24685

Metallized Polyester film capacitors

PCMT 368

V_{Rdc} = 250 V V_{Rac} = 160 V~

Cap. (µF)	b x h x l (mm)	Mass (g)	CATALOGUE NUMBER PCMT 368 ..... loose in box C-tol. ± 5%	
			lt = 25±2.0	lt = 5±1.0
	Pitch = 10.0 ± 0.4 mm	dt = 0.6 mm +0.06 / -0.05	A = 2.0 +1.0/-0.5 mm	
0.10	4.5 x 15.5 x 12.5	0.6	PCMT 368 42104	PCMT 368 44104
0.12	4.5 x 15.5 x 12.5	0.6	PCMT 368 42124	PCMT 368 44124
0.15	5.0 x 16.0 x 12.5	0.8	PCMT 368 42154	PCMT 368 44154
0.18	5.5 x 16.5 x 12.5	1.0	PCMT 368 42184	PCMT 368 44184
0.22	6.0 x 17.0 x 12.5	1.2	PCMT 368 99102	PCMT 368 99104
	Pitch = 15.0 ± 0.4 mm	dt = 0.8 mm +0.08 / -0.05	A = 2.5 +1.0/-0.5 mm	
0.22	5.0 x 16.5 x 18.0	1.0	PCMT 368 42224	PCMT 368 44224
0.27	5.0 x 16.5 x 18.0	1.2	PCMT 368 42274	PCMT 368 44274
0.33	5.5 x 17.0 x 18.0	1.5	PCMT 368 42334	PCMT 368 44334
0.39	5.5 x 17.0 x 18.0	1.5	PCMT 368 42394	PCMT 368 44394
0.47	6.0 x 17.5 x 18.0	1.6	PCMT 368 42474	PCMT 368 44474
0.56	6.5 x 18.0 x 18.0	1.8	PCMT 368 42564	PCMT 368 44564
0.68	7.0 x 18.5 x 18.0	2.0	PCMT 368 42684	PCMT 368 44684
0.82	8.0 x 19.5 x 18.0	2.6	PCMT 368 42824	PCMT 368 44824
1.0	8.0 x 22.5 x 18.0	3.2	PCMT 368 42105	PCMT 368 44105
	Pitch = 22.5 ± 0.4 mm	dt = 0.8 mm +0.08 / -0.05	A = 2.5 +1.0/-0.5 mm	
1.2	6.5 x 20.5 x 26.0	3.0	PCMT 368 42125	PCMT 368 44125
1.5	7.5 x 21.5 x 26.0	3.6	PCMT 368 42155	PCMT 368 44155
1.8	8.5 x 22.5 x 26.0	4.4	PCMT 368 42185	PCMT 368 44185
2.2	9.5 x 23.5 x 26.0	5.2	PCMT 368 42225	PCMT 368 44225
2.7	10.5 x 24.5 x 26.0	6.0	PCMT 368 42275	PCMT 368 44275
3.3	11.5 x 25.5 x 26.0	7.0	PCMT 368 42335	PCMT 368 44335
3.9	13.0 x 27.0 x 26.0	8.0	PCMT 368 42395	PCMT 368 44395
4.7	14.5 x 28.5 x 26.0	9.0	PCMT 368 42475	PCMT 368 44475
	Pitch = 27.5 ± 0.4 mm	dt = 0.8 mm +0.08 / -0.05	A = 2.5 +1.0/-0.5 mm	
5.6	14.5 x 28.5 x 31.0	11.0	PCMT 368 42565	PCMT 368 44565

Metallized Polyester film capacitors

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V_{Rdc} = 400 V V_{Rac} = 220 V~

Cap. (µF)	b x h x l (mm)	Mass (g)	CATALOGUE NUMBER PCMT 368 ..... loose in box C-tol. ± 5%	
			lt = 25±2.0	lt = 5±1.0
	Pitch = 10.0 ± 0.4 mm	dt = 0.6 mm +0.06 / -0.05	A = 2.0 +1.0/-0.5 mm	
0.039	5.0 x 16.0 x 12.5	0.7	PCMT 368 52393	PCMT 368 54393
0.047	5.5 x 16.5 x 12.5	0.8	PCMT 368 52473	PCMT 368 54473
0.056	5.5 x 16.5 x 12.5	0.8	PCMT 368 52563	PCMT 368 54563
0.068	6.0 x 17.0 x 12.5	0.9	PCMT 368 52683	PCMT 368 54683
0.082	6.0 x 17.0 x 12.5	0.9	PCMT 368 52823	PCMT 368 54823
0.10	6.5 x 17.5 x 12.5	1.0	PCMT 368 99106	PCMT 368 99108
	Pitch = 15.0 ± 0.4 mm	dt = 0.8 mm +0.08 / -0.05	A = 2.5 +1.0/-0.5 mm	
0.10	5.0 x 16.5 x 18.0	1.3	PCMT 368 52104	PCMT 368 54104
0.12	5.0 x 16.5 x 18.0	1.3	PCMT 368 52124	PCMT 368 54124
0.15	5.5 x 17.0 x 18.0	1.4	PCMT 368 52154	PCMT 368 54154
0.18	6.0 x 17.5 x 18.0	1.6	PCMT 368 52184	PCMT 368 54184
0.22	6.5 x 18.0 x 18.0	1.8	PCMT 368 52224	PCMT 368 54224
0.27	7.0 x 18.5 x 18.0	2.2	PCMT 368 52274	PCMT 368 54274
0.33	7.5 x 19.0 x 18.0	2.4	PCMT 368 52334	PCMT 368 54334
0.39	7.5 x 22.0 x 18.0	2.8	PCMT 368 52394	PCMT 368 54394
	Pitch = 22.5 ± 0.4 mm	dt = 0.8 mm +0.08 / -0.05	A = 2.5 +1.0/-0.5 mm	
0.47	6.0 x 20.0 x 26.0	2.8	PCMT 368 52474	PCMT 368 54474
0.56	6.5 x 20.5 x 26.0	3.0	PCMT 368 52564	PCMT 368 54564
0.68	7.5 x 21.5 x 26.0	3.6	PCMT 368 52684	PCMT 368 54684
0.82	8.5 x 22.5 x 26.0	4.4	PCMT 368 52824	PCMT 368 54824
1.0	9.5 x 23.5 x 26.0	5.6	PCMT 368 52105	PCMT 368 54105
1.2	10.5 x 24.5 x 26.0	5.8	PCMT 368 52125	PCMT 368 54125
	Pitch = 27.5 ± 0.4 mm	dt = 0.8 mm +0.08 / -0.05	A = 2.5 +1.0/-0.5 mm	
1.5	10.5 x 24.5 x 31.0	8.0	PCMT 368 52155	PCMT 368 54155
1.8	12.0 x 26.0 x 31.0	9.0	PCMT 368 52185	PCMT 368 54185
2.2	13.5 x 27.5 x 31.0	10.2	PCMT 368 52225	PCMT 368 54225

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V_{Rdc} = 630 V V_{Rac} = 250 V~

Cap. (µF)	b x h x l (mm)	Mass (g)	CATALOGUE NUMBER PCMT 368 ..... loose in box C-tol. ± 5%	
			lt = 25±2.0	lt = 5±1.0
	Pitch = 10.0 ± 0.4 mm	dt = 0.6 mm +0.06 / -0.05	A = 2.0 +1.0/-0.5 mm	
0.010	4.5 x 16.5 x 12.5	0.6	PCMT 368 62103	PCMT 368 64103
0.012	4.5 x 16.5 x 12.5	0.6	PCMT 368 62123	PCMT 368 64123
0.015	4.5 x 16.5 x 12.5	0.6	PCMT 368 62153	PCMT 368 64153
0.018	4.5 x 16.5 x 12.5	0.6	PCMT 368 62183	PCMT 368 64183
0.022	5.0 x 17.0 x 12.5	0.7	PCMT 368 62223	PCMT 368 64223
0.027	5.0 x 17.0 x 12.5	0.8	PCMT 368 62273	PCMT 368 64273
0.033	5.5 x 17.5 x 12.5	0.9	PCMT 368 62333	PCMT 368 64333
0.039	6.0 x 18.0 x 12.5	1.0	PCMT 368 62393	PCMT 368 64393
0.047	6.5 x 18.5 x 12.5	1.2	PCMT 368 62473	PCMT 368 64473
	Pitch = 15.0 ± 0.4 mm	dt = 0.8 mm +0.08 / -0.05	A = 2.5 +1.0/-0.5 mm	
0.056	5.5 x 17.0 x 18.0	2.0	PCMT 368 62563	PCMT 368 64563
0.068	6.0 x 17.5 x 18.0	2.1	PCMT 368 62683	PCMT 368 64683
0.082	6.5 x 18.0 x 18.0	2.2	PCMT 368 62823	PCMT 368 64823
0.10	7.5 x 19.0 x 18.0	2.3	PCMT 368 62104	PCMT 368 64104
0.12	7.0 x 21.5 x 18.0	2.4	PCMT 368 62124	PCMT 368 64124
0.15	7.5 x 22.0 x 18.0	2.6	PCMT 368 62154	PCMT 368 64154
	Pitch = 22.5 ± 0.4 mm	dt = 0.8 mm +0.08 / -0.05	A = 2.5 +1.0/-0.5 mm	
0.18	6.5 x 20.5 x 26.0	2.8	PCMT 368 62184	PCMT 368 64184
0.22	7.5 x 21.5 x 26.0	3.0	PCMT 368 62224	PCMT 368 64224
0.27	8.5 x 22.5 x 26.0	3.7	PCMT 368 62274	PCMT 368 64274
0.33	9.5 x 23.5 x 26.0	4.0	PCMT 368 62334	PCMT 368 64334
0.39	10.5 x 24.5 x 26.0	4.6	PCMT 368 62394	PCMT 368 64394
0.47	11.5 x 25.5 x 26.0	5.3	PCMT 368 62474	PCMT 368 64474
0.56	13.0 x 27.0 x 26.0	5.8	PCMT 368 62564	PCMT 368 64564
0.68	14.5 x 30.0 x 26.0	6.9	PCMT 368 62684	PCMT 368 64684
	Pitch = 27.5 ± 0.4 mm	dt = 0.8 mm +0.08 / -0.05	A = 2.5 +1.0/-0.5 mm	
0.82	14.5 x 28.5 x 31.0	8.5	PCMT 368 62824	PCMT 368 64824
1.0	15.5 x 29.5 x 31.0	9.3	PCMT 368 62105	PCMT 368 64105

Metallized Polyester film capacitors

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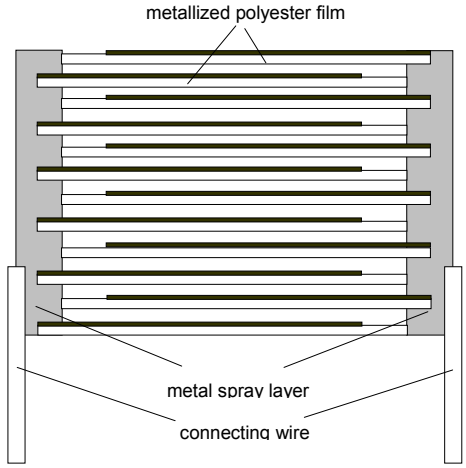
CONSTRUCTION



Description
. Low-inductive wound cell of Metallized polyethyleneterephthalate film
. Protected by a hard, water repellent, solvent resistant epoxy lacquer
. Radial leads, solder-coated.

MOUNTING

NORMAL USE

The capacitors are designed for mounting on printed-wiring boards. The capacitors packed in bandollers are designed for mounting on printed-wiring boards by means of automatic insertion machines.
For detailed specifications refer to chapter PACKING

SPECIFIC METHOD OF MOUNTING TO WITHSTAND VIBRATION AND SHOCK

In order to withstand vibration and shock tests, it must be ensured that the underside of the crimps are in good contact with the printed-wiring board.
. For pitches of 15 mm the capacitors shall be mechanically fixed by the leads.
. For larger pitches the capacitors shall be mounted in the same way and the body clamped.

STORAGE TEMPERATURE

. Storage temperature : T_{stg} = -25°C to +40°C with RH maximum 80% witout condensation.

RATINGS AND CHARACTERISTICS

Unless otherwise specified, all electrical values apply to an ambient free air temperature of 23±1°C, an atmospheric pressure of 86 to 106 kPa and a relative humidity of 50±2%.
For reference testing, a conditioning period shall be applied over 96±4 hours by heating the products in a circulating air oven at the rated temperature and a relative humidity not exceeding 20%.

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CHARACTERISTICS

● **Dissipation Factor**

Rated voltage	Capacitance	Tangent of loss angle (x 10^{-4})		
		1 KHz	10 KHz	100 KHz
100 V	0.39µF < C ≤ 0.47µF	≤ 75	≤ 120	≤ 225
	0.47µF < C ≤ 6.8 µF	≤ 75	≤ 120	-
250 V	0.1 µF < C ≤ 0.47µF	< 75	< 120	< 225
	0.47µF < C ≤ 5.6 µF	< 75	< 120	-
400 V	C ≤ 0.1 µF	< 75	< 120	< 200
	0.1 µF ≤ C ≤ 0.47µF	< 75	< 120	< 225
	C > 0.47µF	< 75	< 120	-
630 V	C ≤ 0.1 µF	< 75	< 120	< 200
	0.1 µF < C ≤ 0.47µF	< 75	< 120	< 225
	C > 0.47µF	< 75	< 120	-

● **Insulation Resistance**

The insulation resistance is measured after a voltage has been applied for 1 minute ±5 seconds, the voltage being 100±15V for the 100, 250 and 400V versions and 500±50V for the 630V versions.

Rated voltage	Capacitance	R between leads (MΩ)	RC between leads (sec)
100 V	C > 0.33µF	-	> 5 000 s
250 V / 400 V / 630 V	C ≤ 0.33µF	> 30 000	-
	C > 0.33µF	-	> 10 000 s

● **Rated Voltage Pulse Load Slope $(dV/dt)_R$**

For values see specific reference data. If the pulse voltage is lower than the rated voltage, the values of the specific reference data mast be multiplied by V_{Rdc} and divided by the applied voltage

Rated voltage	Rated pulse load(V/µs) as a function of I_{max}			
	I_{max} = 12.5mm	I_{max} = 18.0mm	I_{max} = 26.0mm	I_{max} = 31.0mm
100 V	30	20	20	-
250 V	120	45	20	15
400 V	170	65	30	25
630 V	90	90	35	30

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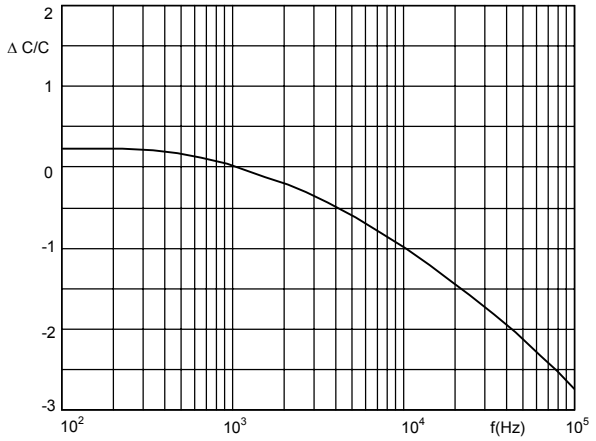
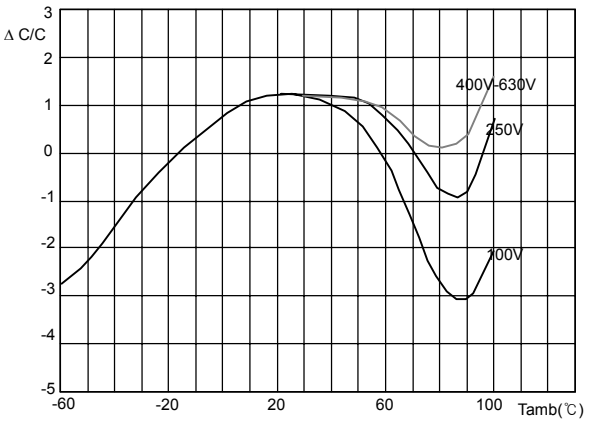
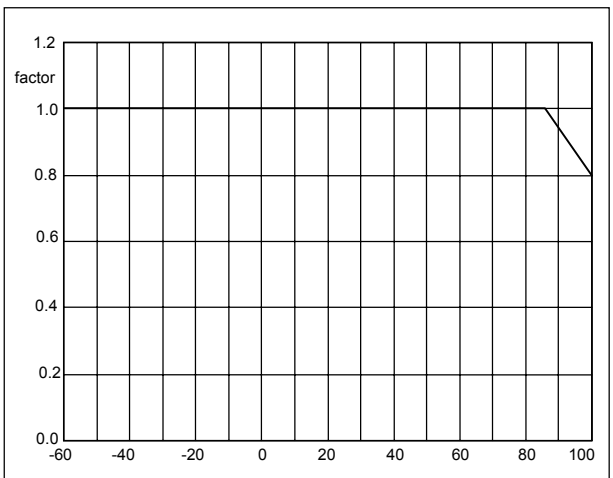
THE GRAPHS OF CHARACTERISTICS



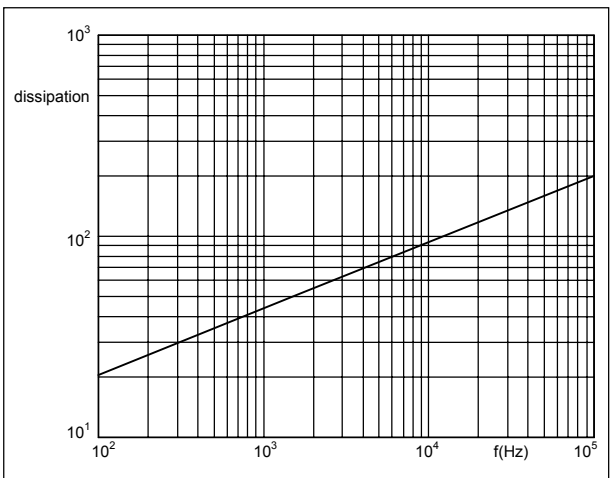
Capacitance change at 1kHz as a function of frequency ; typical curve



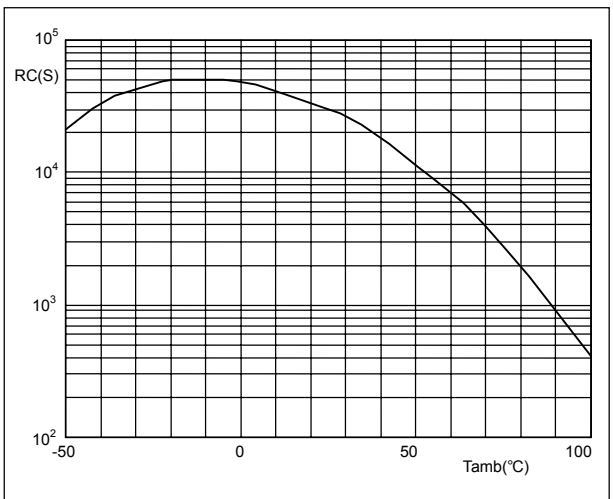
Capacitance as a function of ambient free air temperature,
Measured at 1kHz , 1V ; typical curve



Multiplying factor as a function of temperature



Tangent of loss angle as a function of frequency : typical curve

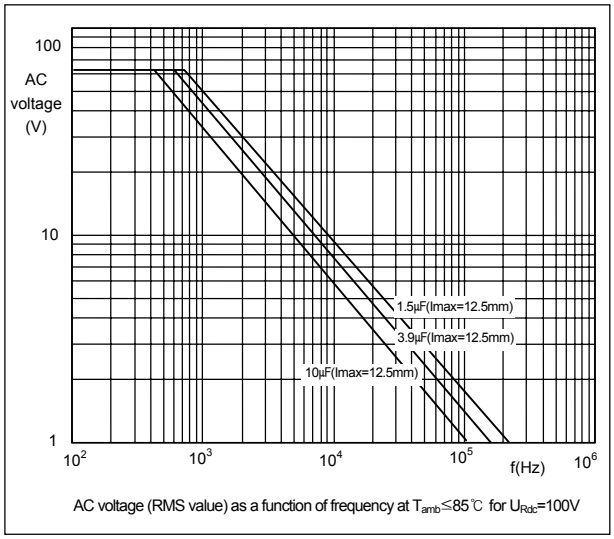


RC-product as a function of ambient free air temperature ; typical curve

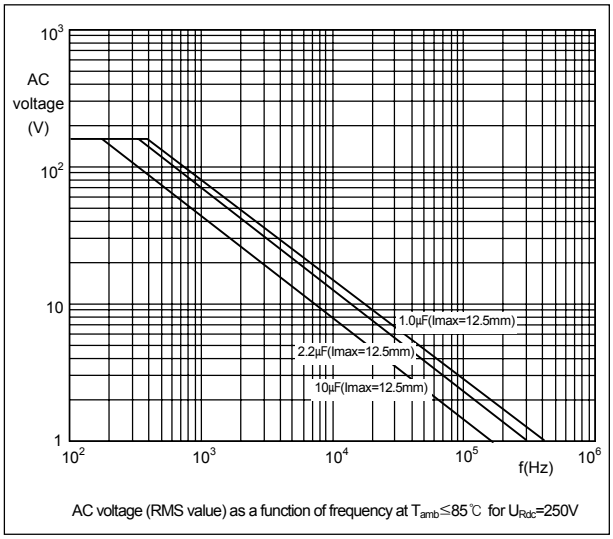
Metallized Polyester film capacitors

PCMT 368

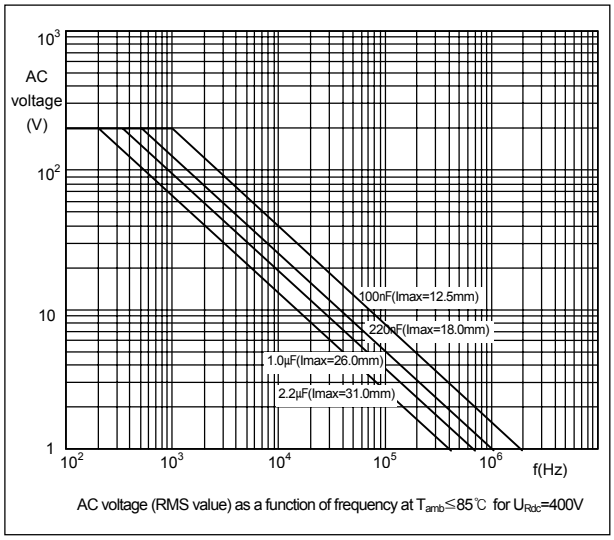
MAXIMUM RMS VOLTAGE (SINEWAVE) AS A FUNCTION OF FREQUENCY



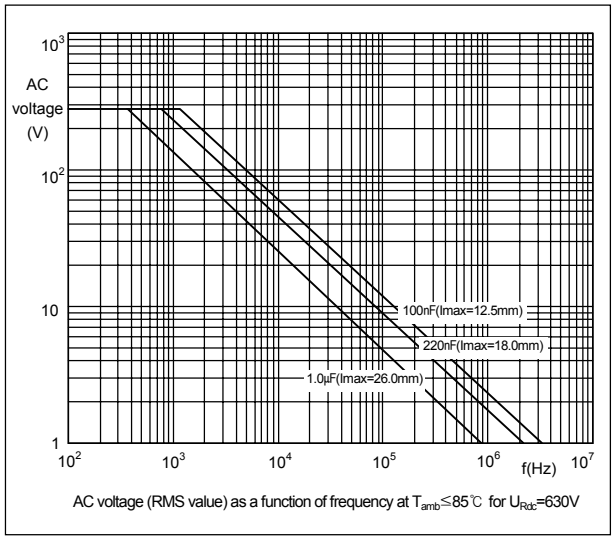
AC voltage (RMS value) as a function of frequency at $T_{amb} \leq 85℃$ for U_{Rdc}=100V



AC voltage (RMS value) as a function of frequency at $T_{amb} \leq 85℃$ for U_{Rdc}=250V



AC voltage (RMS value) as a function of frequency at $T_{amb} \leq 85℃$ for U_{Rdc}=400V



AC voltage (RMS value) as a function of frequency at $T_{amb} \leq 85℃$ for U_{Rdc}=630V

Metallized Polyester film capacitors

PCMT 368

APPLICATION NOTE

To select this capacitor for a certain application, 6 conditions must be checked :

1. The peak voltage (V_p) shall not be greater than the rated DC voltage.

2. The peak-to-peak voltage (V_{p-p}) shall not be greater than $2\sqrt{2}$ times the rated AC voltage to avoid the ionization inception level.

3. The peak current (I_p) shall not exceed the maximum peak current, defined as maximum voltage pulse slope (dV/dt) multiplied by the capacitance.

$$I_p \text{ max.} = C\ (dV/dt)\ \text{max}$$

   Or the voltage pulse slope shall not exceed the rated voltage pulse slope. If the pulse voltage is Lower than the rated voltage, the values of the table may be multiplied by V_{Rdc} and divided by the applied voltage.

4. The dissipated power shall not be greater than the maximum permissible power dissipation stated above.

5. The free air ambient temperature for the capacitor is not exceeding the category temperature.

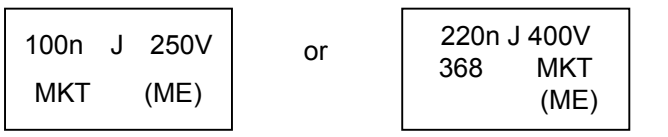
6. Since all metallized film capacitors have an intrinsically active flammability risk, it is recommended that these capacitors should only be used in circuits where the power can be limited to less than 5W to the capacitor should a failure occur.

PRODUCT MARKING

The capacitors are marked on the side in black ink with the following information :

. Rated capacitance code in nF or µF
. Tolerance on rated capacitance : J = ±5 % , K = ±10 %
. Rated DC voltage

Example of marking



I_{max} = 12.5 I_{max} = 18.0/26.0/31.0 mm