TECAP Catalogue - Aldinet

TeCap International Co.,Ltd.

TeCap

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General Short Form Catalogue

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www.tecaphk.com

The Company

TeCap International Incorporation is located in H.K., with 2 manufacturing plants in China and 1 in Taiwan, all of them ISO 9001 and ISO 14001 approved.

TeCap can provide a wide range of film capacitors, manufactured from automated machines that have a monthly production capability of over 100 million capacitors.

The product range includes polypropylene film capacitors X2 and Y2 class, metalized polyester and power capacitors, box and axial style.

The development and production of TeCap capacitors is geared towards a technologically advanced field of applications where high reliability combined with large production volumes are essential.

The dynamic thrust of the modern electronic industry requires a highly reactive organization along with a product and service quality capable of meeting customer requirements throughout the world.

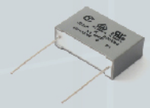
TeCap's mission is to fully satisfy the above requirements in terms of service, quality and competitiveness.

Contact:
email: sales@tecaphk.com *www.tecaphk.com*

TECAP International Co. Ltd. 2701 Hong Kong Plaza 186-196 Connaught Road, WEST, HONG KONG

Tecap Film Capacitor Product Range

Suppressors MKP

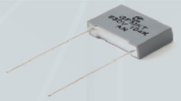


Applications:
Intereference suppression and across the line, spark killer circuit, EMI filters, switching power supply

Series	Class	Voltage	Capacitor Range	Pitch	Approvals
X2MKP	X2	275/310/440 Vac	0.01µf-10µf	10-37.5 mm	ENEC/UL/CQC
Y2MKP	Y2	300 Vac	0.001µf-0.1µf	10-22.5 mm	ENEC/UL/CQC
X1MKP	X1	300 Vac	0.0047µf-2.2µf	10-27.5mm	VDE/UL
RCMKP	X2+R	250/275 Vac	0.01µf-1µf	15-27.5 mm	
XYMKP	X2+2Y2	275VAC	X2: 0.1µf-2.2µf Y2: 0.001µf-0.027µf	15-27.5 mm	

* X1 available under request

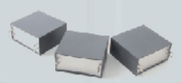
Polyester MKT



Applications :
General Purpose

Series	Voltage	Capacitor Range	Pitch
GPMKT	63Vdc-1000Vdc	0.001µf-22µf	10-37.5mm

Polypropylene Pulse MKP



Applications :
electronic ballast and compact lamp, SMPS , high voltage and high current,

Series	Metallization	Voltage	Capacitor Range	Pitch	dv/dt
PUMKP	Single metallized	160Vdc-2000Vdc	0.001µf-22µf	7.5-37.5	35-9500V/µs
PMMKP	Double metallized	250Vdc-2000Vdc	0.001µf-22µf	7.5-37.5	100-9500V/µs
PUKKP	Film foil	100Vdc-2000Vdc	0.01µf-2.2µf	7.5-37.5	2400-54000V/µs

Axial Polyester MKT

Application:
Blocking, coupling,decoupling, bypassing, filtering

Series	Construction	Voltage	Capacitor Range	Lenght
AXMKT	Tube	50Vdc-1000Vdc	0.01µf-22µf	13-46mm

Axial Polypropylene MKP

Application:
timing, pfc and coupling capacitor in SMPS

Series	Construction	Voltage	Capacitor Range	Lenght	dv/dt
AXMKP	Tube	100Vdc-1000Vdc	0.0047µf-10µf	13-46mm	5-30V/µs

Power box capacitors:

Applications:
Snubber, Dc-Link, IGBT

Series	Construction	Voltage	Capacitor Range	Pitch	dv/dt
P2MKP	pcb 2 pins	250Vdc-3000Vdc	0.47µf-12µf	27.5-37.5	11-2500V/µs
P4MKP	pcb 4 pins	250Vdc-3000Vdc	3.3µf-100µf	27.5-52.5	11-2500V/µs
PGMKP	Cupper lugs	250Vdc-3000Vdc	0.047µf-60µf	-	11-2500V/µs

custom solutions available for all series

www.tecaphk.com

TeCap X1MKP

X1 Capacitor (Metallized Polypropylene Film Capacitor)

www.tecaphk.com

TeCap X1MKP

X1 Capacitor (Metallized Polypropylene Film Capacitor)

single sided metallized polypropylene film

c US IEC 60384-14

APPLICATION:

Intereference suppression and across the line.
Spark killer circuit.
EMI filters.
Switching power supply.

FEATURES:

Withstand overvoltage stressing.
Excellent flame resistant abilities.

GENERAL TECHNICAL DATA

Dielectric: polypropylene film.

Metal Layer: Matal layer by evaporation under vacuum.

Winding: Non-inductive type.

Leads: Tin-plated copper wire.

Plastic case: PBT material with solven resistant & flame retardant according to UL94V0

Filling: Epoxy Resin with flame retardant according to UL94V0.

Marking: Company logo, capacitor type, capacitance, tolerance, capacitor class, rated voltage, approvals climatic category, passive flammability category, date code.

Operating temperature range: - 40 to +110°C
Climatic category: 40/100/56 IEC

ELECTRICAL CHARACTERISTICS

Capacitance range: 0.01uF ~ 2.2uF
Capacitance tolerances: (measured at 1KHZ)
±10%(K); ±20%(M) upon request
Rated Voltage: 300Vac(50/60Hz)/ 610Vdc

Dissipation Factor:
tg δ 10^{-4} at +25°C±5°C: ≤ 0.15 (6 typical) at 1 kHz

Insulation Resistance:
Test conditions
Temperature 25°C ±5°C
Voltage charge: 100 Vdc
Charge time 1 Min.
Performance
C ≤ 0.33uF ≥1×10^5 MΩ (typical value 5×10^5 MΩ)
C > 0.33uF ≥30000 s (typical value 150000 s)
Test Voltage: at 25°C ±5°C
(Between terminals) 1500VAC for 1 sec. or 2200VDC 1sec.

Rated voltage pulse slope Max dv/dt(V/us)at 390VDC

Pitch	10mm	15mm	22.5mm	27.5mm	37,5mm
dv/dt	500	400	200	150	100

RELIBILITY TEST METHOD &PERFORMANCE:

Damp heat steady state			**Performance**	
Test condition				
1st	Temperature:	40±2℃	Dielectric strength	No dielectric breakdown or flashover at 4.3xVr(d.c)/1 min.
	Relative humidity:	93%±2%		
	Test duration:	56 days	Capacitance change	≤5%
2nd	Temperature:	60±2℃	Insulation resistance	≥50% of initial limit
	Relative humidity:	95%±2%		
	Test duration:	500 hours		
Endurance			**Performance**	
Test condition				
	Temperature:	100±2℃	Dielectric strength	No dielectric breakdown or flashover at 4.3xVr(d.c)/1 min.
	Test duration:	1000 h		
	Voltage applied:	1.25*VR+1000Vac 0.1S/h	Capacitance change	≤10%
			Insulation resistance	≥50% of initial limit
Resistance to soldering heat				
	Solder bath temperature:	260±5℃	Capacitance change	≤2%
	Dipping time:	10s±1s		

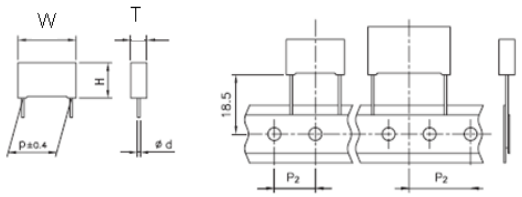
TeCap X1MKP

X1 Capacitor (Metallized Polypropylene Film Capacitor)

Dimensions

Loose Taped

Fig.1 Fig.2



Pitch	Box thickness (T)	Maximum dimensions (mm)		
mm	mm	Tmax	Hmax	Wmax
10,0	All	T+0,2	H+0,1	W+0,2
15,0	<7,5	T+0,2	H+0,1	W+0,3
15,0	>7,5	T+0,2	H+0,1	W+0,5
22,5	All	T+0,2	H+0,1	W+0,3
27,5	All	T+0,2	H+0,1	W+0,3

⌀ d+0,05	p=15	22,5 ≤ p ≤ 27,5
	0,6	0,8

All dimensions are in mm

Dimension Table (mm)

TeCap PN	CAP. (µF)	300Vac/610Vdc															
		P=10mm				P=15mm				P=22.5mm				P=27.5mm			
		W	H	T	d	W	H	T	d	W	H	T	d	W	H	T	d
X1MKP103#300P10- -	0,01	13,0	11,0	4,0	0,6												
X1MKP223#300P10 - -	0,022	13,0	11,0	4,0	0,6												
X1MKP333#300P10 - -	0,033	13,0	11,0	5,0	0,6												
X1MKP473#300P10 - -	0,047	13,0	12,0	6,0	0,6												
X1MKP683#300P15 - -	0,068					18,0	11,0	5,0	0,8								
X1MKP104#300P15 - -	0,1					18,0	12,0	6,0	0,8								
X1MKP154#300P15 - -	0,15					18,0	13,5	7,5	0,8								
X1MKP224#300*** - -	0,22					18,0	14,5	8,5	0,8	26,5	16,5	7,0	0,8				
X1MKP334#300P22 - -	0,33									26,5	16,5	7,0	0,8				
X1MKP474#300P22 - -	0,47									26,0	17,0	8,5	0,8				
X1MKP474#300P27 - -	0,47													32,0	17,5	8,5	0,8
X1MKP684#300P27 - -	0,68													32,0	20,0	11,0	0,8
X1MKP105#300P27 - -	1													32,0	23,0	13,0	0,8
X1MKP155#300P27 - -	1,5													32,0	26,0	15,0	0,8
X1MKP225#300P27 - -	2,2													32,0	27,5	17,5	0,8

\# tolerance: K=10%, M=20%

*** pitch code

- - lead length/package code

E12 series available upon request

TeCap X1MKP

X1 Capacitor (Metallized Polypropylene Film Capacitor)

Part number description

X1 M K P	1 0 5	K	2 7 5	P 1 5	0 6	*
1 Type	2 Capacitance	3 Tolerance	4 Rated Voltage	5 Pitch	6 lead lenght	7 internal code

1 Type:

X1 MKP = Class X1, film metallized polypropylene

2 Capacitance:

Use 3 digit to represent Capacitance. First 2 digit means capacitance value. The last digit means 0 No. after capacitance value with unit Picro Farad. Show as below:

102= 1000PF= 1.0nF=0.001µF

103= 10000PF= 10nF= 0.01µF

104=100000PF= 100nF= 0.1µF

105= 1000000PF= 1000nF=1.0µF

106= 10000000PF= 10000nF= 10µF

3 Tolerance:

TOLERANCE	±1%	±2%	±3%	±5%	**±10%**	**±20%**
CODE	F	G	H	J	**K**	**M**

4 Rated Voltage:

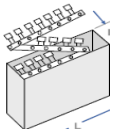
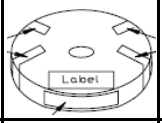
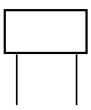
AC voltage represent code:

VOLTAGE	125V	180V	200V	220V	230V	250V	275V	280V	300V	310V
CODE	125	180	200	220	230	250	275	280	300	310

5 Pitch Code:

PITCH	5.0	7.5	10	15	22.5	27.5	37,5
CODE	P05	P07	P10	P15	P22	P27	P37

6 Lead length & Box dimensions:

CODE	Package	Lead length mm	Drawing	Typing style		
				P_2 mm	Fig N°	Pitch mm
TA	Ammo-Pack			12,70 19,05	1 2	10,0/15,0 22,5
TR	Reel Taping ø500			12,70 19,05	1 2	10,0/15,0 22,5
06	Loose, short lead wire	6^{-2}				
30	Loose, long lead wire	30^{+5}				

7 Internal code:

S = series version

* = others

TeCap X1MKP

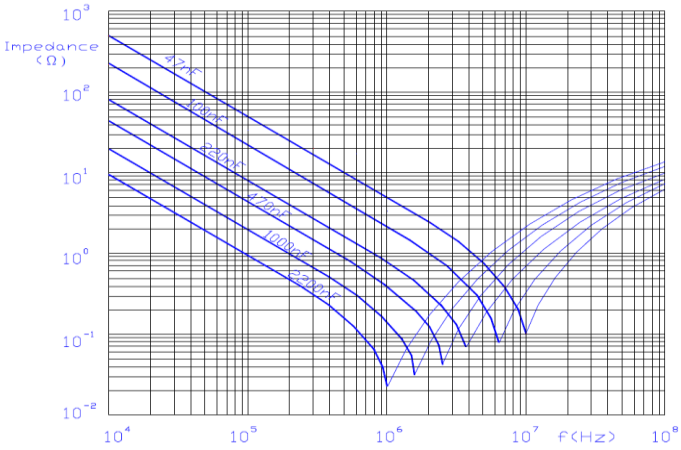
X1 Capacitor (Metallized Polypropylene Film Capacitor)

Approval Standards

Approval marks	Standard	Class	Region
IEC 60384-14	VDE IEC 60384-14	Class X1	Europe
c US	UL UL 60384-14	Class X1	Usa
	UL CSA 60384-14	Class X1	Canada

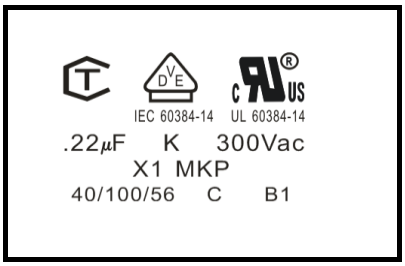
Impedence vs frequency

(lead length less than 2mm) Typical values.



X1 Capacitor marking:

	Company Logo
MKP	capacitor Type
.22uF	Capacitance value
K	Capacitance tolerence: J=±5%, K=±10%, M=±20%
X1	X2 class
300Vac	Rated voltage
c US	UL safety approval mark
VDE	VDE safety approval mark
40/100/56	Climatic Category
IEC 60384-14	Product test standard
C	Passive flammability category
B1	Date code (table)



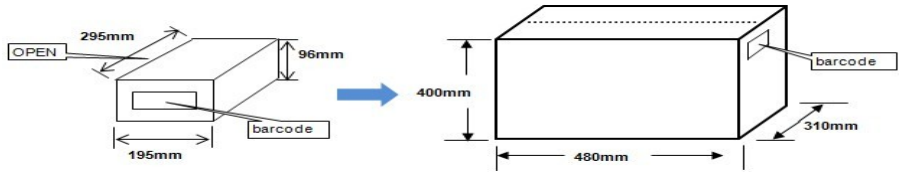
Date code table:

Year Code	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020
	X	Y	Z	A	B	C	D	E	F	G	H	I
Month Code	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
	1	2	3	4	5	6	7	8	9	0	N	D

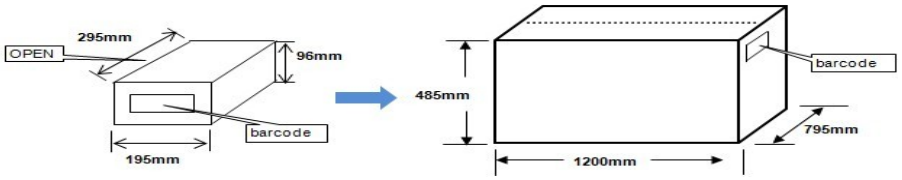
TeCap

GENERAL INFORMATION

Bulk Package-A (dimensions in mm)



Bulk Package-B (dimensions in mm)



NUMBER OF PIECES FOR PACKING UNIT

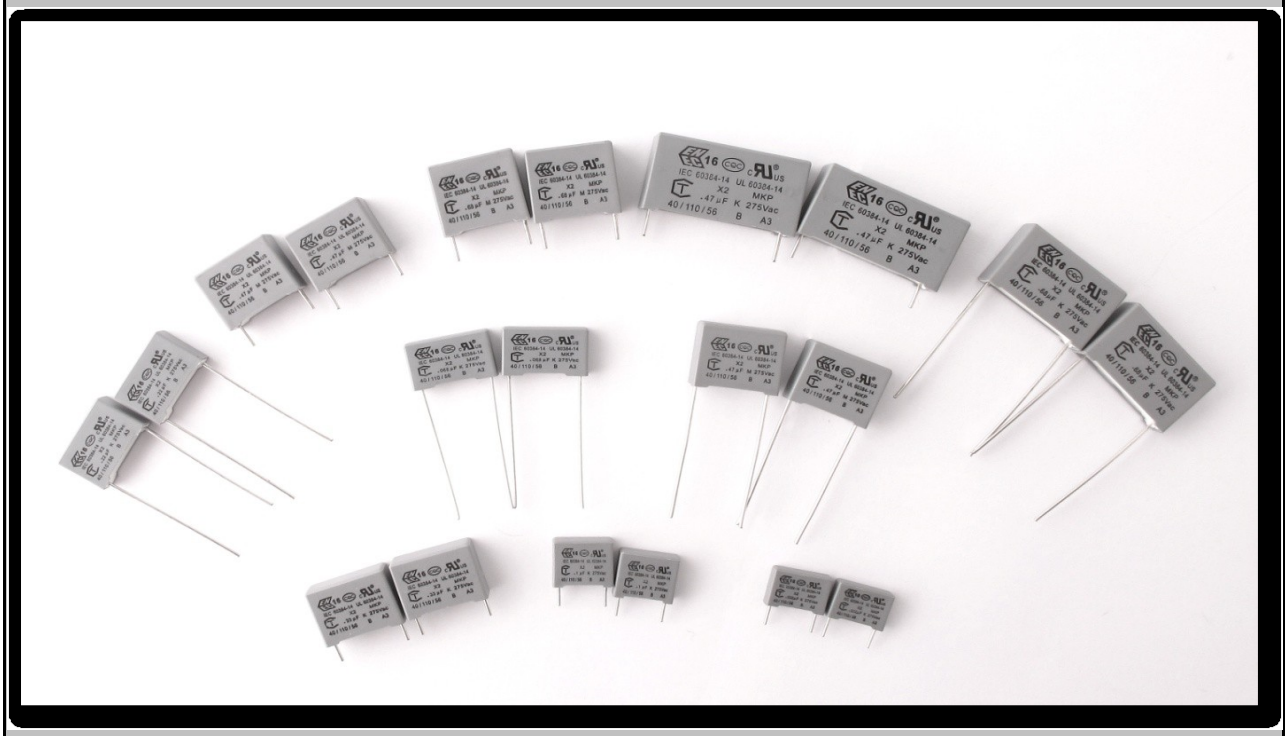
Box dimensions			Pitch	Bulk Package				Taping package			
				PCS/box		box/Carton		Ammo		Reel/O 500mm	
W	H	T	P	short leads	Long leads	A	B	PCS/box	box/ Carton	PCS/box	Reel / Carton
mm	mm	mm	mm	6^{-2}mm	30^{+5}mm						
13,0	9,0	4,0	10,0	2000	1800	10	80	1000	64	1500	20
13,0	11,0	5,0	10,0	1500	1300	10	80	800	64	1250	20
13,0	12,0	6,0	10,0	1200	1000	10	80	680	64	1000	20
18,0	10,0	4,0	15,0	2500	1500	10	80	1000	64	1500	20
18,0	11,0	5,0	15,0	2000	1000	10	80	800	64	1250	20
18,0	12,0	6,0	15,0	1750	900	10	80	680	64	1000	20
18,0	13,5	7,5	15,0	1000	700	10	80	500	64	800	20
18,0	17,5	6,0	15,0	1000	700	10	80	680	64	1000	20
18,0	14,5	8,5	15,0	1000	500	10	80	440	64	700	20
18,0	12,5	9,0	15,0	1000	520	10	80	410	64	650	20
18,0	16,0	10,0	15,0	750	500	10	80	380	64	600	20
18,0	12,0	13,0	15,0	750	490	10	80	280	64	480	20
18,0	19,0	11,0	15,0	450	350	10	80	340	64	500	20
26,5	15,0	6,0	22,5	805	500	10	80	464	64	700	20
26,5	16,0	7,0	22,5	700	500	10	80	380	64	550	20
26,5	17,0	8,5	22,5	468	300	10	80	280	64	450	20
26,5	18,5	10,0	22,5	396	300	10	80	235	64	350	20
26,0	20,0	11,0	22,5	360	250	10	80	217	64	350	20
26,5	22,0	13,0	22,5	300	200	10	80			300	20
32,0	17,0	9,0	27,5	408	204	10	80			450	20
32,0	20,0	10,0	27,5	300	204	10	80			350	20
32,0	20,0	11,0	27,5	280	168	10	80			350	20
32,0	22,0	13,0	27,5	240	144	10	80			300	20
32,0	25,0	14,0	27,5	240	144	10	80				
32,0	28,0	14,0	27,5	176	88	10	80				
32,0	24,5	15,0	27,5	200	120	10	80				
32,0	33,0	18,0	27,5	156	64	10	80				
32,0	37,0	22,0	27,5	84	56	10	80				
41,5	22,0	11,0	37,5	210	126	10	80				
41,5	24,0	13,0	37,5	180	108	10	80				
41,5	28,0	16,0	37,5	108	54	10	80				
41,5	32,0	19,0	37,5	96	48	10	80				
41,5	40,0	20,0	37,5	63	42	10	80				
41,5	44,0	24,0	37,5	54	36	10	80				
41,5	45,0	30,0	37,5	45	30	10	80				

TeCap

X2MKP

X2MKP S(series connection)

X2 Capacitor (Metallized Polypropylene Film Capacitor)



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TeCap

The Company

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TeCap can provide a wide range of film capacitors manufactured with automatic machines, with a monthly production capability over 100 mill capacitors.

The Product range can cover polypropylene film capacitors both X2 and Y2 class, metallized polyester and power capacitors, box and axial style.

The development and production of TeCap capacitors is geared to technologically advanced field of applications where high reliability combined with large production volumes are essential.

The dynamic thrust of the modern electronic industry requires an highly reactive organization together with a product and service quality capable of meeting the customers requirement through the world.

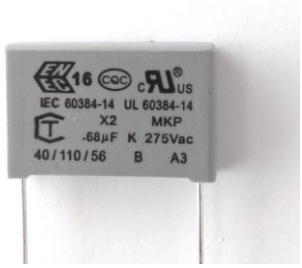
TeCap mission is to fully satisfy above requirements in term of service, quality and competitiveness.

Contact:
email: sales@tecaphk.com www.tecaphk.com

TECAP International Co. Ltd. 2701 Hong Kong Plaza 186-196 Connaught Road, WEST, HONG KONG

TeCap X2MKP

X2 Capacitor (Metallized Polypropylene Film Capacitor)



single sided metallized polypropylene film

APPLICATION:

Intereference suppression and across the line.
Spark killer circuit.
EMI filters.
Switching power supply.

FEATURES:

Withstand overvoltage stressing.
Excellent flame resistant abilities.

GENERAL TECHNICAL DATA

Dielectric: polypropylene film.

Metal Layer: Zinc Alloy evaporation under vacuum.

Winding: Non-inductive type.

Leads: Tin-plated copper wire.

Plastic case: PBT material with solven resistant & flame retardant according to UL94V0

Filling: Epoxy Resin with flame retardant according to UL94V0.

Marking: Company logo, capacitor type, capacitance, tolerance, capacitor class, rated voltage, approvals climatic category, passive flammability category, date code.

Operating temperature range: - 40 to +110℃
Climatic category: 40/110/56 IEC
Related documents: IEC-60384-14, EN 60384-14,GB/T14472
UL 60384-14, CSA E60384-14

ELECTRICAL CHARACTERISTICS

Capacitance range: 0.01uF ~ 10uF
Capacitance tolerances: (measured at 1KHZ)
±10%(K); ±20%(M) upon request
Rated Voltage: 275Vac(50/60Hz)/ 560Vdc
310Vac(50/60Hz)/ 630Vdc

Dissipation Factor:
tg δ 10^{-4} at +25°C±5°C: ≤ 0.15 (6 typical) at 1 kHz
Insulation Resistance:
Test conditions
Temperature 25°C ±5°C
Voltage charge: 100 Vdc
Charge time 1 Min.
Performance
C ≤ 0.33uF ≥1×10^5 MΩ (typical value 5x10^5 MΩ)
C > 0.33uF ≥30000 s (typical value 150000 s)
Test Voltage: at 25°C ±5°C
(Between terminals) 1500VAC for 1 sec. or 2200VDC 1sec.

Rated voltage pulse slope Max dv/dt(V/us)at 390VDC

Pitch	10mm	15mm	22.5mm	27.5mm	37,5mm
dv/dt	500	400	200	150	100

RELIBILITY TEST METHOD &PERFORMANCE:

Damp heat steady state			**Performance**	
Test condition				
1st	Temperature:	40±2℃	Dielectric strength	No dielectric breakdown or flashover at 4.3xVr(d.c)/1 min.
	Relative humidity:	93%±2%		
	Test duration:	56 days	Capacitance change	≤5%
2nd	Temperature:	60±2℃	Insulation resistance	≥50% of initial limit
	Relative humidity:	95%±2%		
	Test duration:	500 hours		
Endurance			**Performance**	
Test condition				
	Temperature:	110±2℃	Dielectric strength	No dielectric breakdown or flashover at 4.3xVr(d.c)/1 min.
	Test duration:	1000 h		
	Voltage applied:	1.25*VR+1000Vac 0.1S/h	Capacitance change	≤10%
			Insulation resistance	≥50% of initial limit
Resistance to soldering heat				
	Solder bath temperature:	260±5℃	Capacitance change	≤2%
	Dipping time:	10s±1s		

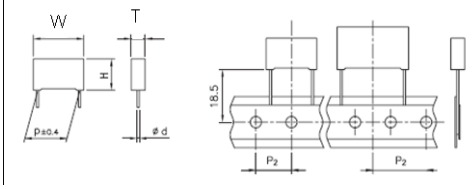
TeCap X2MKP

X2 Capacitor (Metallized Polypropylene Film Capacitor)

Dimensions

Loose Taped

Fig.1 Fig.2



Pitch	Box thickness (T)	Maximum dimensions (mm)		
mm	mm	Tmax	Hmax	Wmax
10,0	All	T+0,2	H+0,1	W+0,2
15,0	<7,5	T+0,2	H+0,1	W+0,3
15,0	>7,5	T+0,2	H+0,1	W+0,5
22,5	All	T+0,2	H+0,1	W+0,3
27,5	All	T+0,2	H+0,1	W+0,3

∅d+0,05	p≤15	22,5 ≤ p ≤ 37,5
	0,6 or 0,8*	0,8

* See dimension table

All dimensions are in mm

Dimension Table (mm)

TeCap PN	CAP. (µF)	275Vac/560Vdc																			
		P=10mm				P=15mm				P=22.5mm				P=27.5mm				P=37.5mm			
		W	H	T	d	W	H	T	d	W	H	T	d	W	H	T	d	W	H	T	d
X2MKP103#275*** - -	0,01	13,0	11,0	5,0	0,6	18,0	11,0	5,0	0,6												
X2MKP153#275*** - -	0,015	13,0	11,0	5,0	0,6	18,0	11,0	5,0	0,6												
X2MKP223#275*** - -	0,022	13,0	11,0	5,0	0,6	18,0	11,0	5,0	0,6												
X2MKP333#275*** - -	0,033	13,0	11,0	5,0	0,6	18,0	11,0	5,0	0,6												
X2MKP473#275*** - -	0,047	13,0	11,0	5,0	0,6	18,0	11,0	5,0	0,6												
X2MKP683#275*** - -	0,068	13,0	11,0	5,0	0,6	18,0	11,0	5,0	0,6												
X2MKP104#275*** - -	0,1	13,0	12,0	6,0	0,6	18,0	11,0	5,0	0,6												
X2MKP154#275P10 - -	0,15	13,0	12,0	6,0	0,6	18,0	12,0	6,0	0,8	26,5	15,0	6,0	0,8								
X2MKP224#275*** - -	0,22	15,0	10,0	8,0		18,0	13,0	6,3	0,8	26,5	15,0	6,0	0,8								
X2MKP334#275*** - -	0,33					18,0	14,5	8,5	0,8	26,5	15,0	6,0	0,8								
X2MKP474#275*** - -	0,47					18,0	16,0	10,0	0,8	26,5	16,0	7,0	0,8	32,0	17,0	9,0	0,8				
X2MKP564#275*** - -	0,56					18,0	16,0	10,0	0,8	26,5	16,0	7,0	0,8	32,0	17,0	9,0	0,8				
X2MKP684M275P15 - -	0,68					18,0	16,0	10,0	0,8												
X2MKP684#275*** - -	0,68					18,0	19,0	11,0	0,8	26,5	16,0	7,0	0,8	32,0	17,0	9,0	0,8				
X2MKP105#275*** - -	1									26,5	18,5	10,0	0,8	32,0	17,0	9,0	0,8				
X2MKP155#275*** - -	1,5									26,5	20,0	11,0	0,8	32,0	20,0	11,0	0,8				
X2MKP225M275P22 - -	2,2									26,5	22,0	13,0	0,8								
X2MKP225#275P27 - -	2,2													32,0	22,0	13,0	0,8	42,0	22,0	11,0	0,8
X2MKP335#275P27 - -	3,3									26,5	30,0	14,5	0,8	32,0	25,0	14,0	0,8	42,0	22,0	11,0	0,8
X2MKP475#275P27 - -	4,7													32,0	28,0	18,0	0,8	42,0	24,0	13,0	0,8
X2MKP565#275P27 - -	5,6													32,0	28,0	18,0	0,8	42,0	28,0	16,0	0,8
X2MKP685#275P27 - -	6,8													32,0	33,0	18,0	0,8	42,0	32,0	19,0	0,8
X2MKP825#275P27 - -	8,2													32,0	37,0	22,0	0,8	42,0	49,0	20,0	0,8
X2MKP106#275P27 - -	10													32,0	37,0	22,0	0,8	42,0	45,0	30,0	0,8

\# tolerance: K=10%, M=20%

*** pitch code

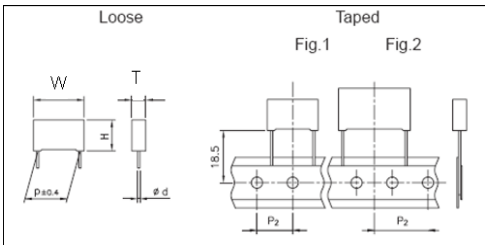
- - lead length/package code

E12 series available upon request

TeCap X2MKP

X2 Capacitor (Metallized Polypropylene Film Capacitor)

Dimensions



Pitch	Box thickness (T)	Maximum dimensions (mm)		
mm	mm	Tmax	Hmax	Wmax
10,0	All	T+0,2	H+0,1	W+0,2
15,0	<7,5	T+0,2	H+0,1	W+0,3
15,0	>7,5	T+0,2	H+0,1	W+0,5
22,5	All	T+0,2	H+0,1	W+0,3
27,5	All	T+0,2	H+0,1	W+0,3

⌀ d+0,05	p≤15	22,5 ≤ p ≤ 37,5
	0,6 or 0,8*	0,8

* See dimension table

All dimensions are in mm

Dimension Table (mm)

TeCap PN	CAP. (µF)	310Vac/630Vdc																			
		P=10mm				P=15mm				P=22.5mm				P=27.5mm				P=37.5mm			
		W	H	T	d	W	H	T	d	W	H	T	d	W	H	T	d	W	H	T	d
X2MKP103#310*** - -	0,01	13,0	11,0	5,0	0,6	18,0	11,0	5,0	0,6												
X2MKP153#310*** - -	0,015	13,0	11,0	5,0	0,6	18,0	11,0	5,0	0,6												
X2MKP223#310*** - -	0,022	13,0	11,0	5,0	0,6	18,0	11,0	5,0	0,6												
X2MKP333#310*** - -	0,033	13,0	11,0	5,0	0,6	18,0	11,0	5,0	0,6												
X2MKP473#310*** - -	0,047	13,0	11,0	5,0	0,6	18,0	11,0	5,0	0,6												
X2MKP683#310*** - -	0,068	13,0	12,0	6,0	0,6	18,0	11,0	5,0	0,6												
X2MKP104#310*** - -	0,1	13,0	12,0	6,0	0,6	18,0	11,0	5,0	0,6												
X2MKP154#310*** - -	0,15					18,0	12,0	6,0	0,8	26,5	15,0	6,0	0,8								
X2MKP224#310*** - -	0,22					18,0	13,5	7,5	0,8	26,5	15,0	6,0	0,8								
X2MKP334#310*** - -	0,33					18,0	14,5	8,5	0,8	26,5	15,0	6,0	0,8								
X2MKP474M310P15 - -	0,47					18,0	16,0	10,0	0,8												
X2MKP474#310*** - -	0,47					18,0	19,0	11,0	0,8	26,5	16,0	7,0	0,8	32,0	17,0	9,0	0,8				
X2MKP564#310*** - -	0,56					18,0	19,0	11,0	0,8	26,5	18,5	10,0	0,8	32,0	17,0	9,0	0,8				
X2MKP684#310*** - -	0,68									26,5	18,5	10,0	0,8	32,0	17,0	9,0	0,8				
X2MKP105#310*** - -	1									26,0	20,0	11,0	0,8	32,0	20,0	11,0	0,8				
X2MKP155#310*** - -	1,5									26,5	22,0	13,0	0,8	32,0	22,0	13,0	0,8				
X2MKP225#310P27 - -	2,2									26,5	30,0	14,5	0,8	32,0	28,0	14,0	0,8				
X2MKP335#310*** - -	3,3													32,0	28,0	18,0	0,8	42,0	24,0	13,0	0,8
X2MKP475M310*** - -	4,7																	42,0	24,0	13,0	0,8
X2MKP475#310*** - -	4,7													32,0	32,0	22,0	0,8	42,0	28,0	16,0	0,8
X2MKP565#310*** - -	5,6													32,0	37,0	22,0	0,8	42,0	32,0	19,0	0,8
X2MKP685#310*** - -	6,8													32,0	37,0	22,0	0,8	42,0	40,0	20,0	0,8
X2MKP825#310*** - -	8,2																	42,0	44,0	24,0	0,8
X2MKP106#310*** - -	10																	42,0	45,0	30,0	0,8

\# tolerance: K=10%, M=20%

*** pitch code

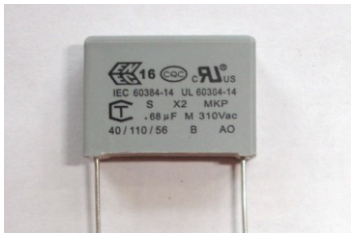
\- - lead length/package code

E12 series available upon request

TeCap

X2MKP S(series connection)

X2 Capacitor (Metallized Polypropylene Film Capacitor)



single sided metallized polypropylene film

APPLICATION:

This special X2MKP S release is designed for applications in series with the main

FEATURES:

- Metallized polypropylene structure
- Good self-healing properties,withstanding surge voltage stressing
- Long stability of capacitance
- Good properties in damp environment
- Excellent active and passive flame resistant abilities

GENERAL TECHNICAL DATA

Dielectric: polypropylene film.

Metal Layer: Zinc Alloy evaporation under vacuum.

Winding: Non-inductive type.

Leads: Tin-plated copper wire.

Plastic case: PBT material with solven resistant & flame retardant according to UL94V0

Filling: Epoxy Resin with flame retardant according to UL94V0.

Marking: Company logo, capacitor type, capacitance, tolerance, capacitor class, rated voltage, approvals climatic category, passive flammability category, date code.

Operating temperature range: - 40 to +110℃

Climatic category: 40/110/56 IEC

Related documents: IEC-60384-14, EN 60384-14,GB/T14472
UL 60384-14, CSA E60384-14

ELECTRICAL CHARACTERISTICS

Capacitance range: 0.01uF ~ 2.2uF

Capacitance tolerances: (measured at 1KHZ)
±10%(K); ±20%(M)
±5%(J); available upon request

Rated Voltage: 275Vac(50/60Hz)/ 560Vdc
310Vac(50/60Hz)/ 630Vdc

Dissipation Factor:
tg δ 10^{-4} at +25°C±5°C: ≤ 0.15 (8 typical) at 1 kHz

Insulation Resistance:

Test conditions

Temperature	25°C ±5°C
Voltage charge:	100 Vdc
Charge time	1 Min.

Performance

C ≤ 0.33uF	≥1×10^5 MΩ (typical value 5×10^5 MΩ)
C > 0.33uF	≥30000 s (typical value 150000 s)

Test Voltage: at 25°C ±5°C
(Between terminals) 1500VAC for 1 sec. or 2200VDC 1sec.

Rated voltage pulse slope Max dv/dt(V/us)at 390VDC

Pitch	15mm	22.5mm	27.5mm
dv/dt	400	200	150

RELIBILITY TEST METHOD &PERFORMANCE:

Damp heat steady state

Test condition

			Performance	
1st	Temperature:	40±2℃	Dielectric strength	No dielectric breakdown or flashover at 4.3xVr(d.c)/1 min.
	Relative humidity:	93%±2%		
	Test duration:	56 days	Capacitance change	≤5%
2nd	Temperature:	60±2℃	Insulation resistance	≥50% of initial limit
	Relative humidity:	95%±2%		
	Test duration:	500 hours		
3nd	Temperature:	40±2℃		
	Relative humidity:	93%±2%		
	Test duration:	500 hours		
	Voltage applied:	230Vac,50Hz		

Endurance

Test condition

		Performance	
Temperature:	110±2℃	Dielectric strength	No dielectric breakdown or flashover at 4.3xVr(d.c)/1 min.
Test duration:	1000 h		
Voltage applied:	1.25*VR+1000Vac 0.1S/h	Capacitance change	≤10%
		Insulation resistance	≥50% of initial limit

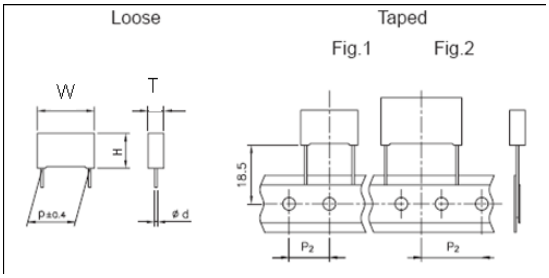
Resistance to soldering heat

Solder bath temperature:	260±5℃	Capacitance change	≤2%
Dipping time:	10s±1s		

TeCap X2MKP S(series connection)

X2 Capacitor (Metallized Polypropylene Film Capacitor)

Dimensions



Pitch	Box thickness (T)	Maximum dimensions (mm)		
mm	mm	Tmax	Hmax	Wmax
15,0	<7,5	T+0,2	H+0,1	W+0,3
15,0	>7,5	T+0,2	H+0,1	W+0,5
22,5	All	T+0,2	H+0,1	W+0,3
27,5	All	T+0,2	H+0,1	W+0,3

∅+0,05	p = 15	22,5 ≤ p ≤ 27,5
	0,6 or 0,8*	0,8

* See dimension table

All dimensions are in mm

Dimension Table (mm)

TeCap PN	CAP. (µF)	275Vac/560Vdc											
		P=15mm				P=22.5mm				P=27.5mm			
		W	H	T	d	W	H	T	d	W	H	T	d
X2MKP103#275P15 - -S	0,01	18,0	11,0	5,0	0,6								
X2MKP153#275P15 - -S	0,015	18,0	11,0	5,0	0,6								
X2MKP223#275P15 - -S	0,022	18,0	11,0	5,0	0,6								
X2MKP333#275P15 - -S	0,033	18,0	11,0	5,0	0,6								
X2MKP473#275P15 - -S	0,047	18,0	11,0	5,0	0,6								
X2MKP683#275P15 - -S	0,068	18,0	11,0	5,0	0,6								
X2MKP104#275P15 - -S	0,1	18,0	11,0	5,0	0,6								
X2MKP154#275*** - -S	0,15	18,0	12,0	6,0	0,8	26,5	15,0	6,0	0,8				
X2MKP224#275*** - -S	0,22	18,0	13,5	7,5	0,8	26,5	15,0	6,0	0,8				
X2MKP334#275*** - -S	0,33	18,0	14,5	8,5	0,8	26,5	15,0	6,0	0,8				
X2MKP474M275P15 - -S	0,47	18,0	16,0	10,0	0,8								
X2MKP474#275*** - -S	0,47	18,0	19,0	11,0	0,8	26,5	16,0	7,0	0,8	32,0	17,0	9,0	0,8
X2MKP564#275*** - -S	0,56	18,0	19,0	11,0	0,8	26,5	18,5	10,0	0,8	32,0	17,0	9,0	0,8
X2MKP684M275*** - -S	0,68	18,0	19,0	11,0	0,8	26,5	18,5	10,0	0,8	32,0	17,0	9,0	0,8
X2MKP824#275*** - -S	0,82					26,5	18,5	10,0	0,8	32,0	20,0	11,0	0,8
X2MKP105M275P22 - -S	1,0					26,5	18,5	10,0	0,8				
X2MKP105#275*** - -S	1,0					26,5	20,0	11,0	0,8	32,0	20,0	11,0	0,8
X2MKP155#275P27 - -S	1,5									32,0	22,0	13,0	0,8
X2MKP225M275P27 - -S	2,2									32,0	25,0	13,0	0,8

\# tolerance: K=10%, M=20%

*** pitch code

- - lead length/package code

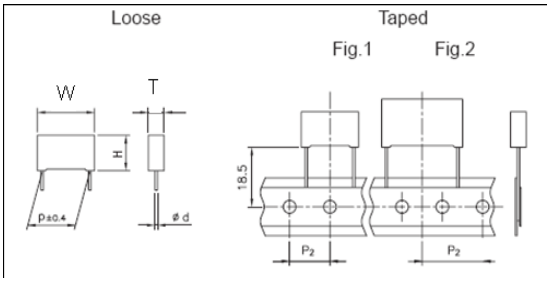
S series version

E12 series available upon request

TeCap X2MKP S(series connection)

X2 Capacitor (Metallized Polypropylene Film Capacitor)

Dimensions



∅+0,05	p = 15	22,5 ≤ p ≤ 27,5
	0,6 or 0,8*	0,8

* See dimension table

All dimensions are in mm

Pitch	Box thickness (T)	Maximum dimensions (mm)		
mm	mm	Tmax	Hmax	Wmax
15,0	<7,5	T+0,2	H+0,1	W+0,3
15,0	>7,5	T+0,2	H+0,1	W+0,5
22,5	All	T+0,2	H+0,1	W+0,3
27,5	All	T+0,2	H+0,1	W+0,3

Dimension Table (mm)

TeCap PN	CAP. (µF)	310Vac/630Vdc											
		P=15mm				P=22.5mm				P=27.5mm			
		W	H	T	d	W	H	T	d	W	H	T	d
X2MKP103#310P15 - -S	0,01	18,0	11,0	5,0	0,6								
X2MKP153#310P15 - -S	0,015	18,0	11,0	5,0	0,6								
X2MKP223#310P15 - -S	0,022	18,0	11,0	5,0	0,6								
X2MKP333#310P15 - -S	0,033	18,0	11,0	5,0	0,6								
X2MKP473#310P15 - -S	0,047	18,0	11,0	5,0	0,6								
X2MKP683#310P15 - -S	0,068	18,0	11,0	5,0	0,6								
X2MKP104#310P15 - -S	0,1	18,0	12,0	6,0	0,8								
X2MKP154#310*** - -S	0,15	18,0	13,5	7,5	0,8	26,5	15,0	6,0	0,8				
X2MKP224#310*** - -S	0,22	18,0	14,5	8,5	0,8	26,5	15,0	6,0	0,8				
X2MKP334#310*** - -S	0,33	18,0	16,0	10,0	0,8	26,5	17,0	8,5	0,8				
X2MKP474#310*** - -S	0,47	18,0	19,0	11,0	0,8	26,5	18,5	10,0	0,8	32,0	17,0	9,0	0,8
X2MKP564#310*** - -S	0,56					26,5	18,5	10,0	0,8	32,0	17,0	9,0	0,8
X2MKP684#310*** - -S	0,68					26,5	20,0	11,0	0,8	32,0	17,0	9,0	0,8
X2MKP824#310*** - -S	0,82					26,5	20,0	11,0	0,8	32,0	20,0	11,0	0,8
X2MKP105M310P22 - -S	1,0					26,5	20,0	11,0	0,8				
X2MKP105#310*** - -S	1,0					26,5	22,0	13,0	0,8	32,0	20,0	11,0	0,8
X2MKP155M310P27 - -S	1,5									32,0	22,0	13,0	0,8
X2MKP155#310P27 - -S	1,5									32,0	28,0	14,0	0,8
X2MKP225K310P27 - -S	2,2									32,0	28,0	14,0	0,8

\# tolerance: K=10%, M=20%

*** pitch code

\- - lead length/package code

S series version

E12 series available upon request

TeCap X2MKP

X2 Capacitor (Metallized Polypropylene Film Capacitor)

Part number description

X2 M K P	1 0 5	K	2 7 5	P 1 5	0 6	*
1 Type	2 Capacitance	3 Tolerance	4 Rated Voltage	5 Pitch	6 lead lenght	7 internal code

1 Type:

X2 MKP = Class X2, film metallized polypropylene

2 Capacitance:

Use 3 digit to represent Capacitance. First 2 digit means capacitance value. The last digit means 0 No. after capacitance value with unit Micro Farad. Show as below:

102= 1000PF= 1.0nF=0.001μF

103= 10000PF= 10nF= 0.01μF

104=100000PF= 100nF= 0.1μF

105= 1000000PF= 1000nF=1.0μF

106= 10000000PF= 10000nF= 10μF

3 Tolerance:

TOLERANCE	±1%	±2%	±3%	±5%	**±10%**	**±20%**
CODE	F	G	H	J	**K**	**M**

4 Rated Voltage:

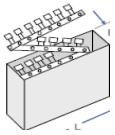
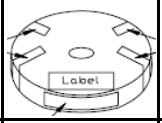
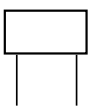
AC voltage represent code:

VOLTAGE	125V	180V	200V	220V	230V	250V	275V	280V	300V	310V
CODE	125	180	200	220	230	250	275	280	300	310

5 Pitch Code:

PITCH	5.0	7.5	10	15	22.5	27.5	37,5
CODE	P05	P07	P10	P15	P22	P27	P37

6 Lead length & Box dimensions:

CODE	Package	Lead length mm	Drawing	Typing style		
				P_2 mm	Fig N°	Pitch mm
TA	Ammo-Pack			12,70 19,05	1 2	10,0/15,0 22,5
TR	Reel Taping ø500			12,70 19,05	1 2	10,0/15,0 22,5
06	Loose, short lead wire	6^{-2}				
30	Loose, long lead wire	30^{+5}				

7 Internal code:

S = series version

* = others

TeCap X2MKP

X2 Capacitor (Metallized Polypropylene Film Capacitor)

Approval Standards

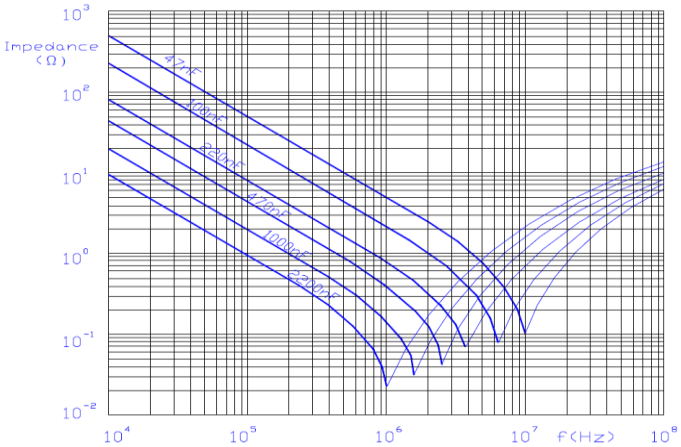
Approval marks	Standard	Class	Region
(**)	ENEC IEC 60384-14	Class X2	Europe
'(***)	UL UL 60384-14	Class X2	Usa
'(***)	UL CSA 60384-14	Class X2	Canada
	CQC GB/T 14472	Class X2	China

** ENEC mark has replaced all the following European National marks:

*** UL approval available for values 0,01uf-2,2uf.

Impedence vs frequency

(lead length less than 2mm) Typical values.



X2 Capacitor marking:

	Company Logo
MKP	capacitor Type
.22uF	Capacitance value
K	Capacitance tolerence: J=±5%, K=±10%, M=±20%
X2	X2 class
310Vac	Rated voltage
	UL safety approval mark
	Femko safety approval mark for ENEC
	CQC for China quality certification mark
40/110/56	Climatic Category
IEC 60384-14	Product test standard
B	Passive flammability category
A3	Date code (table)
S	Series connection

IEC 60384-14 UL 60384-14

S X2 MKP

.22µF K 310Vac

40/110/56 B A3

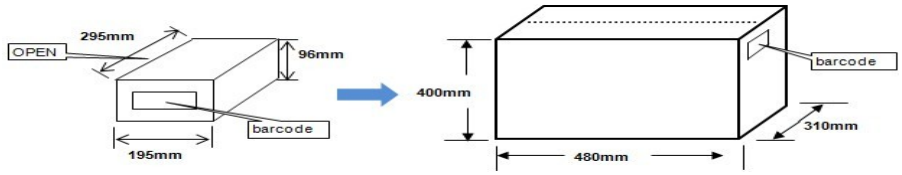
Date code table:

Year Code	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020
	X	Y	Z	A	B	C	D	E	F	G	H	I
Month Code	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
	1	2	3	4	5	6	7	8	9	0	N	D

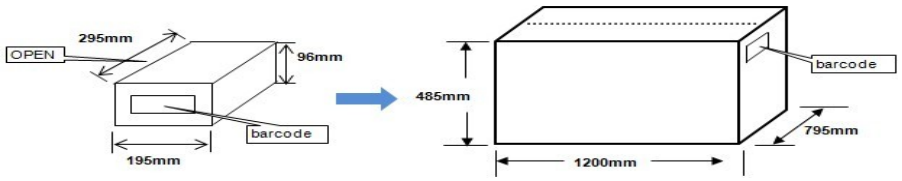
TeCap

GENERAL INFORMATION

Bulk Package-A (dimensions in mm)



Bulk Package-B (dimensions in mm)

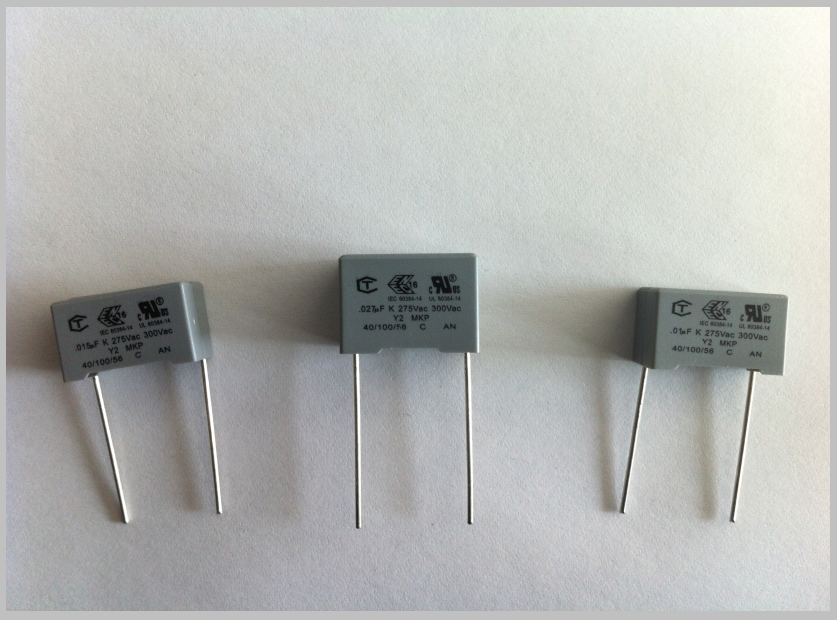


NUMBER OF PIECES FOR PACKING UNIT

Box dimensions			Pitch	Bulk Package				Taping package			
				PCS/box		box/Carton		Ammo		Reel/O 500mm	
W	H	T	P	short leads	Long leads	A	B	PCS/box	box/ Carton	PCS/box	Reel / Carton
mm	mm	mm	mm	6-^{2}mm	30+^{5}mm						
13,0	9,0	4,0	10,0	2000	1800	10	80	1000	64	1500	20
13,0	11,0	5,0	10,0	1500	1300	10	80	800	64	1250	20
13,0	12,0	6,0	10,0	1200	1000	10	80	680	64	1000	20
18,0	10,0	4,0	15,0	2500	1500	10	80	1000	64	1500	20
18,0	11,0	5,0	15,0	2000	1000	10	80	800	64	1250	20
18,0	12,0	6,0	15,0	1750	900	10	80	680	64	1000	20
18,0	13,5	7,5	15,0	1000	700	10	80	500	64	800	20
18,0	17,5	6,0	15,0	1000	700	10	80	680	64	1000	20
18,0	14,5	8,5	15,0	1000	500	10	80	440	64	700	20
18,0	12,5	9,0	15,0	1000	520	10	80	410	64	650	20
18,0	16,0	10,0	15,0	750	500	10	80	380	64	600	20
18,0	12,0	13,0	15,0	750	490	10	80	280	64	480	20
18,0	19,0	11,0	15,0	450	350	10	80	340	64	500	20
26,5	15,0	6,0	22,5	805	500	10	80	464	64	700	20
26,5	16,0	7,0	22,5	700	500	10	80	380	64	550	20
26,5	17,0	8,5	22,5	468	300	10	80	280	64	450	20
26,5	18,5	10,0	22,5	396	300	10	80	235	64	350	20
26,5	20,0	11,0	22,5	360	250	10	80	217	64	350	20
26,5	22,0	13,0	22,5	300	200	10	80			300	20
32,0	17,0	9,0	27,5	408	204	10	80			450	20
32,0	20,0	10,0	27,5	300	204	10	80			350	20
32,0	20,0	11,0	27,5	280	168	10	80			350	20
32,0	22,0	13,0	27,5	240	144	10	80			300	20
32,0	25,0	14,0	27,5	240	144	10	80				
32,0	28,0	14,0	27,5	176	88	10	80				
32,0	24,5	15,0	27,5	200	120	10	80				
32,0	33,0	18,0	27,5	156	64	10	80				
32,0	37,0	22,0	27,5	84	56	10	80				
41,5	22,0	11,0	37,5	210	126	10	80				
41,5	24,0	13,0	37,5	180	108	10	80				
41,5	28,0	16,0	37,5	108	54	10	80				
41,5	32,0	19,0	37,5	96	48	10	80				
41,5	40,0	20,0	37,5	63	42	10	80				
41,5	44,0	24,0	37,5	54	36	10	80				
41,5	45,0	30,0	37,5	45	30	10	80				

TeCap Y2MKP

Y2 Capacitor (Metallized Polypropylene Film Capacitor)

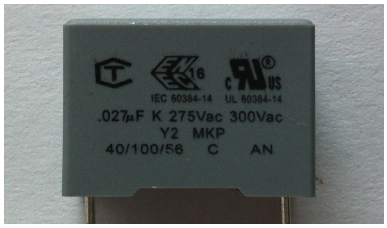


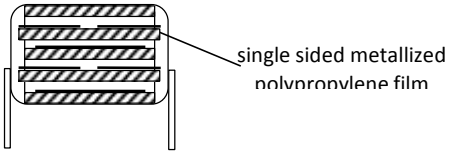
www.tecaphk.com

TeCap Y2MKP

Y2/X1 Capacitor (Metallized Polypropylene Film Capacitor)

SELF-HEALING PROPERTIES





APPLICATION:

Interference suppression and «acrossthe-line» applications.
Suitable for use in situations where failure of the capacitor could lead to danger of electric shock.

FEATURES:

- Compact size
- Withstand overvoltage stressing
- Excellent active and passive flame resistant abilities
- Widely used in across-the-line,line-by-pass,antenna coupling interference suppression circuit

GENERAL TECHNICAL DATA

Dielectric: polypropylene film.

Plates: metal layer deposited by evaporation under vacuum

Metal Layer: Zinc Alloy evaporation under vacuum.

Winding: Non-inductive type.

Leads: Tin-plated copper wire.

Plastic case: PBT material solven resistant & flame retardant according to UL94V0.

Filling: Epoxy Resin with flame retardant according to UL94V0.

Marking: Company logo, capacitor type, capacitance, tolerance, capacitor class, rated voltage, approvals climatic category, passive flammability category, date code.

Operating temperature range: - 40 to +110℃

Climatic category: 40/110/56 IEC 60068-1

Related documents: IEC-60384-14, EN-60384-14, UL-60384-14, CSA-60384-14

ELECTRICAL CHARACTERISTICS

Capacitance range:
1000pF ~ 1.0μF

Capacitance tolerances: (measured at 1KHZ)
±10%(K); ±20%(M)

Rated Voltage: 300Vac/1000Vdc;50/60Hz

Dissipation Factor:
tg δ 10^{-4} at +25°C±5°C: ≤ 30 (20 typical) at 1 kHz

Insulation Resistance:

Test conditions	
Temperature	25°C ±5°C
Voltage charge:	100 Vdc
Charge time	1 Min.
Performance	
C ≤ 0.33uF	≥1×10^5 MΩ (typical value 5×10^5 MΩ)
C > 0.33uF	≥30000 s (typical value 150000 s)

Test Voltage: at 25°C ±5°C
(Between terminals) 2500VAC for 1 sec+ 5000Vdc for 1sec
on all pieces

RELIBILITY TEST METHOD &PERFORMANCE:

Damp heat steady state

Test condition

Temperature:	40±2℃
Relative humidity:	93%±2%
Test duration:	56 days

Performance

Dielectric strength	No dielectric breakdown or flashover at 1500Vac/1 min.
Capacitance change	≤5%
Insulation resistance	⩾50% of initial limit

Endurance

Test condition

Temperature:	110°C±2C
Test duration:	1000 h
Voltage applied:	$1.7V_R$+1000Vac 0.1s/h

Performance

Dielectric strength	No dielectric breakdown or flashover at 1500Vac/1 min.
Capacitance change	⩽10%
Insulation resistance	⩾50% of initial limit

Resistance to soldering heat

Test condition

Solder bath temperature:	260°C±5°C
Dipping time:	10s±1s

Performance

Capacitance change	⩽2%

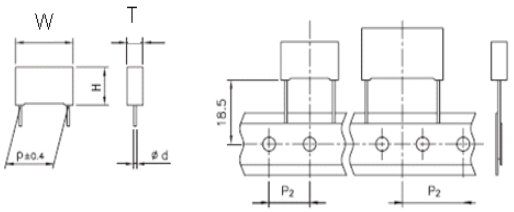
TeCap Y2MKP

Y2/X1 Capacitor (Metallized Polypropylene Film Capacitor)

Dimensions

Loose Taped

Fig.1 Fig.2



Pitch	Box thickness (T)	Maximum dimensions (mm)		
mm	mm	Tmax	Hmax	Wmax
7.5	All	T+0,2	H+0,1	W+0,2
10.0	All	T+0,2	H+0,1	W+0,2
15.0	<7,5	T+0,2	H+0,1	W+0,3
15.0	≥7,5	T+0,2	H+0,1	W+0,5
22.5	All	T+0,2	H+0,1	W+0,3
27.5	All	T+0,2	H+0,1	W+0,3
37.5	All	T+0,3	H+0,1	W+0,3

Ø d+0,05	p=7,5	p=10	p=15	22,5≤p≤27,5
	0.5	0.6	0,6 or 0,8*	0.8

* See dimension table

All dimensions are in mm

Dimension Table (mm)

TeCap PN	CAP.	300Vac/1000dc															
		P=7,5mm				P=10mm				P=15mm				P=22,5mm			
		W	H	T	d	W	H	T	d	W	H	T	d	W	H	T	d
Y2MKP102K300***- -	1000pF	10.5	9.0	4.0	0.5	13.0	9.0	4.0	0.6								
Y2MKP152K300***- -	1500pF	10.5	9.0	4.0	0.5	13.0	9.0	4.0	0.6								
Y2MKP222K300***- -	2200pF	10.5	9.0	4.0	0.5	13.0	9.0	4.0	0.6								
Y2MKP332K300***- -	3300pF	10.5	11.0	5.0	0.5	13.0	9.0	4.0	0.6	18.0	11.0	5.0	0.6				
Y2MKP472K300***- -	4700pF	10.5	12.0	6.0	0.5	13.0	11.0	5.0	0.6	18.0	11.0	5.0	0.6				
Y2MKP562K300***- -	5600pF	10.5	12.0	6.0	0.5	13.0	12.0	6.0	0.6	18.0	11.0	5.0	0.6				
Y2MKP682K300***- -	6800pF					13.0	12.0	6.0	0.6	18.0	11.0	5.0	0.6				
Y2MKP103K300***- -	0.010µF					13.0	12.0	6.0	0.6	18.0	11.0	5.0	0.6				
Y2MKP153K300***- -	0,015µF									18.0	11.0	5.0	0.6				
Y2MKP223K300***- -	0,022µF									18.0	12.0	6.0	0.8				
Y2MKP273K300***- -	0,027µF									18.0	13.0	7.0	0.8				
Y2MKP333K300***- -	0,033µF									18.0	13.0	7.0	0.8				
Y2MKP473K300***- -	0,047µF									18.0	14.5	8.5	0.8	26.5	15.0	6.0	0.8
Y2MKP563K300***- -	0,056µF									18.0	16.0	10.0	0.8	26.5	15.0	6.0	0.8
Y2MKP683K300***- -	0,068µF									18.0	16.0	10.0	0.8	26.5	15.0	6.0	0.8
Y2MKP104K300***- -	0,1µF													26.5	17.0	8.5	0.8

*** pitch code

- - lead length/package code

Further E12 series available upon request

in progress

TeCap Y2MKP

Y2/X1 Capacitor (Metallized Polypropylene Film Capacitor)

Part number description

Y2 M K P	1 0 2	K	3 0 0	P 1 5	0 6	*
1	2	3	4	5	6	7
Type	Capacitance	Tolerance	Rated Voltage	Pitch	lead lenght	internal code

1 Type:

Y2 MKP = Class Y2/X1, film metallized polypropylene

2 Capacitance

Use 3 digit to represent Capacitance. First 2 digit means capacitance value. The last digit means 0 No. after capacitance value with unit Picro Farad. Show as below:

102= 1000PF= 1.0nF=0.001μF

103= 10000PF= 10nF= 0.01μF

104=100000PF= 100nF= 0.1μF

105= 1000000PF= 1000nF=1.0μF

106= 10000000PF= 10000nF= 10μF

3 Tolerence:

TOLERANCE	±1%	±2%	±3%	±5%	**±10%**	**±20%**
CODE	F	G	H	J	**K**	**M**

4 Rated Voltage:

AC voltage represent code:

VOLTAGE	125V	180V	200V	220V	230V	250V	275V	280V	300V	310V
CODE	125	180	200	220	230	250	275	280	300	310

5 Pitch Code:

PITCH	5.0	7.5	10	15	22.5	27.5	37,5
CODE	P05	P07	P10	P15	P22	P27	P37

6 Lead length & Box dimensions

CODE	Package	Lead length mm	Drawing	Typing style		
				P_2 mm	Fig N°	Pitch mm
TB	Ammo-Pack			12.70 19.05	1 2	10,0/15,0 22,5
TR	Reel Taping ø500			12.70 19.05	1 2	10,0/15,0 22,5
06	Loose, short lead wire	6^{-2}				
30	Loose, long lead wire	30^{+5}				

TeCap Y2MKP

Y2/X1 Capacitor (Metallized Polypropylene Film Capacitor)

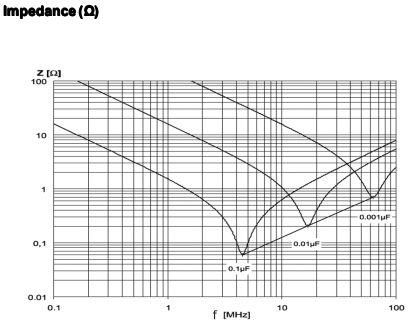
Approval Standards

Approval marks	Standard	Class	Region
**	ENEC IEC 60384-14	Class Y2/X1	Europe
	UL UL 60384-14	Class Y2/X1	Usa
	UL CSA 60384-14	Class Y2/X1 for Canada	Canada
	CQC GB/T 14472	Class Y2/X1	China

** ENEC mark has replaced all the following European National marks:

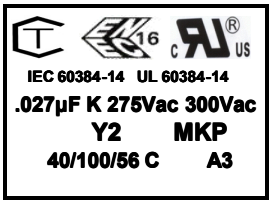
Impedence vs frequency

(lead length 2mm) Typical values.



Y2 Capacitor marking:

	Company Logo
MKP	capacitor Type
.027µF	Capacitance value
K	Capacitance tolerance: J=±5%, K=±10%, M=±20%
Y2	Y2/X1 class
275Vac 300Vac	Rated voltage (275Vac for ENEC, 300Vac for UL)
	UL safety approval mark
	Femko safety approval mark for ENEC
40/100/56	Climatic Category
IEC 60384-14	Product test standard
C	Passive flammability category
A3	Date code (table)



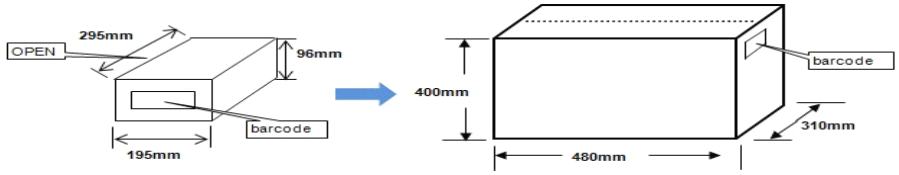
Date code table:

Year Code	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020
	X	Y	Z	A	B	C	D	E	F	G	H	I
Month Code	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
	1	2	3	4	5	6	7	8	9	0	N	D

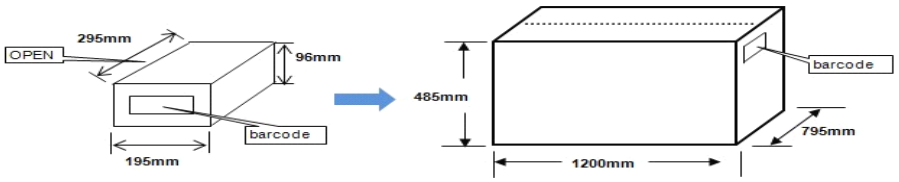
TeCap

GENERAL INFORMATION

Bulk Package-A (dimensions in mm)



Bulk Package-B (dimensions in mm)



NUMBER OF PIECES FOR PACKING UNIT

Box dimensions			Pitch	Bulk Package				Taping package			
				PCS/box		box/Carton		Ammo		Reel Ø 500mm	
W	H	T	P	short leads	Long leads	A	B	PCS/box	box/ Carton	PCS/box	Reel / Carton
mm	mm	mm	mm	6-^{2}mm	30+^{5}mm						
13.0	9.0	4.0	10.0	2000	1800	10	80	1000	64	1500	20
13.0	11.0	5.0	10.0	1500	1300	10	80	800	64	1250	20
13.0	12.0	6.0	10.0	1200	1000	10	80	680	64	1000	20
18.0	10.0	4.0	15.0	2500	1500	10	80	1000	64	1500	20
18.0	11.0	5.0	15.0	2000	1000	10	80	800	64	1250	20
18.0	12.0	6.0	15.0	1750	900	10	80	680	64	1000	20
18.0	13.5	7.5	15.0	1000	700	10	80	500	64	800	20
18.0	17.5	6.0	15.0	1000	700	10	80	680	64	1000	20
18.0	14.5	8.5	15.0	1000	500	10	80	440	64	700	20
18.0	12.5	9.0	15.0	1000	520	10	80	410	64	650	20
18.0	16.0	10.0	15.0	750	500	10	80	380	64	600	20
18.0	12.0	13.0	15.0	750	490	10	80	280	64	480	20
18.0	19.0	11.0	15.0	450	350	10	80	340	64	500	20
26.5	15.0	6.0	22.5	805	500	10	80	464	64	700	20
26.5	16.0	7.0	22.5	700	500	10	80	380	64	550	20
26.5	17.0	8.5	22.5	468	300	10	80	280	64	450	20
26.5	18.5	10.0	22.5	396	300	10	80	235	64	350	20
26.0	20.0	11.0	22.5	360	250	10	80	217	64	350	20
26.5	22.0	13.0	22.5	300	200	10	80			300	20
32.0	17.0	9.0	27.5	408	204	10	80			450	20
32.0	20.0	10.0	27.5	300	204	10	80			350	20
32.0	20.0	11.0	27.5	280	168	10	80			350	20
32.0	22.0	13.0	27.5	240	144	10	80			300	20
32.0	25.0	14.0	27.5	240	144	10	80				
32.0	28.0	14.0	27.5	176	88	10	80				
32.0	24.5	15.0	27.5	200	120	10	80				
32.0	33.0	18.0	27.5	156	64	10	80				
32.0	37.0	22.0	27.5	84	56	10	80				
41.5	22.0	11.0	37.5	210	126	10	80				
41.5	24.0	13.0	37.5	180	108	10	80				
41.5	28.0	16.0	37.5	108	54	10	80				
41.5	32.0	19.0	37.5	96	48	10	80				
41.5	40.0	20.0	37.5	63	42	10	80				
41.5	44.0	24.0	37.5	54	36	10	80				
41.5	45.0	30.0	37.5	45	30	10	80				

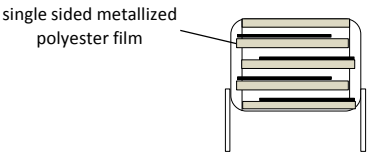
TeCap

GPMKT

MKT Series

METALLIZED POLYESTER FILM CAPACITOR, D.C. APPLICATIONS

Winding scheme



APPLICATION:

blocking,coupling,decoupling,by-passing,interference suppression in low voltage applications(i.e.:AUTOMOTIVE).

FEATURES:

- High reliability
- Box type provides the identical outer appearance

GENERAL TECHNICAL DATA

Construction: Wound technoloy

Dielectric: polyethylene terephthalate (polyester film, PET)

Metal Layer: aluminum layer deposited by evaporation under vacuum.

Winding: Non-inductive type.

Leads: Tin-plated copper wire.

Plastic case: PBT material with solven resistant & flame retardant according to UL94V0.

Filling: Epoxy Resin with flame retardant according to UL94V0.

Marking: Manufacturer's logo, series, capacitor type, rated voltage, capacitance, tolerance, date code.

Operating temperature range: - 55 to +105°C
Upper operating temperature of 125°C is allowed for a max.operating time of 1000h.

Climatic category: 55/105/56 IEC 60068-1
Related documents: IEC-60384-2

Test Voltage: at 25°C ±5°C
(Between termi1.6×V_R applied for 2s at +25°C ±5°C.

ELECTRICAL CHARACTERISTICS

Capacitance range: 1000 PF ~ 220μF

Capacitance tolerances: (measured at 1KHZ)
±5%(J); ±10%(K); ±20%(M)

Rated Voltage:
63Vdc-100Vdc-160Vdc-250Vdc
400Vdc-630Vdc-1000Vdc

Rated temperature(T_R): + 85°C
Temperature derated voltage:
for temperatures between +85°C and +125°C
a decreasing factor of 1.25% per degree°C on the rated voltage V_R(d.c. and a.c.) has to be applied.

Total self-inductance(L): (Lead length~2mm)

Pitch(mm)	10	15	22.5	27.5	37.5
L(nH)≈	9	10	18	18	22

Dissipation Factor: tgδ 10^{-4} At 25°C ±5°C

kHz	C ≤ 1μF	C >1μF
1	≤ 100	≤ 100
10	≤ 150	

Insulation Resistance:

Test conditions
Temperat+25°C ±5°C
Charge time: 1 Min.
Voltage charge: 50 Vdc for V_R ＜100 Vdc
100 Vdc for V_R ≥100 Vdc

Performance
For VR ≤ 100Vdc
C ≤ 0.33uF ≥3750 MΩ (typical value 5x10^4 MΩ)
C > 0.33uF ≥1250 s (typical value 5000 s)
For VR > 100Vdc
C ≤ 0.33uF ≥30000MΩ (typical value 5x10^4 MΩ)
C > 0.33uF ≥10000 s (typical value 17000 s)

RELIBILITY TEST METHOD & PERFORMANCE:

Damp heat steady state			**Performance**	
Test condition	Temperature:	40±2℃	Capacitance change:	≤5%
	Relative humidity:	93%±2%	DF change:	≤50×10^{-4} at 1kHz
	Test duration:	56 days	Insulation resistance:	≥50% of initial limit
Endurance			**Performance**	
Test condition	Temperature:	+105±2℃	Capacitance change:	≤5%
	Test duration:	2000 h	DF change:	≤50×10^{-4} at 10kHz for C≤ 1uF
	Voltage applied:	1.25×Vc		≤30×10^{-4} at 1kHz for C > 1uF
			Insulation resistance:	≥50% of initial limit
Resistance to soldering heat			**Performance**	
Test condition	Solder bath temperatu	260±5℃	Capacitance change:	≤2%
	Dipping time:	10s±1s	DF change:	≤50×10^{-4} at 10kHz for C≤ 1uF
				≤30×10^{-4} at 1kHz for C＞ 1uF
			Insulation resistance:	≥initial limit
Long term stability(after two years):			**Performance**	
Storage:	standard environmental conditions (see general information page)		Capacitance change:	≤3% for C≤ 0,1uF
				≤2% for C＞ 0,1uF

TeCap

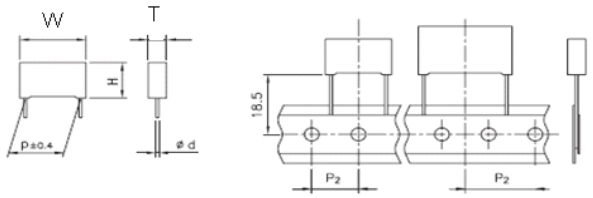
GPMKT
MKT Series

METALLIZED POLYESTER FILM CAPACITOR, DC APPLICATIONS

Dimension Table

Loose Taped

Fig.1 Fig.2



Pitch	Box thickness (T)	Maximum dimensions (mm)		
mm	mm	Tmax	Hmax	Wmax
10.0	All	T+0,2	H+0,1	W+0,2
15	<7,5	T+0,2	H+0,1	W+0,3
15.0	≥7,5	T+0,2	H+0,1	W+0,5
22.5	All	T+0,2	H+0,1	W+0,3
27.5	All	T+0,2	H+0,1	W+0,3
37.5	All	T+0,2	H+0,1	W+0,3

All dimensions are in mm

CAP. (µF)	100Vdc/63ac						
	W 2	H	T	P	Ø d	Max dv/dt	Part Number
0.33	18.0	11.0	5.0	15.0	0.6	3.0	GPMKT334 - 0100P15 - - -
0.47	18.0	11.0	5.0	15.0	0.6	3.0	GPMKT474 - 0100P15 - - -
0.68	18.0	11.0	5.0	15.0	0.6	3.0	GPMKT684 - 0100P15 - - -
1.0	18.0	11.0	5.0	15.0	0.6	3.0	GPMKT105 - 0100P15 - - -
1.5	18.0	13.5	7.5	15.0	0.8	3.0	GPMKT155 - 0100P15 - - -
2.2	18.0	14.5	8.5	15.0	0.8	3.0	GPMKT225 - 0100P15 - - -
3.3	18.0	16.0	10.0	15.0	0.8	3.0	GPMKT335 - 0100P15 - - -
4.7	18.0	19.0	11.0	15.0	0.8	3.0	GPMKT475 - 0100P15 - - -
1.5	26.5	15.0	6.0	22.5	0.8	2.0	GPMKT155 - 0100P22 - - -
2.2	26.5	15.0	6.0	22.5	0.8	2.0	GPMKT225 - 0100P22 - - -
3.3	26.5	16.0	7.0	22.5	0.8	2.0	GPMKT335 - 0100P22 - - -
4.7	26.5	17.0	8.5	22.5	0.8	2.0	GPMKT475 - 0100P22 - - -
6.8	26.5	18.5	10.0	22.5	0.8	2.0	GPMKT685 - 0100P22 - - -
10.0	26.5	22.0	13.0	22.5	0.8	2.0	GPMKT106 - 0100P22 - - -
4.7	32.0	17.0	9.0	27.5	0.8	1.5	GPMKT475 - 0100P27 - - -
6.8	32.0	17.0	9.0	27.5	0.8	1.5	GPMKT685 - 0100P27 - - -
10.0	32.0	17.0	9.0	27.5	0.8	1.5	GPMKT106 - 0100P27 - - -
15.0	32.0	20.0	11.0	27.5	0.8	1.5	GPMKT156 - 0100P27 - - -
22.0	32.0	22.0	13.0	27.5	0.8	1.5	GPMKT226 - 0100P27 - - -
33.0	32.0	28.0	14.0	27.5	0.8	1.5	GPMKT336 - 0100P27 - - -
47.0	32.0	33.0	18.0	27.5	0.8	1.5	GPMKT476 - 0100P27 - - -
68.0	32.0	37.0	22.0	27.5	0.8	1.5	GPMKT686 - 0100P27 - - -
15.0	41.5	22.0	11.0	37.5	0.8	1.0	GPMKT156 - 0100P37 - - -
22.0	41.5	22.0	11.0	37.5	0.8	1.0	GPMKT226 - 0100P37 - - -
33.0	41.5	24.0	13.0	37.5	0.8	1.0	GPMKT336 - 0100P37 - - -
47.0	41.5	28.5	16.0	37.5	0.8	1.0	GPMKT476 - 0100P37 - - -
68.0	41.5	32.0	19.0	37.5	0.8	1.0	GPMKT686 - 0100P37 - - -
100.0	41.5	40.0	20.0	37.5	0.8	1.0	GPMKT107 - 0100P37 - - -
150.0	41.5	44.0	24.0	37.5	0.8	1.0	GPMKT157 - 0100P37 - - -

Tolerance: J(±5%); K(±10%); M(±20%)
Lead lenght/package code
Internal use

CAP. (µF)	63Vdc/40ac						
	W	H	T	P	Ø d	Max dv/dt (V/µs)	Part Number
0.68	18.0	11.0	5.0	15.0	0.6	2.5	GPMKT684 - 0063P15 - - -
1.0	18.0	11.0	5.0	15.0	0.6	2.5	GPMKT105 - 0063P15 - - -
1.5	18.0	11.0	5.0	15.0	0.6	2.5	GPMKT155 - 0063P15 - - -
2.2	18.0	12.0	6.0	15.0	0.8	2.5	GPMKT225 - 0063P15 - - -
3.3	18.0	13.5	7.5	15.0	0.8	2.5	GPMKT335 - 0063P15 - - -
4.7	18.0	14.5	8.5	15.0	0.8	2.5	GPMKT475 - 0063P15 - - -
6.8	18.0	16.0	10.0	15.0	0.8	2.5	GPMKT685 - 0063P15 - - -
3.3	26.5	15.0	6.0	22.5	0.8	1.5	GPMKT335 - 0063P22 - - -
4.7	26.5	16.0	7.0	22.5	0.8	1.5	GPMKT475 - 0063P22 - - -
6.8	26.5	16.0	7.0	22.5	0.8	1.5	GPMKT685 - 0063P22 - - -
10.0	26.5	17.0	8.5	22.5	0.8	1.5	GPMKT106 - 0063P22 - - -
15.0	26.5	20.0	11.0	22.5	0.8	1.5	GPMKT156 - 0063P22 - - -
10.0	32.0	17.0	9.0	27.5	0.8	1.0	GPMKT106 - 0063P27 - - -
15.0	32.0	17.0	9.0	27.5	0.8	1.0	GPMKT156 - 0063P27 - - -
22.0	32.0	20.0	11.0	27.5	0.8	1.0	GPMKT226 - 0063P27 - - -
33.0	32.0	22.0	13.0	27.5	0.8	1.0	GPMKT336 - 0063P27 - - -
47.0	32.0	28.0	14.0	27.5	0.8	1.0	GPMKT476 - 0063P27 - - -
68.0	32.0	33.0	18.0	27.5	0.8	1.0	GPMKT686 - 0063P27 - - -
100.0	32.0	37.0	22.0	27.5	0.8	1.0	GPMKT107 - 0063P27 - - -
22.0	41.5	22.0	11.0	37.5	0.8	0.8	GPMKT226 - 0063P37 - - -
33.0	41.5	22.0	11.0	37.5	0.8	0.8	GPMKT336 - 0063P37 - - -
47.0	41.5	24.0	13.0	37.5	0.8	0.8	GPMKT476 - 0063P37 - - -
68.0	41.5	32.0	19.0	37.5	0.8	0.8	GPMKT686 - 0063P37 - - -
100.0	41.5	32.0	19.0	37.5	0.8	0.8	GPMKT107 - 0063P37 - - -
150.0	41.5	40.0	20.0	37.5	0.8	0.8	GPMKT157 - 0063P37 - - -
220.0	41.5	44.0	24.0	37.5	0.8	0.8	GPMKT227 - 0063P37 - - -

CAP.	160Vdc/90ac						
	W	H	T	P	Ø d	Max dv/dt	Part Number
0.33	18.0	11.0	5.0	15.0	0.6	9.0	GPMKT334 - 0160P15 - - -
0.47	18.0	11.0	5.0	15.0	0.6	9.0	GPMKT474 - 0160P15 - - -
0.68	18.0	11.0	5.0	15.0	0.6	9.0	GPMKT684 - 0160P15 - - -
1.0	18.0	13.5	7.5	15.0	0.8	9.0	GPMKT105 - 0160P15 - - -
1.5	18.0	14.5	8.5	15.0	0.8	9.0	GPMKT155 - 0160P15 - - -
2.2	18.0	16.0	10.0	15.0	0.8	9.0	GPMKT225 - 0160P15 - - -
3.3	18.0	19.0	11.0	15.0	0.8	9.0	GPMKT335 - 0160P15 - - -
1.5	26.5	15.0	6.0	22.5	0.8	5.5	GPMKT155 - 0160P22 - - -
2.2	26.5	16.0	7.0	22.5	0.8	5.5	GPMKT225 - 0160P22 - - -
3.3	26.5	17.0	8.5	22.5	0.8	5.5	GPMKT335 - 0160P22 - - -
4.7	26.5	20.0	11.0	22.5	0.8	5.5	GPMKT475 - 0160P22 - - -
6.8	26.5	22.0	13.0	22.5	0.8	5.5	GPMKT685 - 0160P22 - - -
3.3	32.0	17.0	9.0	27.5	0.8	3.0	GPMKT335 - 0160P27 - - -
4.7	32.0	17.0	9.0	27.5	0.8	3.0	GPMKT475 - 0160P27 - - -
6.8	32.0	17.0	9.0	27.5	0.8	3.0	GPMKT685 - 0160P27 - - -
10.0	32.0	17.0	9.0	27.5	0.8	3.0	GPMKT106 - 0160P27 - - -
15.0	32.0	20.0	11.0	27.5	0.8	3.0	GPMKT156 - 0160P27 - - -
22.0	32.0	22.0	13.0	27.5	0.8	3.0	GPMKT226 - 0160P27 - - -
33.0	32.0	28.0	14.0	27.5	0.8	3.0	GPMKT336 - 0160P27 - - -
47.0	32.0	33.0	18.0	27.5	0.8	3.0	GPMKT476 - 0160P27 - - -
68.0	32.0	37.0	22.0	27.5	0.8	3.0	GPMKT686 - 0160P27 - - -
10.0	41.5	22.0	11.0	37.5	0.8	2.0	GPMKT106 - 0160P37 - - -
15.0	41.5	22.0	11.0	37.5	0.8	2.0	GPMKT156 - 0160P37 - - -
22.0	41.5	22.0	11.0	37.5	0.8	2.0	GPMKT226 - 0160P37 - - -
33.0	41.5	24.0	13.0	37.5	0.8	2.0	GPMKT336 - 0160P37 - - -
47.0	41.5	28.5	16.0	37.5	0.8	2.0	GPMKT476 - 0160P37 - - -
68.0	41.5	32.0	19.0	37.5	0.8	2.0	GPMKT686 - 0160P37 - - -
100.0	41.5	40.0	20.0	37.5	0.8	2.0	GPMKT107 - 0160P37 - - -
150.0	41.5	45.0	30.0	37.5	0.8	2.0	GPMKT157 - 0160P37 - - -

Tolerance: J(±5%); K(±10%); M(±20%)
Lead lenght/package code
Internal use

Note: If the working voltage (V) is lower than the rated voltage (V_R),the capacitor may work at higher dv/dt.In this case the maximum value allowed is obtained multiplying the above value(see table dv/dt) with the ratio V_R/V.

TeCap

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MKT Series

METALLIZED POLYESTER FILM CAPACITOR, DC APPLICATIONS

Dimension Table

CAP. (μF)	250Vdc/160ac W	H	T	P	Ø d	Max dv/dt (V/μs)	Part Number
0.10	18.0	11.0	5.0	15.0	0.6	12	GPMKT104 - 0250P15 - - -
0.15	18.0	11.0	5.0	15.0	0.6	12	GPMKT154 - 0250P15 - - -
0.22	18.0	11.0	5.0	15.0	0.6	12	GPMKT224 - 0250P15 - - -
0.33	18.0	11.0	5.0	15.0	0.6	12	GPMKT334 - 0250P15 - - -
0.47	18.0	12.0	6.0	15.0	0.8	12	GPMKT474 - 0250P15 - - -
0.68	18.0	13.5	7.5	15.0	0.8	12	GPMKT684 - 0250P15 - - -
1.0	18.0	14.5	8.5	15.0	0.8	12	GPMKT105 - 0250P15 - - -
1.5	18.0	16.0	10.0	15.0	0.8	12	GPMKT155 - 0250P15 - - -
0.47	26.5	15.0	6.0	22.5	0.8	8	GPMKT474 - 0250P22 - - -
0.68	26.5	15.0	6.0	22.5	0.8	8	GPMKT684 - 0250P22 - - -
1.0	26.5	15.0	6.0	22.5	0.8	8	GPMKT105 - 0250P22 - - -
1.5	26.5	16.0	7.0	22.5	0.8	8	GPMKT155 - 0250P22 - - -
2.2	26.5	18.5	10.0	22.5	0.8	8	GPMKT225 - 0250P22 - - -
3.3	26.5	20.0	11.0	22.5	0.8	8	GPMKT335 - 0250P22 - - -
1.5	32.0	17.0	9.0	27.5	0.8	5	GPMKT155 - 0250P27 - - -
2.2	32.0	17.0	9.0	27.5	0.8	5	GPMKT225 - 0250P27 - - -
3.3	32.0	17.0	9.0	27.5	0.8	5	GPMKT335 - 0250P27 - - -
4.7	32.0	17.0	9.0	27.5	0.8	5	GPMKT475 - 0250P27 - - -
6.8	32.0	20.0	11.0	27.5	0.8	5	GPMKT685 - 0250P27 - - -
10.0	32.0	22.0	13.0	27.5	0.8	5	GPMKT106 - 0250P27 - - -
15.0	32.0	28.0	14.0	27.5	0.8	5	GPMKT156 - 0250P27 - - -
22.0	32.0	33.0	18.0	27.5	0.8	5	GPMKT226 - 0250P27 - - -
33.0	32.0	37.0	22.0	27.5	0.8	5	GPMKT336 - 0250P27 - - -
4.7	41.5	22.0	11.0	37.5	0.8	4	GPMKT475 - 0250P37 - - -
6.8	41.5	22.0	11.0	37.5	0.8	4	GPMKT685 - 0250P37 - - -
10.0	41.5	22.0	11.0	37.5	0.8	4	GPMKT106 - 0250P37 - - -
15.0	41.5	24.0	13.0	37.5	0.8	4	GPMKT156 - 0250P37 - - -
22.0	41.5	28.5	16.0	37.5	0.8	4	GPMKT226 - 0250P37 - - -
33.0	41.5	32.0	19.0	37.5	0.8	4	GPMKT336 - 0250P37 - - -
47.0	41.5	40.0	20.0	37.5	0.8	4	GPMKT476 - 0250P37 - - -
68.0	41.5	44.0	24.0	37.5	0.8	4	GPMKT686 - 0250P37 - - -

CAP. (μF)	630Vdc/220ac W	H	T	P	Ø d	Max dv/dt (V/μs)	Part Number
0.0047	13.0	9.0	4.0	10.0	0.6	40	GPMKT472 - 0630P10 - - -
0.0068	13.0	9.0	4.0	10.0	0.6	40	GPMKT682 - 0630P10 - - -
0.010	13.0	9.0	4.0	10.0	0.6	40	GPMKT103 - 0630P10 - - -
0.015	13.0	9.0	4.0	10.0	0.6	40	GPMKT153 - 0630P10 - - -
0.022	13.0	9.0	4.0	10.0	0.6	40	GPMKT223 - 0630P10 - - -
0.033	13.0	11.0	5.0	10.0	0.6	40	GPMKT333 - 0630P10 - - -
0.047	13.0	12.0	6.0	10.0	0.6	40	GPMKT473 - 0630P10 - - -
0.033	18.0	11.0	5.0	15.0	0.6	25	GPMKT333 - 0630P15 - - -
0.047	18.0	11.0	5.0	15.0	0.6	25	GPMKT473 - 0630P15 - - -
0.068	18.0	11.0	5.0	15.0	0.6	25	GPMKT683 - 0630P15 - - -
0.10	18.0	12.0	6.0	15.0	0.8	25	GPMKT104 - 0630P15 - - -
0.15	18.0	13.5	7.5	15.0	0.8	25	GPMKT154 - 0630P15 - - -
0.22	18.0	14.5	8.5	15.0	0.8	25	GPMKT224 - 0630P15 - - -
0.3	18.0	16.0	10.0	15.0	0.8	25	GPMKT334 - 0630P15 - - -
0.10	26.5	15.0	6.0	22.5	0.8	12	GPMKT104 - 0630P22 - - -
0.15	26.5	15.0	6.0	22.5	0.8	12	GPMKT154 - 0630P22 - - -
0.22	26.5	15.0	6.0	22.5	0.8	12	GPMKT224 - 0630P22 - - -
0.33	26.5	16.0	7.0	22.5	0.8	12	GPMKT334 - 0630P22 - - -
0.47	26.5	18.5	10.0	22.5	0.8	12	GPMKT474 - 0630P22 - - -
0.7	26.5	20.0	11.0	22.5	0.8	12	GPMKT684 - 0630P22 - - -
0.33	32.0	17.0	9.0	27.5	0.8	10	GPMKT334 - 0630P27 - - -
0.47	32.0	17.0	9.0	27.5	0.8	10	GPMKT474 - 0630P27 - - -
0.68	32.0	20.0	11.0	27.5	0.8	10	GPMKT684 - 0630P27 - - -
1.0	32.0	20.0	11.0	27.5	0.8	10	GPMKT105 - 0630P27 - - -
1.5	32.0	33.0	18.0	27.5	0.8	10	GPMKT155 - 0630P27 - - -
2.2	32.0	33.0	18.0	27.5	0.8	10	GPMKT225 - 0630P27 - - -
3.3	32.0	37.0	22.0	27.5	0.8	10	GPMKT335 - 0630P27 - - -
4.7	32.0	37.0	22.0	27.5	0.8	10	GPMKT475 - 0630P27 - - -
1.0	41.5	22.0	11.0	37.5	0.8	8	GPMKT105 - 0630P37 - - -
1.5	41.5	22.0	11.0	37.5	0.8	8	GPMKT155 - 0630P37 - - -
2.2	41.5	24.0	13.0	37.5	0.8	8	GPMKT225 - 0630P37 - - -
3.3	41.5	28.0	16.0	37.5	0.8	8	GPMKT335 - 0630P37 - - -
4.7	41.5	32.0	19.0	37.5	0.8	8	GPMKT475 - 0630P37 - - -
6.8	41.5	40.0	20.0	37.5	0.8	8	GPMKT685 - 0630P37 - - -
10.0	41.5	44.0	24.0	37.5	0.8	8	GPMKT106 - 0630P37 - - -

Tolerance: J(±5%)；K(±10%)；M(±20%)
Lead lenght/package code
Internal use

CAP. (μF)	400Vdc/200ac W	H	T	P	Ø d	Max dv/dt (V/μs)	Part Number
0.015	13.0	9.0	4.0	10.0	0.6	30	GPMKT153 - 0400P10 - - -
0.022	13.0	9.0	4.0	10.0	0.6	30	GPMKT223 - 0400P10 - - -
0.033	13.0	9.0	4.0	10.0	0.6	30	GPMKT333 - 0400P10 - - -
0.047	13.0	9.0	4.0	10.0	0.6	30	GPMKT473 - 0400P10 - - -
0.068	13.0	9.0	4.0	10.0	0.6	30	GPMKT683 - 0400P10 - - -
0.10	13.0	11.0	5.0	10.0	0.6	30	GPMKT104 - 0400P10 - - -
0.15	13.0	12.0	6.0	10.0	0.6	30	GPMKT154 - 0400P10 - - -
0.022	18.0	11.0	5.0	15.0	0.6	20	GPMKT223 - 0400P15 - - -
0.047	18.0	11.0	5.0	15.0	0.6	20	GPMKT473 - 0400P15 - - -
0.068	18.0	11.0	5.0	15.0	0.6	20	GPMKT683 - 0400P15 - - -
0.10	18.0	11.0	5.0	15.0	0.6	20	GPMKT104 - 0400P15 - - -
0.15	18.0	11.0	5.0	15.0	0.6	20	GPMKT154 - 0400P15 - - -
0.22	18.0	11.0	5.0	15.0	0.6	20	GPMKT224 - 0400P15 - - -
0.33	18.0	13.5	7.5	15.0	0.8	20	GPMKT334 - 0400P15 - - -
0.47	18.0	13.5	7.5	15.0	0.8	20	GPMKT474 - 0400P15 - - -
0.47	18.0	14.5	8.5	15.0	0.8	20	GPMKT474 - 0400P15 - - -
0.47	18.0	12.0	13.0	15.0	0.8	20	GPMKT474 - 0400P15 - - -
0.68	18.0	16.0	10.0	15.0	0.8	20	GPMKT684 - 0400P15 - - -
1.0	18.0	19.0	11.0	15.0	0.8	20	GPMKT105 - 0400P15 - - -
0.22	26.5	15.0	6.0	22.5	0.8	10	GPMKT224 - 0400P22 - - -
0.33	26.5	15.0	6.0	22.5	0.8	10	GPMKT334 - 0400P22 - - -
0.47	26.5	15.0	6.0	22.5	0.8	10	GPMKT474 - 0400P22 - - -
0.68	26.5	15.0	6.0	22.5	0.8	10	GPMKT684 - 0400P22 - - -
1.0	26.5	17.0	8.5	22.5	0.8	10	GPMKT105 - 0400P22 - - -
1.5	26.5	18.5	10.0	22.5	0.8	10	GPMKT155 - 0400P22 - - -
1.5	26.5	20.0	11.0	22.5	0.8	10	GPMKT155 - 0400P22 - - -
2.2	26.5	22.0	13.0	22.5	0.8	10	GPMKT225 - 0400P22 - - -
0.68	32.0	17.0	9.0	27.5	0.8	8.5	GPMKT684 - 0400P27 - - -
1.0	32.0	17.0	9.0	27.5	0.8	8.5	GPMKT105 - 0400P27 - - -
1.5	32.0	17.0	9.0	27.5	0.8	8.5	GPMKT155 - 0400P27 - - -
2.2	32.0	20.0	11.0	27.5	0.8	8.5	GPMKT225 - 0400P27 - - -
3.3	32.0	22.0	13.0	27.5	0.8	8.5	GPMKT335 - 0400P27 - - -
4.7	32.0	28.0	14.0	27.5	0.8	8.5	GPMKT475 - 0400P27 - - -
6.8	32.0	33.0	18.0	27.5	0.8	8.5	GPMKT685 - 0400P27 - - -
10.0	32.0	37.0	22.0	27.5	0.8	8.5	GPMKT106 - 0400P27 - - -
3.3	41.5	22.0	11.0	37.5	0.8	6	GPMKT335 - 0400P37 - - -
4.7	41.5	22.0	11.0	37.5	0.8	6	GPMKT475 - 0400P37 - - -
6.8	41.5	24.0	13.0	37.5	0.8	6	GPMKT685 - 0400P37 - - -
10.0	41.5	28.0	16.0	37.5	0.8	6	GPMKT106 - 0400P37 - - -
15.0	41.5	44.0	24.0	37.5	0.8	6	GPMKT156 - 0400P37 - - -
22.0	41.5	44.0	24.0	37.5	0.8	6	GPMKT226 - 0400P37 - - -
33.0	41.5	45.0	30.0	37.5	0.8	6	GPMKT336 - 0400P37 - - -

CAP. (μF)	1000Vdc/250ac W	H	T	P	Ø d	Max dv/dt (V/μs)	Part Number
0.0010	13.0	9.0	4.0	10.0	0.6	60	GPMKT102 - 1000P10 - - -
0.0015	13.0	9.0	4.0	10.0	0.6	60	GPMKT152 - 1000P10 - - -
0.0022	13.0	9.0	4.0	10.0	0.6	60	GPMKT222 - 1000P10 - - -
0.0033	13.0	9.0	4.0	10.0	0.6	60	GPMKT332 - 1000P10 - - -
0.0047	13.0	11.0	5.0	10.0	0.6	60	GPMKT472 - 1000P10 - - -
0.0068	13.0	12.0	6.0	10.0	0.6	60	GPMKT682 - 1000P10 - - -
0.010	18.0	11.0	5.0	15.0	0.6	30	GPMKT103 - 1000P15 - - -
0.015	18.0	11.0	5.0	15.0	0.6	30	GPMKT153 - 1000P15 - - -
0.022	18.0	12.0	6.0	15.0	0.8	30	GPMKT223 - 1000P15 - - -
0.033	18.0	13.5	7.5	15.0	0.8	30	GPMKT333 - 1000P15 - - -
0.047	18.0	16.0	10.0	15.0	0.8	30	GPMKT473 - 1000P15 - - -
0.068	18.0	19.0	11.0	15.0	0.8	30	GPMKT683 - 1000P15 - - -
0.033	26.5	15.0	6.0	22.5	0.8	15	GPMKT333 - 1000P22 - - -
0.047	26.5	15.0	6.0	22.5	0.8	15	GPMKT473 - 1000P22 - - -
0.068	26.5	16.0	7.0	22.5	0.8	15	GPMKT683 - 1000P22 - - -
0.10	26.5	17.0	8.5	22.5	0.8	15	GPMKT104 - 1000P22 - - -
0.15	26.5	22.0	13.0	22.5	0.8	15	GPMKT154 - 1000P22 - - -
0.15	32.0	17.0	9.0	27.5	0.8	12	GPMKT154 - 1000DP27 - - -
0.22	32.0	17.0	9.0	27.5	0.8	12	GPMKT224 - 1000P27 - - -
0.33	32.0	20.0	11.0	27.5	0.8	12	GPMKT334 - 1000P27 - - -
0.47	32.0	22.0	13.0	27.5	0.8	12	GPMKT474 - 1000P27 - - -
0.68	32.0	28.0	14.0	27.5	0.8	12	GPMKT684 - 1000P27 - - -
1.0	32.0	33.0	18.0	27.5	0.8	12	GPMKT105 - 1000P27 - - -
1.5	32.0	37.0	22.0	27.5	0.8	12	GPMKT155 - 1000P27 - - -
0.47	41.5	22.0	11.0	37.5	0.8	10	GPMKT474 - 1000P37 - - -
0.68	41.5	22.0	11.0	37.5	0.8	10	GPMKT684 - 1000P37 - - -
1.0	41.5	24.0	13.0	37.5	0.8	10	GPMKT105 - 1000P37 - - -
1.5	41.5	28.0	16.0	37.5	0.8	10	GPMKT155 - 1000P37 - - -
2.2	41.5	32.0	19.0	37.5	0.8	10	GPMKT225 - 1000P37 - - -
3.3	41.5	44.0	24.0	37.5	0.8	10	GPMKT335 - 1000P37 - - -
4.7	41.5	45.0	30.0	37.5	0.8	10	GPMKT475 - 1000P37 - - -

Tolerance: J(±5%)；K(±10%)；M(±20%)
Lead lenght/package code
Internal use

Note: If the working voltage (V) is lower than the rated voltage (V_R),the capacitor may work at higher dv/dt.In this case the maximum value allowed is obtained multiplying the above value(see table dv/dt) with the ratio V_R/V.

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MKT Series

METALLIZED POLYESTER FILM CAPACITOR, DC APPLICATIONS

Part number description

G P M K T	6 8 4	K	0 0 6 3	P 1 5	0 6	*
1 Type	2 Capacitance	3 Tolerance	4 Rated Voltage	5 Pitch	6 lead lenght	7 internal code

1 Type:

GP MKT = General Purpose, film metallized polyester

2 Capacitance

Use 3 digit to represent Capacitance. First 2 digit means capacitance value. The last digit means 0 No. after capacitance value with unit Picro Farad. Show as below:

102= 1000PF= 1.0nF=0.001µF

103= 10000PF= 10nF= 0.01µF

104=100000PF= 100nF= 0.1µF

105= 1000000PF= 1000nF=1.0µF

106= 10000000PF= 10000nF= 10µF

3 Tolerence:

TOLERANCE	±1%	±2%	±3%	±5%	**±10%**	**±20%**
CODE	F	G	H	J	**K**	**M**

4 Rated Voltage:

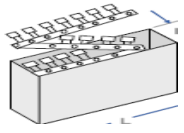
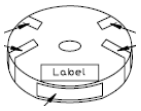
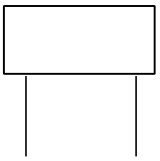
DC voltage represent code:

VOLTAGE	63V	100V	160V	250V	400V	630V	1000V
CODE	0063	0100	0160	0250	0400	0630	1000

5 Pitch Code:

PITCH	5.0	7.5	10	15	22.5	27.5	37,5
CODE	P05	P07	P10	P15	P22	P27	P37

6 Lead length & Box dimensions

CODE	Package	Lead length mm	Drawing	Typing style		
				P_2 mm	Fig N°	Pitch mm
TB	Ammo-Pack			12.70 19.05	1 2	10,0/15,0 22,5
TR	Reel Taping ø500			12.70 19.05	1 2	10,0/15,0 22,5
06	Loose, short lead wire	6^{-2}				
30	Loose, long lead wire	30^{+5}				
17	Loose, long lead wire	$17^{\pm1}$				
25	Loose, long lead wire	$25^{\pm1}$				

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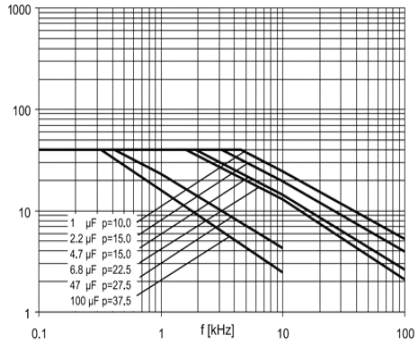
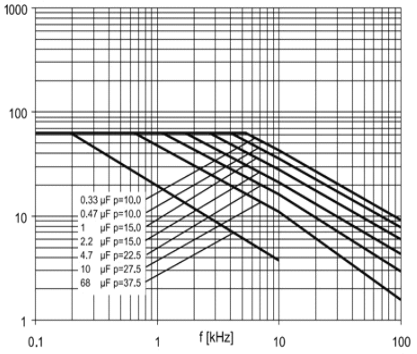
METALLIZED POLYESTER FILM CAPACITOR, DC APPLICATIONS

MAX.VOLTAGE(Vr.m.s)VERSUS FREQUENCY(sinusoidal wave-form/Tn≤ 40°C)

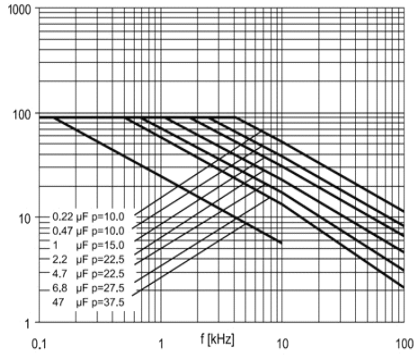
63 Vdc / 40 Vac



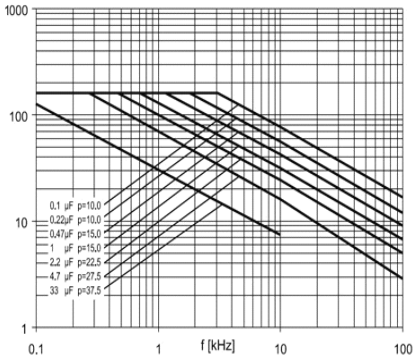
100 Vdc / 63 Vac



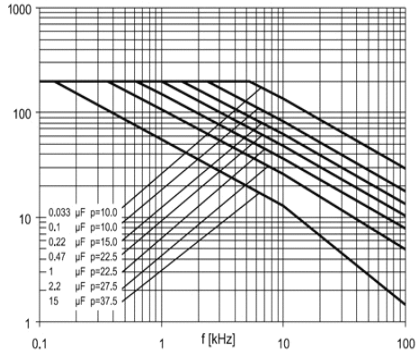
160 Vdc / 90 Vac



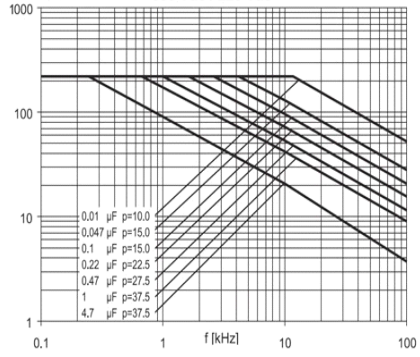
250 Vdc / 160 Vac



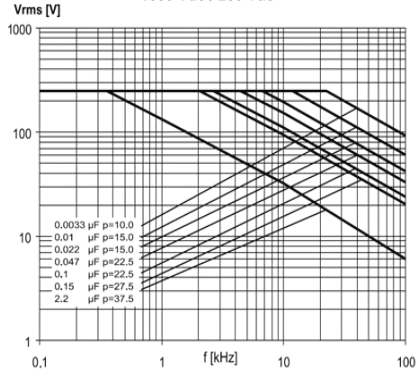
400 Vdc / 200 Vac



630 Vdc / 220 Vac



1000 Vdc / 250 Vac



Note: p (pitch) in mm.

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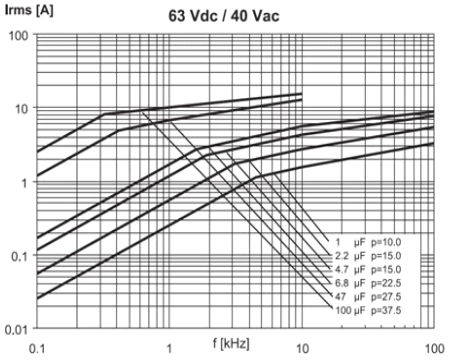
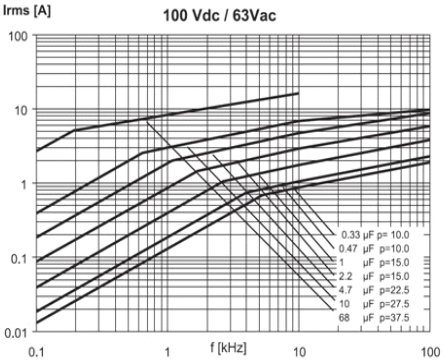
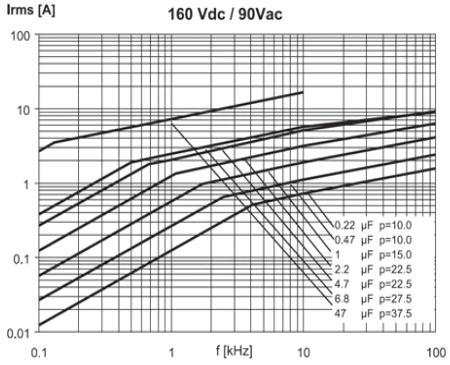
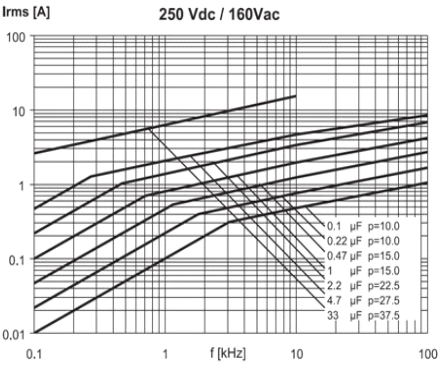
METALLIZED POLYESTER FILM CAPACITOR, DC APPLICATIONS

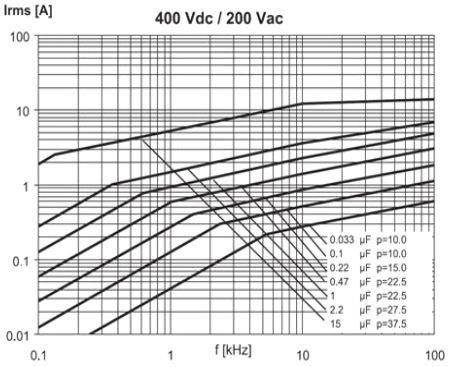
MAX.CURRENT(Ir.m.s)VERSUS FREQUENCY(sinusoidal wave-form/Tn≤ 40°C)

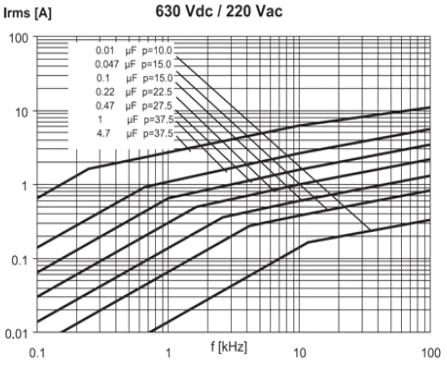


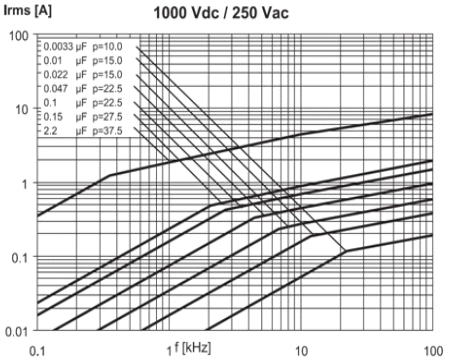












Note: p (pitch) in mm.

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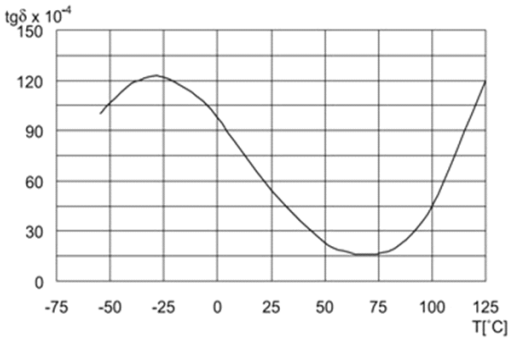
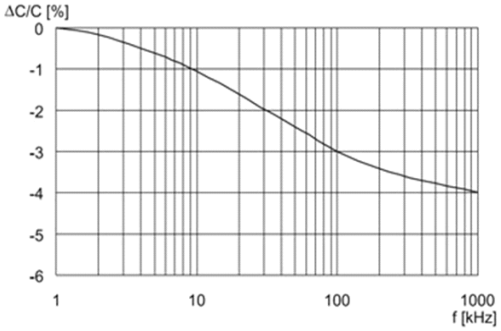
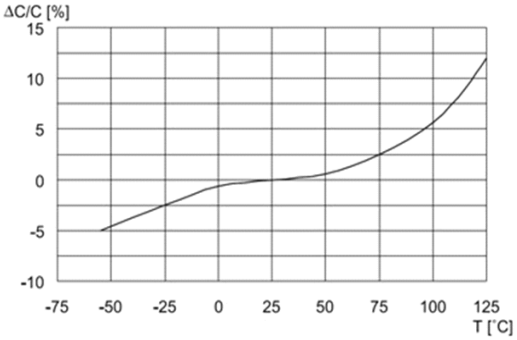
POLYESTER FILM - TYPLCAL GRAPHS



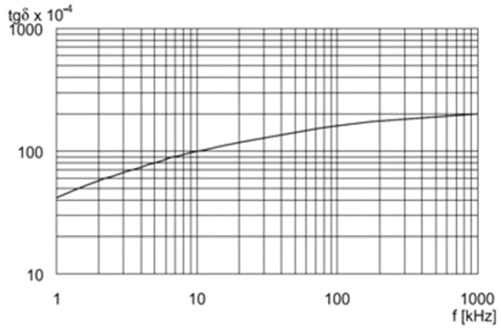
Dissipation factor vs. temperature at 1kHz



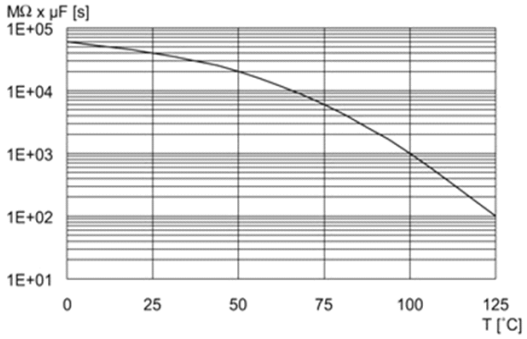
Capacitance change vs. frequency (Room temperature)



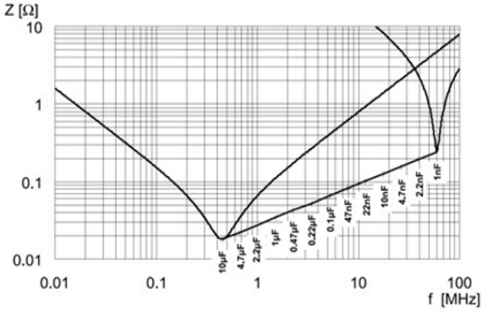
Capacitance change vs. temperature at 1kHz



Dissipation factor vs. frequency (Room temperature)



Time constant vs. temperature



Impedance vs. frequency

Storage Conditions:

Avoid to store the capacitors in places where the conditions differ from the following:

Storage time: ≤ 24 months from the date marked on the label gluded to the package

* Temperature:	-40 to 80°C
* Humidity:	
Average per year:	≤70% (at an ambient temperature of 40°C
For 30 full days ramdomly distributed throughout the year:	≤85%
Dew:	absent