FILM CAPACITORS

Contents

INTRODUCTION

- CAUTION AND WARNING -

- Please contact us for complete technical specification before use and confirm the appropriate condition of your application.
- If used in a specific appliance that requires an extremely high reliability directly impacting human life, please consult with us and use within the conditions designated in the specification.
- In the event of trouble with other parts on the circuit such as shorting and opening, provide proper means for preventing voltage, current or temperature exceeding the capacitor's rating from being applied to the film capacitor.
- For film capacitor for AC use, ask for our specification, and use within the specified conditions.
- Under the worst-case conditions, a film capacitor may smoke or catch fire. Therefore, as the specific application demands, we recommend that the resin part of periphery is covered with a flame-retardant material and case.

★★★ Design and specifications are subject to change without notice. Ask factory for technical specifications before purchase and/or use. Whenever a doubt about safety arises from this product, please contact us immediately for technical consultation.★★★

Web Site : http://www.pilkor.co.kr

Our technical specialists are always available to answer your questions on special applications and requirements not covered in this data book

TEL : 82-31-546-5162~5167
FAX : 82-31-217-7314~5

FILM DIELECTRICS USED IN FILM CAPACITORS

Overview

PARAMETER	DIELECTRIC[1]				UNIT
	KT	KN	KI	KP	
Dielectric constant: at 1 kHz	3.3	3.0	3.0	2.2	–
Dissipation factor					
at 1 kHz	50	40	3	1	10^{-4}
at 10 kHz	110	–	6	2	10^{-4}
at 100 kHz	170	–	12	2	10^{-4}
at 1 MHz	200	–	18	4	10^{-4}
Volume resistivity	10^{+17}	10^{+17}	10^{+17}	10^{+18}	Ωcm
Dielectric strength	400	300	250	600	V/µm
Maximum application temperature	125	125	150	105	℃
Power density: at 10 kHz	50	40	2.5	0.6	W/cm^3
Dielectric absorption	0.2	1.2	0.05	0.01	%

Note

1. In accordance with “IEC 60062”: KT = polyethylene terephthalate (PETP);
   KN = polyethylene naphthalate (PEN); KI = polyphenylene sulfide (PPS); KP = polypropylene (PP).

Polyethylene terephthalate (PETP) and polyethylene naphthalate (PEN) films are mostly used in general purpose capacitors. These capacitors are used in applications typically with small bias DC voltages and/or small AC voltages at low frequencies.

Polyethylene terephthalate (PETP) has high capacitance per volume due to its high dielectric constant and availability in thin gauges.

Polyethylene naphthalate (PEN) is used when high temperature resistance is required compared to PET. Polyphenylene sulfide (KI) film can be used in applications where high temperature resistance is needed in combination with low dissipation factor.

Polypropylene (KP) film is used in high frequency or high voltage applications due to its very low dissipation factor and high dielectric strength. It is used in AC and pulse capacitors and interference suppression capacitors for mains applications.

Typical properties as functions of temperature or frequency are illustrated in Fig. 1 to 5.

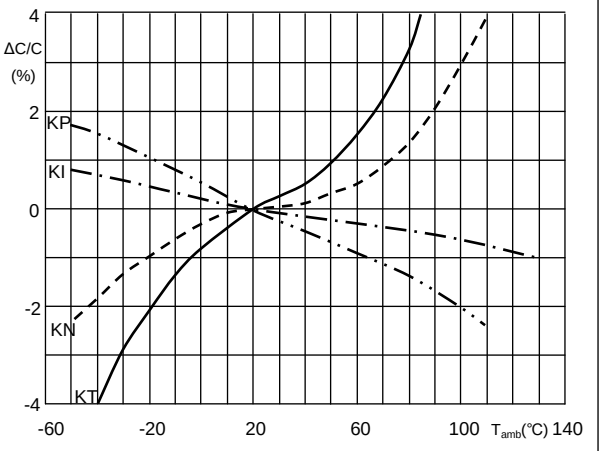


Fig.1 Capacitance change as a function of ambient free air temperature at 1 kHz; typical curves

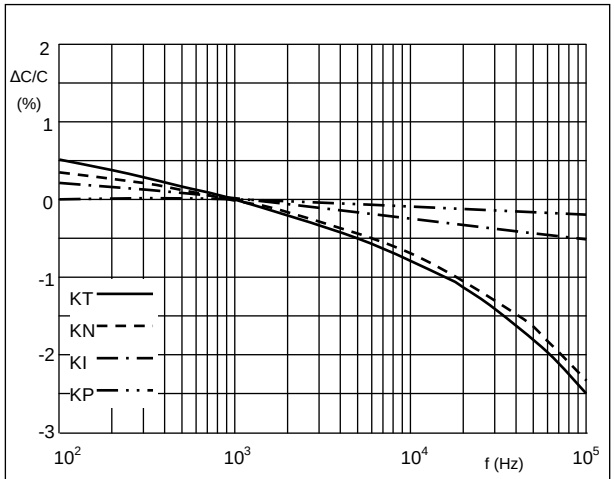


Fig.4 Capacitance change as a function of frequency; typical curves

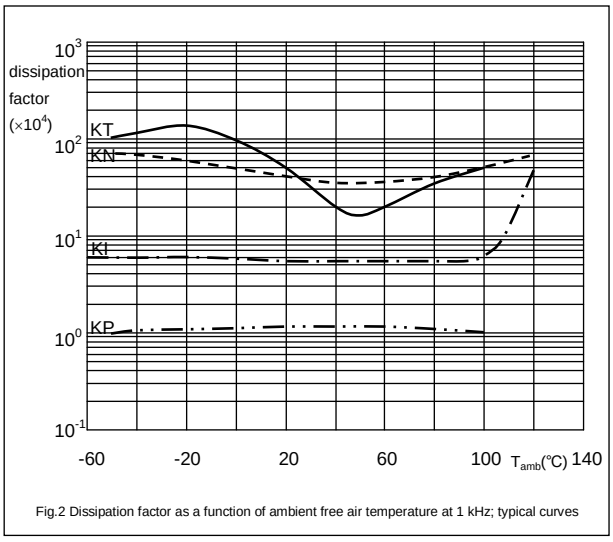


Fig.2 Dissipation factor as a function of ambient free air temperature at 1 kHz; typical curves

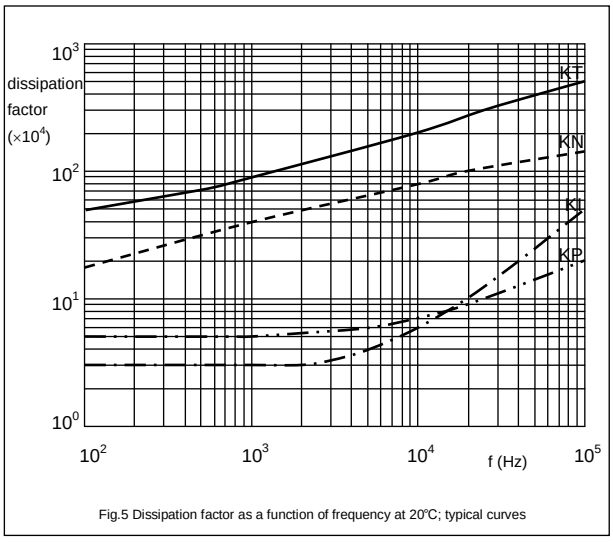


Fig.5 Dissipation factor as a function of frequency at 20℃; typical curves

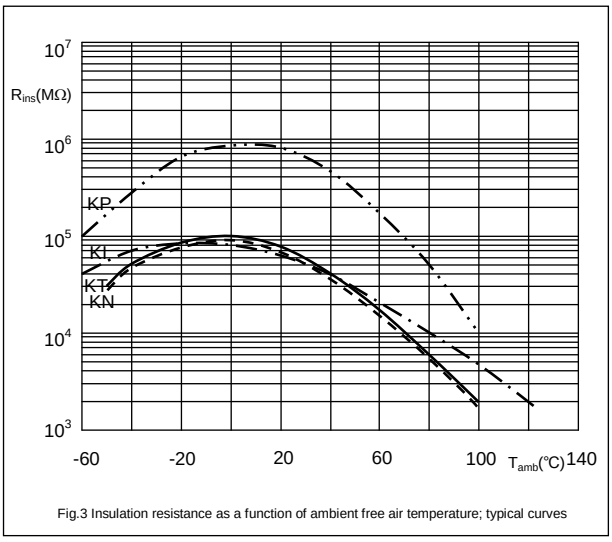


Fig.3 Insulation resistance as a function of ambient free air temperature; typical curves

CONSTRUCTION OF THE CAPACITOR CELL

The type of electrode used determines whether the capacitor is a metallized film or film/foil type.

The electrode used for the metallized film capacitor is a thin metal layer deposited on the plastic film with thickness of approximately 30 to 50 nm. The electrode of the film/foil capacitor is discrete metal foil with thickness of approximately 5 to 10µm.

In some products a double side metallized plastic film is used as electrode.

Due to their construction, film/foil capacitors can carry higher currents than metallized ones, but are larger in volume.

Metallized film capacitors have a self-healing property as an intrinsic characteristic.

Depending on the AC voltage, single or series constructions are used. Single section capacitors are normally used for products with an AC rating up to 275 V (AC). Series constructions are used for higher AC voltages.

GENERAL DEFINITIONS

Rated DC voltage (V_{Rdc})

The maximum direct voltage or peak value of pulse voltage which may be applied continuously to a capacitor at any temperature between the lower category temperature and the rated temperature.

Category voltage (V_C)

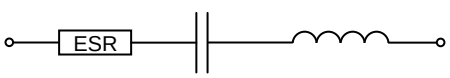
The maximum voltage which may be applied continuously to a capacitor at its upper category temperature.

Rated AC voltage (V_{Rac})

The maximum RMS voltage (in V) at specified frequency (mostly 50 Hz) which may be continuously applied to the terminations of a capacitor at any temperature between the lower category temperature and the rated temperature.

Capacitance

The capacitance of a capacitor is the capacitive part of the equivalent circuit composed of capacitance, equivalent series resistance (ESR) and inductance.



Simplified equivalent circuit.

Rated capacitance

The designed capacitance value usually indicated on the capacitor.

Capacitance tolerance

The percentage of the allowed deviation of the capacitance from the rated capacitance measured at a free air ambient temperature of 23 ±1℃ and RH of 50 ±2%.

Tolerance coding in accordance with "*IEC 60062*"

CAPACITANCE TOLERANCE	LETTER CODE
±1.0%	F
±2.0%	G
±3.0%	H
±3.5%	A
±5.0%	J
±10.0%	K
±20.0%	M

A letter "A" indicates that the tolerance is defined in the type specification or customer detail specification.

Temperature coefficient and cyclic drift of capacitance

The terms characterizing these two properties apply to capacitors of which the variations of capacitance as a function of temperature are linear or approximately linear and can be expressed with a certain precision.

TEMPERATURE COEFFICIENT OF CAPACITANCE

The rate of capacitance change with temperature, measured over the specified temperature range. It is normally expressed in parts per million per Kelvin (10^{-6}/K).

TEMPERATURE CYCLIC DRIFT OF CAPACITANCE

The maximum irreversible variation of capacitance observed at room temperature (20 ±2℃) during or after the completion of a number of specified temperature cycles. It is normally expressed in percent.

Rated voltage pulse slope (dV/dt)

The maximum voltage pulse slope that the capacitor can withstand with a pulse voltage equal to the rated voltage. For pulse voltages other than the rated voltage, the maximum voltage pulse slope may be multiplied by V_{Rdc} and divided by the applied voltage.

The voltage pulse slope multiplied by the capacitance gives the peak current for the capacitor.

Dissipation factor

The dissipation factor or tangent of loss angle (tanδ) is the power loss of the capacitor divided by the reactive power of the capacitor at a sinusoidal voltage of specified frequency.

Equivalent series resistance (ESR)

The resistive part of the equivalent circuit composed of capacitance, series resistance and inductance.

Insulation resistance (R_{ins})

The applied DC voltage divided by the leakage current after defined time.

Time constant

The product of the insulation resistance and the capacitance, normally expressed in seconds.

Ambient temperature

The ambient temperature is the temperature of the air surrounding the component.

Climatic category

The climatic category code (e.g. 50/100/56) indicates to which climatic category a film capacitor type belongs. The category is indicated by a series of three sets of digits separated by oblique strokes corresponding to the minimum ambient temperature of operation, the maximum temperature of operation and the number of days of exposure to damp heat (Steady state - test Ca), respectively.

Category temperature range

The range of ambient temperatures for which the capacitor has been designed to operate continuously; this is given by the lower and upper category temperature.

Upper category temperature

The maximum ambient temperature for which a capacitor has been designed to operate continuously.

Lower category temperature

The minimum ambient temperature for which a capacitor has been designed to operate continuously.

Rated temperature

The maximum ambient temperature at which the rated voltage may be continuously applied.

Maximum application temperature

The equivalent of the upper category temperature.

Temperature characteristic of capacitance

The maximum reversible variation of capacitance produced over a given temperature range within the category temperature range, normally expressed as a percentage of the capacitance related to a reference temperature of 20℃.

NOTE The term characterizing this property applies mainly to capacitors of which the variations of capacitance as a function of temperature, linear or non-linear, cannot be expressed with precision and certainty.

Storage temperature

The temperature range from -25℃ to 40℃, a RH of maximum 80% without condensation at which the initial characteristics can be guaranteed for at least 2 years.

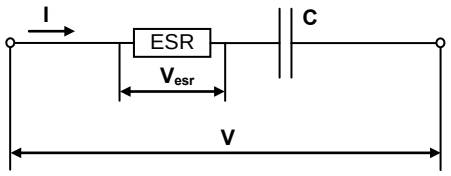
Self-healing

The process by which the electrical properties of the capacitor, after a local breakdown of the dielectric, are rapidly and essentially restored to the values before the breakdown.

Maximum power dissipation

The power dissipated by a capacitor is a function of the voltage (V_{esr}) across or the current (I) through the equivalent series resistance ESR and is expressed by:

$$P = \text{오류! 책갈피가 정의되어 있지 않습니다.}\frac{V_{esr}^2}{ESR} = ESR \times I^2$$



Simplified equivalent circuit.

$$V_{esr}^2 = \text{오류! 책갈피가 정의되어 있지 않습니다.}\frac{ESR^2}{ESR^2 + 1/\omega^2C^2} \times V^2$$

Given that for film capacitors $\tan\delta = \omega \times C \times ESR \ll 0.1$ the formula can be simplified to:

$$V_{esr}^2 = ESR^2 \times \omega^2 \times C^2 \times V^2$$

With ESR = $\tan\delta/\omega C$, the formula becomes:

$$P = \omega \times C \times \tan\delta \times V^2 = \text{오류! 책갈피가 정의되어 있지 않습니다.}\frac{\tan\delta}{\omega \times C} \times I^2$$

For the $\tan\delta$ we take the typical value found in the specification, C is in farads and $\omega = 2\pi f$. V or I are assumed to be known.

In applications where sinewaves occur, we have to take for V the RMS-voltage or for I the RMS-current of the sinewave.

In applications where periodic signals occur, the signal has to be expressed in Fourier-terms:

$$V = V_0 + \sum_{k=1}^{\infty} V_k \times \sin(k\omega t + \phi_k) \qquad I = \sum_{k=1}^{\infty} I_k \times \sin(k\omega t + \phi_k)$$

with V_0 (the DC voltage), V_k and I_k (the voltage and current of the k-th harmonic, respectively) the formula for the dissipated power becomes:

$$P = \sum_{k=1}^{\infty} I_k \times \omega \times C \times \tan\delta_k \times \frac{V_k^2}{2} \qquad P = \sum_{k=1}^{\infty} \frac{\tan\delta_k \times I_k^2}{2 \times k \times \omega \times C}$$

and $\tan\delta_k$ is the $\tan\delta$ at the k-th harmonic.

TEST INFORMATION

Robustness of terminations

TENSILE (Ua_1) (LOAD IN LEAD AXIS DIRECTION)

Lead diameter 0.5, 0.6 and 0.8 mm: load 10 N, 10 s
Lead diameter 1.0 mm: load 20 N, 20 s

BENDING (Ub)

Lead diameter 0.5, 0.6 and 0.8 mm: load 5 N, 4 × 90°
Lead diameter 1.0 mm: load 10 N, 4 × 90°

TORSION (Uc) (FOR AXIAL CAPACITORS ONLY)

Severity 1: three rotations of 360°
Severity 2: two rotations of 180°

Rapid change of temperature (Na)

The rapid change of temperature test is intended to determine the effect on capacitors of a succession of temperature changes and consists of 5 cycles of 30 minutes at lower category temperature and 30 minutes at higher category temperature.

Dry heat (Ba)

This test determines the ability of the capacitors to be used or stored at high temperature. The standard test is 16 hours at upper category temperature.

Damp heat cyclic (Db)

This test determines the suitability of capacitors for use and storage under conditions of high humidity combined with cyclic temperature changes and, in general, producing condensation on the surface of the capacitor.
One cycle consists of 24 hours exposure to 55℃ and 95 to 100% relative humidity (RH).

Cold (Aa)

This test determines the ability of the capacitors to be used or stored at low temperature. The standard test is 2 hours at the lower category temperature.

Damp heat steady state (Ca)

This test determines the suitability of capacitors for use and storage under conditions of high humidity.
The test is primarily intended to observe the effects of high humidity at constant temperature over a specified period.
The capacitors are exposed to a damp heat environment which is maintained at a temperature of 40℃ and a RH of 90 to 95% for the number of days specified by the third set of digits of the climatic category code.

Soldering

With regard to the resistance to soldering heat and the solderability, our products comply with “IEC60384-1” and the additional type specifications.

Solvent resistance of components

Soldered capacitors may be cleaned using appropriate cleansing agents, such as alcohol, fluorohydrocarbons or their mixtures. Solvents or cleansing agents based on chlorohydrocarbons or ketones should not be used, as they may attack the capacitor or the encapsulation.
After cleaning it is always recommended to dry the components carefully and completely.

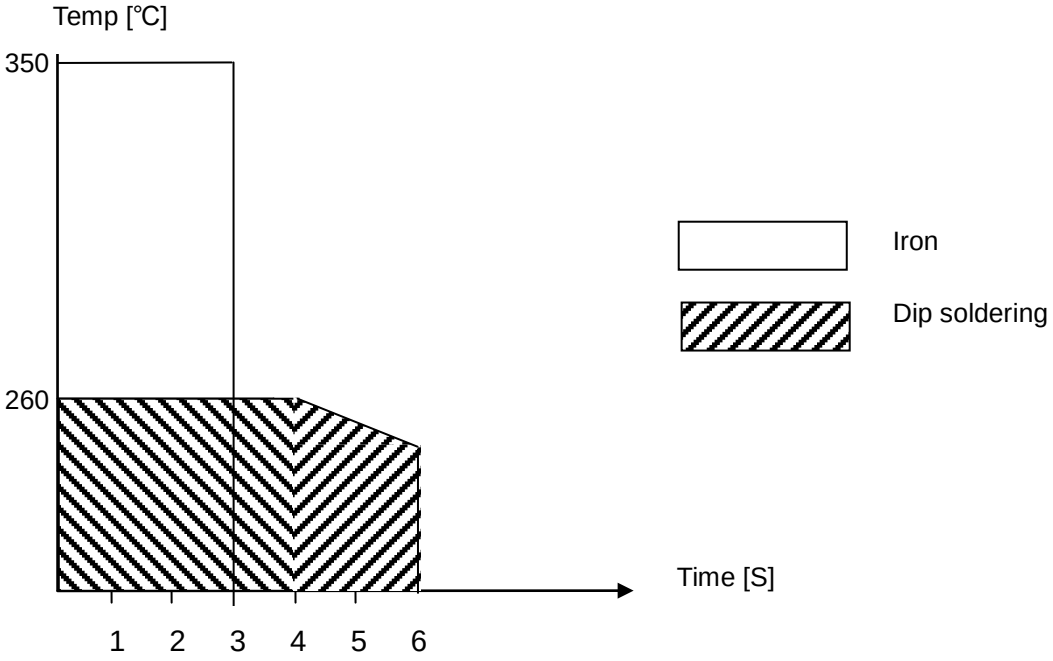
OTHER CAUTIONS

Soldering conditions

- Heat resisting temperature
  MKT : 160℃ KP/MKP : 110℃

  When mounting, set the soldering temperature so that the capacitor inside peak temperature is to be lower than the given above heat resisting temperature.

- Preheating temp : Max 110℃, 1min



[If dipping a capacitor into solder twice, the second dipping shall be carried after the capacitor itself has returned to normal temperature]

Not passing through adhesive curing oven in order to fix the SMD parts in combination with leads parts.
- Not reflow soldering by combine the lead parts with SMD parts.

When cleaning right after soldering, make sure the capacitor surface temperature is lower than 50℃

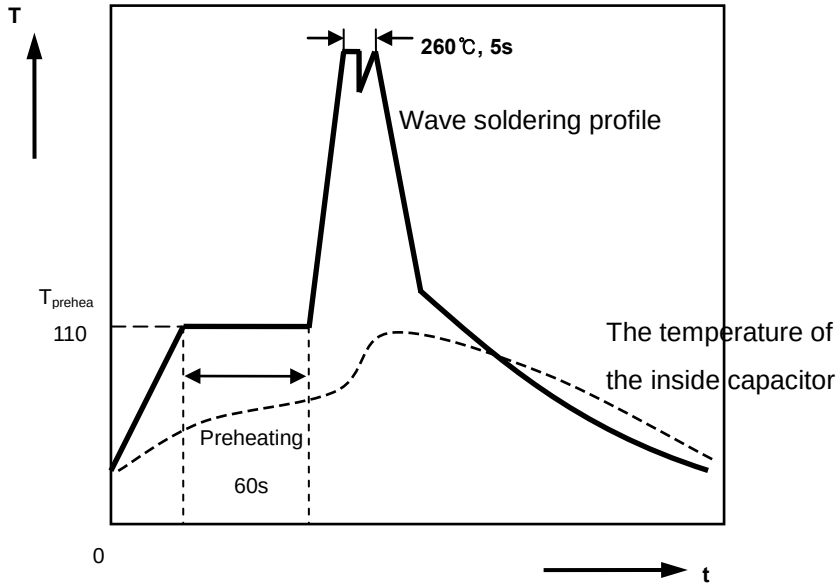
General notes on soldering

Long exposure to temperatures above this type-related temperature limit can lead to changes in the plastic dielectric and thus change irreversibly a capacitor's electrical characteristics. For short exposures (as in practical soldering processes) the heat load (and thus the possible effects on a capacitor) will also depend on other factors like:

- Pre-heating temperature and time
- Forced cooling immediately after soldering
- Terminal characteristics: diameter, length, thermal resistance, special configurations
- Height of capacitor above solder bath
- Shadowing by neighboring components
- Additional heating due to heat dissipation by neighboring components
- Use of solder-resist coatings

The overheating associated with some of these factors can usually be reduced by suitable countermeasures. For example, if a pre-heating step cannot be avoided, an additional or reinforced cooling process may possibly have to be included.

Recommended wave soldering profile

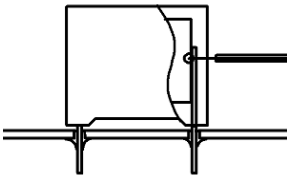


1. The maximum set-up temperature of the soldering process

Maximum preheat temperature	Maximum peak soldering temperature
110℃	260℃

2. The maximum temperature of the inside capacitor:
   Set the temperature so that inside the element the maximum temperature is below the limit:-

Maximum temperature measured inside the element
110℃



Changes in capacitance value over time

The capacitor characteristics change depending on its ambient conditions and environmental conditions. In natural conditions, there is a certain capacitance change due to permeation of humidity in the air. The degree of such capacitance changes varies with the dielectric material, coating material, and structure.

Buzz noise

Any buzz noise produced by the film capacitor is caused by the vibration of the film due to the Coulomb force that is generated between the electrodes with opposite polarity. Buzz noise becomes louder if the applied voltage waveform presents distortion and/or high frequency harmonics. Buzz noise does not affect the capacitor structure, nor its electrical characteristics or reliability.

Selection guide for across the line

The approved series by UL, ENEC, CQC, KC and so on should be selected for across the line, line bypass or antenna coupling purpose in the circuit.

Legal notice

These described information given by PILKOR are as accurate as possible but, being given for general and typical information.

PILKOR shall not be liable for any defect which is due to accident, improper handling, improper use, improper operation or any other default on the part of any person other than PILKOR.

These described products in this data book, are not designed for use in medical, life-saving, or life-sustaining applications.

SELECTION GUIDE

Film Capacitor Selection Guide

	Dielectric	Style		Type	Application	Page
Metallized Polyester Film Capacitors	Metallized Polyester	MKT	(Dipped)	PCMT 365/366/367	・Blocking ・Coupling ・Bypass ・Energy reservoir	19
		MKT	(Box)	PCMT 468		20
EMI Suppression Film Capacitors	Metallized Polypropylene	MKP	(Box)	PCX2 339 (MINI) (X2)	・SMPS ・EMI Filters ・E – Ballast ・Dom. Appliance	21
				PCX2 339 (X2)		
				PCX2 337 (MINI) (X2)		
				PCX2 337 (X2)		
				PCX1 331 (440Vac) (X1)	・Industrial	22
				PCX1 331 (480Vac) (X1)		
				PCY2 130 (Y2)	・SMPS ・EMI Filters	
				PCRC 420 (RC Unit)	・Noise Suppressor ・Spark Quenching	23
Series Impedance Capacitors	Metallized Polyester	MKT	(Box)	PCX2 347	・capacitive power supply	24
Metallized Polypropylene Film Capacitors	Metallized Polypropylene	MKP	(Box)	PCMP 389	・High Frequency ・High Current	25
	Double Side Metallized Polypropylene	MMKP	(Box)	PCMP 384	・High Frequency ・High Pulse ・High Current	26
PFC Input Capacitors	Metallized Polypropylene	MKP	(Box)	PCMP 372	・PFC Input	27
		MKP	(Box)	PCMP 352	・PFC Input	
Power Electronic Capacitors	Metallized Polypropylene	MMKP	(Box)	PCPW 237	・Snubber Capacitor For IGBT	28
		MMKP	(Box)	PCPW 238	・Snubber Capacitor For IGBT ・SMPS	29
		MKP	(Box)	PCPW 226	・DC-Link ・Switching Applications	30
		MKP (pattern Film)	(Box)	PCPW 246	・DC-Link (High cap. Density) ・HEV/EV LDC, OBC ・Inverter circuit in appliances	31
		MKP	(Box)	PCPW 255	・Output AC filtering ・Solar inverters ・Motor drivers ・Automotive	32
	Metallized Polyester	MKT	(Box)	PCPW 223	・Blocking ・Coupling ・Bypass ・Filtering ・Energy reservoir ・Automotive	33
DC-Link For Automotive	Metallized Polypropylene	MKP (pattern Film)	Customized (Bus-plate)	PCHM 912	・Inverter DC-Link (Automotive & Renewable energy)	34

Metallized Polyester — Selection Guide

	PCMT 365/366/367									
	Page 37									
										
Dielectric	metallized polyester									
Encapsulation	epoxy lacquered (dipped)									
Qualified to Approvals	IEC 60384-2									
Climatic category	55/105/56									
Packaging	loose ; taped									
Tolerance	± 5% ; ± 10%									
Capacitance(μF)	V_{Rdc} (V)									
(*)	**63**		**100**		**250**		**400**		**630**	
0.001										
0.0015										
0.0022										
0.0033										
0.0047										
0.0068										
0.01			5.08				5.08	7.62	5.08	7.62
0.015										
0.022					5.08	7.62				
0.033										
0.047	5.08			7.62						
0.068										
0.1		7.62								
0.15										
0.22										
0.33										
0.47										
0.68										
1.0										
1.5										
2.2										
3.3										
4.7										
6.8										
10										
15										

(*) Intermediate values of E12 series are also available

Pitch size (mm) :

Metallized Polyester — Selection Guide

	PCMT 468
	Page 67
	
Dielectric	metallized polyester
Encapsulation	potted with epoxy resin
Qualified to Approvals	IEC 60384-2
Climatic category	55/105/56
Packaging	loose ; taped
Tolerance	± 5% ; ± 10%

Capacitance(µF)	V_{Rdc} (V)																			
(*)	100				250				400				630				1000			
0.001																	10.0			
0.0012																				
0.0015																				
0.0018																				
0.0022																				
0.0033																				
0.0047																				
0.0068																				
0.0082																				
0.01									10.0				10.0					15.0		
0.012																				
0.015																				
0.018																				
0.022																				
0.033																				
0.047														15.0						
0.068																			22.5	
0.082																				
0.1					10.0					15.0										
0.12																				
0.15																				
0.18																				
0.22	10.0					15.0									22.5					27.5
0.33																				
0.47											22.5									
0.68																				
0.82		15.0					22.5									27.5				
1.0																				
1.2												27.5								
1.5																				
1.8																				
2.2																				
3.3			22.5					27.5												
4.7																				
6.8																				
8.2																				
10																				
12																				

(*) Intermediate values of E12 series are also available

Pitch size (mm) :

EMI Suppression — Selection Guide

	PCX2 339	PCX2 337
	Page 83	Page 99
		
Class	X2	
Dielectric	metallized polypropylene	
Encapsulation	potted with epoxy resin	
Qualified to Approvals	IEC 60384-14 and EN 60384-14	
Climatic category	55/110/21 55/105/21	40/105/21 40/100/21
tanδ (10kHz)	≤ 70 X 10^{-4}	≤ 70 X 10^{-4}
Rins for C ≤ 330nF **RC for C > 330nF**	>15 000 MΩ >5 000 s	>15 000 MΩ >5 000 s
Pulse slop at V_R	100 V/μs	100 V/μs
Packaging	loose ; taped	loose ; taped
Tolerance	± 10% ; ± 20%	± 10% ; ± 20%
Capacitance(μF)	V_{Rac} (V)	V_{Rac} (V)
(*)	305	275
0.001	10.0	
0.0015		
0.0022		
0.0033		
0.0047		
0.0068		
0.01	15.0	10.0
0.015		
0.022		
0.033		
0.047		
0.068		
0.1		
0.15		
0.22	22.5	15.0
0.33		
0.47		
0.68	27.5	22.5
1.0		
1.5		
2.2	37.5	27.5
3.3		
4.7		
6.8		
10		

(*) Intermediate values of E6 series are also available

Pitch size (mm) :

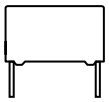
EMI Suppression — Selection Guide

	PCX1 331		PCY2 130
	Page 115	Page 123	Page 131
			
Class	X1		Y2
Dielectric	metallized polypropylene		
Encapsulation	potted with epoxy resin		
Qualified to Approvals	IEC 60384-14 and EN 60384-14		
Climatic category	55/105/21	55/110/21	55/105/21
tanδ (10kHz)	≤ 70 X 10^{-4}		≤ 20 X 10^{-4}
Rins for C ≤ 330nF RC for C > 330nF	>15 000 MΩ >5 000 s		>15 000 MΩ >5 000 s
Pulse slop at V_R	100 V/μs		100 V/μs
Packaging	loose ; taped		loose ; taped
Tolerance	± 10% ; ± 20%		± 10% ; ± 20%
Capacitance(μF)	V_{Rac} (V)		V_{Rac} (V)
(*)	440	480	300
0.001			10.0
0.0015			10.0
0.0022			10.0
0.0033			10.0
0.0047			10.0
0.0068			15.0
0.01	15.0	15.0	15.0
0.015	15.0	15.0	15.0
0.022	15.0	15.0	15.0
0.033	15.0	15.0	15.0
0.047	15.0	15.0	22.5
0.068	22.5	15.0	22.5
0.1	22.5	22.5	22.5
0.15	22.5	22.5	22.5
0.22	27.5	22.5	27.5
0.33	27.5	27.5	27.5
0.47	27.5	27.5	27.5
0.68	27.5	27.5	27.5
1.0	27.5	37.5	27.5
1.5	27.5	37.5	27.5
2.2	27.5	37.5	27.5
3.3	27.5	37.5	27.5
4.7	27.5	37.5	27.5

(*) Intermediate values of E6 series are also available

Pitch size (mm) :

RC Unit — Selection Guide

		PCRC 420	
		Page 139	
			
Class		X2, RC unit	
Dielectric		metallized polypropylene	
Encapsulation		potted with epoxy resin	
Qualified to Approvals		IEC 60384-14	
Climatic category		40/085/21	
R_{ins} for C ≤ 1uF		> 30 000 MΩ	
Packaging		loose ; taped	
Tolerance		C-tol ; ± 20% & R-tol ; ± 10%	
Capacitance(μF)	Combinating Resistance(Ω)	V_{Rdc} (V)	
		250	
0.033	22	15.0	
	47		
	120		
0.047	22		
	47		
	120		
0.068	22		
	47		
	120		
0.1	22		17.5
	47		
	120		
0.15	22		
	47		
	120		
0.22	22		
	47		
	120		

Pitch size (mm) :

Series Impedance — Selection Guide

	PCX2 347			
	Page 149			
				
Class	X2			
Dielectric	metallized polyester			
Encapsulation	potted with epoxy resin			
Qualified to Approvals	IEC 60384-14 and UL60384-14			
Climatic category	55/110/56			
tanδ (10kHz)	≤ 150 X 10^{-4}			
Rins for C ≤ 330nF **RC for C > 330nF**	>15 000 MΩ >5 000 s			
Pulse slop at V_R	100 V/μs			
Packaging	loose ; taped			
Tolerance	± 10% ; ± 20%			
Capacitance(μF)	V_{Rac} (V)			
(*)	310			
0.01	10.0			
0.015				
0.022				
0.033				
0.047				
0.068				
0.1		15.0		
0.15				
0.22				
0.33			22.5	
0.47				27.5
0.68				
1.0				
1.5				
2.2				

(*) Intermediate values of E6 series are also available

Pitch size (mm) :

Metallized Polypropylene — Selection Guide

	PCMP 389
	Page 157
	
Dielectric	metalized polypropylene
Encapsulation	potted with epoxy resin
Qualified to Approvals	IEC 60384-17
Climatic category	55/105/56
Packaging	loose ; taped
Tolerance	± 5%
Capacitance(μF)	V_{Rdc} (V)

(*)	250	400	630	1000	1250	1600	2000
0.00082							15.0
0.0010							
0.0022				10.0	10.0		
0.0039							
0.0047						15.0	
0.0056				15.0	15.0		
0.0068							
0.0082							
0.01			10.0				
0.012							
0.015							
0.018							
0.022		10.0					
0.027			15.0	22.5	22.5		
0.033							
0.039				27.5	27.5		
0.047	10.0	15.0					
0.056							
0.068							
0.082			22.5				
0.1	15.0						
0.12							
0.15		22.5					
0.18							
0.22			27.5				
0.27							
0.33							
0.39							
0.47							
0.56	22.5						
0.68		27.5					
0.82							
1.0							
1.2							
1.5							
1.8	27.5						
2.2							
2.7							
3.3							
3.9							

(*) Intermediate values of E24 series are also available

Pitch size (mm) :

Metallized Polypropylene — Selection Guide

PCMP 384

Page 181

Dielectric	double side polyester carrier and polypropylene
Encapsulation	potted with epoxy resin
Qualified to Approvals	IEC 60384-17 / 16
Climatic category	55/105/56
Packaging	loose ; taped
Tolerance	± 5% ; ± 10%

Capacitance(µF) (*)	V_{Rdc} (V) 250	400	630 ($250V_{Rac}$)	630 ($400V_{Rac}$)	800	1000	1250	1600	2000 ($680V_{Rac}$)	2000 ($700V_{Rac}$)	2500
0.00022						15.0		15.0		15.0	
0.00047						10.0					
0.00068											
0.00082											
0.001				10.0					15.0		22.5
0.0018											
0.0022											
0.0033						15.0					
0.0039								22.5			
0.0047			10.0						22.5		
0.0056				10.0							
0.0068											
0.0082											
0.01	10.0	10.0	10.0		15.0	15.0	15.0				
0.012											
0.015											
0.018											
0.022			15.0	15.0							
0.027											
0.033											
0.039		15.0						27.5			
0.047				15.0		22.5					
0.056							22.5				
0.068	15.0				22.5						
0.082											
0.1				22.5							
0.12					27.5	27.5					
0.15											
0.18											
0.22											
0.27				27.5							
0.33											
0.39											
0.47											
0.56											
0.68											
0.82											

(*) Intermediate values of E24 series are also available

Pitch size (mm) :

PFC Input — Selection Guide

	PCMP 372	PCMP 352
	Page 209	Page 217
		
Dielectric	metalized polypropylene	metalized polypropylene
Encapsulation	potted with epoxy resin	potted with epoxy resin
Qualified to Approvals	IEC 60384-16	IEC 60384-16
Climatic category	40/105/21	40/105/21
Packaging	loose ; taped	loose ; taped
Tolerance	± 5% ; ± 10%	± 5% ; ± 10%
Capacitance(μF)	V_{Rdc} (V)	V_{Rdc} (V)
(*)	450 mini / 500 mini / 630 mini	450
0.022	10.0	10.0
0.033	10.0	10.0
0.047	10.0	10.0
0.068	10.0	10.0
0.082	10.0	10.0
0.1	10.0	15.0
0.15	10.0	15.0
0.22	15.0	15.0
0.33	15.0	15.0
0.47	22.5	22.5
0.56	22.5	22.5
0.68	22.5	22.5
0.82	22.5	22.5
1.0	22.5	22.5
1.2	22.5	22.5
1.5	22.5	22.5
2.2	22.5	22.5

(*) Intermediate values of E6 series are also available

Pitch size (mm) :

	PCPW 237				
	Page 229				
					
Dielectric	double side polyester carrier and polypropylene				
Encapsulation	potted with epoxy resin				
Qualified to Approvals	IEC 60384-16 / IEC 61071				
Climatic category	40/105/56				
Packaging	arrange				
Tolerance	± 5% ; ± 10%				
Capacitance(μF)	V_{Rdc} (V)				
	850	1000	1250	1600	850
0.33				37.5	
0.47					
0.56					37.5
0.68			37.5		
1.0		37.5			52.5
1.5	37.5			52.5	
2.0			52.5		
2.2					
3.3		52.5			
4.7	52.5				

Pitch size (mm) :

	PCPW 238									
	Page 237									
										
Dielectric	double side polyester carrier and polypropylene									
Encapsulation	potted with epoxy resin									
Qualified to Approvals	IEC 60384-16 / IEC 61071									
Climatic category	40/105/56									
Packaging	arrange									
Tolerance	± 5% ; ± 10%									
Capacitance(μF)	V_{Rdc} (V)									
	850		1000		1250		1600		2000	
	2-pin	4-pin	2-pin	4-pin	2-pin	4-pin	2-pin	4-pin	2-pin	4-pin
0.15									32.5	
0.18							32.5			
0.20										
0.22					32.5				37.5	
0.30										
0.33							37.5			37.5
0.47			32.5					37.5		
0.56										
0.68	32.5				37.5	37.5				
0.82										
1.0			37.5	37.5						
1.5	37.5	37.5								
2.2										
3.3										

Pitch size (mm) :

	PCPW 226							
	Page 245							
								
Dielectric	metalized polypropylene							
Encapsulation	potted with epoxy resin							
Qualified to Approvals	IEC 60384-16 / IEC 61071							
Climatic category	40/105/56							
Packaging	loose ; arrange							
Tolerance	± 5% ; ± 10%							
Capacitance(μF)	V_{Rdc} (V)							
	250		450		630		900	
1.0	27.5		27.5		27.5		27.5	
1.5								
2.0								
2.2								
3.0								
3.3				37.5				37.5
3.9								
4.7								
5.0						37.5		
5.6								
6.8								
8.0								
10								
15		37.5						
20								
22								
30								
33								
39								

Pitch size (mm) :

	PCPW 246
	Page 253
	
Dielectric	metallized polypropylene
Encapsulation	potted with epoxy resin
Qualified to Approvals	IEC 60384-16 / IEC 61071
Climatic category	40/105/56
Packaging	arrange
Tolerance	± 5%

Capacitance(μF)	V_{Rdc} (V)															
	450				700				900				1100			
	2-pin		4-pin		2-pin		4-pin		2-pin		4-pin		2-pin		4-pin	
1									27.5				27.5			
2					27.5											
3																
4	27.5															
5														37.5	27.5	
6															37.5	
7																
8										37.5	27.5					
9											37.5					
10						37.5	27.5									
12							37.5									52.5
15												52.5				
18																
20		37.5	27.5													
22			37.5													
25																
30																
35																
40								52.5								
45																
50																
55																
60				52.5												
75																
100																
110																
120																
130																
140																
150																

Pitch size (mm) :

Power Electronic — Selection Guide

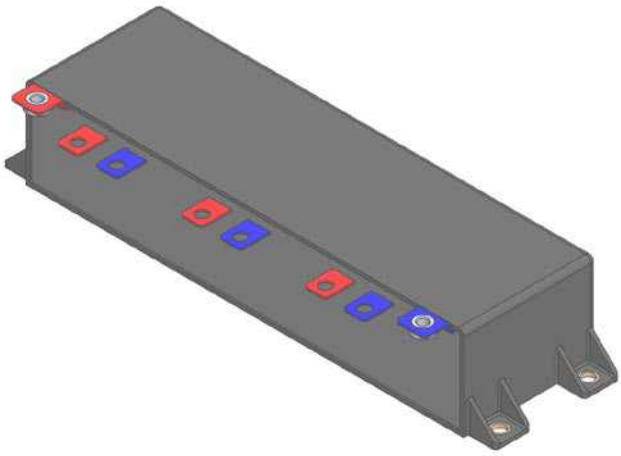
	PCPW 255
	Page 263
	
Dielectric	metalized polypropylene
Encapsulation	potted with epoxy resin
Qualified to Approvals	IEC 61071
Climatic category	40/85/56
Packaging	loose ; arrange
Tolerance	± 5% ; ± 10%

Capacitance(µF)	V_{Rac} (V)												
	250 ($500V_{Rdc}$)			300 ($550V_{Rdc}$)			350 ($630V_{Rdc}$)			400 ($700V_{Rdc}$)			450 ($900V_{Rdc}$)
	2-pin	2-pin 4-pin	4-pin	2-pin	2-pin 4-pin	4-pin	2-pin	2-pin 4-pin	4-pin	2-pin	2-pin 4-pin	4-pin	2-pin 4-pin
1.0										27.5			
1.5							27.5						
2.0				27.5									
2.5	27.5												
2.8													
3.0													
3.5													
3.6													
4.0													37.5
5.0											37.5		
6.0													
7.0													
7.5													
8.0								37.5					
8.5													
9.0					37.5								
9.5													
10.0													
11.0													
12.0		37.5											
13.0													
14.0													
15.0													
17.0													
18.0												52.5	
19.0													
20.0													
22.0													
24.0									52.5				
25.0													
28.0													
30.0						52.5							
35.0													
40.0			52.5										
45.0													
55.0													

Pitch size (mm) :

	PCPW 223				
	Page 273				
					
Dielectric	metalized polyester				
Encapsulation	potted with epoxy resin				
Qualified to Approvals	IEC 60384-2				
Climatic category	40/105/21				
Packaging	loose				
Tolerance	± 10%				
Capacitance(μF)	V_{Rdc} (V)				
	35			100	
2.2	15.0			15.0	
3.3					
4.7					
5.6					
6.8					
8.2					
9.4					
19.0		20.0	22.5		22.5
22.0					

Pitch size (mm) :

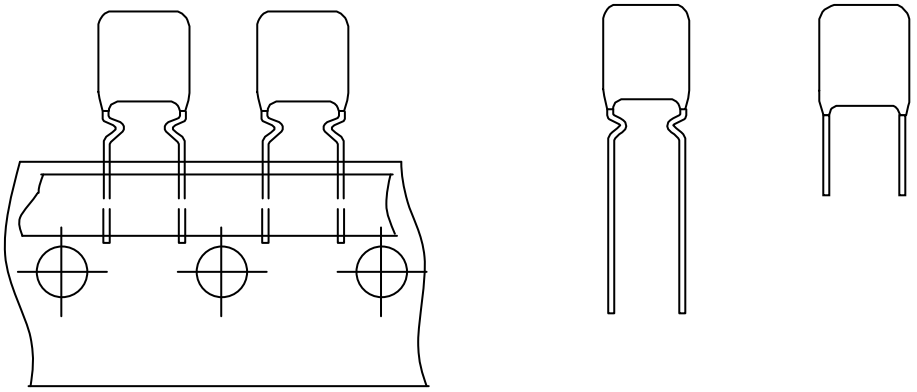
	PCHM 912
	Page 281
	
Dielectric	metallized polypropylene
Capacitance Range (uF)	< 5000uF (customer specific design)
Tolerance	± 5%
Rated Voltage (Vdc)	450 ~ 1100Vdc
Qualified to Approvals	IEC 61071
Operating temperature range	-40℃ ~ 105℃
Climatic category	40/105/56
Rated current	< 400Arms
Self inductance	< 20nH at 1MHz
Packaging	User specific

METALLIZED POLYESTER FILM CAPACITORS

Metallized Polyester film capacitors

PCMT 365/366/367

MKT RADIAL LACQUERED CAPACITORS (Dipped Type) - Orange **Pitch 5.0/7.5mm**



365 **366** **367**

QUICK REFERENCE DATA

Capacitance range (E12 series)	0.001 to 1.0μF
Capacitance tolerance	±10%, ±5%
Rated voltage V_{Rdc}	63 V, 100 V, 250 V, 400 V, 630V
Rated voltage V_{Rac}	40 V, 63 V, 160 V, 220 V, 250V
Climatic category	55/105/56
Temperature range	-55℃ ~ +105℃
Reference specification	IEC 60384-2
Performance grade	Grade 1 (long life)
Coating material	Qualified in accordance with UL94V-0

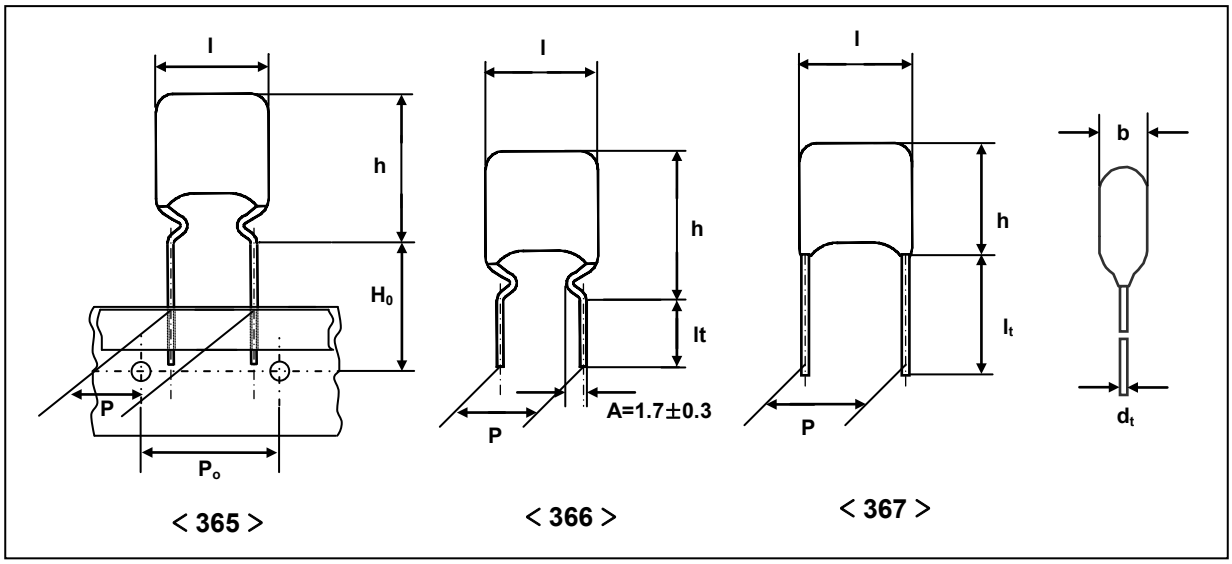
FEATURES	APPLICATIONS
. Low inductive wound cell of metallized (PETP) film . Cell protected by epoxy lacquer . Radial leads of tin coated wire . Withstand to solvents and rinsing liquids	. Blocking and coupling . Bypass and energy reservoir application

• 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.

Metallized Polyester film capacitors

PCMT 365/366/367

Ordering Information



PCMT XXX X X XXX

Type

Series
365
366
367

Capacitance

Code	I_{max}	Voltage
1	10.0	63V
2		100V
4		250V
5		400V
6		630V
7	7.5	63V
8		100V

Available versions						Product(I_{max})	
Series	Code	Packing Method	C-tol.	Lead length & Height	Hole to hole (P_o)	7.5	10.0
						Pitch (P)	
365	1	Taped on reel	±10%	H_0 = 16mm	12.7mm	5.08	5.08
	2	Taped on reel	± 5%	H_0 = 16mm	12.7mm	5.08	5.08
	5	Ammopack	±10%	H_0 = 16mm	12.7mm	5.08	5.08
	6	Ammopack	± 5%	H_0 = 16mm	12.7mm	5.08	5.08
366	1	Loose in box	±10%	lt = 17±4mm	-	5.08	7.62
	2	Loose in box	± 5%	lt = 17±4mm	-	5.08	7.62
	5	Loose in box	±10%	lt = 4+1/-0.5mm	-	5.08	7.62
	6	Loose in box	± 5%	lt = 4+1/-0.5mm	-	5.08	7.62
367	1	Loose in box	±10%	lt = 22±4mm	-	5.08	7.62
	2	Loose in box	± 5%	lt = 22±4mm	-	5.08	7.62
	5	Loose in box	±10%	lt = 4+1/-0.5mm	-	5.08	7.62
	6	Loose in box	± 5%	lt = 4+1/-0.5mm	-	5.08	7.62

Metallized Polyester film capacitors

PCMT 365/366/367

Packing Information

SERIES	SMALLEST PACKAGING QUANTITIES (SPQ)	reel	ammopack
	DIMENSIONS	SPQ	SPQ
365	3.5 x 12.5 x 7.5	1500	1500
	4.0 x 13.0 x 7.5	1500	1500
	4.5 x 13.5 x 7.5	1000	1000
	5.0 x 14.0 x 7.5	1000	1000
	5.5 x 14.5 x 7.5	1000	1000
	6.0 x 15.0 x 7.5	1000	1000
	6.0 x 15.5 x 7.5	1000	1000
	4.0 x 13.5 x 10.0	1500	1500
	4.0 x 15.0 x 10.0	1500	1500
	4.5 x 14.0 x 10.0	1000	1000
	4.5 x 14.0 x 10.5	1000	1000
	4.5 x 15.5 x 10.0	1000	1000
	5.0 x 14.5 x 10.0	1000	1000
	5.0 x 14.5 x 10.5	1000	1000
	5.0 x 16.0 x 10.0	1000	1000
	5.5 x 15.0 x 10.0	1000	1000
	5.5 x 15.0 x 10.5	1000	1000
	5.5 x 16.5 x 10.0	1000	1000
	6.0 x 15.5 x 10.0	1000	1000
	6.0 x 15.5 x 10.5	1000	1000
	6.0 x 16.5 x 10.0	1000	1000
	6.5 x 17.0 x 10.0	1000	1000

SERIES	SMALLEST PACKAGING QUANTITIES (SPQ)	lt = 17±4mm	lt = 4+1/-0.5mm
	DIMENSIONS	SPQ	SPQ
366	All dimensions	1000	1000

SERIES	SMALLEST PACKAGING QUANTITIES (SPQ)	lt = 22±4mm	lt = 4+1/-0.5mm
	DIMENSIONS	SPQ	SPQ
367	All dimensions	1000	1000

Metallized Polyester film capacitors

PCMT 365

V_{Rdc} = 63 V **V_{Rac} = 40 V~** **taped versions**

Cap (µF)	b_{max} x h_{max} x l_{max} (mm)	mass (g)	CATALOGUE NUMBER			
			PCMT 365			
			taped on reel		ammopack	
			H = 16 mm		H = 16 mm	
			C-tol. ±10%	C-tol. ±5%	C-tol. ±10%	C-tol. ±5%
Pitch = 5.08 ± 0.3 mm dt = 0.5 mm (+ 0.05 / - 0.05)						
0.047	3.5 x 12.5 x 7.5	0.3	71473	72473	75473	76473
0.056			71563	72563	75563	76563
0.068			71683	72683	75683	76683
0.082			71823	72823	75823	76823
0.1			71104	72104	75104	76104
0.12			71124	72124	75124	76124
0.15	4.0 x 13.0 x 7.5	0.3	71154	72154	75154	76154
0.18	4.5 x 13.5 x 7.5	0.3	71184	72184	75184	76184
0.22			71224	72224	75224	76224
0.27	5.0 x 14.0 x 7.5	0.4	71274	72274	75274	76274
0.33	5.5 x 14.5 x 7.5	0.4	71334	72334	75334	76334
0.39			71394	72394	75394	76394
0.47	6.0 x 15.5 x 7.5	0.4	71474	72474	75474	76474
0.56	5.5 x 14.0 x 7.5	0.4	71564	72564	75564	76564
0.68	5.5 x 14.5 x 7.5	0.4	71684	72684	75684	76684
0.82	6.0 x 15.0 x 7.5	0.5	71824	72824	75824	76824
1.0	6.0 x 15.5 x 7.5	0.5	71105	72105	75105	76105

SPECIFIC REFERENCE DATA FOR THE 63V DC CAPACITORS

Description	Value		
Tangent of loss angle (unit : 10^{-4})	at 1kHz	at 10kHz	at 100kHz
C ≤ 0.1µF	≤ 75	≤ 130	≤ 225
0.1µF < C ≤ 0.47µF	≤ 75	≤ 130	≤ 300
0.47µF < C ≤ 1.0µF	≤ 75	≤ 130	-
Rated voltage pulse slope$(dV/dt)_R$ at 63V (DC)	110 V/µs		
R between leads at 10V , for C ≤ 0.33µF	> 15 000 MΩ		
RC between leads at 10V, for C > 0.33µF	> 5 000 s		
R between interconnected leads and casing;100V ; 1min	> 30 000 MΩ		
Withstanding voltage DC (cut off current 10mA) ;rise time 100 V/s	100V ; 1min		

Metallized Polyester film capacitors

PCMT 365

V_{Rdc} = 100 V **V_{Rac} = 63 V~** **taped versions**

Cap (µF)	b_{max} x h_{max} x l_{max} (mm)	mass (g)	CATALOGUE NUMBER PCMT 365 ..... taped on reel H = 16 mm C-tol. ±10%	taped on reel H = 16 mm C-tol. ±5%	ammopack H = 16 mm C-tol. ±10%	ammopack H = 16 mm C-tol. ±5%
Pitch = 5.08 ± 0.3 mm			dt = 0.5 mm (+ 0.05 / - 0.05)			
0.01	3.5 x 12.5 x 7.5	0.3	81103	82103	85103	86103
0.012			81123	82123	85123	86123
0.015			81153	82153	85153	86153
0.018			81183	82183	85183	86183
0.022			81223	82223	85223	86223
0.027			81273	82273	85273	86273
0.033			81333	82333	85333	86333
0.039			81393	82393	85393	86393
0.047			81473	82473	85473	86473
0.056			81563	82563	85563	86563
0.068			81683	82683	85683	86683
0.082	4.0 x 13.0 x 7.5	0.3	81823	82823	85823	86823
0.1			81104	82104	85104	86104

SPECIFIC REFERENCE DATA FOR THE 100V DC CAPACITORS

Description	Value		
Tangent of loss angle (unit : 10^{-4})	at 1kHz	at 10kHz	at 100kHz
C ≤ 0.1µF	≤ 75	≤ 130	≤ 225
0.1µF < C ≤ 0.27µF	≤ 75	≤ 130	≤ 300
Rated voltage pulse slope$(dV/dt)_R$ at 100V (DC)	110 V/µs		
R between leads at 100V, for C ≤ 0.33µF	> 15 000 MΩ		
R between interconnected leads and casing;100V ; 1min	> 30 000MΩ		
Withstanding voltage DC (cut off current 10mA) ;rise time 100 V/s	160V ; 1min		

Metallized Polyester film capacitors

PCMT 365

V_{Rdc} = 63 V V_{Rac} = 40 V~ taped versions

Cap (µF)	b_{max} x h_{max} x l_{max} (mm)	mass (g)	CATALOGUE NUMBER			
			PCMT 365			
			taped on reel		ammopack	
			H = 16 mm		H = 16 mm	
			C-tol. ±10%	C-tol. ±5%	C-tol. ±10%	C-tol. ±5%
Pitch = 5.08 ± 0.3 mm dt = 0.5 mm (+ 0.05 / - 0.05)						
0.12	4.0 x 13.5 x 10.0	0.4	11124	12124	15124	16124
0.15			11154	12154	15154	16154
0.18			11184	12184	15184	16184
0.22			11224	12224	15224	16224
0.27	4.5 x 14.0 x 10.0	0.5	11274	12274	15274	16274
0.33	5.0 x 14.5 x 10.0	0.6	11334	12334	15334	16334
0.39			11394	12394	15394	16394
0.47	5.5 x 15.0 x 10.0	0.7	11474	12474	15474	16474
0.56			11564	12564	15564	16564
0.68			11684	12684	15684	16684
0.82			11824	12824	15824	16824
1.0			11105	12105	15105	16105

SPECIFIC REFERENCE DATA FOR THE 63V DC CAPACITORS

Description	Value		
Tangent of loss angle (unit : 10^{-4})	at 1kHz	at 10kHz	at 100kHz
C ≤ 0.1µF	≤ 75	≤ 130	≤ 225
0.1µF < C ≤ 0.47µF	≤ 75	≤ 130	≤ 300
0.47µF < C ≤ 1.0µF	≤ 75	≤ 130	-
Rated voltage pulse slope$(dV/dt)_R$ at 63V (DC)	18 V/µs		
R between leads at 10V , for C ≤ 0.33µF	> 15 000 MΩ		
RC between leads at 10V, for C > 0.33µF	> 5 000 s		
R between interconnected leads and casing;100V ; 1min	> 30 000 MΩ		
Withstanding voltage DC (cut off current 10mA) ;rise time 100 V/s	100V ; 1min		

Metallized Polyester film capacitors

PCMT 365

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

Cap (µF)	b_{max} x h_{max} x l_{max} (mm)	mass (g)	CATALOGUE NUMBER PCMT 365 ..... taped on reel H = 16 mm C-tol. ±10%	taped on reel H = 16 mm C-tol. ±5%	ammopack H = 16 mm C-tol. ±10%	ammopack H = 16 mm C-tol. ±5%
Pitch = 5.08 ± 0.3 mm dt = 0.5 mm (+ 0.05 / - 0.05)						
0.039	4.0 x 13.5 x 10.0	0.4	21393	22393	25393	26393
0.047			21473	22473	25473	26473
0.056			21563	22563	25563	26563
0.068			21683	22683	25683	26683
0.082			21823	22823	25823	26823
0.1			21104	22104	25104	26104
0.12	4.5 x 14.0 x 10.5	0.5	21124	22124	25124	26124
0.15	5.0 x 14.5 x 10.5	0.6	21154	22154	25154	26154
0.18			21184	22184	25184	26184
0.22	5.5 x 15.0 x 10.5	0.7	21224	22224	25224	26224
0.27	6.0 x 15.5 x 10.5	0.7	21274	22274	25274	26274
0.33			21334	22334	25334	26334
0.39			21394	22394	25394	26394
0.47			21474	22474	25474	26474

SPECIFIC REFERENCE DATA FOR THE 100V DC CAPACITORS

Description	Value		
Tangent of loss angle (unit : 10^{-4})	at 1kHz	at 10kHz	at 100kHz
C ≤ 0.1µF	≤ 75	≤ 130	≤ 225
0.1µF < C ≤ 0.47µF	≤ 75	≤ 130	≤ 300
Rated voltage pulse slope$(dV/dt)_R$ at 100V (DC)	36 V/µs		
R between leads at 100V , for C ≤ 0.33µF	> 15 000 MΩ		
RC between leads at 100V, for C > 0.33µF	> 5 000 s		
R between interconnected leads and casing;100V ; 1min	> 30 000 MΩ		
Withstanding voltage DC (cut off current 10mA) ;rise time 100 V/s	160V ; 1min		

Metallized Polyester film capacitors

PCMT 365

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

Cap (µF)	b_{max} x h_{max} x l_{max} (mm)	mass (g)	CATALOGUE NUMBER PCMT 365 ..... taped on reel H = 16 mm C-tol. ±10%	taped on reel H = 16 mm C-tol. ±5%	ammopack H = 16 mm C-tol. ±10%	ammopack H = 16 mm C-tol. ±5%
Pitch = 5.08 ± 0.3 mm dt = 0.5 mm (+ 0.05 / - 0.05)						
0.018	4.0 x 13.5 x 10.0	0.4	41183	42183	45183	46183
0.022			41223	42223	45223	46223
0.027			41273	42273	45273	46273
0.033			41333	42333	45333	46333
0.039			41393	42393	45393	46393
0.047			41473	42473	45473	46473
0.056			41563	42563	45563	46563
0.068			41683	42683	45683	46683
0.082	5.0 x 14.5 x 10.5	0.4	41823	42823	45823	46823
0.1			41104	42104	45104	46104
0.12	5.5 x 15.0 x 10.5	0.6	41124	42124	45124	46124
0.15	5.5 x 15.5 x 10.5	0.7	41154	42154	45154	46154

SPECIFIC REFERENCE DATA FOR THE 250V DC CAPACITORS

Description	Value		
Tangent of loss angle (unit : 10^{-4})	at 1kHz	at 10kHz	at 100kHz
C ≤ 0.1µF	≤ 75	≤ 130	≤ 225
0.1µF < C ≤ 0.47µF	≤ 75	≤ 130	≤ 300
Rated voltage pulse slope$(dV/dt)_R$ at 250V (DC)	70 V/µs		
R between leads at 100V, for C ≤ 0.33µF	> 30 000 MΩ		
R between interconnected leads and casing;100V ; 1min	> 30 000 MΩ		
Withstanding voltage DC (cut off current 10mA) ;rise time 100 V/s	400V ; 1min		

Metallized Polyester film capacitors

PCMT 365

V_{Rdc} = 400 V **V_{Rac} = 220 V~** **taped versions**

Cap (μF)	b_{max} x h_{max} x l_{max} (mm)	mass (g)	CATALOGUE NUMBER			
			PCMT 365			
			taped on reel		ammopack	
			H = 16 mm		H = 16 mm	
			C-tol. ±10%	C-tol. ±5%	C-tol. ±10%	C-tol. ±5%
Pitch = 5.08 ± 0.3 mm dt = 0.5 mm (+ 0.05 / - 0.05)						
0.010 0.012 0.015	4.0 x 13.5 x 10.0	0.4	51103 51123 51153	52103 52123 52153	55103 55123 55153	56103 56123 56153
0.018	4.0 x 15.0 x 10.0	0.4	51183	52183	55183	56183
0.022	4.5 x 15.5 x 10.0	0.4	51223	52223	55223	56223
0.027	5.0 x 16.0 x 10.0	0.4	51273	52273	55273	56273
0.033	5.5 x 16.5 x 10.0	0.4	51333	52333	55333	56333
0.039	6.0 x 16.5 x 10.0	0.4	51393	52393	55393	56393
0.047 0.056	6.5 x 17.0 x 10.0	0.4	51473 51563	52473 52563	55473 55563	56473 56563

SPECIFIC REFERENCE DATA FOR THE 400V DC CAPACITORS

Description	Value		
Tangent of loss angle (unit : 10^{-4})	at 1kHz	at 10kHz	at 100kHz
C ≤ 0.1μF	≤ 75	≤ 130	≤ 225
Rated voltage pulse slope$(dV/dt)_R$ at 400V (DC)	110 V/μs		
R between leads at 100V, for C ≤ 0.33μF	> 30 000 MΩ		
R between interconnected leads and casing;100V ; 1min	> 30 000 MΩ		
Withstanding voltage DC (cut off current 10mA) ;rise time 100 V/s	640V ; 1min		

Metallized Polyester film capacitors

PCMT 365

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

Cap (µF)	b_{max} x h_{max} x l_{max} (mm)	mass (g)	CATALOGUE NUMBER			
			PCMT 365			
			taped on reel		ammopack	
			H = 16 mm		H = 16 mm	
			C-tol. ±10%	C-tol. ±5%	C-tol. ±10%	C-tol. ±5%
Pitch = 5.08 ± 0.3 mm dt = 0.5 mm (+ 0.05 / - 0.05)						
0.010	5.0 x 14.5 x 10.0	0.4	61103	62103	65103	66103
0.012	5.5 x 15.0 x 10.0	0.4	61123	62123	65123	66123
0.015	6.0 x 15.5 x 10.0	0.5	61153	62153	65153	66153

SPECIFIC REFERENCE DATA FOR THE 630V DC CAPACITORS

Description	Value		
Tangent of loss angle (unit : 10^{-4})	at 1kHz	at 10kHz	at 100kHz
C ≤ 0.1µF	≤ 75	≤ 130	≤ 225
Rated voltage pulse slope$(dV/dt)_R$ at 630V (DC)	110 V/µs		
R between leads at 100V, for C ≤ 0.33µF	> 30 000 MΩ		
R between interconnected leads and casing;100V ; 1min	> 30 000 MΩ		
Withstanding voltage DC (cut off current 10mA) ;rise time 100 V/s	1008V ; 1min		

Metallized Polyester film capacitors

PCMT 366

V_{Rdc} = 63 V **V_{Rac} = 40 V~** **loose in box**

Cap (µF)	b_{max} x h_{max} x l_{max} (mm)	mass (g)	CATALOGUE NUMBER			
			PCMT 366			
			loose in box			
			lt = 17 ± 4 mm		lt = 4 +1/-0.5 mm	
			C-tol. ±10%	C-tol. ±5%	C-tol. ±10%	C-tol. ±5%
Pitch = 5.08 ± 0.3 mm dt = 0.5 mm (+ 0.05 / - 0.05)						
0.047	3.5 x 12.5 x 7.5	0.3	71473	72473	75473	76473
0.056			71563	72563	75563	76563
0.068			71683	72683	75683	76683
0.082			71823	72823	75823	76823
0.1			71104	72104	75104	76104
0.12			71124	72124	75124	76124
0.15	4.0 x 13.0 x 7.5	0.3	71154	72154	75154	76154
0.18	4.5 x 13.5 x 7.5	0.3	71184	72184	75184	76184
0.22			71224	72224	75224	76224
0.27	5.0 x 14.0 x 7.5	0.4	71274	72274	75274	76274
0.33	5.5 x 14.5 x 7.5	0.4	71334	72334	75334	76334
0.39			71394	72394	75394	76394
0.47	6.0 x 15.5 x 7.5	0.4	71474	72474	75474	76474
0.56	5.5 x 14.0 x 7.5	0.4	71564	72564	75564	76564
0.68	5.5 x 14.5 x 7.5	0.4	71684	72684	75684	76684
0.82	6.0 x 15.0 x 7.5	0.5	71824	72824	75824	76824
1.0	6.5 x 15.5 x 7.5	0.5	71105	72105	75105	76105

SPECIFIC REFERENCE DATA FOR THE 63V DC CAPACITORS

Description	Value		
Tangent of loss angle (unit : 10^{-4})	at 1kHz	at 10kHz	at 100kHz
C ≤ 0.1µF	≤ 75	≤ 130	≤ 225
0.1µF < C ≤ 0.47µF	≤ 75	≤ 130	≤ 300
0.47µF < C ≤ 1.0µF	≤ 75	≤ 130	-
Rated voltage pulse slope$(dV/dt)_R$ at 63V (DC)	110 V/µs		
R between leads at 10V , for C ≤ 0.33µF	> 15 000 MΩ		
RC between leads at 10V, for C > 0.33µF	> 5 000 s		
R between interconnected leads and casing;100V ; 1min	> 30 000 MΩ		
Withstanding voltage DC (cut off current 10mA) ;rise time 100 V/s	100V ; 1min		

Metallized Polyester film capacitors

PCMT 366

V_{Rdc} = 100 V **V_{Rac} = 63 V~** **loose in box**

Cap (µF)	b_{max} x h_{max} x l_{max} (mm)	mass (g)	CATALOGUE NUMBER			
			PCMT 366			
			loose in box			
			lt = 17 ± 4 mm		lt = 4 +1/-0.5 mm	
			C-tol. ±10%	C-tol. ±5%	C-tol. ±10%	C-tol. ±5%
Pitch = 5.08 ± 0.3 mm dt = 0.5 mm (+ 0.05 / - 0.05)						
0.01	3.5 x 12.5 x 7.5	0.3	81103	82103	85103	86103
0.012			81123	82123	85123	86123
0.015			81153	82153	85153	86153
0.018			81183	82183	85183	86183
0.022			81223	82223	85223	86223
0.027			81273	82273	85273	86273
0.033			81333	82333	85333	86333
0.039			81393	82393	85393	86393
0.047			81473	82473	85473	86473
0.056			81563	82563	85563	86563
0.068			81683	82683	85683	86683
0.082	4.0 x 13.0 x 7.5	0.3	81823	82823	85823	86823
0.1			81104	82104	85104	86104

SPECIFIC REFERENCE DATA FOR THE 100V DC CAPACITORS

Description	Value		
Tangent of loss angle (unit : 10^{-4})	at 1kHz	at 10kHz	at 100kHz
C ≤ 0.1µF	≤ 75	≤ 130	≤ 225
0.1µF < C ≤ 0.27µF	≤ 75	≤ 130	≤ 300
Rated voltage pulse slope$(dV/dt)_R$ at 100V (DC)	110 V/µs		
R between leads at 100V, for C ≤ 0.33µF	> 15 000 MΩ		
R between interconnected leads and casing;100V ; 1min	> 30 000 MΩ		
Withstanding voltage DC (cut off current 10mA) ;rise time 100 V/s	160V ; 1min		

Metallized Polyester film capacitors

PCMT 366

V_{Rdc} = 63 V **V_{Rac} = 40 V~** **loose in box**

Cap (µF)	b_{max} x h_{max} x l_{max} (mm)	mass (g)	CATALOGUE NUMBER			
			PCMT 366			
			loose in box			
			lt = 17 ± 4 mm		lt = 4 +1/-0.5 mm	
			C-tol. ±10%	C-tol. ±5%	C-tol. ±10%	C-tol. ±5%
Pitch = 7.62 ± 0.3 mm dt = 0.5 mm (+ 0.05 / - 0.05)						
0.12 0.15 0.18 0.22	4.0 x 12.0 x 10.0	0.4	11124 11154 11184 11224	12124 12154 12184 12224	15124 15154 15184 15224	16124 16154 16184 16224
0.27	4.5 x 13.0 x 10.5	0.5	11274	12274	15274	16274
0.33 0.39	5.0 x 13.5 x 10.5	0.6	11334 11394	12334 12394	15334 15394	16334 16394
0.47	5.5 x 14.0 x 10.5	0.7	11474	12474	15474	16474
0.56 0.68 0.82 1.0	5.5 x 14.5 x 10.5	0.8	11564 11684 11824 11105	12564 12684 12824 12105	15564 15684 15824 15105	16564 16684 16824 16105

SPECIFIC REFERENCE DATA FOR THE 63V DC CAPACITORS

Description	Value		
Tangent of loss angle (unit : 10^{-4})	at 1kHz	at 10kHz	at 100kHz
C ≤ 0.1µF	≤ 75	≤ 130	≤ 225
0.1µF < C ≤ 0.47µF	≤ 75	≤ 130	≤ 300
0.47µF < C ≤ 1.0µF	≤ 75	≤ 130	-
Rated voltage pulse slope$(dV/dt)_R$ at 63V (DC)	18 V/µs		
R between leads at 10V , for C ≤ 0.33µF	> 15 000 MΩ		
RC between leads at 10V, for C > 0.33µF	> 5 000 s		
R between interconnected leads and casing;100V ; 1min	> 30 000 MΩ		
Withstanding voltage DC (cut off current 10mA) ;rise time 100 V/s	100V ; 1min		

Metallized Polyester film capacitors

PCMT 366

V_{Rdc} = 100 V **V_{Rac} = 63 V~** **loose in box**

Cap (µF)	b_{max} x h_{max} x l_{max} (mm)	mass (g)	CATALOGUE NUMBER			
			PCMT 366			
			loose in box			
			lt = 17 ± 4 mm		lt = 4 +1/-0.5 mm	
			C-tol. ±10%	C-tol. ±5%	C-tol. ±10%	C-tol. ±5%
Pitch = 7.62 ± 0.3 mm dt = 0.5 mm (+ 0.05 / - 0.05)						
0.039 0.047 0.056 0.068 0.082	4.0 x 12.0 x 10	0.4	21393 21473 21563 21683 21823	22393 22473 22563 22683 22823	25393 25473 25563 25683 25823	26393 26473 26563 26683 26823
0.10	4.0 x 13.0 x 10.0	0.4	21104	22104	25104	26104
0.12	4.5 x 13.0 x 10.5	0.5	21124	22124	25124	26124
0.15	5.0 x 13.0 x 10.5	0.5	21154	22154	25154	26154
0.18	5.0 x 13.5 x 10.5	0.6	21184	22184	25184	26184
0.22	5.5 x 13.5 x 10.5	0.7	21224	22224	25224	26224
0.27	6.0 x 14.5 x 10.5	0.7	21274	22274	25274	26274
0.33 0.39 0.47	6.0 x 15.0 x 10.5	0.7	21334 21394 21474	22334 22394 22474	25334 25394 25474	26334 26394 26474

SPECIFIC REFERENCE DATA FOR THE 100V DC CAPACITORS

Description	Value		
Tangent of loss angle (unit : 10^{-4})	at 1kHz	at 10kHz	at 100kHz
C ≤ 0.1µF	≤ 75	≤ 130	≤ 225
0.1µF < C ≤ 0.47µF	≤ 75	≤ 130	≤ 300
Rated voltage pulse slope$(dV/dt)_R$ at 100V (DC)	36 V/µs		
R between leads at 100V, for C ≤ 0.33µF	> 15 000 MΩ		
RC between leads at 100V, for C > 0.33µF	> 5 000 s		
R between interconnected leads and casing;100V ; 1min	> 30 000 MΩ		
Withstanding voltage DC (cut off current 10mA) ;rise time 100 V/s	160V ; 1min		

Metallized Polyester film capacitors

PCMT 366

V_{Rdc} = 250 V V_{Rac} = 160 V~ loose in box

Cap (µF)	b_{max} x h_{max} x l_{max} (mm)	mass (g)	CATALOGUE NUMBER			
			PCMT 366			
			loose in box			
			lt = 17 ± 4 mm		lt = 4 +1/-0.5 mm	
			C-tol. ±10%	C-tol. ±5%	C-tol. ±10%	C-tol. ±5%
Pitch = 7.62 ± 0.3 mm dt = 0.5 mm (+ 0.05 / - 0.05)						
0.018	4.0 x 13.0 x 10.0	0.4	41183	42183	45183	46183
0.022			41223	42223	45223	46223
0.027			41273	42273	45273	46273
0.033			41333	42333	45333	46333
0.039			41393	42393	45393	46393
0.047			41473	42473	45473	46473
0.056			41563	42563	45563	46563
0.068			41683	42683	45683	46683
0.082	5.0 x 14.0 x 10.5	0.4	41823	42823	45823	46823
0.1			41104	42104	45104	46104
0.12	5.5 x 15.0 x 10.5	0.6	41124	42124	45124	46124
0.15	5.5 x 15.5 x 10.5	0.7	41154	42154	45154	46154

SPECIFIC REFERENCE DATA FOR THE 250V DC CAPACITORS

Description	Value		
Tangent of loss angle (unit : 10^{-4})	at 1kHz	at 10kHz	at 100kHz
C ≤ 0.1µF	≤ 75	≤ 130	≤ 225
0.1µF < C ≤ 0.47µF	≤ 75	≤ 130	≤ 300
Rated voltage pulse slope$(dV/dt)_R$ at 250V (DC)	70 V/µs		
R between leads at 100V, for C ≤ 0.33µF	> 30 000 MΩ		
R between interconnected leads and casing;100V ; 1min	> 30 000 MΩ		
Withstanding voltage DC (cut off current 10mA) ;rise time 100 V/s	400V ; 1min		

Metallized Polyester film capacitors

PCMT 366

V_{Rdc} = 400 V **V_{Rac} = 220 V~** **loose in box**

Cap (µF)	b_{max} x h_{max} x l_{max} (mm)	mass (g)	CATALOGUE NUMBER			
			PCMT 366			
			loose in box			
			lt = 17 ± 4 mm		lt = 4 +1/-0.5 mm	
			C-tol. ±10%	C-tol. ±5%	C-tol. ±10%	C-tol. ±5%
Pitch = 7.62 ± 0.3 mm dt = 0.5 mm (+ 0.05 / - 0.05)						
0.010 0.012 0.015	4.0 x 13.0 x 10.0	0.4	51103 51123 51153	52103 52123 52153	55103 55123 55153	56103 56123 56153
0.018	4.0 x 15.0 x 10.0	0.4	51183	52183	55183	56183
0.022	4.5 x 15.5 x 10.0	0.4	51223	52223	55223	56223
0.027	5.0 x 16.0 x 10.0	0.4	51273	52273	55273	56273
0.033	5.5 x 16.5 x 10.0	0.4	51333	52333	55333	56333
0.039	6.0 x 16.5 x 10.0	0.4	51393	52393	55393	56393
0.047	6.5 x 17.0 x 10.0	0.4	51473	52473	55473	56473
0.056	6.5 x 17.0 x 10.0	0.4	51563	52563	55563	56563

SPECIFIC REFERENCE DATA FOR THE 400V DC CAPACITORS

Description	Value		
Tangent of loss angle (unit : 10^{-4})	at 1kHz	at 10kHz	at 100kHz
C ≤ 0.1µF	≤ 75	≤ 130	≤ 225
Rated voltage pulse slope$(dV/dt)_R$ at 400V (DC)	110 V/µs		
R between leads at 100V, for C ≤ 0.33µF	> 30 000 MΩ		
R between interconnected leads and casing;100V ; 1min	> 30 000 MΩ		
Withstanding voltage DC (cut off current 10mA) ;rise time 100 V/s	640V ; 1min		

Metallized Polyester film capacitors

PCMT 366

V_{Rdc} = 630 V **V_{Rac} = 250 V~** **loose in box**

Cap (µF)	b_{max} x h_{max} x l_{max} (mm)	mass (g)	CATALOGUE NUMBER			
			PCMT 366			
			loose in box			
			lt = 17 ± 4 mm		lt = 4 +1/-0.5 mm	
			C-tol. ±10%	C-tol. ±5%	C-tol. ±10%	C-tol. ±5%
Pitch = 7.62 ± 0.3 mm dt = 0.5 mm (+ 0.05 / - 0.05)						
0.010	5.0 x 14.5 x 10.0	0.4	61103	62103	65103	66103
0.012	5.5 x 15.0 x 10.0	0.4	61123	62123	65123	66123
0.015	6.0 x 15.5 x 10.0	0.5	61153	62153	65153	66153

SPECIFIC REFERENCE DATA FOR THE 630V DC CAPACITORS

Description	Value		
Tangent of loss angle (unit : 10^{-4})	at 1kHz	at 10kHz	at 100kHz
C ≤ 0.1µF	≤ 75	≤ 130	≤ 225
Rated voltage pulse slope$(dV/dt)_R$ at 630V (DC)	110 V/µs		
R between leads at 100V, for C ≤ 0.33µF	> 30 000 MΩ		
R between interconnected leads and casing;100V ; 1min	> 30 000 MΩ		
Withstanding voltage DC (cut off current 10mA) ;rise time 100 V/s	1008V ; 1min		

Metallized Polyester film capacitors

PCMT 367

V_{Rdc} = 63 V V_{Rac} = 40 V~ loose in box

Cap (µF)	b_{max} x h_{max} x l_{max} (mm)	mass (g)	CATALOGUE NUMBER			
			PCMT 367			
			loose in box			
			lt = 22 ± 4 mm		lt = 4 +1/-0.5 mm	
			C-tol. ±10%	C-tol. ±5%	C-tol. ±10%	C-tol. ±5%
Pitch = 5.08 ± 0.3 mm dt = 0.5 mm (+ 0.05 / - 0.05)						
0.047	3.5 x 7.5 x 7.5	0.3	71473	72473	75473	76473
0.056			71563	72563	75563	76563
0.068			71683	72683	75683	76683
0.082			71823	72823	75823	76823
0.1			71104	72104	75104	76104
0.12			71124	72124	75124	76124
0.15	4.0 x 8.0 x 7.5	0.3	71154	72154	75154	76154
0.18	4.5 x 8.5 x 7.5	0.3	71184	72184	75184	76184
0.22			71224	72224	75224	76224
0.27	5.0 x 9.0 x 7.5	0.3	71274	72274	75274	76274
0.33	5.5 x 9.5 x 7.5	0.3	71334	72334	75334	76334
0.39	5.5 x 10.5 x 7.5	0.3	71394	72394	75394	76394
0.47	6.0 x 11.5 x 7.5	0.4	71474	72474	75474	76474
0.56	5.5 x 10.0 x 7.5	0.4	71564	72564	75564	76564
0.68	5.5 x 10.5 x 7.5	0.4	71684	72684	75684	76684
0.82	6.0 x 11.0 x 7.5	0.5	71824	72824	75824	76824
1.0	6.5 x 11.5 x 7.5	0.5	71105	72105	75105	76105

SPECIFIC REFERENCE DATA FOR THE 63V DC CAPACITORS

Description	Value		
Tangent of loss angle (unit : 10^{-4})	at 1kHz	at 10kHz	at 100kHz
C ≤ 0.1µF	≤ 75	≤ 130	≤ 225
0.1µF < C ≤ 0.47µF	≤ 75	≤ 130	≤ 300
0.47µF < C ≤ 1.0µF	≤ 75	≤ 130	-
Rated voltage pulse slope$(dV/dt)_R$ at 63V (DC)	110 V/µs		
R between leads at 10V , for C ≤ 0.33µF	> 15 000 MΩ		
RC between leads at 10V, for C > 0.33µF	> 5 000 s		
R between interconnected leads and casing;100V ; 1min	> 30 000 MΩ		
Withstanding voltage DC (cut off current 10mA) ;rise time 100 V/s	100V ; 1min		

Metallized Polyester film capacitors

PCMT 367

V_{Rdc} = 100 V **V_{Rac} = 63 V~** **loose in box**

Cap (µF)	b_{max} x h_{max} x l_{max} (mm)	mass (g)	CATALOGUE NUMBER			
			PCMT 367			
			loose in box			
			lt = 22 ± 4 mm		lt = 4 +1/-0.5 mm	
			C-tol. ±10%	C-tol. ±5%	C-tol. ±10%	C-tol. ±5%
Pitch = 5.08 ± 0.3 mm dt = 0.5 mm (+ 0.05 / - 0.05)						
0.01	3.5 x 7.5 x 7.5	0.3	81103	82103	85103	86103
0.012			81123	82123	85123	86123
0.015			81153	82153	85153	86153
0.018			81183	82183	85183	86183
0.022			81223	82223	85223	86223
0.027			81273	82273	85273	86273
0.033			81333	82333	85333	86333
0.039			81393	82393	85393	86393
0.047			81473	82473	85473	86473
0.056			81563	82563	85563	86563
0.068			81683	82683	85683	86683
0.082	4.0 x 8.0 x 7.5	0.3	81823	82823	85823	86823
0.1			81104	82104	85104	86104

SPECIFIC REFERENCE DATA FOR THE 100V DC CAPACITORS

Description	Value		
Tangent of loss angle (unit : 10^{-4})	at 1kHz	at 10kHz	at 100kHz
C ≤ 0.1µF	≤ 75	≤ 130	≤ 225
0.1µF < C ≤ 0.27µF	≤ 75	≤ 130	≤ 300
Rated voltage pulse slope$(dV/dt)_R$ at 100V (DC)	110 V/µs		
R between leads at 100V, for C ≤ 0.33µF	> 15 000 MΩ		
R between interconnected leads and casing;100V ; 1min	> 30 000 MΩ		
Withstanding voltage DC (cut off current 10mA) ;rise time 100 V/s	160V ; 1min		

Metallized Polyester film capacitors

PCMT 367

V_{Rdc} = 63 V **V_{Rac} = 40 V~** **loose in box**

Cap (µF)	b_{max} x h_{max} x l_{max} (mm)	mass (g)	CATALOGUE NUMBER			
			PCMT 367			
			loose in box			
			lt = 22 ± 4 mm		lt = 4 +1/-0.5 mm	
			C-tol. ±10%	C-tol. ±5%	C-tol. ±10%	C-tol. ±5%
Pitch = 7.62 ± 0.3 mm dt = 0.5 mm (+ 0.05 / - 0.05)						
0.12	4.0 x 8.0 x 10.0	0.4	11124	12124	15124	16124
0.15			11154	12154	15154	16154
0.18			11184	12184	15184	16184
0.22			11224	12224	15224	16224
0.27	4.5 x 8.5 x 10.5	0.5	11274	12274	15274	16274
0.33	5.0 x 9.0 x 10.5	0.6	11334	12334	15334	16334
0.39			11394	12394	15394	16394
0.47	5.5 x 9.5 x 10.5	0.7	11474	12474	15474	16474
0.56	5.5 x 10.0 x 10.5	0.8	11564	12564	15564	16564
0.68			11684	12684	15684	16684
0.82			11824	12824	15824	16824
1.0			11105	12105	15105	16105

SPECIFIC REFERENCE DATA FOR THE 63V DC CAPACITORS

Description	Value		
Tangent of loss angle (unit : 10^{-4})	at 1kHz	at 10kHz	at 100kHz
C ≤ 0.1µF	≤ 75	≤ 130	≤ 225
0.1µF < C ≤ 0.47µF	≤ 75	≤ 130	≤ 300
0.47µF < C ≤ 1.0µF	≤ 75	≤ 130	-
Rated voltage pulse slope$(dV/dt)_R$ at 63V (DC)	18 V/µs		
R between leads at 10V , for C ≤ 0.33µF	> 15 000 MΩ		
RC between leads at 10V, for C > 0.33µF	> 5 000 s		
R between interconnected leads and casing;100V ; 1min	> 30 000 MΩ		
Withstanding voltage DC (cut off current 10mA) ;rise time 100 V/s	100V ; 1min		

Metallized Polyester film capacitors

PCMT 367

V_{Rdc} = 100 V **V_{Rac} = 63 V~** **loose in box**

Cap (µF)	b_{max} x h_{max} x l_{max} (mm)	mass (g)	CATALOGUE NUMBER			
			PCMT 367			
			loose in box			
			lt = 22 ± 4 mm		lt = 4 +1/−0.5 mm	
			C-tol. ±10%	C-tol. ±5%	C-tol. ±10%	C-tol. ±5%
Pitch = 7.62 ± 0.3 mm dt = 0.5 mm (+ 0.05 / - 0.05)						
0.039 0.047 0.056 0.068 0.082	4.0 x 8.0 x 10.0	0.4	21393 21473 21563 21683 21823	22393 22473 22563 22683 22823	25393 25473 25563 25683 25823	26393 26473 26563 26683 26823
0.10	4.0 x 8.5 x 10.0	0.4	21104	22104	25104	26104
0.12	4.5 x 9.0 x 10.5	0.5	21124	22124	25124	26124
0.15 0.18	5.0 x 9.5 x 10.5	0.5	21154 21184	22154 22184	25154 25184	26154 26184
0.22	5.5 x 10.0 x 10.5	0.7	21224	22224	25224	26224
0.27 0.33 0.39 0.47	6.0 x 10.5 x 10.5	0.7	21274 21334 21394 21474	22274 22334 22394 22474	25274 25334 25394 25474	26274 26334 26394 26474

SPECIFIC REFERENCE DATA FOR THE 100V DC CAPACITORS

Description	Value		
Tangent of loss angle (unit : 10^{-4})	at 1kHz	at 10kHz	at 100kHz
C ≤ 0.1µF	≤ 75	≤ 130	≤ 225
0.1µF < C ≤ 0.47µF	≤ 75	≤ 130	≤ 300
Rated voltage pulse slope$(dV/dt)_R$ at 100V (DC)	36 V/µs		
R between leads at 100V, for C ≤ 0.33µF	> 15 000 MΩ		
RC between leads at 100V, for C > 0.33µF	> 5 000 s		
R between interconnected leads and casing;100V ; 1min	> 30 000 MΩ		
Withstanding voltage DC (cut off current 10mA) ;rise time 100 V/s	160V ; 1min		

Metallized Polyester film capacitors

PCMT 367

V_{Rdc} = 250 V V_{Rac} = 160 V~ loose in box

Cap (µF)	b_{max} x h_{max} x l_{max} (mm)	mass (g)	CATALOGUE NUMBER			
			PCMT 367.....			
			loose in box			
			lt = 22 ± 4 mm		lt = 4 +1/-0.5 mm	
			C-tol. ±10%	C-tol. ±5%	C-tol. ±10%	C-tol. ±5%
Pitch = 7.62 ± 0.3 mm dt = 0.5 mm (+ 0.05 / - 0.05)						
0.018	4.0 x 8.5 x 10.0	0.4	41183	42183	45183	46183
0.022			41223	42223	45223	46223
0.027			41273	42273	45273	46273
0.033			41333	42333	45333	46333
0.039			41393	42393	45393	46393
0.047			41473	42473	45473	46473
0.056			41563	42563	45563	46563
0.068			41683	42683	45683	46683
0.082	5.0 x 9.5 x 10.5	0.4	41823	42823	45823	46823
0.1			41104	42104	45104	46104
0.12	5.5 x 10.0 x 10.5	0.6	41124	42124	45124	46124
0.15	5.5 x 11.5 x 10.5	0.7	41154	42154	45154	46154

SPECIFIC REFERENCE DATA FOR THE 250V DC CAPACITORS

Description	Value		
Tangent of loss angle (unit : 10^{-4})	at 1kHz	at 10kHz	at 100kHz
C ≤ 0.1µF	≤ 75	≤ 130	≤ 225
0.1µF < C ≤ 0.47µF	≤ 75	≤ 130	≤ 300
Rated voltage pulse slope$(dV/dt)_R$ at 250V (DC)	70 V/µs		
R between leads at 100V, for C ≤ 0.33µF	> 30 000 MΩ		
R between interconnected leads and casing;100V ; 1min	> 30 000 MΩ		
Withstanding voltage DC (cut off current 10mA) ;rise time 100 V/s	400V ; 1min		

Metallized Polyester film capacitors

PCMT 367

V_{Rdc} = 400 V **V_{Rac} = 220 V~** **loose in box**

Cap (μF)	b_{max} x h_{max} x l_{max} (mm)	mass (g)	CATALOGUE NUMBER			
			PCMT 367			
			loose in box			
			lt = 22 ± 4 mm		lt = 4 +1/-0.5 mm	
			C-tol. ±10%	C-tol. ±5%	C-tol. ±10%	C-tol. ±5%
Pitch = 7.62 ± 0.3 mm dt = 0.5 mm (+ 0.05 / - 0.05)						
0.010 0.012 0.015	4.0 x 8.5 x 10.0	0.4	51103 51123 51153	52103 52123 52153	55103 55123 55153	56103 56123 56153
0.018	4.0 x 10.0 x 10.0	0.4	51183	52183	55183	56183
0.022	4.5 x 10.5 x 10.0	0.4	51223	52223	55223	56223
0.027	5.0 x 11.0 x 10.0	0.4	51273	52273	55273	56273
0.033	5.5 x 11.5 x 10.0	0.4	51333	52333	55333	56333
0.039	6.0 x 11.5 x 10.0	0.4	51393	52393	55393	56393
0.047	6.5 x 12.0 x 10.0	0.4	51473	52473	55473	56473
0.056	6.5 x 12.0 x 10.0	0.4	51563	52563	55563	56563

SPECIFIC REFERENCE DATA FOR THE 400V DC CAPACITORS

Description	Value		
Tangent of loss angle (unit : 10^{-4})	at 1kHz	at 10kHz	at 100kHz
C ≤ 0.1μF	≤ 75	≤ 130	≤ 225
Rated voltage pulse slope$(dV/dt)_R$ at 400V (DC)	110 V/μs		
R between leads at 100V, for C ≤ 0.33μF	> 30 000 MΩ		
R between interconnected leads and casing;100V ; 1min	> 30 000 MΩ		
Withstanding voltage DC (cut off current 10mA) ;rise time 100 V/s	640V ; 1min		

Metallized Polyester film capacitors

PCMT 367

V_{Rdc} = 630 V **V_{Rac} = 250 V~** **loose in box**

Cap (µF)	b_{max} x h_{max} x l_{max} (mm)	mass (g)	CATALOGUE NUMBER			
			PCMT 367			
			loose in box			
			lt = 22 ± 4 mm		lt = 4 +1/-0.5 mm	
			C-tol. ±10%	C-tol. ±5%	C-tol. ±10%	C-tol. ±5%
Pitch = 7.62 ± 0.3 mm dt = 0.5 mm (+ 0.05 / - 0.05)						
0.010	5.0 x 9.5 x 10.0	0.4	61103	62103	65103	66103
0.012	5.5 x 10.0 x 10.0	0.4	61123	62123	65123	66123
0.015	6.0 x 10.5 x 10.0	0.5	61153	62153	65153	66153

SPECIFIC REFERENCE DATA FOR THE 630V DC CAPACITORS

Description	Value		
Tangent of loss angle (unit : 10^{-4})	at 1kHz	at 10kHz	at 100kHz
C ≤ 0.1µF	≤ 75	≤ 130	≤ 225
Rated voltage pulse slope$(dV/dt)_R$ at 630V (DC)	110V/µs		
R between leads at 100V, for C ≤ 0.33µF	> 30 000 MΩ		
R between interconnected leads and casing;100V ; 1min	> 30 000 MΩ		
Withstanding voltage DC (cut off current 10mA) ;rise time 100 V/s	1008V ; 1min		

Metallized Polyester film capacitors

PCMT 365/366/367

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 VIBRATIONAND SHOCK

In order to withstand vibration and shock tests, it must be ensured that the underside of the kinks are in good contact with the printed-circuit.

The capacitors shall be mechanically fixed by the leads

STORAGE TEMPERATURE

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

RATINGS AND CHARACTERISTICS

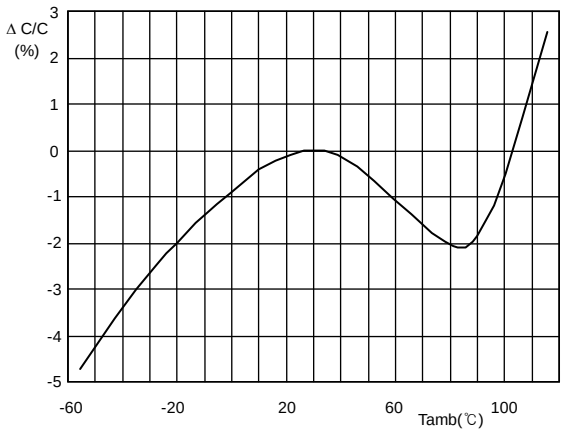
specified all electrical values apply at an ambient temperature of 23±1℃, an atmospheric pressure of 86 to 106 kPa and a relative humidity of 50±2%.

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%.

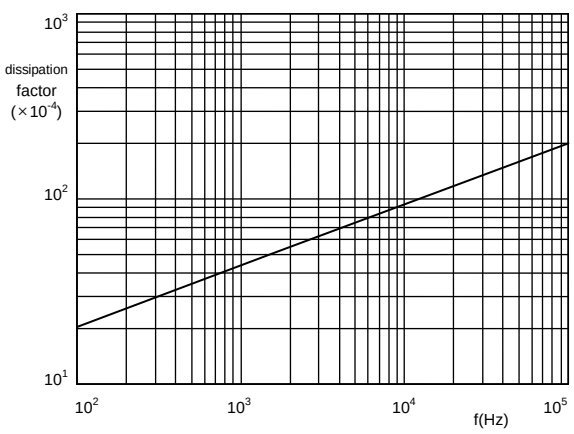
Metallized Polyester film capacitors

PCMT 365/366/367

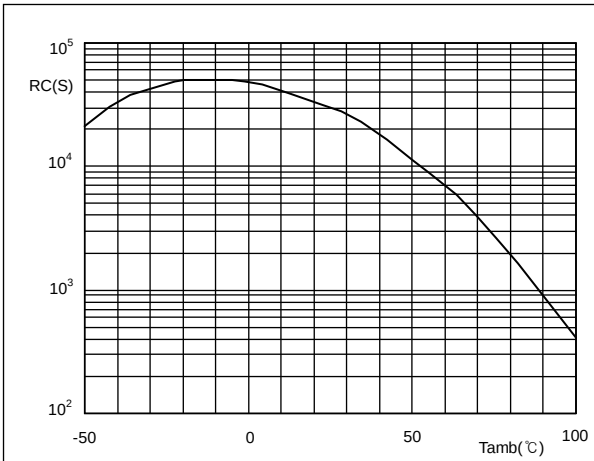
THE GRAPHS OF CHARACTERISTICS



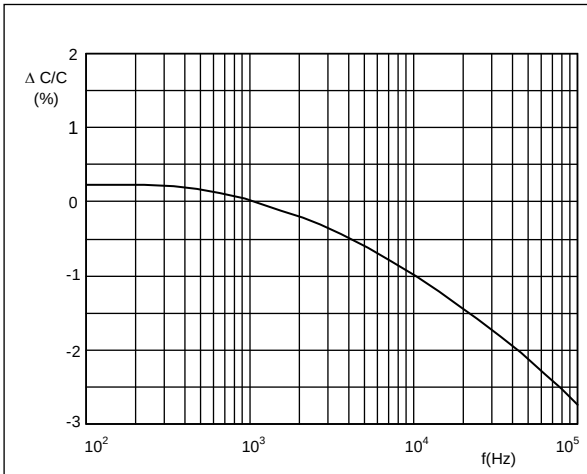
Capacitance as fuction of ambient free air temperature : typical curve



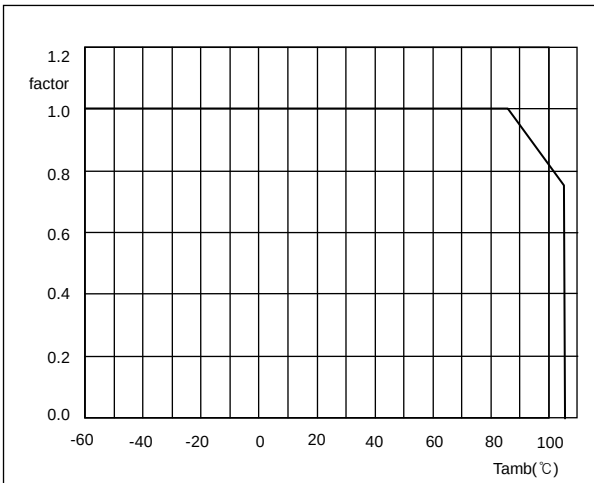
Tangent of loss angle as a function of frequency : typical curve



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

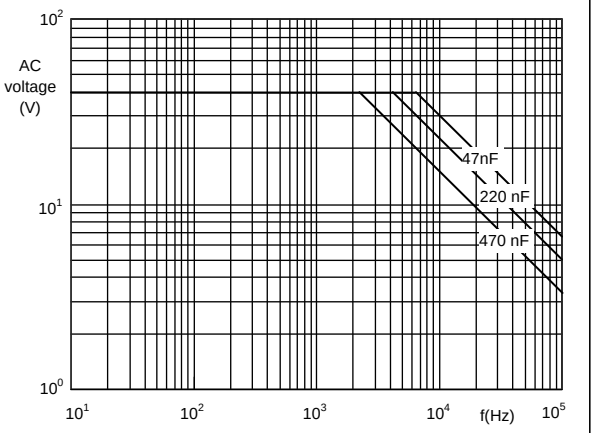


Capacitance as a function of frequency : typical curve

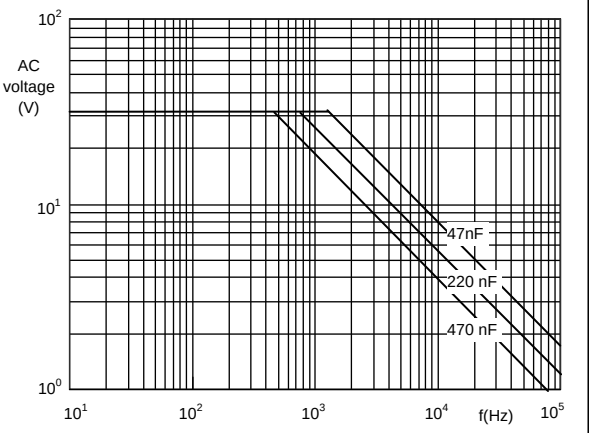


Multiplying factor for DC and AC voltage as a function of temperature

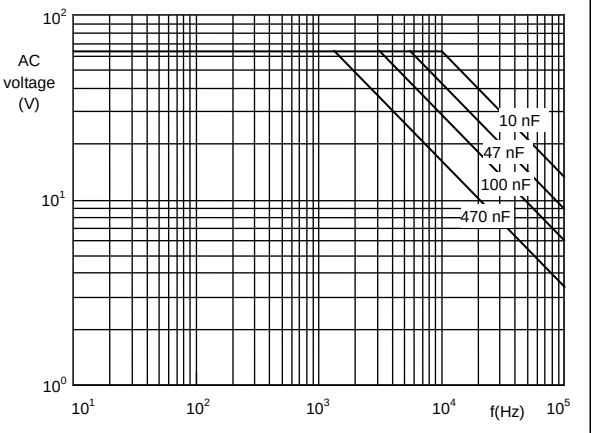
MAXIMUM RMS (63V, 100V, 250V) VOLTAGE (SINEWAVE) AS A FUNCTION OF FREQUENCY



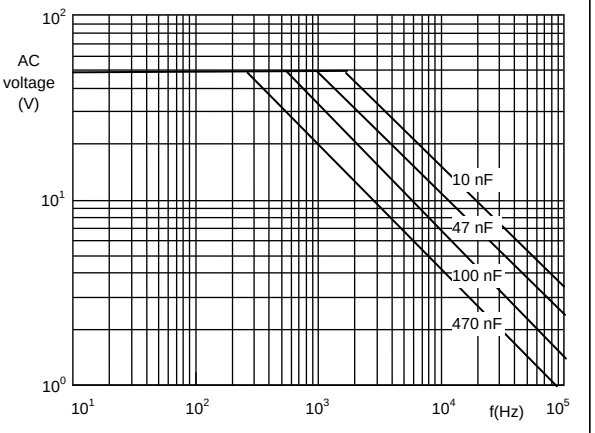
AC voltage (RMS value) as a function of frequency
at $T_{amb} \leq 85℃$ for $V_{Rdc} = 63V$



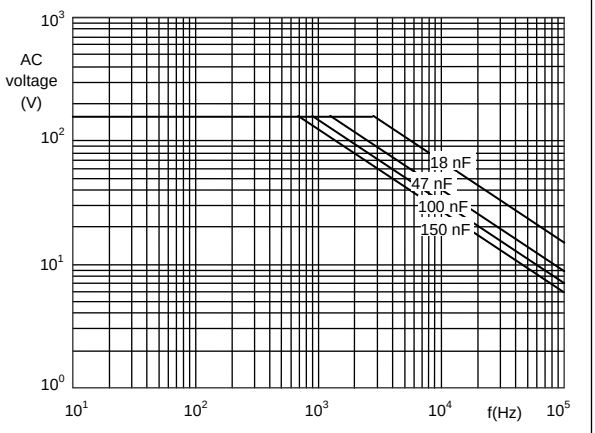
AC voltage (RMS value) as a function of frequency
at $85℃ < T_{amb} \leq 105℃$ for $V_{Rdc} = 63V$



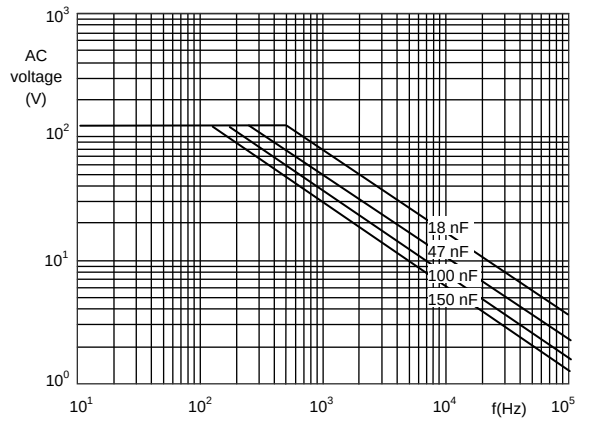
AC voltage (RMS value) as a function of frequency
at $T_{amb} \leq 85℃$ for $V_{Rdc} = 100V$



AC voltage (RMS value) as a function of frequency
at $85℃ < T_{amb} \leq 105℃$ for $V_{Rdc} = 100V$

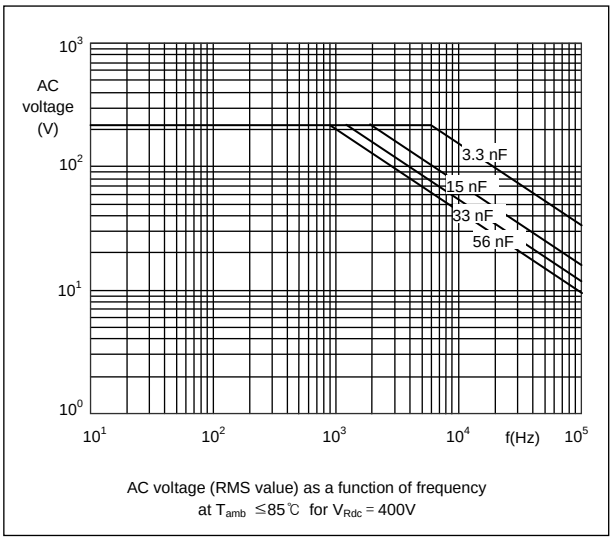


AC voltage (RMS value) as a function of frequency
at $T_{amb} \leq 85℃$ for $V_{Rdc} = 250V$

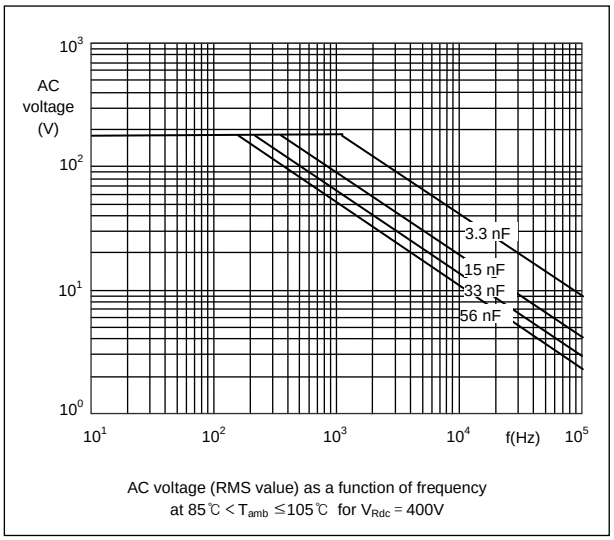


AC voltage (RMS value) as a function of frequency
at $85℃ < T_{amb} \leq 105℃$ for $V_{Rdc} = 250V$

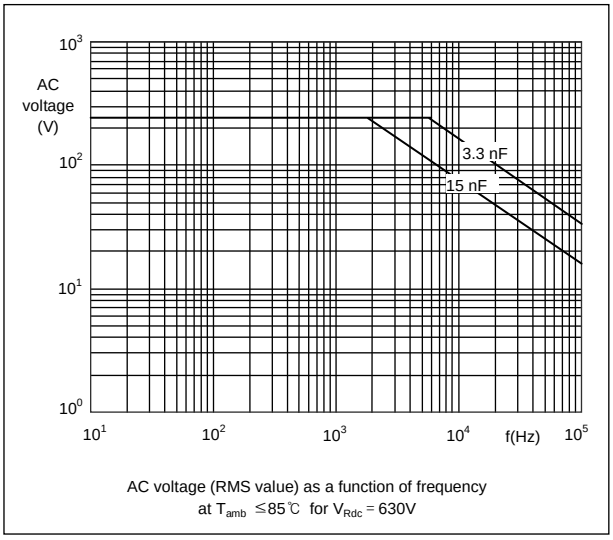
MAXIMUM RMS (400V, 630V) VOLTAGE (SINEWAVE) AS A FUNCTION OF FREQUENCY



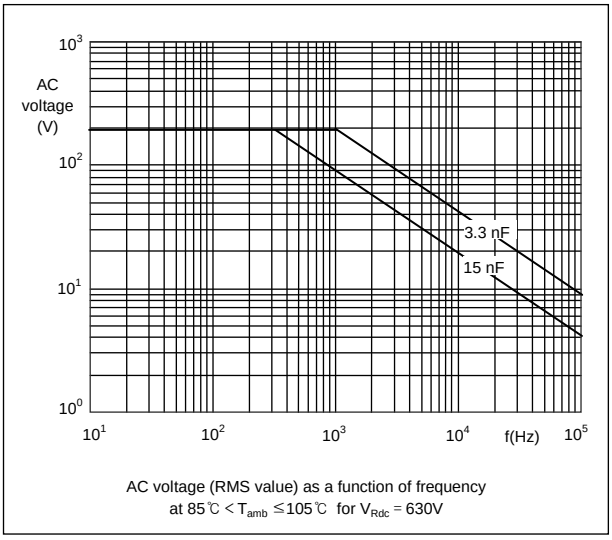
AC voltage (RMS value) as a function of frequency
at T_{amb} ≤85℃ for V_{Rdc} = 400V



AC voltage (RMS value) as a function of frequency
at 85℃ < T_{amb} ≤105℃ for V_{Rdc} = 400V



AC voltage (RMS value) as a function of frequency
at T_{amb} ≤85℃ for V_{Rdc} = 630V



AC voltage (RMS value) as a function of frequency
at 85℃ < T_{amb} ≤105℃ for V_{Rdc} = 630V

APPLICATION NOTE AND LIMITING CONDITIONS

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

Capacitors with a body length ≤ 7.5 mm

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

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

Example of marking

0.047 K. 63	or	0.047 K 63

Capacitors with a body length of 10 mm or 10.5 mm

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

. Rated capacitance code in pF or µF
. Tolerance on rated capacitance : K = ± 10 %, J = ± 5 %
. Rated DC voltage
. Code for dielectric material

Example of marking

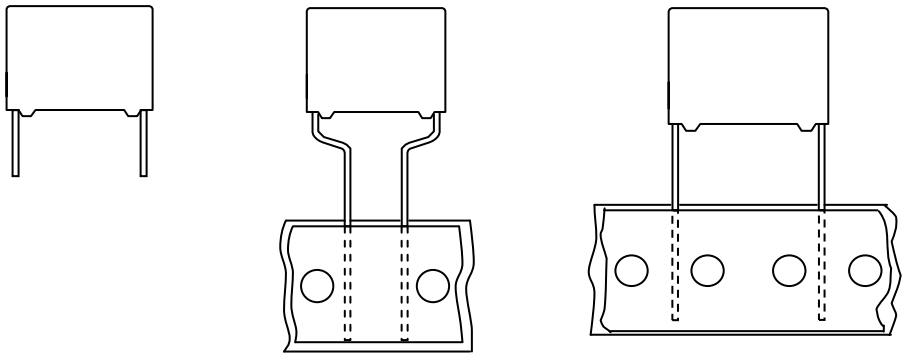
0.47 K 100 MKT.	or	0.47 K 100 MK

Metallized Polyester film capacitors

PCMT 468

MKT RADIAL POTTED CAPACITORS

Pitch 10.0/15.0/22.5/27.5mm
(reduced pitch ; 7.5mm)



QUICK REFERENCE DATA

Capacitance range (E24 series)	0.001 to 12μF
Capacitance tolerance	± 5%, ± 10%,
Rated voltage (DC)	100V, 250V, 400V, 630V, 1000V
Climatic category	55/105/56
Temperature range	-55℃ ~ +105℃
Reference specification	IEC 60384-2
Potting & Encapsulation material	Qualified in accordance with UL94V-0

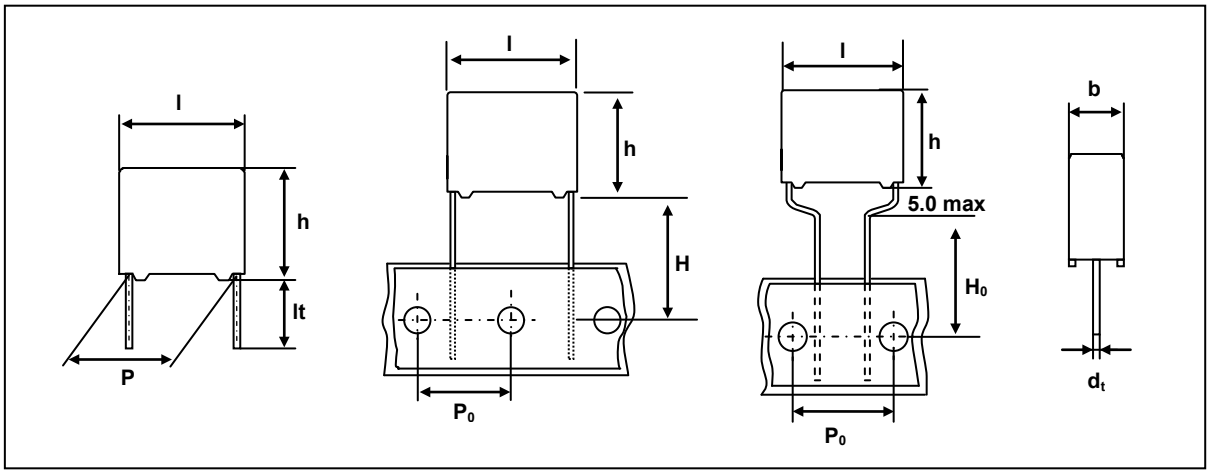
FEATURES	APPLICATIONS
. Low inductive wound cell of metallized (PETP) film . Supplied loose in box and ammopack	. General purpose . Blocking and coupling . Bypass and energy reservoir application . Stable capacitance in damp environment 85℃85%RH, V_{Rdc} , 1000hours

• 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.

Metallized Polyester film capacitors

PCMT 468

Ordering Information



PCMT 468 (X) X X XXX

Type series — Capacitance

Code	Voltage
2	100V
4	250V
5	400V
6	630V
7	1000V
A	250V mini
8	400V mini
Q	630V mini

*Code	Original pitch
D	10.0mm
F	15.0mm
J	22.5mm

*** In case of overlapping the value, use the 13NC with pitch information.**

Available versions					Product (l_{max})			
Code	Packing method	C-tol.	Lead length & Height	Hole to hole (P_o)	12.5	18.0	26.0	31.0
					Pitch (P)			
2	Loose in box	± 5%	lt = 5.0±1.0mm	-	10.0	15.0	22.5	27.5
3	Loose in box	±10%	lt = 5.0±1.0mm	-	10.0	15.0	22.5	27.5
4	Loose in box	± 5%	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
8	Ammo packing	± 5%	H = 18.5mm	12.7mm	10.0	15.0	22.5	27.5
9	Ammo packing	±10%	H = 18.5mm	12.7mm	10.0	15.0	22.5	27.5
A	Ammo packing	± 5%	H_0 = 16.0mm	15.0mm	7.5(*)	7.5(*)	-	-
B	Ammo packing	±10%	H_0 = 16.0mm	15.0mm	7.5(*)	7.5(*)	-	-

* Reduced pitch (reduced lead spacings)

Metallized Polyester film capacitors

PCMT 468

Packaging Information

SMALLEST PACKING QUANTITIES (SPQ)	Loose in box	
	lt = 5.0 ± 1.0 mm	lt = 25.0 ± 2.0 mm
DIMENSIONS	**SPQ**	**SPQ**
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
11.5 x 21.0 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

Metallized Polyester film capacitors

PCMT 468

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

Cap. (µF)	b x h x l (mm)	Mass (g)	CATALOGUE NUMBER PCMT 468 ..... loose in box lt = 5 ± 1 mm	
			C-tol. ± 5 %	C-tol. ± 10 %
Pitch = 10.0 ± 0.4 mm			dt = 0.6 +0.06/-0.05 mm	
0.22	4.0 x 10.0 x 12.5	0.8	PCMT 468 22224	PCMT 468 23224
0.27			PCMT 468 22274	PCMT 468 23274
0.33			PCMT 468 22334	PCMT 468 23334
0.39	5.0 x 11.0 x 12.5	0.9	PCMT 468 22394	PCMT 468 23394
0.47			PCMT 468 22474	PCMT 468 23474
0.56	6.0 x 12.0 x 12.5	1.0	PCMT 468 22564	PCMT 468 23564
0.68			PCMT 468 22684	PCMT 468 23684
0.82			PCMT 468D22824	PCMT 468D23824
1.0			PCMT 468D22105	PCMT 468D23105
1.2	5.0 x 11.0 x 12.5	0.9	PCMT 468D22125	PCMT 468D23125
1.5			PCMT 468D22155	PCMT 468D23155
1.8	6.0 x 12.0 x 12.5	1.0	PCMT 468D22185	PCMT 468D23185
2.2			PCMT 468D22225	PCMT 468D23225
Pitch = 15.0 ± 0.4 mm			dt = 0.8 +0.08/-0.05 mm	
0.82	5.0 x 11.0 x 18.0	1.2	PCMT 468 22824	PCMT 468 23824
1.0	6.0 x 12.0 x 18.0	1.4	PCMT 468 22105	PCMT 468 23105
1.2			PCMT 468 22125	PCMT 468 23125
1.5	7.0 x 13.5 x 18.0	1.9	PCMT 468 22155	PCMT 468 23155
1.8	8.5 x 15.0 x 18.0	2.6	PCMT 468 22185	PCMT 468 23185
2.2			PCMT 468 22225	PCMT 468 23225
2.7	10.0 x 16.5 x 18.0	3.1	PCMT 468F22275	PCMT 468F23275
3.3	11.0 x 18.5 x 18.0	4.1	PCMT 468F22335	PCMT 468F23335
Pitch = 22.5 ± 0.4 mm			dt = 0.8 +0.08/-0.05 mm	
2.7	7.0 x 16.5 x 26.0	3.2	PCMT 468 22275	PCMT 468 23275
3.3	8.5 x 18.0 x 26.0	4.4	PCMT 468 22335	PCMT 468 23335
3.9			PCMT 468 22395	PCMT 468 23395
4.7			PCMT 468 22475	PCMT 468 23475
5.6	10.0 x 19.5 x 26.0	5.5	PCMT 468 22565	PCMT 468 23565
6.8			PCMT 468 22685	PCMT 468 23685

Metallized Polyester film capacitors

PCMT 468

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

Cap. (µF)	b x h x l (mm)	Mass (g)	CATALOGUE NUMBER PCMT 468 ..... loose in box lt = 5.0 ± 1.0 mm	
			C-tol. ± 5 %	C-tol. ± 10 %
	Pitch = 10.0 ± 0.4 mm		dt = 0.6 +0.06/-0.05 mm	
0.1 0.12 0.15 0.18 0.22	4.0 x 10.0 x 12.5	0.8	PCMT 468 42104 PCMT 468 42124 PCMT 468 A2154 PCMT 468 A2184 PCMT 468 A2224	PCMT 468 43104 PCMT 468 43124 PCMT 468 A3154 PCMT 468 A3184 PCMT 468 A3224
0.15 0.18 0.22 0.27 0.33	5.0 x 11.0 x 12.5	0.9	PCMT 468 42154 PCMT 468 42184 PCMT 468D42224 PCMT 468D42274 PCMT 468D42334	PCMT 468 43154 PCMT 468 43184 PCMT 468D43224 PCMT 468D43274 PCMT 468D43334
0.39 0.47	6.0 x 12.0 x 12.5	1.0	PCMT 468D42394 PCMT 468D42474	PCMT 468D43394 PCMT 468D43474
	Pitch = 15.0 ± 0.4 mm		dt = 0.8 +0.08/-0.05 mm	
0.22 0.27 0.33 0.39 0.47	5.0 x 11.0 x 18.0	1.2	PCMT 468 42224 PCMT 468 42274 PCMT 468 42334 PCMT 468 A2394 PCMT 468 A2474	PCMT 468 43224 PCMT 468 43274 PCMT 468 43334 PCMT 468 A3394 PCMT 468 A3474
0.39 0.47 0.56 0.68	6.0 x 12.0 x 18.0	1.4	PCMT 468 42394 PCMT 468 42474 PCMT 468 A2564 PCMT 468 A2684	PCMT 468 43394 PCMT 468 43474 PCMT 468 A3564 PCMT 468 A3684
0.56 0.68 0.82 1.0	7.0 x 13.5 x 18.0	1.9	PCMT 468 42564 PCMT 468 42684 PCMT 468 A2824 PCMT 468 A2105	PCMT 468 43564 PCMT 468 43684 PCMT 468 A3824 PCMT 468 A3105
0.82 1.0 1.2 1.5	8.5 x 15.0 x 18.0	2.6	PCMT 468 42824 PCMT 468 42105 PCMT 468F42125 PCMT 468F42155	PCMT 468 43824 PCMT 468 43105 PCMT 468F43125 PCMT 468F43155
1.8	10.0 x 16.5 x 18.0	3.1	PCMT 468FA2185	PCMT 468FA3185
2.2	11.0 x 18.5 x 18.0	4.1	PCMT 468FA2225	PCMT 468FA3225
	Pitch = 22.5 ± 0.4 mm		dt = 0.8 +0.08/-0.05 mm	
1.0 1.2 1.5 1.8	7.0 x 16.5 x 26.0	3.2	PCMT 468J42105 PCMT 468 42125 PCMT 468 A2155 PCMT 468 A2185	PCMT 468J43105 PCMT 468 43125 PCMT 468 A3155 PCMT 468 A3185
1.5 1.8 2.2 2.7	8.5 x 18.0 x 26.0	4.4	PCMT 468 42155 PCMT 468 42185 PCMT 468 A2225 PCMT 468 A2275	PCMT 468 43155 PCMT 468 43185 PCMT 468 A3225 PCMT 468 A3275
2.2 2.7 3.3 3.9	10.0 x 19.5 x 26.0	5.5	PCMT 468 42225 PCMT 468 42275 PCMT 468J42335 PCMT 468JA2395	PCMT 468 43225 PCMT 468 43275 PCMT 468J43335 PCMT 468JA3395
3.9 4.7 5.6	13.0 x 23.0 x 26.0	9.7	PCMT 468J42395 PCMT 468J42475 PCMT 468JA2565	PCMT 468J43395 PCMT 468J43475 PCMT 468JA3565
	Pitch = 27.5 ± 0.4 mm		dt = 0.8 +0.08/-0.05 mm	
3.3 3.9 4.7 5.6	11.0 x 21.0 x 31.0	7.8	PCMT 468 42335 PCMT 468 A2395 PCMT 468 A2475 PCMT 468 A2565	PCMT 468 43335 PCMT 468 A3395 PCMT 468 A3475 PCMT 468 A3565
3.9 4.7 5.6 6.8	13.0 x 23.0 x 31.0	10.4	PCMT 468 42395 PCMT 468 42475 PCMT 468 42565 PCMT 468 A2685	PCMT 468 43395 PCMT 468 43475 PCMT 468 43565 PCMT 468 A3685
6.8 8.2 10	15.0 x 25.0 x 31.0	12.8	PCMT 468 42685 PCMT 468 A2825 PCMT 468 A2106	PCMT 468 43685 PCMT 468 A3825 PCMT 468 A3106
12	18.0 x 28.0 x 31.0	19.6	PCMT 468 A2126	PCMT 468 A3126

Metallized Polyester film capacitors

PCMT 468

V_{Rdc} = 400V **V_{Rac} = 220V~** **mini type**

Cap. (μF)	b x h x l (mm)	Mass (g)	CATALOGUE NUMBER PCMT 468 ..... loose in box lt = 5.0 ± 1.0 mm	
			C-tol. ± 5 %	C-tol. ± 10 %
Pitch = 10.0 ± 0.4 mm			dt = 0.6 +0.06/-0.05 mm	
0.01	4.0 x 10.0 x 12.5	0.8	PCMT 468 82103	PCMT 468 83103
0.012			PCMT 468 82123	PCMT 468 83123
0.015			PCMT 468 82153	PCMT 468 83153
0.018			PCMT 468 82183	PCMT 468 83183
0.022			PCMT 468 82223	PCMT 468 83223
0.027			PCMT 468 82273	PCMT 468 83273
0.033			PCMT 468 82333	PCMT 468 83333
0.039			PCMT 468 82393	PCMT 468 83393
0.047			PCMT 468 82473	PCMT 468 83473
0.056	5.0 x 11.0 x 12.5	0.9	PCMT 468 82563	PCMT 468 83563
0.068			PCMT 468 82683	PCMT 468 83683
0.082	6.0 x 12.0 x 12.5	1.0	PCMT 468 82823	PCMT 468 83823
0.1			PCMT 468 82104	PCMT 468 83104
Pitch = 15.0 ± 0.4 mm			dt = 0.8 +0.08/-0.05 mm	
0.1	5.0 x 11.0 x 18.0	1.2	PCMT 468 52104	PCMT 468 53104
0.12			PCMT 468 82124	PCMT 468 83124
0.15			PCMT 468 82154	PCMT 468 83154
0.15	6.0 x 12.0 x 18.0	1.4	PCMT 468 52154	PCMT 468 53154
0.18			PCMT 468 82184	PCMT 468 83184
0.20			PCMT 468 82204	PCMT 468 83204
0.22			PCMT 468 82224	PCMT 468 83224
0.22	7.0 x 13.5 x 18.0	1.9	PCMT 468 52224	PCMT 468 53224
0.27			PCMT 468 82274	PCMT 468 83274
0.33			PCMT 468 82334	PCMT 468 83334
0.33	8.5 x 15.0 x 18.0	2.6	PCMT 468 52334	PCMT 468 53334
0.39			PCMT 468 82394	PCMT 468 83394
0.47			PCMT 468 82474	PCMT 468 83474
0.56	10.0 x 16.5 x 18.0		PCMT 468 82564	PCMT 468 83564
Pitch = 22.5 ± 0.4 mm			dt = 0.8 +0.08/-0.05 mm	
0.47	7.0 x 16.5 x 26.0	3.2	PCMT 468 52474	PCMT 468 53474
0.68	8.5 x 18.0 x 26.0	4.4	PCMT 468 82684	PCMT 468 83684
0.82			PCMT 468 82824	PCMT 468 83824
1.0	10.0 x 19.5 x 26.0	5.5	PCMT 468 82105	PCMT 468 83105
1.2			PCMT 468 82125	PCMT 468 83125
Pitch = 27.5 ± 0.4 mm			dt = 0.8 +0.08/-0.05 mm	
1.2	11.0 x 21.0 x 31.0	7.8	PCMT 468 52125	PCMT 468 53125
1.5			PCMT 468 82155	PCMT 468 83155
1.8			PCMT 468 82185	PCMT 468 83185
2.2	13.0 x 23.0 x 31.0	12.8	PCMT 468 82225	PCMT 468 83225
2.7			PCMT 468 82275	PCMT 468 83275
3.3	15.0 x 25.0 x 31.0	17.2	PCMT 468 82335	PCMT 468 83335
3.9			PCMT 468 82395	PCMT 468 83395
4.7	18.0 x 28.0 x 31.0	19.6	PCMT 468 82475	PCMT 468 83475

; Larger type

Metallized Polyester film capacitors

PCMT 468

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

Cap. (µF)	b x h x l (mm)	Mass (g)	CATALOGUE NUMBER PCMT 468 ..... loose in box lt = 5.0 ± 1.0 mm	
			C-tol. ± 5 %	C-tol. ± 10 %
Pitch = 10.0 ± 0.4 mm			dt = 0.6 +0.06/-0.05 mm	
0.01 0.012	4.0 x 10.0 x 12.5	0.8	PCMT 468 62103 PCMT 468 62123	PCMT 468 63103 PCMT 468 63123
0.015 0.018 0.022 0.027 0.033 0.039 0.047	5.0 x 11.0 x 12.5	0.9	PCMT 468 62153 PCMT 468 62183 PCMT 468 62223 PCMT 468 62273 PCMT 468 62333 PCMT 468 Q2393 PCMT 468DQ2473	PCMT 468 63153 PCMT 468 63183 PCMT 468 63223 PCMT 468 63273 PCMT 468 63333 PCMT 468 Q3393 PCMT 468DQ3473
0.039 0.047 0.056 0.068	6.0 x 12.0 x 12.5	1.0	PCMT 468 62393 PCMT 468 62473 PCMT 468DQ2563 PCMT 468DQ2683	PCMT 468 63393 PCMT 468 63473 PCMT 468DQ3563 PCMT 468DQ3683
Pitch = 15.0 ± 0.4 mm			dt = 0.8 +0.08/-0.05 mm	
0.047 0.056 0.068	5.0 x 11.0 x 18.0	1.2	PCMT 468F62473 PCMT 468 62563 PCMT 468 Q2683	PCMT 468F63473 PCMT 468 63563 PCMT 468 Q3683
0.068 0.082 0.1	6.0 x 12.0 x 18.0	1.4	PCMT 468 62683 PCMT 468 62823 PCMT 468 Q2104	PCMT 468 63683 PCMT 468 63823 PCMT 468 Q3104
0.1 0.12 0.15	7.0 x 13.5 x 18.0	1.9	PCMT 468 62104 PCMT 468 62124 PCMT 468 Q2154	PCMT 468 63104 PCMT 468 63124 PCMT 468 Q3154
0.15 0.18	8.5 x 15.0 x 18.0	2.6	PCMT 468 62154 PCMT 468 62184	PCMT 468 63154 PCMT 468 63184
0.22 0.27	10.0 x 16.5 x 18.0	3.1	PCMT 468F62224 PCMT 468FQ2274	PCMT 468F63224 PCMT 468FQ3274
0.33 0.39	11.0 x 18.5 x 18.0	4.1	PCMT 468FQ2334 PCMT 468FQ2394	PCMT 468FQ3334 PCMT 468FQ3394
Pitch = 22.5 ± 0.4 mm			dt = 0.8 +0.08/-0.05 mm	
0.22 0.27	7.0 x 16.5 x 26.0	3.2	PCMT 468 62224 PCMT 468 62274	PCMT 468 63224 PCMT 468 63274
0.33 0.39	8.5 x 18.0 x 26.0	4.4	PCMT 468 62334 PCMT 468 62394	PCMT 468 63334 PCMT 468 63394
0.47 0.56	10.0 x 19.5 x 26.0	5.5	PCMT 468 62474 PCMT 468 62564	PCMT 468 63474 PCMT 468 63564
0.68 0.82 1.0	13.0 x 23.0 x 26.0	9.7	PCMT 468JQ2684 PCMT 468JQ2824 PCMT 468JQ2105	PCMT 468JQ3684 PCMT 468JQ3824 PCMT 468JQ3105
Pitch = 27.5 ± 0.4 mm			dt = 0.8 +0.08/-0.05 mm	
0.68 0.82	11.0 x 21.0 x 31.0	7.8	PCMT 468 62684 PCMT 468 Q2824	PCMT 468 63684 PCMT 468 Q3824
0.82 1.0	13.0 x 23.0 x 31.0	10.4	PCMT 468 62824 PCMT 468 Q2105	PCMT 468 63824 PCMT 468 Q3105
1.0 1.2 1.5	15.0 x 25.0 x 31.0	12.8	PCMT 468 62105 PCMT 468 Q2125 PCMT 468 Q2155	PCMT 468 63105 PCMT 468 Q3125 PCMT 468 Q3155
1.2 1.8 2.2	18.0 x 28.0 x 31.0	17.2	PCMT 468 62125 PCMT 468 Q2185 PCMT 468 Q2225	PCMT 468 63125 PCMT 468 Q3185 PCMT 468 Q3225

Metallized Polyester film capacitors

PCMT 468

V_{Rdc} = 1000V V_{Rac} = 300V~

Cap. (µF)	b x h x l (mm)	Mass (g)	CATALOGUE NUMBER PCMT 468 ..... loose in box lt = 5 ± 1 mm	
			C-tol. ± 5 %	C-tol. ± 10 %
Pitch = 10.0 ± 0.4 mm			dt = 0.6 +0.06/-0.05 mm	
0.001 0.0012 0.0015 0.0018 0.0022 0.0027 0.0033 0.0039 0.0047 0.0056	4.0 x 10.0 x 12.5	0.8	PCMT 468 72102 PCMT 468 72122 PCMT 468 72152 PCMT 468 72182 PCMT 468 72222 PCMT 468 72272 PCMT 468 72332 PCMT 468 72392 PCMT 468 72472 PCMT 468 72562	PCMT 468 73102 PCMT 468 73122 PCMT 468 73152 PCMT 468 73182 PCMT 468 73222 PCMT 468 73272 PCMT 468 73332 PCMT 468 73392 PCMT 468 73472 PCMT 468 73562
0.0068 0.0082 0.01	5.0 x 11.0 x 12.5	0.9	PCMT 468 72682 PCMT 468 72822 PCMT 468D72103	PCMT 468 73682 PCMT 468 73822 PCMT 468D73103
0.012 0.015	6.0 x 12.0 x 12.5	1.0	PCMT 468D72123 PCMT 468D72153	PCMT 468D73123 PCMT 468D73153
Pitch = 15.0 ± 0.4 mm			dt = 0.8 +0.08/-0.05 mm	
0.01 0.012 0.015 0.018	5.0 x 11.0 x 18.0	1.2	PCMT 468 72103 PCMT 468 72123 PCMT 468 72153 PCMT 468 72183	PCMT 468 73103 PCMT 468 73123 PCMT 468 73153 PCMT 468 73183
0.022 0.027	6.0 x 12.0 x 18.0	1.4	PCMT 468 72223 PCMT 468 72273	PCMT 468 73223 PCMT 468 73273
0.033 0.039	7.0 x 13.5 x 18.0	1.9	PCMT 468 72333 PCMT 468 72393	PCMT 468 73333 PCMT 468 73393
0.047 0.056	8.5 x 15.0 x 18.0	2.6	PCMT 468 72473 PCMT 468 72563	PCMT 468 73473 PCMT 468 73563
0.068 0.082	10.0 x 16.5 x 18.0	3.1	PCMT 468 72683 PCMT 468 72823	PCMT 468 73683 PCMT 468 73823
0.1	11.0 x 18.5 x 18.0	4.1	PCMT 468 72104	PCMT 468 73104
Pitch = 22.5 ± 0.4 mm			dt = 0.8 +0.08/-0.05 mm	
0.068 0.082	7.0 x 16.5 x 26.0	3.2	PCMT 468J72683 PCMT 468J72823	PCMT 468J73683 PCMT 468J73823
0.1 0.12	8.5 x 18.0 x 26.0	4.4	PCMT 468J72104 PCMT 468 72124	PCMT 468J73104 PCMT 468 73124
0.15 0.18	10.0 x 19.5 x 26.0	5.5	PCMT 468 72154 PCMT 468 72184	PCMT 468 73154 PCMT 468 73184
0.22	11.5 x 21.0 x 26.0	9.7	PCMT 468 72224	PCMT 468 73224
Pitch = 27.5 ± 0.4 mm			dt = 0.8 +0.08/-0.05 mm	
0.22 0.27	11.0 x 21.0 x 31.0	7.8	PCMT 468L72224 PCMT 468 72274	PCMT 468L73224 PCMT 468 73274
0.33 0.39	13.0 x 23.0 x 31.0	10.4	PCMT 468 72334 PCMT 468 72394	PCMT 468 73334 PCMT 468 73394
0.47	15.0 x 25.0 x 31.0	12.8	PCMT 468 72474	PCMT 468 73474
0.56 0.68	18.0 x 28.0 x 31.0	17.2	PCMT 468 72564 PCMT 468 72684	PCMT 468 73564 PCMT 468 73684
0.82 1.0	21.0 x 31.0 x 31.0	20.4	PCMT 468 72824 PCMT 468 72105	PCMT 468 73824 PCMT 468 73105

Metallized Polyester film capacitors

PCMT 468

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.

SPECIFIC METHOD OF MOUNTING OF WITHSTAND VIBRATION AND SHOCK.

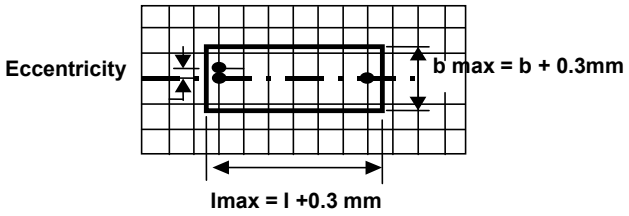
In order to withstand vibration and shock tests, it must be ensured that the stand-off pips are in good contact with the printed-circuit boards.

. For l_{max} 18mm 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.

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

Metallized Polyester film capacitors

PCMT 468

STORAGE TEMPERATURRE

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

RATINGS AND CHARACTERISTICS

Unless otherwise specified, all electrical values apply at an ambient free air temperature of 23±1℃, 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%.

CHARACTERISTICS

● **Test Voltage**

. Test Voltage (between leads) : 1.6 x V_{Rdc}, 1 min (cut off current 10mA, rise time 100V/s)
. Test Voltage (between leads and case) : 2.0 x V_{Rdc}, 1 min

● **Dissipation Factor**

Capacitance	Tangent of loss angle (x 10^{-4})	
	1 KHz	10 KHz
C ≤ 0.1μF	≤ 75	≤ 130
0.27μF < C ≤ 1.0μF	≤ 75	≤ 130
1.0μF < C	≤ 75	≤ 150

● **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 / 1000 V	C ≤ 0.33μF	> 30 000	-
	C > 0.33μF	-	> 10 000 s

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

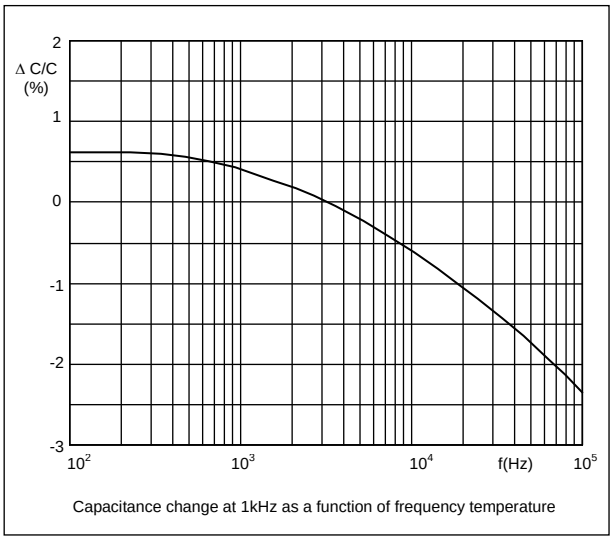
For values see specific reference data. If the pulse voltage is lower than the rated voltage, the values of the specific reference data mast be multiplied by V_{Rdc} and divided by the applied voltage.

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
100V	30	20	20	-
250V	120	45	20	15
400V	170	65	30	25
630V	120	90	35	30
1000 V	120	90	35	30

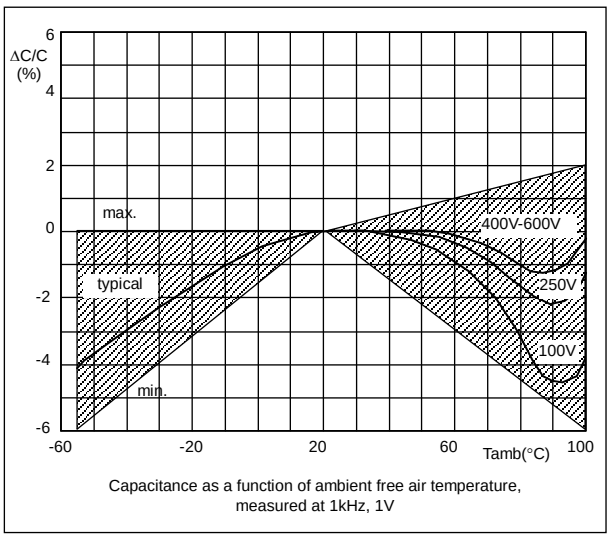
Metallized Polyester film capacitors

PCMT 468

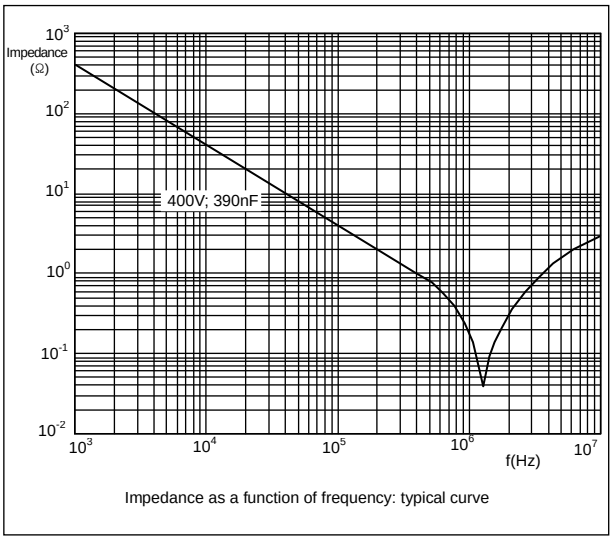
THE GRAPHS OF CHARACTERISTICS



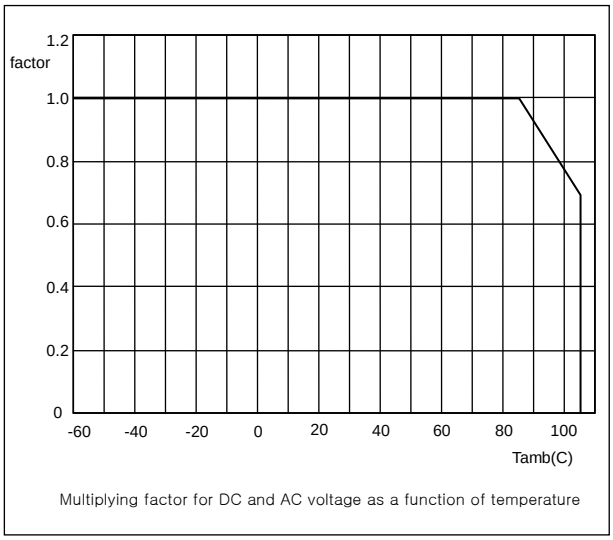
Capacitance change at 1kHz as a function of frequency temperature



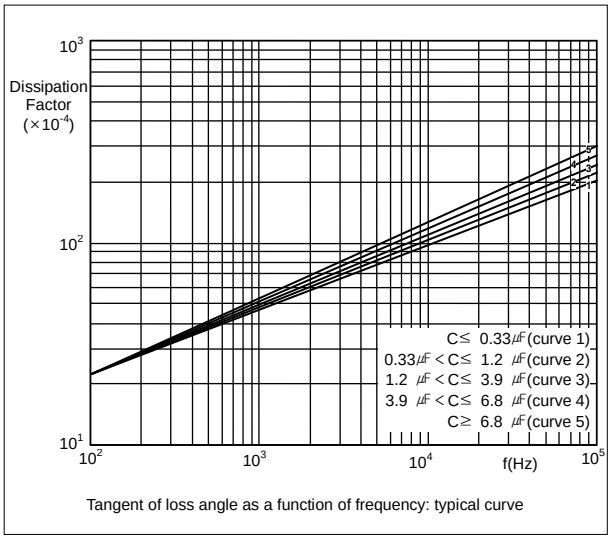
Capacitance as a function of ambient free air temperature, measured at 1kHz, 1V



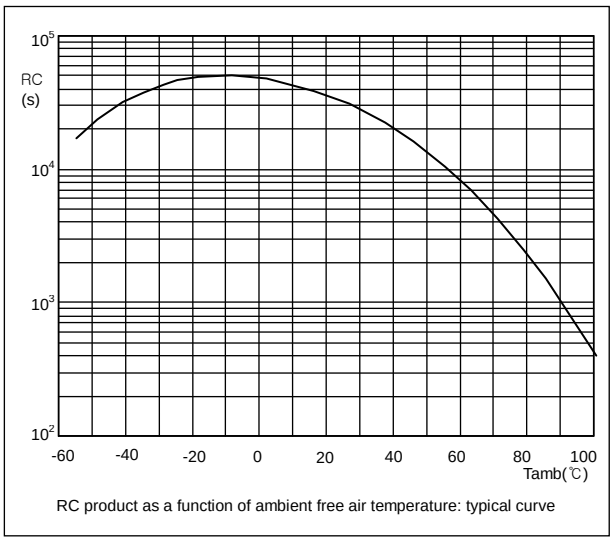
Impedance as a function of frequency: typical curve



Multiplying factor for DC and AC voltage as a function of temperature



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

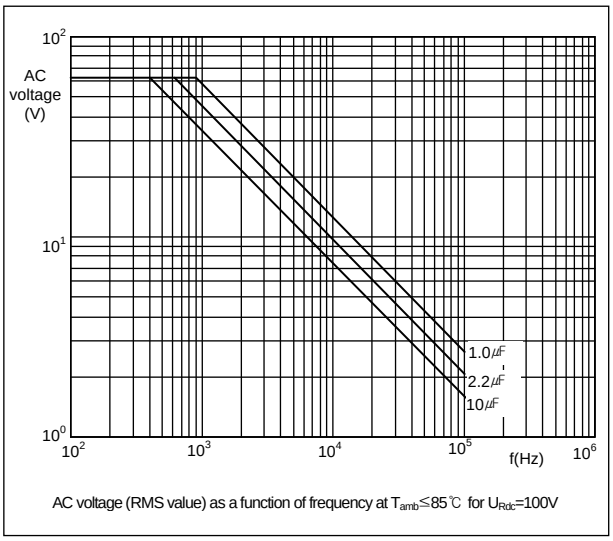


RC product as a function of ambient free air temperature: typical curve

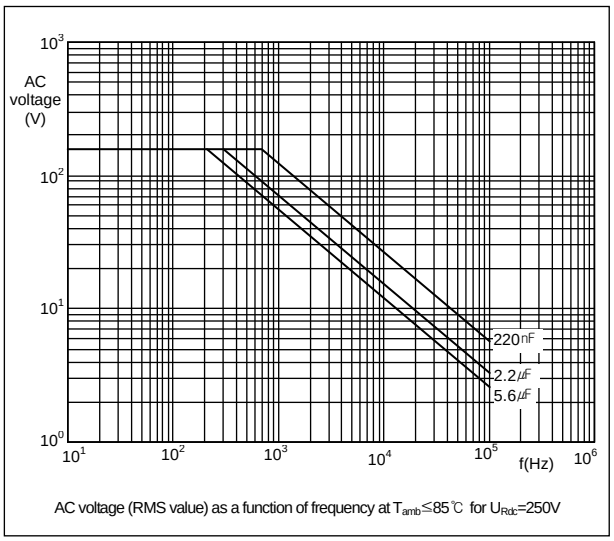
Metallized Polyester film capacitors

PCMT 468

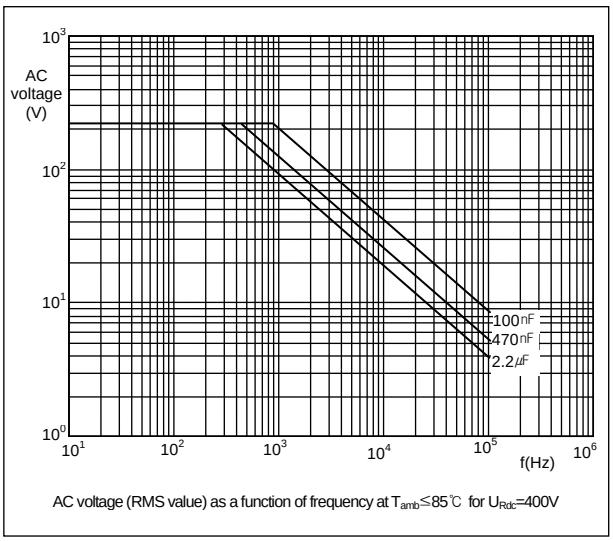
MAXIMUM RMS VOLTAGE (SINEWAVE) AS A FUNCTION OF FREQUENCY



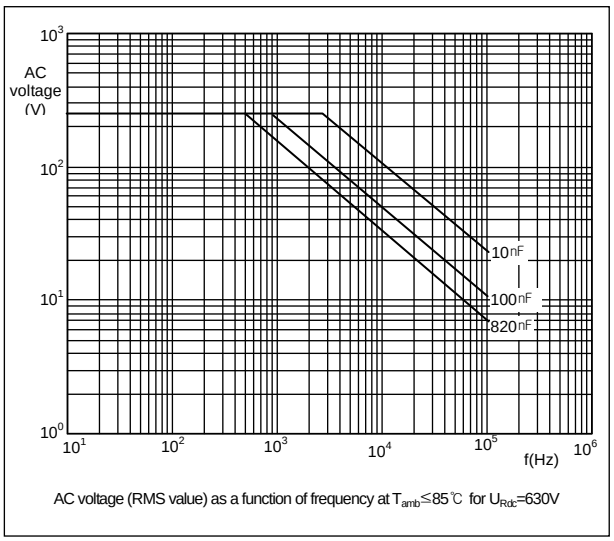
AC voltage (RMS value) as a function of frequency at $T_{amb} \leq 85$℃ for U_{Rdc}=100V



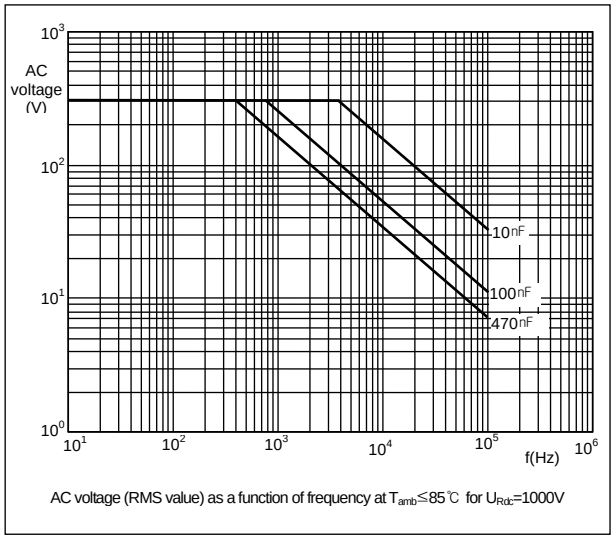
AC voltage (RMS value) as a function of frequency at $T_{amb} \leq 85$℃ for U_{Rdc}=250V



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



AC voltage (RMS value) as a function of frequency at $T_{amb} \leq 85$℃ for U_{Rdc}=1000V

Metallized Polyester film capacitors

PCMT 468

APPLICATION NOTE AND LIMITING CONDITIONS

These capacitors are not suitable for mains application as across-the-line capacitors without additional protection.

To select the capacitor for a certain application, the following conditions must be checked :

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

2. The peak-to-peak voltage (V_{p-p}) shall not be greater than the maximum V_{p-p} to avoid the ionization inception level.

3. The voltage pulse slope (dV/dt) shall not exceed the rated voltage pulse slope in an RC-circuit at rated voltage and without ringing. If the pulse voltage is lower than the rated DC voltage, the rated voltage pulse slope may be multiplied by V_{Rdc} and divided by the applied voltage. For all other pulses following equation must be fulfilled :

$$2 \times \int_0^T \left(\frac{dU}{dt}\right)^2 \times dt < U_{Rdc} \times \left(\frac{dU}{dt}\right)_{rated}$$

T is the pulse duration.

4. The maximum component surface temperature rise must be lower than the limits.

5. To ensure withstanding high humidity requirements in the application it is recommended not to damage the epoxy adhesion at the leads. Therefore the leads may not be damaged or bent before soldering.

Voltage conditions for aboves.

ALLOWED VOLTAGES	$T_{amb} \leq 85℃$	$85℃ < T_{amb} \leq 105℃$
Maximum continuous RMS voltage	V_{Rac}	0.7 x V_{Rac}
Maximum temporary RMS over voltage (<24 hrs)	1.25 x V_{Rac}	0.875 x V_{Rac}

Metallized Polyester film capacitors

PCMT 468

PRODUCT MARKING

The capacitors are marked on the top and side or on the top with the following information ;

. Rated capacitance in code according to IEC 60062

. Tolerance on rated capacitance : J = ±5% , K = ±10%

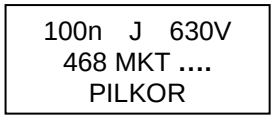
. Rated DC voltage : (e.g. 400V)

. Manufacturer's type designation : (468)

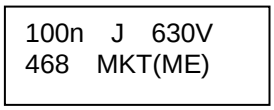
. Code for dielectric material : (MKT(ME))

. White or black color

Example of marking

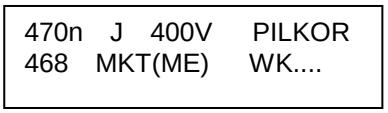


Marking on the side

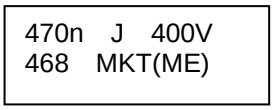


Marking on the top

Marking on the side



Marking on the top



Marking on the top

Marking on the side

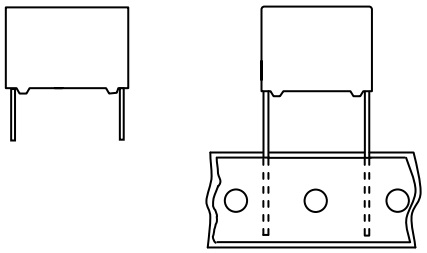
Marking on the top

EMI SUPPRESSION CAPACITORS

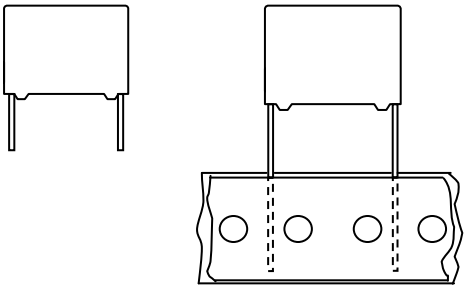
EMI Suppression film capacitors

PCX2 339x6,x7 (Mini)

MKP RADIAL POTTED CAPACITORS **Pitch 10.0/15.0/22.5/27.5/37.5mm**



10 and 15mm



22.5 and 27.5mm

QUICK REFERENCE DATA

Capacitance range (E6 series) *	0.001μF to 10μF
Capacitance tolerance	± 10 %, ± 20 %
Rated (AC) voltage 50 to 60 Hz	305 V~
Climatic category	55/110/21
Temperature range	-55℃ ~ +110℃
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**

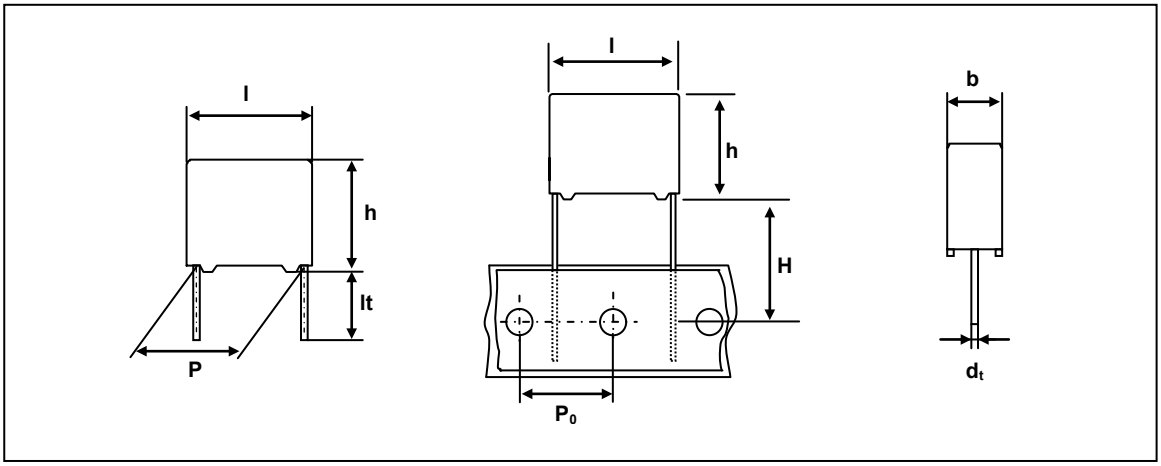
FEATURES	APPLICATIONS
. 10 to 27.5 mm lead pitch . Supplied loose in box and taped on reel . Consist of a low-inductive wound cell of Metallized (PP) film . potted in a flame retardant case	. For X2-electromagnetic interference suppression . Specially designed to meet the NEW REQUIREMENTS of new IEC 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

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

EMI Suppression film capacitors

PCX2 339x6,x7 (Mini)

Ordering Information



PCX2 339 X X X XXX

Capacitance

Code	Version & Voltage
6	Mini-Cp / 305V
7	Mini-Cu / 305V
F	Low h-Cp / 305V

Code	Original pitch
D	10.0 mm
F	15.0 mm
J	22.5 mm
L	27.5 mm
Q	37.5 mm

Available versions					Product (I_{max})				
Code	Packing method	C – tol.	Lead length & Height	Hole to hole (P_o)	12.5	18.0	26.0	31.0	42.0
					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	-
0	Arrange Pack.	±20%	lt = 5.0±1.0mm	-		-	-	-	37.5
1	Arrange Pack.	±10%	lt = 5.0±1.0mm	-		-	-	-	37.5
4	Loose in box	±20%	lt =25.0±2.0mm	-	10.0	15.0	22.5	27.5	37.5
5	Loose in box	±10%	lt =25.0±2.0mm	-	10.0	15.0	22.5	27.5	37.5
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 339x6,x7 (Mini)

SAFETY APPROVALS

SAFETY APPROVALS	Voltage	Value	File Number
UL 60384-14 & CSA E60384-14:09(cUL)	305V(AC)	1nF to 10μF	E165646
ENEC(SEMKO) *	305V(AC)	1nF to 10μF	SE/0256-4
EK	305V(AC)	C ≤ 0.1μF 0.1μF < C ≤ 0.33μF 0.33μF < C ≤ 1.0μF 1.0μF < C ≤ 3.0μF	SH03001-9001 SH03001-8001 SH03001-13001 SH03001-13002
CQC	305V(AC)	1nF to 10μF	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	
DIMENSIONS	lt = 5.0 ± 1.0 mm	lt = 25 ± 2.0 mm
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 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
11.5 x 21.0 x 26.0	500	500
13.0 x 23.0 x 26.0	500	500
16.5 x 22.0 x 26.0	250	250
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
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
14.0 x 25.0 x 42.0	130*	200
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

*Average packing

EMI Suppression film capacitors

PCX2 339x6,x7 (Mini)

SPECIFIC REFERENCE DATA FOR 305 V_{AC}

Tangent of loss angle	at 1 khz	at 10 khz
C ≤ 470 nF 470 nF < C ≤ 1 µF C > 1 µF	≤ 10 x 10^{-4} ≤ 20 x 10^{-4} ≤ 30 x 10^{-4}	≤ 20 x 10^{-4} ≤ 70 x 10^{-4} –
Rated voltage pulse slope $(dV/dt)_R$ P = 10.0mm P = 15.0mm P = 22.5mm P = 27.5mm P = 37.5mm	400 V/µs 300 V/µs 150 V/µs 100 V/µs 100 V/µs	
R between leads, for C ≤ 0.33 µF	〉 15 000 MΩ	
RC between leads, for C > 0.33 µF	〉 5 000 s	
Withstanding(DC) Voltage (cut-off current 10mA) C ≤ 1 µF C > 1 µF	 2250 V, 1min 1850 V, 1min	
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 ± 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 (Cp wire)			
0.001	4.0 x 10.0x 12.5	0.8	D60102	D61102	D64102	D65102
0.0015	4.0 x 10.0x 12.5	0.8	D60152	D61152	D64152	D65152
0.0022	4.0 x 10.0x 12.5	0.8	D60222	D61222	D64222	D65222
0.0033	4.0 x 10.0x 12.5	0.8	D60332	D61332	D64332	D65332
0.0047	4.0 x 10.0x 12.5	0.8	D60472	D61472	D64472	D65472
0.0068	4.0 x 10.0x 12.5	0.8	D60682	D61682	D64682	D65682
0.01	4.0 x 10.0x 12.5	0.8	D60103	D61103	D64103	D65103
0.015	4.0 x 10.0x 12.5	0.8	D60153	D61153	D64153	D65153
0.022	4.0 x 10.0x 12.5	0.8	D60223	D61223	D64223	D65223
0.033	5.0 x 11.0 x 12.5	0.9	D60333	D61333	D64333	D65333
0.047	5.0 x 11.0 x 12.5	0.9	D60473	D61473	D64473	D65473
0.068	6.0 x 12.0 x 12.5	1.0	D60683	D61683	D64683	D65683
0.1	6.0 x 12.0 x 12.5	1.0	D60104	D61104	D64104	D65104
0.15	6.0 x 12.0 x 12.5	1.0	D60154	D61154	D64154	D65154

EMI Suppression film capacitors

PCX2 339x6,x7 (Mini)

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 ± 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			dt = 0.6 +0.06/-0.05 mm (Cp wire)			
0.01	5.0 x 11.0 x 18.0	1.6	F60103	F61103	F64103	F65103
0.015	5.0 x 11.0 x 18.0	1.6	F60153	F61153	F64153	F65153
0.022	5.0 x 11.0 x 18.0	1.6	F60223	F61223	F64223	F65223
0.033	5.0 x 11.0 x 18.0	1.6	F60333	F61333	F64333	F65333
0.047	5.0 x 11.0 x 18.0	1.6	F60473	F61473	F64473	F65473
0.068	5.0 x 11.0 x 18.0	1.6	F60683	F61683	F64683	F65683
0.1	5.0 x 11.0 x 18.0	1.6	F60104	F61104	F64104	F65104
0.15	6.0 x 12.0 x 18.0	1.7	F60154	F61154	F64154	F65154
Pitch = 15.0 ± 0.4 mm			dt = 0.8 +0.08/-0.05 mm (Cp wire)			
0.22	7.0 x 13.5 x 18.0	1.9	F60224	F61224	F64224	F65224
0.33	8.5 x 13.5 x 18.0	2.4	FF0334	FF1334	FF4334	FF5334
0.33	8.5 x 15.0 x 18.0	2.6	F60334	F61334	F64334	F65334
0.47	10.0 x 16.5 x 18.0	3.1	F60474	F61474	F64474	F65474
0.68	11.0 x 18.5 x 18.0	4.1	F60684	F61684	F64684	F65684
Pitch = 22.5 ± 0.4 mm			dt = 0.8 +0.08/-0.05 mm (Cp wire)			
0.22	6.0 x 15.5 x 26.0	3.0	J60224	J61224	J64224	J65224
0.33	6.0 x 15.5 x 26.0	3.0	J60334	J61334	J64334	J65334
0.47	7.0 x 16.5 x 26.0	3.5	J60474	J61474	J64474	J65474
0.68	8.5 x 18.0 x 26.0	4.4	J60684	J61684	J64684	J65684
1.0	10.0 x 19.5 x 26.0	5.5	J60105	-	J64105	-
1.0	11.5 x 21.0 x 26.0	6.5	-	J61105	-	J65105
1.5	13.0 x 23.0 x 26.0	8.0	J60155	J61155	J64155	J65155
2.2	16.5 x 22.0 x 26.0	10.0	JF0225	JF1225	JF4225	JF5225
Pitch = 27.5 ± 0.4 mm			dt = 0.8 +0.08/-0.05 mm (Cp wire)			
0.68	9.0 x 19.0 x 31.0	5.5	L60684	L61684	L64684	L65684
1.0	11.0 x 21.0 x 31.0	7.8	L60105	L61105	L64105	L65105
1.5	13.0 x 23.0 x 31.0	10.4	L60155	L61155	L64155	L65155
2.2	15.0 x 25.0 x 31.0	12.8	L60225	L61225	L64225	L65225
3.3	18.0 x 28.0 x 31.0	17.2	L60335	L61335	L64335	L65335
Pitch = 27.5 ± 0.4 mm			dt = 0.8 +0.08/-0.05 mm (Cu wire)			
4.7	21.0 x 31.0 x 31.0	20.4	L70475	L71475	L74475	L75475
Pitch = 37.5 ± 0.7 mm			dt = 1.0 +0.1/-0.1 mm (Cu wire)			
2.2	14.0 x 25.0 x 42.0	15.0	Q70225*	Q71225*	Q74225	Q75225
3.3	14.0 x 25.0 x 42.0	15.0	Q70335*	Q71335*	Q74335	Q75335
4.7	17.0 x 30.0 x 42.0	25.3	Q70475*	Q71475*	Q74475	Q75475
6.8	20.0 x 34.0 x 42.0	33.6	Q70685*	Q71685*	Q74685	Q75685
10	28.0 x 42.5 x 42.0	51.9	Q70106*	Q71106*	Q74106	Q75106

* 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".

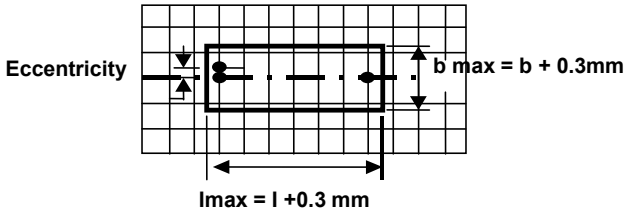
SPECIFIC METHOD OF MOUNTING TO WITHSTAND VIBRATION AND SHOCK

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

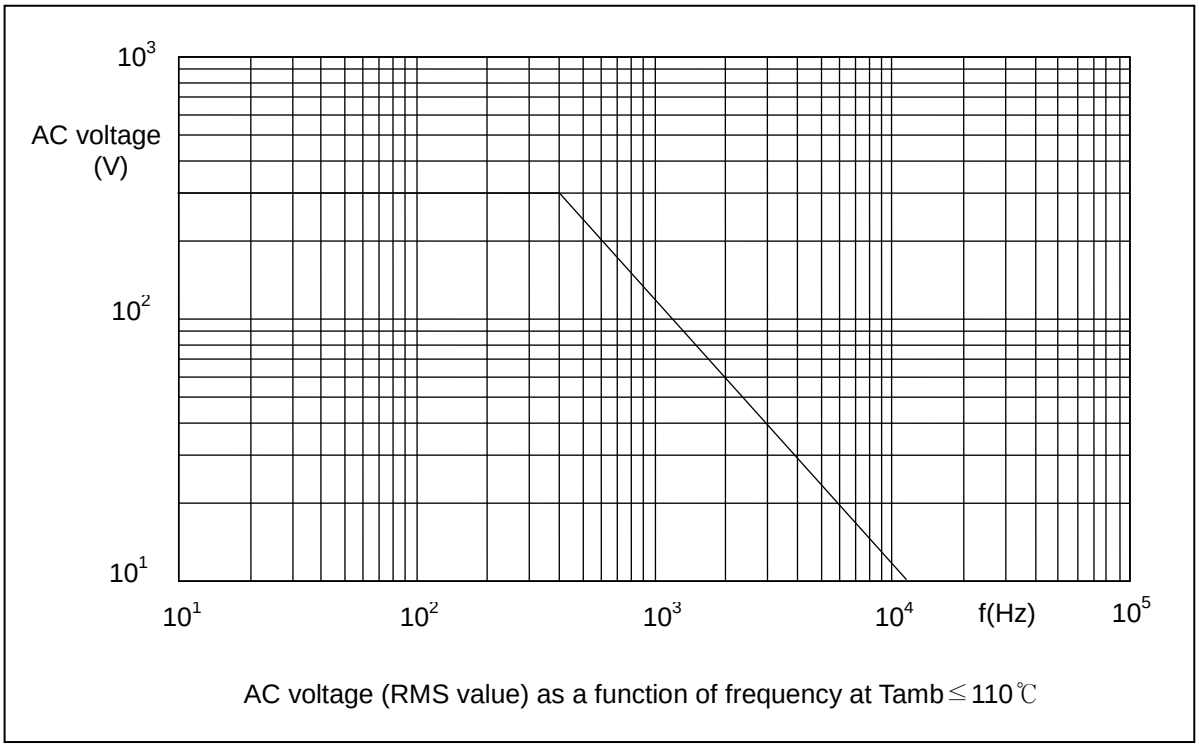
. Storage temperature : T_{stg} = -25 to +40 ^{o}C with RH maximum 80% without condensation.

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 Tamb≤110℃

EMI Suppression film capacitors

PCX2 339x6,x7 (Mini)

PRODUCT MARKING

Capacitors are marked with having following information;

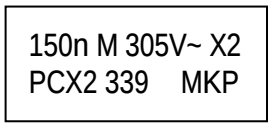
1.Manufacturer (PILKOR)
2.Manufacturer's type designation (PCX2 339)
3.Rated capacitance in code according to IEC 60062
4.Rated (AC) voltage (305V~)
5.Sub class (X2)
6.Tolerance on rated capacitance M =±20 % K =±10 %
7.Climatic category (55/110/21)
8.Code for dielectric material (MKP)
9.Year and week of manufacturing (e.g. 1401)
10.Safety approvals
* white or black color

Example of marking

Marking on the side

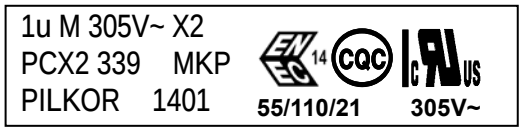
or

Marking on the side



Marking on the top

Marking on the side



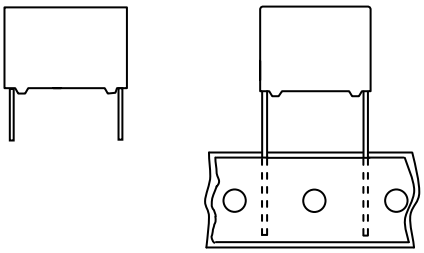
Marking on headface

Marking on the top

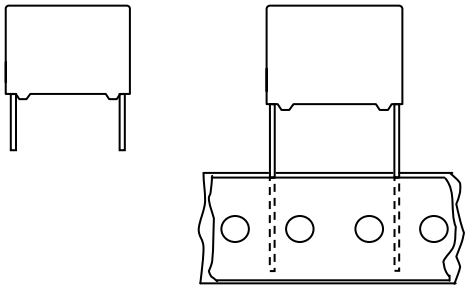
EMI Suppression film capacitors

PCX2 339x3 (Standard)

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) *	0.001μF to 3.3μF
Capacitance tolerance	± 10 %, ± 20 %
Rated (AC) voltage 50 to 60 Hz	305 V~
Climatic category	55/105/21
Temperature range	-55℃ ~ +105℃
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**

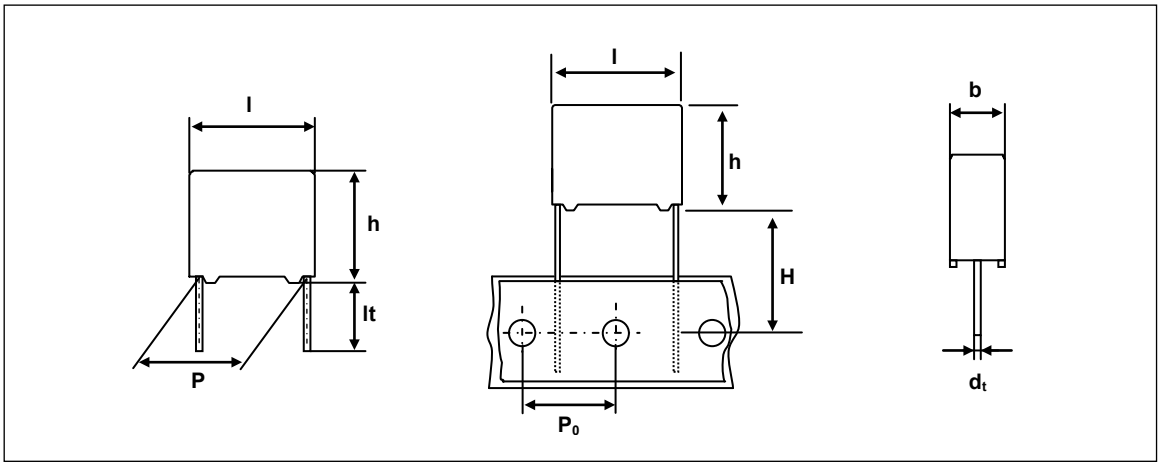
FEATURES	APPLICATIONS
. 10 to 27.5 mm lead pitch . Supplied loose in box and taped on reel . Consist of a low-inductive wound cell of Metallized (PP) film . potted in a flame retardant case	. For X2-electromagnetic interference suppression . Specially designed to meet the NEW REQUIREMENTS of new IEC 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

• 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.

EMI Suppression film capacitors

PCX2 339x3 (Standard)

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 (I_{max})			
code	Packing method	C – tol.	Lead length & Height	Hole to hole (P_o)	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 3.3μF	E165646
ENEC(SEMKO) *	305V(AC)	1nF to 3.3μF	SE/0256-4
EK	305V(AC)	C ≤ 0.1μF 0.1μF < C ≤ 0.33μF 0.33μF < C ≤ 1.0μF 1.0μF < C ≤ 3.0μF	SH03001-9001 SH03001-8001 SH03001-13001 SH03001-13002
CQC	305V(AC)	1nF to 3.3μF	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	
DIMENSIONS	**lt = 5.0 ± 1.0 mm**	**lt = 25 ± 2.0 mm**
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 ≤ 470 nF 470 nF < C ≤ 1 µF C > 1 µF	≤ 10 x 10^{-4} ≤ 20 x 10^{-4} ≤ 30 x 10^{-4}	≤ 20 x 10^{-4} ≤ 70 x 10^{-4} –
Rated voltage pulse slope $(dV/dt)_R$ P = 10.0mm P = 15.0mm P = 22.5mm P = 27.5mm	 550 V/µs 400 V/µs 200 V/µs 150 V/µs	
R between leads, for C ≤ 0.33 µF	> 15 000 MΩ	
RC between leads, for C > 0.33 µF	> 5 000 s	
Withstanding(DC) Voltage (cut-off current 10mA) C ≤ 1 µF C > 1 µF	 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 ± 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				
0.001	4.0 x 10.0x 12.5	0.8	D30102	D31102	D34102	D35102
0.0015	4.0 x 10.0x 12.5	0.8	D30152	D31152	D34152	D35152
0.0022	4.0 x 10.0x 12.5	0.8	D30222	D31222	D34222	D35222
0.0033	4.0 x 10.0x 12.5	0.8	D30332	D31332	D34332	D35332
0.0047	4.0 x 10.0x 12.5	0.8	D30472	D31472	D34472	D35472
0.0068	4.0 x 10.0x 12.5	0.8	D30682	D31682	D34682	D35682
0.01	4.0 x 10.0x 12.5	0.8	D30103	D31103	D34103	D35103
0.015	4.0 x 10.0x 12.5	0.8	D30153	D31153	D34153	D35153
0.022	4.0 x 10.0x 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~ X2 **loose and taped**

Cap. (µF)	b x h x l (mm)	MASS (g)	CATALOGUE NUMBER			
			PCX2 339			
			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			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 ± 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 ± 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".

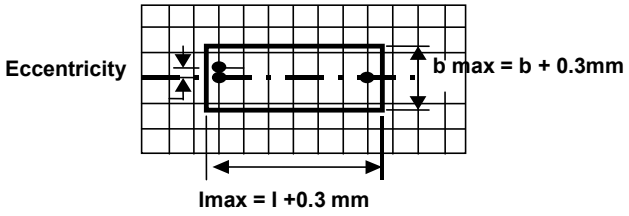
SPECIFIC METHOD OF MOUNTING TO WITHSTAND VIBRATION AND SHOCK

In order to withstand vibration and shock tests, it must be ensured that the stand-off 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 ^{o}C with RH maximum 80% without condensation.

EMI Suppression film capacitors

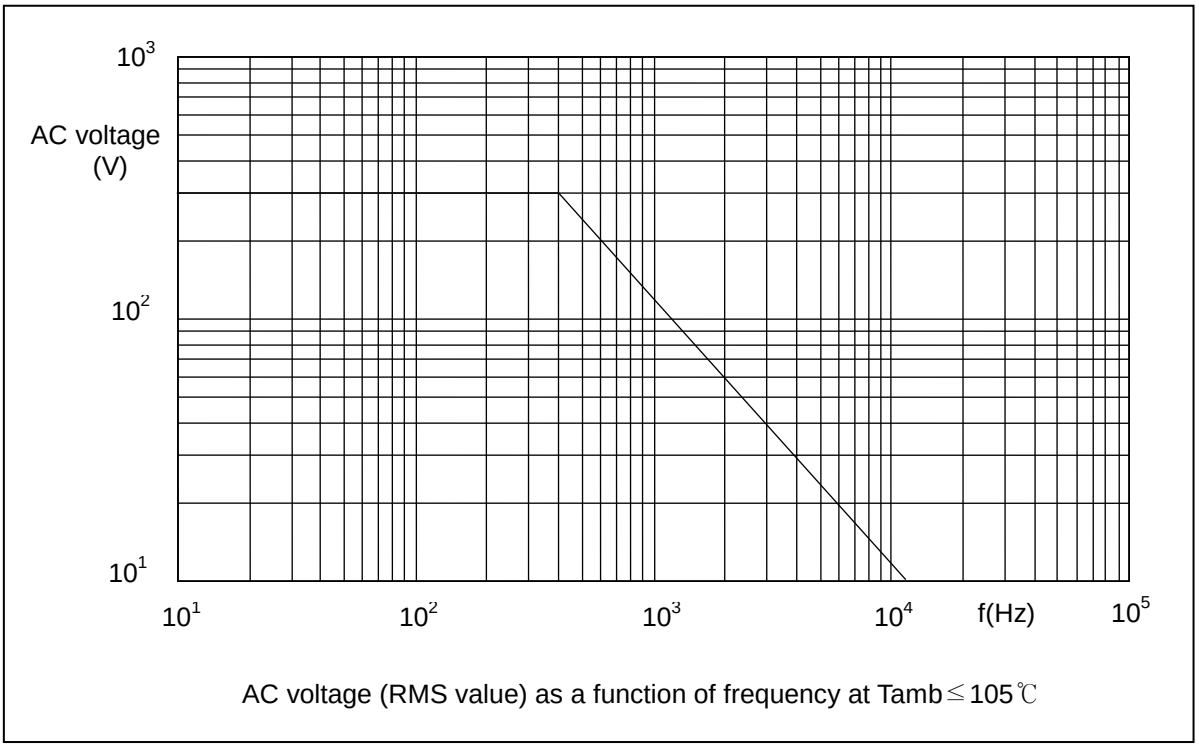
PCX2 339x3 (Standard)

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 Tamb≤105℃

EMI Suppression film capacitors

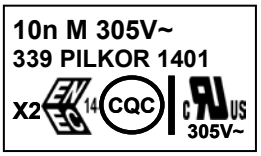
PCX2 339x3 (Standard)

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
* white or black color

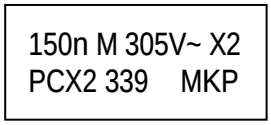
Example of marking



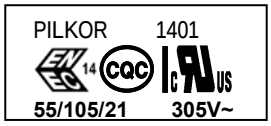
Marking on the side

or

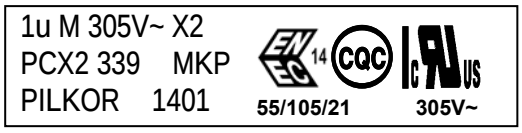
Marking on the side



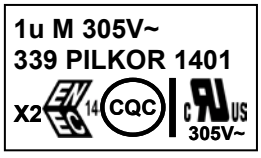
Marking on the top



Marking on the side



Marking on headface

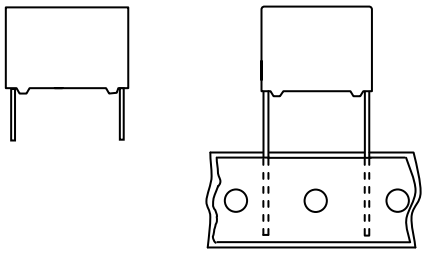


Marking on the top

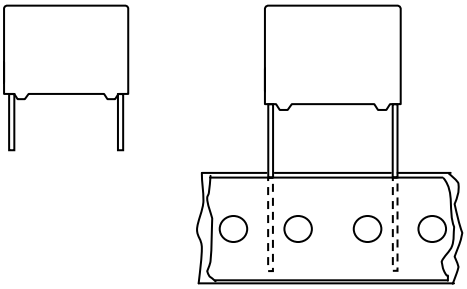
EMI Suppression Film capacitors

PCX2 337x6 (Mini)

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) *	0.001μF to 3.3μF
Capacitance tolerance	± 10 %, ± 20 %
Rated (AC) voltage 50 to 60 Hz	275 V~
Climatic category	40/105/21
Temperature range	-40℃ ~ +105℃
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**

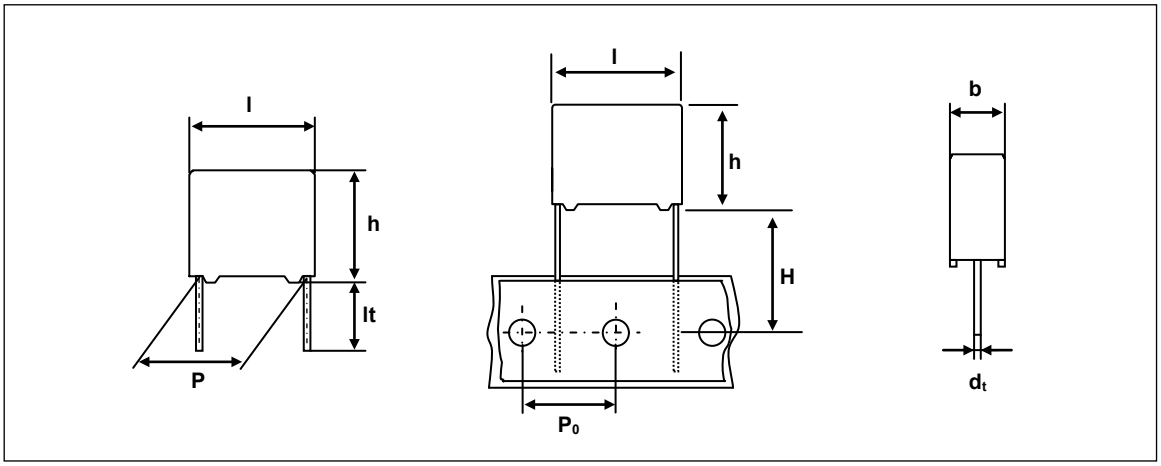
FEATURES	APPLICATIONS
. 10 to 27.5 mm lead pitch . Supplied loose in box and taped on reel . Consist of a low-inductive wound cell of Metallized (PP) film . potted in a flame retardant case	. For X2-electromagnetic interference suppression . Specially designed to meet the NEW REQUIREMENTS of new IEC 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

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

EMI Suppression
Film capacitors

PCX2 337x6
(Mini)

Ordering Information



PCX2 337 X X X XXX

Capacitance

Code	Version & Voltage
6	Mini-Cp / 275V
F	Low h-Cp / 275V

Code	Original Pitch
D	10.0 mm
F	15.0 mm
J	22.5 mm
L	27.5 mm

Available versions					Product (l_{max})			
code	Packing method	C – tol.	Lead length & Height	Hole to hole (P_o)	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 337x6 (Mini)

SAFETY APPROVALS

SAFETY APPROVALS	Voltage	Value	File Number
UL 60384-14 & CSA E60384-14:09(cUL)	305V(AC)	1nF to 3.3μF	E165646
ENEC(SEMKO) *	275V(AC)	1nF to 3.3μF	SE/0256-1
EK	275V(AC)	10nF to 3.3μF	SH03001-2003
CQC	275V(AC)	10nF to 3.3μF	CQC04001009332

* 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 = 5.0 ± 1.0 mm	lt = 25 ± 2.0 mm
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 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
11.5 x 21.0 x 26.0	500	500
13.0 x 23.0 x 26.0	500	500
17.0 x 22.0 x 26.0	250	250
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
15.0 x 25.0 x 31.0	250	250
18.0 x 28.0 x 31.0	200	200

EMI Suppression
Film capacitors

PCX2 337x6
(Mini)

SPECIFIC REFERENCE DATA FOR 275 V_{AC}

Tangent of loss angle	at 1 khz	at 10 khz
C ≤ 470 nF	≤ 10 x 10^{-4}	≤ 20 x 10^{-4}
470 nF < C ≤ 1 µF	≤ 20 x 10^{-4}	≤ 70 x 10^{-4}
C > 1 µF	≤ 30 x 10^{-4}	–
Rated voltage pulse slope $(dV/dt)_R$		
P = 10.0mm	400 V/µs	
P = 15.0mm	300 V/µs	
P = 22.5mm	150 V/µs	
P = 27.5mm	100 V/µs	
R between leads, for C ≤ 0.33 µF	〉 15 000 MΩ	
RC between leads, for C > 0.33 µF	〉 5 000 s	
Withstanding(DC) Voltage (cut-off current 10mA)		
C ≤ 1 µF	2250 V 1min	
C > 1 µF	1850 V 1min	
Withstanding(AC) Voltage between leads and case	2400 V ; 1 min	

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

Cap. (µF)	b x h x l (mm)	MASS (g)	CATALOGUE NUMBER			
			PCX2 337			
			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				
0.001	4.0x 10.0x 12.5	0.8	D60102	D61102	D64102	D65102
0.0015	4.0x 10.0x 12.5	0.8	D60152	D61152	D64152	D65152
0.0022	4.0x 10.0x 12.5	0.8	D60222	D61222	D64222	D65222
0.0033	4.0x 10.0x 12.5	0.8	D60332	D61332	D64332	D65332
0.0047	4.0x 10.0x 12.5	0.8	D60472	D61472	D64472	D65472
0.0068	4.0x 10.0x 12.5	0.8	D60682	D61682	D64682	D65682
0.01	4.0x 10.0x 12.5	0.8	D60103	D61103	D64103	D65103
0.015	4.0x 10.0x 12.5	0.8	D60153	D61153	D64153	D65153
0.022	4.0x 10.0x 12.5	0.8	D60223	D61223	D64223	D65223
0.033	5.0x 11.0 x 12.5	0.9	D60333	D61333	D64333	D65333
0.047	5.0x 11.0 x 12.5	0.9	D60473	D61473	D64473	D65473
0.068	6.0 x 12.0 x 12.5	1.0	D60683	D61683	D64683	D65683
0.1	6.0 x 12.0 x 12.5	1.0	D60104	D61104	D64104	D65104
0.15	6.0 x 12.0 x 12.5	1.0	D60154	D61154	D64154	D65154

EMI Suppression
Film capacitors

PCX2 337x6
(Mini)

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

Cap. (µF)	b x h x l (mm)	MASS (g)	CATALOGUE NUMBER			
			PCX2 337			
			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 dt = 0.6 +0.06/-0.05 mm						
0.01	5.0 x 11.0 x 18.0	1.6	F60103	F61103	F64103	F65103
0.015	5.0 x 11.0 x 18.0	1.6	F60153	F61153	F64153	F65153
0.022	5.0 x 11.0 x 18.0	1.6	F60223	F61223	F64223	F65223
0.033	5.0 x 11.0 x 18.0	1.6	F60333	F61333	F64333	F65333
0.047	5.0 x 11.0 x 18.0	1.6	F60473	F61473	F64473	F65473
0.068	5.0 x 11.0 x 18.0	1.6	F60683	F61683	F64683	F65683
0.1	5.0 x 11.0 x 18.0	1.6	F60104	F61104	F64104	F65104
0.15	6.0 x 12.0 x 18.0	1.7	F60154	F61154	F64154	F65154
Pitch = 15.0 ± 0.4 mm dt = 0.8 +0.08/-0.05 mm						
0.22	7.0 x 13.5 x 18.0	1.9	F60224	F61224	F64224	F65224
0.33	8.5 x 13.5 x 18.0	2.4	FF0334	FF1334	FF4334	FF5334
0.33	8.5 x 15.0 x 18.0	2.6	F60334	F61334	F64334	F65334
0.47	10.0 x 16.5 x 18.0	3.1	F60474	F61474	F64474	F65474
0.68	11.0 x 18.5 x 18.0	4.1	F60684	F61684	F64684	F65684
Pitch = 22.5 ± 0.4 mm dt = 0.8 +0.08/-0.05 mm						
0.22	6.0 x 15.5 x 26.0	3.0	J60224	J61224	J64224	J65224
0.33	6.0 x 15.5 x 26.0	3.0	J60334	J61334	J64334	J65334
0.47	7.0 x 16.5 x 26.0	3.5	J60474	J61474	J64474	J65474
0.68	8.5 x 18.0 x 26.0	4.4	J60684	J61684	J64684	J65684
1.0	10.0 x 19.5 x 26.0	5.5	J60105	-	J64105	-
1.0	11.5 x 21.0 x 26.0	6.5	-	J61105	-	J65105
1.5	13.0 x 23.0 x 26.0	8.0	J60155	J61155	J64155	J65155
2.2	16.5 x 22.0 x 26.0	10.0	JF0225	JF1225	JF4225	JF5225
Pitch = 27.5 ± 0.4 mm dt = 0.8 +0.08/-0.05 mm						
0.68	9.0 x 19.0 x 31.0	5.5	L60684	L61684	L64684	L65684
1.0	11.0 x 21.0 x 31.0	7.8	L60105	L61105	L64105	L65105
1.5	13.0 x 23.0 x 31.0	10.4	L60155	L61155	L64155	L65155
2.2	15.0 x 25.0 x 31.0	12.8	L60225	L61225	L64225	L65225
3.3	18.0 x 28.0 x 31.0	17.2	L60335	L61335	L64335	L65335

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".

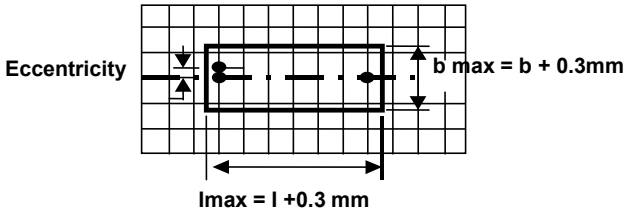
SPECIFIC METHOD OF MOUNTING TO WITHSTAND VIBRATION AND SHOCK

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 ^{o}C with RH maximum 80% without condensation.

EMI Suppression Film capacitors

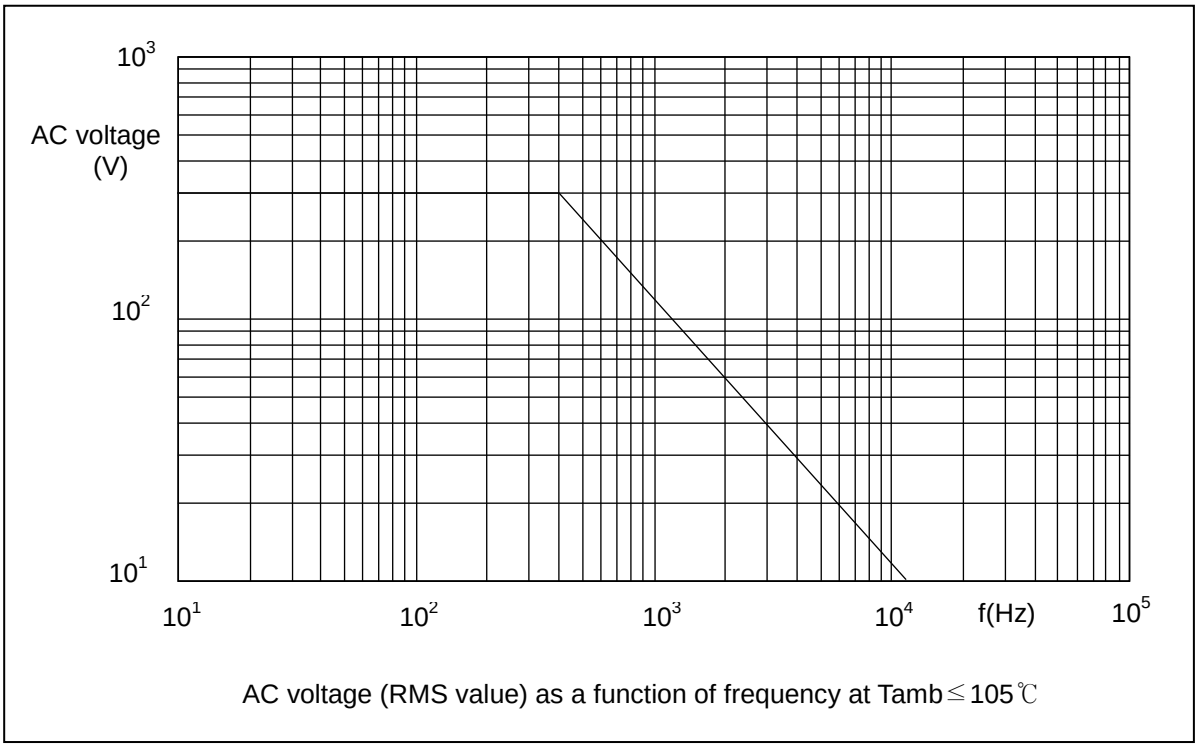
PCX2 337x6 (Mini)

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 Tamb≤105℃

EMI Suppression
Film capacitors

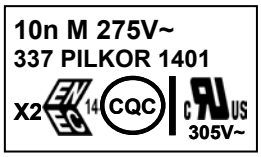
PCX2 337x6
(Mini)

PRODUCT MARKING

Capacitors are marked with having following information;

1.Manufacturer (PILKOR)
2.Manufacturer's type designation (PCX2 337)
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 (40/105/21)
8.Code for dielectric material (MKP)
9.Year and week of manufacturing (e.g. 1401)
10.Safety approvals
* white or black color

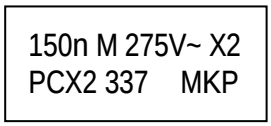
Example of marking



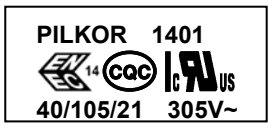
Marking on the side

or

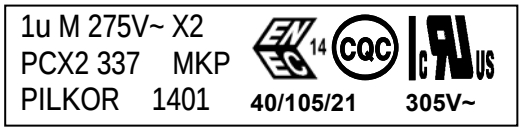
Marking on the side



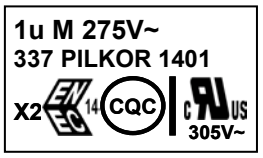
Marking on the top



Marking on the side



Marking on headface

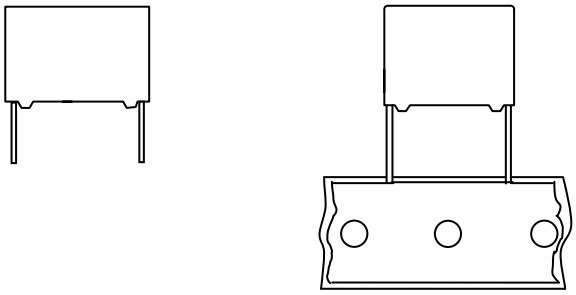


Marking on the top

EMI Suppression film capacitors

PCX2 337x1 (Standard)

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



QUICK REFERENCE DATA

Capacitance range (E6 series) *	0.01μF to 3.3μF
Capacitance tolerance	±10 %, ±20 %
Rated (AC) voltage 50 to 60 Hz	275 V~
Climatic category	40/100/21
Temperature range	-40℃ ~ +100℃
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**

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 (PP) film
. potted in a flame retardant case

APPLICATIONS

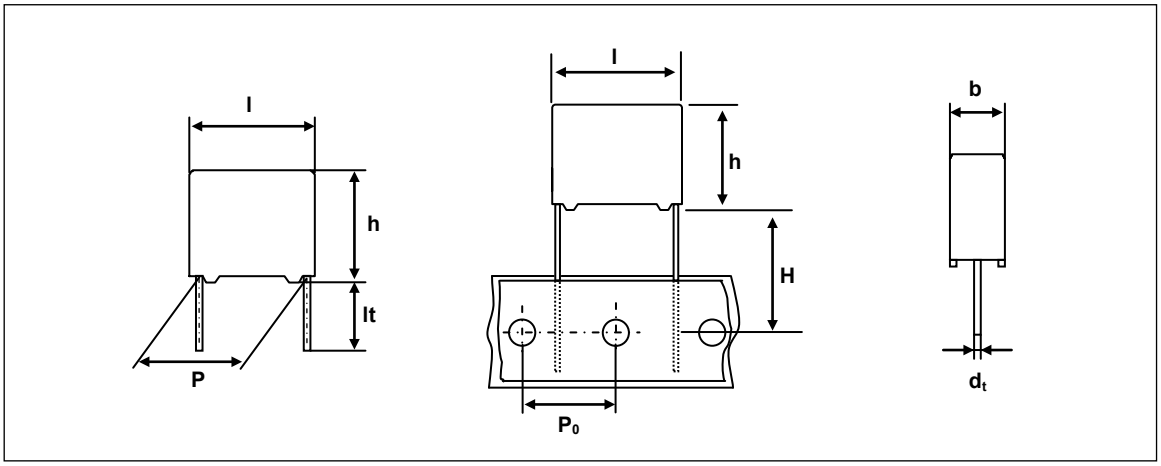
. For X2-electromagnetic interference suppression
. Specially designed to meet the NEW REQUIREMENTS of new IEC 60384-14 Specification(3rd edition)/ EN 60384-14/UL60384-14 requiring a 2.5kV peak pulse voltage test
. Not for use in series with the mains

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

EMI Suppression film capacitors

PCX2 337x1 (Standard)

Ordering Information



PCX2 337 (X) X X X X X

- Type series
- Capacitance

Code	Version & Voltage
1	Standard / 275V

*Code	Original pitch
F	15.0mm
J	22.5mm
L	27.5mm

* In case of overlapping the value, use the 13NC with pitch information.

Available versions					Product (l_{max})			
Code	Packing method	C – tol.	Lead length & Height	Hole to hole (P_o)	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 do not follow coding rule.

EMI Suppression film capacitors

PCX2 337x1 (Standard)

SAFETY APPROVALS

SAFETY APPROVALS	Voltage	Value	File Number
UL 60384-14 & CSA E60384-14:09(cUL)	305V(AC)	10nF to 3.3µF	E165646
ENEC(SEMKO) *	275V(AC)	10nF to 3.3µF	SE/0256-1
EK	275V(AC)	10nF to 3.3µF	SH03001-2003
CQC	275V(AC)	10nF to 3.3µF	CQC04001009332

* 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 = 5.0 ± 1.0 mm**	**lt = 25 ± 2.0 mm**
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
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
12.0 x 20.0 x 18.0	1000	1000
6.0 x 15.5 x 26.5	1000	1000
7.0 x 16.5 x 26.5	1000	1000
8.5 x 18.0 x 26.5	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 31.5	500	250
13.0 x 23.0 x 31.5	250	250
15.0 x 25.0 x 31.5	250	250
18.0 x 28.0 x 31.5	200	200
21.0 x 31.0 x 31.5	150	150

EMI Suppression film capacitors

PCX2 337x1 (Standard)

SPECIFIC REFERENCE DATA FOR 275 V_{AC}

Tangent of loss angle	at 1 khz	at 10 khz
C ≤ 470 nF	≤ 10 x 10^{-4}	≤ 20 x 10^{-4}
470 nF < C ≤ 1 µF	≤ 20 x 10^{-4}	≤ 70 x 10^{-4}
C > 1 µF	≤ 30 x 10^{-4}	-
Rated voltage pulse slope $(dV/dt)_R$		
P = 10.0mm	550 V/µs	
P = 15.0mm	400 V/µs	
P = 22.5mm	200 V/µs	
P = 27.5mm	150 V/µs	
R between leads, for C ≤ 0.33 µF	> 15 000 MΩ	
RC between leads, for C > 0.33 µF	> 5 000 s	
Withstanding(DC) Voltage (cut-off current 10mA)		
C ≤1 µF	2250 V, 1 min	
1 µF < C ≤3.3 µF	1850 V, 1 min	
Withstanding(AC) Voltage between leads and case	2400 V ; 1 min	

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

Cap. (µF)	b x h x l (mm)	MASS (g)	CATALOGUE NUMBER PCX2 337 ..... 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	4.0 x 10.0 x 12.5	0.8	10103	11103	14103	15103
0.015	4.0 x 10.0 x 12.5	0.8	10153	11153	14153	15153
0.022	4.0 x 10.0 x 12.5	0.8	10223	11223	14223	15223
0.033	5.0 x 11.0 x 12.5	0.9	10333	11333	14333	15333
0.047	5.0 x 11.0 x 12.5	0.9	10473	11473	14473	15473
0.068	6.0 x 12.0 x 12.5	1.0	10683	11683	14683	15683
0.1	6.0 x 12.0 x 12.5	1.0	10104	11104	14104	15104
Pitch = 15.0 ± 0.4 mm dt = 0.8 +0.08/-0.05 mm						
0.01	5.0 x 11.0 x 18.0	1.6	F10103	F11103	F14103	F15103
0.015	5.0 x 11.0 x 18.0	1.6	F10153	F11153	F14153	F15153
0.022	5.0 x 11.0 x 18.0	1.6	F10223	F11223	F14223	F15223
0.033	5.0 x 11.0 x 18.0	1.6	F10333	F11333	F14333	F15333
0.047	5.0 x 11.0 x 18.0	1.6	F10473	F11473	F14473	F15473
0.068	5.0 x 11.0 x 18.0	1.6	F10683	F11683	F14683	F15683
0.1	5.0 x 11.0 x 18.0	1.6	FJ0104	FJ1104	FJ4104	FJ5104
0.1	6.0 x 12.0 x 18.0	1.8	F10104	F11104	F14104	F15104
0.15	7.0 x 13.5 x 18.0	1.9	10154	11154	14154	15154
0.22	8.5 x 15.0 x 18.0	2.6	10224	11224	14224	15224
0.33	10.0 x 16.5 x 18.0	3.1	10334	11334	14334	15334
0.47	11.0 x 18.5 x 18.0	4.1	99001	99002	99003	99004

; Mini Type (xJxxxx)

EMI Suppression film capacitors

PCX2 337x1 (Standard)

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

Cap. (µF)	b x h x l (mm)	MASS (g)	CATALOGUE NUMBER			
			PCX2 337			
			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 = 22.5 ± 0.4 mm			dt = 0.8 +0.08/-0.05 mm			
0.22	6.0 x 15.5 x 26.0	4.4	J10224	J11224	J14224	J15224
0.33	7.0 x 16.5 x 26.0	4.4	J10334	J11334	J14334	J15334
0.47	8.5 x 18.0 x 26.0	4.4	10474	11474	14474	15474
0.68	10.0 x 19.5 x 26.0	5.5	10684	11684	14684	15684
1.0	13.0 x 23.0 x 26.0	8.0	10105	11105	14105	15105
Pitch = 27.5 ± 0.4 mm			dt = 0.8 +0.08/-0.05 mm			
0.68	11.0 x 21.0 x 31.0	7.8	L10684	L11684	L14684	L15684
1.0	13.0 x 23.0 x 31.0	10.4	L10105	L11105	L14105	L15105
1.5	15.0 x 25.0 x 31.0	12.8	10155	11155	14155	15155
2.2	18.0 x 28.0 x 31.0	17.2	10225	11225	14225	15225
3.3	21.0 x 31.0 x 31.0	20.4	10335	11335	14335	15335

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.

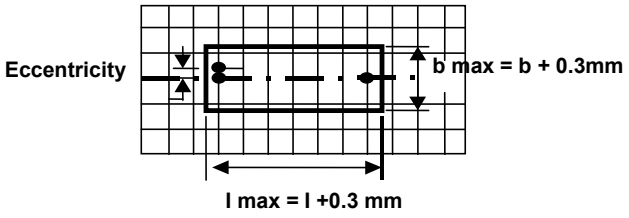
. For pitches of 15mm the capacitors shall be mechanically fixed by leads.

. 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 ^{o}C with RH maximum 80% without condensation.

EMI Suppression film capacitors

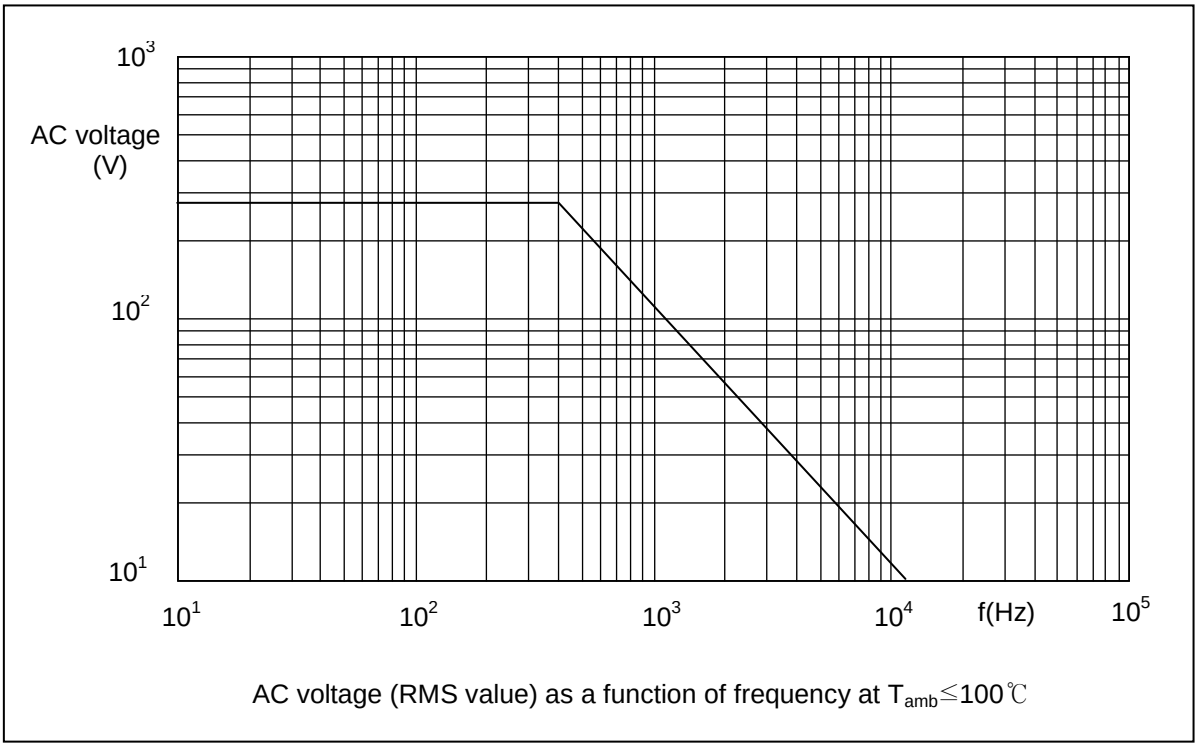
PCX2 337x1 (Standard)

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 $T_{amb} \leq 100$℃

EMI Suppression film capacitors

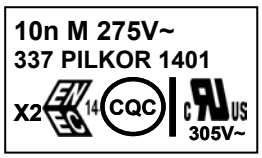
PCX2 337x1 (Standard)

PRODUCT MARKING

Capacitors are marked with the following information ;

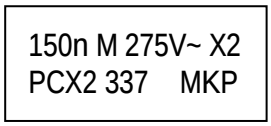
1.Manufacturer (PILKOR) for capacitors with original pitch ≥15mm,
PILKOR trade mark for pitch=10mm
2.Manufacturer's type designation (PCX2 337)
3.Rated capacitance in code according to IEC 60062
4.Rated (AC) voltage (275V~)
5.Sub class (X2)
6.Tolerance on rated capacitance M =±20 % K =±10 %
7.Climatic category (40/100/21)
8.Code for dielectric material (MKP) for capacitors with original pitch ≥15mm
9.Year and week of manufacturing (1401)
10.Safety approvals
* white or black color

Example of marking

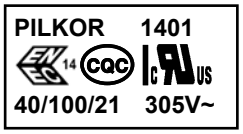


Marking on the side or

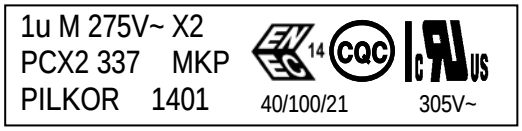
Marking on the side



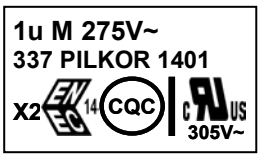
Marking on the top



Marking on the side



Marking on headface

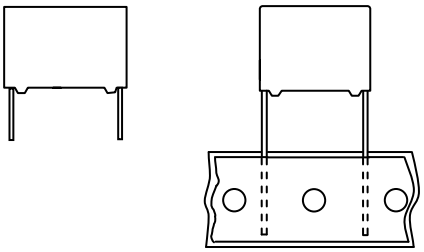


Marking on the top

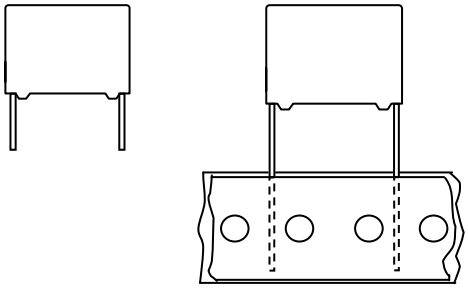
EMI Suppression film capacitors

PCX1 331

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



15mm



22.5 and 27.5mm

QUICK REFERENCE DATA

Capacitance range (E6 series) *	0.01μF to 1.0μF
Capacitance tolerance	±10 %, ±20 %
Rated (AC) voltage 50 to 60 Hz	440 V~
Climatic category	55/105/21
Temperature range	-55℃ ~ +105℃
Reference IEC specification	IEC 60384-14(3rd edition) and EN 60384-14
Safety approvals	UL60384-14 & CSA E60384-14:09(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**

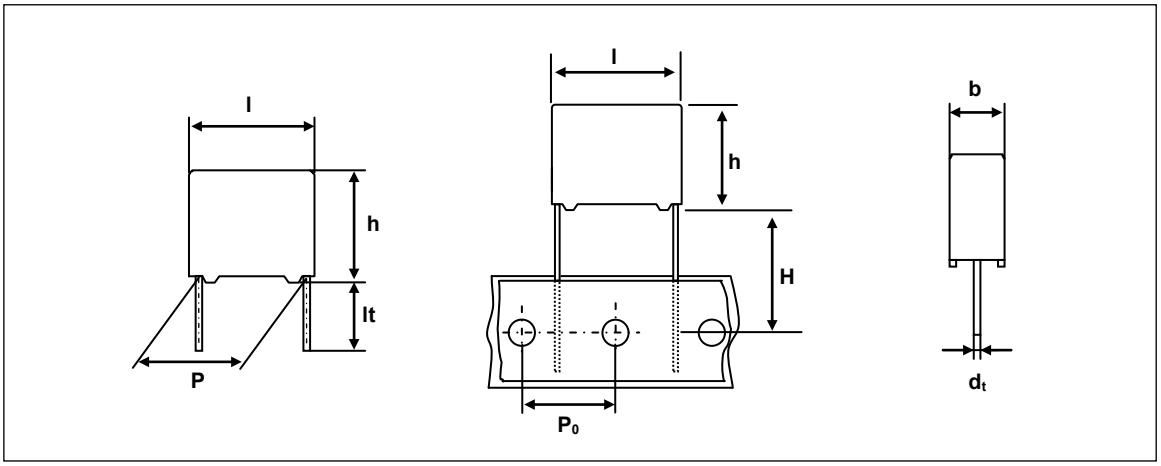
FEATURES	APPLICATIONS
. 15 to 27.5 mm lead pitch	. For X1-electromagnetic interference suppression
. Supplied loose in box and taped on reel	. Specially designed to meet the NEW REQUIREMENTS in new IEC 60384-14 specification(3rd edition)/EN 60384-14/UL60384-14 requiring for X1 a 4kV peak pulse voltage test
. Consist of a low-inductive wound cell of Metallized Polypropylene film, potted in a flame retardant case	. 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.

EMI Suppression film capacitors

PCX1 331

Ordering Information



PCX1 331 X X X X X X

Type series

Capacitance

Code	Voltage
4	440Vac

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

Available versions					Product (I_{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

** Some values is not following the coding rule.

EMI Suppression film capacitors

PCX1 331

SAFETY APPROVALS

SAFETY APPROVALS	Voltage	Value	File Number
UL 60384-14 & CSA E60384-14:09(cUL)	440V(AC)	10nF to 1uF	E165646
ENEC(SEMKO)*	440V(AC)	10nF to 1uF	SE/02566
* 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 = 5.0 ± 1.0 mm	lt = 25 ± 2.0 mm
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
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
12.0 x 22.0 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

PCX1 331

SPECIFIC REFERENCE DATA FOR 440 V_{AC}

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

V_{Rac} = 440V~ X1

Cap. (uF)	b x h x l (mm)	MASS (g)	CATALOGUE NUMBER PCX1 331 ..... loose in box			
			lt = 5.0 ± 1.0 mm		lt = 25.0 ± 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	F40103	F41103	F44103	F45103
0.015			F40153	F41153	F44153	F45153
0.022			F40223	F41223	F44223	F45223
0.033	6.0 x 12.0 x 18.0	1.4	F40333	F41333	F44333	F45333
0.047	7.0 x 13.5 x 18.0	1.9	F40473	F41473	F44473	F45473
0.068	8.5 x 15.0 x 18.0	2.6	F40683	F41683	F44683	F45683
0.1	10.0 x 16.5 x 18.0	3.1	F40104	F41104	F44104	F45104
Pitch = 22.5 ± 0.4 mm			d_t = 0.8+0.08/-0.05 mm			
0.068	6.0 x 15.5 x 26.0	2.6	J40683	J41683	J44683	J45683
0.1	7.0 x 16.5 x 26.0	3.1	J40104	J41104	J44104	J45104
0.15	8.5 x 18.0 x 26.0	4.4	J40154	J41154	J44154	J45154
0.22	10.0 x 19.5 x 26.0	5.5	J40224	J41224	J44224	J45224
0.33	12.0 x 22.0 x 26.0	6.7	J40334	J41334	J44334	J45334
Pitch = 27.5 ± 0.4 mm			d_t = 0.8+0.08/-0.05 mm			
0.22	11.0 x 21.0 x 31.0	7.8	L40224	L41224	L44224	L45224
0.33	13.0 x 23.0 x 31.0	10.4	L40334	L41334	L44334	L45334
0.47	15.0 x 25.0 x 31.0	12.8	L40474	L41474	L44474	L45474
0.68	18.0 x 28.0 x 31.0	17.2	L40684	L41684	L44684	L45684
1.0	21.0 x 31.0 x 31.0	20.4	L40105	L41105	L44105	L45105

Original pitch	New Code	Old Code	Example
15.0mm	PCX1 331F4xxxx	PCX1 331 4xxxx	PCX1 331 45104 => PCX1 331F45104
22.5mm	PCX1 331J4xxxx	PCX1 331 5xxxx	
27.5mm	PCX1 331L4xxxx	PCX1 331 6xxxx	

EMI Suppression film capacitors

PCX1 331

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".

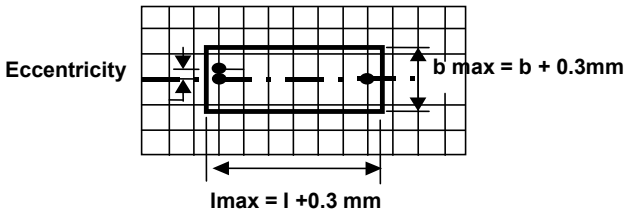
SPECIFIC METHOD OF MOUNTING TO WITHSTAND VIBRATION AND SHOCK

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 ^{o}C with RH maximum 80% without condensation.

EMI Suppression film capacitors

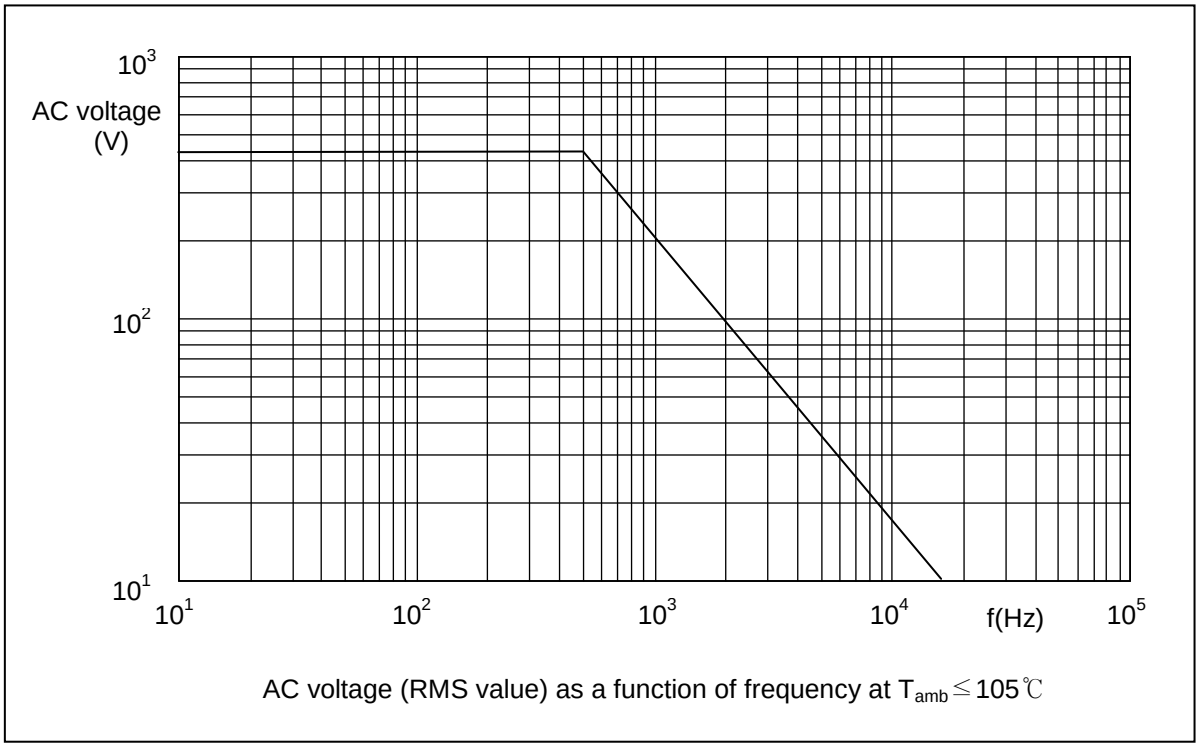
PCX1 331

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 $T_{amb} \leq 105$℃

EMI Suppression film capacitors

PCX1 331

PRODUCT MARKING

Capacitors are marked with the following information;

1.Manufacturer (PILKOR) for capacitors
2.Manufacturer's type designation (PCX1 331)
3.Rated capacitance in code according to IEC 60062
4.Rated (AC) voltage (440V~)
5.Sub class (X1)
6.Tolerance on rated capacitance M = ± 20 % K = ± 10 %
7.Climatic category (55/105/21)
8.Code for dielectric material (MKP) for capacitors with original pitch
9.Year and week of manufacturing (1401)
10.Safety approvals
* white or black color

Example of marking

Head face

100n M 440V~ X1
PCX1 331 MKP

Side face

PILKOR 1401
55/105/21

Head face

1u M 440V~ X1
PCX1 331 MKP
PILKOR 1401
55/105/21

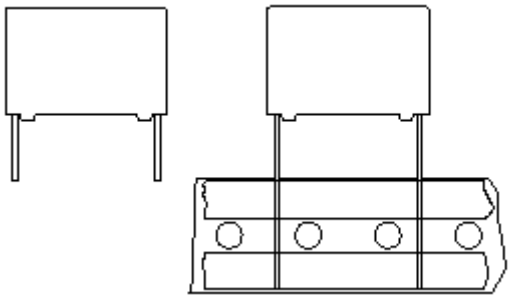
Head face or Side face

1u M 440V~
331 PILKOR 1401
X1

EMI Suppression film capacitors

PCX1 331 (480Vac)

MKP RADIAL POTTED **Pitch 15.0/22.5/27.5/37.5mm**



QUICK REFERENCE DATA

Capacitance range (E6 series) *	0.01㎌ to 4.7㎌
Capacitance tolerance	±10 %, ±20 %
Rated (AC) voltage 50 to 60 Hz	480 V~
Climatic category	55/110/21
Temperature range	-55℃ ~ +110℃
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**

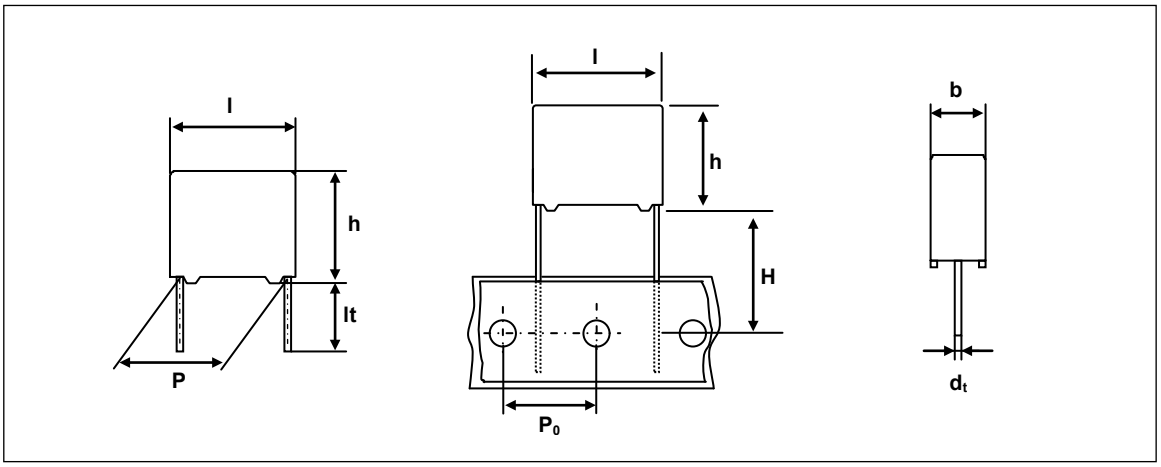
FEATURES	APPLICATIONS
. 15 to 37.5 mm lead pitch	. For X1-electromagnetic interference suppression
. Supplied loose in box and taped on reel	. Specially designed to meet the NEW REQUIREMENTS in new IEC 60384-14 specification(4th edition)/EN 60384-14/UL60384-14 requiring for X1 a 4kV peak pulse voltage test
. Consist of a low-inductive wound cell of Metallized Polypropylene film, potted in a flame retardant case	. 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.

EMI Suppression film capacitors

PCX1 331 (480Vac)

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 (l_{max})			
code	Packing method	C – tol.	Lead length & Height	Hole to hole (P_o)	18.0	26.0	31.0	42.0
					Pitch (P)			
0	Loose in box	±20%	lt = 5.0±1.0mm		15.0	22.5	27.5	
1	Loose in box	±10%	lt = 5.0±1.0mm		15.0	22.5	27.5	
0	Arrange Pack.	±20%	lt = 5.0±1.0mm					37.5
1	Arrange Pack.	±10%	lt = 5.0±1.0mm					37.5
4	Loose in box	±20%	lt =25.0±2.0mm		15.0	22.5	27.5	37.5
5	Loose in box	±10%	lt =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

EMI Suppression film capacitors

PCX1 331 (480Vac)

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	
DIMENSIONS	l_t = 5.0 ±1.0 mm	l_t = 25 ±2.0 mm
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

EMI Suppression film capacitors

PCX1 331 (480Vac)

SPECIFIC REFERENCE DATA FOR 480 V_{AC}

Tangent of loss angle	at 1 kHz	at 10 kHz	At 100kHz
C ≤ 470 nF	≤ 10×10^{-4}	≤ 20×10^{-4}	≤ 100×10^{-4}
C > 470 nF	≤ 20×10^{-4}	≤ 70×10^{-4}	–
Rated voltage pulse slope $(dV/dt)_R$			
P = 15.0 mm	250 V/us		
P = 22.5 mm	150 V/us		
P = 27.5, 37.5 mm	100 V/us		
R between leads, for C ≤ 0.33 uF at 100V 1min	> 15 000 MΩ		
RC between leads, for C > 0.33 uF 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	3400 V ; 1 min		
C > 1 μF	2700 V ; 1 min		
Withstanding(AC) Voltage between leads and case	2400 V ; 1 min		

V_{Rac} = 480V~ X1 **loose and taped**

Cap. (uF)	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**

EMI Suppression film capacitors

PCX1 331 (480Vac)

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".

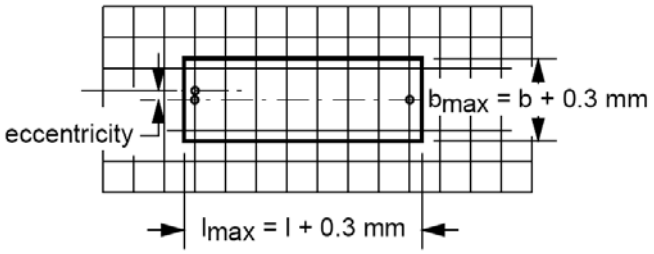
SPECIFIC METHOD OF MOUNTING TO WITHSTAND VIBRATION AND SHOCK

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 ^{o}C with RH maximum 80% without condensation.

EMI Suppression film capacitors

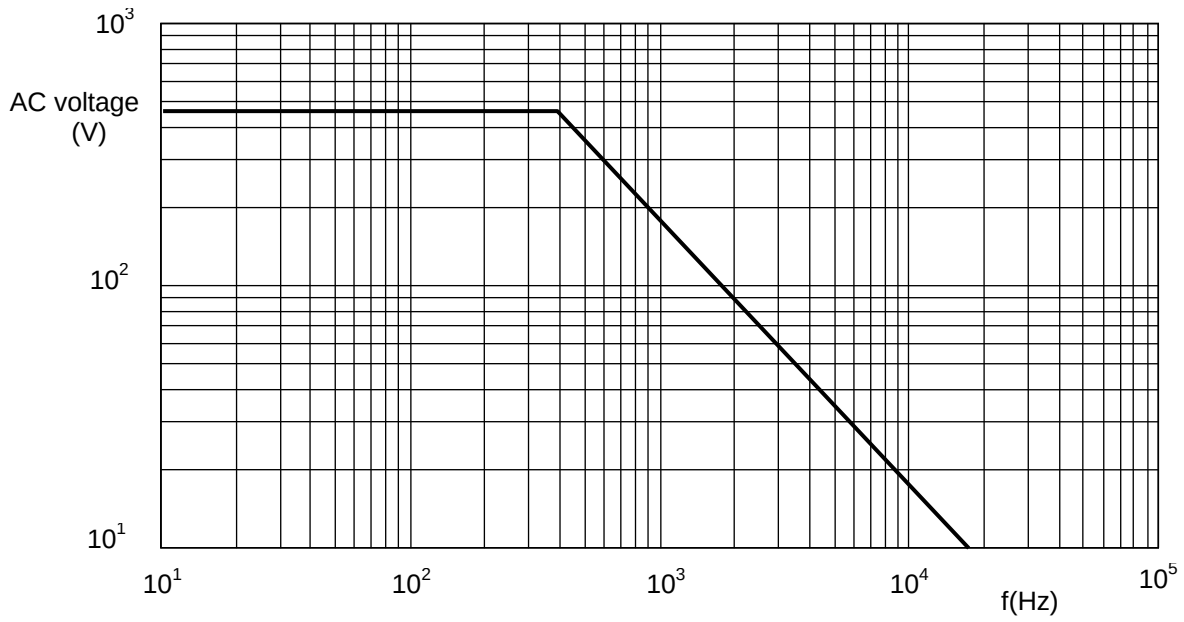
PCX1 331 (480Vac)

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 $T_{amb} \leq 110$℃

EMI Suppression film capacitors

PCX1 331 (480Vac)

PRODUCT MARKING

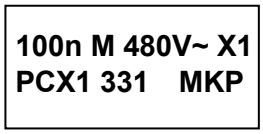
Capacitors are marked with the following information;

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

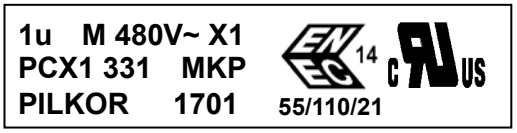
Example of marking

Marking on the side



Marking on the top

Marking on the side



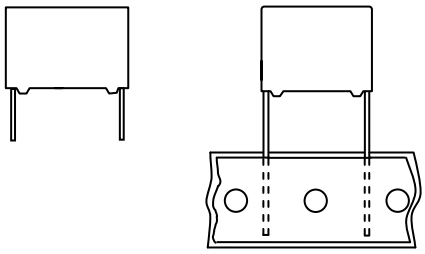
Marking on headface

Marking on the Top

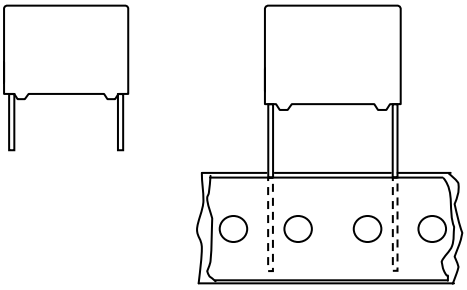
EMI Suppression film capacitors

PCY2 130

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 μF to 0.47 μF**
Capacitance tolerance	**± 10 %, ± 20 %**
Rated (AC) voltage 50 to 60 Hz	**300 V~**
Climatic category	**55/105/21**
Temperature range	**-55℃ ~ +105℃**
Reference IEC specification	**IEC 60384-14(3rd edition) and EN 60384-14**
Safety approvals	**UL 60384-14 & CSA E60384-14:09(cUL), ENEC, CQC**
Potting & Encapsulation material	**Qualified in accordance with UL 94V-0**
Safety class	**Y2**

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

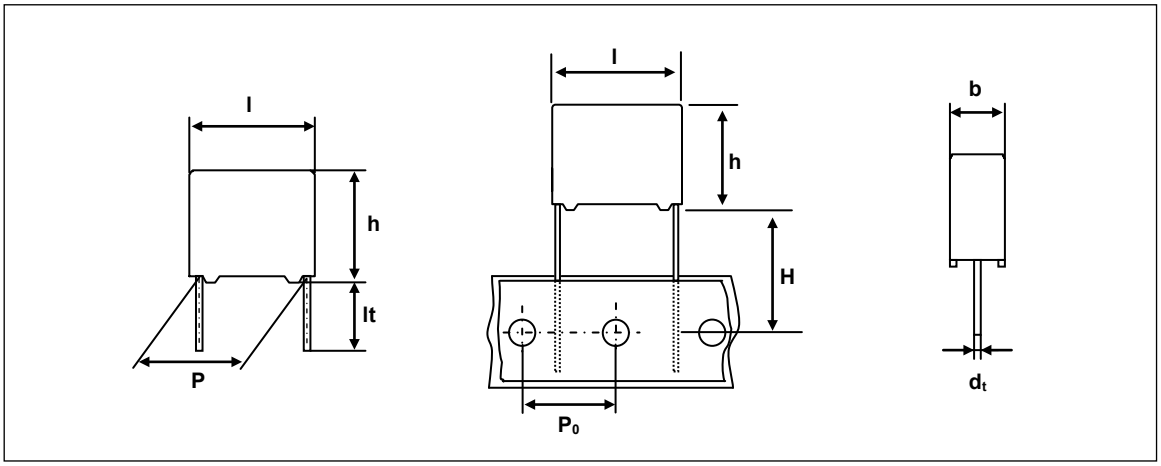
FEATURES	APPLICATIONS
. 10 to 27.5 mm lead pitch	. For Y2-electromagnetic interference suppression
. Supplied loose in box and taped on reel	. Specially designed to meet the NEW REQUIREMENTS
. Consist of a low-inductive wound	in new IEC 60384-14
cell of Metallized Polypropylene	specification(3rd edition)/EN 60384-14/UL60384-14
film, potted in a flame retardant case	requiring for Y2 a 5kV peak pulse voltage test

• 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.

EMI Suppression film capacitors

PCY2 130

Ordering Information



PCY2 130 X X X X X X

Type series

Capacitance

Code	Voltage
3	300Vac

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

** Some values is not following the coding rule.

EMI Suppression film capacitors

PCY2 130

SAFETY APPROVALS

SAFETY APPROVALS	Voltage	Value	File Number
UL 60384-14 & CSA E60384-14:09(cUL)	300V(AC)	1nF to 470nF	E165646
ENEC*(SEMKO)	300V(AC)	1nF to 470nF	SE/0256-5
CQC	300V(AC)	1nF to 470μF	CQC15001121967

* 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 = 5.0 ± 1.0 mm	lt = 25.0 ± 2.0 mm
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
7.0 x 16.5 x 26.0	1000	1000
8.5 x 18.0 x 26.0	1000	1000
10.0 x 19.5 x 26.0	500	500
12.0 x 22.0 x 26.0	500	500
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

PCY2 130

SPECIFIC REFERENCE DATA FOR 300 V_{AC}

Tangent of loss angle	at 1 khz	at 10 khz	at 100kHz
	≤ 10 x 10^{-4}	≤ 20 x 10^{-4}	≤ 100 x 10^{-4}
Rated voltage pulse slope $(dV/dt)_R$ P = 10.0mm P = 15.0mm P = 22.5mm P = 27.5mm	 800 V/µs 600 V/µs 500 V/µs 400 V/µs		
R between leads, for C ≤ 0.33µF at 100V 1min	〉 15 000 MΩ		
RC between leads, for C > 0.33µF at 100V 1min	〉 5 000 s		
R between leads and case ; 100V 1min	〉 30 000 MΩ		
Withstanding(DC) Voltage (cut-off current 10mA)	3400V ; 1 min		
Withstanding(AC) Voltage between leads and case	2400V ; 1 min		

V_{Rac} = 300 V~ Y2

Cap. (µF)	b x h x l (mm)	Mass (g)	CATALOGUE NUMBER PCY2 130 ..... loose in box			
			lt = 5.0 ± 1.0 mm		lt = 25.0 ± 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			
0.001	4.0 x 10.0 x 12.5	0.8	D30102	D31102	D34102	D35102
0.0015			D30152	D31152	D34152	D35152
0.0022			D30222	D31222	D34222	D35222
0.0033			D30332	D31332	D34332	D35332
0.0047	5.0 x 11.0 x 12.5	0.9	D30472	D31472	D34472	D35472
0.0068			D30682	-	D34682	-
0.0068	6.0 x 12.0 x 12.5	1.0	-	D31682	-	D35682
0.01	6.0 x 12.0 x 12.5	1.0	D30103	D31103	D34103	D35103
Pitch = 15.0 ± 0.4 mm			dt = 0.8 +0.08/-0.05 mm			
0.0068	5.0 x 11.0 x 18.0	1.2	F30682	F31682	F34682	F35682
0.01			F30103	F31103	F34103	F35103
0.015	6.0 x 12.0 x 18.0	1.4	F30153	F31153	F34153	F35153
0.022	7.0 x 13.5 x 18.0	1.9	F30223	F31223	F34223	F35223
0.033	8.5 x 15.0 x 18.0	2.6	F30333	F31333	F34333	F35333
0.047	10.0 x 16.5 x 18.0	3.1	F30473	F31473	F34473	F35473

EMI Suppression film capacitors

PCY2 130

V_{Rac} = 300V~ Y2

Cap. (µF)	b x h x l (mm)	Mass (g)	CATALOGUE NUMBER			
			PCY2 130			
			loose in box			
			lt = 5.0 ± 1.0 mm		lt = 25.0 ± 2.0 mm	
			C – tol. ± 20 %	C – tol. ± 10 %	C – tol. ± 20 %	C – tol. ± 10 %
Pitch = 22.5 ± 0.4 mm			dt = 0.8 +0.08/-0.05 mm			
0.047	7.0 x 16.5 x 26.0	3.2	J30473	J31473	J34473	J35473
0.068	8.5 x 18.0 x 26.0	4.4	J30683	J31683	J34683	J35683
0.1	10.0 x 19.5 x 26.0	5.5	J30104	J31104	J34104	J35104
0.15	12.0 x 22.0 x 26.0	8.0	J30154	J31154	J34154	J35154
Pitch = 27.5 ± 0.4 mm			dt = 0.8 +0.08/-0.05 mm			
0.22	13.0 x 23.0 x 31.0	10.4	L30224	–	L34224	–
0.22	15.0 x 25.0 x 31.0	12.8	-	L31224	-	L35224
0.33	18.0 x 28.0 x 31.0	17.2	L30334	L31334	L34334	L35334
0.47	21.0 x 31.0 x 31.0	20.4	L30474	L31474	L34474	L35474

Original pitch	New Code	Old Code	Example
10.0mm	PCY2 130D3xxxx	PCY2 130 3xxxx	PCY2 130 60474 => PCY2 130L30474
15.0mm	PCY2 130F3xxxx	PCY2 130 4xxxx	
22.5mm	PCY2 130J3xxxx	PCY2 130 5xxxx	
27.5mm	PCY2 130L3xxxx	PCY2 130 6xxxx	

EMI Suppression film capacitors

PCY2 130

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".

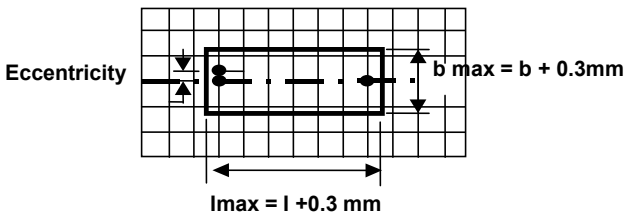
SPECIFIC METHOD OF MOUNTING TO WITHSTAND VIBRATION AND SHOCK

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 ^{o}C with RH maximum 80% without condensation.

EMI Suppression film capacitors

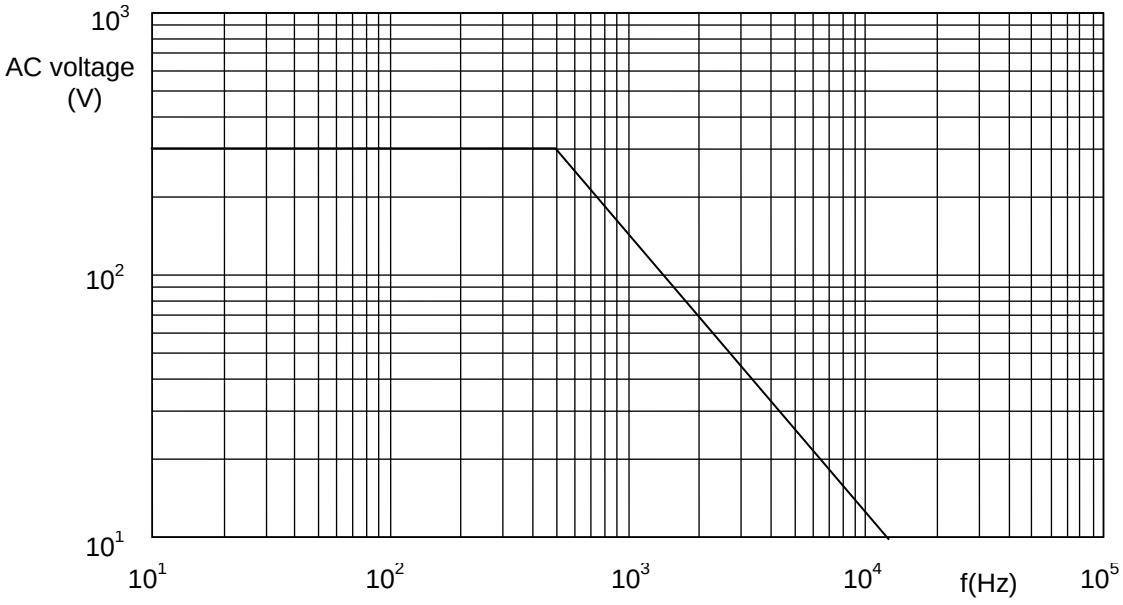
PCY2 130

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 $T_{amb} \leq 105$℃

EMI Suppression film capacitors

PCY2 130

PRODUCT MARKING

Capacitors are marked with having following information;

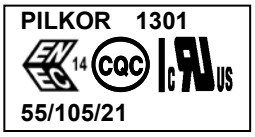
1.Manufacturer (PILKOR)
2.Manufacturer's type designation (130 or PCY2 130)
3.Rated capacitance in code according to IEC 60062
4.Rated (AC) voltage (300V~)
5.Sub class (Y2)
6.Tolerance on rated capacitance M = ±20 % K = ±10 %
7.Climatic category (55/105/21)
8.Code for dielectric material (MKP)
9.Year and week of manufacturing (e.g. 1401)
10.Safety approvals
* white or black color

Example of marking

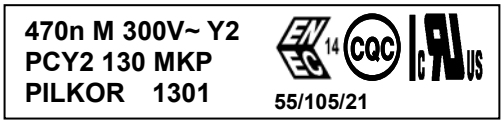
Marking on the side or

Marking on the side

Marking on the top



Marking on the side



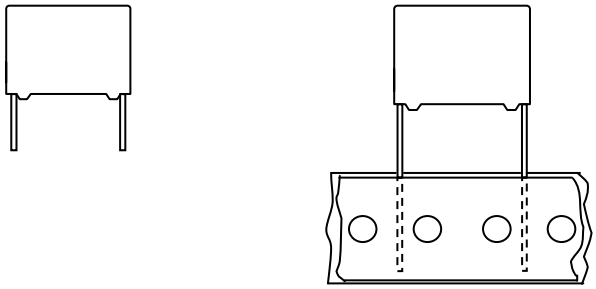
Marking on the top

Marking on the top

EMI Suppression film capacitors (RC unit)

PCRC 420

MKP RADIAL POTTED CAPACITORS **Pitch 15.0/17.5 mm**



P = 15.0 / 17.5mm

QUICK REFERENCE DATA

Capacitance value	0.033, 0.047, 0.068, 0.1, 0.15, 0.22μF
Capacitance tolerance	±20%
Resistance value	22Ω, 47Ω, 120Ω
Resistance tolerance	±10%
Rated (AC) voltage 50 to 60 Hz	250 V~
Climatic category	40/085/21
Temperature range	-40℃ ~ +85℃
Reference IEC specification	IEC 60384-14
Safety approvals	UL60384-14 & CSA E60384-14:09(cUL) VDE, EK
Potting & Encapsulation material	Qualified in accordance with UL 94V-0
Safety class	X2

FEATURES

. 15.0mm, 17.5mm lead pitch
. Supplied loose in box and taped in ammopack
. Consist of a low-inductive wound cell of metalized polypropylene film and carbon composition resistor, potted in a flame retardant case

APPLICATIONS

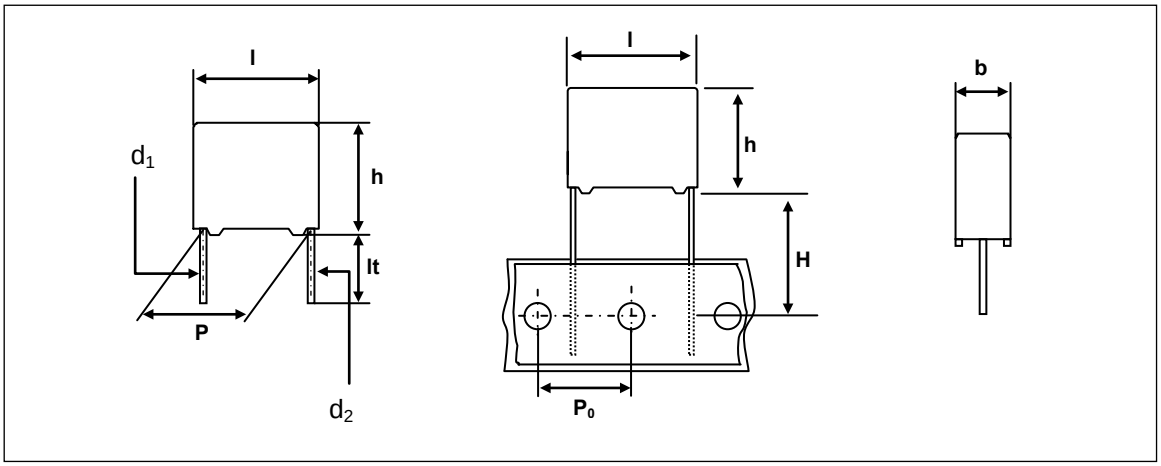
. For X2 – electromagnetic Interference suppression
. Spark quenching
. Noise suppression

• 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.

EMI Suppression film capacitors (RC unit)

PCRC 420

Ordering Information



PCRC 420 X X XXX

Type series

Capacitance

code	Resistance
1	22Ω
2	47Ω
3	120Ω

code	Packing method	Lead configuration	C – tol, R - tol	12NC**
1	Loose in box	lt = 4.0 ± 1.0mm	C-tol ±20% & R-tol ±10%	PCRC 420 x1xxx
2	Loose in box	20 < lt ≤ 25mm	C-tol ±20% & R-tol ±10%	PCRC 420 x2xxx
3	Ammopack	H = 18.5 mm / P_0=12.7mm	C-tol ±20% & R-tol ±10%	PCRC 420 x3xxx
4	Ammopack	H = 18.5 mm / P_0=15.0mm	C-tol ±20% & R-tol ±10%	PCRC 420 x4xxx

** Some values do not follow coding rule.

EMI Suppression film capacitors (RC unit)

PCRC 420

SAFETY APPROVALS

SAFETY APPROVALS	Voltage	Value	File Number
UL 60384-14 & CSA E60384-14:09(cUL)	250V(AC)	33nF to 220nF + 22Ω , 47Ω , 120Ω	E165646
VDE	250V(AC)	33nF to 220nF + 22Ω , 47Ω , 120Ω	120831
EK	250V(AC)	33nF to 220nF + 22Ω , 47Ω , 120Ω	SH03001-2004

Packaging Information

SMALLEST PACKING QUANTITIES (SPQ)	LOOSE IN BOX	
DIMENSIONS	lt = 4 ± 1.0 mm	20 < lt ≤ 25 mm
8.5 x 15.0 x 18.0	1000	1000
10.0 x 17.5 x 18.0	1000	1000
8.0 x 17.0 x 22.0	1000	1000
9.0 x 17.5 x 22.0	500	500
10.5 x 18.5 x 22.0	500	500

EMI Suppression film capacitors (RC unit)

PCRC 420

SPECIFIC REFERENCE DATA FOR 250 V_{AC}

Tangent of loss angle	Frequency		at 1 khz		
	Value (Cap. + Res.)				
	Resistance (Ω)		22	47	120
	Capacitance (µF)	0.033 ~ 0.047	< 1.5%	< 3%	< 6%
		0.068 ~ 0.1	< 3%	< 5%	< 10%
		0.15 ~ 0.22	< 5%	< 10%	< 20%
Rated voltage pulse slope $(dV/dt)_R$			100 V/µs		
R between leads, for all value			〉30 000 MΩ		
Test voltage (DC) on line;			2250V, 1min		
Withstanding(AC) Voltage between leads and case			2400 V ; 1 min		

V_{Rac} = 250 V~

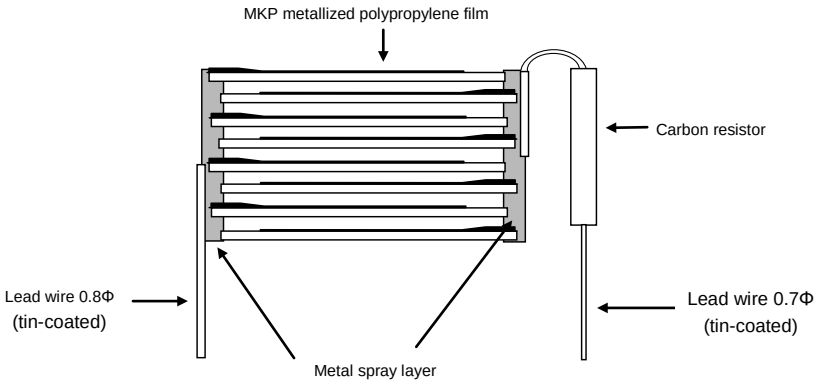
Cap. (µF)	Combination Resistance (Ω)	b x h x l (mm)	CATALOGUE NUMBER	
			PCRC 420	
			loose in box	
			lt = 4.0 ± 1.0 mm	20 < lt ≤ 25 mm
			C – tol ; ± 20 % & R – tol ; ± 10 %	
Pitch = 15.0 ± 0.5 mm		d_1 = 0.8 +0.08/-0.05 mm, d_2 = 0.7 +0.08/-0.05 mm		
0.033	22	8.5 x 15.0 x 18.0	11333	12333
	47		21333	22333
	120		31333	32333
0.047	22		11473	12473
	47		21473	22473
	120		31473	32473
0.068	22	11.0 x 19.0 x 18.0	11683	12683
	47		21683	22683
	120		31683	32683
0.1	22		11A04	12A04
	47		21A04	22A04
	120		31A04	32A04
Pitch = 17.5 ± 0.5 mm		d_1 = 0.8 +0.08/-0.05 mm, d_2 = 0.7 +0.08/-0.05 mm		
0.1	22	8.0 x 17.0 x 22.0	11104	12104
	47		21104	22104
	120		31104	32104
0.15	22	9.0 x 17.5 x 22.0	11154	12154
	47		21154	22154
	120		31154	32154
0.22	22	10.5 x 18.5 x 22.0	11224	12224
	47		21224	22224
	120		31224	32224

Example : 68nF + 120Ω (lt = 4 ±1.0 mm) → code number : PCRC 420 31683

EMI Suppression film capacitors (RC unit)

PCRC 420

CONSTRUCTION



MOUNTING

NORMAL USE

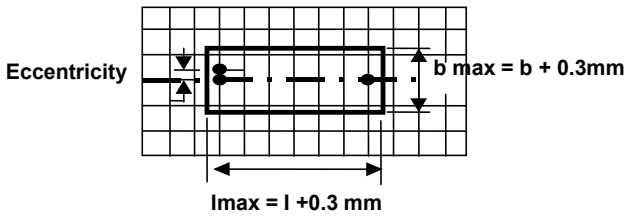
The capacitors are designed for mounting on printed-circuit boards.
The capacitors packed in bandoliers are designed for mounting on printed-circuit boards by means of automatic insertion machines.
For detailed specifications refer to chapter "PACKAGING".

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 15.0mm the capacitors shall be mechanically fixed by leads.
- For pitches of 17.5mm 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 : $h_{max} \leq h+0.3mm$

EMI Suppression film capacitors (RC unit)

PCRC 420

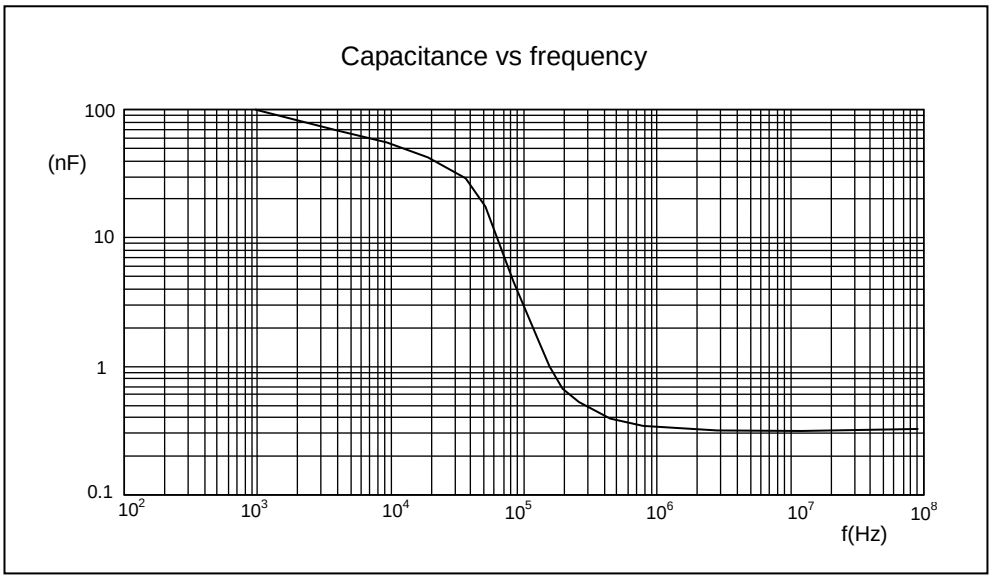
RATINGS AND CHARACTERISTICS

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%.

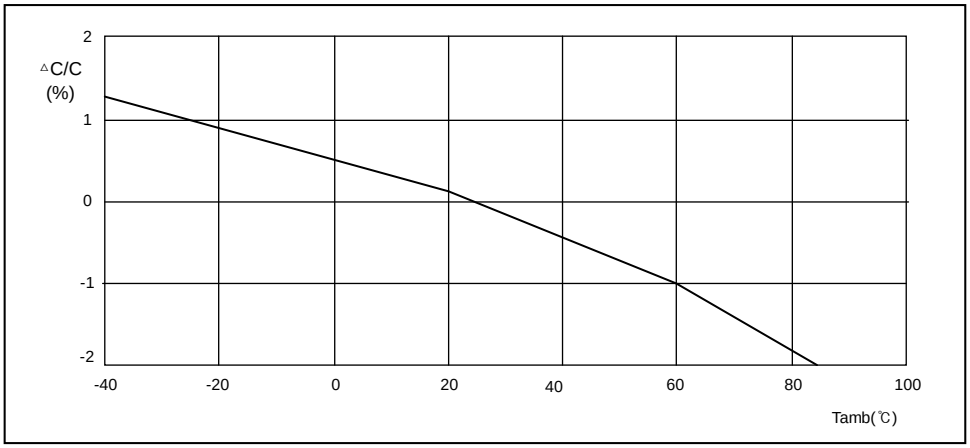
For reference testing, a conditioning period shall be applied of 96±4 hours by heating the products in a circulating air oven at the rated temperature and a relative humidity not exceeding 20%.

CAPACITANCE

- All capacitance values are specified at 1 kHz. (Vs. Temperature)



- Capacitance at 25℃ (Vs. Frequency) , ex) 100nF+120Ω



EMI Suppression film capacitors (RC unit)

PCRC 420

TEMPERATURE

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

VOLTAGE

- Test voltage between leads, 100% on line for 1 second : for all value ; 2200V (DC)
- Test voltage between interconnected leads and case (foil method) : 2050V (AC).

DISSIPATION FACTOR

The dissipation factor is measured at 1㎑

INSULATION RESISTANCE

The insulation resistance is measured after a voltage of 100±15 V has been applied for

1 minute ±5 seconds at T_{amb} = 20℃.

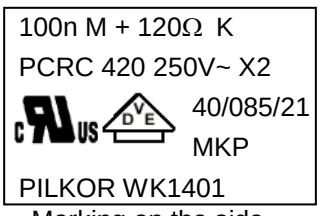
- R between leads for all value : > 30 000 ㏁.
- R between interconnected leads and case (foil method) : > 30 000 ㏁.

PRODUCT MARKING

Capacitors are marked with following information;

1.Manufacturer (PILKOR)
2.Manufacturer's type designation (PCRC 420)
3.Rated capacitance
4.Rated (AC) voltage (250V~)
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.Resistance value (Ω)
10.Year and week of manufacturing (e.g. WK1301)
11.Safety approvals
* white or black color

Example of marking



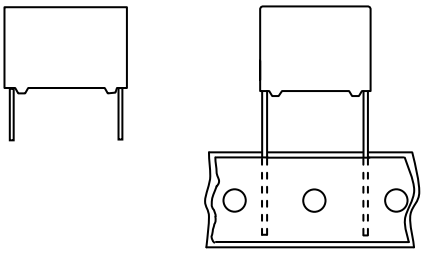
Marking on the side

SERIES IMPEDANCE CAPACITORS

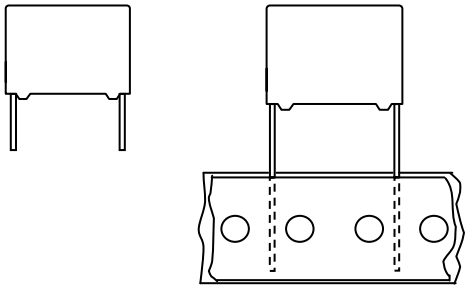
Series Impedance Film capacitors

PCX2 347

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



10.0 and 15.0mm



22.5 and 27.5mm

QUICK REFERENCE DATA

Capacitance range (E6 series) *	0.01μF to 2.2μF
Capacitance tolerance	± 10 %, ± 20 %
Rated (AC) voltage 50 to 60 Hz	310 V~
Climatic category	55/110/56
Temperature range	-55℃ ~ +110℃
Reference IEC, UL specification	IEC 60384-14(3rd edition) and UL60384-14
Safety approvals	ENEC, EK
	UL60384-14
Potting & Encapsulation material	Qualified in accordance with UL 94V-0
Safety class	X2

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

FEATURES

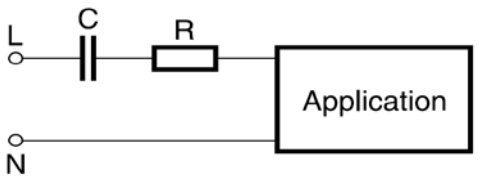
. 10.0 to 27.5 mm lead pitch
. Supplied loose in box and taped on reel
. Consist of a low-inductive wound cell of Metallized Polyester film, potted in a flame retardant case

APPLICATIONS

. For X2-electromagnetic interference suppression
. Specially designed to meet the NEW REQUIREMENTS in new IEC 60384-14 specification(3rd edition)/UL 60384-14 requiring for X2 a 2.5kV peak pulse voltage test
. Energy meter
. Stable capacitance in damp environment 85℃85%RH, 240Vac, 1000hours

• 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.

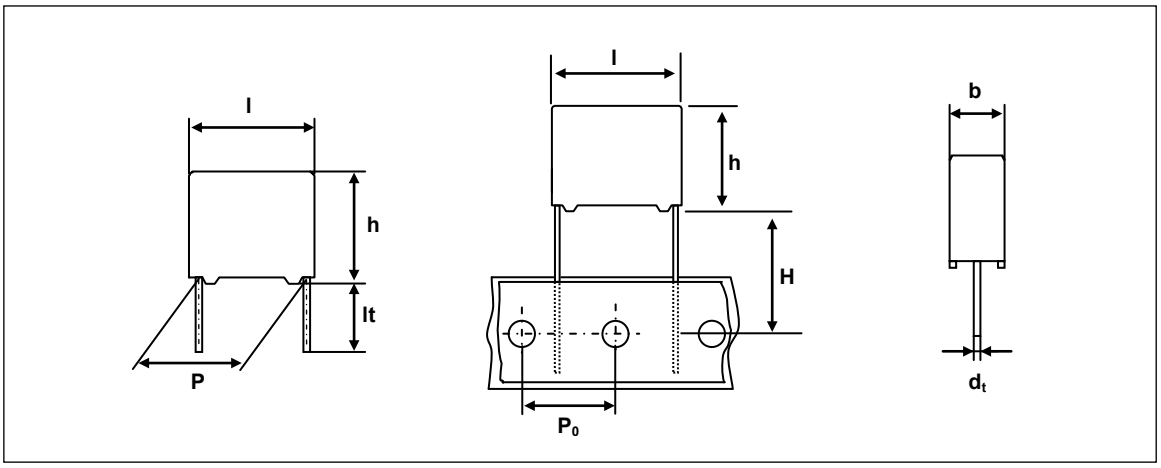
Main application _ In series with the powerline (capacitive power supply)



Series Impedance Film capacitors

PCX2 347

Ordering Information



PCX2 347 X X X XXX

Capacitance

Code	Voltage
3	310V

Code	Original Pitch
D	10.0 mm
F	15.0 mm
J	22.5 mm
L	27.5 mm

Available versions					Product (l_{max})			
code	Packing method	C – tol.	Lead length & Height	Hole to hole (P_o)	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.

Series Impedance Film capacitors

PCX2 347

SAFETY APPROVALS

SAFETY APPROVALS	Voltage	Value	File Number
UL60384-14	310V(AC)	0.01μF to 2.2μF	E165646
ENEC(SEMKO) *	310V(AC)	0.01μF to 2.2μF	SE/0256-7
EK	310V(AC)	C ≤ 0.1μF 0.1μF < C ≤ 0.33μF 0.33μF < C ≤ 1.0μF	SH03001-14001 SH03001-14002 SH03001-14003

* 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 = 5.0 ± 1.0 mm**	**lt = 25 ± 2.0 mm**
4.0 x 10.0 x 12.5	2000	1000
5.0 x 11.0 x 12.5	1500	1000
6.0 x 12.0 x 12.5	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 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
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
12.0 x 22.0 x 26.0	500	500
16.5 x 22.0 x 26.0	250	250
9.0 x 19.0 x 31.0	500	500
10.0 x 20.0 x 31.0	500	250
11.0 x 21.0 x 31.0	500	250
13.0 x 23.0 x 31.0	250	250
21.0 x 31.0 x 31.0	150	150

Series Impedance Film capacitors

PCX2 347

SPECIFIC REFERENCE DATA FOR 310 V_{AC}

Tangent of loss angle	at 1 khz	at 10 khz
C ≤ 1 µF C > 1 µF	≤ 80 x 10^{-4} ≤ 80 x 10^{-4}	≤ 150 x 10^{-4} –
Rated voltage pulse slope $(dV/dt)_R$	100 V/µs	
R between leads, for C ≤ 0.33 µF	〉15 000 MΩ	
RC between leads, for C > 0.33 µF	〉5 000 s	
Withstanding(DC) Voltage (cut-off current 10mA)	4.3* V_R, 1min	
Withstanding(AC) Voltage between leads and case	2400V 1min	

V_{Rac} = 310V~ X2 **loose and taped**

Cap. (µF)	b x h x l (mm)	MASS (g)	CATALOGUE NUMBER PCX2 347..... 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	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
0.082	6.0 x 12.0 x 12.5	1.0	D30823	D31823	D34823	D35823
0.1	6.0 x 12.0 x 12.5	1.0	D30104	D31104	D34104	D35104
Pitch = 15.0 ± 0.4 mm dt = 0.8 +0.08/-0.05 mm						
0.1	6.0 x 12.0 x 18.0	1.4	F30104	F31104	F34104	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 ± 0.4 mm dt = 0.8 +0.08/-0.05 mm						
0.33	7.0 x 16.5 x 26.0	3.2	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	12.0 x 22.0 x 26.0	9.0	J30105	J31105	J34105	J35105
1.5	16.5 x 22.0 x 26.0	10.0	J30155	J31155	J34155	J35155
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	L30474	L31474	L34474	L35474
0.68	10.0 x 20.0 x 31.0	6.5	L30684	L31684	L34684	L35684
1.0	11.0 x 21.0 x 31.0	7.8	L30105	L31105	L34105	L35105
1.5	13.0 x 23.0 x 31.0	10.4	L30155	L31155	L34155	L35155
2.2	21.0 x 31.0 x 31.0	20.5	L30225	L31225	L34225	L35225

Series Impedance Film capacitors

PCX2 347

MOUNTING

NORMAL USE

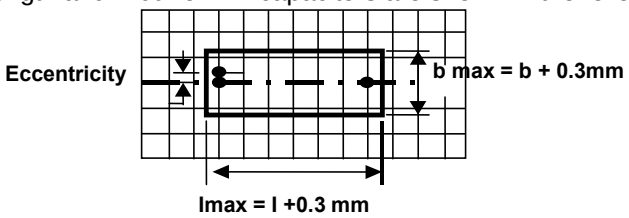
The capacitors are designed for mounting on printed-circuit boards.
The capacitors packed in bandoliers are designed for mounting on printed-circuit boards by means of automatic insertion machines.
For detailed specifications refer to chapter "PACKAGING".

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 ;



- Product height with seating plane as given by IEC 60717 as reference : $h_{max} \leq$ h+0.3mm

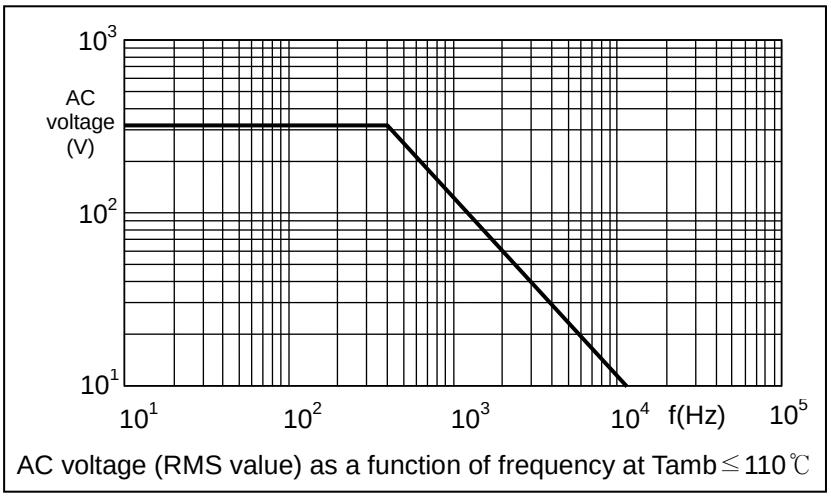
STORAGE TEMPERATURE

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

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 Tamb≤110℃

APPLICATION NOTE

epoxy adhesion at the leads. Therefore the leads may not be damaged or bent before soldering.

PRODUCT MARKING

Capacitors are marked with having following information;

1.Manufacturer (PILKOR)

2.Manufacturer's type designation (PCX2 347)

3.Rated capacitance in code according to IEC 60062

4.Rated (AC) voltage (310V~)

5.Sub class (X2)

6.Tolerance on rated capacitance M =±20 % K = ±10 %

7.Climatic category (55/110/56)

8.Metallized polyester film (MKT)

9.Year and week of manufacturing (e.g 1401)

10.Safety approvals

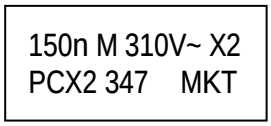
* white or black color

Example of marking

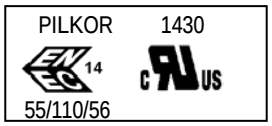
Marking on the side

or

Marking on the side



Marking on the top



Marking on the side

Marking on headface

Marking on headface

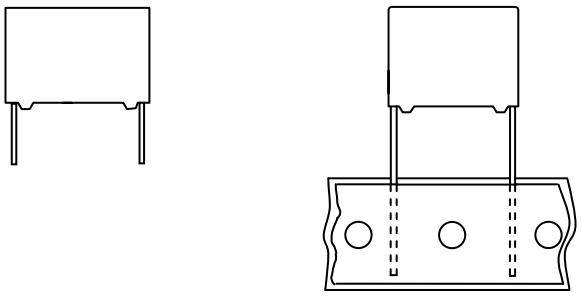
METALLIZED POLYPROPYLENE FILM CAPACITORS

Metallized Polypropylene film capacitors

PCMP 389

MKP RADIAL POTTED CAPACITORS

Pitch 10.0/15.0/22.5/27.5mm (reduced pitch 7.5mm)



QUICK REFERENCE DATA

Capacitance range (E24 series)	0.00082 to 3.9μF
Capacitance tolerance	±5%
Rated voltage (DC)	250V, 400V, 630V, 1000V, 1250V, 1600V, 2000V
Climatic category	55/105/56
Temperature range	-55℃ ~ +105℃
Reference specification	IEC 60384-17 / 16
Potting & Encapsulation material	Qualified in accordance with UL94V-0

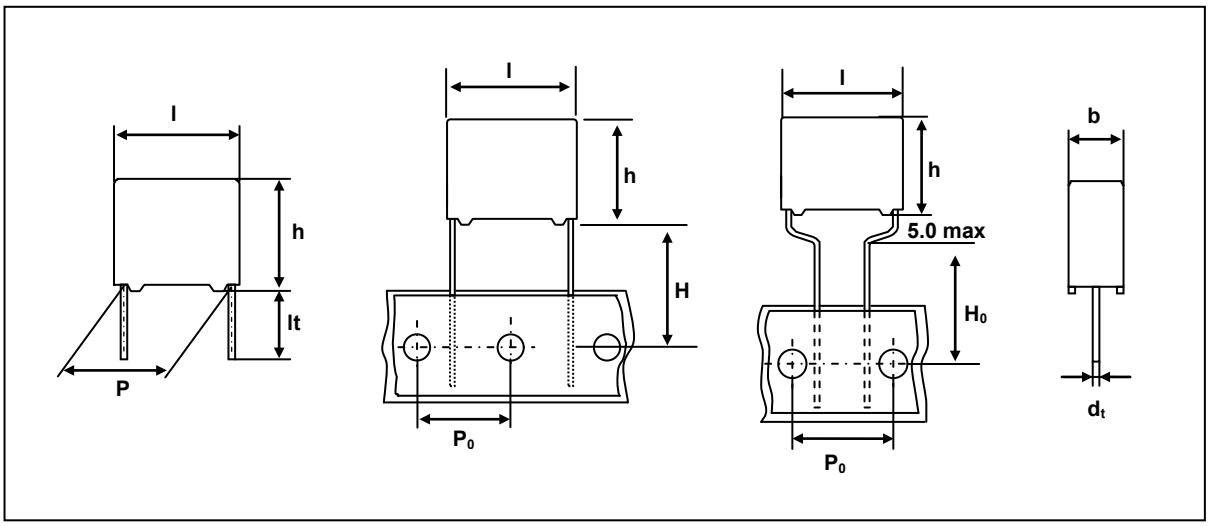
FEATURES	APPLICATIONS
. 15mm to 27.5mm lead pitch	. Where steep pulses occur e.g. SMPS (switch mode power supplies)
. Low contact resistance	. S - correction
. Low loss dielectric	. Motor control circuits
. Small dimensions for high density packaging	. Electronic lighting circuits (1600V, 2000V)
. Supplied loose in box and taped on reel	. Stable capacitance in damp environment 85℃85%RH, V_{Rdc} , 500hours
. High pulse withstand capability (1600V, 2000V)	

• 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.

Metallized Polypropylene film capacitors

PCMP 389

Ordering Information



PCMP 389 (X) X X XXX

Type series — Capacitance

Code	Voltage
4	250V
5	400V
6	630V
7	1000V
N	1250V
8	1600V
9	2000V

*Code	Original pitch
D	10.0mm
F	15.0mm
J	22.5mm
L	27.5mm

* In case of overlapping the value, use the 13NC with pitch information.

Available versions					Product (I_{max})			
Code	Packing method	C-tol.	Lead length & Height	Hole to hole (P_o)	12.5	18.0	26.0	31.0
					Pitch (P)			
2	Loose in box	±5%	lt = 5.0±1.0mm	-	10.0	15.0	22.5	27.5
3	Loose in box	±5%	lt =25.0±2.0mm	-	10.0	15.0	22.5	27.5
5	Ammo packing	±5%	H=18.5mm	12.7mm	10.0	15.0	22.5	27.5
A	Ammo packing	±5%	H_0=16.0mm	15.0mm	7.5(*)	7.5(*)	-	-

* Reduced pitch (Reduced lead spacings)

Metallized Polypropylene film capacitors

PCMP 389

Packing Information

SMALLEST PACKING QUANTITIES (SPQ)	Loose in box	Ammo packing
	lt = 5.0±1.0mm	H=18.5mm
DIMENSIONS	**SPQ**	**SPQ**
4.0 x 10.0 x 12.5	2000	800
5.0 x 11.0 x 12.5	1500	700
6.0 x 12.0 x 12.5	1000	600
5.0 x 11.0 x 18.0	1000	700
6.0 x 12.0 x 18.0	1000	600
7.0 x 13.5 x 18.0	1000	500
8.5 x 15.0 x 18.0	1000	400
10.0 x 16.5 x 18.0	1000	370
11.0 x 18.5 x 18.0	1000	330
6.0 x 15.5 x 26.0	1000	600
7.0 x 16.5 x 26.0	1000	500
8.5 x 18.0 x 26.0	500	400
10.0 x 19.5 x 26.0	500	370
11.5 x 21.0 x 26.0	500	300
12.0 x 22.0 x 26.0	500	300
11.0 x 21.0 x 31.0	500	300
13.0 x 23.0 x 31.0	250	250
15.0 x 25.0 x 31.0	250	220
18.0 x 28.0 x 31.0	200	200

Metallized Polypropylene film capacitors

PCMP 389

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

Cap (µF)	b x h x l (mm)	Mass (g)	CATALOGUE NUMBER PCMP 389 ….. loose in box lt = 5.0 ± 1.0 mm C – tol. ± 5%	CATALOGUE NUMBER PCMP 389 ….. ammo packing H = 18.5 mm C – tol. ± 5%
Pitch = 10.0 ± 0.4 mm			dt = 0.6 mm (+ 0.06 / - 0.05)	
0.047	4.0 x 10.0 x 12.5	0.8	PCMP 389 42473	PCMP 389 45473
0.051			PCMP 389 42513	PCMP 389 45513
0.056			PCMP 389 42563	PCMP 389 45563
0.062			PCMP 389 42623	PCMP 389 45623
0.068			PCMP 389 42683	PCMP 389 45683
0.075	5.0 x 11.0 x 12.5	0.9	PCMP 389 42753	PCMP 389 45753
0.082			PCMP 389 42823	PCMP 389 45823
0.091			PCMP 389 42913	PCMP 389 45913
0.10	6.0 x 12.0 x 12.5	1.0	PCMP 389 42104	PCMP 389 45104
0.11			PCMP 389 42114	PCMP 389 45114
0.12			PCMP 389 42124	PCMP 389 45124
Pitch = 15.0 ± 0.4 mm			dt = 0.8 mm (+ 0.08 / - 0.05)	
0.10	5.0 x 11.0 x 18.0	1.2	PCMP 389F42104	PCMP 389F45104
0.11			PCMP 389F42114	PCMP 389F45114
0.12			PCMP 389F42124	PCMP 389F45124
0.13			PCMP 389 42134	PCMP 389 45134
0.15			PCMP 389 42154	PCMP 389 45154
0.16			PCMP 389 42164	PCMP 389 45164
0.18	6.0 x 12.0 x 18.0	1.4	PCMP 389 42184	PCMP 389 45184
0.20			PCMP 389 42204	PCMP 389 45204
0.22			PCMP 389 42224	PCMP 389 45224
0.24			PCMP 389 42244	PCMP 389 45244
0.33			PCMP 389F42334	PCMP 389F45334
0.36			PCMP 389F42364	PCMP 389F45364
0.39			PCMP 389F42394	PCMP 389F45394
0.27	7.0 x 13.5 x 18.0	1.9	PCMP 389 42274	PCMP 389 45274
0.30			PCMP 389 42304	PCMP 389 45304
0.33			PCMP 389 42334	PCMP 389 45334
0.43			PCMP 389F42434	PCMP 389F45434
0.47			PCMP 389F42474	PCMP 389F45474
0.36	8.5 x 15.0 x 18.0	2.6	PCMP 389 42364	PCMP 389 45364
0.39			PCMP 389 42394	PCMP 389 45394
0.43			PCMP 389 42434	PCMP 389 45434
0.47			PCMP 389 42474	PCMP 389 45474

Metallized Polypropylene film capacitors

PCMP 389

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

Cap (μF)	b x h x l (mm)	Mass (g)	CATALOGUE NUMBER PCMP 389 ….. loose in box lt = 5.0 ± 1.0 mm C – tol. ± 5%	CATALOGUE NUMBER PCMP 389 ….. ammo packing H = 18.5 mm C – tol. ± 5%
Pitch = 22.5 ± 0.4 mm			dt = 0.8 mm (+ 0.08 / - 0.05)	
0.33	7.0 X 16.5 X 26.0	3.1	PCMP 389J42334	PCMP 389J45334
0.36			PCMP 389J42364	PCMP 389J45364
0.39			PCMP 389J42394	PCMP 389J45394
0.43			PCMP 389J42434	PCMP 389J45434
0.47			PCMP 389J42474	PCMP 389J45474
0.51			PCMP 389 42514	PCMP 389 45514
0.56			PCMP 389 42564	PCMP 389 45564
0.62			PCMP 389 42624	PCMP 389 45624
0.75			PCMP 389J42754	PCMP 389J45754
0.82			PCMP 389J42824	PCMP 389J45824
0.91			PCMP 389J42914	PCMP 389J45914
1.0			PCMP 389J42105	PCMP 389J45105
0.68	8.5 X 18.0 X 26.0	4.4	PCMP 389 42684	PCMP 389 45684
0.75			PCMP 389 42754	PCMP 389 45754
0.82			PCMP 389 42824	PCMP 389 45824
0.91			PCMP 389 42914	PCMP 389 45914
1.1			PCMP 389J42115	PCMP 389J45115
1.2			PCMP 389J42125	PCMP 389J45125
1.0	10.0 X 19.5 X 26.0	5.5	PCMP 389 42105	PCMP 389 45105
1.1			PCMP 389 42115	PCMP 389 45115
1.2			PCMP 389 42125	PCMP 389 45125
Pitch = 27.5 ± 0.4 mm			dt = 0.8 mm (+ 0.08 / - 0.05)	
0.91	11.0 X 21.0 X 31.0	8.2	PCMP 389L42914	-
1.0			PCMP 389L42105	-
1.1			PCMP 389L42115	-
1.2			PCMP 389L42125	-
1.3			PCMP 389 42135	-
1.5			PCMP 389 42155	-
1.6			PCMP 389 42165	-
1.8	13.0 X 23.0 X 31.0	10.4	PCMP 389 42185	-
2.0			PCMP 389 42205	-
2.2			PCMP 389 42225	-
2.4	15.0 X 25.0 X 31.0	12.8	PCMP 389 42245	-
2.7			PCMP 389 42275	-
3.0	18.0 X 28.0 X 31.0	17.2	PCMP 389 42305	-
3.3			PCMP 389 42335	-
3.6			PCMP 389 42365	-
3.9			PCMP 389 42395	-

Metallized Polypropylene film capacitors

PCMP 389

V_{Rdc} = 400 V V_{Rac} = 200 V~

Cap (µF)	b x h x l (mm)	Mass (g)	CATALOGUE NUMBER	
			PCMP 389	
			loose in box	ammo packing
			lt = 5.0 ± 1.0 mm	H = 18.5 mm
			C – tol. ± 5%	C – tol. ± 5%
Pitch = 10.0 ± 0.4 mm			dt = 0.6 mm (+ 0.06 / - 0.05)	
0.022	4.0 x 10.0 x 12.5	0.8	PCMP 389 52223	PCMP 389 55223
0.024			PCMP 389 52243	PCMP 389 55243
0.027			PCMP 389 52273	PCMP 389 55273
0.030			PCMP 389 52303	PCMP 389 55303
0.033			PCMP 389 52333	PCMP 389 55333
0.036	5.0 x 11.0 x 12.5	0.9	PCMP 389 52363	PCMP 389 55363
0.039			PCMP 389 52393	PCMP 389 55393
0.043			PCMP 389 52433	PCMP 389 55433
0.047			PCMP 389 52473	PCMP 389 55473
0.051	6.0 x 12.0 x 12.5	1.0	PCMP 389 52513	PCMP 389 55513
0.056			PCMP 389 52563	PCMP 389 55563
Pitch = 15.0 ± 0.4 mm			dt = 0.8 mm (+ 0.08 / - 0.05)	
0.047	5.0 x 11.0 x 18.0	1.2	PCMP 389F52473	PCMP 389F55473
0.051			PCMP 389F52513	PCMP 389F55513
0.056			PCMP 389F52563	PCMP 389F55563
0.062			PCMP 389 52623	PCMP 389 55623
0.068			PCMP 389 52683	PCMP 389 55683
0.075			PCMP 389 52753	PCMP 389 55753
0.082			PCMP 389 52823	PCMP 389 55823
0.091	6.0 x 12.0 x 18.0	1.4	PCMP 389 52913	PCMP 389 55913
0.10			PCMP 389 52104	PCMP 389 55104
0.11			PCMP 389 52114	PCMP 389 55114
0.12			PCMP 389 52124	PCMP 389 55124
0.13			PCMP 389F52134	PCMP 389F55134
0.15			PCMP 389F52154	PCMP 389F55154
0.16			PCMP 389F52164	PCMP 389F55164
0.13	7.0 x 13.5 x 18.0	1.9	PCMP 389 52134	PCMP 389 55134
0.15			PCMP 389 52154	PCMP 389 55154
0.16			PCMP 389 52164	PCMP 389 55164
0.18			PCMP 389F52184	PCMP 389F55184
0.20			PCMP 389F52204	PCMP 389F55204
0.22			PCMP 389F52224	PCMP 389F55224
0.18	8.5 x 15.0 x 18.0	2.6	PCMP 389 52184	PCMP 389 55184
0.20			PCMP 389 52204	PCMP 389 55204
0.22			PCMP 389 52224	PCMP 389 55224

Metallized Polypropylene film capacitors

PCMP 389

V_{Rdc} = 400 V V_{Rac} = 200 V~

Cap (μF)	b x h x l (mm)	Mass (g)	CATALOGUE NUMBER	
			PCMP 389	
			loose in box	ammo packing
			lt = 5.0 ± 1.0 mm	H = 18.5 mm
			C – tol. ± 5%	C – tol. ± 5%
Pitch = 22.5 ± 0.4 mm			dt = 0.8 mm (+ 0.08 / - 0.05)	
0.18	7.0 X 16.5 X 26.0	3.1	PCMP 389J52184	PCMP 389J55184
0.20			PCMP 389J52204	PCMP 389J55204
0.22			PCMP 389J52224	PCMP 389J55224
0.24			PCMP 389 52244	PCMP 389 55244
0.27			PCMP 389 52274	PCMP 389 55274
0.30			PCMP 389 52304	PCMP 389 55304
0.33			PCMP 389J52334	PCMP 389J55334
0.36			PCMP 389J52364	PCMP 389J55364
0.39			PCMP 389J52394	PCMP 389J55394
0.33	8.5 X 18.0 X 26.0	4.4	PCMP 389 52334	PCMP 389 55334
0.36			PCMP 389 52364	PCMP 389 55364
0.39			PCMP 389 52394	PCMP 389 55394
0.43			PCMP 389 52434	PCMP 389 55434
0.47			PCMP 389 52474	PCMP 389 55474
0.51			PCMP 389J52514	PCMP 389J55514
0.56			PCMP 389J52564	PCMP 389J55564
0.62			PCMP 389J52624	PCMP 389J55624
0.51	10.0 X 19.5 X 26.0	5.5	PCMP 389 52514	PCMP 389 55514
0.56			PCMP 389 52564	PCMP 389 55564
0.62			PCMP 389 52624	PCMP 389 55624
Pitch = 27.5 ± 0.4 mm			dt = 0.8 mm (+ 0.08 / - 0.05)	
0.51	11.0 X 21.0 X 31.0	8.2	PCMP 389L52514	-
0.56			PCMP 389L52564	-
0.62			PCMP 389L52624	-
0.68			PCMP 389 52684	-
0.75			PCMP 389 52754	-
0.82			PCMP 389 52824	-
0.91	13.0 X 23.0 X 31.0	10.4	PCMP 389 52914	-
1.0			PCMP 389 52105	-
1.1			PCMP 389 52115	-
1.2	15.0 X 25.0 X 31.0	12.8	PCMP 389 52125	-
1.3			PCMP 389 52135	-
1.5			PCMP 389 52155	-
1.6	18.0 X 28.0 X 31.0	17.2	PCMP 389 52165	-
1.8			PCMP 389 52185	-
2.0			PCMP 389 52205	-

Metallized Polypropylene film capacitors

PCMP 389

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

Cap (µF)	b x h x l (mm)	Mass (g)	CATALOGUE NUMBER	
			PCMP 389	
			loose in box	ammo packing
			lt = 5.0 ± 1.0 mm	H = 18.5 mm
			C – tol. ± 5%	C – tol. ± 5%
Pitch = 10.0 ± 0.4 mm			dt = 0.6 mm (+ 0.06 / - 0.05)	
0.010	4.0 x 10.0 x 12.5	0.8	PCMP 389 62103	PCMP 389 65103
0.011			PCMP 389 62113	PCMP 389 65113
0.012			PCMP 389 62123	PCMP 389 65123
0.013			PCMP 389 62133	PCMP 389 65133
0.015			PCMP 389 62153	PCMP 389 65153
0.016			PCMP 389 62163	PCMP 389 65163
0.018	5.0 x 11.0 x 12.5	0.9	PCMP 389 62183	PCMP 389 65183
0.020			PCMP 389 62203	PCMP 389 65203
0.022			PCMP 389 62223	PCMP 389 65223
0.024			PCMP 389 62243	PCMP 389 65243
0.027	6.0 x 12.0 x 12.5	1.0	PCMP 389 62273	PCMP 389 65273
0.030			PCMP 389 62303	PCMP 389 65303
0.033			PCMP 389 62333	PCMP 389 65333
Pitch = 15.0 ± 0.4 mm			dt = 0.8 mm (+ 0.08 / - 0.05)	
0.027	5.0 X 11.0 X 18.0	1.2	PCMP 389F62273	PCMP 389F65273
0.030			PCMP 389F62303	PCMP 389F65303
0.033			PCMP 389F62333	PCMP 389F65333
0.036			PCMP 389 62363	PCMP 389 65363
0.039			PCMP 389 62393	PCMP 389 65393
0.043	6.0 X 12.0 X 18.0	1.4	PCMP 389 62433	PCMP 389 65433
0.047			PCMP 389 62473	PCMP 389 65473
0.051			PCMP 389 62513	PCMP 389 65513
0.056			PCMP 389 62563	PCMP 389 65563
0.062			PCMP 389 62623	PCMP 389 65623
0.068			PCMP 389F62683	PCMP 389F65683
0.068	7.0 X 13.5 X 18.0	1.9	PCMP 389 62683	PCMP 389 65683
0.075			PCMP 389 62753	PCMP 389 65753
0.082			PCMP 389 62823	PCMP 389 65823
0.091			PCMP 389F62913	PCMP 389F65913
0.091	8.5 X 15.0 X 18.0	2.6	PCMP 389 62913	PCMP 389 65913
0.10			PCMP 389 62104	PCMP 389 65104
0.11			PCMP 389 62114	PCMP 389 65114

Metallized Polypropylene film capacitors

PCMP 389

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

Cap (μF)	b x h x l (mm)	Mass (g)	CATALOGUE NUMBER	
			PCMP 389	
			loose in box	ammo packing
			lt = 5.0 ± 1.0 mm	H = 18.5 mm
			C – tol. ± 5%	C – tol. ± 5%
Pitch = 22.5 ± 0.4 mm			dt = 0.8 mm (+ 0.08 / - 0.05)	
0.10	7.0 X 16.5 X 26.0	3.1	PCMP 389J62104	PCMP 389J65104
0.11			PCMP 389J62114	PCMP 389J65114
0.12			PCMP 389 62124	PCMP 389 65124
0.13			PCMP 389 62134	PCMP 389 65134
0.15			PCMP 389 62154	PCMP 389 65154
0.16			PCMP 389 62164	PCMP 389 65164
0.18	8.5 X 18.0 X 26.0	4.4	PCMP 389 62184	PCMP 389 65184
0.20			PCMP 389 62204	PCMP 389 65204
0.22			PCMP 389 62224	PCMP 389 65224
0.24			PCMP 389J62244	PCMP 389J65244
0.27			PCMP 389J62274	PCMP 389J65274
0.24	10.0 X 19.5 X 26.0	5.5	PCMP 389 62244	PCMP 389 65244
0.27			PCMP 389 62274	PCMP 389 65274
0.30			PCMP 389 62304	PCMP 389 65304
Pitch = 27.5 ± 0.4 mm			dt = 0.8 mm (+ 0.08 / - 0.05)	
0.22	11.0 X 21.0 X 31.0	8.2	PCMP 389L62224	-
0.24			PCMP 389L62244	-
0.27			PCMP 389L62274	-
0.30			PCMP 389L62304	-
0.33			PCMP 389 62334	-
0.36			PCMP 389 62364	-
0.39			PCMP 389 62394	-
0.43			PCMP 389 62434	-
0.47	13.0 X 23.0 X 31.0	10.4	PCMP 389 62474	-
0.51			PCMP 389 62514	-
0.56			PCMP 389 62564	-
0.62	15.0 X 25.0 X 31.0	12.8	PCMP 389 62624	-
0.68			PCMP 389 62684	-
0.75			PCMP 389 62754	-
0.82			PCMP 389 62824	
0.91	18.0 X 28.0 X 31.0	17.2	PCMP 389 62914	-
1.0			PCMP 389 62105	-

Metallized Polypropylene film capacitors

PCMP 389

V_{Rdc} = 1000 V V_{Rac} = 400 V~

Cap (µF)	b x h x l (mm)	Mass (g)	CATALOGUE NUMBER	
			PCMP 389	
			loose in box	ammo packing
			lt = 5 ± 1 mm	H = 18.5 mm
			C – tol. ± 5%	C – tol. ± 5%
Pitch = 10.0 ± 0.4 mm			dt = 0.6 mm (+ 0.06 / - 0.05)	
0.0020	5.0 x 11.0 x 12.5	0.9	PCMP 389 72202	PCMP 389 75202
0.0022			PCMP 389 72222	PCMP 389 75222
0.0024			PCMP 389 72242	PCMP 389 75242
0.0027			PCMP 389 72272	PCMP 389 75272
0.0030			PCMP 389 72302	PCMP 389 75302
0.0033			PCMP 389 72332	PCMP 389 75332
0.0036			PCMP 389 72362	PCMP 389 75362
0.0039			PCMP 389 72392	PCMP 389 75392
0.0043			PCMP 389 72432	PCMP 389 75432
0.0047			PCMP 389 72472	PCMP 389 75472
0.0051			PCMP 389 72512	PCMP 389 75512
0.0056			PCMP 389 72562	PCMP 389 75562
0.0062			PCMP 389 72622	PCMP 389 75622
0.0068			PCMP 389 72682	PCMP 389 75682
0.0075			PCMP 389 72752	PCMP 389 75752
0.0082			PCMP 389 72822	PCMP 389 75822
0.0091	6.0 x 12.0 x 12.5	1.0	PCMP 389 72912	PCMP 389 75912
0.010			PCMP 389 72103	PCMP 389 75103
0.011			PCMP 389 72113	PCMP 389 75113
0.012			PCMP 389 72123	PCMP 389 75123
Pitch = 15.0 ± 0.4 mm			dt = 0.8 mm (+ 0.08 / - 0.05)	
0.0056	6.0 X 12.0 X 18.0	1.4	PCMP 389F72562	PCMP 389F75562
0.0062			PCMP 389F72622	PCMP 389F75622
0.0068			PCMP 389F72682	PCMP 389F75682
0.0075			PCMP 389F72752	PCMP 389F75752
0.0082			PCMP 389F72822	PCMP 389F75822
0.0091			PCMP 389F72912	PCMP 389F75912
0.010			PCMP 389F72103	PCMP 389F75103
0.011			PCMP 389F72113	PCMP 389F75113
0.012			PCMP 389F72123	PCMP 389F75123
0.013			PCMP 389 72133	PCMP 389 75133
0.015			PCMP 389 72153	PCMP 389 75153
0.016			PCMP 389 72163	PCMP 389 75163
0.018			PCMP 389 72183	PCMP 389 75183
0.020			PCMP 389 72203	PCMP 389 75203
0.022			PCMP 389 72223	PCMP 389 75223
0.024			PCMP 389 72243	PCMP 389 75243
0.027			PCMP 389 72273	PCMP 389 75273
0.030	7.0 X 13.5 X 18.0	1.9	PCMP 389 72303	PCMP 389 75303
0.033			PCMP 389 72333	PCMP 389 75333
0.036			PCMP 389 72363	PCMP 389 75363
0.039	8.5 X 15.0 X 18.0	2.6	PCMP 389 72393	PCMP 389 75393
0.043			PCMP 389 72433	PCMP 389 75433
0.047			PCMP 389 72473	PCMP 389 75473
0.051			PCMP 389 72513	PCMP 389 75513
0.056	10.0 X 16.5 X 18.0	3.1	PCMP 389 72563	PCMP 389 75563
0.062			PCMP 389 72623	PCMP 389 75623
0.068			PCMP 389 72683	PCMP 389 75683
0.075	11.0 X 18.5 X 18.0	4.1	PCMP 389 72753	PCMP 389 75753
0.082			PCMP 389 72823	PCMP 389 75823
0.091			PCMP 389 72913	PCMP 389 75913

Metallized Polypropylene film capacitors

PCMP 389

V_{Rdc} = 1000 V V_{Rac} = 400 V~

Cap (µF)	b x h x l (mm)	Mass (g)	CATALOGUE NUMBER	
			PCMP 389	
			loose in box	ammo packing
			lt = 5 ± 1 mm	H = 18.5 mm
			C – tol. ± 5%	C – tol. ± 5%
Pitch = 22.5 ± 0.4 mm			dt = 0.8 mm (+ 0.08 / - 0.05)	
0.039	7.0 X 16.5 X 26.0	3.2	PCMP 389J72393	PCMP 389J75393
0.043			PCMP 389J72433	PCMP 389J75433
0.047			PCMP 389J72473	PCMP 389J75473
0.051			PCMP 389J72513	PCMP 389J75513
0.056			PCMP 389J72563	PCMP 389J75563
0.062			PCMP 389J72623	PCMP 389J75623
0.068			PCMP 389J72683	PCMP 389J75683
0.075	8.5 X 18.0 X 26.0	4.4	PCMP 389J72753	PCMP 389J75753
0.082			PCMP 389J72823	PCMP 389J75823
0.091			PCMP 389J72913	PCMP 389J75913
0.10			PCMP 389 72104	PCMP 389 75104
0.11	10.0 X 19.5 X 26.0	5.5	PCMP 389 72114	PCMP 389 75114
0.12			PCMP 389 72124	PCMP 389 75124
0.13			PCMP 389 72134	PCMP 389 75134
0.15			PCMP 389 72154	PCMP 389 75154
0.16	11.5 X 21.0 X 26.0	6.7	PCMP 389 72164	PCMP 389 75164
0.18			PCMP 389 72184	PCMP 389 75184
0.20	12.0 X 22.0 X 26.0	7.0	PCMP 389 72204	PCMP 389 75204
0.22			PCMP 389 72224	PCMP 389 75224
Pitch = 27.5 ± 0.4 mm			dt = 0.8 mm (+ 0.08 / - 0.05)	
0.039	11.0 X 21.0 X 31.0	8.2	PCMP 389L72393	-
0.043			PCMP 389L72433	-
0.047			PCMP 389L72473	-
0.051			PCMP 389L72513	-
0.056			PCMP 389L72563	-
0.062			PCMP 389L72623	-
0.068			PCMP 389L72683	-
0.075			PCMP 389L72753	-
0.082			PCMP 389L72823	-
0.091			PCMP 389L72913	-
0.10			PCMP 389L72104	-
0.11			PCMP 389L72114	-
0.12			PCMP 389L72124	-
0.13			PCMP 389L72134	-
0.15			PCMP 389L72154	-
0.16			PCMP 389L72164	-
0.18			PCMP 389L72184	-
0.20			PCMP 389L72204	-
0.22	13.0 X 23.0 X 31.0	10.4	PCMP 389L72224	-
0.24			PCMP 389 72244	-
0.27			PCMP 389 72274	-
0.30			PCMP 389 72304	-
0.33	15.0 X 25.0 X 31.0	12.8	PCMP 389 72334	-
0.36			PCMP 389 72364	-
0.39			PCMP 389 72394	-
0.43	18.0 X 28.0 X 31.0	17.2	PCMP 389 72434	-
0.47			PCMP 389 72474	-
0.51			PCMP 389 72514	-
0.56			PCMP 389 72564	-

Metallized Polypropylene film capacitors

PCMP 389

V_{Rdc} = 1250 V V_{Rac} = 500 V~

Cap (µF)	b x h x l (mm)	Mass (g)	CATALOGUE NUMBER	
			PCMP 389	
			loose in box	ammo packing
			lt = 5 ± 1 mm	H = 18.5 mm
			C – tol. ± 5%	C – tol. ± 5%
Pitch = 10.0 ± 0.4 mm			dt = 0.6 mm (+ 0.06 / - 0.05)	
0.0020	5.0 x 11.0 x 12.5	0.9	PCMP 389 N2202	PCMP 389 N5202
0.0022			PCMP 389 N2222	PCMP 389 N5222
0.0024			PCMP 389 N2242	PCMP 389 N5242
0.0027			PCMP 389 N2272	PCMP 389 N5272
0.0030			PCMP 389 N2302	PCMP 389 N5302
0.0033			PCMP 389 N2332	PCMP 389 N5332
0.0036			PCMP 389 N2362	PCMP 389 N5362
0.0039			PCMP 389 N2392	PCMP 389 N5392
0.0043			PCMP 389 N2432	PCMP 389 N5432
0.0047			PCMP 389 N2472	PCMP 389 N5472
0.0051			PCMP 389 N2512	PCMP 389 N5512
0.0056			PCMP 389 N2562	PCMP 389 N5562
0.0062			PCMP 389 N2622	PCMP 389 N5622
0.0068	6.0 x 12.0 x 12.5	1.0	PCMP 389 N2682	PCMP 389 N5682
0.0075			PCMP 389 N2752	PCMP 389 N5752
0.0082			PCMP 389 N2822	PCMP 389 N5822
0.0091			PCMP 389 N2912	PCMP 389 N5912
Pitch = 15.0 ± 0.4 mm			dt = 0.8 mm (+ 0.08 / - 0.05)	
0.0056	6.0 X 12.0 X 18.0	1.4	PCMP 389FN2562	PCMP 389FN5562
0.0062			PCMP 389FN2622	PCMP 389FN5622
0.0068			PCMP 389FN2682	PCMP 389FN5682
0.0075			PCMP 389FN2752	PCMP 389FN5752
0.0082			PCMP 389FN2822	PCMP 389FN5822
0.0091			PCMP 389FN2912	PCMP 389FN5912
0.010			PCMP 389 N2103	PCMP 389 N5103
0.011			PCMP 389 N2113	PCMP 389 N5113
0.012			PCMP 389 N2123	PCMP 389 N5123
0.013			PCMP 389 N2133	PCMP 389 N5133
0.015			PCMP 389 N2153	PCMP 389 N5153
0.016			PCMP 389 N2163	PCMP 389 N5163
0.018			PCMP 389 N2183	PCMP 389 N5183
0.020			PCMP 389 N2203	PCMP 389 N5203
0.022	7.0 X 13.5 X 18.0	1.9	PCMP 389 N2223	PCMP 389 N5223
0.024			PCMP 389 N2243	PCMP 389 N5243
0.027			PCMP 389 N2273	PCMP 389 N5273
0.030	8.5 X 15.0 X 18.0	2.6	PCMP 389 N2303	PCMP 389 N5303
0.033			PCMP 389 N2333	PCMP 389 N5333
0.036			PCMP 389 N2363	PCMP 389 N5363
0.039			PCMP 389 N2393	PCMP 389 N5393
0.043	10.0 X 16.5 X 18.0	3.1	PCMP 389 N2433	PCMP 389 N5433
0.047			PCMP 389 N2473	PCMP 389 N5473
0.051			PCMP 389 N2513	PCMP 389 N5513
0.056	11.0 X 18.5 X 18.0	4.1	PCMP 389 N2563	PCMP 389 N5563
0.062			PCMP 389 N2623	PCMP 389 N5623
0.068			PCMP 389 N2683	PCMP 389 N5683

Metallized Polypropylene film capacitors

PCMP 389

V_{Rdc} = 1250 V V_{Rac} = 500 V~

Cap (µF)	b x h x l (mm)	Mass (g)	CATALOGUE NUMBER	
			PCMP 389	
			loose in box	ammo packing
			lt = 5 ± 1 mm	H = 18.5 mm
			C – tol. ± 5%	C – tol. ± 5%
Pitch = 22.5 ± 0.4 mm dt = 0.8 mm (+ 0.08 / - 0.05)				
0.039 0.043 0.047 0.051	7.0 X 16.5 X 26.0	3.2	PCMP 389JN2393 PCMP 389JN2433 PCMP 389JN2473 PCMP 389JN2513	PCMP 389JN5393 PCMP 389JN5433 PCMP 389JN5473 PCMP 389JN5513
0.056 0.062 0.068 0.075	8.5 X 18.0 X 26.0	4.4	PCMP 389JN2563 PCMP 389JN2623 PCMP 389JN2683 PCMP 389 N2753	PCMP 389JN5563 PCMP 389JN5623 PCMP 389JN5683 PCMP 389 N5753
0.082 0.091 0.10 0.11	10.0 X 19.5 X 26.0	5.5	PCMP 389 N2823 PCMP 389 N2913 PCMP 389 N2104 PCMP 389 N2114	PCMP 389 N5823 PCMP 389 N5913 PCMP 389 N5104 PCMP 389 N5114
0.12 0.13	11.5 X 21.0 X 26.0	6.7	PCMP 389 N2124 PCMP 389 N2134	PCMP 389 N5124 PCMP 389 N5134
0.15 0.16	12.0 X 22.0 X 26.0	7.0	PCMP 389 N2154 PCMP 389 N2164	PCMP 389 N5154 PCMP 389 N5164
Pitch = 27.5 ± 0.4 mm dt = 0.8 mm (+ 0.08 / - 0.05)				
0.039 0.043 0.047 0.051 0.056 0.062 0.068 0.075 0.082 0.091 0.10 0.11 0.12 0.13 0.15 0.16	11.0 X 21.0 X 31.0	7.8	PCMP 389LN2393 PCMP 389LN2433 PCMP 389LN2473 PCMP 389LN2513 PCMP 389LN2563 PCMP 389LN2623 PCMP 389LN2683 PCMP 389LN2753 PCMP 389LN2823 PCMP 389LN2913 PCMP 389LN2104 PCMP 389LN2114 PCMP 389LN2124 PCMP 389LN2134 PCMP 389LN2154 PCMP 389LN2164	- - - - - - - - - - - - - - - -
0.18 0.20 0.22	13.0 X 23.0 X 31.0	10.4	PCMP 389 N2184 PCMP 389 N2204 PCMP 389 N2224	- - -
0.24 0.27 0.30	15.0 X 25.0 X 31.0	12.8	PCMP 389 N2244 PCMP 389 N2274 PCMP 389 N2304	- - -
0.33 0.36 0.39	18.0 X 28.0 X 31.0	17.2	PCMP 389 N2334 PCMP 389 N2364 PCMP 389 N2394	- - -

Metallized Polypropylene film capacitors

PCMP 389

V_{Rdc} = 1600 V V_{Rac} = 600 V~

Cap (µF)	b x h x l (mm)	Mass (g)	CATALOGUE NUMBER	
			PCMP 389	
			loose in box	ammo packing
			lt = 5 ± 1 mm	H = 18.5 mm
			C – tol. ± 5%	C – tol. ± 5%
Pitch = 15.0 ± 0.4 mm			dt = 0.6 mm (+ 0.06 / - 0.05)	
0.0047 0.0051 0.0056 0.0062 0.0068	5.0 X 11.0 X 18.0	1.2	PCMP 389F82472 PCMP 389F82512 PCMP 389F82562 PCMP 389F82622 PCMP 389F82682	PCMP 389F85472 PCMP 389F85512 PCMP 389F85562 PCMP 389F85622 PCMP 389F85682
0.0075 0.0082 0.0091 0.010	6.0 X 12.0 X 18.0	1.4	PCMP 389F82752 PCMP 389F82822 PCMP 389F82912 PCMP 389F82103	PCMP 389F85752 PCMP 389F85822 PCMP 389F85912 PCMP 389F85103
Pitch = 15.0 ± 0.4 mm			dt = 0.8 mm (+ 0.08 / - 0.05)	
0.011 0.012 0.013	7.0 X 13.5 X 18.0	1.9	PCMP 389F82113 PCMP 389F82123 PCMP 389F82133	PCMP 389F85113 PCMP 389F85123 PCMP 389F85133
0.015 0.016 0.018	8.5 X 15.0 X 18.0	2.6	PCMP 389F82153 PCMP 389F82163 PCMP 389F82183	PCMP 389F85153 PCMP 389F85163 PCMP 389F85183
0.020 0.022 0.024	10.0 X 16.5 X 18.0	3.1	PCMP 389F82203 PCMP 389F82223 PCMP 389F82243	PCMP 389F85203 PCMP 389F85223 PCMP 389F85243
0.027 0.030 0.033 0.036 0.039	11.0 X 18.5 X 18.0	4.1	PCMP 389F82273 PCMP 389F82303 PCMP 389F82333 PCMP 389F82363 PCMP 389F82393	PCMP 389F85273 PCMP 389F85303 PCMP 389F85333 PCMP 389F85363 PCMP 389F85393

Metallized Polypropylene film capacitors

PCMP 389

V_{Rdc} = 2000 V V_{Rac} = 700 V~

Cap (µF)	b x h x l (mm)	Mass (g)	CATALOGUE NUMBER	
			PCMP 389	
			loose in box	ammo packing
			lt = 5 ± 1 mm	H = 18.5 mm
			C – tol. ± 5%	C – tol. ± 5%
Pitch = 15.0 ± 0.4 mm dt = 0.6 mm (+ 0.06 / - 0.05)				
0.00082	5.0 X 11.0 X 18.0	1.2	PCMP 389F92821	PCMP 389F95821
0.00091			PCMP 389F92911	PCMP 389F95911
0.0010			PCMP 389F92102	PCMP 389F95102
0.0011			PCMP 389F92112	PCMP 389F95112
0.0012			PCMP 389F92122	PCMP 389F95122
0.0013			PCMP 389F92132	PCMP 389F95132
0.0015			PCMP 389F92152	PCMP 389F95152
0.0018			PCMP 389F92182	PCMP 389F95182
0.0020			PCMP 389F92202	PCMP 389F95202
0.0022			PCMP 389F92222	PCMP 389F95222
0.0024			PCMP 389F92242	PCMP 389F95242
0.0027			PCMP 389F92272	PCMP 389F95272
0.0030			PCMP 389F92302	PCMP 389F95303
0.0033			PCMP 389F92332	PCMP 389F95332
0.0036			PCMP 389F92362	PCMP 389F95362
0.0039			PCMP 389F92392	PCMP 389F95392
0.0043			PCMP 389F92432	PCMP 389F95432
0.0047	6.0 X 12.0 X 18.0	1.4	PCMP 389F92472	PCMP 389F95472
0.0051			PCMP 389F92512	PCMP 389F95512
0.0056			PCMP 389F92562	PCMP 389F95562
0.0062			PCMP 389F92622	PCMP 389F95622
0.0068			PCMP 389F92682	PCMP 389F95682
Pitch = 15.0 ± 0.4 mm dt = 0.8 mm (+ 0.08 / - 0.05)				
0.0075	7.0 X 13.5 X 18.0	1.9	PCMP 389F92752	PCMP 389F95752
0.0082			PCMP 389F92822	PCMP 389F95822
0.0091			PCMP 389F92912	PCMP 389F95912
0.010			PCMP 389F92103	PCMP 389F95103
0.011	8.5 X 15.0 X 18.0	2.6	PCMP 389F92113	PCMP 389F95113
0.012			PCMP 389F92123	PCMP 389F95123
0.013			PCMP 389F92133	PCMP 389F95133
0.015	10.0 X 16.5 X 18.0	3.1	PCMP 389F92153	PCMP 389F95153
0.016			PCMP 389F92163	PCMP 389F95163
0.018	11.0 X 18.5 X 18.0	4.1	PCMP 389F92183	PCMP 389F95183
0.020			PCMP 389F92203	PCMP 389F95203
0.022			PCMP 389F92223	PCMP 389F95223
0.024			PCMP 389F92243	PCMP 389F95243

Metallized Polypropylene film capacitors

PCMP 389

MOUNTING

NORMAL USE

The capacitors are designed for mounting on printed-circuit boards. The capacitors packed in bandoilers are designed for mounting on printed-circuit boards by means of automatic insertion machines.

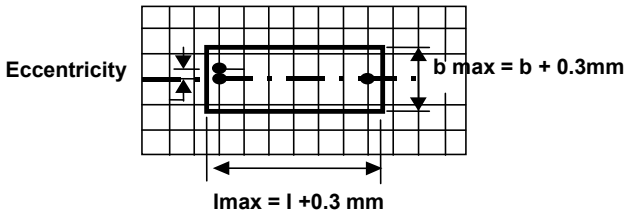
SPECIFIC METHOD OF MOUNTING TO WITHSTAND VIBRATIONAND SHOCK

. 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.

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

Metallized Polypropylene film capacitors

PCMP 389

STORAGE TEMPERATURE

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

RATINGS AND CHARACTERISTICS

Unless otherwise specified all electrical values apply at an ambient temperature of 23±1℃, an atmospheric pressure of 86 to 106 kPa and a relative humidity of 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%.

CHARACTERISTICS

- **Test Voltage**

. Test Voltage (between leads) : 1.6 x V_{Rdc}, 1min (cut-off current 10mA)
. Test Voltage (between leads and case) : 2840 V_{dc}, 1min

- **Dissipation Factor**

Rated voltage	Capacitance	Tangent of loss angle (x 10^{-4})		
		1 kHz	10 kHz	100 kHz
250 V	0.047㎌ ≤ C ≤ 0.12㎌	≤ 5	≤ 5	≤ 30
	0.12 ㎌ < C ≤ 0.33㎌	≤ 5	≤ 8	≤ 40
	0.33 ㎌ < C ≤ 0.56㎌	≤ 5	≤ 10	≤ 50
	0.56 ㎌ < C ≤ 0.91㎌	≤ 5	≤ 10	≤ 60
	0.91 ㎌ < C ≤ 1.5 ㎌	≤ 6	≤ 10	≤ 80
	1.5 ㎌ < C ≤ 2.2 ㎌	≤ 6	≤ 10	≤ 100
	2.2 ㎌ < C ≤ 3.9 ㎌	≤ 6	≤ 15	≤ 135
400 V	0.022㎌ ≤ C ≤ 0.075㎌	≤ 5	≤ 5	≤ 20
	0.075㎌ < C ≤ 0.39 ㎌	≤ 5	≤ 8	≤ 40
	0.39 ㎌ < C ≤ 0.91 ㎌	≤ 5	≤ 10	≤ 60
	0.91 ㎌ < C ≤ 1.5 ㎌	≤ 6	≤ 10	≤ 80
	1.5 ㎌ < C ≤ 2.0 ㎌	≤ 6	≤ 10	≤ 95
630 V	0.010㎌ ≤ C ≤ 0.068 ㎌	≤ 5	≤ 5	≤ 15
	0.068 ㎌ < C ≤ 0.39 ㎌	≤ 5	≤ 8	≤ 40
	0.39 ㎌ < C ≤ 1.0 ㎌	≤ 5	≤ 10	≤ 60
1000V	C ≤ 0.012㎌	≤ 5	≤ 7	≤ 15
	0.013㎌ ≤ C ≤ 0.091㎌	≤ 5	≤ 7	≤ 25
	0.10㎌ ≤ C ≤ 0.56㎌	≤ 5	≤ 7	≤ 35
1250V	C ≤ 0.0091㎌	≤ 5	≤ 7	≤ 15
	0.010㎌ ≤ C ≤ 0.091㎌	≤ 5	≤ 7	≤ 25
	0.10㎌ ≤ C ≤ 0.39㎌	≤ 5	≤ 7	≤ 35
1600V	0.0047㎌ ≤ C ≤ 0.039 ㎌	≤ 5	≤ 7	≤ 25
2000V	0.00082㎌ ≤ C ≤ 0.024 ㎌	≤ 5	≤ 7	≤ 20

Metallized Polypropylene film capacitors

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● Insulation Resistance

The insulation resistance is measured for 1min ±5s, at 100V for V_{Rdc} < 630V, at 500V for V_{Rdc} ≥ 630V
Between terminals :

C ≤ 0.33μF : R > 100 000 MΩ
C > 0.33μF : RC ≥ 30 000 s

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

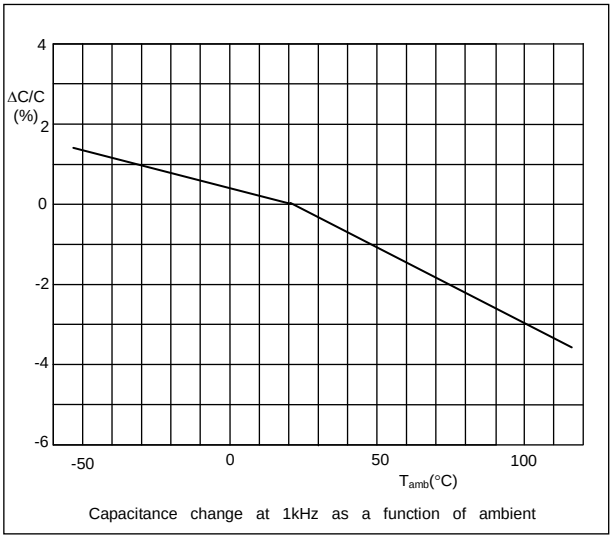
For values see specific reference data. If the pulse voltage is lower than the rated voltage, the values of the specific reference data mast be multiplied by V_{Rdc} and divided by the applied voltage

Rated voltage	MAXIMUM RATED VOLTAGE PULSE SLOPE (V/μs)			
	P = 10.0 mm	P = 15.0 mm	P = 22.5 mm	P = 27.5 mm
250 V	280	200	125	50
400 V	420	300	180	70
630 V	550	400	250	100
1000 V	2000	1300	800	380
1250 V	4000	1850	1150	600
1600 V	-	6000	-	-
2000 V	-	9500	-	-

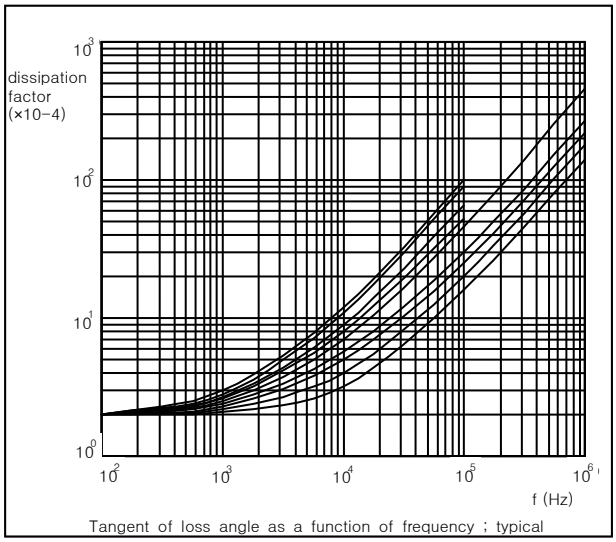
Metallized Polypropylene film capacitors

PCMP 389

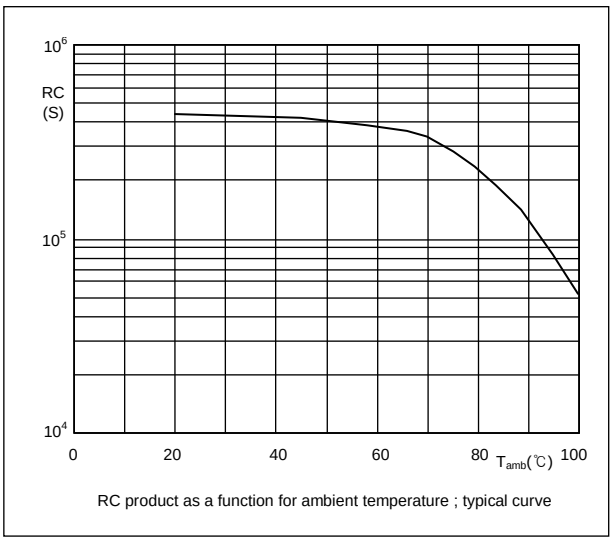
THE GRAPHS OF CHARACTERISTICS



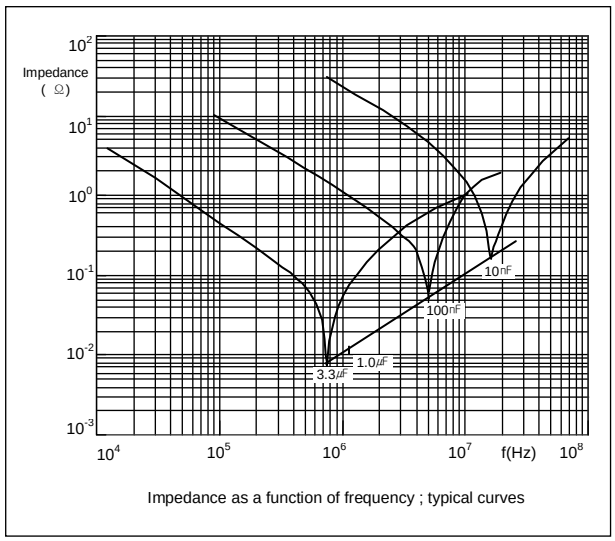
Capacitance change at 1kHz as a function of ambient



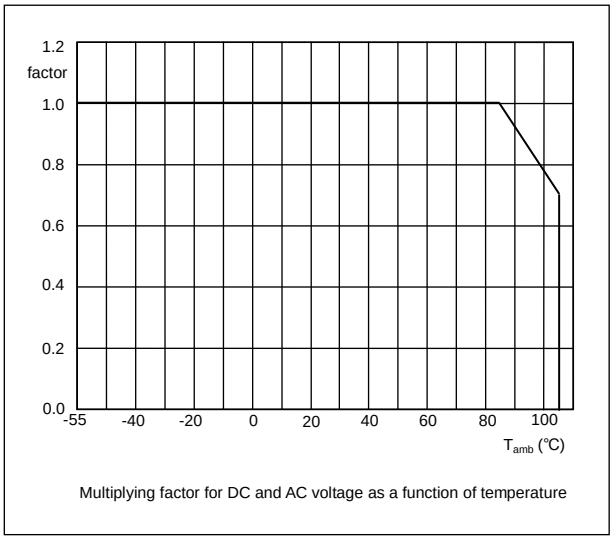
Tangent of loss angle as a function of frequency ; typical



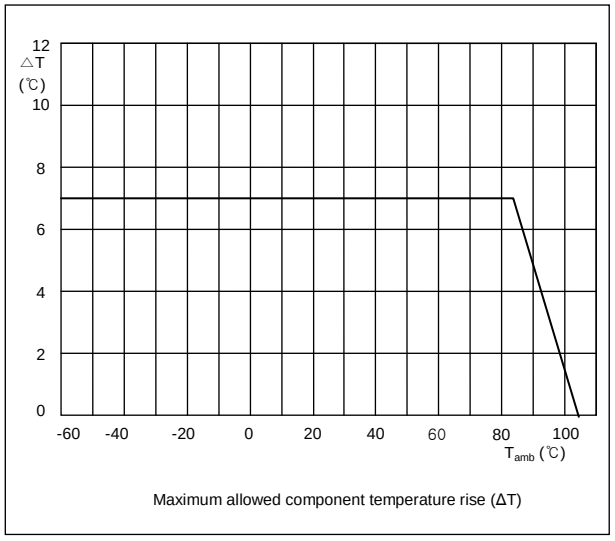
RC product as a function for ambient temperature ; typical curve



Impedance as a function of frequency ; typical curves



Multiplying factor for DC and AC voltage as a function of temperature



Maximum allowed component temperature rise (ΔT)

Metallized Polypropylene film capacitors

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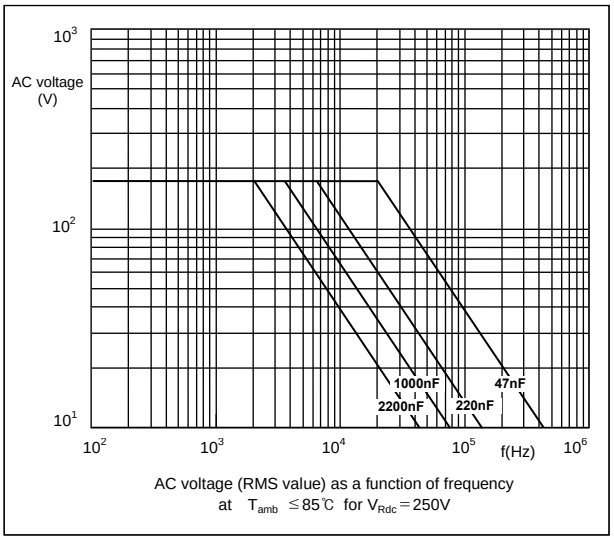
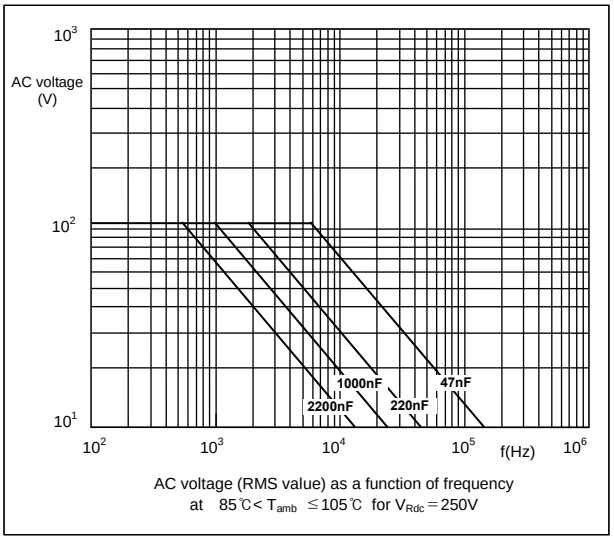
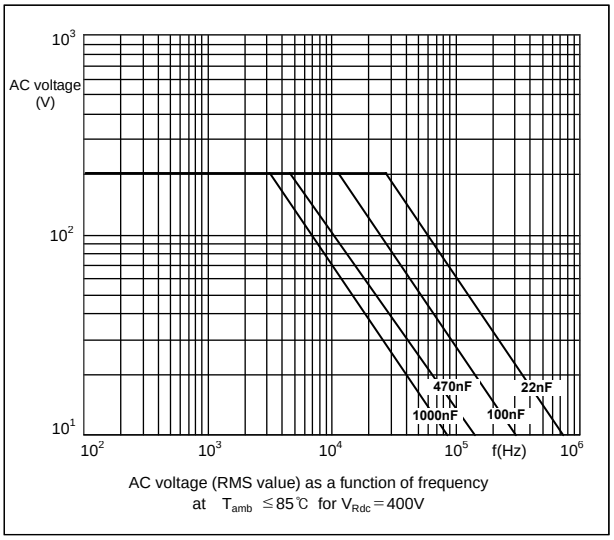
MAXIMUM RMS VOLTAGE (SINEWAVE) AS A FUNCTION OF FREQUENCY (250V~630V)



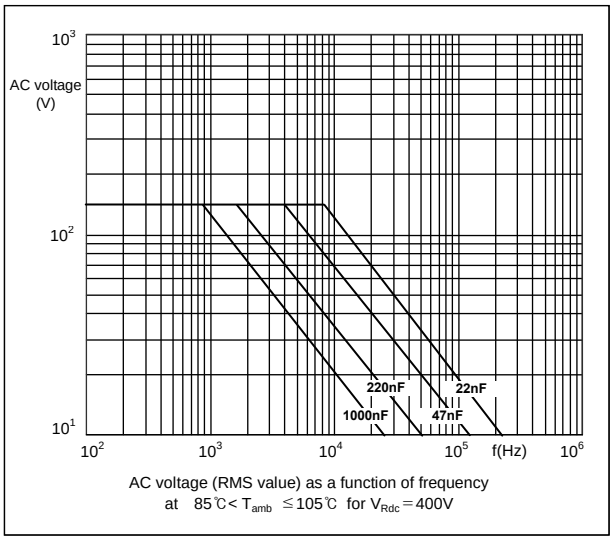
AC voltage (RMS value) as a function of frequency
at $T_{amb} \leq 85℃$ for $V_{Rdc} = 250V$



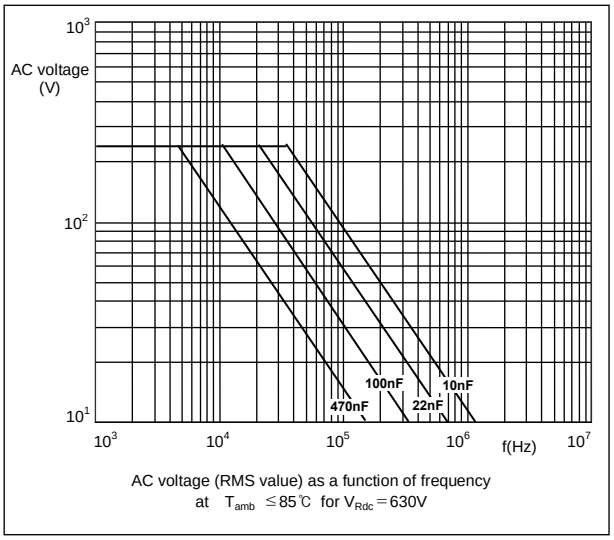
AC voltage (RMS value) as a function of frequency
at $85℃ < T_{amb} \leq 105℃$ for $V_{Rdc} = 250V$



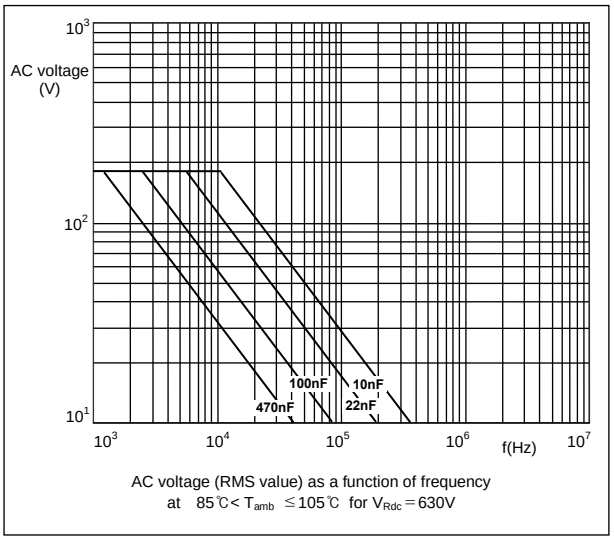
AC voltage (RMS value) as a function of frequency
at $T_{amb} \leq 85℃$ for $V_{Rdc} = 400V$



AC voltage (RMS value) as a function of frequency
at $85℃ < T_{amb} \leq 105℃$ for $V_{Rdc} = 400V$



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

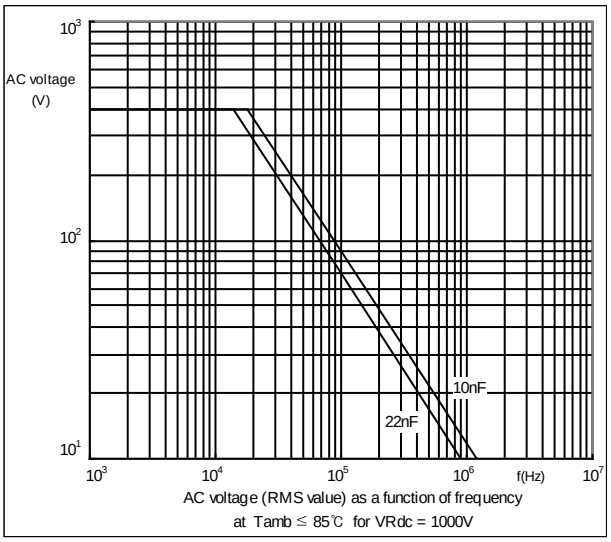


AC voltage (RMS value) as a function of frequency
at $85℃ < T_{amb} \leq 105℃$ for $V_{Rdc} = 630V$

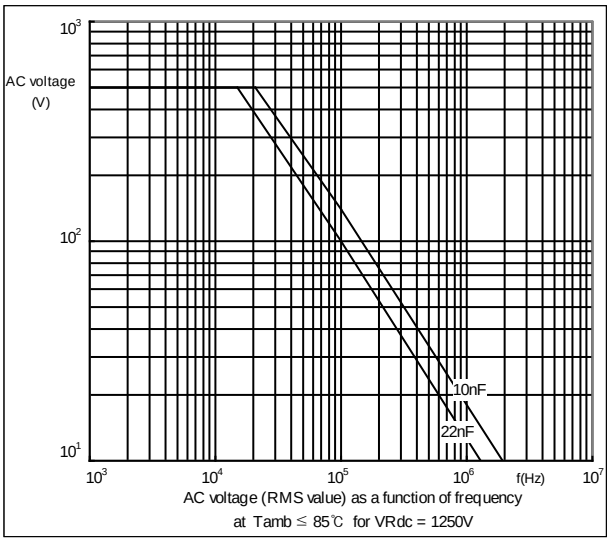
Metallized Polypropylene film capacitors

PCMP 389

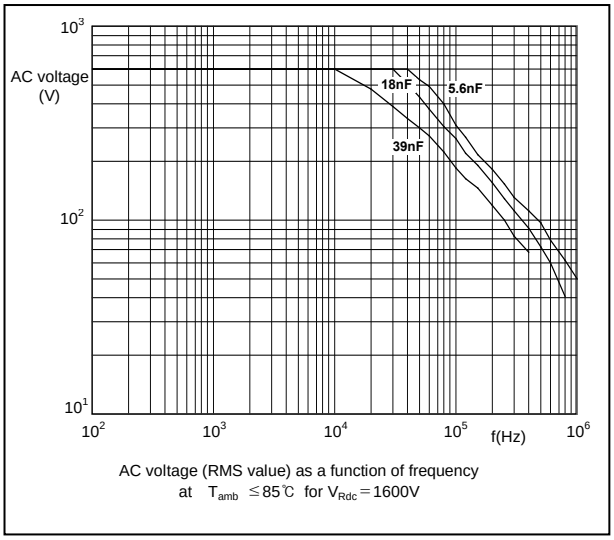
MAXIMUM RMS VOLTAGE (SINEWAVE) AS A FUNCTION OF FREQUENCY (1000V~2000V)



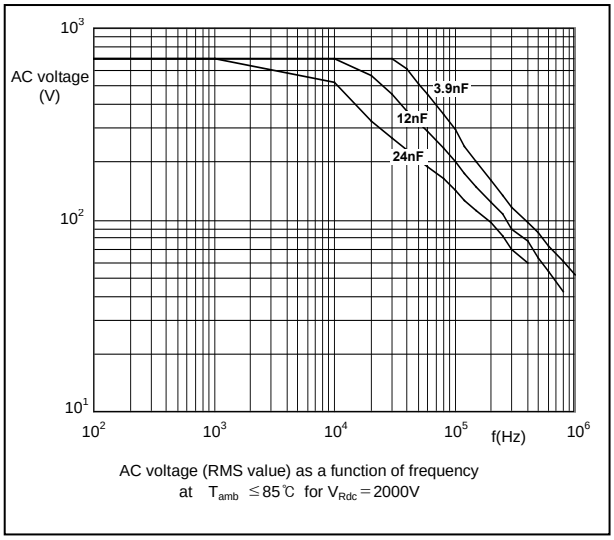
AC voltage (RMS value) as a function of frequency
at Tamb ≤ 85℃ for VRdc = 1000V



AC voltage (RMS value) as a function of frequency
at Tamb ≤ 85℃ for VRdc = 1250V



AC voltage (RMS value) as a function of frequency
at T_{amb} ≤85℃ for V_{Rdc} = 1600V



AC voltage (RMS value) as a function of frequency
at T_{amb} ≤85℃ for V_{Rdc} = 2000V

Metallized Polypropylene film capacitors

PCMP 389

APPLICATION NOTE AND LIMITING CONDITIONS

These capacitors are not suitable for mains application as across-the-line capacitors without additional protection.

To select the capacitor for a certain application, the following conditions must be checked :

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

2. The peak-to-peak voltage (V_{p-p}) shall not be greater than the maximum V_{p-p} to avoid the ionisation inception level.

3. The voltage pulse slope (dV/dt) shall not exceed the rated voltage pulse slope in an RC-circuit at rated voltage and without ringing. If the pulse voltage is lower than the rated DC voltage, the rated voltage pulse slope may be multiplied by V_{Rdc} and divided by the applied voltage.
   For all other pulses following equation must be fulfilled :

$$2 \times \int_0^T \left(\frac{dU}{dt}\right)^2 \times dt < U_{Rdc} \times \left(\frac{dU}{dt}\right)_{rated}$$

   T is the pulse duration.
4. The maximum component surface temperature rise must be lower than the limits.

5. To ensure withstanding high humidity requirements in the application it is recommended not to damage the epoxy adhesion at the leads. Therefore the leads may not be damaged or bent before soldering.

Metallized Polypropylene film capacitors

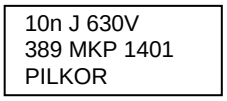
PCMP 389

PRODUCT MARKING

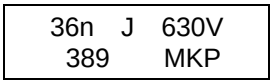
Capacitors are marked with the following information :

. Rated capacitance code in accordance with IEC 60062
. Tolerance on rated capacitance : J = ± 5 %
. Rated (DC) Voltage (e.g. 630 V)
. Code for dielectric material (MKP)
. Manufacturer's type designation (389)
. Manufacturer's name (PILKOR)
. Year and week of manufacture (e.g. 1401)
. White or black color

Example of marking

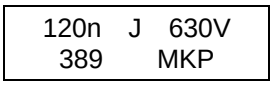


Marking on the side



Marking on the top

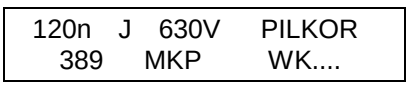
Marking on the side



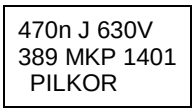
Marking on the top

Marking on the side

or



Marking on the top



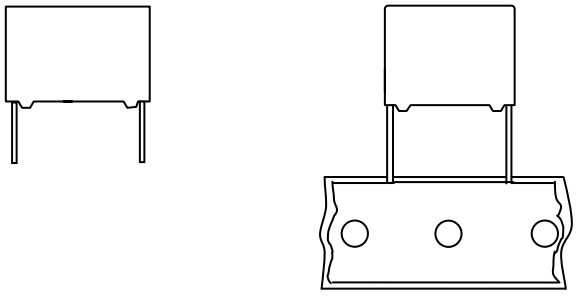
Marking on the top

Metallized Polypropylene film capacitors

PCMP 384

MMKP RADIAL POTTED CAPACITORS

Pitch 10.0/15.0/22.5/27.5mm
(reduced pitch 7.5mm)



QUICK REFERENCE DATA

Capacitance range (E24 series)	0.00022 to 1.0μF
Capacitance tolerance	±3.5%, ±5%, ±10%
Rated voltage (DC)	250V, 400V, 630V, 800V, 1000V, 1250V, 1600V, 2000V, 2500V
Climatic category	55/105/56
Temperature range	-55℃ ~ +105℃
Reference specification	IEC 60384-17 / 16
Potting & Encapsulation material	Qualified in accordance with UL94V-0

FEATURES

. Double sided metallized electrodes
. Low contact resistance
. Low loss dielectric
. Small dimension for high density packaging
. Supplied loose in box and ammo pack

APPLICATIONS

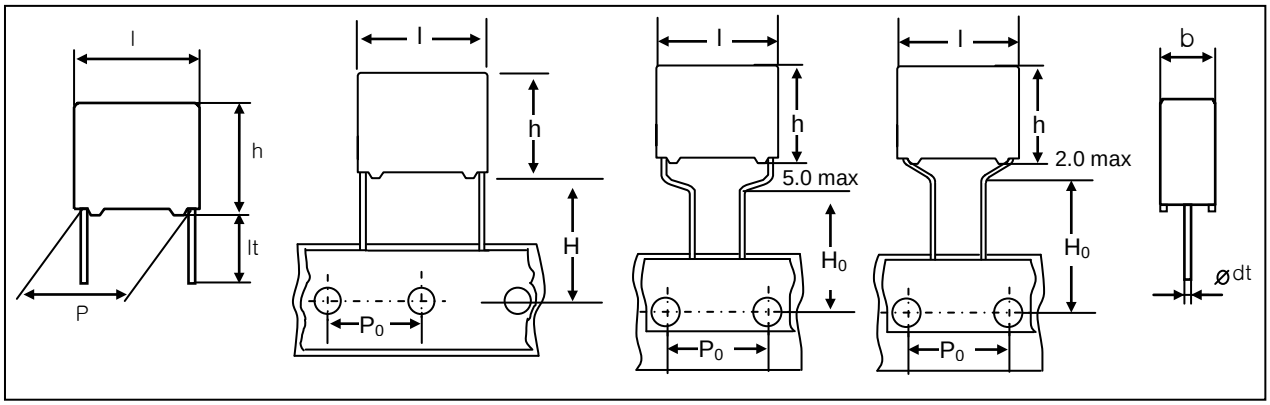
. Electronic lighting e.g. Ballast
. S-correction, Fly-back circuit in television receivers
. UPS, Inverters
. IGBT Snubber
. Protection power semi-conductor
. Stable capacitance in damp environment
85℃85%RH, V_{Rdc} , 1000hours

• 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.

Metallized Polypropylene film capacitors

PCMP 384

Ordering Information



PCMP 384 (X) X X XXX

Type series

Capacitance

Code	Voltage
4	250V
5	400V
6	630V
C	630V mini
1	630V (400Vac)
M	800V
7	1000V
D	1000V mini
N	1250V
8	1600V
9	2000V
2	2000V(700Vac)
0	2500V

*Code	Original pitch
D	10.0mm
F	15.0mm
J	22.5mm
L	27.5mm

*** In case of overlapping the value, use the 13NC with pitch information.**

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)			
2	Loose in box	± 5%	lt = 5.0±1.0mm	-	10.0	15.0	22.5	27.5
8	Loose in box	±3.5%	lt = 5.0±1.0mm	-	10.0	15.0	22.5	27.5
H	Loose in box	±10%	lt = 5.0±1.0mm	-	10.0	15.0	22.5	27.5
3	Loose in box	± 5%	lt =25.0±2.0mm	-	10.0	15.0	22.5	27.5
7	Loose in box	±10%	lt =25.0±2.0mm	-	10.0	15.0	22.5	27.5
5	Ammo packing	± 5%	H=18.5mm	12.7mm	10.0	15.0	22.5	27.5
A	Ammo packing	± 5%	H_0=16.0mm	15.0mm	7.5(*)	7.5(*)	-	-
C	Ammo packing	± 5%	H_0=16.0mm	15.0mm	-	7.5(**)	-	-

* Reduced pitch (Reduced lead spacings)
** Reduced pitch (Low height)

Metallized Polypropylene film capacitors

PCMP 384

Packaging Information

SMALLEST PACKING QUANTITIES (SPQ)	Loose in box
	lt = 5.0 ± 1.0mm
DIMENSIONS	**SPQ**
4.0 X 10.0 X 12.5	2000
5.0 X 11.0 X 12.5	1500
6.0 X 12.0 X 12.5	1000
5.0 X 11.0 X 18.0	1000
6.0 X 12.0 X 18.0	1000
7.0 X 13.5 X 18.0	1000
8.5 X 15.0 X 18.0	1000
10.0 X 16.5 X 18.0	1000
6.0 X 15.5 X 26.0	1000
7.0 X 16.5 X 26.0	1000
8.5 X 18.0 X 26.0	500
10.0 X 19.5 X 26.0	500
11.5 X 21.0 X 26.0	500
13.0 X 23.0 X 26.0	500
11.0 X 21.0 X 31.0	500
13.0 X 23.0 X 31.0	250
15.0 X 25.0 X 31.0	250
18.0 X 28.0 X 31.0	200

Metallized Polypropylene film capacitors

PCMP 384

V_{Rdc} = 250 V V_{Rac} = 125 V~

Cap (µF)	b x h x l (mm)	Mess (g)	CATALOGUE NUMBER	
			PCMP 384	
			loose in box	ammo packing
			lt = 5.0 ± 1.0 mm	H = 16.0 mm Reduced pitch(7.5mm)
			C – tol. ± 5 %	C – tol. ± 5 %
Pitch = 10.0 ± 0.4 mm dt = 0.6 +0.06/-0.05 mm				
0.010	4.0 x 10.0 x 12.5	0.8	PCMP 384 42103	PCMP 384 4A103
0.011			PCMP 384 42113	PCMP 384 4A113
0.012			PCMP 384 42123	PCMP 384 4A123
0.013			PCMP 384 42133	PCMP 384 4A133
0.015			PCMP 384 42153	PCMP 384 4A153
0.016			PCMP 384 42163	PCMP 384 4A163
0.018			PCMP 384 42183	PCMP 384 4A183
0.020			PCMP 384 42203	PCMP 384 4A203
0.022			PCMP 384 42223	PCMP 384 4A223
0.024			PCMP 384 42243	PCMP 384 4A243
0.027			PCMP 384 42273	PCMP 384 4A273
0.030			PCMP 384 42303	PCMP 384 4A303
0.033			PCMP 384 42333	PCMP 384 4A333
0.036			PCMP 384 42363	PCMP 384 4A363
0.039			PCMP 384 42393	PCMP 384 4A393
0.043	5.0 x 11.0 x 12.5	0.9	PCMP 384 42433	PCMP 384 4A433
0.047			PCMP 384 42473	PCMP 384 4A473
0.051			PCMP 384 42513	PCMP 384 4A513
0.056			PCMP 384 42563	PCMP 384 4A563
0.062	6.0 x 12.0 x 12.5	1.0	PCMP 384 42623	PCMP 384 4A623
0.068			PCMP 384D42683	PCMP 384D4A683
0.075			PCMP 384D42753	PCMP 384D4A753
0.082			PCMP 384D42823	PCMP 384D4A823
Pitch = 15.0 ± 0.4 mm dt = 0.8 +0.08/-0.05 mm				
0.068	5.0 x 11.0 x 18.0	1.2	PCMP 384 42683	PCMP 384 4A683
0.075			PCMP 384 42753	PCMP 384 4A753
0.082			PCMP 384 42823	PCMP 384 4A823
0.091			PCMP 384 42913	PCMP 384 4A913
0.10			PCMP 384 42104	PCMP 384 4A104
0.11	6.0 x 12.0 x 18.0	1.4	PCMP 384 42114	PCMP 384 4A114
0.12			PCMP 384 42124	PCMP 384 4A124
0.13			PCMP 384 42134	PCMP 384 4A134
0.15			PCMP 384 42154	PCMP 384 4A154

Metallized Polypropylene film capacitors

PCMP 384

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

Cap (µF)	b x h x l (mm)	Mess (g)	CATALOGUE NUMBER	
			PCMP 384	
			loose in box	ammo packing
			lt = 5.0 ± 1.0 mm	H = 16.0 mm Reduced pitch(7.5mm)
			C – tol. ± 5 %	C – tol. ± 5 %
Pitch = 10.0 ± 0.4 mm dt = 0.6 +0.06/-0.05 mm				
0.010	4.0 x 10.0 x 12.5	0.8	PCMP 384 52103	PCMP 384 5A103
0.011			PCMP 384 52113	PCMP 384 5A113
0.012			PCMP 384 52123	PCMP 384 5A123
0.013			PCMP 384 52133	PCMP 384 5A133
0.015			PCMP 384 52153	PCMP 384 5A153
0.016			PCMP 384 52163	PCMP 384 5A163
0.018			PCMP 384 52183	PCMP 384 5A183
0.020			PCMP 384 52203	PCMP 384 5A203
0.022			PCMP 384 52223	PCMP 384 5A223
0.024	5.0 x 11.0 x 12.5	0.9	PCMP 384 52243	PCMP 384 5A243
0.027			PCMP 384 52273	PCMP 384 5A273
0.030			PCMP 384 52303	PCMP 384 5A303
0.033			PCMP 384 52333	PCMP 384 5A333
0.036	6.0 x 12.0 x 12.5	1.0	PCMP 384D52363	PCMP 384D5A363
0.039			PCMP 384D52393	PCMP 384D5A393
0.043			PCMP 384D52433	PCMP 384D5A433
0.047			PCMP 384D52473	PCMP 384D5A473
Pitch = 15.0 ± 0.4 mm dt = 0.8 +0.08/-0.05 mm				
0.036	5.0 x 11.0 x 18.0	1.2	PCMP 384 52363	PCMP 384 5A363
0.039			PCMP 384 52393	PCMP 384 5A393
0.043			PCMP 384 52433	PCMP 384 5A433
0.047			PCMP 384 52473	PCMP 384 5A473
0.051			PCMP 384 52513	PCMP 384 5A513
0.056			PCMP 384 52563	PCMP 384 5A563
0.062	6.0 x 12.0 x 18.0	1.4	PCMP 384 52623	PCMP 384 5A623
0.068			PCMP 384 52683	PCMP 384 5A683
0.075			PCMP 384 52753	PCMP 384 5A753
0.082			PCMP 384 52823	PCMP 384 5A823
0.091	7.0 x 13.5 x 18.0	1.9	PCMP 384 52913	PCMP 384 5A913
0.10			PCMP 384 52104	PCMP 384 5A104
0.11			PCMP 384 52114	PCMP 384 5A114

Metallized Polypropylene film capacitors

PCMP 384

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

Cap (µF)	b x h x l (mm)	Mess (g)	CATALOGUE NUMBER PCMP 384 ..... loose in box lt = 5.0 ± 1.0 mm C – tol. ± 5 %	CATALOGUE NUMBER PCMP 384 ..... ammo packing H = 16.0 mm Reduced pitch(7.5mm) C – tol. ± 5 %
Pitch = 10.0 ± 0.4 mm dt = 0.6 +0.06/-0.05 mm				
0.0047	4.0 x 10.0 x 12.5	0.8	PCMP 384 C2472	PCMP 384 CA472
0.0051			PCMP 384 C2512	PCMP 384 CA512
0.0056			PCMP 384 C2562	PCMP 384 CA562
0.0062			PCMP 384 C2622	PCMP 384 CA622
0.0068			PCMP 384 C2682	PCMP 384 CA682
0.0075			PCMP 384 C2752	PCMP 384 CA752
0.0082			PCMP 384 C2822	PCMP 384 CA822
0.0091			PCMP 384 C2912	PCMP 384 CA912
0.010			PCMP 384 C2103	PCMP 384 CA103
0.011			PCMP 384 C2113	PCMP 384 CA113
0.012			PCMP 384 C2123	PCMP 384 CA123
0.013			PCMP 384 C2133	PCMP 384 CA133
0.015	5.0 x 11.0 x 12.5	0.9	PCMP 384 C2153	PCMP 384 CA153
0.016			PCMP 384 C2163	PCMP 384 CA163
0.018			PCMP 384 C2183	PCMP 384 CA183
0.020			PCMP 384 C2203	PCMP 384 CA203
0.022			PCMP 384 C2223	PCMP 384 CA223
0.024	6.0 x 12.0 x 12.5	1.0	PCMP 384 C2243	PCMP 384 CA243
0.027			PCMP 384 C2273	PCMP 384 CA273
0.030			PCMP 384DC2303	PCMP 384DCA303
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	PCMP 384 62103	PCMP 384 6A103
0.011			PCMP 384 62113	PCMP 384 6A113
0.012			PCMP 384 62123	PCMP 384 6A123
0.013			PCMP 384 62133	PCMP 384 6A133
0.015			PCMP 384 62153	PCMP 384 6A153
0.016			PCMP 384 62163	PCMP 384 6A163
0.018			PCMP 384 62183	PCMP 384 6A183
0.020			PCMP 384 62203	PCMP 384 6A203
0.022			PCMP 384 62223	PCMP 384 6A223
0.024			PCMP 384 62243	PCMP 384 6A243
0.027			PCMP 384 62273	PCMP 384 6A273
0.030			PCMP 384 C2303	PCMP 384 CA303
0.033			PCMP 384 C2333	PCMP 384 CA333
0.036			PCMP 384 C2363	PCMP 384 CA363
0.039	6.0 x 12.0 x 18.0	1.4	PCMP 384 C2393	PCMP 384 CA393
0.043			PCMP 384 C2433	PCMP 384 CA433
0.047			PCMP 384 C2473	PCMP 384 CA473
0.051			PCMP 384 C2513	PCMP 384 CA513
0.056			PCMP 384 C2563	PCMP 384 CA563
0.062	7.0 x 13.5 x 18.0	1.9	PCMP 384 C2623	PCMP 384 CA623
0.068			PCMP 384 C2683	PCMP 384 CA683
0.075			PCMP 384 C2753	PCMP 384 CA753
0.082	8.5 x 15.0 x 18.0	2.6	PCMP 384 C2823	PCMP 384 CA823
0.091			PCMP 384 C2913	PCMP 384 CA913
0.10			PCMP 384 C2104	PCMP 384 CA104
0.11			PCMP 384 C2114	PCMP 384 CA114

Metallized Polypropylene film capacitors

PCMP 384

V_{Rdc} = 630 V **V_{Rac} = 400 V~**

Cap (µF)	b x h x l (mm)	Mess (g)	CATALOGUE NUMBER PCMP 384 ..... loose in box lt = 5.0 ± 1.0 mm C – tol. ± 5 %	CATALOGUE NUMBER PCMP 384 ..... ammo packing H = 16.0 mm Reduced pitch(7.5mm) C – tol. ± 5 %
Pitch = 10.0 ± 0.4 mm dt = 0.6 +0.06/-0.05 mm				
0.0010	4.0 x 10.0 x 12.5	0.8	PCMP 384 12102	PCMP 384 1A102
0.0011			PCMP 384 12112	PCMP 384 1A112
0.0012			PCMP 384 12122	PCMP 384 1A122
0.0013			PCMP 384 12132	PCMP 384 1A132
0.0015			PCMP 384 12152	PCMP 384 1A152
0.0016			PCMP 384 12162	PCMP 384 1A162
0.0018			PCMP 384 12182	PCMP 384 1A182
0.0020			PCMP 384 12202	PCMP 384 1A202
0.0022			PCMP 384 12222	PCMP 384 1A222
0.0024			PCMP 384 12242	PCMP 384 1A242
0.0027			PCMP 384 12272	PCMP 384 1A272
0.0030			PCMP 384 12302	PCMP 384 1A302
0.0033			PCMP 384 12332	PCMP 384 1A332
0.0036			PCMP 384 12362	PCMP 384 1A362
0.0039			PCMP 384 12392	PCMP 384 1A392
0.0043			PCMP 384 12432	PCMP 384 1A432
0.0047			PCMP 384 12472	PCMP 384 1A472
0.0051			PCMP 384 12512	PCMP 384 1A512
0.0056			PCMP 384 12562	PCMP 384 1A562
0.0062			PCMP 384 12622	PCMP 384 1A622
0.0068			PCMP 384 12682	PCMP 384 1A682
0.0075			PCMP 384 12752	PCMP 384 1A752
0.0082			PCMP 384 12822	PCMP 384 1A822
0.0091	5.0 x 11.0 x 12.5	0.9	PCMP 384 12912	PCMP 384 1A912
0.010			PCMP 384 12103	PCMP 384 1A103
0.011			PCMP 384 12113	PCMP 384 1A113
0.012			PCMP 384 12123	PCMP 384 1A123
0.013	6.0 x 12.0 x 12.5	1.0	PCMP 384 12133	PCMP 384 1A133
0.015			PCMP 384 12153	PCMP 384 1A153
0.016			PCMP 384 12163	PCMP 384 1A163
0.018			PCMP 384 12183	PCMP 384 1A183
Pitch = 15.0 ± 0.4 mm dt = 0.8 +0.08/-0.05 mm				
0.020	5.0 x 11.0 x 18.0	1.2	PCMP 384 12203	PCMP 384 1A203
0.022			PCMP 384 12223	PCMP 384 1A223
0.024			PCMP 384 12243	PCMP 384 1A243
0.027			PCMP 384 12273	PCMP 384 1A273
0.030	6.0 x 12.0 x 18.0	1.4	PCMP 384 12303	PCMP 384 1A303
0.033			PCMP 384 12333	PCMP 384 1A333
0.036			PCMP 384 12363	PCMP 384 1A363
0.039			PCMP 384 12393	PCMP 384 1A393
0.043	7.0 x 13.5 x 18.0	1.9	PCMP 384 12433	PCMP 384 1A433
0.047			PCMP 384 12473	PCMP 384 1A473
0.051	8.5 x 15.0 x 18.0	2.6	PCMP 384 12513	PCMP 384 1A513
0.056			PCMP 384 12563	PCMP 384 1A563
0.062			PCMP 384 12623	PCMP 384 1A623
0.068			PCMP 384 12683	PCMP 384 1A683
0.075	10.0 x 16.5 x 18.0	3.1	PCMP 384 12753	PCMP 384 1A753
0.082			PCMP 384 12823	PCMP 384 1A823
0.091			PCMP 384 12913	PCMP 384 1A913
0.10			PCMP 384 12104	PCMP 384 1A104

Metallized Polypropylene film capacitors

PCMP 384

V_{Rdc} = 630 V V_{Rac} = 400 V~

Cap (µF)	b x h x l (mm)	Mess (g)	CATALOGUE NUMBER PCMP 384 ..... loose in box lt = 5.0 ± 1.0 mm C – tol. ± 5 %	ammo packing H = 16.0 mm Reduced pitch(7.5mm) C – tol. ± 5 %
Pitch = 22.5 ± 0.4 mm dt = 0.8 +0.08/-0.05 mm				
0.10	7.0 x 16.5 x 26.0	3.2	PCMP 384J12104	-
0.11			PCMP 384 12114	-
0.12			PCMP 384 12124	-
0.13	8.5 x 18.0 x 26.0	4.4	PCMP 384 12134	-
0.15			PCMP 384 12154	-
0.16			PCMP 384 12164	-
0.18			PCMP 384 12184	-
0.20	10.0 x 19.5 x 26.0	5.5	PCMP 384 12204	-
0.22			PCMP 384 12224	-
0.24	11.5 x 21.0 x 26.0	6.7	PCMP 384 12244	-
0.27			PCMP 384 12274	-
0.28			PCMP 384 12284	-
0.30	13.0 x 23.0 x 26.0	8.0	PCMP 384 12304	-
0.33			PCMP 384 12334	-
Pitch = 27.5 ± 0.4 mm dt = 0.8 +0.08/-0.05 mm				
0.24	11.0 x 21.0 x 31.0	7.8	PCMP 384L12244	-
0.27			PCMP 384L12274	-
0.30			PCMP 384L12304	-
0.33	13.0 x 23.0 x 31.0	10.4	PCMP 384L12334	-
0.36			PCMP 384 12364	-
0.39			PCMP 384 12394	-
0.43			PCMP 384 12434	-
0.47	15.0 x 25.0 x 31.0	12.8	PCMP 384 12474	-
0.51			PCMP 384 12514	-
0.56			PCMP 384 12564	-
0.62	18.0 x 28.0 x 31.0	17.2	PCMP 384 12624	-
0.68			PCMP 384 12684	-
0.75			PCMP 384 12754	-
0.82			PCMP 384 12824	-

Metallized Polypropylene film capacitors

PCMP 384

V_{Rdc} = 800 V V_{Rac} = 450 V~

Cap (µF)	b x h x l (mm)	Mess (g)	CATALOGUE NUMBER PCMP 384 ..... loose in box lt = 5.0 ± 1.0 mm C – tol. ± 5 %	CATALOGUE NUMBER PCMP 384 ..... ammo packing H = 16.0 mm Reduced pitch(7.5mm) C – tol. ± 5 %
Pitch = 15.0 ± 0.4 mm dt = 0.8 +0.08/-0.05 mm				
0.010 0.011 0.012 0.013 0.015 0.016 0.018	5.0 x 11.0 x 18.0	1.2	PCMP 384 M2103 PCMP 384 M2113 PCMP 384 M2123 PCMP 384 M2133 PCMP 384 M2153 PCMP 384 M2163 PCMP 384 M2183	PCMP 384 MA103 PCMP 384 MA113 PCMP 384 MA123 PCMP 384 MA133 PCMP 384 MA153 PCMP 384 MA163 PCMP 384 MA183
0.020 0.022	6.0 x 12.0 x 18.0	1.4	PCMP 384 M2203 PCMP 384 M2223	PCMP 384 MA203 PCMP 384 MA223
0.027 0.033	7.0 x 13.5 x 18.0	1.9	PCMP 384 M2273 PCMP 384 M2333	PCMP 384 MA273 PCMP 384 MA333
0.039 0.047	8.5 x 15.0 x 18.0	2.6	PCMP 384 M2393 PCMP 384 M2473	PCMP 384 MA393 PCMP 384 MA473
0.056 0.068	10.0 x 16.5 x 18.0	3.1	PCMP 384 M2563 PCMP 384 M2683	PCMP 384 MA563 PCMP 384 MA683
Pitch = 22.5 ± 0.4 mm dt = 0.8 +0.08/-0.05 mm				
0.075 0.082 0.091 0.10	8.5 x 18.0 x 26.0	4.4	PCMP 384 M2753 PCMP 384 M2823 PCMP 384 M2913 PCMP 384 M2104	- - - -
0.11 0.12 0.13 0.15	10.0 x 19.5 x 26.0	5.5	PCMP 384 M2114 PCMP 384 M2124 PCMP 384 M2134 PCMP 384 M2154	- - - -
0.16 0.18	11.5 x 21.0 x 26.0	6.7	PCMP 384 M2164 PCMP 384 M2184	- -
Pitch = 27.5 ± 0.4 mm dt = 0.8 +0.08/-0.05 mm				
0.20 0.22	11.0 x 21.0 x 31.0	7.8	PCMP 384 M2204 PCMP 384 M2224	- -
0.24 0.27 0.30	13.0 x 23.0 x 31.0	10.4	PCMP 384 M2244 PCMP 384 M2274 PCMP 384 M2304	- - -
0.33 0.36 0.39	15.0 x 25.0 x 31.0	12.8	PCMP 384 M2334 PCMP 384 M2364 PCMP 384 M2394	- - -
0.43 0.47 0.51 0.56	18.0 x 28.0 x 31.0	17.2	PCMP 384 M2434 PCMP 384 M2474 PCMP 384 M2514 PCMP 384 M2564	- - - -

Metallized Polypropylene film capacitors

PCMP 384

V_{Rdc} = 1000 V V_{Rac} = 500 V~

Cap (µF)	b x h x l (mm)	Mess (g)	CATALOGUE NUMBER PCMP 384 ..... loose in box lt = 5.0 ± 1.0 mm C – tol. ± 5 %	CATALOGUE NUMBER PCMP 384 ..... ammo packing H = 16.0 mm Reduced pitch(7.5mm) C – tol. ± 5 %
Pitch = 10.0 ± 0.4 mm dt = 0.6 +0.06/-0.05 mm				
0.00047	4.0 x 10.0 x 12.5	0.8	PCMP 384DDH471(*)	- (*)
0.00056			PCMP 384DDH561(*)	- (*)
0.00068			PCMP 384DDH681(*)	- (*)
0.00082			PCMP 384DDH821(*)	- (*)
0.0010	4.0 x 10.0 x 12.5	0.8	PCMP 384 D2102	PCMP 384 DA102
0.0011			PCMP 384 D2112	PCMP 384 DA112
0.0012			PCMP 384 D2122	PCMP 384 DA122
0.0013			PCMP 384 D2132	PCMP 384 DA132
0.0015			PCMP 384 D2152	PCMP 384 DA152
0.0016			PCMP 384 D2162	PCMP 384 DA162
0.0018			PCMP 384 D2182	PCMP 384 DA182
0.0020			PCMP 384 D2202	PCMP 384 DA202
0.0022			PCMP 384 D2222	PCMP 384 DA222
0.0024			PCMP 384 D2242	PCMP 384 DA242
0.0027			PCMP 384 D2272	PCMP 384 DA272
0.0030			PCMP 384 D2302	PCMP 384 DA302
0.0033			PCMP 384 D2332	PCMP 384 DA332
0.0036	5.0 x 11.0 x 12.5	0.9	PCMP 384 D2362	PCMP 384 DA362
0.0039			PCMP 384 D2392	PCMP 384 DA392
0.0043			PCMP 384 D2432	PCMP 384 DA432
0.0047			PCMP 384 D2472	PCMP 384 DA472
0.0051	6.0 x 12.0 x12.5	1.0	PCMP 384 D2512	PCMP 384 DA512
0.0056			PCMP 384 D2562	PCMP 384 DA562
0.0062			PCMP 384 D2622	PCMP 384 DA622
0.0068			PCMP 384 D2682	PCMP 384 DA682
Pitch = 15.0 ± 0.4 mm dt = 0.8 +0.08/-0.05 mm				
0.00022	5.0 x 11.0 x 18.0	1.2	PCMP 384 DH221(*)	- (*)
0.00027			PCMP 384 DH271(*)	- (*)
0.00033			PCMP 384 DH331(*)	- (*)
0.00039			PCMP 384 DH391(*)	- (*)
0.00047			PCMP 384 DH471(*)	- (*)
0.00056			PCMP 384 DH561(*)	- (*)
0.00068			PCMP 384 DH681(*)	- (*)
0.00082			PCMP 384 DH821(*)	- (*)
0.0033	5.0 x 11.0 x 18.0	1.2	PCMP 384 72332	PCMP 384 7A332
0.0036			PCMP 384 72362	PCMP 384 7A362
0.0039			PCMP 384 72392	PCMP 384 7A392
0.0043			PCMP 384 72432	PCMP 384 7A432
0.0047			PCMP 384 72472	PCMP 384 7A472
0.0051			PCMP 384 72512	PCMP 384 7A512
0.0056			PCMP 384 72562	PCMP 384 7A562
0.0062			PCMP 384 72622	PCMP 384 7A622
0.0068			PCMP 384 72682	PCMP 384 7A682
0.0075			PCMP 384 D2752	PCMP 384 DA752
0.0082			PCMP 384 D2822	PCMP 384 DA822
0.0091			PCMP 384 D2912	PCMP 384 DA912
0.010			PCMP 384 D2103	PCMP 384 DA103
0.011			PCMP 384 D2113	PCMP 384 DA113
0.012			PCMP 384 D2123	PCMP 384 DA123
0.013			PCMP 384FD2133	PCMP 384FDA133
0.013	6.0 x 12.0 x 18.0	1.4	PCMP 384 D2133	PCMP 384 DA133
0.015			PCMP 384 D2153	PCMP 384 DA153
0.016			PCMP 384FD2163	PCMP 384FDA163
0.018			PCMP 384FD2183	PCMP 384FDA183
0.020			PCMP 384FD2203	PCMP 384FDA203
0.016	7.0 x 13.5 x 18.0	1.9	PCMP 384 D2163	PCMP 384 DA163
0.018			PCMP 384 D2183	PCMP 384 DA183
0.020			PCMP 384 D2203	PCMP 384 DA203
0.022			PCMP 384 D2223	PCMP 384 DA223
0.024			PCMP 384FD2243	PCMP 384FDA243
0.027			PCMP 384FD2273	PCMP 384FDA273
0.024	8.5 x 15.0 x 18.0	2.6	PCMP 384 D2243	PCMP 384 DA243
0.027			PCMP 384 D2273	PCMP 384 DA273
0.030			PCMP 384 D2303	PCMP 384 DA303
0.033			PCMP 384 D2333	PCMP 384 DA333
0.036			PCMP 384FD2363	PCMP 384FDA363
0.039			PCMP 384FD2393	PCMP 384FDA393
0.036	10.0 x 16.5 x 18.0	3.1	PCMP 384 D2363	PCMP 384 DA363
0.039			PCMP 384 D2393	PCMP 384 DA393

*** Capacitance tolerance±10%**

Metallized Polypropylene film capacitors

PCMP 384

V_{Rdc} = 1000 V V_{Rac} = 500 V~

Cap (µF)	b x h x l (mm)	Mess (g)	CATALOGUE NUMBER PCMP 384 ..... loose in box lt = 5.0 ± 1.0 mm C – tol. ± 5 %	CATALOGUE NUMBER PCMP 384 ..... ammo packing H = 16.0 mm Reduced pitch(7.5mm) C – tol. ± 5 %
Pitch = 22.5 ± 0.4 mm dt = 0.8 +0.08/-0.05 mm				
0.043	7.0 x 16.5 x 26.0	3.2	PCMP 384 D2433	-
0.047			PCMP 384 D2473	-
0.051			PCMP 384 D2513	-
0.056	8.5 x 18.0 x 26.0	4.4	PCMP 384 D2563	-
0.062			PCMP 384 D2623	-
0.068			PCMP 384 D2683	-
0.075	10.0 x 19.5 x 26.0	5.5	PCMP 384 D2753	-
0.082			PCMP 384 D2823	-
0.091			PCMP 384 D2913	-
0.10			PCMP 384 D2104	-
Pitch = 27.5 ± 0.4 mm dt = 0.8 +0.08/-0.05 mm				
0.11	11.0 x 21.0 x 31.0	7.8	PCMP 384 D2114	-
0.12			PCMP 384 D2124	-
0.13			PCMP 384 D2134	-
0.14	13.0 x 23.0 x 31.0	10.4	PCMP 384 D2144	-
0.15			PCMP 384 D2154	-
0.16			PCMP 384 D2164	-
0.18			PCMP 384 D2184	-
0.20	15.0 x 25.0 x 31.0	12.8	PCMP 384 D2204	-
0.22			PCMP 384 D2224	-
0.24			PCMP 384 D2244	-
0.27	18.0 x 28.0 x 31.0	17.2	PCMP 384 D2274	-
0.30			PCMP 384 D2304	-
0.33			PCMP 384 D2334	-
0.36			PCMP 384 D2364	-

Metallized Polypropylene film capacitors

PCMP 384

V_{Rdc} = 1250 V V_{Rac} = 550 V~

Cap (µF)	b x h x l (mm)	Mess (g)	CATALOGUE NUMBER PCMP 384 ..... loose in box lt = 5.0 ± 1.0 mm C – tol. ± 5 %	CATALOGUE NUMBER PCMP 384 ..... ammo packing H = 16.0 mm Reduced pitch(7.5mm) C – tol. ± 5 %
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	PCMP 384FN2103	PCMP 384FNA103
0.010 0.011 0.012 0.013 0.015 0.016	6.0 x 12.0 x 18.0	1.4	PCMP 384 N2103 PCMP 384 N2113 PCMP 384 N2123 PCMP 384 N2133 PCMP 384FN2153 PCMP 384FN2163	PCMP 384 NA103 PCMP 384 NA113 PCMP 384 NA123 PCMP 384 NA133 PCMP 384FNA153 PCMP 384FNA163
0.015 0.016 0.018 0.020	7.0 x 13.5 x 18.0	1.9	PCMP 384 N2153 PCMP 384 N2163 PCMP 384FN2183 PCMP 384FN2203	PCMP 384 NA153 PCMP 384 NA163 PCMP 384FNA183 PCMP 384FNA203
0.018 0.020 0.022 0.024 0.027 0.030	8.5 x 15.0 x 18.0	2.6	PCMP 384 N2183 PCMP 384 N2203 PCMP 384 N2223 PCMP 384 N2243 PCMP 384FN2273 PCMP 384FN2303	PCMP 384 NA183 PCMP 384 NA203 PCMP 384 NA223 PCMP 384 NA243 PCMP 384FNA273 PCMP 384FNA303
0.027 0.030 0.033 0.036 0.039	10.0 x 16.5 x 18.0	3.1	PCMP 384 N2273 PCMP 384 N2303 PCMP 384 N2333 PCMP 384FN2363 PCMP 384FN2393	PCMP 384 NA273 PCMP 384 NA303 PCMP 384 NA333 PCMP 384FNA363 PCMP 384FNA393
0.036 0.039 0.043 0.047	11.0 x 18.5 x 18.0	4.1	PCMP 384 N2363 PCMP 384 N2393 PCMP 384 N2433 PCMP 384 N2473	PCMP 384 NA363 PCMP 384 NA393 PCMP 384 NA433 PCMP 384 NA473
Pitch = 22.5 ± 0.4 mm dt = 0.8 +0.08/-0.05 mm				
0.051	8.5 x 18.0 x 26.0	4.4	PCMP 384 N2513	-
0.056 0.062 0.068 0.075	10.0 x 19.5 x 26.0	5.5	PCMP 384 N2563 PCMP 384 N2623 PCMP 384 N2683 PCMP 384 N2753	- - - -
0.082 0.091 0.10	11.5 x 21.0 x 26.0	6.7	PCMP 384 N2823 PCMP 384 N2913 PCMP 384 N2104	- - -
0.11 0.12	13.0 x 23.0 x 26.0	8.0	PCMP 384 N2114 PCMP 384 N2124	- -

Metallized Polypropylene film capacitors

PCMP 384

V_{Rdc} = 1600 V V_{Rac} = 630 V~

Cap (µF)	b x h x l (mm)	Mess (g)	CATALOGUE NUMBER PCMP 384 ..... loose in box lt = 5.0 ± 1.0 mm C – tol. ± 5 %	CATALOGUE NUMBER PCMP 384 ..... ammo packing H = 16.0 mm Reduced pitch(7.5mm) C – tol. ± 5 %
Pitch = 15.0 ± 0.4 mm dt = 0.8 +0.08/-0.05 mm				
0.00022	5.0 x 11.0 x 18.0	1.2	PCMP 384 8H221(*)	- (*)
0.00027			PCMP 384 8H271(*)	- (*)
0.00033			PCMP 384 8H331(*)	- (*)
0.00039			PCMP 384 8H391(*)	- (*)
0.00047			PCMP 384 8H471(*)	- (*)
0.00056			PCMP 384 8H561(*)	- (*)
0.00068			PCMP 384 8H681(*)	- (*)
0.00082			PCMP 384 8H821(*)	- (*)
0.0010	5.0 x 11.0 x 18.0	1.2	PCMP 384 82102	PCMP 384 8A102
0.0011			PCMP 384 82112	PCMP 384 8A112
0.0012			PCMP 384 82122	PCMP 384 8A122
0.0013			PCMP 384 82132	PCMP 384 8A132
0.0015			PCMP 384 82152	PCMP 384 8A152
0.0016			PCMP 384 82162	PCMP 384 8A162
0.0018			PCMP 384 82182	PCMP 384 8A182
0.0020			PCMP 384 82202	PCMP 384 8A202
0.0022			PCMP 384 82222	PCMP 384 8A222
0.0024			PCMP 384 82242	PCMP 384 8A242
0.0027			PCMP 384 82272	PCMP 384 8A272
0.0030			PCMP 384 82302	PCMP 384 8A302
0.0033			PCMP 384 82332	PCMP 384 8A332
0.0036			PCMP 384 82362	PCMP 384 8A362
0.0039			PCMP 384 82392	PCMP 384 8A392
0.0043			PCMP 384 82432	PCMP 384 8A432
0.0047			PCMP 384 82472	PCMP 384 8A472
0.0051			PCMP 384F82512	PCMP 384F8A512
0.0056			PCMP 384F82562	PCMP 384F8A562
0.0062			PCMP 384F82622	PCMP 384F8A622
0.0068			PCMP 384F82682	PCMP 384F8A682
0.0075	6.0 x 12.0 x 18.0	1.4	PCMP 384F82752	PCMP 384F8A752
0.0051			PCMP 384 82512	PCMP 384 8A512
0.0056			PCMP 384 82562	PCMP 384 8A562
0.0062			PCMP 384 82622	PCMP 384 8A622
0.0068			PCMP 384 82682	PCMP 384 8A682
0.0082			PCMP 384F82822	PCMP 384F8A822
0.0091			PCMP 384F82912	PCMP 384F8A912
0.010			PCMP 384F82103	PCMP 384F8A103
0.0075	7.0 x 13.5 x 18.0	1.9	PCMP 384 82752	PCMP 384 8A752
0.0082			PCMP 384 82822	PCMP 384 8A822
0.0091	8.5 x 15.0 x 18.0	2.6	PCMP 384 82912	PCMP 384 8A912
0.010			PCMP 384 82103	PCMP 384 8A103
0.011			PCMP 384 82113	PCMP 384 8A113
0.012			PCMP 384 82123	PCMP 384 8A123
0.013	10.0 x 16.5 x 18.0	3.1	PCMP 384 82133	PCMP 384 8A133
0.015			PCMP 384 82153	PCMP 384 8A153
0.016			PCMP 384 82163	PCMP 384 8A163
0.018			PCMP 384 82183	PCMP 384 8A183

*** Capacitance tolerance±10%**

Metallized Polypropylene film capacitors

PCMP 384

V_{Rdc} = 1600 V V_{Rac} = 630 V~

Cap (µF)	b x h x l (mm)	Mess (g)	CATALOGUE NUMBER PCMP 384 ..... loose in box lt = 5.0 ± 1.0 mm C – tol. ± 5 %	CATALOGUE NUMBER PCMP 384 ..... ammo packing H = 16.0 mm Reduced pitch(7.5mm) C – tol. ± 5 %
Pitch = 22.5 ± 0.4 mm dt = 0.8 +0.08/-0.05 mm				
0.0056	6.0 x 15.5 x 26.0	2.9	PCMP 384J82562	-
0.0062			PCMP 384J82622	-
0.0068			PCMP 384J82682	-
0.0075			PCMP 384J82752	-
0.0082			PCMP 384J82822	-
0.0091			PCMP 384J82912	-
0.010			PCMP 384J82103	-
0.011	7.0 x 16.5 x 26.0	3.2	PCMP 384J82113	-
0.012			PCMP 384J82123	-
0.013			PCMP 384J82133	-
0.015			PCMP 384J82153	-
0.016	8.5 x 18.0 x 26.0	4.4	PCMP 384J82163	-
0.018			PCMP 384J82183	-
0.020			PCMP 384 82203	-
0.022			PCMP 384 82223	-
0.024	10.0 x 19.5 x 26.0	5.5	PCMP 384 82243	-
0.027			PCMP 384 82273	-
0.030	11.5 x 21.0 x 26.0	6.7	PCMP 384 82303	-
0.033			PCMP 384 82333	-
0.036			PCMP 384 82363	-
0.039	13.0 x 23.0 x 26.0	8.0	PCMP 384 82393	-
0.043			PCMP 384 82433	-
0.047			PCMP 384 82473	-
Pitch = 27.5 ± 0.4 mm dt = 0.8 +0.08/-0.05 mm				
0.039	11.0 x 21.0 x 31.0	7.8	PCMP 384L82393	-
0.043			PCMP 384L82433	-
0.047			PCMP 384L82473	-
0.051	13.0 x 23.0 x 31.0	10.4	PCMP 384 82513	-
0.056			PCMP 384 82563	-
0.062			PCMP 384 82623	-
0.068	15.0 x 25.0 x 31.0	12.8	PCMP 384 82683	-
0.075			PCMP 384 82753	-
0.082			PCMP 384 82823	-
0.10	18.0 x 28.0 x 31.0	17.2	PCMP 384 82104	-
0.11			PCMP 384 82114	-
0.12			PCMP 384 82124	-

Metallized Polypropylene film capacitors

PCMP 384

V_{Rdc} = 2000 V V_{Rac} = 680 V~

Cap (µF)	b x h x l (mm)	Mess (g)	CATALOGUE NUMBER PCMP 384 ..... loose in box lt = 5.0 ± 1.0 mm C – tol. ± 5 %	CATALOGUE NUMBER PCMP 384 ..... ammo packing H = 16.0 mm Reduced pitch(7.5mm) C – tol. ± 5 %
Pitch = 15.0 ± 0.4 mm dt = 0.8 +0.08/-0.05 mm				
0.0010	5.0 x 11.0 x 18.0	1.2	PCMP 384 92102	PCMP 384 9A102
0.0011			PCMP 384 92112	PCMP 384 9A112
0.0012			PCMP 384 92122	PCMP 384 9A122
0.0013			PCMP 384 92132	PCMP 384 9A132
0.0015			PCMP 384 92152	PCMP 384 9A152
0.0016			PCMP 384 92162	PCMP 384 9A162
0.0018			PCMP 384 92182	PCMP 384 9A182
0.0020			PCMP 384 92202	PCMP 384 9A202
0.0022			PCMP 384 92222	PCMP 384 9A222
0.0024			PCMP 384 92242	PCMP 384 9A242
0.0027			PCMP 384 92272	PCMP 384 9A272
0.0030			PCMP 384F92302	PCMP 384F9A302
0.0033			PCMP 384F92332	PCMP 384F9A332
0.0036			PCMP 384F92362	PCMP 384F9A362
0.0039			PCMP 384F92392	PCMP 384F9A392
0.0043			PCMP 384F92432	PCMP 384F9A432
0.0047			PCMP 384F92472	PCMP 384F9A472
0.0051	6.0 x 12.0 x 18.0	1.4	PCMP 384F92512	PCMP 384F9A512
0.0030			PCMP 384 92302	PCMP 384 9A302
0.0033			PCMP 384 92332	PCMP 384 9A332
0.0036			PCMP 384 92362	PCMP 384 9A362
0.0039			PCMP 384 92392	PCMP 384 9A392
0.0056			PCMP 384F92562	PCMP 384F9A562
0.0062			PCMP 384F92622	PCMP 384F9A622
0.0068			PCMP 384F92682	PCMP 384F9A682
0.0075	7.0 x 13.5 x 18.0	1.9	PCMP 384F92752	PCMP 384F9A752
0.0043			PCMP 384 92432	PCMP 384 9A432
0.0047			PCMP 384 92472	PCMP 384 9A472
0.0051			PCMP 384 92512	PCMP 384 9A512
0.0056			PCMP 384 92562	PCMP 384 9A562
0.0082			PCMP 384F92822	PCMP 384F9A822
0.0091			PCMP 384F92912	PCMP 384F9A912
0.010	8.5 x 15.0 x 18.0	2.6	PCMP 384F92103	PCMP 384F9A103
0.0062			PCMP 384 92622	PCMP 384 9A622
0.0068			PCMP 384 92682	PCMP 384 9A682
0.0075			PCMP 384 92752	PCMP 384 9A752
0.0082			PCMP 384 92822	PCMP 384 9A822
0.0091	10.0 x 16.5 x 18.0	3.1	PCMP 384 92912	PCMP 384 9A912
0.010			PCMP 384 92103	PCMP 384 9A103
0.011			PCMP 384 92113	PCMP 384 9A113
0.012			PCMP 384 92123	PCMP 384 9A123
0.013	11.0 x 18.5 x 18.0	4.1	PCMP 384F92133	PCMP 384F9A133
0.015			PCMP 384F92153	PCMP 384F9A153

Metallized Polypropylene film capacitors

PCMP 384

V_{Rdc} = 2000 V V_{Rac} = 680 V~

Cap (µF)	b x h x l (mm)	Mess (g)	CATALOGUE NUMBER	
			PCMP 384	
			loose in box	ammo packing
			lt = 5.0 ± 1.0 mm	H = 16.0 mm Reduced pitch(7.5mm)
			C – tol. ± 5 %	C – tol. ± 5 %
Pitch = 22.5 ± 0.4 mm dt = 0.8 +0.08/-0.05 mm				
0.0051	6.0 x 15.5 x 26.0	2.9	PCMP 384J92512	-
0.0056			PCMP 384J92562	-
0.0062			PCMP 384J92622	-
0.0068			PCMP 384J92682	-
0.0075	7.0 x 16.5 x 26.0	3.2	PCMP 384J92752	-
0.0082			PCMP 384J92822	-
0.0091			PCMP 384J92912	-
0.010			PCMP 384J92103	-
0.011	8.5 x 18.0 x 26.0	4.4	PCMP 384J92113	-
0.012			PCMP 384J92123	-
0.013			PCMP 384 92133	-
0.015			PCMP 384 92153	-
0.016	10.0 x 19.5 x 26.0	5.5	PCMP 384 92163	-
0.018			PCMP 384 92183	-
0.020	11.5 x 21.0 x 26.0	6.7	PCMP 384 92203	-
0.022			PCMP 384 92223	-
0.024			PCMP 384 92243	-

Metallized Polypropylene film capacitors

PCMP 384

V_{Rdc} = 2000 V V_{Rac} = 700 V~

Cap (µF)	b x h x l (mm)	Mess (g)	CATALOGUE NUMBER PCMP 384 ..... loose in box lt = 5.0 ± 1.0 mm C – tol. ± 5 %	CATALOGUE NUMBER PCMP 384 ..... ammo packing H = 16.0 mm Reduced pitch(7.5mm) C – tol. ± 5 %
Pitch = 15.0 ± 0.4 mm dt = 0.8 +0.08/-0.05 mm				
0.00022	5.0 x 11.0 x 18.0	1.2	PCMP 384 2H221(*)	- (*)
0.00027			PCMP 384 2H271(*)	- (*)
0.00033			PCMP 384 2H331(*)	- (*)
0.00039			PCMP 384 2H391(*)	- (*)
0.00047			PCMP 384 2H471(*)	- (*)
0.00056			PCMP 384 2H561(*)	- (*)
0.00068			PCMP 384 2H681(*)	- (*)
0.00082			PCMP 384 2H821(*)	- (*)
0.0010	5.0 x 11.0 x 18.0	1.2	PCMP 384 22102	PCMP 384 2A102
0.0011			PCMP 384 22112	PCMP 384 2A112
0.0012			PCMP 384 22122	PCMP 384 2A122
0.0013			PCMP 384 22132	PCMP 384 2A132
0.0015			PCMP 384 22152	PCMP 384 2A152
0.0016			PCMP 384 22162	PCMP 384 2A162
0.0018			PCMP 384 22182	PCMP 384 2A182
0.0020			PCMP 384 22202	PCMP 384 2A202
0.0022			PCMP 384 22222	PCMP 384 2A222
0.0024			PCMP 384 22242	PCMP 384 2A242
0.0027	6.0 x 12.0 x 18.0	1.4	PCMP 384 22272	PCMP 384 2A272
0.0030			PCMP 384 22302	PCMP 384 2A302
0.0033			PCMP 384 22332	PCMP 384 2A332
0.0036			PCMP 384 22362	PCMP 384 2A362
0.0039	7.0 x 13.5 x 18.0	1.9	PCMP 384 22392	PCMP 384 2A392
0.0043			PCMP 384 22432	PCMP 384 2A432
0.0047			PCMP 384 22472	PCMP 384 2A472
0.0051	8.5 x 15.0 x 18.0	2.6	PCMP 384 22512	PCMP 384 2A512
0.0056			PCMP 384 22562	PCMP 384 2A562
0.0062			PCMP 384 22622	PCMP 384 2A622
0.0068			PCMP 384 22682	PCMP 384 2A682
0.0075	10.0 x 16.5 x 18.0	3.1	PCMP 384 22752	PCMP 384 2A752
0.0082			PCMP 384 22822	PCMP 384 2A822
0.0091			PCMP 384 22912	PCMP 384 2A912
0.010			PCMP 384 22103	PCMP 384 2A103

*** Capacitance tolerance±10%**

Metallized Polypropylene film capacitors

PCMP 384

V_{Rdc} = 2500 V **V_{Rac} = 900 V~**

Cap (µF)	b x h x l (mm)	Mess (g)	CATALOGUE NUMBER	
			PCMP 384	
			loose in box	ammo packing
			lt = 5.0 ± 1.0 mm	H = 16.0 mm Reduced pitch(7.5mm)
			C – tol. ± 5 %	C – tol. ± 5 %
Pitch = 22.5 ± 0.4 mm dt = 0.8 +0.08/-0.05 mm				
0.0010	6.0 x 15.5 x 26.0	2.9	PCMP 384 02102	-
0.0011			PCMP 384 02112	-
0.0012			PCMP 384 02122	-
0.0013			PCMP 384 02132	-
0.0015			PCMP 384 02152	-
0.0016			PCMP 384 02162	-
0.0018			PCMP 384 02182	-
0.0020			PCMP 384 02202	-
0.0022			PCMP 384 02222	-
0.0024			PCMP 384 02242	-
0.0027			PCMP 384 02272	-
0.0030			PCMP 384 02302	-
0.0033			PCMP 384 02332	-
0.0036			PCMP 384 02362	-
0.0039			PCMP 384 02392	-
0.0043			PCMP 384 02432	-
0.0047			PCMP 384 02472	-
0.0051			PCMP 384 02512	-
0.0056	7.0 x 16.5 x 26.0	3.2	PCMP 384 02562	-
0.0062			PCMP 384 02622	-
0.0068			PCMP 384 02682	-
0.0075			PCMP 384 02752	-
0.0082	8.5 x 18.0 x 26.0	4.4	PCMP 384 02822	-
0.0091			PCMP 384 02912	-
0.010			PCMP 384 02103	-
0.011			PCMP 384 02113	-
0.012	10.0 x 19.5 x 26.0	5.5	PCMP 384 02123	-
0.013			PCMP 384 02133	-
0.015			PCMP 384 02153	-

Metallized Polypropylene film capacitors

PCMP 384

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.

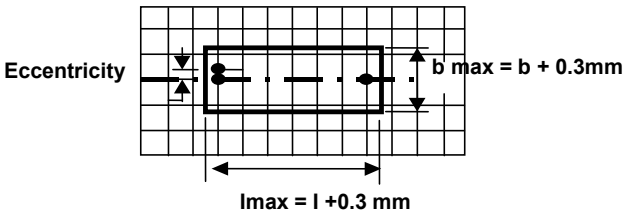
SPECIFIC METHOD OF MOUNTING TO WITHSTAND VIBRATIONAND SHOCK

. 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.

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 ^{o}C with RH maximum 80% without condensation.

Metallized Polypropylene film capacitors

PCMP 384

RATINGS AND CHARACTERISTICS

Unless otherwise specified all electrical values apply at an ambient 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 of 96±4 hours by heating the products in a circulating air oven at the rated temperature and a relative humidity not exceeding 20%.

CHARACTERISTICS

● **Test Voltage**
. Test Voltage (between leads) : 1.6 x V_{Rdc}, 1min (cut-off current 10mA)
. Test Voltage (between leads and Case) : 2840 V_{dc}, 1min

● **Dissipation Factor**

Rated voltage	Capacitance	Pitch	Tangent of loss angle (x 10^{-4})	
			10 KHz	100 KHz
250 V (V_{Rac} = 125V~)	C ≤ 0.082μF	10.0mm	≤ 5	≤ 15
	0.068μF ≤ C ≤ 0.33μF	15.0mm	≤ 5	≤ 25
	0.33 μF < C ≤ 1.0μF	22.5mm	≤ 5	≤ 45
400 V (V_{Rac} = 220V~)	C ≤ 0.047μF	10.0mm	≤ 5	≤ 15
	0.033μF < C ≤ 0.22μF	15.0mm	≤ 5	≤ 20
	0.22 μF ≤ C ≤ 0.47μF	22.5mm	≤ 10	≤ 40
630 V (V_{Rac} = 250V~, mini)	C ≤ 0.030μF	10.0mm	≤ 5	≤ 15
	0.030μF ≤ C ≤ 0.15μF	15.0mm	≤ 5	≤ 15
	0.15 μF < C ≤ 0.27μF	22.5mm	≤ 8	≤ 20
630 V (V_{Rac} = 250V~, old)	C ≤ 0.1μF	15.0mm	≤ 5	≤ 15
	0.1 μF < C ≤ 0.22 μF	22.5mm	≤ 8	≤ 20
630 V (V_{Rac} = 400V~)	C ≤ 0.018μF	10.0mm	≤ 4	≤ 12
	0.018μF < C ≤ 0.1μF	15.0mm	≤ 5	≤ 15
	0.1μF ≤ C ≤ 0.33μF	22.5mm	≤ 8	≤ 25
	0.24μF ≤ C	27.5mm	≤ 10	≤ 40
800V (V_{Rac} = 450V~)	C ≤ 0.068μF	15.0mm	≤ 5	≤ 15
	0.068 μF < C ≤ 0.18μF	22.5mm	≤ 8	≤ 25
	0.20μF ≤ C	27.5mm	≤ 10	≤ 30
1000 V (V_{Rac} = 450V~)	C ≤ 0.027μF	15.0mm	≤ 4	≤ 15
	0.012μF ≤C ≤ 0.039μF	22.5mm	≤ 6	≤ 20
1000 V (V_{Rac} = 500V~)	C ≤ 0.0068μF	10.0mm	≤ 4	≤ 15
	0.0022μF ≤ C ≤ 0.039μF	15.0mm	≤ 6	≤ 20
	0.039 μF < C ≤ 0.1μF	22.5mm	≤ 8	≤ 25
	0.11μF ≤ C	27.5mm	≤ 10	≤ 30
1250V (V_{Rac} = 550V~)	C ≤ 0.047μF	15.0mm	≤ 6	≤ 15
	0.051μF ≤ C	22.5mm	≤ 8	≤ 25
1600 V (V_{Rac} = 630V~)	C ≤ 0.018μF	15.0mm	≤ 5	≤ 15
	0.0056μF ≤C ≤ 0.047μF	22.5mm	≤ 5	≤ 20
	0.039μF ≤ C	27.5mm	≤ 10	≤ 25
2000 V (V_{Rac} = 680V~)	C ≤ 0.015μF	15.0mm	≤ 5	≤ 15
	0.0051μF ≤C ≤ 0.024μF	22.5mm	≤ 5	≤ 20
2000 V (V_{Rac} = 700V~)	C ≤ 0.01μF	15.0mm	≤ 5	≤ 15
2500 V (V_{Rac} = 900V~)	C ≤ 0.015μF	22.5mm	≤ 5	≤ 15

Metallized Polypropylene film capacitors

PCMP 384

• Insulation Resistance

The insulation resistance is measured for 1min ±5s, at 100V for V_{Rdc} < 630V, at 500V for V_{Rdc} ≥ 630V
Between terminals :

C ≤ 0.33µF : R > 100 000 MΩ
C > 0.33µF : RC ≥ 30 000 s

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

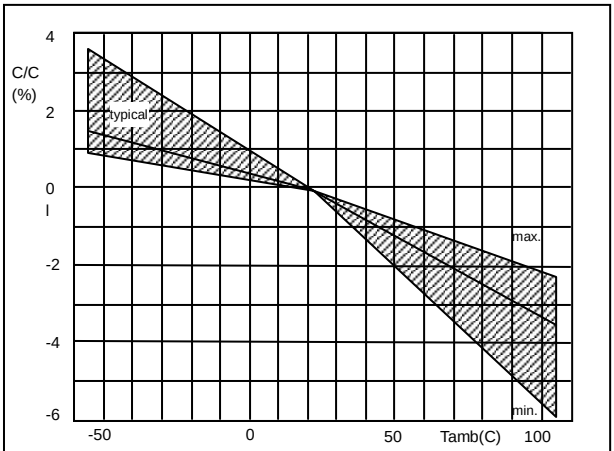
For values see specific reference data. If the pulse voltage is lower than the rated voltage, the values of the specific reference data must be multiplied by V_{Rdc} and divided by the applied voltage

Rated voltage	Rated voltage pulse slope (V/µs)			
	P = 10.0 mm	P = 15.0 mm	P = 22.5 mm	P = 27.5 mm
250 V	1000	550	250	-
400 V	1200	700	400	-
630V	1500	900	500	400
630 V (V_{Rac} = 400V~)	3000	2500	1500	900
800 V	4300	3000	1800	1000
1000 V	4800	3300	2100	1200
1250 V	6000	4500	2500	1400
1600 V	8000	6000	3000	2000
2000 V (V_{Rac} = 680V~)	-	9500	3500	2300
2000 V (V_{Rac} = 700V~)	-	11000	-	-
2500 V	-	-	11000	-

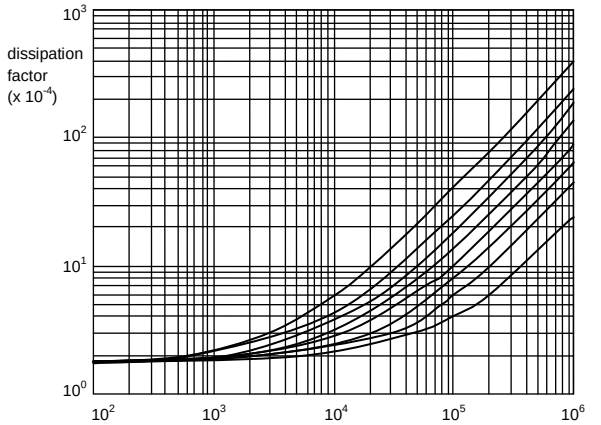
Metallized Polypropylene film capacitors

PCMP 384

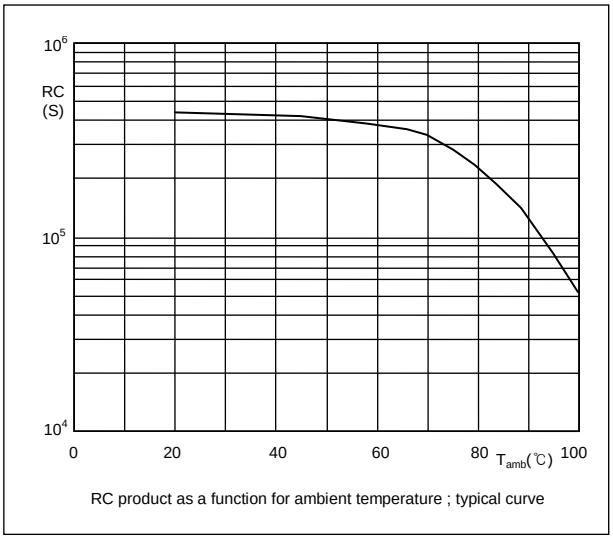
THE GRAPHS OF CHARACTERISTICS



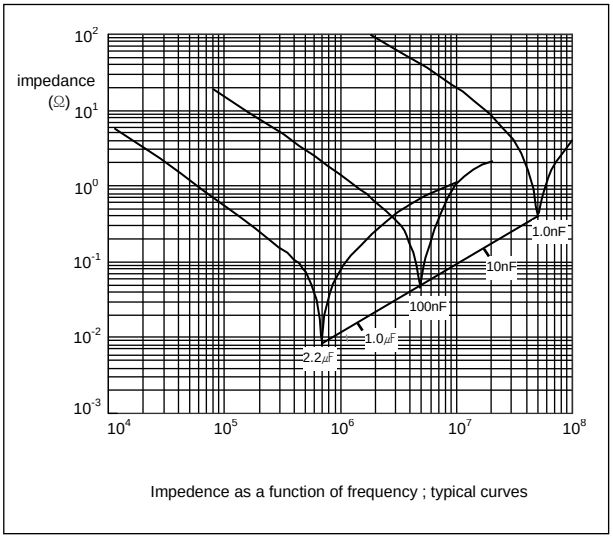
Capacitance change at 1kHz as a function of ambient temperature



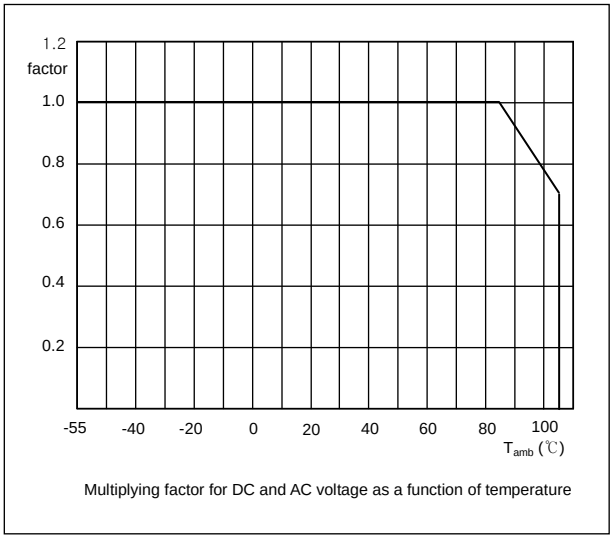
Tangent of loss angle as a function of frequency ; typical curves



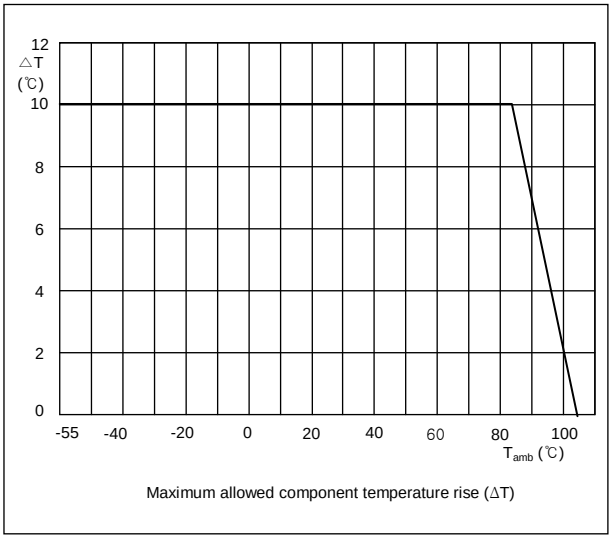
RC product as a function for ambient temperature ; typical curve



Impedence as a function of frequency ; typical curves



Multiplying factor for DC and AC voltage as a function of temperature

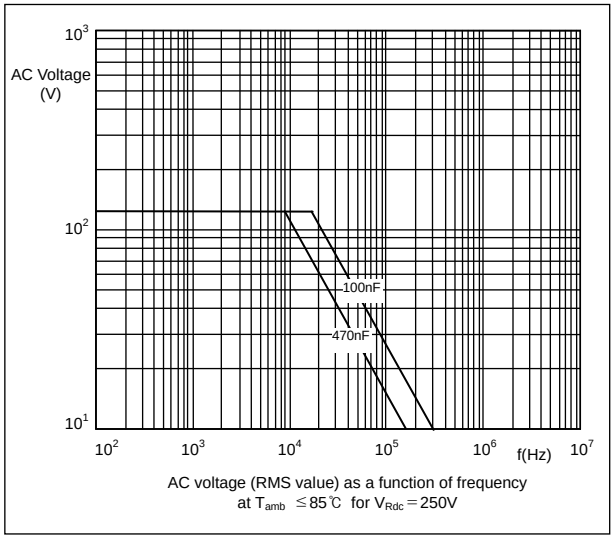


Maximum allowed component temperature rise (ΔT)

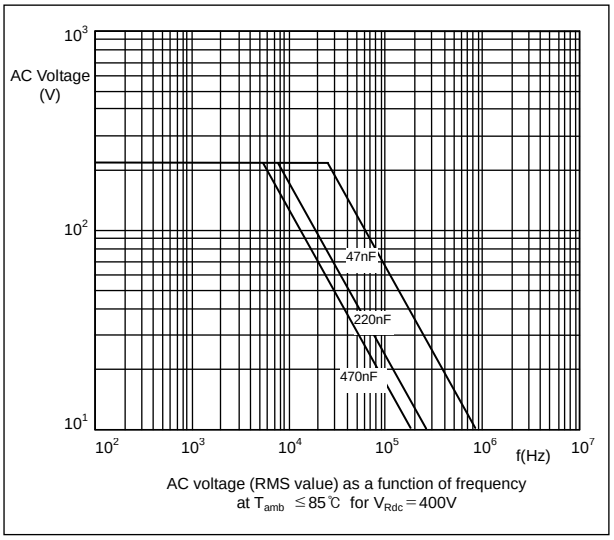
Metallized Polypropylene film capacitors

PCMP 384

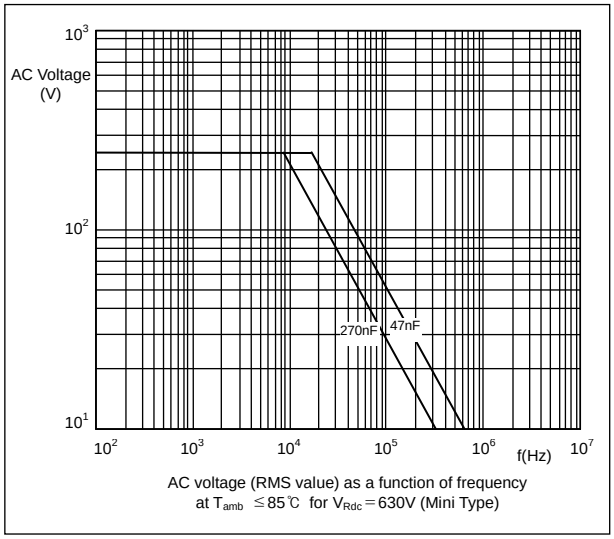
MAXIMUM RMS VOLTAGE (SINEWAVE) AS A FUNCTION OF FREQUENCY



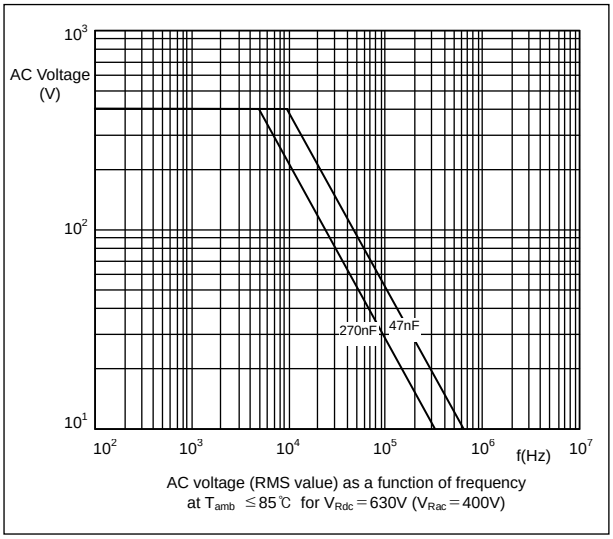
AC voltage (RMS value) as a function of frequency
at T_{amb} ≤85℃ for V_{Rdc} = 250V



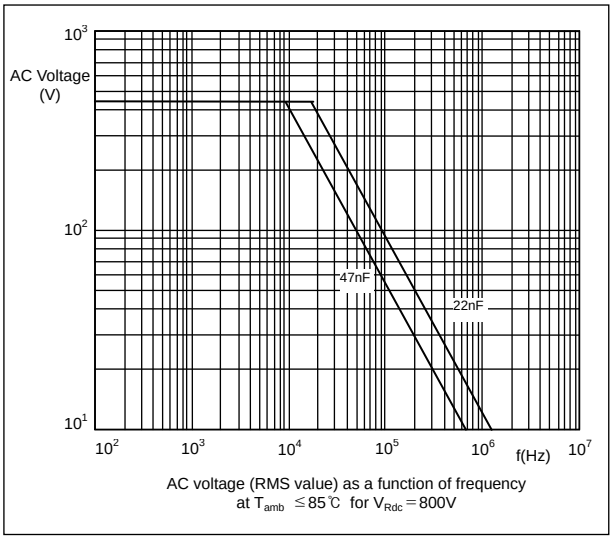
AC voltage (RMS value) as a function of frequency
at T_{amb} ≤85℃ for V_{Rdc} = 400V



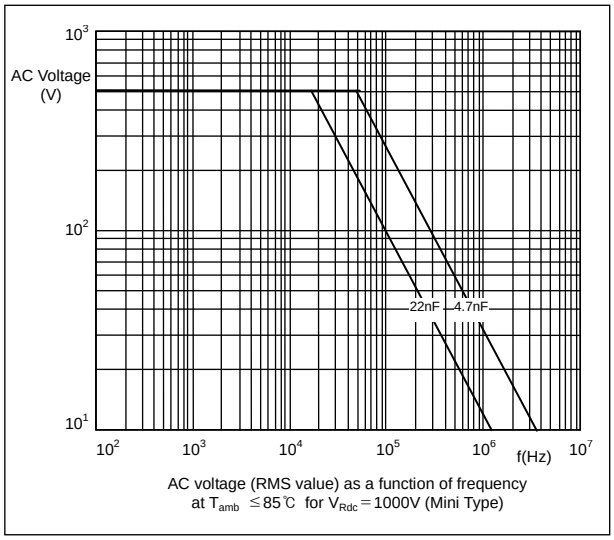
AC voltage (RMS value) as a function of frequency
at T_{amb} ≤85℃ for V_{Rdc} = 630V (Mini Type)



AC voltage (RMS value) as a function of frequency
at T_{amb} ≤85℃ for V_{Rdc} = 630V (V_{Rac} = 400V)



AC voltage (RMS value) as a function of frequency
at T_{amb} ≤85℃ for V_{Rdc} = 800V

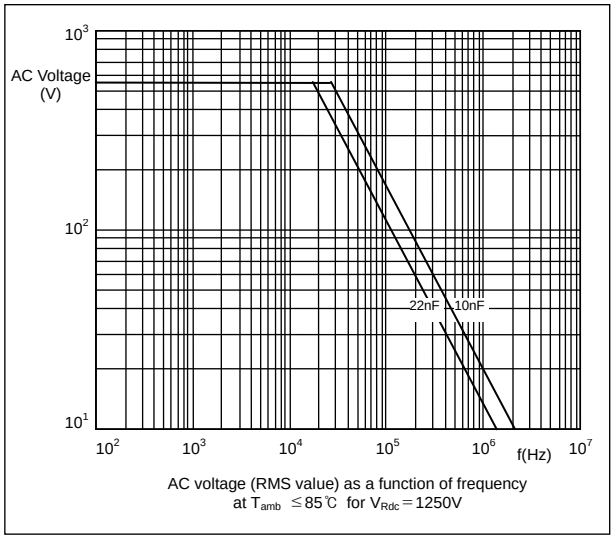


AC voltage (RMS value) as a function of frequency
at T_{amb} ≤85℃ for V_{Rdc} = 1000V (Mini Type)

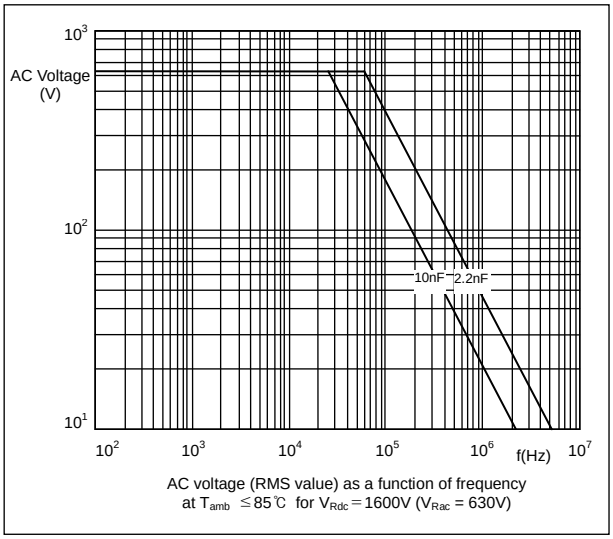
Metallized Polypropylene film capacitors

PCMP 384

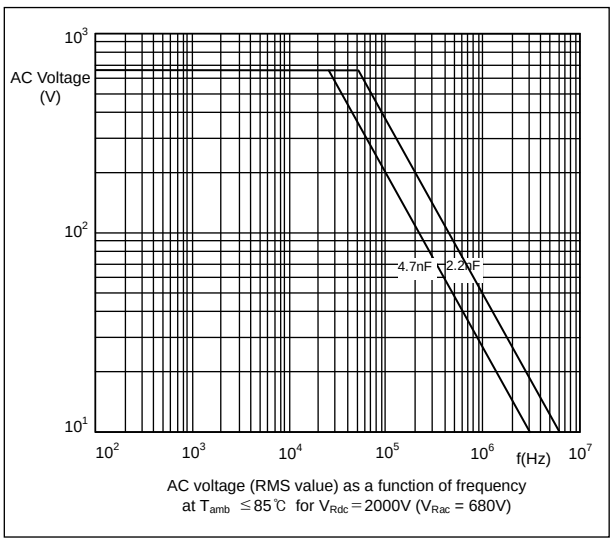
MAXIMUM RMS VOLTAGE (SINEWAVE) AS A FUNCTION OF FREQUENCY



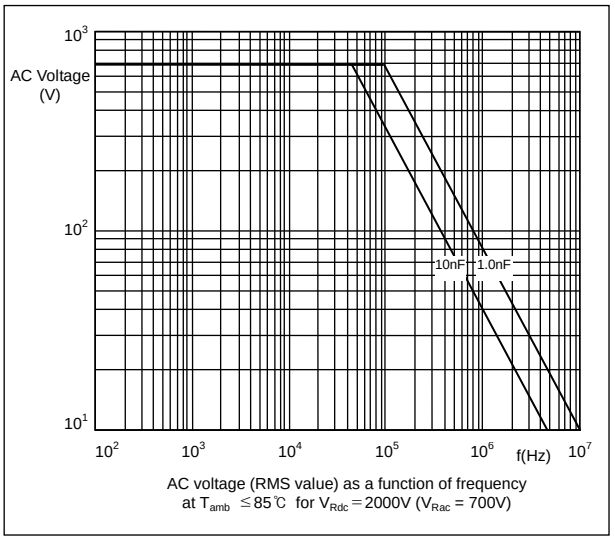
AC voltage (RMS value) as a function of frequency
at T_{amb} ≤ 85℃ for V_{Rdc} = 1250V



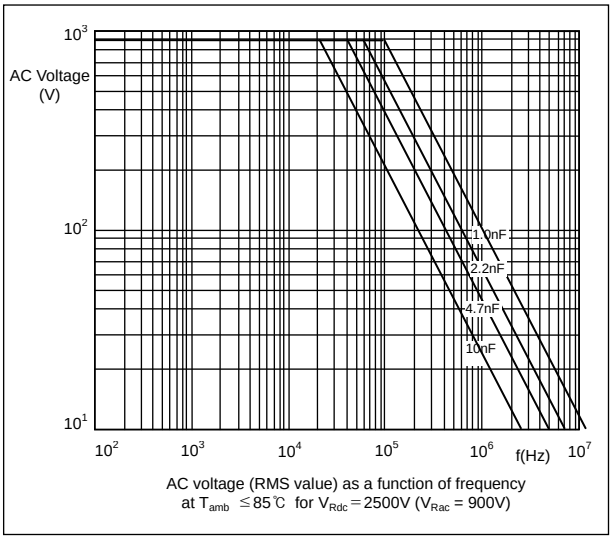
AC voltage (RMS value) as a function of frequency
at T_{amb} ≤ 85℃ for V_{Rdc} = 1600V (V_{Rac} = 630V)



AC voltage (RMS value) as a function of frequency
at T_{amb} ≤ 85℃ for V_{Rdc} = 2000V (V_{Rac} = 680V)



AC voltage (RMS value) as a function of frequency
at T_{amb} ≤ 85℃ for V_{Rdc} = 2000V (V_{Rac} = 700V)



AC voltage (RMS value) as a function of frequency
at T_{amb} ≤ 85℃ for V_{Rdc} = 2500V (V_{Rac} = 900V)

Metallized Polypropylene film capacitors

PCMP 384

APPLICATION NOTE AND LIMITING CONDITIONS

These capacitors are not suitable for mains application as across-the-line capacitors without additional protection.

To select the capacitor for a certain application, the following conditions must be checked :

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

2. The peak-to-peak voltage (V_{p-p}) shall not be greater than the maximum V_{p-p} to avoid the ionisation inception level.

3. The voltage pulse slope (dV/dt) shall not exceed the rated voltage pulse slope in an RC-circuit at rated voltage and without ringing. If the pulse voltage is lower than the rated DC voltage, the rated voltage pulse slope may be multiplied by V_{Rdc} and divided by the applied voltage.
   For all other pulses following equation must be fulfilled :

$$2 \times \int_0^T \left(\frac{dU}{dt}\right)^2 \times dt < U_{Rdc} \times \left(\frac{dU}{dt}\right)_{rated}$$

   T is the pulse duration.

4. The maximum component surface temperature rise must be lower than the limits.

5. To ensure withstanding high humidity requirements in the application it is recommended not to damage the epoxy adhesion at the leads. Therefore the leads may not be damaged or bent before soldering.

Voltage conditions for above.

ALLOWED VOLTAGES	$T_{amb} \leq 85^oC$	$85^oC < T_{amb} \leq 105^oC$
Maximum continuous RMS voltage	V_{Rac}	0.75 x V_{Rac}
Maximum temporary RMS over voltage (<24 hours)	1.25 x V_{Rac}	1.0 x V_{Rac}
Maximum peak voltage (V_{o-p}) (<2s)	1.6 x V_{Rdc}	1.1 x V_{Rdc}

Metallized Polypropylene film capacitors

PCMP 384

PRODUCT MARKING

The capacitors are marked with the following information :

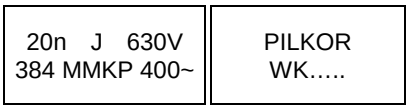
. Rated capacitance in code according to IEC 60062
. Tolerance on rated capacitance J = ±5 % A = ±3.5 %
. Rated DC voltage or rated AC voltage (e.g. 1000 V or 700Vac)
. Manufacturer's type designation (384)
. Code for dielectric material (MMKP)
. Manufacturer's name (PILKOR)
. Year and week of manufacture (e.g. 1401)
. White or black color

Example of marking

Marking on the side

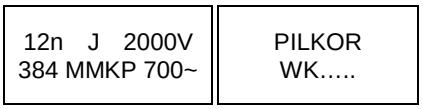
Marking on the top Marking on the side

at 400Vac



Marking on the top Marking on the side

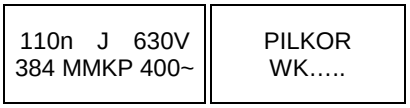
at 700Vac



Marking on the top Marking on the side

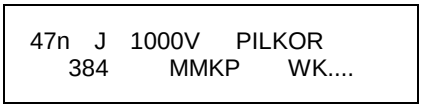
Marking on the top Marking on the side

at 400Vac



Marking on the top Marking on the side

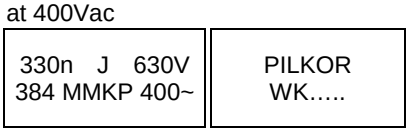
or



Marking on the top

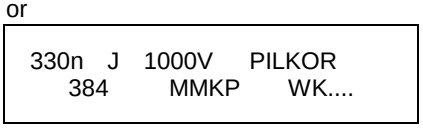
Marking on the top Marking on the side

at 400Vac



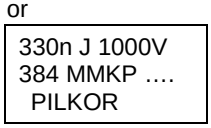
Marking on the top Marking on the side

or



Marking on the top

or



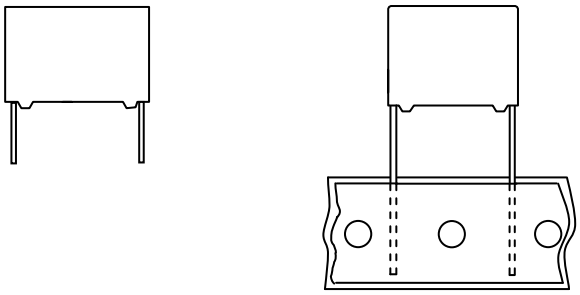
Marking on the top

PFC INPUT CAPACITORS

PFC Input Capacitors PCMP 372

Metallized Polypropylene film capacitors (MPP)

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



QUICK REFERENCE DATA

Capacitance range (E6 series)	0.022 to 2.2㎌
Capacitance tolerance	±5%, ±10%
Rated voltage (DC)	450V, 500V, 630 V
Climatic category	40/105/21
Temperature range	-40℃ ~ + 105℃
Reference specification	IEC 60384-16
Potting & Encapsulation material	Qualified in accordance with UL94V-0

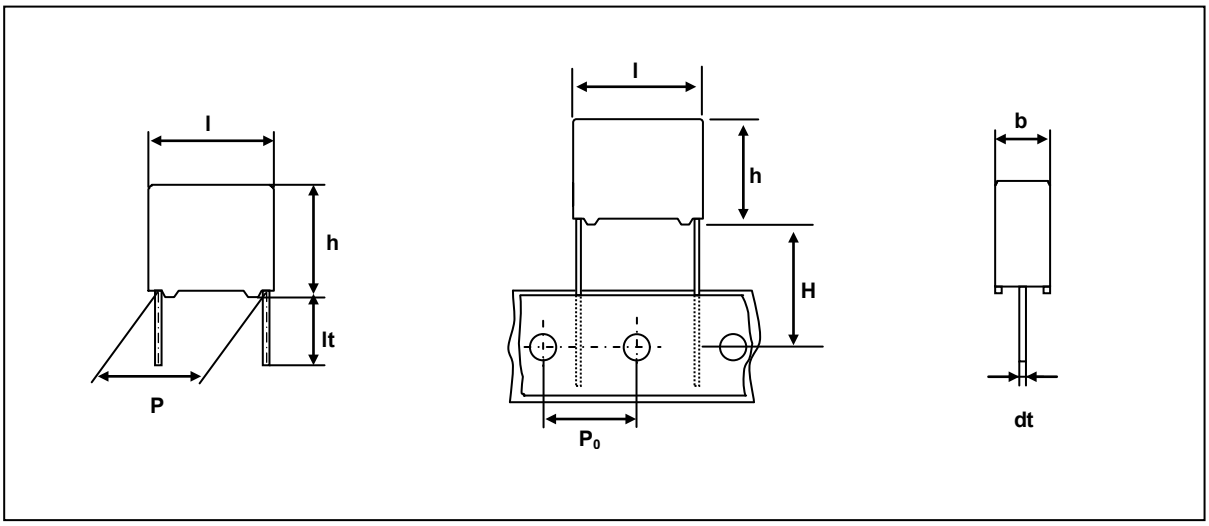
FEATURES	APPLICATIONS
. Low-noise . Self-healing properties . Low dissipation factor . Low ESR . Supplied loose in box & ammo packing	. PFC Input Capacitor for LCD/PDP power

• 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.

PFC Input Capacitors PCMP 372

Metallized Polypropylene film capacitors (MPP)

Ordering Information



PCMP 372 X X X X X X

Type series

Capacitance

Code	Voltage
R	450V mini
U	500V mini
Q	630V mini

Code	Pitch
D	10.0mm
F	15.0mm
J	22.5mm
L	27.5mm

Available versions					Product (I_{max})			
code	Packing method	C – tol.	Lead length & Height	Hole to hole (P_o)	12.5	18.0	26.0	31.0
					Pitch (P)			
3	Loose in box	± 5%	lt = 5.0±1.0mm	-	10.0	15.0	22.5	27.5
4	Loose in box	±10%	lt = 5.0±1.0mm	-	10.0	15.0	22.5	27.5
5	Loose in box	± 5%	lt = 25±2.0mm	-	10.0	15.0	22.5	27.5
6	Loose in box	±10%	lt = 25±2.0mm	-	10.0	15.0	22.5	27.5
7	Ammopack	± 5%	H = 18.5 mm*	12.7mm	10.0	15.0	22.5	27.5
8	Ammopack	±10%	H = 18.5 mm*	12.7mm	10.0	15.0	22.5	27.5

*** H(In-tape height) ; For detailed specifications refer to chapter PACKAGING**

PFC Input Capacitors PCMP 372

Metallized Polypropylene film capacitors (MPP)

Packaging Information

SMALLEST PACKING QUANTITIES (SPQ)	Loose in box	
	lt = 5.0±1.0mm	lt = 25.0±2.0mm
DIMENSIONS	SPQ	SPQ
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
11.5 X 21.0 X 26.0	500	500
12.5 X 22.5 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

PFC Input Capacitors PCMP 372

Metallized Polypropylene film capacitors (MPP)

V_{Rdc} = 450V & 500V **mini type**

Cap. (µF)	b x h x l (mm)	Mass (g)	CATALOGUE NUMBER	
			PCMP 372……	
			loose in box	
			450V mini	500V mini
			lt= 5.0 ± 1.0 mm	lt= 5.0 ± 1.0 mm
			C – tol. ± 10%	C – tol. ± 10%
Pitch = 10.0 ± 0.4 mm			dt = 0.6 + 0.06 / -0.05 mm	
0.10	4.0 x 10.0 x 12.5	0.8	PCMP 372DR4104	PCMP 372DU4104
0.15	5.0 x 11.0 x 12.5	0.8	PCMP 372DR4154	PCMP 372DU4154
0.22	5.0 x 11.0 x 12.5	0.9	PCMP 372DR4224	PCMP 372DU4224
0.33	6.2 x 12.3 x 12.5	1.0	PCMP 372DR4334	PCMP 372DU4334
Pitch = 15.0 ± 0.4 mm			dt = 0.8 + 0.08 / -0.05 mm	
0.22	5.0 x 11.0 x 18.0	1.2	PCMP 372FR4224	PCMP 372FU4224
0.33	5.0 x 11.0 x 18.0	1.2	PCMP 372FR4334	PCMP 372FU4334
0.47	6.0 x 12.0 x 18.0	1.4	PCMP 372FR4474	PCMP 372FU4474
0.56	7.0 x 13.5 x 18.0	1.9	PCMP 372FR4564	PCMP 372FU4564
0.68	8.5 x 15.0 x 18.0	2.6	PCMP 372FR4684	PCMP 372FU4684
0.82	8.5 x 15.0 x 18.0	2.6	PCMP 372FR4824	PCMP 372FU4824
1.0	8.5 x 15.0 x 18.0	2.6	*PCMP 372FR4105	*PCMP 372FU4105
1.0	10.0 x 16.5 x 18.0	3.1	**PCMP 372FR3105	**PCMP 372FU3105
1.5	11.0 x 18.5 x 18.0	4.1	PCMP 372FR4155	PCMP 372FU4155
Pitch = 22.5 ± 0.4 mm			dt = 0.8 + 0.08 / -0.05 mm	
0.47	6.0 x 15.5 x 26.0	3.0	PCMP 372JR4474	PCMP 372JU4474
0.56	6.0 x 15.5 x 26.0	3.0	PCMP 372JR4564	PCMP 372JU4564
0.68	6.0 x 15.5 x 26.0	3.0	PCMP 372JR4684	PCMP 372JU4684
0.82	7.0 x 16.5 x 26.0	3.5	PCMP 372JR4824	PCMP 372JU4824
1.0	7.0 x 16.5 x 26.0	3.5	PCMP 372JR4105	PCMP 372JU4105
1.5	8.5 x 18.0 x 26.0	4.4	PCMP 372JR4155	PCMP 372JU4155
2.2	10.0 x 19.5 x 26.0	5.5	PCMP 372JR4225	PCMP 372JU4225

* 10% tolerance products only / ** 5% tolerance products only

PFC Input Capacitors PCMP 372

Metallized Polypropylene film capacitors (MPP)

V_{Rdc} = 630 V **mini type**

Cap. (μF)	b x h x l (mm)	Mass (g)	CATALOGUE NUMBER	
			PCMP 372……	
			loose in box	
			lt= 5.0 ± 1.0 mm	lt= 25.0 ± 2.0 mm
			C – tol. ± 10%	C – tol. ± 10%
Pitch = 10.0 ± 0.4 mm			dt = 0.6 + 0.06 / -0.05 mm	
0.022	4.0 x 10.0 x 12.5	0.8	PCMP 372DQ4223	PCMP 372DQ6223
0.033	5.0 x 11.0 x 12.5	0.9	PCMP 372DQ4333	PCMP 372DQ6333
0.047	5.0 x 11.0 x 12.5	0.9	PCMP 372DQ4473	PCMP 372DQ6473
0.068	5.0 x 11.0 x 12.5	0.9	PCMP 372DQ4683	PCMP 372DQ6683
0.10	5.0 x 11.0 x 12.5	0.9	PCMP 372DQ4104	PCMP 372DQ6104
0.15	6.0 x 12.0 x 12.5	0.9	PCMP 372DQ4154	PCMP 372DQ6154
0.22	6.2 x 12.3 x 12.5	1.0	PCMP 372DQ4224	PCMP 372DQ6224
Pitch = 15.0 ± 0.4 mm			dt = 0.8 + 0.08 / -0.05 mm	
0.10	5.0 x 11.0 x 18.0	1.2	PCMP 372FQ4104	PCMP 372FQ6104
0.15	5.0 x 11.0 x 18.0	1.2	PCMP 372FQ4154	PCMP 372FQ6154
0.22	6.0 x 12.0 x 18.0	1.4	PCMP 372FQ4224	PCMP 372FQ6224
0.33	7.0 x 13.5 x 18.0	1.9	PCMP 372FQ4334	PCMP 372FQ6334
0.47	8.5 x 15.0 x 18.0	2.6	PCMP 372FQ4474	PCMP 372FQ6474
0.68	10.0 x 16.5 x 18.0	3.1	PCMP 372FQ4684	PCMP 372FQ6684
0.82	11.0 x 18.5 x 18.0	4.1	PCMP 372FQ4824	PCMP 372FQ6824
1.0	11.0 x 18.5 x 18.0	4.1	PCMP 372FQ4105	PCMP 372FQ6105
Pitch = 22.5 ± 0.4 mm			dt = 0.8 + 0.08 / -0.05 mm	
0.47	7.0 x 16.5 x 26.0	3.5	PCMP 372JQ4474	PCMP 372JQ6474
0.68	7.0 x 16.5 x 26.0	3.5	PCMP 372JQ4684	PCMP 372JQ6684
0.82	8.5 x 18.0 x 26.0	4.4	PCMP 372JQ4824	PCMP 372JQ6824
1.0	8.5 x 18.0 x 26.0	4.4	PCMP 372JQ4105	PCMP 372JQ6105
1.5	10.0 x 19.5 x 26.0	5.5	PCMP 372JQ4155	PCMP 372JQ6155
2.2	13.0 x 23.0 x 26.0	8.0	PCMP 372JQ4225	PCMP 372JQ6225

PFC Input Capacitors PCMP 372
Metallized Polypropylene film capacitors (MPP)

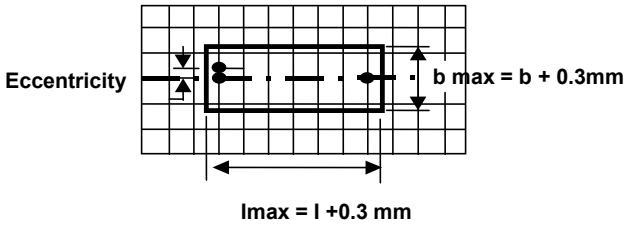
MOUNTING

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.

SPECIFIC METHOD OF MOUNTING TO WITHSTAND VIBRATIONAND SHOCK
. 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.

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

PFC Input Capacitors PCMP 372
Metallized Polypropylene film capacitors (MPP)

STORAGE TEMPERATURE

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

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 of 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%.

CHARACTERISTICS

● Test Voltage

- Cut off current 10mA / rise time 100V/sec.
- Test Voltage (between lead and lead) : 1.6 x V_{Rdc}, 1min.
- Test Voltage (between leads and case) : 2840 V_{dc}, 1min.

● Capacitance

. Capacitance : Within specified tolerance range when sine wave AC is applied at 1kHz ±200Hz and 5V_{rms}

● Dissipation Factor(DF)

. Dissipation factor: When sine wave AC is applied at 10kHz and ≤1 V_{rms}, DF<30X10^{-4}

● Insulation Resistance

. The insulation resistance is measured for 1min.±5s, at 100V for V_{Rdc}<500V, at 500V for V_{Rdc}≥500V

Rated voltage	Minimum RC	Minimum Insulation Resistance
	Capacitance > 0.33uF	Capacitance ≤ 0.33uF
450V mini/ 500V mini/ 630V mini	> 10,000s	> 30GΩ

(R = insulation resistance between the terminations[Ω], C= capacitance[Farad])

● Self heating temperature

. Maximum allowable rise is 7℃

● 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 must be multiplied by V_{Rdc} and divided by the applied voltage.

Rated voltage	MAXIMUM RATED VOLTAGE PULSE SLOPE (V/μs)			
	P = 10.0 mm	P = 15.0 mm	P = 22.5 mm	P = 27.5 mm
450V mini/ 500V mini	150	95	60	-
630V mini	270	141	85	65

PFC Input Capacitors PCMP 372
Metallized Polypropylene film capacitors (MPP)

PRODUCT MARKING

The capacitors are marked with the following information :

. Rated capacitance in code according to IEC 60062 (680n ; 680nF)

. Tolerance on rated capacitance (J : ±5%, K : ±10%)

. Rated DC voltage (630V)

. Manufacturer's mark (PILKOR)

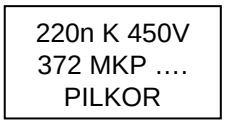
. Manufacturer's type designation (372)

. Code for dielectric material (MKP)

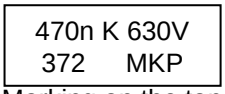
. Date code number (WK....)

. White or black color

Example of marking

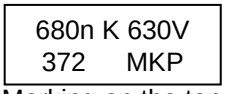


Marking on the side

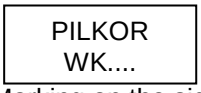


Marking on the top

Marking on the side

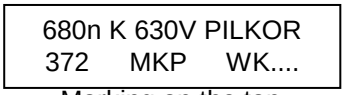


Marking on the top

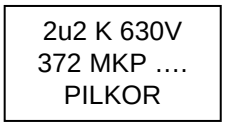


Marking on the side

or



Marking on the top

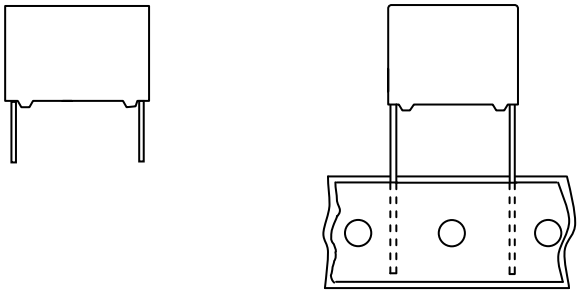


Marking on the top

PFC Input Capacitors PCMP 352

Metallized Polypropylene film capacitors (MPP)

MKP BOXED CAPACITORS **Pitch 10.0/15.0mm**



QUICK REFERENCE DATA

Capacitance range (E6 series)	0. 22 to 2.2㎌
Capacitance tolerance	±5%, ±10%
Rated voltage (DC)	450V
Climatic category	40/105/21
Temperature range	-40℃ ~ + 105℃
Reference specification	IEC 60384-16
Potting & Encapsulation material	Qualified in accordance with UL94V-0

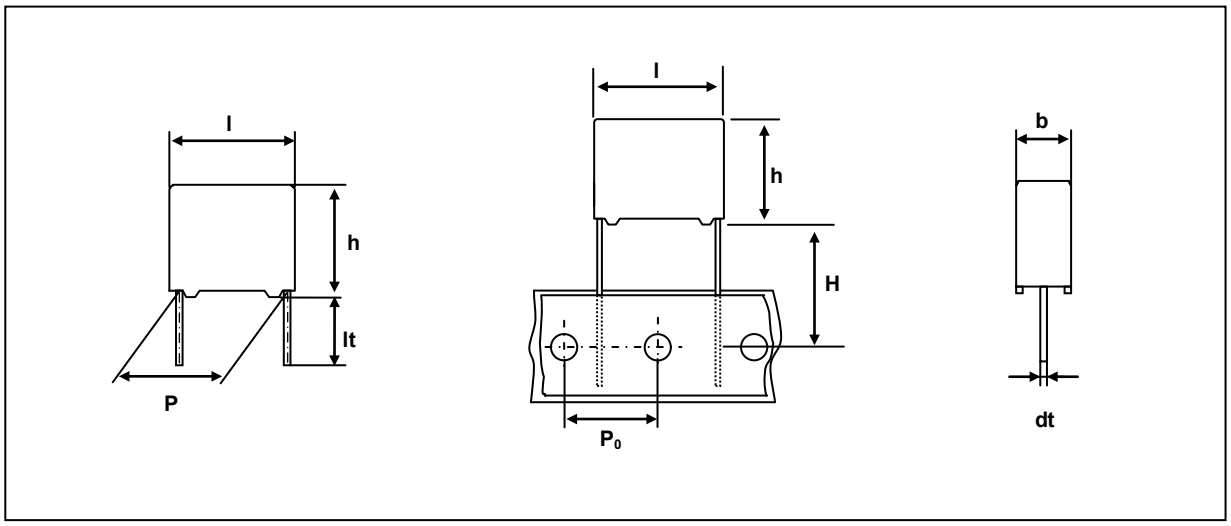
FEATURES	APPLICATIONS
. Low-noise	. PFC Input Capacitor for LCD/PDP TV power
. Self-healing properties	. PFC Input Capacitor for LED lamp power
. Low dissipation factor	. Peak to peak voltage applied on the capacitor
. Low ESR	should be less than 300 Vp-p, and zero to peak
. Supplied loose in box	voltage should be less than 450 Vo-p.
. Miniature type of PCMP 372	

- 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.

PFC Input Capacitors PCMP 352

Metallized Polypropylene film capacitors (MPP)

Ordering Information



P	3	5	2	D	4	5	4	7	4	K	A	S	L
1				2	3		4			5	6	7	

Digits 1	
Code	Series Name
P352	PCMP 352

Digits 2	
Code	Original Pitch
D	10.0mm
F	15.0mm

Digits 3	
Code	Voltage
45	450V

Digits 4	
Code	Capacitance (example)
474	0.47uF
105	1.0uF

Digits 5	
Code	Capacitance Tolerance
J	± 5 %
K	± 10 %

Digits 6	
Code	Revision
A	Standard

Digits 7				Product(lmax)	
				12.5	18.0
Code	Packing Method	Lead length & Height	Hole to hole (Po)	Pitch(P)	
SL	Loose in box	lt= 5.0±1.0mm	-	10.0	15.0
LL	Loose in box	lt=25.0±2.0mm	-	10.0	15.0
AA	Ammo packing	H=18.5mm*	12.7mm	10.0	15.0

*H(In-tape height) ; For detailed specifications refer to chapter PACKAGING.

PFC Input Capacitors PCMP 352

Metallized Polypropylene film capacitors (MPP)

Packaging Information

SMALLEST PACKING QUANTITIES (SPQ)	Loose in box	
	lt = 5.0±1.0mm	lt = 25.0±2.0mm
DIMENSIONS	SPQ	SPQ
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

PFC Input Capacitors PCMP 352

Metallized Polypropylene film capacitors (MPP)

V_{Rdc} = 450 V

Cap. (µF)	b x h x l (mm)	Mass (g)	CATALOGUE NUMBER loose in box	
			lt= 5.0 ± 1.0 mm	lt= 25.0 ± 2.0 mm
			C – tol. ± 10%	C – tol. ± 10%
Pitch = 10.0 ± 0.4 mm			dt = 0.6 + 0.06 / -0.05 mm	
0.22	4.0 x 10.0 x 12.5	0.8	P352D45224KASL	P352D45224KALL
0.27	5.0 x 11.0 x 12.5	1.0	P352D45274KASL	P352D45274KALL
0.33	5.0 x 11.0 x 12.5	1.0	P352D45334KASL	P352D45334KALL
0.39	6.0 x 12.0 x 12.5	1.3	P352D45394KASL	P352D45394KALL
0.47	6.0 x 12.0 x 12.5	1.3	P352D45474KASL	P352D45474KALL
Pitch = 15.0 ± 0.4 mm			dt = 0.8 + 0.08 / -0.05 mm	
0.47	5.0 x 11.0 x 18.0	1.4	P352F45474KASL	P352F45474KALL
0.56	6.0 x 12.0 x 18.0	1.8	P352F45564KASL	P352F45564KALL
0.68	6.0 x 12.0 x 18.0	1.8	P352F45684KASL	P352F45684KALL
0.82	7.0 x 13.5 x 18.0	2.2	P352F45824KASL	P352F45824KALL
1.0	7.0 x 13.5 x 18.0	2.2	P352F45105KASL	P352F45105KALL
1.2	8.5 x 15.0 x 18.0	2.9	P352F45125KASL	P352F45125KALL
1.5	8.5 x 15.0 x 18.0	2.9	P352F45155KASL	P352F45155KALL
1.8	10.0 x 16.5 x 18.0	3.6	P352F45185KASL	P352F45185KALL
2.2	11.0 x 18.5 x 18.0	4.4	P352F45225KASL	P352F45225KALL

Original pitch	New Code	Old Code	Example
10.0mm	P352D45xxxxxxx	P352HADxxxxxxx	P352HAF105KALJ
15.0mm	P352F45xxxxxxx	P352HAFxxxxxxx	⇒ P352F45105KASL

PFC Input Capacitors PCMP 352
Metallized Polypropylene film capacitors (MPP)

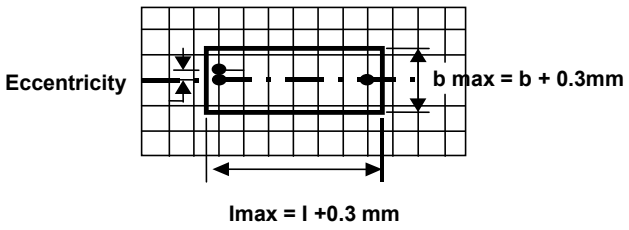
MOUNTING

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.

SPECIFIC METHOD OF MOUNTING TO WITHSTAND VIBRATIONAND SHOCK
. 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.

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℃ with RH maximum 80% without condensation.

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 of 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%.

PFC Input Capacitors PCMP 352

Metallized Polypropylene film capacitors (MPP)

CHARACTERISTICS

- **Test Voltage**
  - Cut off current 10mA / rise time 100V/sec.
  - Test Voltage (between lead and lead) : 1.6 x V_{Rdc}, 1min.
  - Test Voltage (between leads and case) : 2840 V_{dc}, 1min.

- **Capacitance**

. Capacitance : Within specified tolerance range when sine wave AC is applied at 1kHz ±200Hz and 5V_{rms}

- **Dissipation Factor(DF)**

. Dissipation factor: When sine wave AC is applied at 10kHz and ≤1 V_{rms}, DF<30X10^{-4}

- **Insulation Resistance**

. The insulation resistance is measured for 1min.±5s, at 100V for V_{Rdc}<500V, at 500V for V_{Rdc}≥500V

Rated voltage	Minimum RC	Minimum Insulation Resistance
	Capacitance > 0.33uF	Capacitance ≤ 0.33uF
450V	> 10,000s	> 30GΩ

(R = insulation resistance between the terminations[Ω], C= capacitance[Farad])

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

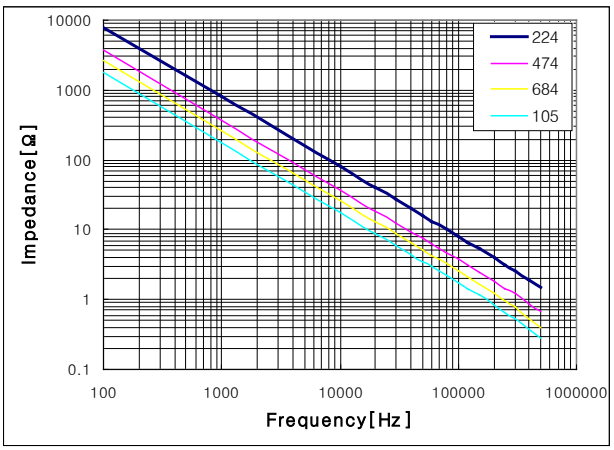
. For values see specific reference data. IF the pulse voltage is lower than the rated voltage, values of the specific reference data must be multiplied by V_{Rdc} and divided by the applied voltage.

Rated voltage	MAXIMUM RATED VOLTAGE PULSE SLOPE (V/μs)	
	P = 10.0 mm	P = 15.0 mm
450V	47.5	47.5

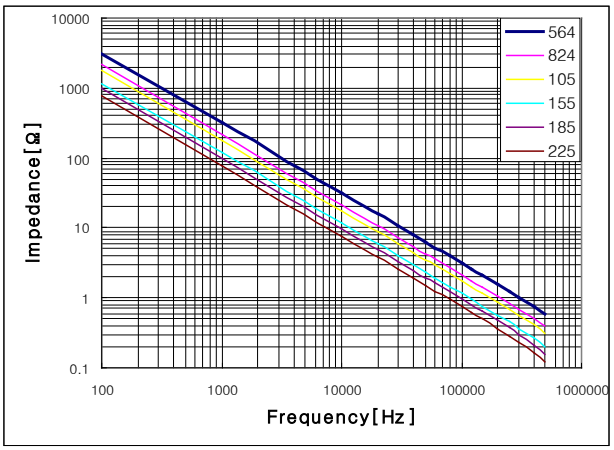
PFC Input Capacitors PCMP 352

Metallized Polypropylene film capacitors (MPP)

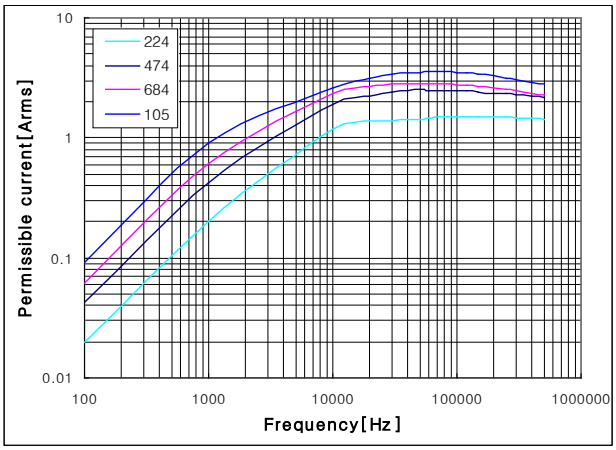
THE GRAPHS OF CHARACTERISTICS



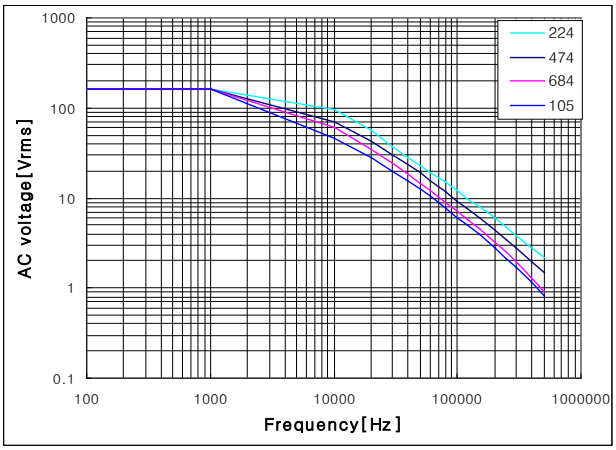
Impedance as a function of frequency
at $T_{amb.}$ ≤ 85℃ for original pitch 10.0mm



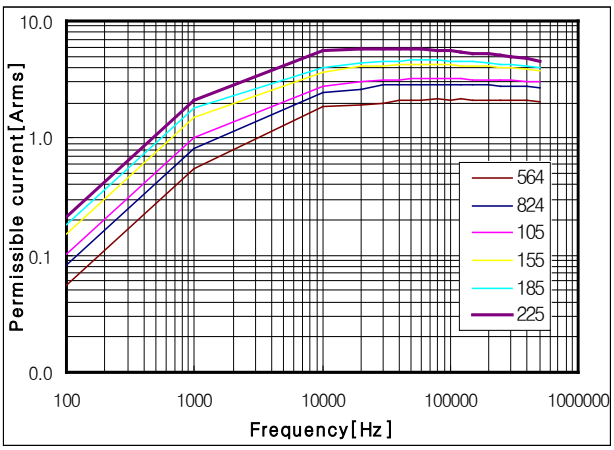
Impedance as a function of frequency
at $T_{amb.}$ ≤ 85℃ for original pitch 15.0mm



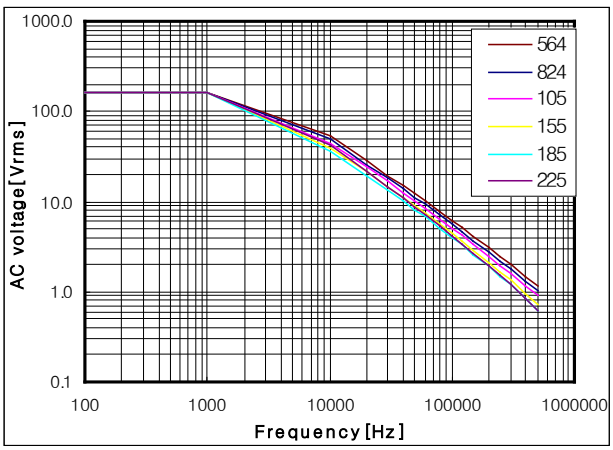
Permissible current as a function of frequency
at $T_{amb.}$ ≤ 85℃ for original pitch 10.0mm



AC voltage as a function of frequency
at $T_{amb.}$ ≤ 85℃ for original pitch 10.0mm



Permissible current as a function of frequency
at $T_{amb.}$ ≤ 85℃ for original pitch 15.0mm



AC voltage as a function of frequency
at $T_{amb.}$ ≤ 85℃ for original pitch 15.0mm

PFC INPUT CAPACITORS

PFC Input Capacitors PCMP 352
Metallized Polypropylene film capacitors (MPP)

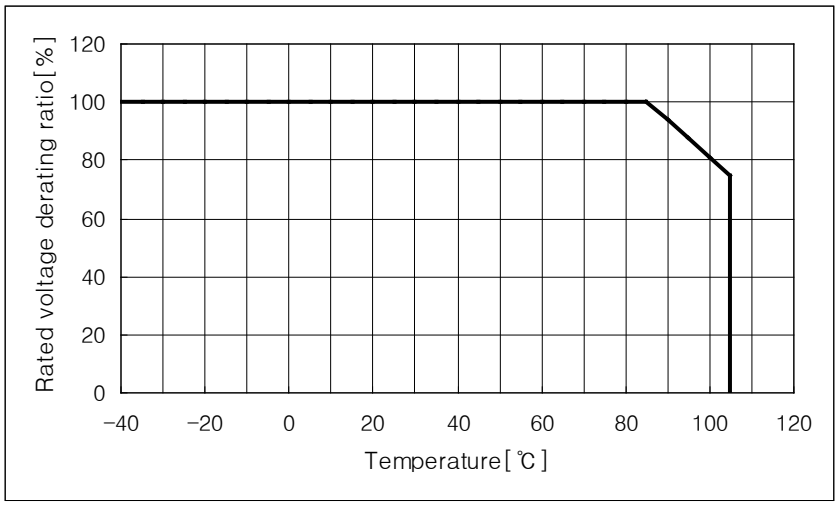
- **Permissible current to temperature**

When operating in the range of $T_{amb.}$ (85℃ ~ 105℃) with waveform, the value for characteristic of permissible current to frequency shown in Fig. shall be derated 2.25% at each 1℃.

- **Self heating temperature**

. Maximum allowable rise is 7℃ under 85℃.

- **Maximum permissible continuous voltage vs temperature [℃]**



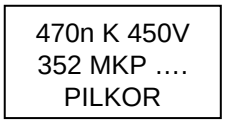
PFC Input Capacitors PCMP 352

Metallized Polypropylene film capacitors (MPP)

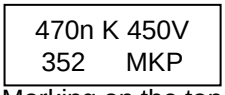
PRODUCT MARKING

The capacitors are marked with the following information :
. Rated capacitance in code according to IEC 60062 (470n ; 470nF)
. Tolerance on rated capacitance (J : ±5%, K : ±10%)
. Rated DC voltage (450V)
. Manufacturer's mark (PILKOR)
. Manufacturer's type designation (352)
. Code for dielectric material (MKP)
. Date code number (WK....)
. White or black color

Example of marking



Marking on the side



Marking on the top

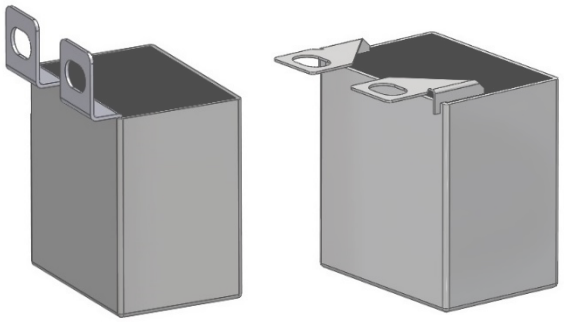
Marking on the side

POWER ELECTRONIC CAPACITORS

Snubber Capacitors PCPW 237
Metallized Polypropylene film capacitors

CONSTRUCTION

· Dielectric	:	Double side metallized PET film & Metallized polypropylene film
· Case	:	PBT (UL94 V-0)
· Filling	:	Epoxy resin (UL94 V-0)
· Terminals	:	Tin plated Copper



FEATURE

- Self-Healing
- Low contact resistance
- Low loss dielectric
- High ripple current
- High contact reliability

APPLICATION

- Snubber Capacitor for IGBT

QUICK REFERENCE DATA

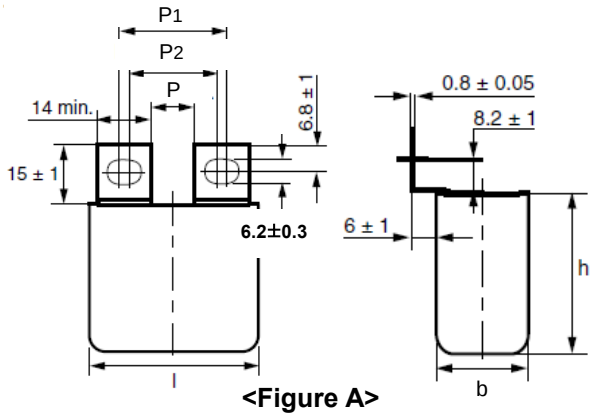
Capacitance range	0.33 to 4.7 μF
Capacitance tolerance	±5%, ±10%,
Rated voltage (DC)	850V, 1000V, 1250V, 1600V, 2000V
Dissipation factor (DF)	0.0005 at 1KHz(0.1uF < C ≤ 3.3uF)
Insulation resistance (IR)	10,000s after 1minute of electrification at 500Vdc(C > 0.33uF)
Climatic category	40 / 85 / 56
Temperature range	-40°C ~+105 °C
Max permissible ambient temperature	85°C (operation at rated power, rated current and natural cooling) (+85°C observing voltage and current de-rating)
Reference	IEC 60384-16
Potting & Encapsulation material	Qualified in accordance with UL94V-0

• 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.

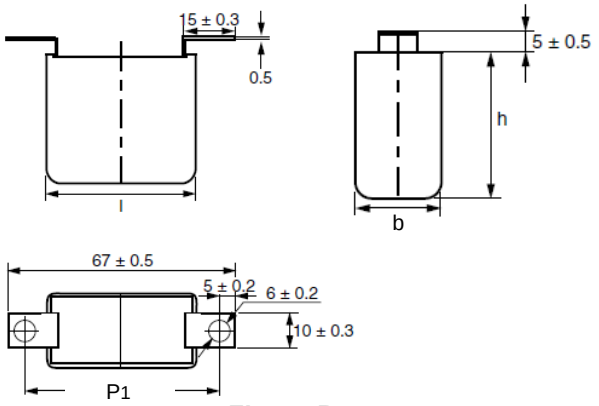
POWER ELECTRONIC CAPACITORS

Snubber Capacitors PCPW 237
Metallized Polypropylene film capacitors

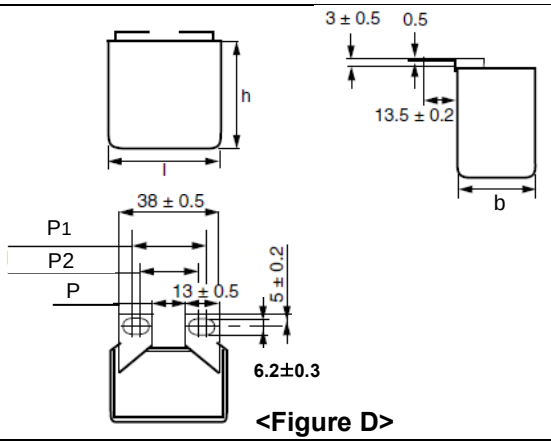
Ordering Information



<Figure A>



<Figure B>



<Figure D>

1	2	3	4	5	6	7	8	9	10	11	12	13	14
P	2	3	7	Q	8	5	3	3	5	K	A	A	A

Digits 1~4	
Code	Series Name
P237	PCPW 237

Digits 5	
Code	Body Pitch
Q	42.0mm
T	57.0mm

Digits 6~7	
Code	Voltage
85	850Vdc
10	1000Vdc
12	1250Vdc
16	1600Vdc
20	2000Vdc

Digits 8~10	
Code	Capacitance (example)
335	3.3uF
336	33uF

Digits 11	
Code	Capacitance Tolerance
J	5 %
K	10 %

Digits 12	
Code	Revision
A	Standard

Digits 13~14					
Code	Packing Method	Figure	P (mm)	P1 (mm)	P2 (mm)
AA	Arrange Packing	A	10.0±1.0	28.0±0.5	23.0±0.5
AB	Arrange Packing	A	6.0±1.0	24.5±0.5	19.5±0.5
BD	Arrange Packing	B	-	57.0±0.5	-
DF	Arrange Packing	D	12.0±1.0.	28.0±0.5	22.0±0.5

Snubber Capacitors PCPW 237
Metallized Polypropylene film capacitors

V_{Rdc} = 850V V_{Rac} = 450 V~ V_{peak} = 1200 V

Cap (µF)	b x h x l (mm)	Figure	dv/dt (V/us)	I_{peak} (A)	I_{RMS} (A)*	ESR (mΩ)**	Ordering Code
1.5	20.0 x 35.0 x 42.0	A	400	600	15	9.0	P237Q85155KA**
2.2	28.0 x 37.0 x 42.0	A	400	880	16	6.0	P237Q85225KA**
3.3	30.0 x 45.0 x 42.0	A	400	1320	18	4.0	P237Q85335KA**
4.7	35.0 x 50.0 x 57.0	A	350	1645	20	3.0	P237T85475KA**

V_{Rdc} = 1000 V V_{Rac} = 480 V~ V_{peak} = 1300 V

Cap (µF)	b x h x l (mm)	Figure	dv/dt (V/us)	I_{peak} (A)	I_{RMS} (A)*	ESR (mΩ)**	Ordering Code
1.0	20.0 x 35.0 x 42.0	A	450	450	14	6.0	P237Q10105KA**
1.5	24.0 x 39.0 x 42.0	A	450	675	16	5.5	P237Q10155KA**
2.2	30.0 x 45.0 x 42.0	A	450	990	18	5.0	P237Q10225KA**
3.3	35.0 x 50.0 x 57.0	A	400	1320	20	3.0	P237T10335KA**

V_{Rdc} = 1250 V V_{Rac} = 500 V~ V_{peak} = 1600 V

Cap (µF)	b x h x l (mm)	Figure	dv/dt (V/us)	I_{peak} (A)	I_{RMS} (A)*	ESR (mΩ)**	Ordering Code
0.68	20.0 x 35.0 x 42.0	A	500	340	14	6.0	P237Q12684KA**
1.0	28.0 x 37.0 x 42.0	A	500	500	16	5.0	P237Q12105KA**
1.5	30.0 x 45.0 x 42.0	A	500	750	18	4.0	P237Q12155KA**
2.0	35.0 x 50.0 x 57.0	A	450	900	20	3.0	P237T12205KA**

(*)Maximum RMS current at +70℃, 100KHz, ΔT=+15℃ (Hot spot temp. = T_{amb} + ΔT = 70℃ + 15℃ = 85℃)
(**)Typical ESR values at 100KHz, 20℃

Snubber Capacitors PCPW 237
Metallized Polypropylene film capacitors

V_{Rdc} = 1600 V V_{Rac} = 600 V~ V_{peak} = 2000 V

Cap (µF)	b x h x l (mm)	Figure	dv/dt (V/us)	I_{peak} (A)	I_{RMS} (A)*	ESR (mΩ)**	Ordering Code
0.33	20.0 x 35.0 x 42.0	A	600	198	11	8.0	P237Q16334KA**
0.47	24.0 x 39.0 x 42.0	A	600	282	13	6.0	P237Q16474KA**
0.68	28.0 x 37.0 x 42.0	A	600	408	15	5.0	P237Q16684KA**
1.0	30.0 x 45.0 x 42.0	A	600	600	17	4.0	P237Q16105KA**
1.5	35.0 x 50.0 x 57.0	A	450	900	19	3.0	P237T16205KA**

V_{Rdc} = 2000 V V_{Rac} = 650 V~ V_{peak} = 2500 V

Cap (µF)	b x h x l (mm)	Figure	dv/dt (V/us)	I_{peak} (A)	I_{RMS} (A)*	ESR (mΩ)**	Ordering Code
0.56	30.0 x 45.0 x 42.0	A	700	392	15	4.0	P237Q20564KA**
1.0	35.0 x 50.0 x 57.0	A	600	900	17	3.0	P237T20155KA**

(*)Maximum RMS current at +70℃, 100KHz, ΔT=+15℃ (Hot spot temp. = T_{amb} + ΔT = 70℃ + 15℃ = 85℃)
(**)Typical ESR values at 100KHz, 20℃

Snubber Capacitors PCPW 237
Metallized Polypropylene film capacitors

CHARACTERISTICS

- **Test Votage**

. Test Voltage (between terminations) : 1.6 x V_{Rdc}, 10s (1 min for type test)

. Test Voltage (between lead and case) : 3KV- 50Hz(or 60Hz) for 60 seconds

- **Dissipation Factor**

Rated voltage	Capacitance	Tangent of loss angle (x 10^{-4})		
		1 kHz	10 kHz	100 kHz
850~2000V	0.1 ㎌ < C ≤ 4.7 ㎌	≤ 5	≤ 8	-

- **Insulation Resistance**

The insulation resistance is measured for 1min ±5s, at 500V

Rated voltage	Minimum RC	Minimum Insulation
	Capacitance > 0.33uF	Capacitance ≤ 0.33uF
≥ 500V	> 10,000s	> 30GΩ

(R = insulation resistance between the terminations[Ω], C = capacitance[Farad])

Snubber Capacitors PCPW 237
Metallized Polypropylene film capacitors

PRODUCT MARKING

Capacitors are marked on the top or on the top and one side with the following information :

. Rated capacitance code in accordance with IEC 60062
. Tolerance on rated capacitance : J : ± 5 % K : ± 10 %
. Rated (DC) Voltage (e.g. 850 V)
. Code for dielectric material (MMKP)
. Manufacturer's type designation (PCPW237)
. Manufacturer's name (PILKOR)
. Marking color : white or black

Example of marking

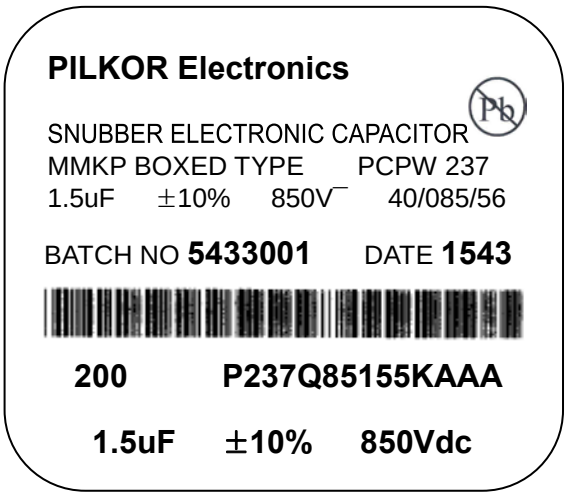
1u K 850V PILKOR
PCPW237 MMKP WK....

Marking on the top or side

Snubber Capacitors PCPW 237
Metallized Polypropylene film capacitors

PACKAGE MARKING

The package containing the capacitors is marked as shown.



LINE MARKING EXPLANATION

1 Manufacturer`s name
2 Sub – family
3. Pb free marking(JEDEC-STD-97)
4 Type description & Series name
5 Capacitance value, tolerance,
Voltage and climatic category (IEC)
6 Batch no. & production period
year and week code
7 Quantity and Product code
8 Capacitance, tolerance and voltage

PACKING QUANTITY INFORMATION

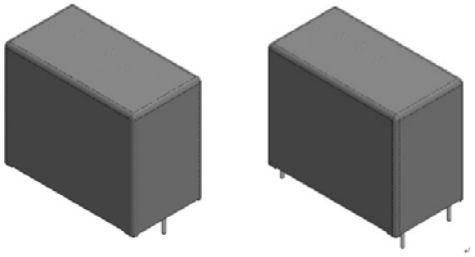
SMALLEST PACKING QUANTITIES (SPQ)	Arrange Pack.		
	Figure A	Figure B	Figure D
20.0 x 35.0 x 42.0	20	20	20
24.0 x 39.0 x 42.0	20	20	20
28.0 x 37.0 x 42.0	20	20	20
30.0 x 45.0 x 42.0	16	16	16
35.0 x 50.0 x 57.0	9	9	9

Snubber Capacitors (Metallized Polypropylene Film Capacitors

PCPW238 MMKP

CONSTRUCTION

· Dielectric	:	Double side metallized PET film & Metallized polypropylene film
· Case	:	PBT (UL94 V-0)
· Filling	:	Epoxy resin (UL94 V-0)
· Terminals	:	Tinned copper wire (2-pin / 4-pin)



FEATURE

- Self-Healing
- Low contact resistance
- Low loss dielectric
- High ripple current
- High contact reliability

APPLICATION

. Snubber Capacitor for IGBT

. Protection circuits in SMPS

. Energy conversion and control in power electronics

QUICK REFERENCE DATA

Capacitance range	0.10 to 3.3μF
Capacitance tolerance	±5%, ±10%,
Rated voltage (DC)	850V, 1000V, 1250V, 1600V, 2000V
Dissipation factor (DF)	0.0005 at 1KHz(0.1uF < C ≤ 3.3uF)
Insulation resistance (IR)	10,000s after 1minute of electrification at 500Vdc(C > 0.33uF)
Climatic category	40 / 85 / 56
Temperature range	-40°C ~+105°C
Max permissible ambient temperature	85°C (operation at rated power, rated current and natural cooling)
Reference	IEC 60384-16 / IEC61071
Potting & Encapsulation material	Qualified in accordance with UL94V-0

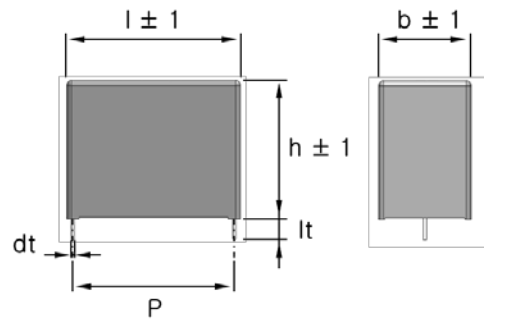
• Design and specifications are subjected to change without notice. Please refer to caution and warning at http://www.pilkor.co.kr/sub/download/Introductions.pdf before using these products.

Snubber Capacitors (Metallized Polypropylene Film Capacitors

PCPW238 MMKP

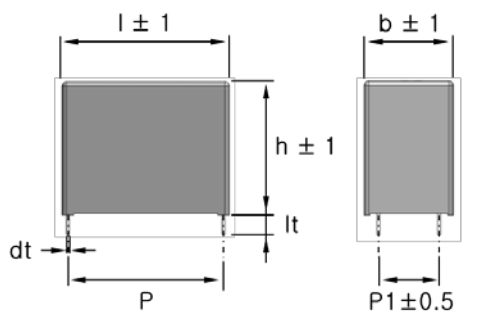
ORDERING INFORMATION

2-PINS



P(mm)	dt (mm)
32.5 (±0.7)	Ø1.0 (±0.10)
37.5 (±0.7)	Ø1.0 (±0.10)

4-PINS



P(mm)	dt (mm)
37.5 (±0.7)	Ø1.0 (±0.10)

1	2	3	4	5	6	7	8	9	10	11	12	13	14
P	**2**	**3**	**8**	**Q**	**8**	**5**	**1**	**0**	**5**	**K**	**A**	**S**	**2**

Digits 1~4	
Code	Series name
P238	PCPW238

Digits 5	
Code	Pitch
N	32.5 mm
Q	37.5 mm
T	52.5 mm

Digits 6~7	
Code	Voltage
85	850Vdc
10	1000Vdc
12	1250Vdc
16	1600Vdc
20	2000Vdc

Digits 8~10	
Code	Capacitance
334	0.33uF
335	3.3uF
336	33uF

Digits 11	
Code	Cap. tolerance
J	5%
K	10%

Digits 12	
Code	Revision
A	Standard
M	Automotive
L	Low profile

Digits 13	
Code	Lead length
L	25.0±1.0
S	5.0±1.0
F	4.0±0.5
8	3.8±0.5(0.3)*
7	3.7±0.5(0.3)*
5	3.5±0.5(0.3)*
4	3.4±0.5(0.3)*
2	3.2±0.5(0.3)*
T	3.0±0.5(0.3)*

* dt(mm) = Ø0.8, ±0.3

Digits 14		
Code	Lead type	Packing
2	2-PIN	Arrange
4	4-PIN	Arrange

Snubber Capacitors (Metallized Polypropylene Film Capacitors

PCPW238 MMKP

ELETRICAL DATA AND ORDERING CODE

V_{Rdc} = 850V

Cap (μF)	B x H x L (mm)	d_t (mm)	P (mm)	dv/dt (V/us)	I_{peak} (A)	I_{rms} (A) *	Ordering Code
Pitch = 32.5 ± 0.7 mm							
0.68	16.0 x 26.0 x 37.0	1.0	32.5	450	306	6.0	P238N85684KA**
0.82	18.0 x 30.0 x 37.0	1.0	32.5	450	369	7.0	P238N85824KA**
1.0	20.0 x 34.0 x 37.0	1.0	32.5	450	450	8.0	P238N85105KA**
Pitch = 37.5 ± 0.7 mm							
0.82	24.0 x 17.0 x 42.0	1.0	37.5	450	369	8.0	P238Q85824KL**
1.0	18.0 x 33.0 x 42.0	1.0	37.5	450	450	10.0	P238Q85105KA**
1.5	20.0 x 35.0 x 42.0	1.0	37.5	450	675	12.0	P238Q85155KA**
2.2	24.0 x 39.0 x 42.0	1.0	37.5	450	990	14.0	P238Q85225KA**
3.3	30.0 x 45.0 x 42.0	1.0	37.5	450	1485	17.0	P238Q85335KA**

V_{Rdc} = 1000V

Cap (μF)	B x H x L (mm)	d_t (mm)	P (mm)	dv/dt (V/us)	I_{peak} (A)	I_{rms} (A) *	Ordering Code
Pitch = 32.5 ± 0.7 mm							
0.47	16.0 x 26.0 x 37.0	1.0	32.5	450	148	6.0	P238N10474KA**
0.68	18.0 x 30.0 x 37.0	1.0	32.5	450	306	7.0	P238N10684KA**
0.82	20.0 x 34.0 x 37.0	1.0	32.5	450	369	8.0	P238N10824KA**
Pitch = 37.5 ± 0.7 mm							
0.56	24.0 x 17.0 x 42.0	1.0	37.5	450	252	8.0	P238Q10564KL**
1.0	20.0 x 35.0 x 42.0	1.0	37.5	450	450	11.0	P238Q10105KA**
1.5	24.0 x 39.0 x 42.0	1.0	37.5	450	675	13.0	P238Q10155KA**
2.2	30.0 x 45.0 x 42.0	1.0	37.5	450	990	15.0	P238Q10155KA**

(*)Maximum RMS current at +70℃, 100KHz, ΔT=+15℃ (Hot spot temp. = T_{amb} + ΔT = 70℃ + 15℃ = 85℃)

Snubber Capacitors (Metallized Polypropylene Film Capacitors

PCPW238 MMKP

V_{Rdc} = 1250 V

Cap (μF)	B x H x L (mm)	d_t (mm) or Terminal	P (mm)	dv/dt (V/us)	I_{peak} (A)	I_{rms} (A) *	Ordering Code
Pitch = 32.5 ± 0.7 mm							
0.22	16.0 x 26.0 x 37.0	1.0	32.5	700	154	6.0	P238N12224KA**
0.33	18.0 x 30.0 x 37.0	1.0	32.5	700	231	7.0	P238N12334KA**
0.47	20.0 x 34.0 x 37.0	1.0	32.5	700	329	8.0	P238N12474KA**
Pitch = 37.5 ± 0.7 mm							
0.47	18.0 x 33.0 x 42.0	1.0	37.5	700	329	10.0	P238Q12474KA**
0.68	20.0 x 35.0 x 42.0	1.0	37.5	700	476	11.0	P238Q12684KA**
1.0	24.0 x 39.0 x 42.0	1.0	37.5	700	700	12.0	P238Q12105KA**
1.5	30.0 x 45.0 x 42.0	1.0	37.5	700	1050	14.0	P238Q12155KA**

V_{Rdc} = 1600 V

Cap (μF)	B x H x L (mm)	d_t (mm) or Terminal	P (mm)	dv/dt (V/us)	I_{peak} (A)	I_{rms} (A) *	Ordering Code
Pitch = 32.5 ± 0.7 mm							
0.18	16.0 x 26.0 x 37.0	1.0	32.5	1000	220	6.0	P238N16154KA**
0.22	18.0 x 30.0 x 37.0	1.0	32.5	1000	300	7.0	P238N16224KA**
0.30	20.0 x 34.0 x 37.0	1.0	32.5	1000	330	8.0	P238N16304KA**
Pitch = 37.5 ± 0.7 mm							
0.22	24.0 x 17.0 x 42.0	1.0	37.5	1000	220	7.0	P238Q16224KL**
0.33	18.0 x 33.0 x 42.0	1.0	37.5	1000	330	8.0	P238Q16334KA**
0.47	20.0 x 35.0 x 42.0	1.0	37.5	1000	470	9.0	P238Q16474KA**
0.68	24.0 x 39.0 x 42.0	1.0	37.5	1000	680	11.0	P238Q16684KA**
1.0	30.0 x 45.0 x 42.0	1.0	37.5	1000	1000	13.0	P238Q16105KA**

(*)Maximum RMS current at +70℃, 100KHz, ΔT=+15℃ (Hot spot temp. = T_{amb} + ΔT = 70℃ + 15℃ = 85℃)

Snubber Capacitors (Metallized Polypropylene Film Capacitors

PCPW238 MMKP

V_{Rdc} = 2000 V

Cap (μF)	B x H x L (mm)	d_t (mm) or Terminal	P (mm)	dv/dt (V/us)	I_{peak} (A)	I_{rms} (A) *	Ordering Code
Pitch = 32.5 ± 0.7 mm							
0.15	16.0 x 26.0 x 37.0	1.0	32.5	1000	150	6.0	P238N20154KA**
0.18	18.0 x 30.0 x 37.0	1.0	32.5	1000	180	7.0	P238N20184KA**
0.20	20.0 x 34.0 x 37.0	1.0	32.5	1000	200	8.0	P238N20204KA**
Pitch = 37.5 ± 0.7 mm							
0.22	18.0 x 33.0 x 42.0	1.0	37.5	1000	220	9.0	P238Q20224KA**
0.33	20.0 x 35.0 x 42.0	1.0	37.5	1000	330	10.0	P238Q20334KA**
0.47	24.0 x 39.0 x 42.0	1.0	37.5	1000	470	11.0	P238Q20474KA**
0.68	30.0 x 45.0 x 42.0	1.0	37.5	1000	680	12.0	P238Q20684KA**

(*)Maximum RMS current at +70℃, 100KHz, ΔT=+15℃ (Hot spot temp. = T_{amb} + ΔT = 70℃ + 15℃ = 85℃)

Snubber Capacitors (Metallized Polypropylene Film Capacitors

PCPW238 MMKP

CHARACTERISTICS

- **Test Votage**

. Test Voltage (between terminations) : 1.6 x V_{Rdc}, 10s (1 min for type test)
. Test Voltage (between leads and case) : 3KV- 50Hz(or 60Hz) for 60 seconds

- **Dissipation Factor**

Rated voltage	Capacitance	Tangent of loss angle (x 10^{-4})		
		1 kHz	10 kHz	100 kHz
850~2000V	0.1 μF < C ≤ 3.3 μF	≤ 5	≤ 8	-

- **Insulation Resistance**

The insulation resistance is measured for 1min ±5s, at 500V

Rated voltage	Minimum RC	Minimum Insulation
	Capacitance > 0.33uF	Capacitance ≤ 0.33uF
≥ 500V	> 10,000s	> 30GΩ

(R = insulation resistance between the terminations[Ω], C = capacitance[Farad])

Snubber Capacitors (Metallized Polypropylene Film Capacitors

PCPW238 MMKP

PRODUCT MARKING

Capacitors are marked on the top or on the top and one side with the following information :

. Rated capacitance code in accordance with IEC 60062

. Tolerance on rated capacitance : J : ± 5 % K : ± 10 %

. Rated (DC) Voltage (e.g. 1250 V)

. Code for dielectric material (MMKP)

. Manufacturer's type designation (PCPW 238)

. Manufacturer's name (PILKOR)

Example of marking

1u5	K	1250V	PILKOR
PCPW238		MMKP	WK....

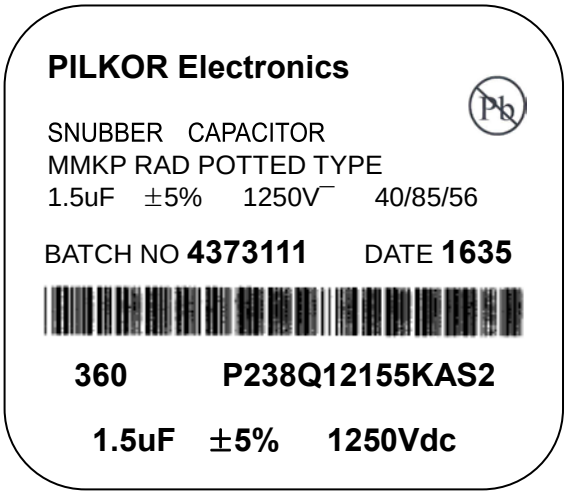
Marking on the top or side

Snubber Capacitors (Metallized Polypropylene Film Capacitors

PCPW238 MMKP

PACKAGE MARKING

The package containing the capacitors is marked as shown.



LINE MARKING EXPLANATION

1 Manufacturer`s name

2 Sub – family

3. Pb free marking(JEDEC-STD-97)

4 Type description

5 Capacitance value, tolerance,
Voltage and climatic category (IEC)

6 Batch no. & production period
year and week code

7 Quantity and Product code

8 Capacitance, tolerance and voltage

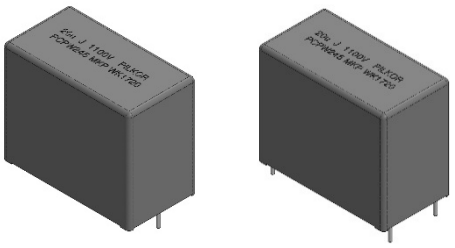
PACKING QUANTITY INFORMATION

SMALLEST PACKING QUANTITIES (SPQ)	Arrange Pack.
	lt = 5.0 ± 1.0mm
16.0 x 26.0 x 37.0	88
18.0 x 30.0 x 37.0	80
20.0 x 34.0 x 37.0	72
18.0 x 33.0 x 42.0	100
20.0 x 35.0 x 42.0	90
24.0 x 17.0 x 42.0	65
24.0 x 39.0 x 42.0	75
28.0 x 43.0 x 42.0	65
30.0 x 45.0 x 42.0	60

Metallized Polypropylene film capacitors (Switching Application) PCPW226

CONSTRUCTION

· Dielectric	:	Metallized Polypropylene film
· Case	:	PBT (UL94 V-0)
· Filling	:	Epoxy resin (UL94 V-0)
· Terminals	:	Tinned copper wire (2-pin / 4-pin)



FEATURE

. Self-Healing
. Low contact resistance
. Low loss dielectric
. High ripple current

APPLICATION

. Switching applications.
. High frequency, high current applications
. Industrial and motor speed control
. induction heater

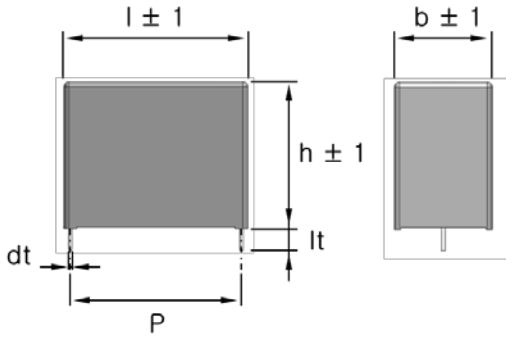
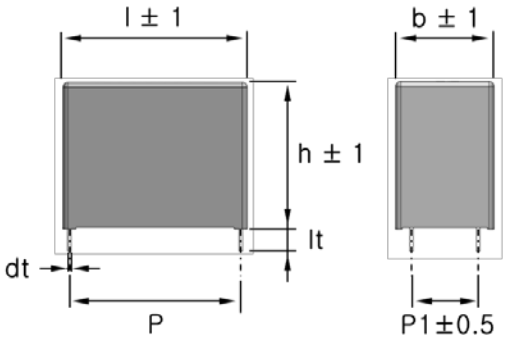
QUICK REFERENCE DATA

Capacitance range	1.0 to 30 ㎌
Capacitance tolerance	±5%, ±10%
Rated voltage (VRdc)	250, 450, 630, 900
Max. repetitive peak voltage (Vpkr)	1.15 x VR (max. 30min. within one day)
Max. non-repetitive peak current (Ipkr)	1.5 x Ipk
IEC Climatic category	40/ 105 / 56
Temperature range	-40℃ ~ +105℃
Life time expectancy	100,000 hours at VR, 70℃
	40,000 hours at VR, 85℃
Reference	IEC 60384-16 / IEC61071
Potting & Encapsulation material	Qualified in accordance with UL94V-0

• 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.

Metallized Polypropylene film capacitors (Switching Application) PCPW226

ORDERING INFORMATION

2-PINS	4-PINS
	

P(mm)	dt (mm)
27.5 (±0.4)	Ø0.8 (±0.08)
37.5 (±0.7)	Ø1.0 (±0.10)

P(mm)	dt (mm)
37.5 (±0.7)	Ø1.2 (±0.12)

1	2	3	4	5	6	7	8	9	10	11	12	13	14
P	**2**	**2**	**6**	**L**	**4**	**5**	**1**	**0**	**5**	**K**	**A**	**S**	**2**

Digits 1~4	
Code	Series name
P226	PCPW226

Digits 5	
Code	Pitch
L	27.5 mm
Q	37.5 mm

Digits 6~7	
Code	Voltage
25	250Vdc
45	450Vdc
63	630Vdc
90	900Vdc

Digits 8~10	
Code	Capacitance
105	1uF
106	10uF

Digits 11	
Code	Cap. tolerance
J	5%
K	10%

Digits 12	
Code	Revision
A	Standard
M	Automotive
L	Low profile
B	Mini-Ⅰ

Digits 13	
Code	Lead length
L	25.0±1.0
S	5.0±1.0
F	4.0±0.5
8	3.8±0.5(0.3)*
7	3.7±0.5(0.3)*
5	3.5±0.5(0.3)*
4	3.4±0.5(0.3)*
2	3.2±0.5(0.3)*
T	3.0±0.5(0.3)*

* dt(mm) = Ø0.8, ±0.3

Digits 14		
Code	Lead type	Packing
L	2-PIN	Loose in box
2	2-PIN	Arrange
4	4-PIN	Arrange

Metallized Polypropylene film capacitors (Switching Application) PCPW226

ELECTRICAL DATA AND ORDERING CODE

V_{Rdc} = 250V

CAP. (uF)	Dimension (mm)			P (mm)	P1 (mm)	dv/dt (V/us)	Ipk (A)	Irms[1] (A)		ESR[2] (mΩ)		Ordering Code
	b	h	l					2P	4P	2P	4P	
1.0	11	21	31	27.5		55	55	4.4	-	10.1		P226L25105KA**
2.2	11	21	31	27.5		55	121	5.3	-	7.1		P226L25225KA**
3.3	11	21	31	27.5		55	182	5.5	-	8.0		P226L25335KA**
4.7	13	23	31	27.5		55	259	5.8	-	6.6		P226L25475KA**
5.0	13	23	31	27.5		55	275	6	-	6.3		P226L25505KA**
5.6	15	25	31	27.5		55	308	6.3	-	5.8		P226L25565KA**
6.8	15	25	31	27.5		55	374	7	-	5.0		P226L25685KA**
8.0	18	28	31	27.5		55	440	7.6	-	4.4		P226L25805KA**
10	18	28	31	27.5		55	550	8.6		3.4		P226L25106KA**
13	20	35	42	37.5	10.2	22	286	606	7.1	7.0	6.5	P226Q25136KA**
16	24	39	42	37.5	10.2	22	352	6.9	7.5	6.6	6.0	P226Q25166KA**
23	28	43	42	37.5	10.2	22	506	7.9	8.4	5.6	5.1	P226Q25236KA**
30	30	45	42	37.5	20.3	22	660	8.7	8.2	4.7	4.2	P226Q25306KA**

V_{Rdc} = 450V

CAP. (uF)	Dimension (mm)			P (mm)	P1 (mm)	dv/dt (V/us)	Ipk (A)	Irms[1] (A)		ESR[2] (mΩ)		Ordering Code
	b	h	l					2P	4P	2P	4P	
1.0	11	21	31	27.5	-	70	70	4.4	-	10.1	-	P226L45105KA**
2.2	11	21	31	27.5	-	70	154	5.3	-	7.1	-	P226L45225KA**
3.3	13	23	31	27.5	-	70	231	6.5	-	5.8	-	P226L45335KA**
3.9	13	23	31	27.5	-	70	273	5.6	-	6.5		P226L45395KB**
3.9	15	25	31	27.5	-	70	273	7.0	-	5.2	-	P226L45395KA**
4.7	15	25	31	27.5	-	70	329	6.2	-	5.7	-	P226L45475KB**
4.7	18	28	31	27.5	-	70	329	7.7	-	4.6	-	P226L45475KA**
5.0	18	28	31	27.5	-	70	350	7.8	-	4.3	-	P226L45505KA**
5.6	18	28	31	27.5	-	70	392	8.3	-	4.1	-	P226L45565KA**
6.8	18	28	31	27.5	-	70	476	7.1	-	4.3	-	P226L45685KB**
6.8	21	31	31	27.5	-	70	476	8.9	-	3.4	-	P226L45685KA**
8.0	21	31	31	27.5	-	70	560	9.2	-	2.9	-	P226L45805KA**
10	21	31	31	27.5	-	70	700	10	-	2.2	-	P226L45106KB**
3.3	24	17	42	37.5	-	54	178	4.1	4.6	3.8	3.3	P226Q45335KL**
6.0	28	20	42	37.5	-	54	324	5.5	6.2	5.2	4.6	P226Q45605KL**
8.5	20	35	42	37.5	10.2	54	432	6.8	7.5	6.5	5.8	P226Q45855KA**
10	24	39	42	37.5	10.2	54	540	7.6	8.3	5.7	5.2	P226Q45106KA**
14	28	43	42	37.5	10.2	54	756	8.5	9.2	4.8	4.2	P226Q45146KA**
19	30	45	42	37.5	20.3	54	1026	9.0	9.6	4.6	4.1	P226Q45196KA**

[1] Maximum RMS current at +85 100KHz, ΔT=+10

[2] Typical ESR values at 100KHz, 20°C
(Maximum ESR value : less than 2.5 x typical ESR value)

Metallized Polypropylene film capacitors (Switching Application) PCPW226

V_{Rdc} = 630V

CAP. (uF)	Dimension (mm)			P (mm)	P1 (mm)	dv/dt (V/us)	Ipk (A)	Irms[1] (A)		ESR[2] (mΩ)		Ordering Code
	b	h	l					2P	4P	2P	4P	
1.0	11	21	31	27.5	-	90	90	4.4	-	10.1	-	P226L63105KA**
2.2	15	25	31	27.5	-	90	198	6.0	-	6.9	-	P226L63225KA**
3.3	18	28	31	27.5	-	90	297	7.2	-	5.2	-	P226L63335KA**
3.9	21	31	31	27.5	-	90	351	7.8	-	4.5	-	P226L63395KA**
5.0	18	33	42	37.5	-	73	365	5.9	6.4	7.8	7.2	P226Q63505KA**
6.5	20	35	42	37.5	-	73	438	7.1	7.6	6.3	5.8	P226Q63655KA**
7.0	24	39	42	37.5	10.2	73	511	7.6	8.0	5.8	5.2	P226Q63705KA**
8.0	24	39	42	37.5	10.2	73	584	8.0	8.5	5.3	4.8	P226Q63805KA**
10	28	43	42	37.5	10.2	73	730	8.5	8.9	4.8	4.2	P226Q63106KA**
13	30	45	42	37.5	20.3	73	949	8.9	9.3	4.6	4.1	P226Q63136KA**

V_{Rdc} = 900V

CAP. (uF)	Dimension (mm)			P (mm)	P1 (mm)	dv/dt (V/us)	Ipk (A)	Irms[1] (A)		ESR[2] (mΩ)		Ordering Code
	b	h	l					2P	4P	2P	4P	
1.0	13	25	31	27.5	-	120	1210	5.0	-	9.2	-	P226L90105KA**
1.5	18	28	31	27.5	-	120	180	6.2	-	7.1	-	P226L90155KA**
2.0	21	31	31	27.5	-	120	240	7.5	-	4.9	-	P226L90205KA**
3.3	20	35	42	37.5	10.2	100	330	5.0	5.7	9.9	9.4	P226Q90335KA**
4.0	24	39	42	37.5	10.2	100	400	5.6	6.2	9.0	8.5	P226Q90405KA**
5.6	28	43	42	37.5	10.2	100	560	6.8	7.3	7.2	6.6	P226Q90565KA**
7.5	30	45	42	37.5	20.3	100	750	7.1	7.8	6.9	6.3	P226Q90755KA**

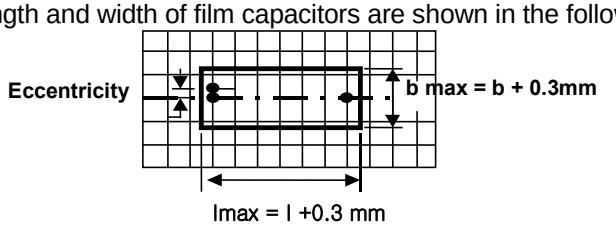
[1] Maximum RMS current at +85 100KHz, ΔT=+10

[2] Typical ESR values at 100KHz, 20℃
(Maximum ESR value : less than 2.5 x typical ESR value)

Metallized Polypropylene film capacitors (Switching Application) PCPW226

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

CHARACTERISTICS

- **Test Voltage**

. Test Voltage (between terminations) : 1.6 x V_{Rdc}, 1min

. Test Voltage (between leads and case) : 2KV- 50Hz(or 60Hz) for 10 seconds

- **Dissipation Factor**

Pitch	Dissipation factor (x 10^{-4})
	1 kHz
27.5mm	≤ 10
37.5mm	≤ 15

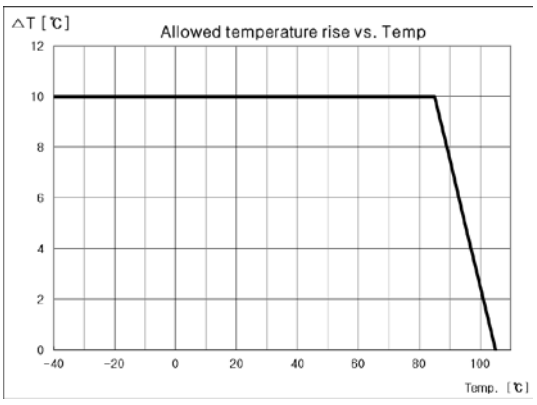
- **Insulation Resistance**

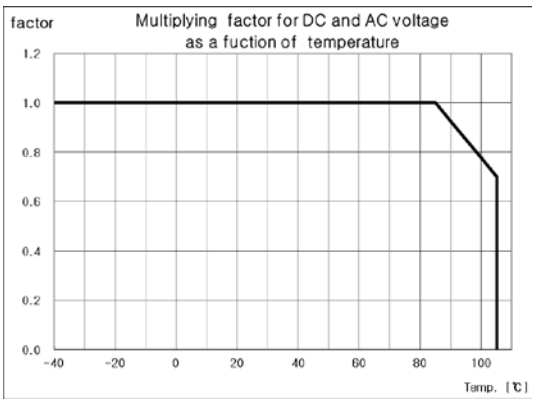
. The insulation resistance is measured for 1min.±5s, at 100V for V_{Rdc}<500V, at 500V for V_{Rdc}≥500V

Minimum RC	Minimum Insulation Resistance
Capacitance > 0.33uF	**Capacitance ≤ 0.33uF**
> 15,000s	> 45GΩ

(R = insulation resistance between the terminations[Ω], C= capacitance[Farad])

- Self heating temperature ; Max 10℃

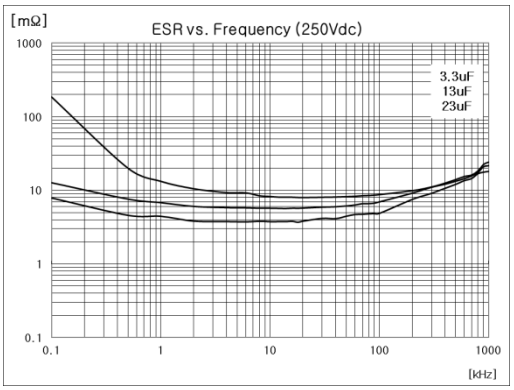


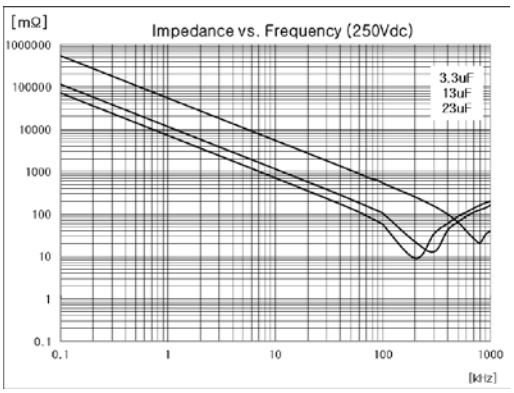


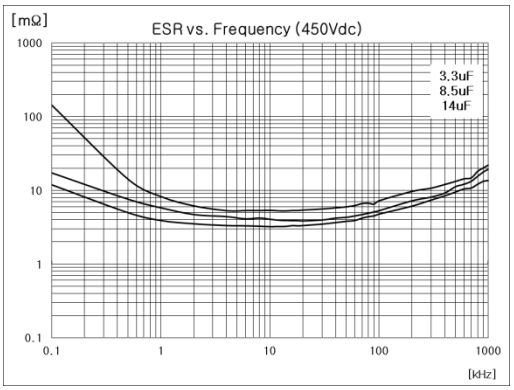
POWER ELECTRONIC CAPACITORS

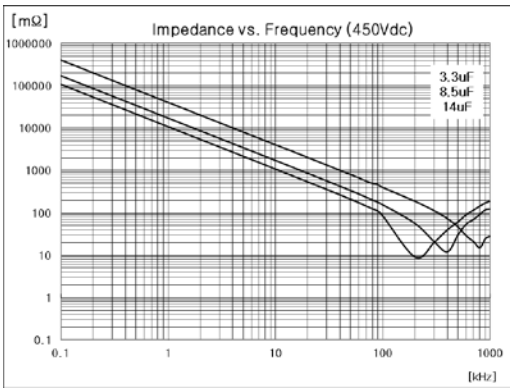
Metallized Polypropylene film capacitors (Switching Application) PCPW226

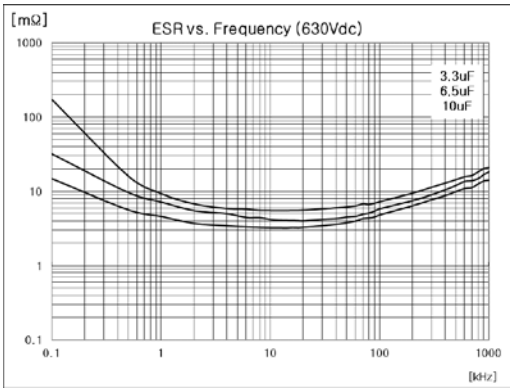
THE GRAPHS OF CHARACTERISTICS

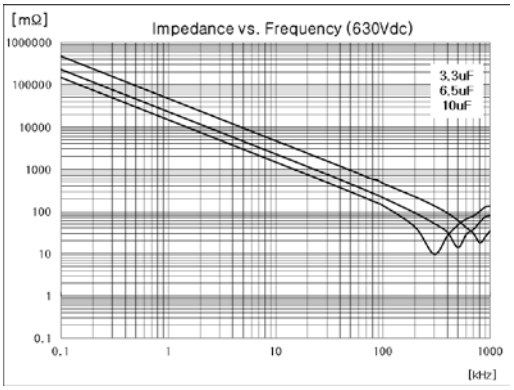


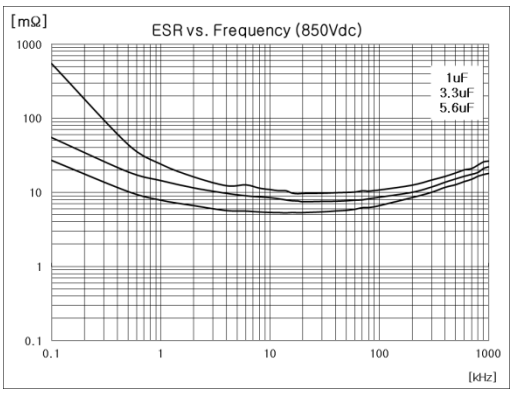


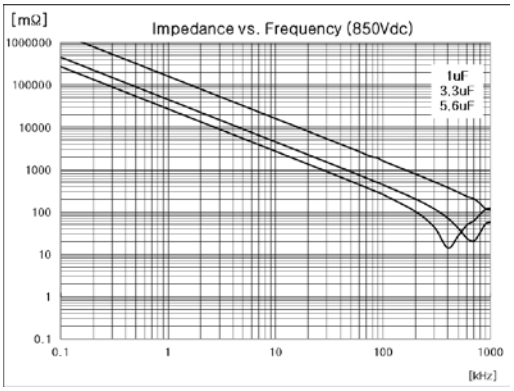






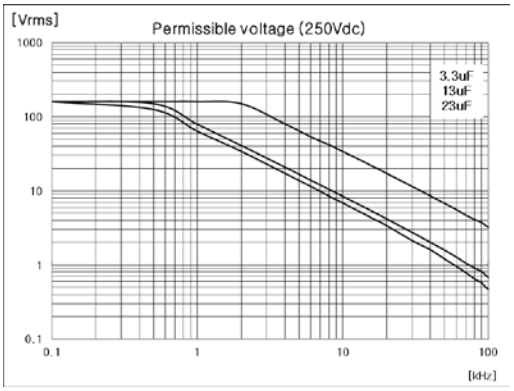


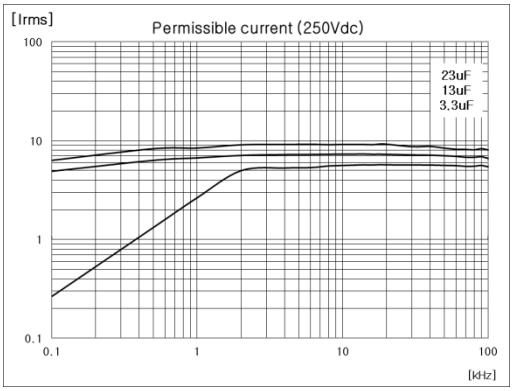


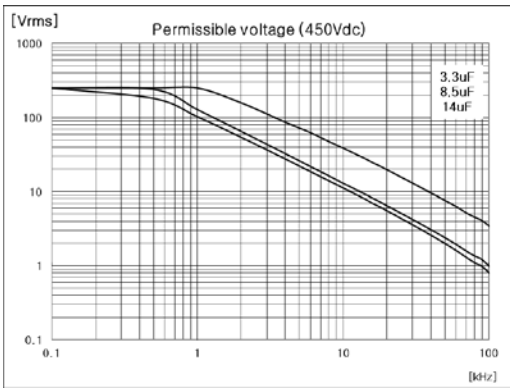


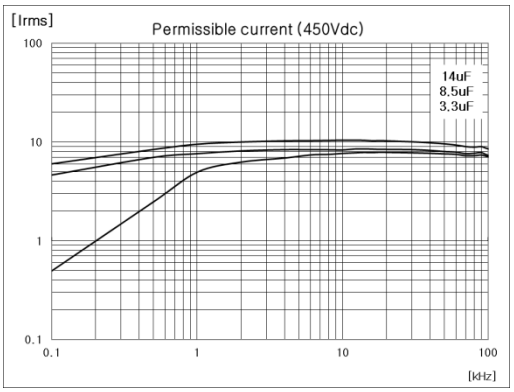
Metallized Polypropylene film capacitors (Switching Application) PCPW226

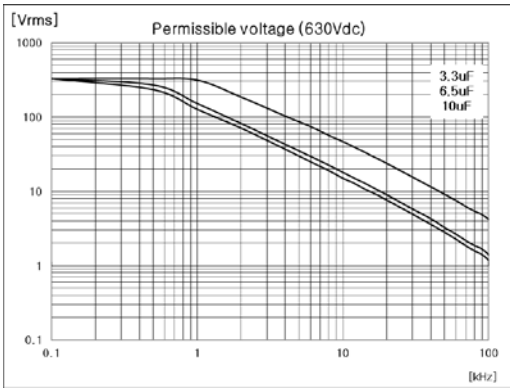
PERMISSIBLE VOLTAGE AND CURRENT AS A FUNCTION OF FREQUENCY

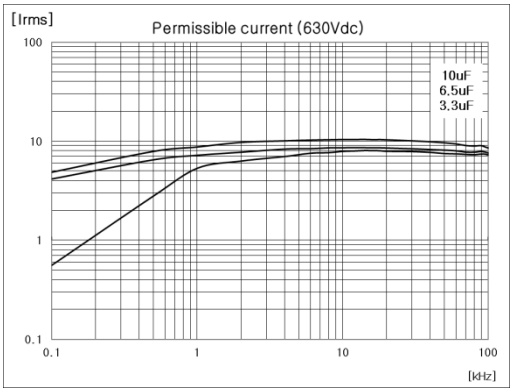


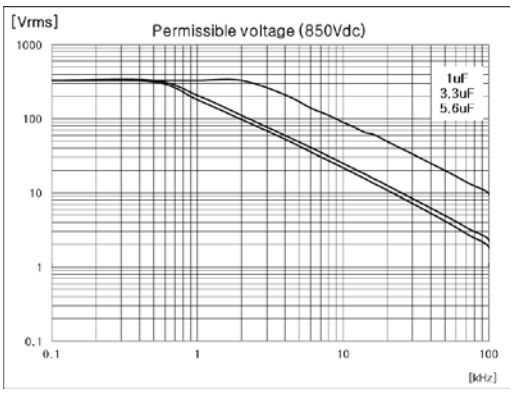


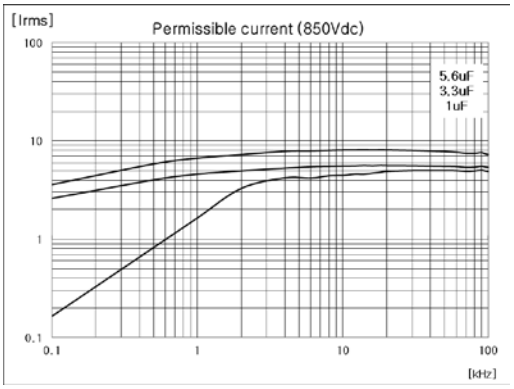












Metallized Polypropylene film capacitors (Switching Application) PCPW226

PRODUCT MARKING

Capacitors are marked with the following information :

. Rated capacitance code in accordance with IEC 60062

. Tolerance on rated capacitance : J : ± 5 % K : ± 10 %

. Rated (DC) Voltage (e.g. 400 V)

. Code for dielectric material (MKP)

. Manufacturer's type designation (PCPW 226)

. Manufacturer's name (PILKOR)

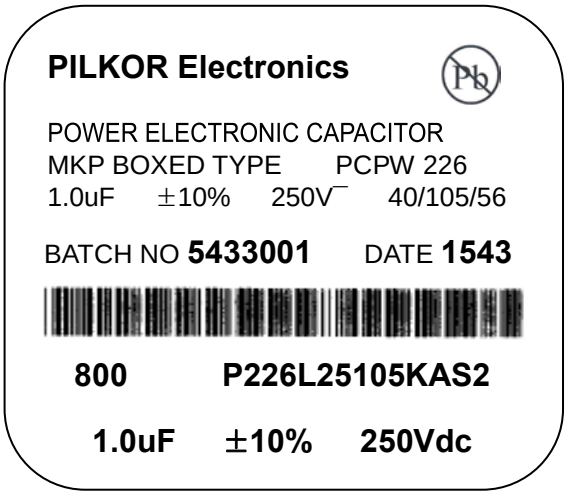
. White or black color

Example of marking

3u3 K 450V PILKOR PCPW 226 MKP WK....	or	3u3 K 450V 226 MKP …. PILKOR	or	3u3 K 450V PCPW 226 MKP PILKOR WK.....
Marking on the top or side		Marking on the top		Marking on the top or side

PACKAGE MARKING

The package containing the capacitors is marked as shown.



LINE MARKING EXPLANATION

1 Manufacturer`s name

2 Sub – family

3. Pb free marking(JEDEC-STD-97)

4 Type description & Series name

5 Capacitance value, tolerance,
Voltage and climatic category (IEC)

6 Batch no. & production period
year and week code

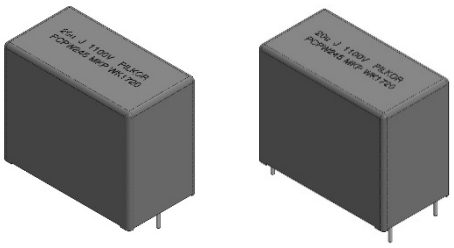
7 Quantity and Product code

8 Capacitance, tolerance and voltage

Metallized Polypropylene Film Capacitors (DC-link application) PCPW246

CONSTRUCTION

· Dielectric	:	Metallized Polypropylene film with segmented pattern
· Case	:	PBT (UL94 V-0)
· Filling	:	Epoxy resin (UL94 V-0)
· Terminals	:	Tinned copper wire (2-pin / 4-pin)



FEATURE

- High capacitance density dc-link capacitor
- High safety, Self-healing and self-protecting function built in
- Low loss, Low ESR
- Long product life, high reliability
- Stable capacitance at THB conditions

APPLICATION

For DC filtering, dc-link circuit

- HEV, EV (power train, OBC etc.)
- Renewable energies inverters
- Industrial power supplies
- Inverter circuit in appliances (air conditioner etc.)
- Motor drive

QUICK REFERENCE DATA

Capacitance range	1.5μF to 150μF
Capacitance tolerance	±5%
Rated voltage (V_{Rdc} at 85℃)	450Vdc to 1100Vdc
IEC Climatic category	40 / 105 / 56
Rated temperature	85℃
Maximum permissible case temperature	105℃ (observing voltage derating)
Insulation resistance (IR)	IRxC ≥ 10,000s at 100(500)V_{dc}, 1min
	For < 500V_{dc}, measuring voltage 100V_{dc}
	For ≥ 500V_{dc}, measuring voltage 500V_{dc}
Withstanding voltage between terminals	1.5 x V_{Rdc} applied for 10s
Withstanding voltage between terminals and case	2KV_{AC} 50-60Hz applied for 60s
Life time expectancy	100,000 hours at V_R , 70℃
	40,000 hours at V_R , 85℃
Reference	IEC 61071, IEC 60068

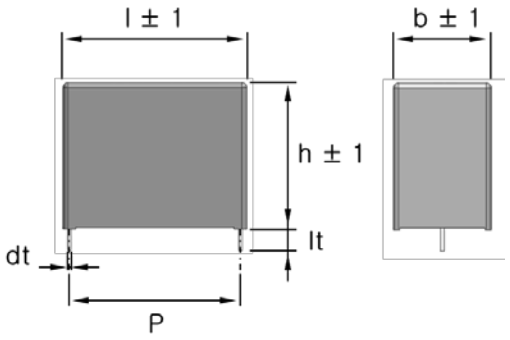
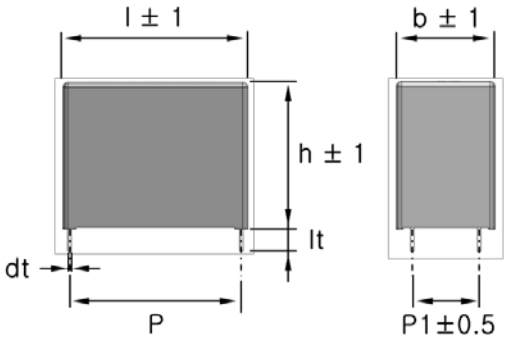
- Design and specifications are subjected to change without notice. Please refer to caution and warning at http://www.pilkor.co.kr/sub/download/Introductions.pdf before using these products.

DC VOLTAGE DERATINGS

V_{Rdc} at 85℃	450V	700V	900V	1100V			
V_{OPdc} at 70℃	500V	840V	1080V	1320V			
V_{OPdc} at 105℃	300V	490V	630V	770V			

Metallized Polypropylene Film Capacitors (DC-link application) PCPW246

ORDERING INFORMATION

2-PINS	4-PINS
	

P(mm)	dt (mm)
27.5 (±0.4)	Ø0.8 (±0.08)
37.5 (±0.7)	Ø1.0 (±0.10)

P(mm)	dt (mm)
37.5 (±0.7)	Ø1.2 (±0.12)
52.5 (±0.7)	Ø1.2 (±0.12)

1	2	3	4	5	6	7	8	9	10	11	12	13	14
P	**2**	**4**	**6**	**Q**	**7**	**0**	**3**	**0**	**6**	**J**	**A**	**S**	**4**

Digits 1~4	
Code	Series name
P246	PCPW246

Digits 5	
Code	Pitch
L	27.5 mm
Q	37.5 mm
T	52.5 mm

Digits 6~7	
Code	Voltage
45	450V
70	700V
90	900V
11	1100V

Digits 8~10	
Code	Capacitance
105	1uF
106	10uF
107	100uF

Digits 11	
Code	Cap. tolerance
J	5%

Digits 12	
Code	Revision
A	Standard
M	Automotive
L	Low profile

Digits 13	
Code	Lead length
L	25.0±1.0
S	5.0±1.0
F	4.0±0.5*
8	3.8±0.5*
7	3.7±0.5*
5	3.5±0.5*
4	3.4±0.5*
2	3.2±0.5*
T	3.0±0.5*

* For product with dt=Ø0.8, tolerance ±0.3

Digits 14		
Code	Lead type	Packing
2	2-PIN	Arrange
4	4-PIN	Arrange

Metallized Polypropylene Film Capacitors (DC-link application) PCPW246

ELETRICAL DATA AND ORDERING CODE

V_{Rdc} = 450Vdc at 85℃ (500Vdc at 70℃)

CAP. (uF)	Dimension (mm)			P (mm)	P1 (mm)	dv/dt (V/us)	Ipk (A)	Irms[1] (A)		ESR[2] (mΩ)		TanD[3] (x10^{-4})		Ordering Code
	b	h	l					2P	4P	2P	4P	2P	4P	
4	11	21	31	27.5	-	30	120	4.7	-	12.3	-	85	-	P246L45405JA**
5	13	23	31	27.5	-	30	150	5.6	-	9.9	-	85	-	P246L45505JA**
6	15	25	31	27.5	-	30	180	6.5	-	8.5	-	85	-	P246L45605JA**
7	15	25	31	27.5	-	30	210	6.9	-	7.5	-	85	-	P246L45705JA**
8	15	25	31	27.5	-	30	240	7.4	-	6.6	-	85	-	P246L45805JA**
9	17	27	31	27.5	-	30	270	8.2	-	6.0	-	85	-	P246L45905JA**
10	18	28	31	27.5	-	30	300	8.8	-	5.5	-	85	-	P246L45106JA**
15	21	31	31	27.5	-	30	450	10.8	-	4.3	-	85	-	P246L45156JA**
20	22	37	31	27.5	10.2	30	600	12.9	13.5	3.4	3.1	85	75	P246L45206JA**
20	18	33	42	37.5	-	21	420	10.0	-	6.0	-	160	140	P246Q45206JA**
22	20	35	42	37.5	10.2	21	462	10.2	11.4	5.6	5.1	160	140	P246Q45226JA**
25	20	35	42	37.5	10.2	21	525	10.8	12.0	5.0	4.5	160	140	P246Q45256JA**
30	24	39	42	37.5	10.2	21	630	12.8	14.2	4.2	3.8	160	140	P246Q45306JA**
35	24	39	42	37.5	10.2	21	735	13.6	15.1	3.7	3.4	160	140	P246Q45356JA**
40	28	43	42	37.5	10.2	21	840	15.6	17.3	3.3	3.0	160	140	P246Q45406JA**
45	28	43	42	37.5	10.2	21	945	16.4	18.2	3.0	2.7	160	140	P246Q45456JA**
50	30	45	42	37.5	20.3	21	1050	17.8	19.8	2.7	2.5	160	140	P246Q45506JA**
55	30	45	42	37.5	20.3	21	1155	18.5	20.6	2.5	2.3	160	140	P246Q45556JA**
60	30	51	42	37.5	20.3	21	1260	20.1	22.3	2.3	2.1	160	140	P246Q45606JA**
60	30	45	57	52.5	20.3	14	840	-	19.2	-	3.2	-	250	P246T45606JA**
75	30	45	57	52.5	20.3	14	1050	-	21.2	-	2.6	-	250	P246T45756JA**
100	35	50	57	52.5	20.3	14	1400	-	25.9	-	2.0	-	250	P246T45107JA**
110	35	50	57	52.5	20.3	14	1540	-	27.0	-	1.9	-	250	P246T45117JA**
120	40	53	57	52.5	20.3	14	1680	-	29.6	-	1.8	-	250	P246T45127JA**
130	40	53	57	52.5	20.3	14	1820	-	30.5	-	1.7	-	300	P246T45137JA**
140	45	55	57	52.5	20.3	14	1960	-	32.5	-	1.6	-	300	P246T45147JA**
150	45	55	57	52.5	20.3	14	2100	-	33.1	-	1.6	-	300	P246T45157JA**

[1] Maximum RMS current at +70℃, 10KHz, ΔT=+15℃ (Hot spot temp. = T_{amb} + ΔT = 70℃ + 15℃ = 85℃)

[2] Typical ESR values at 10KHz, 20℃
(Maximum ESR value : less than 2.5 x typical ESR value)

[3] Maximum TanD value at 10KHz, 20℃

Capacitance	TanD (x 10^{-4}) at 1KHz
P=27.5mm	≤ 10
C ≤ 30uF	≤ 15
C > 30uF	≤ 20
C ≥ 100uF	≤ 30

Metallized Polypropylene Film Capacitors (DC-link application) PCPW246

V_{Rdc} = 700Vdc at 85℃ (800Vdc at 70℃)

CAP. (uF)	Dimension (mm)			P (mm)	P1 (mm)	dv/dt (V/us)	Ipk (A)	Irms[1] (A)		ESR[2] (mΩ)		TanD[3] (x10^{-4})		Ordering Code
	b	h	l					2P	4P	2P	4P	2P	4P	
2	11	21	31	27.5	-	40	80	3.7	-	19.9	-	65	-	P246L70205JA**
3	13	23	31	27.5	-	40	120	4.9	-	13.3	-	65	-	P246L70305JA**
4	15	25	31	27.5	-	40	160	6.0	-	9.9	-	65	-	P246L70405JA**
5	17	27	31	27.5	-	40	200	7.0	-	8.3	-	65	-	P246L70505JA**
6	18	28	31	27.5	-	40	240	7.9	-	6.9	-	65	-	P246L70605JA**
7	19	29	31	27.5	-	40	280	8.7	-	5.9	-	65	-	P246L70705JA**
8	21	31	31	27.5	-	40	320	10.1	-	4.9	-	65	-	P246L70805JA**
9	21	31	31	27.5		40	360	10.4	-	4.6	-	65	-	P246L70905JA**
10	22	37	31	27.5	10.2	40	100	11.8	12.4	4.1	3.7	65	55	P246L70106JA**
10	18	33	42	37.5	-	22	220	9.2	-	7.1	-	110	-	P246Q70106JA**
12	20	35	42	37.5	10.2	22	264	10.0	11.1	5.8	5.3	110	95	P246Q70126JA**
15	24	39	42	37.5	10.2	22	330	12.0	13.3	4.8	4.4	110	95	P246Q70156JA**
20	24	39	42	37.5	10.2	22	440	13.8	15.4	3.6	3.3	110	95	P246Q70206JA**
22	28	43	42	37.5	10.2	22	484	15.4	17.1	3.3	3.0	110	95	P246Q70226JA**
25	28	43	42	37.5	10.2	22	550	16.4	18.3	2.9	2.7	110	95	P246Q70256JA**
30	30	45	42	37.5	20.3	22	660	18.3	20.3	2.5	2.3	110	95	P246Q70306JA**
35	30	51	42	37.5	20.3	22	726	20.5	22.8	2.2	2.0	110	95	P246Q70356JA**
40	30	45	57	52.5	20.3	15	600	-	17.0	-	4.1	-	220	P246T70406JA**
50	35	50	57	52.5	20.3	15	750	-	20.0	-	3.4	-	220	P246T70506JA**
60	35	50	57	52.5	20.3	15	925	-	21.5	-	3.0	-	220	P246T70606JA**
70	40	53	57	52.5	20.3	15	1050	-	23.9	-	2.7	-	250	P246T70706JA**
80	45	55	57	52.5	20.3	15	1200	-	26.3	-	2.4	-	250	P246T70806JA**
90	45	65	57	52.5	20.3	15	1350	-	29.0	-	2.2	-	250	P246T70906JA**
100	45	65	57	52.5	20.3	15	1500	-	30.9	-	2.0	-	250	P246T70107JA**

[1] Maximum RMS current at +70℃, 10KHz, ΔT=+15℃ (Hot spot temp. = T_{amb} + ΔT = 70℃ + 15℃ = 85℃)

[2] Typical ESR values at 10KHz, 20℃
(Maximum ESR value : less than 2.5 x typical ESR value)

[3] Maximum TanD value at 10KHz, 20℃

Capacitance	TanD (x 10^{-4}) at 1KHz
P=27.5mm	≤ 10
C ≤ 30uF	≤ 15
C > 30uF	≤ 20
C ≥ 100uF	≤ 30

Metallized Polypropylene Film Capacitors (DC-link application) PCPW246

V_{Rdc} = 900Vdc at 85℃ (1100Vdc at 70℃)

CAP. (uF)	Dimension (mm)			P (mm)	P1 (mm)	dv/dt (V/us)	Ipk (A)	Irms[1] (A)		ESR[2] (mΩ)		TanD[3] (x10^{-4})		Ordering Code
	b	h	l					2P	4P	2P	4P	2P	4P	
1	11	21	31	27.5	-	75	75	3.1	-	28.6	-	50	-	P246L90105JA**
2	13	23	31	27.5	-	75	150	4.7	-	14.5	-	50	-	P246L90205JA**
3	15	25	31	27.5	-	75	225	6.1	-	9.8	-	50	-	P246L90305JA**
4	18	28	31	27.5	-	75	300	7.6	-	7.4	-	50	-	P246L90405JA**
5	19	29	31	27.5	-	75	375	8.7	-	6.0	-	50	-	P246L90505JA**
6	21	31	31	27.5	-	75	450	9.9	-	5.1	-	50	-	P246L90605JA**
7	22	37	31	27.5	10.2	75	525	11.4	12.0	4.4	4.0	50	45	P246L90705JA**
8	20	35	42	37.5	10.2	54	432	10.6	-	5.8	-	90	-	P246Q90805JA**
10	24	39	42	37.5	10.2	54	540	11.5	12.8	5.2	4.7	90	80	P246Q90106JA**
12	24	39	42	37.5	10.2	54	648	12.1	13.5	4.7	4.2	90	80	P246Q90126JA**
15	28	43	42	37.5	10.2	54	810	14.1	15.7	4.0	3.6	90	80	P246Q90156JA**
18	30	45	42	37.5	20.3	54	972	15.6	17.3	3.5	3.2	90	80	P246Q90186JA**
20	30	45	42	37.5	20.3	54	1080	16.4	18.2	3.3	3.0	90	80	P246Q90206JA**
22	30	51	42	37.5	20.3	54	1188	17.1	19.0	3.2	2.9	90	80	P246Q90226JA**
25	30	45	57	52.5	20.3	35	875	-	16.9	-	4.1	-	140	P246T90256JA**
30	35	50	57	52.5	20.3	35	1050	-	19.9	-	3.5	-	140	P246T90306JA**
35	35	50	57	52.5	20.3	35	1225	-	21.1	-	3.1	-	140	P246T90356JA**
40	40	53	57	52.5	20.3	35	1400	-	23.5	-	2.8	-	140	P246T90406JA**
45	40	53	57	52.5	20.3	35	1575	-	24.5	-	2.5	-	160	P246T90456JA**
50	45	55	57	52.5	20.3	35	1750	-	26.9	-	2.3	-	160	P246T90506JA**
55	45	65	57	52.5	20.3	35	1925	-	29.6	-	2.1	-	160	P246T90556JA**
60	45	65	57	52.5	20.3	35	2100	-	30.8	-	2.0	-	160	P246T90606JA**

[1] Maximum RMS current at +70℃, 10KHz, ΔT=+15℃ (Hot spot temp. = T_{amb} + ΔT = 70℃ + 15℃ = 85℃)

[2] Typical ESR values at 10KHz, 20℃
(Maximum ESR value : less than 2.5 x typical ESR value)

[3] Maximum TanD value at 10KHz, 20℃

Capacitance	TanD (x 10^{-4}) at 1KHz
P=27.5mm	≤ 10
C ≤ 30uF	≤ 15
C > 30uF	≤ 20
C ≥ 100uF	≤ 30

Metallized Polypropylene Film Capacitors (DC-link application) PCPW246

V_{Rdc} = 1100Vdc at 85℃ (1300Vdc at 70℃)

CAP. (uF)	Dimension (mm)			P (mm)	P1 (mm)	dv/dt (V/us)	Ipk (A)	Irms[1] (A)		ESR[2] (mΩ)		TanD[3] (x10^{-4})		Ordering Code
	b	h	l					2P	4P	2P	4P	2P	4P	
1	11	21	31	27.5	-	100	100	3.8	-	19.1	-	40	-	P246L11105JA**
1.5	13	23	31	27.5	-	100	150	4.9	-	13.2	-	40	-	P246L11155JA**
2	15	25	31	27.5	-	100	200	6.0	-	10.0	-	40	-	P246L11205JA**
3	18	28	31	27.5	-	100	300	7.6	-	7.4	-	40	-	P246L11305JA**
3.3	19	29	31	27.5	-	100	330	8.0	-	7.0	-	40	-	P246L11335JA**
4	21	31	31	27.5	-	100	400	9.1	-	6.0	-	40	-	P246L11405JA**
5	22	37	31	27.5	10.2-	100	500	10.3	10.8	5.4	4.9	40	35	P246L11505JA**
5	18	33	42	37.5	-	73	365	9.2	-	7.0	-	70	-	P246Q11505JA**
6	20	35	42	37.5	10.2	73	438	9.4	10.5	6.6	6.0	70	60	P246Q11605JA**
8	24	39	42	37.5	10.2	73	584	11.4	12.6	5.3	4.8	70	60	P246Q11805JA**
10	28	43	42	37.5	10.2	73	730	13.6	15.1	4.4	4.0	70	60	P246Q11106JA**
12	28	43	42	37.5	10.2	73	876	14.5	16.1	3.9	3.5	70	60	P246Q11126JA**
15	30	51	42	37.5	20.3	73	1095	17.2	19.1	3.2	2.9	70	60	P246Q11156JA**
15	30	45	57	52.5	20.3	50	750	-	14.1	-	5.9	-	120	P246T11156JA**
20	30	45	57	52.5	20.3	50	1000	-	16.0	-	4.6	-	120	P246T11206JA**
25	35	50	57	52.5	20.3	50	1250	-	18.9	-	3.8	-	120	P246T11256JA**
30	40	53	57	52.5	20.3	50	1500	-	21.4	-	3.4	-	140	P246T11306JA**
35	45	55	57	52.5	20.3	50	1750	-	23.8	-	3.0	-	140	P246T11356JA**
40	45	65	57	52.5	20.3	50	2000	-	26.5	-	2.7	-	140	P246T11406JA**
45	45	65	57	52.5	20.3	50	2250	-	27.8	-	2.5	-	140	P246T11456JA**

[1] Maximum RMS current at +70℃, 10KHz, ΔT=+15℃ (Hot spot temp. = T_{amb} + ΔT = 70℃ + 15℃ = 85℃)

[2] Typical ESR values at 10KHz, 20℃
(Maximum ESR value : less than 2.5 x typical ESR value)

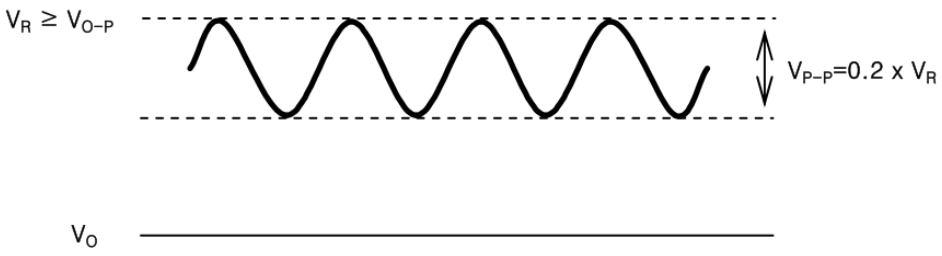
[3] Maximum TanD value at 10KHz, 20℃

Capacitance	TanD (x 10^{-4}) at 1KHz
P=27.5mm	≤ 10
C ≤ 30uF	≤ 15
C > 30uF	≤ 20
C ≥ 100uF	≤ 30

Metallized Polypropylene Film Capacitors (DC-link application) PCPW246

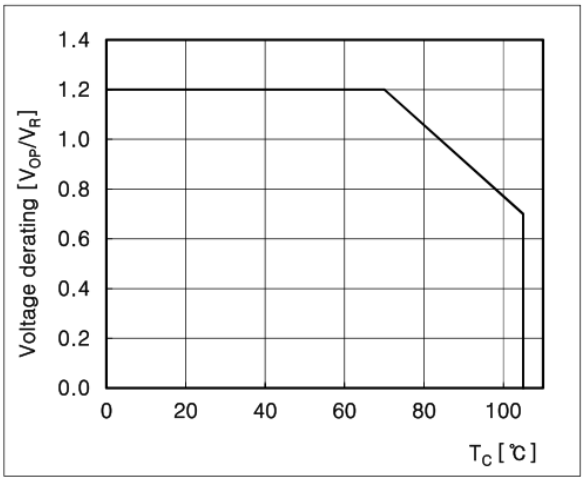
PERMISSIBLE VOLTAGE

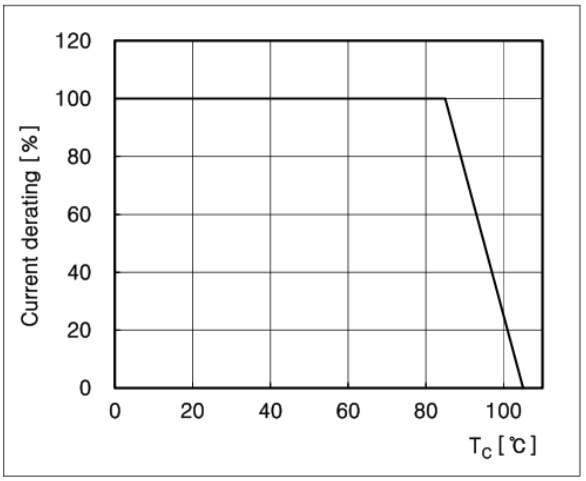
- These capacitors are designed only for DC voltage. So should not be used for AC line.
- Use the peak voltage(V_{O-P}) within the rated voltage.
- Use the peak to peak ripple voltage(V_{P-P}) within 0.2 x V_R



Non reversing recurrent wave form

DC VOLTAGE & PEAK CURRENT & RMS CURRENT DERATING



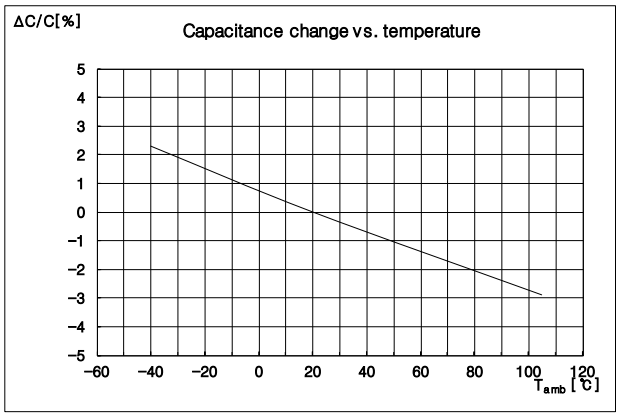


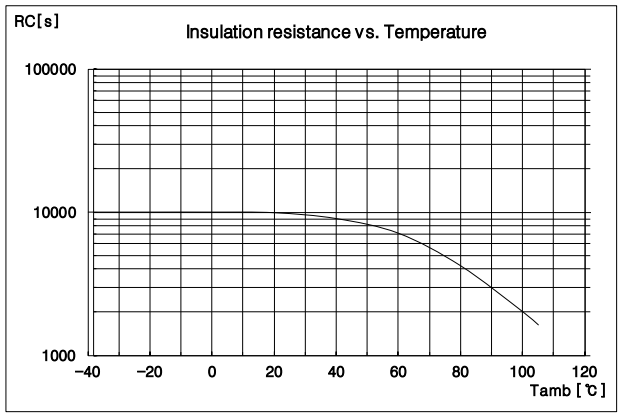
MAXIMUM REPETITIVE PEAK VOLTAGE

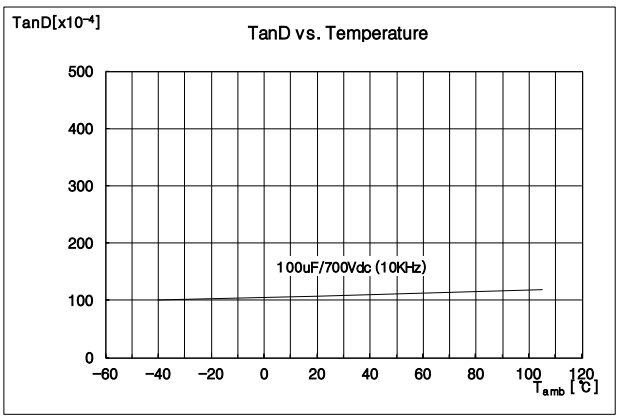
Repetitive surge voltage	Maximum duration / day
1.1 x V_{Rdc}	30% of on load duration
1.15 x V_{Rdc}	30min
1.2 x V_{Rdc}	5min
1.3 x V_{Rdc}	1min
1.5 x V_{Rdc}	110ms

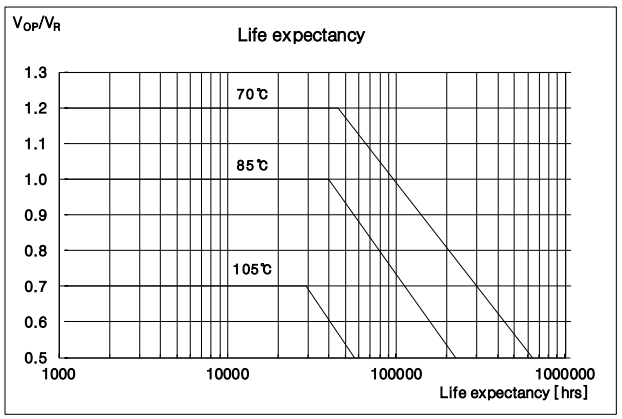
Metallized Polypropylene Film Capacitors (DC-link application) PCPW246

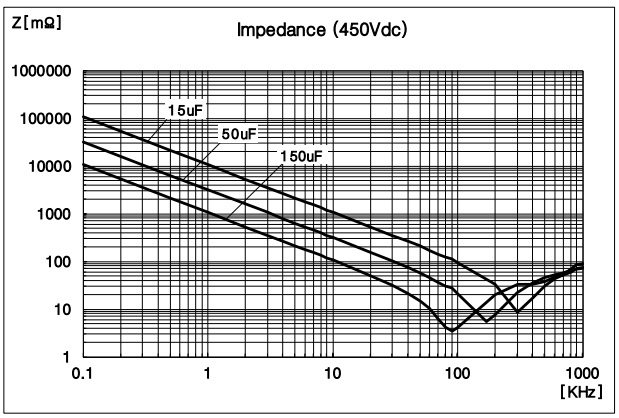
CHARACTERISTICS

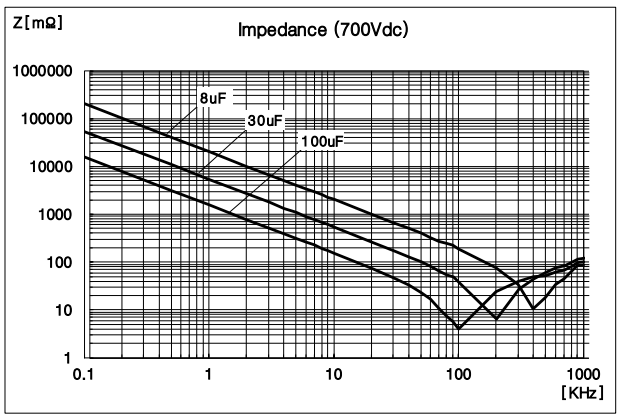


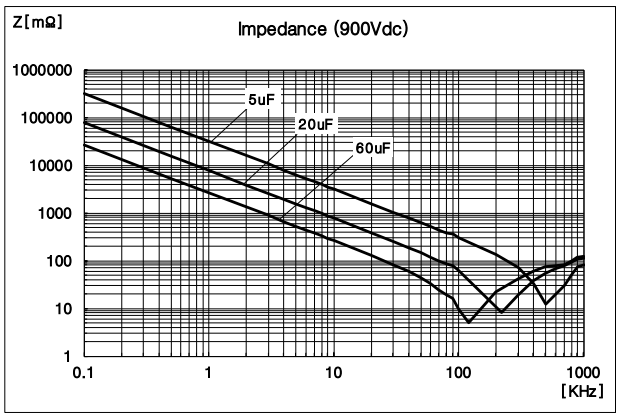


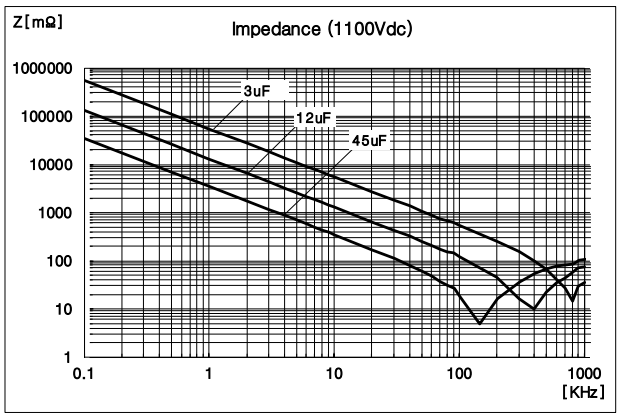






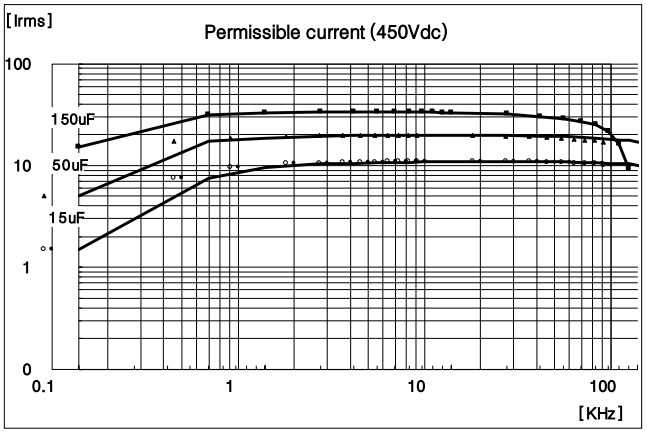


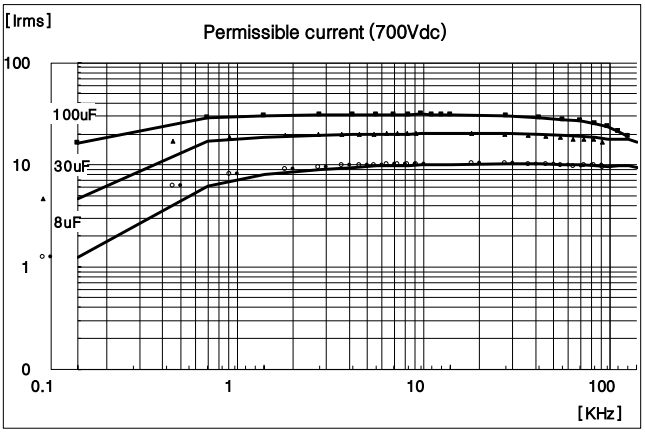


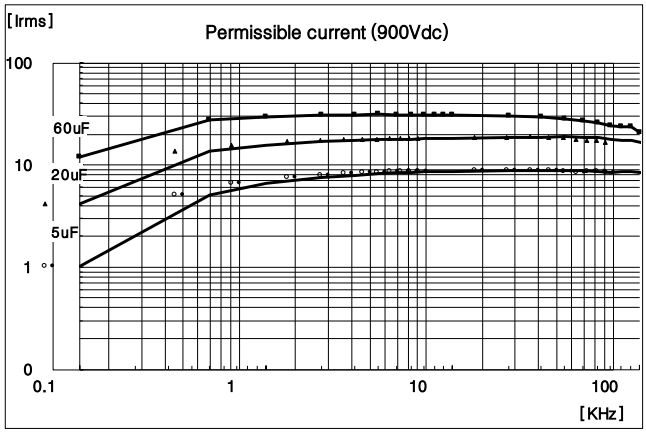


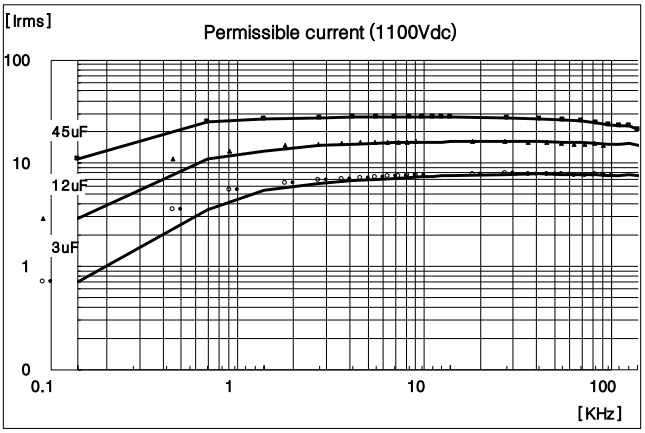
Metallized Polypropylene Film Capacitors (DC-link application) PCPW246

PERMISSIBLE CURRENT









Metallized Polypropylene Film Capacitors PCPW246
(DC-link application)

PRODUCT MARKING

Capacitors are marked on the top with the following information :

. Rated capacitance code in accordance with IEC 60062
. Tolerance on rated capacitance : J : ± 5 % K : ± 10 %
. Rated (DC) Voltage (450 V)
. Manufacturer's type designation (PCPW 246)
. Code for dielectric material (MKP)
. Manufacturer's name (PILKOR)
. Year and week code (WK1720)
. Marking color : white

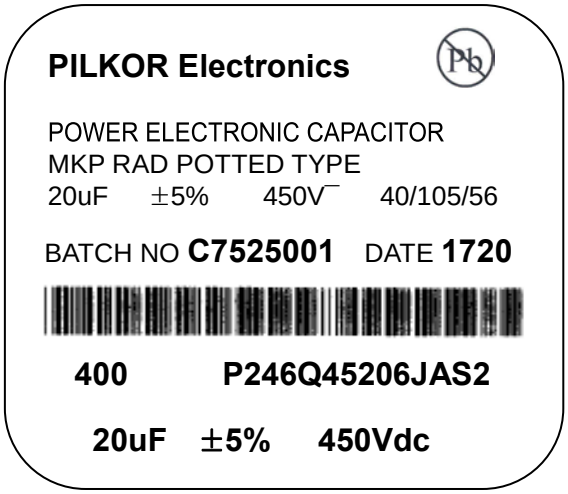
Example of marking

20u	J	450V	PILKOR
PCPW 246		MKP	WK1720

Marking on the top

PACKAGE MARKING

The package containing the capacitors is marked as shown.



LINE MARKING EXPLANATION

1. Manufacturer`s name
2. Sub-family
3. Pb-free marking (JEDEC-STD-97)
4. Type description
5. Capacitance value, tolerance, Voltage and Climatic category(IEC)
6. Batch no. & production period (year and week code)
7. Quantity and Product code (13NC)
8. Capacitance, tolerance and voltage

ARRANGE PACKING QUANTITY INFORMATION

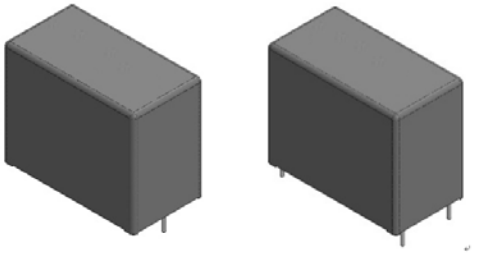
Dimension (mm) b x h x l	SPQ	PQ
11.0 x 21.0 x 31.0	100	500
13.0 x 23.0 x 31.0	100	500
15.0 x 25.0 x 31.0	120	600
17.0 x 27.0 x 31.0	105	525
18.0 x 28.0 x 31.0	100	500
19.0 x 29.0 x 31.0	90	450
21.0 x 31.0 x 31.0	60	240
22.0 x 37.0 x 31.0	60	240
18.0 x 33.0 x 42.0	100	400

Dimension (mm) b x h x l	SPQ	PQ
20.0 x 35.0 x 42.0	90	360
24.0 x 39.0 x 42.0	75	300
28.0 x 43.0 x 42.0	65	195
30.0 x 45.0 x 42.0	60	180
30.0 x 51.0 x 42.0	60	180
30.0 x 45.0 x 57.0	40	120
35.0 x 50.0 x 57.0	35	105
40.0 x 53.0 x 57.0	30	90
45.0 x 55.0 x 57.0	30	60
45.0 x 65.0 x 57.0	30	60

Metallized Polypropylene Film Capacitors (AC filtering) PCPW 255

CONSTRUCTION

· Dielectric	:	Metallized Polypropylene film with segmented pattern
· Case	:	PBT (UL94 V-0)
· Filling	:	Epoxy resin (UL94 V-0)
· Terminals	:	Tinned copper wire (2-pin / 4-pin)



FEATURE

. Supplied loose in box and arrange packing
. Small dimensions
. For PCB mounting
. Potted in a flame retardant case
. Consist of a low-inductive wound cell of Metallized(PP) film

APPLICATION

. Output AC filtering for power converters UPS , solar inverters, motor drives
. Motor applications

QUICK REFERENCE DATA

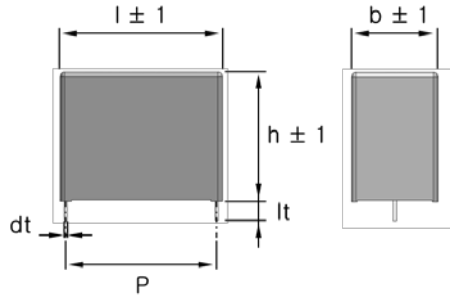
Capacitance range	1μF to 55μF
Capacitance tolerance	±5%, ±10%
Rated voltage (V_{Rac})	250, 310, 350, 400, 450
Climatic category	40/ 85 / 56
Temperature range	-40 ~ +105℃
Reference IEC specification	IEC 61071
Safety approvals	UL810, CSA C22.2 No.190 (Construction only / File No. E348397)
Potting & Encapsulation material	Qualified in accordance with UL94V-0

• 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.

Metallized Polypropylene Film Capacitors (AC filtering) PCPW 255

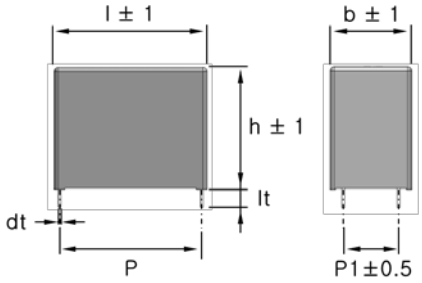
ORDERING INFORMATION

2-PINS



P(mm)	dt (mm)
27.5 (±0.4)	Ø0.8 (±0.08)
32.5 (±0.7)	Ø1.0 (±0.10)
37.5 (±0.7)	Ø1.0 (±0.10)

4-PINS



P(mm)	dt (mm)
37.5 (±0.7)	Ø1.2 (±0.12)
52.5 (±0.7)	Ø1.2 (±0.12)

1	2	3	4	5	6	7	8	9	10	11	12	13	14
P	**2**	**5**	**5**	**Q**	**3**	**1**	**1**	**5**	**6**	**J**	**A**	**S**	**2**

Digits 1~4	
Code	Series name
P255	PCPW255

Digits 5	
Code	Pitch
L	27.5 mm
N	32.5 mm
Q	37.5 mm
T	52.5 mm

Digits 6~7	
Code	Voltage
25	250Vac
31	310Vac
35	350Vac
40	400Vac
45	450Vac

Digits 8~10	
Code	Capacitance
105	1uF
106	10uF
107	100uF

Digits 11	
Code	Cap. tolerance
J	5%
K	10%

Digits 12	
Code	Revision
A	Standard
M	Automotive
L	Low profile

Digits 13	
Code	Lead length
L	25.0±1.0
S	5.0±1.0
F	4.0±0.5
8	3.8±0.5(0.3)*
7	3.7±0.5(0.3)*
5	3.5±0.5(0.3)*
4	3.4±0.5(0.3)*
2	3.2±0.5(0.3)*
T	3.0±0.5(0.3)*

* dt(mm) = Ø0.8, ±0.3

Digits 14		
Code	Lead type	Packing
2	2-PIN	Arrange
4	4-PIN	Arrange

Metallized Polypropylene Film Capacitors PCPW 255
(AC filtering)

ELETRICAL DATA AND ORDERING CODE

V_{Rac} = 250Vac **V_{Rdc} = 500Vdc**

Cap (μF)	b x h x l (mm)	P1±0.5 (mm) 4-Pin	dv/dt (V/us)	Ipk (A)	Ordering Code
Pitch = 27.5 ± 0.4 mm					
2.5	11.0 x 21.0 x 31.0	-	25	62	P255L25255KA**
3.6	13.0 x 23.0 x 31.0		25	90	P255L25365KA**
5.0	15.0 x 25.0 x 31.0	-	25	125	P255L25505KA**
7.0	18.0 x 28.0 x 31.0	-	25	175	P255L25705KA**
10.0	21.0 x 31.0 x 31.0	-	25	250	P255L25106KA**
Pitch = 37.5 ± 0.7 mm					
12	18.0 X 33.0 X 42.0	-	15	180	P255Q25126KA**
14	20.0 X 35.0 X 42.0	10.2	15	210	P255Q25146KA**
19	24.0 X 39.0 X 42.0	10.2	15	285	P255Q25196KA**
25	28.0 X 43.0 X 42.0	10.2	15	375	P255Q25256KA**
28	30.0 X 45.0 X 42.0	20.3	15	420	P255Q25286KA**
Pitch = 52.5 ± 0.7 mm					
40	30.0 X 45.0 X 57.0	20.3	10	400	P255T25406KA**
55	35.0 X 50.0 X 57.0	20.3	10	550	P255T25556KA**

V_{Rac} = 310Vac **V_{Rdc} = 550Vdc**

Cap (μF)	b x h x l (mm)	P1±0.5 (mm) 4-Pin	dv/dt (V/us)	Ipk (A)	Ordering Code
Pitch = 27.5 ± 0.4 mm					
2.0	11.0 x 21.0 x 31.0	-	30	60	P255L31205KA**
2.8	13.0 x 23.0 x 31.0	-	30	84	P255L31285KA**
3.5	15.0 x 25.0 x 31.0	-	30	105	P255L31355KA**
5.0	18.0 x 28.0 x 31.0	-	30	150	P255L31505KA**
7.5	21.0 x 31.0 x 31.0	-	30	225	P255L31755KA**
Pitch = 37.5 ± 0.7 mm					
9	18.0 X 33.0 X 42.0	-	20	180	P255Q31905KA**
11	20.0 X 35.0 X 42.0	10.2	20	220	P255Q31116KA**
15	24.0 X 39.0 X 42.0	10.2	20	300	P255Q31156KA**
20	28.0 X 43.0 X 42.0	10.2	20	400	P255Q31206KA**
22	30.0 X 45.0 X 42.0	20.3	20	440	P255Q31226KA**
Pitch = 52.5 ± 0.7 mm					
30	30.0 X 45.0 X 57.0	20.3	14	420	P255T31306KA**
45	35.0 X 50.0 X 57.0	20.3	14	630	P255T31456KA**

Metallized Polypropylene Film Capacitors PCPW 255
(AC filtering)

V_{Rac} = 350Vac **V_{Rdc} = 630Vdc**

Cap (μF)	b x h x l (mm)	P1±0.5 (mm) 4-Pin	dv/dt (V/us)	Ipk (A)	Ordering Code
Pitch = 27.5 ± 0.4 mm					
1.5	11.0 x 19.0 x 31.0	-	35	52	P255L35155KA**
2.2	13.0 x 23.0 x 31.0	-	35	77	P255L35225KA**
3.0	15.0 x 25.0 x 31.0	-	35	105	P255L35305KA**
4.0	18.0 x 28.0 x 31.0	-	35	140	P255L35405KA**
5.0	19.0 x 30.0 x 31.0	-	35	175	P255L35505KA**
6.0	21.0 x 31.0 x 31.0	-	35	210	P255L35605KA**
Pitch = 37.5 ± 0.7 mm					
8.0	18.0 X 33.0 X 42.0	-	25	200	P255Q35805KA**
9.5	20.0 X 35.0 X 42.0	10.2	25	237	P255Q35955KA**
13	24.0 X 39.0 X 42.0	10.2	25	325	P255Q35136KA**
17	28.0 X 43.0 X 42.0	10.2	25	425	P255Q35176KA**
20	30.0 X 45.0 X 42.0	20.3	25	500	P255Q35206KA**
Pitch = 52.5 ± 0.7 mm					
24	30.0 X 45.0 X 57.0	20.3	15	360	P255T35246KA**
35	35.0 X 50.0 X 57.0	20.3	15	525	P255T35356KA**

V_{Rac} = 400Vac **V_{Rdc} = 700Vdc**

Cap (μF)	b x h x l (mm)	P1±0.5 (mm) 4-Pin	dv/dt (V/us)	Ipk (A)	Ordering Code
Pitch = 27.5 ± 0.4 mm					
1.0	11.0 x 19.0 x 31.0	-	45	45	P255L40105KA**
1.5	13.0 x 23.0 x 31.0	-	45	67	P255L40155KA**
2.0	15.0 x 25.0 x 31.0	-	45	90	P255L40205KA**
2.8	18.0 x 28.0 x 31.0	-	45	126	P255L40285KA**
4.0	21.0 x 31.0 x 31.0	-	45	180	P255L40405KA**
Pitch = 32.5 ± 0.7 mm					
1.2	16.0 x 26.0 x 37.0	-	35	42	P255N40125KA**
1.5	16.0 x 26.0 x 37.0	-	35	52	P255N40155KA**
2.0	18.0 x 30.0 x 37.0	-	35	70	P255N40205KA**
2.5	20.0 x 34.0 x 37.0	-	35	87	P255N40255KA**
Pitch = 37.5 ± 0.7 mm					
5.0	18.0 X 33.0 X 42.0	-	30	150	P255Q40505KA**
6.0	20.0 X 35.0 X 42.0	10.2	30	180	P255Q40605KA**
8.5	24.0 X 39.0 X 42.0	10.2	30	255	P255Q40855KA**
10	28.0 X 43.0 X 42.0	10.2	30	300	P255Q40106KA**
11	28.0 X 43.0 X 42.0	10.2	30	330	P255Q40116KA**
13	30.0 X 45.0 X 42.0	20.3	30	390	P255Q40136KA**
Pitch = 52.5 ± 0.7 mm					
18	30.0 X 45.0 X 57.0	20.3	20	360	P255T40186KA**
25	35.0 X 50.0 X 57.0	20.3	20	500	P255T40256KA**

Metallized Polypropylene Film Capacitors (AC filtering) PCPW 255

V_{Rac} = 450Vac V_{Rdc} = 900Vdc

Cap (μF)	b x h x l (mm)	P1±0.5 (mm) 4-Pin	dv/dt (V/us)	Ipk (A)	Ordering Code
Pitch = 32.5 ± 0.7 mm					
1.2	16.0 x 26.0 x 37.0	-	35	42	P255N45125KA**
1.5	16.0 x 26.0 x 37.0	-	35	52	P255N45155KA**
2.0	18.0 x 30.0 x 37.0	-	35	70	P255N45205KA**
2.5	20.0 x 34.0 x 37.0	-	35	87	P255N45255KA**
Pitch = 37.5 ± 0.7 mm					
4.0	24.0 X 39.0 X 42.0	10.2	35	140	P255Q45405KA**
5.0	28.0 X 43.0 X 42.0	10.2	35	175	P255Q45505KA**
6.0	30.0 X 45.0 X 42.0	10.2	35	210	P255Q45605KA**

Metallized Polypropylene Film Capacitors PCPW 255 (AC filtering)

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.

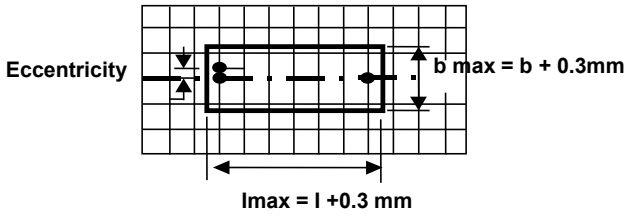
SPECIFIC METHOD OF MOUNTING TO WITHSTAND VIBRATIONAND SHOCK

. 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.

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 ^{o}C with RH maximum 80% without condensation.

RATINGS AND CHARACTERISTICS

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

Metallized Polypropylene Film Capacitors (AC filtering) PCPW 255

CHARACTERISTICS

● Test Voltage

- Cut off current 10mA / rise time 100V/sec.
- Test Voltage (between lead and lead) : 1.6 x V_{Rdc}, 1min.
- Test Voltage (between leads and case) : 2KV_{ac}(50 or 60Hz), 10sec.

● Capacitance

. Capacitance : Within specified tolerance range when sine wave AC is applied at 1kHz ±200Hz and 5V_{rms}

● Dissipation Factor(DF)

. Dissipation factor: When sine wave AC is applied at 1kHz and ≤1 V_{rms}

Pitch	Tangent of loss angle (x 10^{-4})
27.5mm	≤ 10
37.5mm	≤ 13
37.5mm	≤ 15
52.5mm	≤ 20

● Insulation Resistance

. The insulation resistance is measured for 1min.±5sec. at 100V

. Minimum RC (Ω•F) > 10,0000s

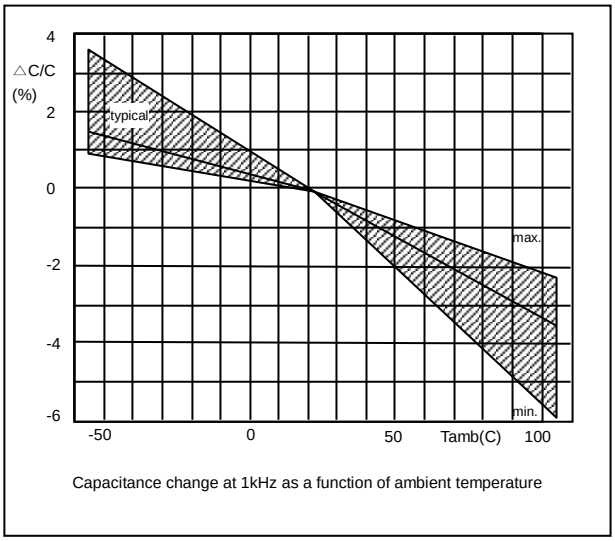
(R = insulation resistance between the terminations[Ω], C= capacitance[Farad])

● Self heating temperature

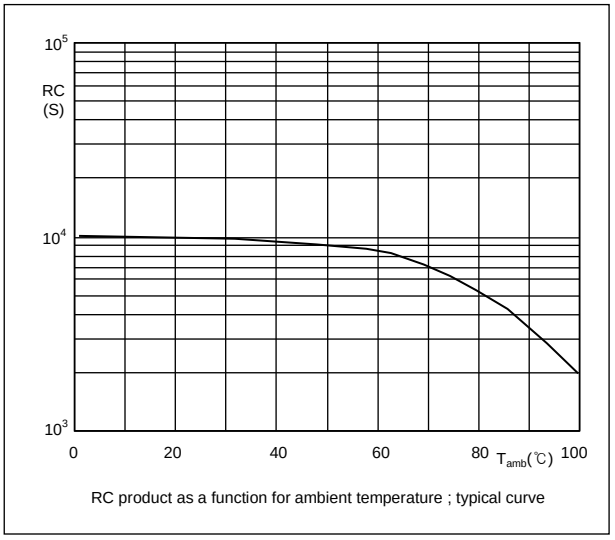
. Maximum allowable rise is 10℃

Metallized Polypropylene Film Capacitors (AC filtering) PCPW 255

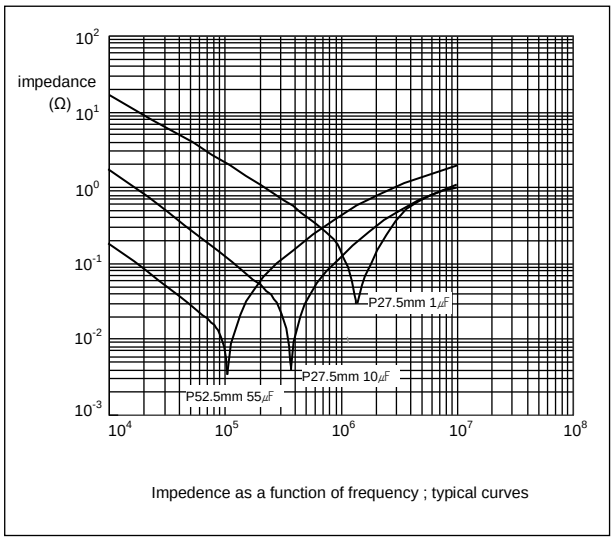
THE GRAPHS OF CHARACTERISTICS



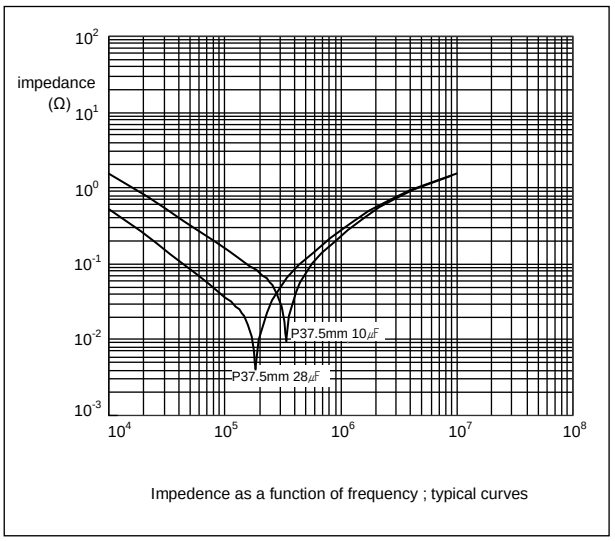
Capacitance change at 1kHz as a function of ambient temperature



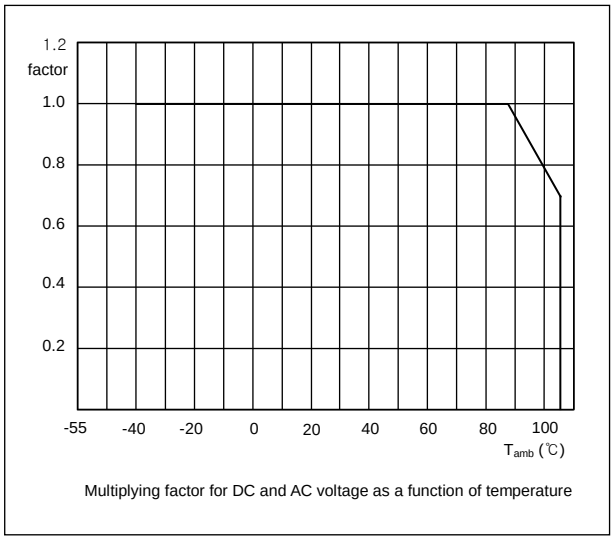
RC product as a function for ambient temperature ; typical curve



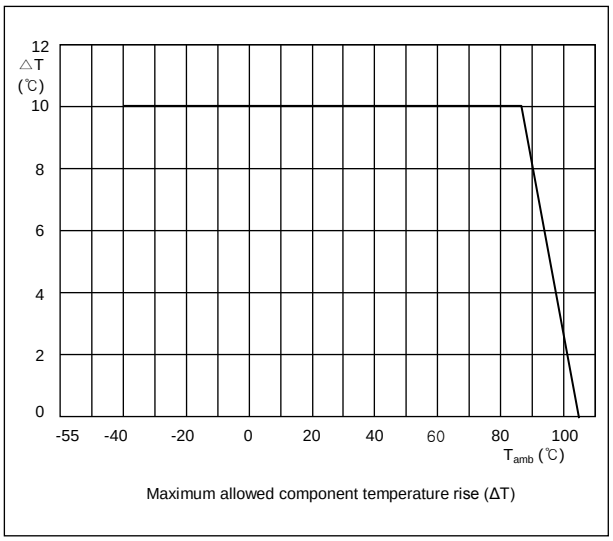
Impedence as a function of frequency ; typical curves



Impedence as a function of frequency ; typical curves



Multiplying factor for DC and AC voltage as a function of temperature



Maximum allowed component temperature rise (ΔT)

Metallized Polypropylene Film Capacitors (AC filtering) PCPW 255

PRODUCT MARKING

Capacitors are marked with the following information :

. Rated capacitance code in accordance with IEC 60062

. Tolerance on rated capacitance : J : ± 5 % K : ± 10 %

. Rated (AC) Voltage (e.g. 250Vac)

. Code for dielectric material (MKP)

. Manufacturer's type designation (PCPW 255 or 255)

. Manufacturer's name (PILKOR)

. Year and week of manufacturing (1607)

. Safety approvals

. Marking color : White or Black

Example of marking

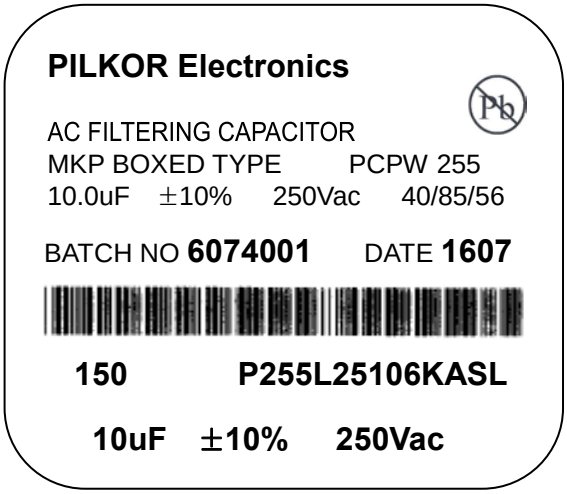
14u K 250Vac
255 MKP
PILKOR 1607

Marking on the top or side

Metallized Polypropylene Film Capacitors PCPW 255
(AC filtering)

PACKAGE MARKING

The package containing the capacitors is marked as shown.



LINE MARKING EXPLANATION

1 Manufacturer`s name

2 Sub – family

3. Pb free marking(JEDEC-STD-97)

4 Type description

5 Capacitance value, tolerance,
Voltage and climatic category (IEC)

6 Batch no. & production period
year and week code

7 Quantity and Product code

8 Capacitance, tolerance and voltage

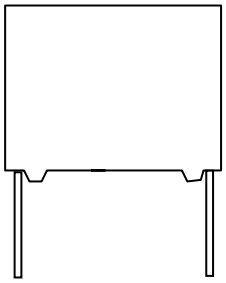
PACKING QUANTITY INFORMATION

SMALLEST PACKING QUANTITIES (SPQ)	Loose in box	Arrange Packing
	lt = 5.0 ± 1.0mm	lt = 5.0 ± 1.0mm
11.0 x 23.0 x 31.0	500	200
13.0 x 23.0 x 31.0	250	100
15.0 x 25.0 x 31.0	250	120
18.0 x 28.0 x 31.0	200	100
19.0 x 30.0 x 31.0	200	65
21.0 x 31.0 x 31.0	150	60
16.0 x 26.0 x 37.0	-	80
18.0 x 30.0 x 37.0	-	88
18.0 x 33.0 x 42.0	-	100
20.0 x 35.0 x 42.0	-	90
24.0 x 39.0 x 42.0	-	75
28.0 x 43.0 x 42.0	-	65
30.0 x 45.0 x 42.0	-	60
30.0 x 45.0 x 57.0	-	40
35.0 x 50.0 x 57.0	-	40

Metallized Polyester film capacitors

PCPW 223

MKT RADIAL POTTED CAPACITORS **Pitch 15.0/20.0/22.5mm**



QUICK REFERENCE DATA

Capacitance range	4.7μF ~ 22μF
Capacitance tolerance	±10%
Rated voltage (DC)	35V, 100V
Climatic category	40/105/21
Temperature range	-40℃ ~ + 105℃
Reference specification	IEC 60384-2 & Tested acc. with AEC-Q200
Potting & Encapsulation material	Qualified in accordance with UL94V-0

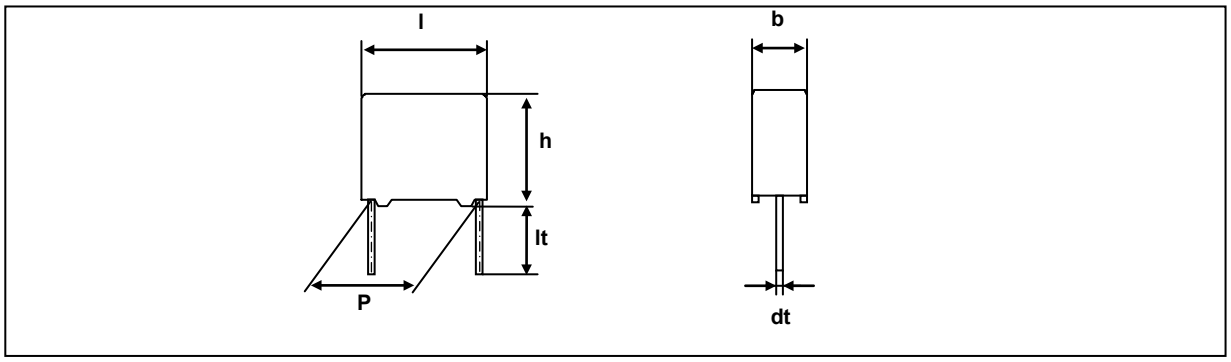
FEATURES	APPLICATIONS
. Low inductive wound cell of metalized(PET) film	. Blocking
. Supplied loose in box	. Bypassing/Coupling/Decoupling
	. RFI for automotive
	. High current applications

• 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.

Metallized Polyester film capacitors

PCPW 223

Ordering Information



PCPW 223 X X X X X X

Type series

Capacitance

Code	Voltage
V	35V
2	100V

Code	Pitch
F	15.0mm
H	20.0mm
J	22.5mm

Available versions				Product (l_{max})		
Code	Packing method	C – tol.	Lead length & tol.	18.0	23.5	26.0
				Pitch (P)		
1	Loose in box	±10%	lt = 5.0±1.0mm	15.0	20.0	22.5
2	Loose in box	±10%	lt = 25.0±2.0mm	15.0	20.0	22.5

Packing Information

Smallest Packing Quantities (SPQ)	Loose in box	Loose in box
	Lt = 5.0±1.0mm	Lt = 25.0±2.0mm
Dimensions	SPQ	SPQ
8.5 x 15.0 x 18.0	1000	1000
11.0 x 18.5 x 18.0	1000	1000
11.0 x 22.5 x 23.5	500	500
12.5 x 23.0 x 26.0	500	500
13.0 x 23.0 x 26.0	500	500

Metallized Polyester film capacitors

PCPW 223

V_{Rdc} = 35 V

Cap. (μF)	b x h x l (mm)	Mass (g)	CATALOGUE NUMBER PCPW 223…… loose in box lt= 25.0 ± 2.0 mm C – tol. ± 10%
Pitch = 15.0 ± 0.4 mm			dt = 0.8 + 0.08 / -0.05 mm
2.2	6.0 x 12.0 x 18.0	1.4	FV2225
3.3	7.0 x 13.5 x 18.0	1.9	FV2335
4.7	8.5 x 15.0 x 18.0	2.6	FV2475
5.6	10.0 x 16.5 x 18.0	3.1	FV2565
6.2	10.0 x 16.5 x 18.0	3.1	FV2625
8.2	11.0 x 18.5 x 18.0	4.1	FV2825
9.4	11.0 x 18.5 x 18.0	4.1	FV2945
Pitch = 20.0 ± 0.4 mm			dt = 0.8 + 0.08 / -0.05 mm
19.0	11.0 x 22.5 x 23.5	7.5	HV2196
Pitch = 22.5 ± 0.4 mm			dt = 0.8 + 0.08 / -0.05 mm
19.0	12.5 x 23.0 x 26.0	9.2	JV2196
22.0	13.0 x 23.0 x 26.0	9.9	JV2226

V_{Rdc} = 100 V

Cap. (μF)	b x h x l (mm)	Mass (g)	CATALOGUE NUMBER PCPW 223…… loose in box lt= 25.0 ± 2.0 mm C – tol. ± 10%
Pitch = 15.0 ± 0.4 mm			dt = 0.8 + 0.08 / -0.05 mm
2.2	6.0 x 12.0 x 18.0	1.4	F22225
3.3	7.0 x 13.5 x 18.0	1.9	F22335
4.7	8.5 x 15.0 x 18.0	2.6	F22475
5.6	10.0 x 16.5 x 18.0	3.1	F22565
6.2	10.0 x 16.5 x 18.0	3.1	F22625
8.2	11.0 x 18.5 x 18.0	4.1	F22825
9.4	11.0 x 18.5 x 18.0	4.1	F22945
Pitch = 22.5 ± 0.4 mm			dt = 0.8 + 0.08 / -0.05 mm
19.0	12.5 x 23.0 x 26.0	9.2	J22196
22.0	13.0 x 23.0 x 26.0	9.9	J22226

Metallized Polyester film capacitors

PCPW 223

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.

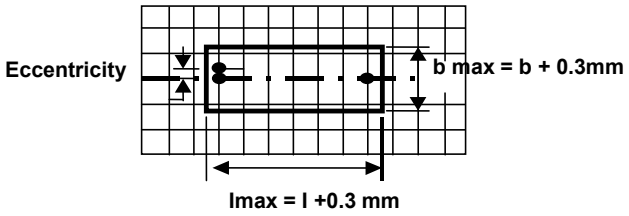
SPECIFIC METHOD OF MOUNTING TO WITHSTAND VIBRATIONAND SHOCK

. 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.

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℃ with RH maximum 80% without condensation.

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 of 50 ±2%.

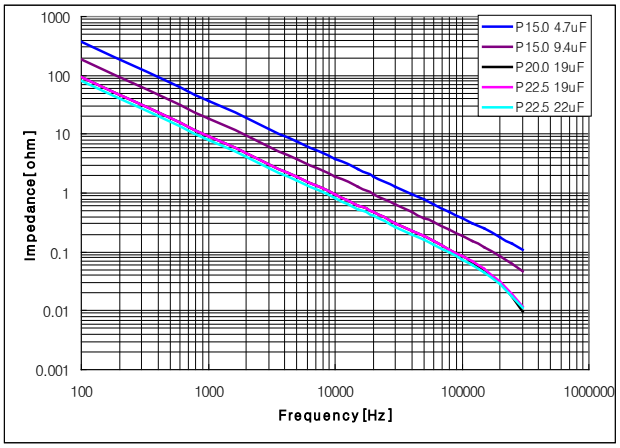
For reference testing a conditioning period shall be applied of 96 ±4 hours by heating the products in a circulating air oven at the rated temperature and a relative humidity not exceeding 20%.

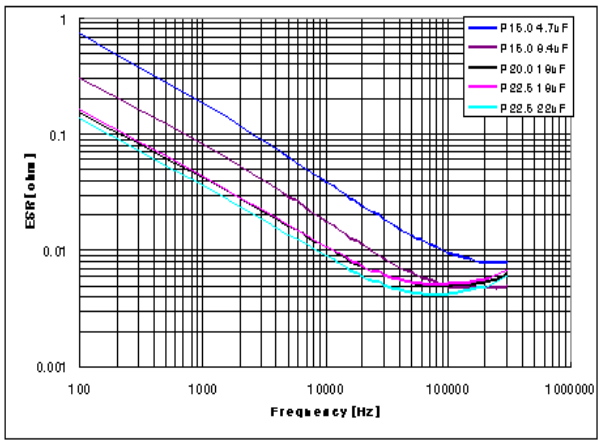
Metallized Polyester film capacitors

PCPW 223

CHARACTERISTICS

● **Impedance & ESR as a function of frequency[Hz]**



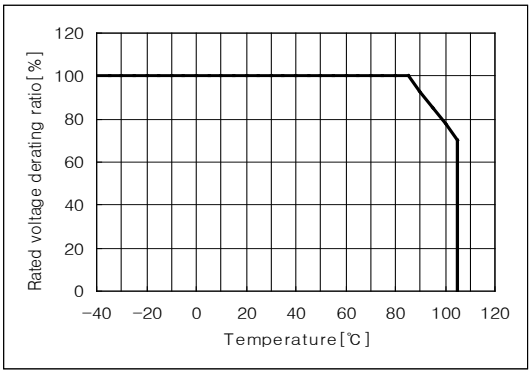


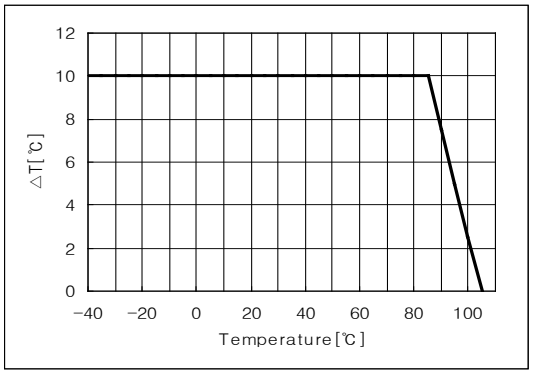
● **Rated Voltage Pulse Load Slope(dV/dt)$_R$**

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

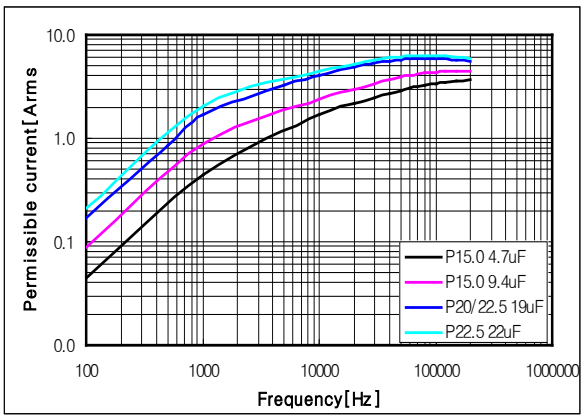
Rated voltage	MAXIMUM RATED VOLTAGE PULSE SLOPE (V/μs)		
	P = 15.0 mm	P = 20.0 mm	P = 22.5mm
35V / 100V	9.2	9.2	3.0

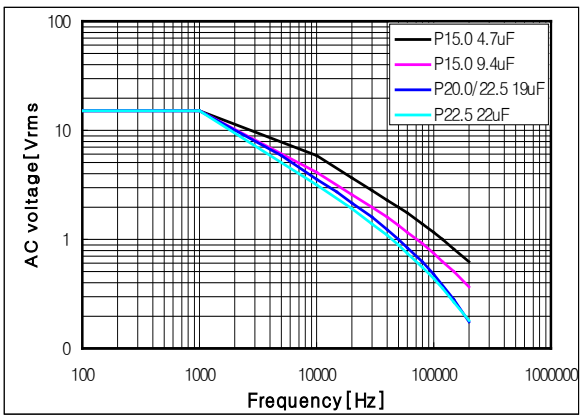
● **Maximum DC voltage & self heating temp. as a function of ambient temperature**





● **Maximum permissible current($T_{amb.}$< 85℃) or Voltage(Vrms) as a function of frequency**





POWER ELECTRONIC CAPACITORS

Metallized Polyester film capacitors

PCPW 223

PRODUCT MARKING

The capacitors are marked with the following information :
. Rated capacitance in code according to IEC 60062 (19u ; 19uF)
. Tolerance on rated capacitance (K : ±10%)
. Rated DC voltage (35V)
. Manufacturer's mark (PILKOR)
. Manufacturer's type designation (PCPW 223 ; 223)
. Code for dielectric material (MKT)
. Date code number (WK.…)
. White or black color

Example of marking

Marking on the top Marking on the side or Marking on the top

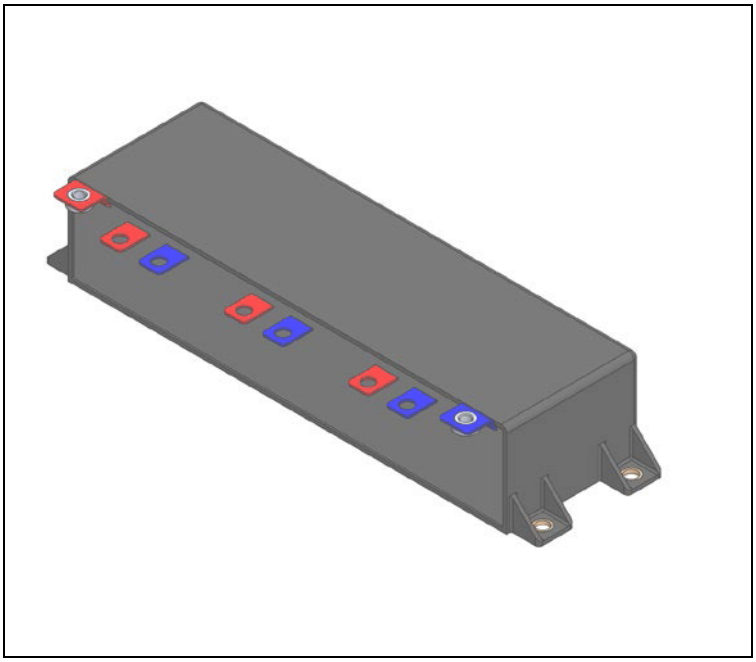
DC-LINK CAPACITORS

DC LINK FILM CAPACITORS (Customized design)

PCHM912 (P912)

▣ CONSTRUCTIONS

· Dielectric	:	Metallized Polypropylene film with segmented pattern
· Case	:	PPS (UL94 V-0)
· Filling	:	Epoxy resin (UL94 V-0)
· Terminals	:	Tinned copper



▣ FEATURE

- Can replace Electrolytic capacitors
- High safety, Self-healing and self-protecting function built in
- Open circuit failure mode by patterned fuse
- Low ESR (High ripple current capability)
- Low ESL

▣ APPLICATIONS

High performance DC LINK / DC filtering applications

- Automotive(HEV, EV) Power inverter / converter
- Renewable energies inverters

▣ GENERAL INFORMATIONS

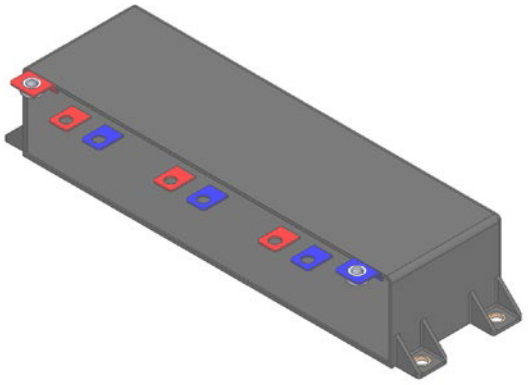
Operating temperature range	-40℃ ~ 105℃ (including self heat generation)
Capacitance range	500uF / 700uF (other values available on request)
Rated voltage (V_{Rdc} at 85℃)	600Vdc
Withstanding voltage between terminals	1.2 x V_{Rdc} applied for 60s
Withstanding voltage between terminals and case	2.5KV_{AC} 50-60Hz applied for 60s
Insulation resistance (IR)	IRxC ≥ 10,000s at 500V_{dc}, 1min
Self inductance (Ls)	< 20nH
Life time expectancy	10,000 hours at V_R , 85℃ FIT : 300 per 10^9 component hours at 0.5xV_R, 40℃

• 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.

DC LINK FILM CAPACITORS (Customized design)

PCHM912 (P912)

▣ OREDRING INFORMATION



< P912A60507JA57 & P912A60707JA79 >

1	2	3	4	5	6	7	8	9	10	11	12	13	14
P	9	1	2	A	6	0	5	0	7	J	A	5	7

Digit 1~4	
Code	Series Name
P912	PCHM912

Digit 5	
Code	Revision
A	Standard
C	Customized

Digit 6~7	
Code	Voltage
45	450Vdc
60	600Vdc

Digit 8~10	
Code	Capacitance
507	500uF
707	700uF

Digit 11	
Code	Capacitance Tolerance
J	± 5 %

Digit 12~14	
Code	No.
A57	057
A79	079
B01	101

▣ ELECTRICAL DATA & ORDERING CODE

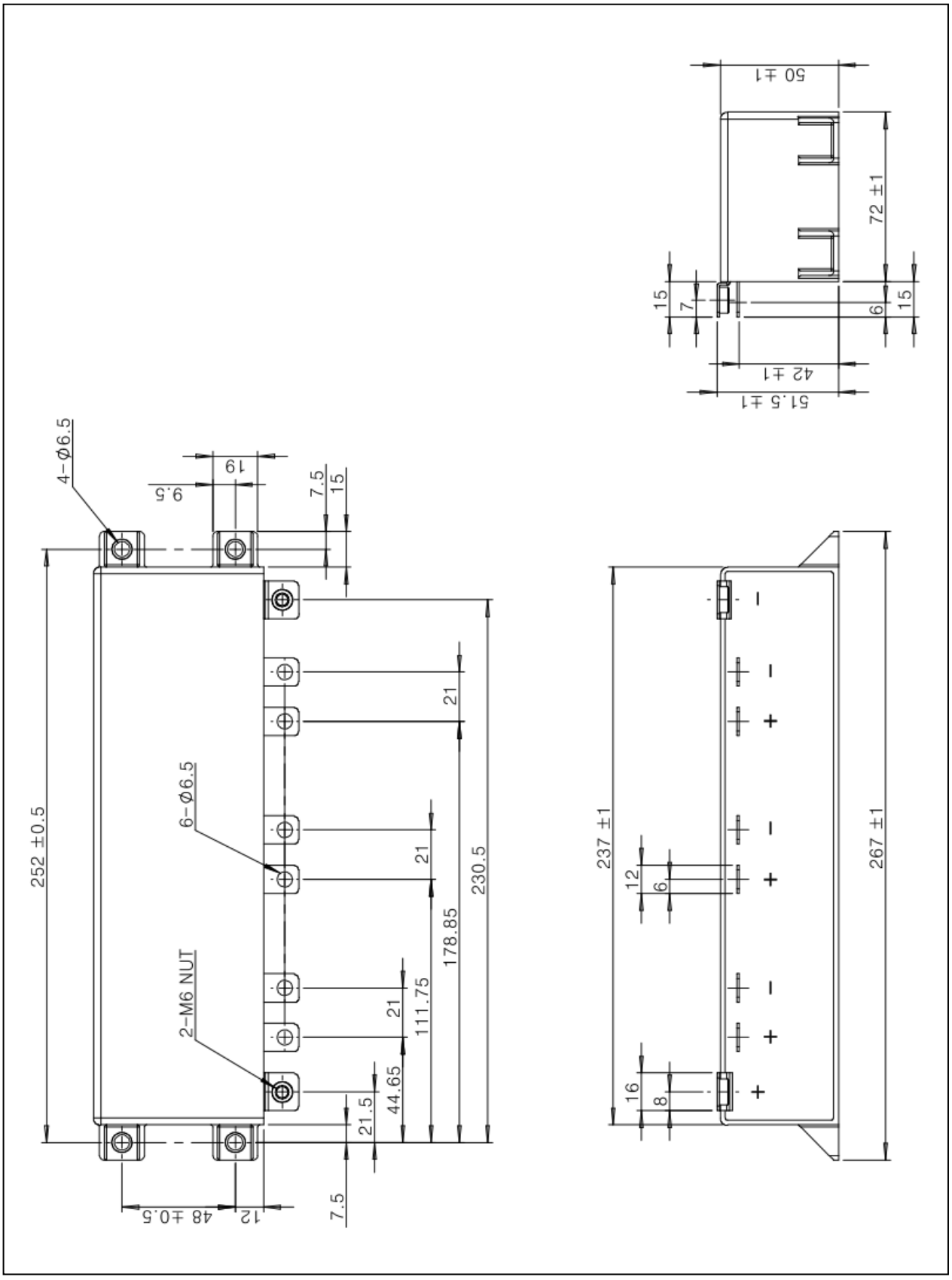
Ordering Code	V_R (V_{dc})	Cap (uF)	L x W x H (mm)	V_S [1] (V_{DC})	Irms [2] (A)	I_{PEAK} [3] (KA)	Rs [4] (mΩ)	Ls [5] (nH)	Mass (kg)
P912A60507JA57	600	500	237 x 72 x 50	720	70	2.5	0.32	15	1.4
P912A60707JA79	600	700	237 x 72 x 50	720	100	3.5	0.32	15	1.5

1) Non recurrent surge voltage or peak operating DC voltage (1.2 x V_R, 60s)
2) Typical rms current for continuous operation at 10KHz (ΔT = 15°C)
3) Maximum repetitive peak current (dV/dt = 5V/us)
4) Typical equivalent series resistance at 10KHz
5) Typical self inductance value at 1MHz

DC LINK FILM CAPACITORS (Customized design)

PCHM912 (P912)

▣ DRAWINGS



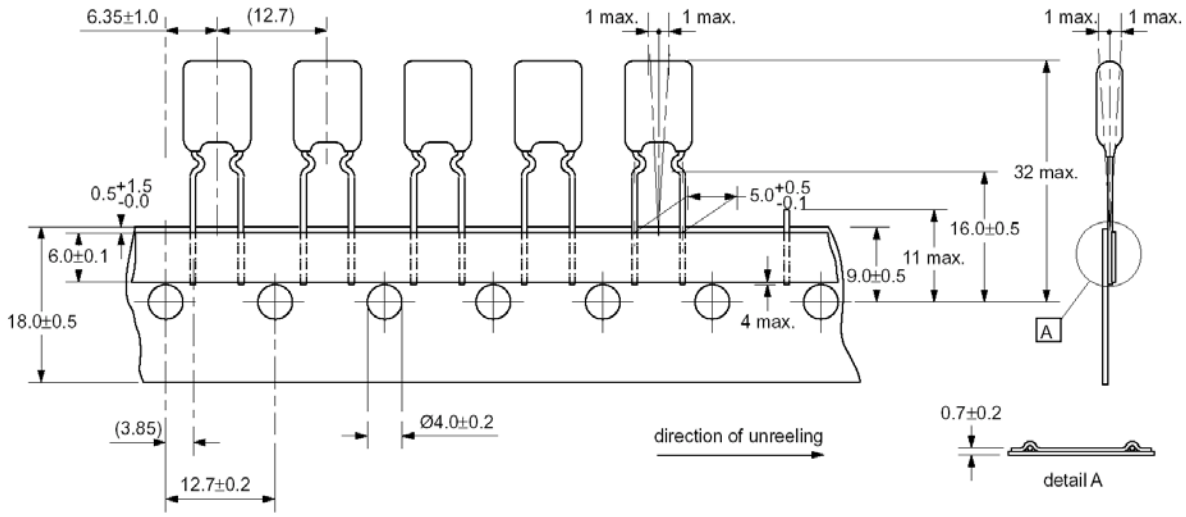
PACKAGING

Taping Specification for Radial film capacitors

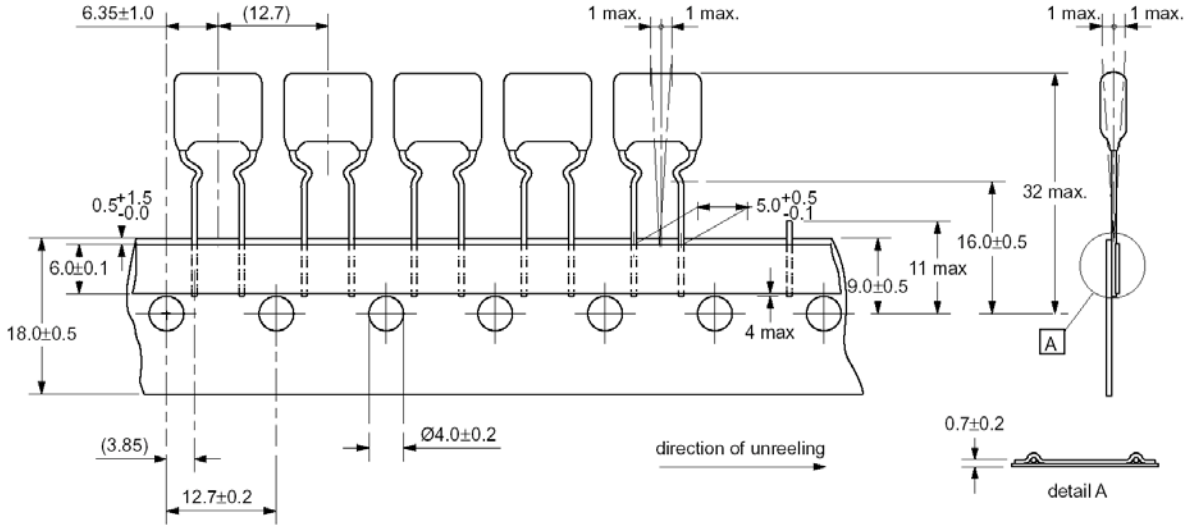
Taping Information

RADIAL DIPPED FILM CAPACITORS (dimension in mm)

pitch = 5.0mm(kinked leads)



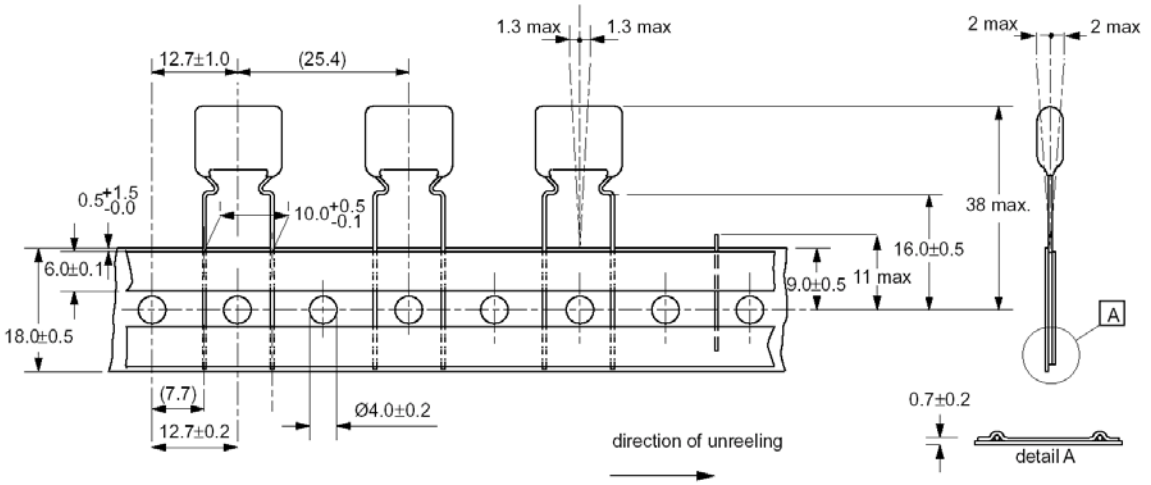
pitch = 5.0mm(bent back leads)



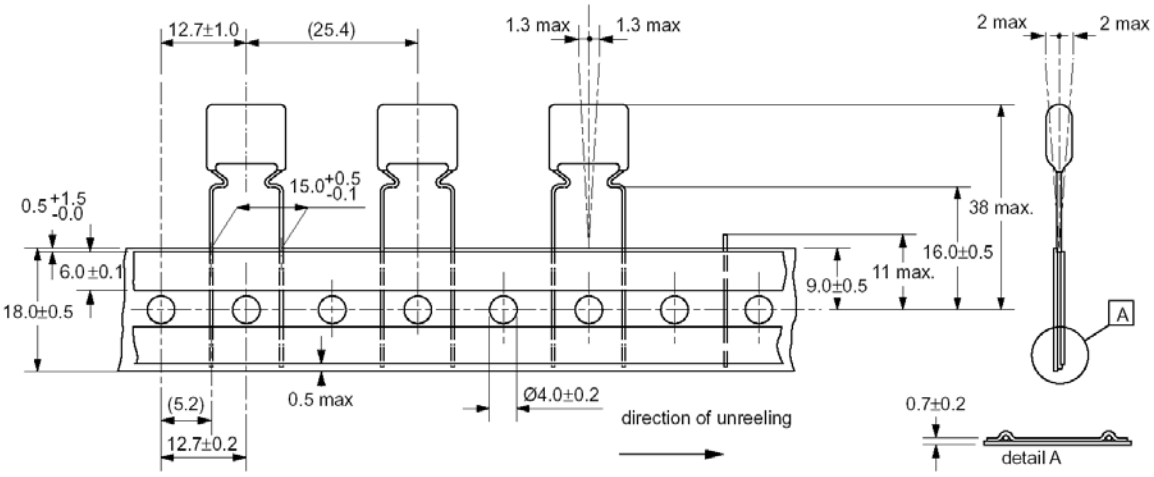
Taping Specification for Radial film capacitors

Taping Information

pitch = 10.0mm(kinked leads)



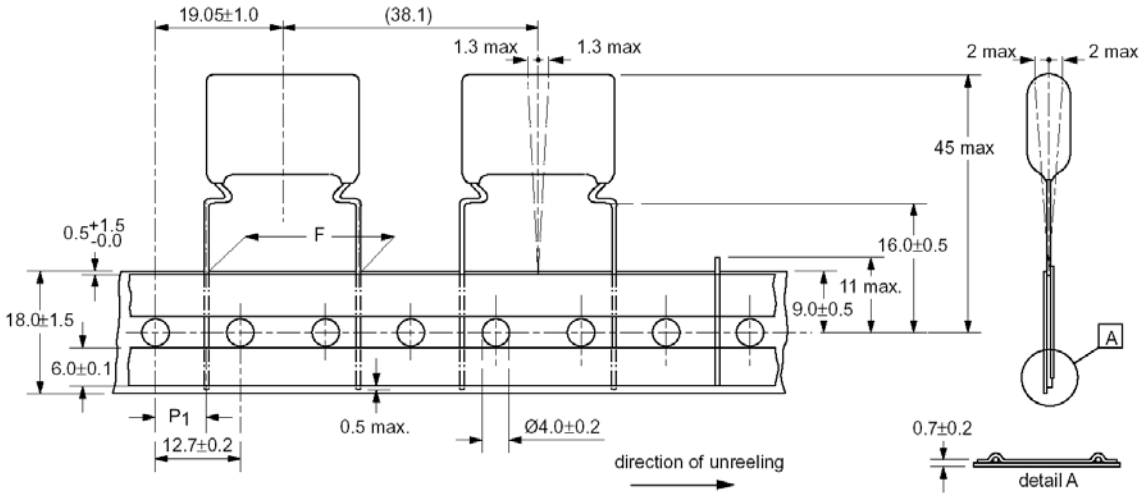
pitch = 15.0mm(kinked leads)



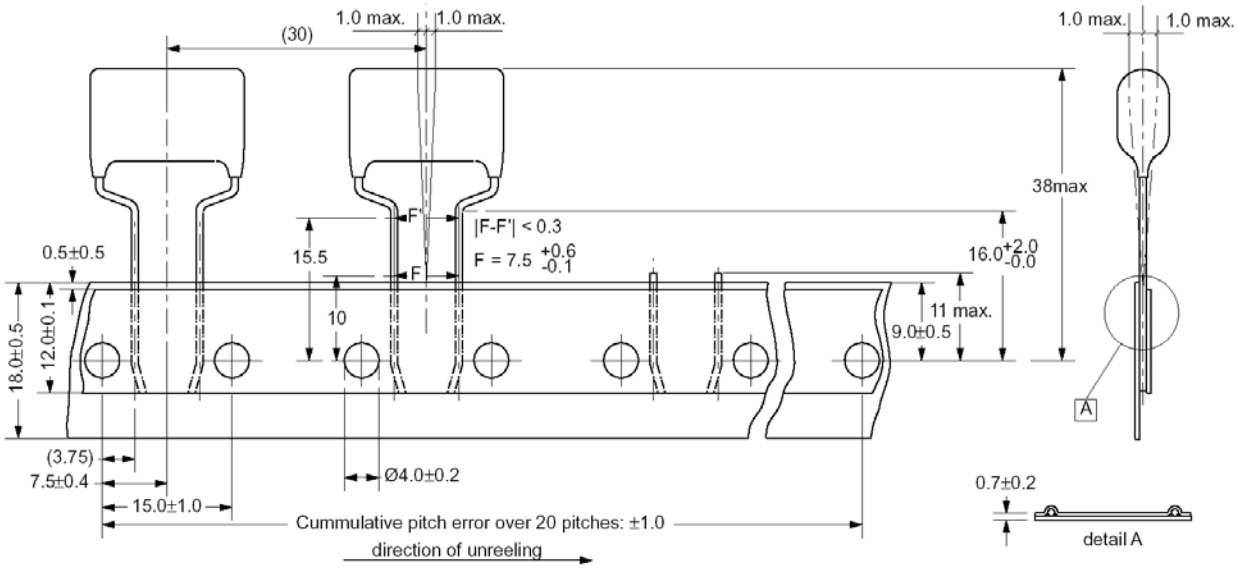
Taping Specification for Radial film capacitors

Taping Information

pitch = 22.5mm(kinked leads)



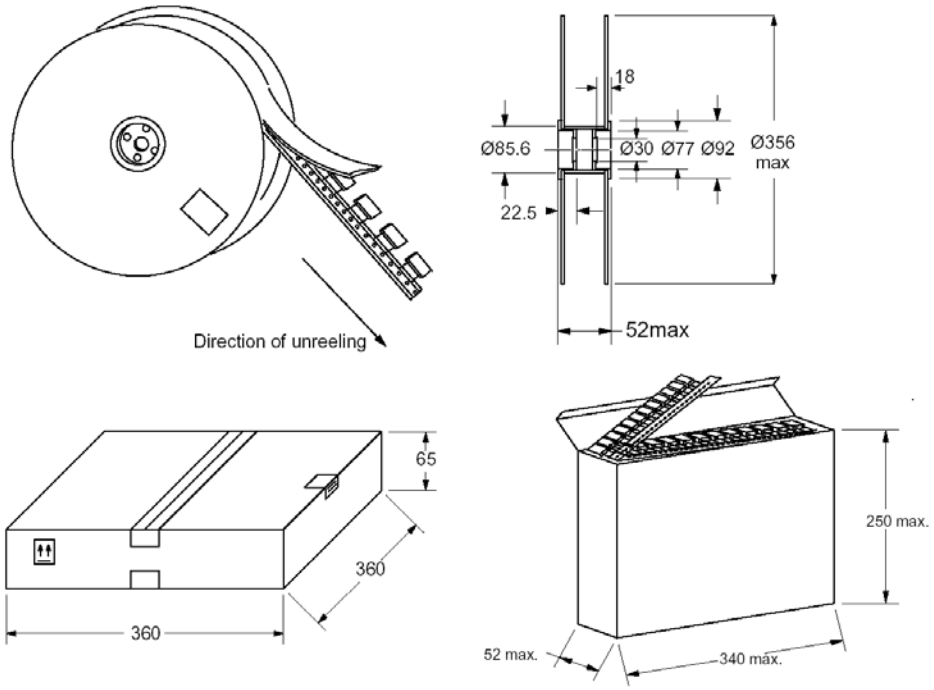
original pitch = 15.0mm (bent back pitch = 7.5mm)



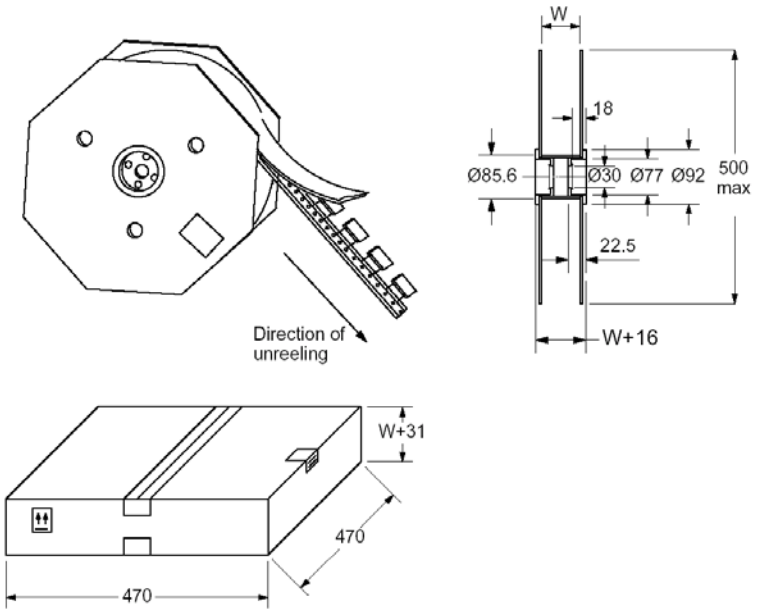
Taping Specification for Radial film capacitors

Outlines of reel and ammo pack (dimension in mm)

pitch = 5.0mm



pitch = 10.0mm, 15.0mm, 22.5mm



Taping Specification for Radial film capacitors

Taping Information

Ammopacking box dimension

Hole to Hole	l_{max} (mm)	Box dimension (A x B x C mm)
12.7 mm	12.5	310 x 296 x 55
	18.0	290 x 380 x 55
	26.0	385 x 370 x 55
	31.0	420 x 340 x 55
15.0 mm	All type	300 x 314 x 55

W as a function of product dimensions (l_{max} and b_{max})

l_{max} = 12.5 or 18.0 mm		l_{max} = 26 or 31 mm	
b_{max}(mm)	W ±2 (mm)	b_{max}(mm)	W ±2 (mm)
4.5 5.0 5.5 6.0 6.5 7.0 7.5 8.0 8.5 9.0 10.0	68 68 68 68 68 68 68 68 68 68 68	5.5 – 9.5	68
		10.0 – 12.0	73
		12.5 – 14.0	78

Cumulative pitch error : 1.0mm/20 pitches.
The maximum number of empty positions per reel shall not exceed 0.5% of total number of components per reel, but no more than 2 consecutive position may be vacant.

Taping specification – Hole to hole 12.7 and 15.0mm

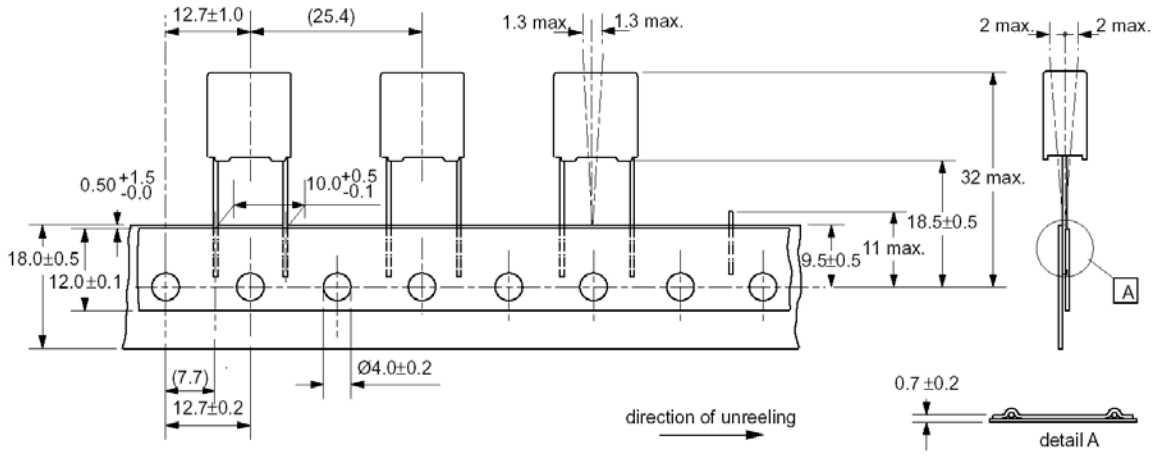
Name	Specification		Application
Standard taping	Reel	5/7.5/10/15/20/22.5/27.5mm pitch	365/369
	Ammo		

Taping Specification for Radial film capacitors

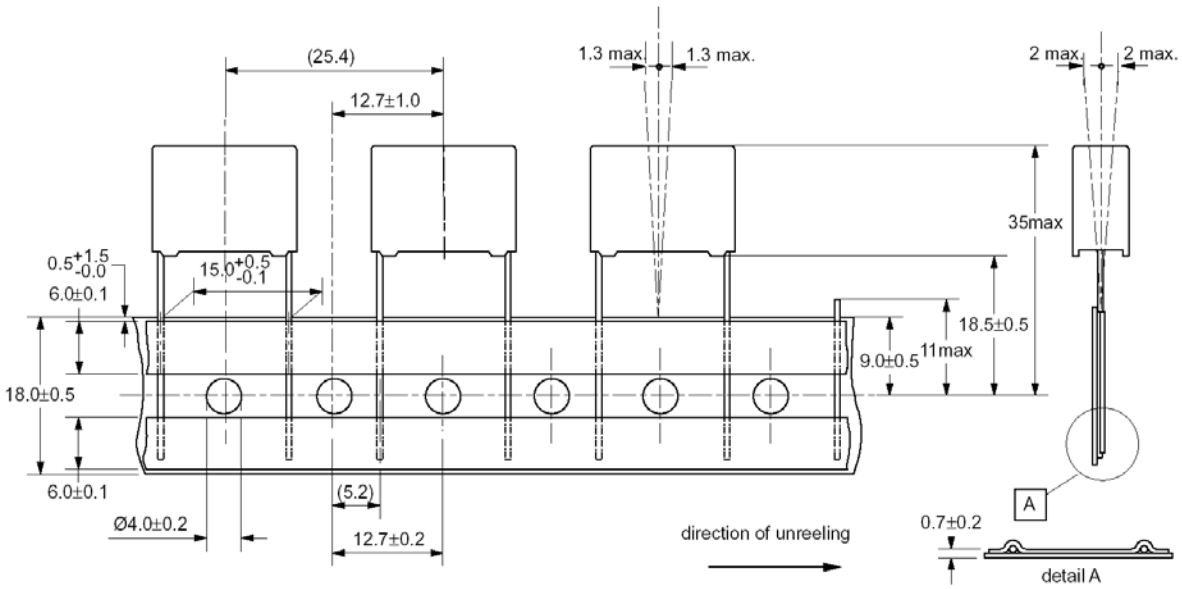
Taping Information

RADIAL Potted FILM CAPACITORS (dimension in mm)

Capacitor with pitch = 10mm



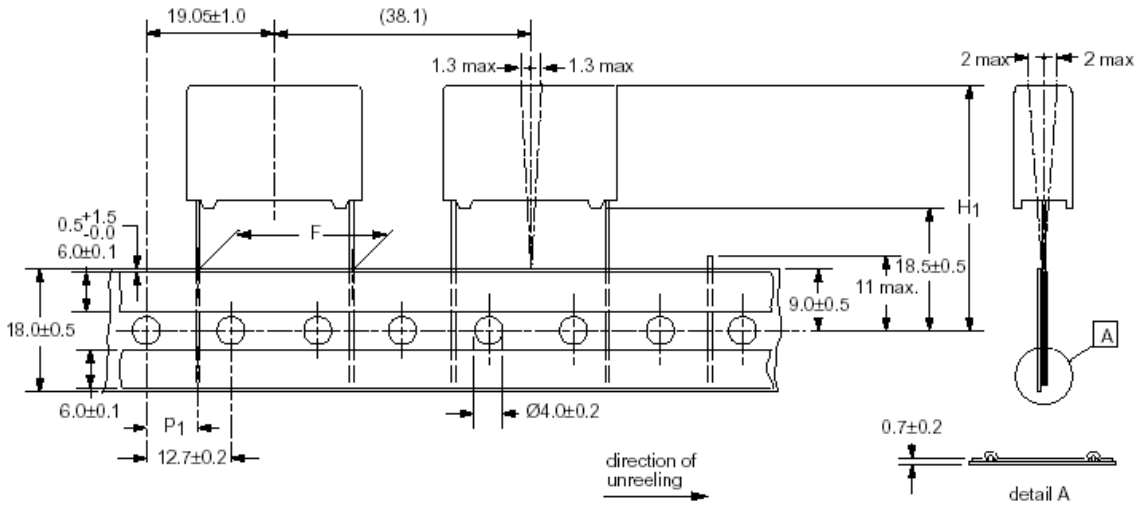
Capacitor with pitch = 15mm



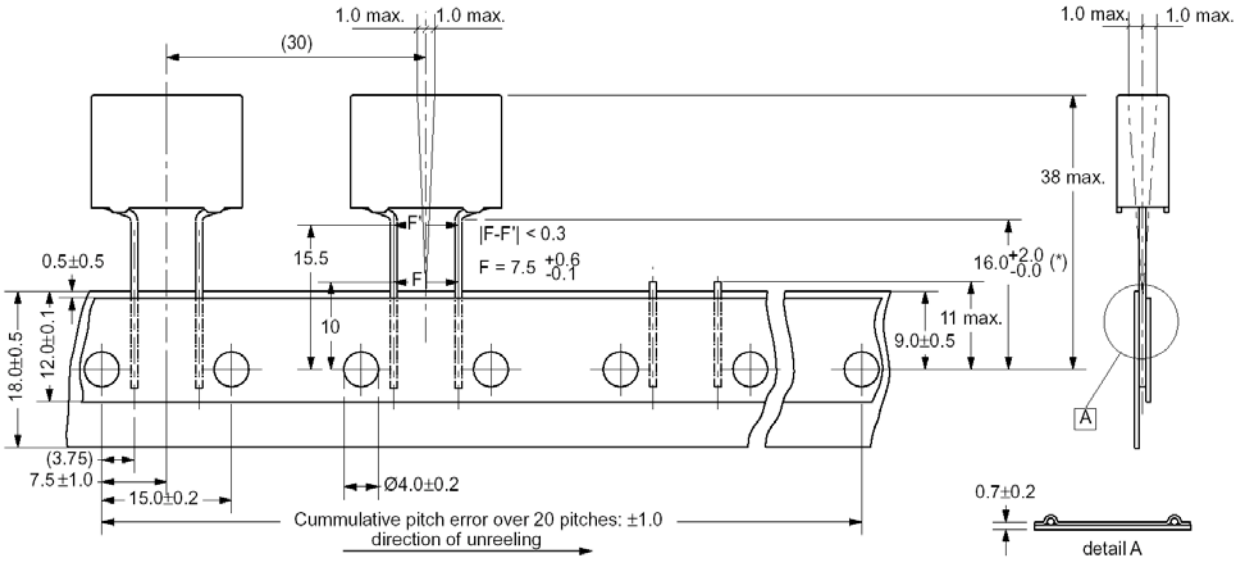
Taping Specification for Radial film capacitors

Taping Information

Capacitor with pitch = 22.5 and 27.5mm



Original pitch = 15mm (bent back pitch = 7.5mm)



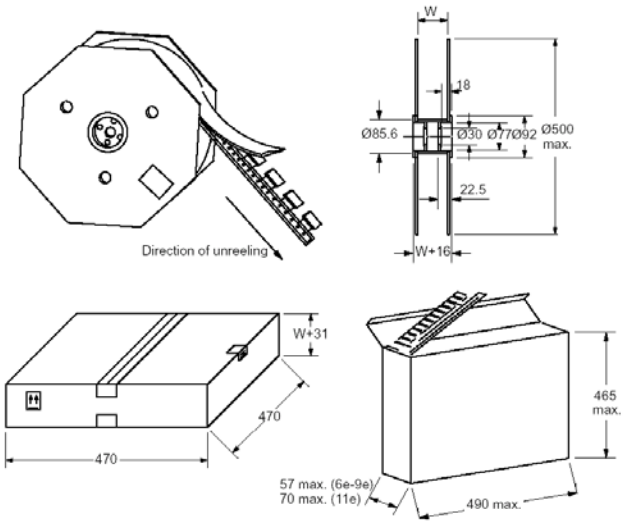
Taping Specification for Radial film capacitors

Taping Information

SYMBOL	PARAMETER	VALUE		Tol.	UNIT
F1	Lead to lead distance	22.5	27.5	+0.5/-0.1	mm
H1	Component height from tape center	40 max	48 max	-	mm
P1	Feed hole to lead center	(7.8)	(5.3)		mm

DESCRIPTION	VALUE
Pull-off force of the component	≥ 5N
Pell-off force of the adhesive tape	≥ 6N
Tearing force of tape	≥ 15N
STORAGE CONDITIONS	
Storage temperature	-25 to +40℃
Maximum relative humidity without condensation	81%

Outlines of reel and ammopack (dimensions in mm)



Taping Specification for Radial film capacitors

Outlines of reel and ammopack (dimensions in mm)

l_{max} = 12.5 or 18.0 mm		l_{max} = 26 or 31 mm	
b_{max} (mm)	W ±2 mm	b_{max} (mm)	W ±2 mm
4.0	40	6.0	50
5.0	45	7.0	50
6.0	45	8.5	50
7.0	45	9.0	50
8.5	45	10.0	50
10.0	50	11.0	55
		13.0	55
		15.0	60
		18.0	60
		21.0	65

Cumulative pitch error : 1.0 mm/20 pitches.
The maximum number of empty positions per reel shall not exceed 0.5%(*) of the total number of components per reel, but no more than 2 consecutive positions may be vacant provided this gap is followed by 6 consecutive components.

* 5% for capacitors with b_{max} : 4.5, 5 or 6mm in ammopack.