CATALOGUE 2018

Deki Electronics Ltd

An ISO 9001:2008 / ISO 14001:2004

Deki Electronics is like a bonsai. Small yet complete.
Complete range of plastic film capacitors with a choice of technologies.

Every branch and twig shaped or eliminated until the chosen image is achieved. *Clear focus on quality and providing solutions.*

The image maintained and improved by constant pruning and trimming. *Commitment to training and knowledge enhancement.*

Deki at a Glance

Year of establishment: 1984 in technical collaboration with Okaya Electric Industries, Japan.

Capacity: 1.2 billion pieces per annum as on 1st October 2012.

Technologies available: Film foil inductive & non-inductive construction, metallised non-inductive construction.

Types of capacitors: Plain Polyester / Metallised Polyester / Plain Polypropylene / Metallised Polypropylene, Plain & Metallised Polypropylene Mixed / Mixed Dielectric.

Encapsulation: Wet, powder epoxy coating and box.

Pitches of capacitors: 5 mm to 37.5 mm in epoxy coating, box and tape wrapped.

Applications: Blocking / Coupling / By passing / Timing circuits / Tuning & Oscillation / Filtering & Frequency discrimination / Temperature Compensation / Interference Suppression / Voltage dropper / TV Flyback tuning / TV 'S' Correction / Snubber / Discharge Ignition / Pulse Coupling, etc.

Segments covered: TVs / Audios / Telecom / Lighting (HF, CFL Ballast and LED) / Medical Electronics / Industrial Electronics / Auto Electronics / IT Hardware / Fan Regulators / Energy meters, etc.

Approvals: CACT / ERTL / ENEC / ISO 9000:2008 / ISO 14001:2004 .

Customer specification approvals: BAG / GE / Havells / JVC / Sanyo/ Sharp / Sony / Sylvania / Philips / Toshiba / Panasonic / Osram, etc.

PPM level: Single Digit.

Average annual growth in turnover (last 10 years): 30%

MANUFACTURING FACILITY

Deki's state-of-the-art manufacturing facility is housed at B-20, Sector 58, Noida, an established industrial township within the National Capital Region of Delhi, India. The capacity has grown steadily from 10 million pieces in 1984 to 1.2 billion pieces per annum as on 1st October 2012.

The plant and machinery are largely imported from Europe, Japan and Korea and every effort to maintain them in the most efficient health is made. The entire maintenance, capital goods and spares development is handled by an Engineering Solutions cell. Strict adherence to well-planned, preventive schedules is ensured.

The housekeeping policy at the plant is based on the 5S concept. The central theme in all such efforts is employee ownership. Fifty eight areas with identified owners ensure that a clean, safe and comfortable working environment is made available. Each member cleans his own workplace and only when necessary, invites help from the housekeeping team.

TQM AND WORK CULTURE

A number of TQM initiatives have been put in place since 1999. Policy deployment is done every year in March based on the company's Single Page Strategy. The single page strategy document lists the strategic direction and the business enablers which will help in achieving the results and the 'must do' actions for the current year. Roadmaps arising out of this are reviewed every month.

External and internal customer satisfaction surveys and employee satisfaction surveys are carried out every six months. Inputs from these surveys are used to make improvement plans which are shared with the customers and employees.

Monthly PPM activity currently takes place with thirteen customers with an objective to reduce our PPM level even further from the current level of five.

The management team of Deki is committed to provide a stimulating, learning-oriented, transparent and professional environment wherein total involvement of each and every member is encouraged. The work culture is oriented towards arriving at decisions by consensus. All members have pledged to strictly follow all decisions so arrived at. A prayer session is held every morning. One of the members is then given an opportunity to share a thought of common interest with the team.

Training, at Deki, is an integral part of the development curriculum with 3% of working time spent on it. Training needs are identified during regular interactions and especially during performance appraisals, road map reviews and shop floor meetings. Accordingly, training schedules are drawn up and followed up through coordination to ensure that the identified needs are effectively addressed. Shop floor personnel are engaged in problem solving and improvement teams. These small group activities have helped in the personal development of individuals as they are now equipped with problem solving tools such as 7 QC tools, CEDAC(Cause and Effect diagram with addition of Cards) and DMAIC methodology of 6 Sigma. The 6 Sigma movement was started in October 2009 and more than 45% of the workforce is involved in it.

A moving suggestion box scheme is also in use. All suggestions are collected during the week and presented in the morning assembly on Saturdays. All suggestions found viable are implemented as top priority action and awarded suitably.

QUALITY ASSURANCE

The quality assurance system enforced at Deki, certified in accordance with ISO 9002 since November
1994, has been upgraded to ISO 9001:2008 in December 2009 and quality procedures are laid out in the quality manual. The procedures have been developed taking into consideration international standards, customer requirements and internal performance standards. The system is designed to ensure satisfaction of customers in respect of quality, functional performance, delivery performance, price/ performance ratio and overall service satisfaction. Deki team members have been extensively trained to follow principles of “first time right” and in case of all corrective actions, the PDCA cycle.

Quality assurance is an all pervasive activity at Deki, transcending all vital functions starting from raw material vendor selection, sourcing, incoming inspection through process inspection to final inspection and storage/ despatch. Modern quality tools such as the 7 QC tools, Statistical Process Controls (SPC), Failure Mode and Effects Analysis
(FMEA), Design of Experiments (DOE), Cause and Effect Diagram with Addition of Cards (CEDAC) and Six Sigma are used regularly to ensure continual improvement in quality and reliability.

AQL (Acceptable quality level): All outgoing inspection is carried out as per Inspection Standard ISO 2859 / IS 2500 or IEC 410. Sampling plan followed is single sampling for normal inspection. AQL for all electrical properties is 0.1; this ensures that not even a single failure is acceptable.

RELIABILITY

All capacitors are subject to qualification approval test as per relevant IEC standards in order to ensure reliability:

Plain Polyester film / foil capacitors: IEC 384-11 **Plain Polypropylene film / foil capacitors:** IEC 384-13 **Metallised Polyester film capacitors:** IEC 384-2 **AC & Pulse MPP film capacitors:** IEC 384-17

Interference Suppression Capacitors: IEC 384-14 The environmental and endurance testing is carried out periodically at the in-house test laboratory.

TECHNICAL CENTRE

The Deki Technical Centre is recognised as "In-house R&D Unit" since June 2011 by the Department of Science & Industrial Research, Government of India. It is primarily responsible for:

Customer Application Support. Assistance is offered to customers for selection of appropriate type of capacitors to suit intended application.

Design and Development of Capacitors. Market requirements are clearly understood and converted into new designs in close association with customers. All designs are subjected to reliability testing and confirmation as part of the pre-release procedure.

Turnover from new products is being monitored for the last ten years and we are consistently generating 25% of our turnover from new products.

Documentation Centre. Specifications of raw material, process specifications and customer product specifications are kept here. In addition, all relevant national and international standards are available in the centre.

Training Cell. Training is undertaken for manufacturing and marketing teams.

Competitor Analysis. Market probe for development around the world and for benchmarking exercises.

	Capacitance Range in µf	Rated Voltage	Marking Example	Page
POLYESTER FILM CAPACITORS				

Reliability Testing. The centre is equipped with an environmental test laboratory wherein a host of reliability and endurance testing can be carried out. This in-house facility is used for ensuring reliability before release of any new design, input or process.

Approval Coordination. This is also the nodal agency for coordination with all external test facilities for testing and approval of Deki capacitors.

Pilot Plant. The centre has an independent production facility wherein the critical processes can be carried out under controlled conditions.

Technical Face. The centre is the technical interface between the company and its customers. The centre head is responsible for making the company technically proficient.

Technical Seminars are conducted on a regular basis for common interest groups of customers where application aspects specific to the user industry are addressed.

The centre also contributes regularly to the Deki news bulletin ***Charge***.

PLAIN POLYESTER FILM	0.1	63 V DC	D	16
CAPACITORS (Inductive)	0.001 ~ 0.47	100 V DC	104	
Epoxy coated	0.001 ~ 0.1	250 V DC	K 1J	
	0.001 ~ 0.1	400 V DC		
	0.001 ~ 0.033,	630 V DC		
	0.0022 ~ 0.0068,	1000 V DC		
	0.0022 ~ 0.056	1250 V DC		
	0.0022 ~ 0.0047	1600 V DC		
PLAIN POLYESTER FILM	0.001~ 0.01	630 V DC/	D	20
CAPACITORS FOR	0.001~0.0068	1000 V DC	332	
LIGHTING APPLICATIONS	0.0047 ~ 0.0068	250 V AC	K 2J	
Epoxy coated				
PLAIN POLYESTER FILM	0.015 ~ 0.47	100 V DC	PET NI	21
CAPACITORS (Non-Inductive)	0.01 ~ 0.47	250 V DC	D 104 J 2D	
Epoxy coated / Box	0.0022 ~ 0.1	400 V DC		
	0.0022 ~ 0.022	630 V DC		
	0.0047 ~ 0.022	1000 V DC		
INDUCTIVE SELF HEALING	0.0033 ~ 0.01	1250 V DC	DTSH	23

POLYESTER CAPACITOR	0.0033 ~ 0.01	1600 V DC	102 K	
DTSH CAPACITORS			3C	
METALLISED POLYESTER	0.1 ~ 1.0	50 V DC	1µ0 J 63	25
FILM CAPACITORS	0.01 ~ 1.0	63 V DC		
(Subminiature)	0.001 ~ 0.33	100 V DC		
Epoxy coated / Box	0.001 ~ 0.1	250 V DC		
Pitch 5 mm	0.001 ~ 0.047	400 V DC		
METALLISED POLYESTER	0.1 ~ 1.0	63 V DC	1µ0 J 63	29
FILM CAPACITORS	0.033 ~ 0.47	100 V DC		
(Miniature)	0.01 ~ 0.22	250 V DC		
Epoxy coated / Box	0.0047 ~ 0.068	400 V DC		
Pitch 7.5 mm	0.0015 ~ 0.022	630 V DC		
METALLISED POLYESTER	0.056 ~ 6.8	100V DC	MPET	33
FILM CAPACITORS (Standard Pitch)	0.027 ~ 4.3	250 V DC	D 104 K 2A	
Epoxy coated / Box	0.01 ~ 3.3	400 V DC		
Pitch 10 mm to 27 mm	0.01 ~ 1.0	630 V DC		
	0.18 ~ 0.47	1000V DC		
METALLISED POLYESTER/POLYPROPYLENE	0.1 ~ 10.0	63 V DC	D 104 K 2A	37-38
FILM CAPACITORS	0.068 ~ 10.0	100 V DC		
Round /Flat Axial Tape Wrapped	0.01 ~ 4.7	250 V DC		
	0.01~ 2.2	400 V DC		
	0.01 ~ 1.0	630 V DC		
MIXED DIELECTRIC FILM CAPACITOR				
PLAIN POLYESTER & POLYPROPYLENE	0.00068 ~ 0.0056	1000 V DC	DPEP	39
CAPACITORS (PEP)	0.00068 ~ 0.0056	1250 V DC	332	
(Inductive) Epoxy coated			K 3A	
POLYPROPYLENE FILM CAPACITORS				
PLAIN POLYPROPYLENE FILM	0.00022 ~ 0.1	100 V DC	DPP	41
CAPACITORS (Inductive)	0.00022 ~ 0.01	250 V DC	103	
Epoxy coated	0.001 ~ 0.0056	400 V DC	K 2A	
	0.001 ~ 0.022	630 V DC		
	0.001 ~ 0.0068	1000 V DC		
PLAIN POLYPROPYLENE FILM	0.015 ~ 0.47	250 V DC	PP NI	44
CAPACITORS (Non-Inductive)	0.01 ~ 0.22	400 V DC	D 104 J 2D	
Epoxy coated / Box	0.0022 ~ 0.1	630 V DC		
AC & PULSE METALLISED	0.0033 ~ 0.056	1000 V DC	PP / MPP	47

	Capacitance Range in µf	Rated Voltage	Marking Example	Page
POLYPROPYLENE FILM	0.0022 ~ 0.033	1250 V DC	D 103 J 3D	
CAPACITORS (PP / MPP Series)	0.001 ~ 0.022	1600 V DC		
Epoxy coated / Box	0.001 ~ 0.01	2000 V DC		
AC & PULSE METALLISED	0.047 ~ 2.2	250 V DC	MPP	50
POLYPROPYLENE FILM	0.022 ~ 1.0	400 V DC	D 105 J 2E	
CAPACITORS (MPP Series)	0.01 ~ 0.47	630 V DC		
AC & PULSE METALLISED	0.0082 ~0.15	1250VDC/500 V AC	MPP/MPP	53
POLYPROPYLENE FILM	0.0022 ~ 0.022	1600VDC/500 V AC	D 104 J 3B	
CAPACITORS (MPP/MPP Series)	0.0056 ~ 0.12	1600VDC/700 V AC		
DC Application Epoxy coated / Box	0.001 ~ 0.047	2000VDC/700 V AC		
AC & PULSE METALLISED	0.0082 ~ 0.082	1250VDC/500 V AC	MMPP	57
POLYPROPYLENE	0.0033 ~ 0.056	1600VDC/500 V AC	D 103 J 3D	
FILM CAPACITORS (MMPP Series)	0.00022 ~ 0.033	2000VDC/700 V AC		
Epoxy coated / Box				
AC & PULSE METALLISED	0.001 ~0.056	500 V AC	MPP/MPP	61
POLYPROPYLENE FILM	0.001 ~ 0.039	700 V AC	D 105 J 07	
CAPACITORS (MPP/MPP Series)	0.001 ~ 0.018	900 V AC		
AC Application Epoxy coated / Box				
INDUCTIVE SELF HEALING	0.0027 ~ 0.01	1250 V DC	DPSH	64
POLYPROPYLENE CAPACITORS	0.0039 ~ 0.01	1600 V DC	102 K	
DPSH CAPACITORS	0.0015 ~ 0.01	2000 V DC	3C	
Epoxy coated				
INTERFERENCE SUPPRESSION CAPACITORS	(X2) 0.01 ~ 3.3	275 V AC/ 305 V AC	IS/MKP X2 D 104 K 305VAC 40/100/56/C	66
Potted, flame retardant box	(Y2) 0.001 ~ 0.1	250 V AC	IS-250 V AC	
D 103 K Y 2				
CDI CAPACITORS				
Metallised Polyester Film cap.	1.0 ~ 3.3	400 V DC	CDI-MPET	67
Epoxy coated			D 105 K 2G	
Metallised Polypropylene Film cap.	0.68 ~ 2.2	400 V DC	CDI-MPP	
Epoxy coated			D 105 K 2G	
METALLISED POLYESTER FILM CAPACITORS	1.0 ~ 4.3	250 V AC	MPET-EC	68
Economic type			D 105 K 250 V AC	
METALLISED POLYESTER FILM CAPACITORS	1.0 ~ 4.3	250 V AC	MPET-SW	69
Switch type			D 105 K 250 V AC	

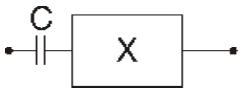
RoHS

	1.0 ~ 3.3	250 V DC	MPET-SW	
D 105 K 2E				
METALLISED POLYESTER FILM CAPACITORS	1.0 ~ 3.5	250 V AC	MPET	70
Socket type			D 105 K 250 V AC	
	1.0 ~ 4.2	250 V AC	MPP	
D 105 K 250 V AC				
METALLISED POLYPROPYLENE	1.5 ~ 4.3	250 V AC	MPET ULTIMA	71
FILM CAPACITORS			D 105 K 250 V AC	
Socket type	1.0 ~ 3.3	250 V AC	MPP ULTIMA	
D 105 K 250 V AC				
METALLISED SAFETY POLYESTER FILM	1.0 ~ 3.5	250 V AC	MPET	72
CAPACITORS			D 105 K 250 V AC	
Ultima safety type	1.0 ~ 4.2	250 V AC	MPP	
D 105 K 250 V AC				
METALLISED SAFETY FILM CAPACITORS	1.0 ~ 3.7	250 V AC	OPTIMA	73
Optima safety type			D 105 K 250 V AC	
METALLISED SAFETY POLYPROPYLENE FILM	1.5 ~ 4.3	250 V AC	MPET ULTIMA	74
CAPACITORS			D 105 K 250 V AC	
Ultima safety type	1.0 ~ 3.3	250 V AC	MPP ULTIMA	
METALLISED POLYPROPYLENE	0.1 ~ 1.0	440 V AC	MPP-AC	75
FILM CAPACITORS			D 414 K 440 V	
(For AC Application)				
Epoxy coated / Box				
HIGH CAPACITANCE STABILITY CAPACITORS	0.15 ~ 1	310 V AC	MPET-AC	76
(AC Application) MPET-AC			D 414 K 310 V	
METALLISED POLYPROPYLENE	1 ~ 100	450 V DC	MPP – DC LINK	77
DC LINK CAPACITORS	1 ~ 80	700 V DC	D 105 K 450 V	
BOX TYPE PITCH 27.5mm to 52.5mm	1 ~ 60	800 V DC		
	1 ~ 50	900 V DC		
	1 ~ 30	1100 V DC		
	1 ~ 30	1200 V DC		

Expected Capacitor Parameter

Guide to Film Capacitors

Application / Function desired	Circuit Diagram



BLOCKING

Once the capacitor is charged it passes no ↑ IR more DC (except for minor leakage, i.e., IR) High insulation resistance.

hence C provides a high series impedance for limiting low frequency AC or DC current.

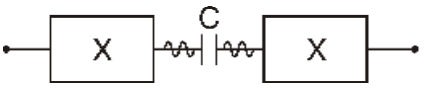
Deki Range

For C < 0.001 µf — Plain Polypropylene Film Capacitors.
For 0.001 < C = 0.1 µf — Plain Polyester Film Capacitors.
For C > 0.1 µf — Metallised Polyester Film Capacitors.

COUPLIN

The capacitor actually acts as a conductor to AC (because of moving particles present in the dielectric) i.e., C provides a low series impedance for transferring AC signal information from one system to another.

Low dissipation factor (D).
Low inductance.



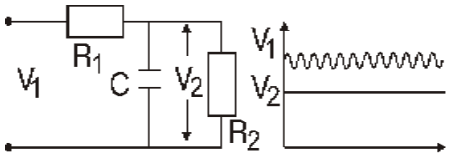
Deki Range

For C < 0.001 µf — Plain Polypropylene Film Capacitors.
For 0.001 < C = 0.1 µf — Plain Polyester Film Capacitors.
For C > 0.1 µf — Metallised Polyester Film Capacitors.

BYPASSIN

Capacitor provides a low series impedance AC path around the given circuit element.

Low dissipation factor (D).
Low inductance.
High insulation resistance.



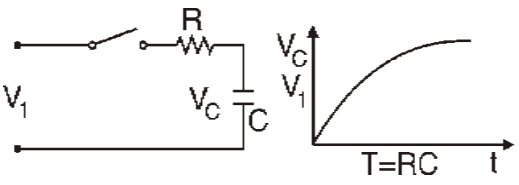
Deki Range

For C < 0.001 µf — Plain Polypropylene Film Capacitors.
For 0.001 < C = 0.1 µf — Plain Polyester Film Capacitors. For C > 0.1 µf — Metallised Polyester Film Capacitors.

TIMING CIRCUITS

In timing circuits capacitors are used to introduce time delays.

Stability of electrical characteristics (with reference to ambient temperature, etc.).
Close capacitance tolerance



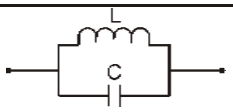
Deki Range

For C ≤ 0.047 µf — Plain Polypropylene Film Capacitor
For C > 0.047 µf — Metallised Polypropylene Film Capacitors.

TUNING AND OSCILLATION

In tuning circuits capacitors and inductors are used to select the desired frequency signal.

Stability of electrical characteristics (with reference to ambient temperature and frequency).



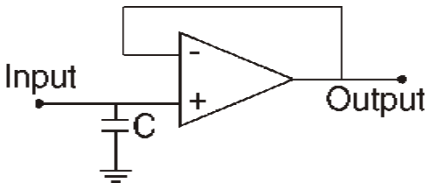
Guide to Film Capacitors (contd.)

Application / Function desired	Expected Capacitor Parameter
	Close capacitance tolerance.

Deki Range
For C ≤ 0.047 µf — Plain Polypropylene Film Capacitors.
For C > 0.047 µf — Metallised Polypropylene Film Capacitors.

Circuit Diagram

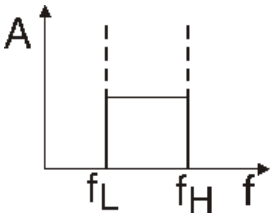
SAMPLE AND HOLD CIRCUIT
In this application C retains the stored energy.Low dielectric absorption.



Deki Range
For C ≤ 0.047 µf — Plain Polypropylene Film Capacitors.
For C > 0.047 µf — Metallised Polypropylene Film Capacitors.

FILTERING AND FREQUENCY
DISCRIMINATION
Capacitor filter network designed for the Stability of electrical frequency band F - F_{LH} characteristics.

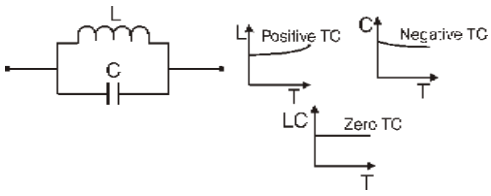
Low dissipation factor.
Close capacitance tolerance.



Deki Range
For C ≤ 0.047 µf — Plain Polypropylene Film Capacitors.
For C > 0.047 µf — Metallised Polypropylene Film Capacitors.

TEMPERATURE
Circuit design utilises change of capacitance with temperature

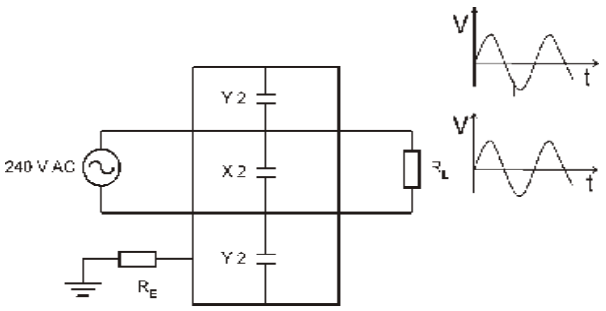
Linear temperature coeffcient
Stability of electrical values



Deki Range
For C ≤ 0.047µf — Plain Polypropylene Film Capacitors.
For C > 0.047 µf — Metallised Polypropylene Film Capacitors.

INTERFERENCE SUPPRESSION
Capacitors are connected across the mains input to supress the interference generated by appliances or in the mains.

Should be able to handle high transient pulses.
High reliability against active and passive flammability.



Deki Range
Interference Suppression Capacitors.

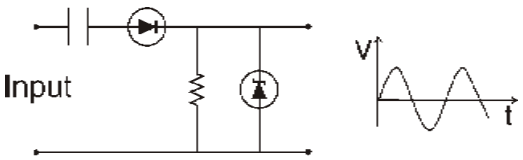
VOLTAGE DROPPER

Guide to Film Capacitors (contd.)

Application / Function desired — Expected Capacitor Parameter

Capacitors are connected in series to drop the input voltage. Used mainly in electronic energy meters and fan regulators. Flame retardant.

Low loss factor. Good reliability.



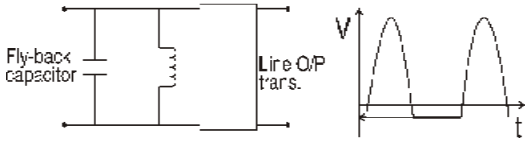
Deki Range

For rated voltage less than 250 V AC — Interference Suppression Capacitors.

For rated voltage more than 250 V AC — Metallised Polypropylene Film Capacitors for AC Application. For rated voltage less than 220 V AC and higher capacitance — Metallised Polyester Film Capacitors.

TV FLY-BACK TUNING

Low dissipation factor.
High dielectric strength.
High pulse rise time rating.



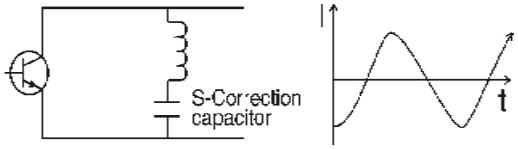
Deki Range

For good dv/dt rating —AC & Pulse Metallised Polypropylene Film Capacitors (MPP / MPP Series).

For very high dv/dt rating— AC & Pulse Metallised Polypropylene Film Capacitors (PP / MPP Series).

TV S-CORRECTION

Low dissipation factor. Stability of electrical characteristics. Good current carrying capability.

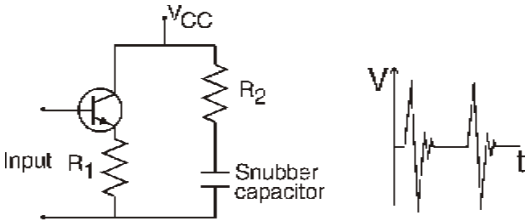


Deki Range

AC & Pulse Metallised Polypropylene Film Capacitors (MPP Series). High Current Film / Foil Polypropylene Film Capacitors (PP NI).

SNUBBER APPLICATION

Low dissipation factor.
High dielectric strength.
High pulse rise time rating.



Deki Range

Plain Polypropylene Film Capacitors.

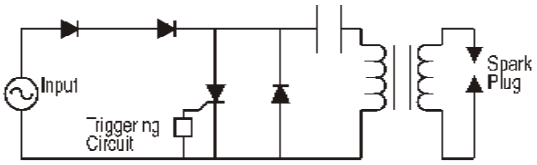
Plain Polypropylene Film Capacitors (Non-inductive) Box type.

AC & Pulse Metallised Polypropylene Film Capacitors (PP / MPP). Film / Foil Polypropylene Film Capacitors (PP NI).

CAPACITOR DISCHARGE IGNITION

During the positive half cycle the capacitor is charged to full voltage. Then, during the negative half cycle energy stored in the capacitor is discharged through the ignition coil.

Good current carrying capability. Good response for fast discharge.



Guide to Film Capacitors (contd.)

Application / Function desired — Expected Capacitor Parameter

Deki Range

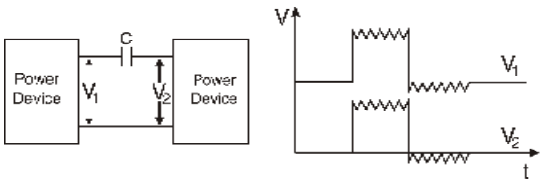
For discharge current of 80 amps — CDI Capacitors (Metallised Polyester Film Capacitors).

For discharge current of 100 amps and above — CDI Capacitors (Metallised Polypropylene Film Capacitors).

PULSE COUPLING — Good pulse and AC characteristics.

Coupling/decoupling of high energy, fast rise pulses — High voltage proof.

Low dissipation factor.



Deki Range

For Low Power Signal

Good dv/dt

For C ≤ 0.047 µf — Plain Polypropylene Film Capacitors.

For C > 0.2 µf — AC & Pulse Metallised Polypropylene Film Capacitors (MPP Series).

For High Power Signal

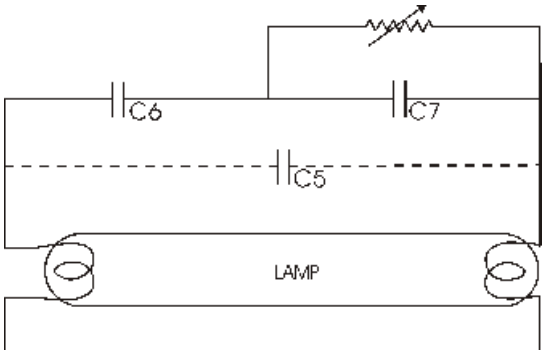
Good dv/dt and V_{RMS} of 700 V AC — AC & Pulse Metallised Polypropylene Film Capacitors (MPP / MPP Series).

Unlimited dv/dt and V_{RMS} of 500 V AC — AC & Pulse Metallised Polypropylene Film Capacitors (PP / MPP Series).

LAMP CIRCUIT

For pre-heating and striking application.

Good pulse and AC characteristics.
Low dissipation factor.
High temperature rating.



Deki Range

For C5 - 0.0022 µf - 0.0068 µf (1000 V DC - 1600 V DC).
C6 - 0.0047 µf - 0.01 µf (630 V DC - 1600 V DC).
C7 - 0.0018 µf - 0.0068 µf (630 V DC - 1600 V DC).

Recommended Capacitors

PP Film Foil Inductive type for temp ≤ 85° C

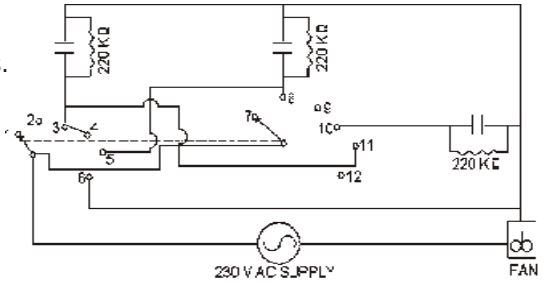
PET Film Foil Inductive for high temperature with low voltage and low frequency, say 40 kHz and 60 V_{RMS}.

PEP Film Foil Inductive for high temperature upto 110° C with high voltage and high frequency say 40KHz and 110 V_{RMS}.

FAN

For speed control of fan.

Good self healing properties.
Smaller in size.
Higher break down voltage.
Flame proof.



Deki Range

1 µf - 4.3 µf — Metallised polyester Film Capacitors (for Switch type)

1 µf - 3.3 µf — Metallised polyester Film Capacitors and Metallised Polypropylene Capacitors (for Socket type)

1 µf - 4.3 µf — Metallised polyester Film Capacitors and Metallised Polypropylene Capacitors (Switch type - Flameproof ULTIMA Range)

1 µf - 4.3 µf — Metallised polyester Film Capacitors and Metallised Polypropylene Capacitors (Socket type- Flameproof ULTIMA Range)

FILM CAPACITOR BASICS

General information

Plastic film capacitors are generally subdivided into film/foil capacitors and metallised film capacitors. The following description gives brief information about their technical features.

Film/foil capacitors

Film/foil capacitors generally consist of two aluminium foil electrodes with plastic film material used as dielectric.

In order to guarantee the necessary safety and reliability of a capacitor it is essential to use a sufficient film thickness.

Typical advantages that relatively large film/foil capacitors have over smaller metallised capacitors is their higher insulation resistance, their better capacitance stability and their good current carrying capability. High voltage and good pulse handling capability are additional features of these capacitors. Lead connections are made by means of welding.

Metallised film capacitors

In contrast to film/foil capacitors, where aluminium foils are used as electrodes, the electrodes of metallised film capacitors consist of a thin metal layer (0.03 micron thickness, approx.) which is vacuum deposited on the dielectric film. The connection of metallised capacitors is accomplished by means of a metal spraying process and by welding the leads on to the sprayed ends.

The main advantages of metallised capacitors are, 1) relatively small dimensions, a result of vacuum deposited electrodes, and, 2) self healing property. Owing to the self healing property, relatively thinner films can be used for metallised capacitors than film/foil capacitors.

DC Capacitor

A capacitor designed essentially for application with direct voltage.

AC Capacitor

A capacitor designed essentially for application with alternating voltage.

Climatic category

Indicates the conditions applicable to climatic testing of capacitors as per the relevant standards. It is indicated as a combination of test temperatures for cold proof, heat proof and test days for damp proof (steady state) which the capacitor will withstand. The category = XX / YYY / ZZ

XX = Test temperature for cold proof

YYY = Test temperature for heat proof

ZZ = Test days applicable

Category temperature range

Denotes the range of ambient temperature for which the capacitor has been designed to operate continuously. This is defined by the temperature limits of the appropriate category.

Rated temperature

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

Lower category temperature

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

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

FILM CAPACITOR BASICS

Self healing

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

Rated voltage

The maximum direct voltage or the maximum r.m.s. alternating 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.

Rated capacitance

The capacitance value for which the capacitor has been designed and which is usually indicated upon it.

The capacitance shall be measured at one of the following frequencies unless otherwise prescribed by the relevant specification: C < 1 nf : 10 kHz_R
1 nf < CR ≤ 10 µf : 1
kHz C > 10 µf : 50
Hz_R

The tolerance on all frequencies for measuring purposes shall not exceed ±20%.

The measuring voltage shall not exceed 3% of rated voltage or 5 V_{RMS} (whichever is lower) unless otherwise prescribed in the relevant specification.

Insulation resistance

The insulation resistance is the quotient of an applied DC voltage to the current flowing after a specified time.

$$R\ (\text{insulation}) = \frac{V\ (\text{applied voltage})}{I\ (\text{leakage current})}$$

The time constant (S) = M ? × Mf
= Insulation Resistance × Rated Capacitance

Before this measurement is made, the capacitors shall be fully discharged. The insulation resistance shall be measured, at the following measuring voltage, between the points specified.

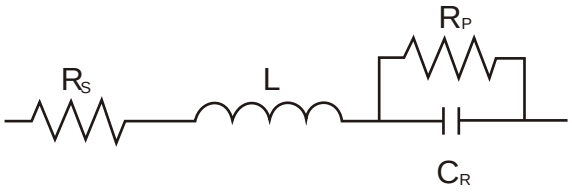
Voltage rating of capacitor	Measuring voltage
UR < 10 V	UR ± 10%
10 V ≤ UR < 100 V	10 ± 1 V
100 V ≤ UR < 500 V	100 ± 15 V
500 V ≤ UR	500 ± 50 V

The insulation resistance shall be measured after the voltage has been applied for 1 min ± 5 sec.

Tangent of loss angle (tan d)

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

Equivalent circuit of capacitor



tan d = ? CR = 2 × p × f × C × R where R is the Equivalent Series Resistance.

The tangent at loss angle shall be measured under the same conditions as those given for the measurement of capacitance at one or more frequencies as prescribed in the detailed specifications.
The measuring method shall be such that the error does not exceed 10% of the specified value or 0.0001, whichever is higher.

Quality factor

The reciprocal of tangent of loss angle

FILM CAPACITOR BASICS

$$Q = \frac{1}{? CR}$$

Equivalent series resistance (ESR)

The ESR is the resistive part of the equivalent series circuit and is temperature and frequency dependent. The ESR can be calculated from the dissipation factor (tan d) as follows: ESR = tan d / ? C

Power dissipation

The power dissipated by a capacitor is a function of the voltage across or the current (I) through the equivalent series resistance ESR. P = v × C × tan d × U2

P = 2 × p × f × C × tan d × U2 where f = frequency, tan d = maximum value specified, U = rated voltage

Pulse load or rise team (dv/dt)

The maximum voltage pulse slope that the capacitor can withstand with a pulse voltage equal to the rated voltage. For pulse voltage other than the rated voltage the maximum voltage pulse slope may be multiplied by U DC $_R$ and divided by the applied voltage. $dv/dt_{(max)} = (dv/dt) \times (V / V_{R\,PP})$

Lead wire specification

Diameter of the wire (mm)	*Force* (N)	Tin plated wire
0.5 < d ≤ 0.8	10	**Robustness of termination**
0.8 < d ≤ 1.25	20	

a. Tensile: The force applied in the direction of the capacitor leads shall be

b. Bending: Two consecutive bends shall be applied in each direction. This test shall not apply if, in the detailed specifications the terminations are described as rigid.

Soldering conditions

Temperature: 235°±5°C

Immersion Speed: 25 mm / minute

Immersion Time: 2 sec ± 0.5 sec

Requirement: Minimum 95% area of lead wire should be fully covered with smooth and bright solder Test conditions: As per IS 9000.

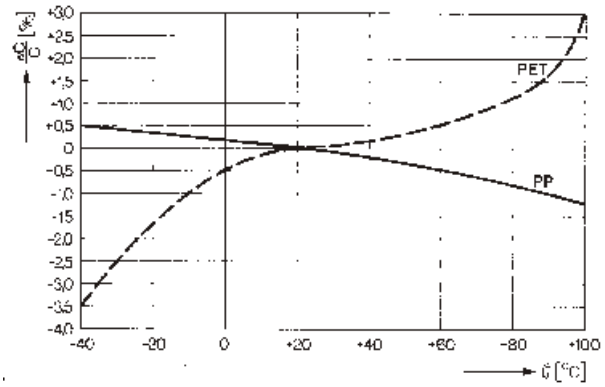
Temperature derated voltage

For temperature between +85°C and 100°C a decreasing factor of 1.25% per °C on the rated voltage V has to be $_R$ applied.

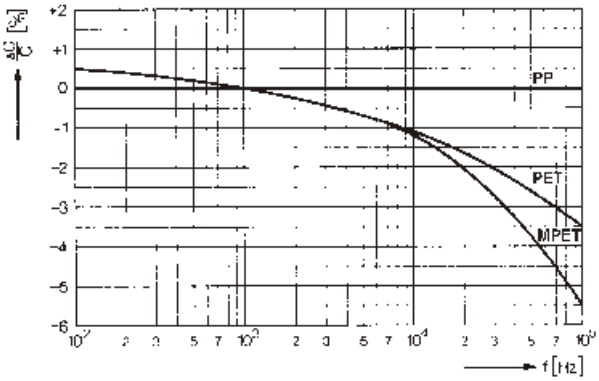
Film / foil (inductive) vs. metallised	
Film/Foil Inductive	**Metallised Non-Inductive**
? High dv/dt ? High IR ? Good current carrying capability ? Better capacitance stability ? Lead connections are made of spot welding on the foil	? Smaller in size as compared to film / foil capacitor ? High reliability (because of self healing property) ? Connections of elements are made by means of metal spraying process and by welding the leads on to the end spray

TYPICAL PARAMETERS

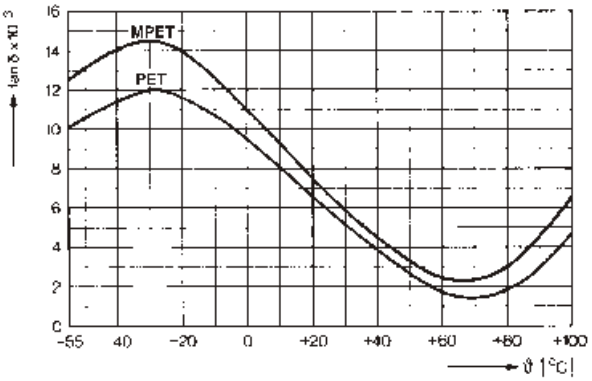
Capacitance change ΔC/C versus Temperature θ



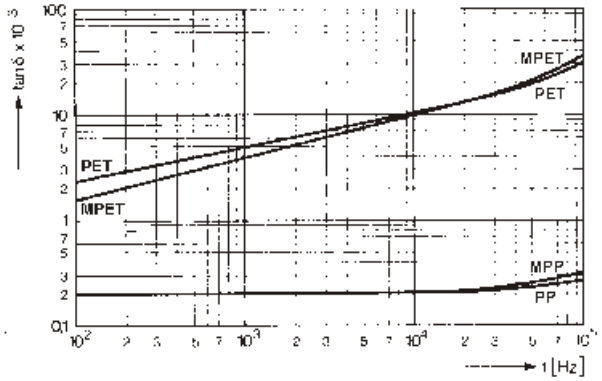
Capacitance change ΔC/C versus Frequency f



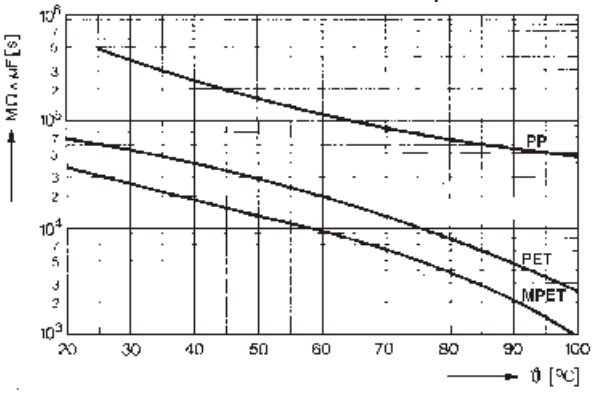
Dissipation factor tan δ versus Temperature θ
(measured at 1 kHz)



Dissipation factor tan δ versus Frequency f



Time constant versus Temperature



Typical inductance values @100kHz (in µH)

Capacitance in µf	PET Film / Foil Inductive	PET Film / Foil Non-inductive	MPET Metallised Non-inductive
0.0033/630V/±10%	-773	-875	-750
0.01/400V/±10%	-251	-240	-246
0.047/630V/±10%	-57	-55	-56
0.1/100V/±10%	-26	-25	-27
0.022/100V/±10%	-11	-10	-12
0.47/100V/±10%	-5	-5	-5

Legend

PET: Plain polyester film / foil capacitor

PP: Plain polypropylene film / foil capacitor

MPET: Metallised polyester film capacitor

MPP: Metallised polypropylene film capacitor

MAIN APPLICATION: Blocking, bypassing, filtering, coupling and decoupling, interference suppression in low voltage application, low pulse application

CONSTRUCTION: Film/foil inductive type construction with aluminum foil as electrode and polyester (PET) film as dielectric,
coated with flame retardant epoxy resin

CLIMATIC CATEGORY: 40/100/56

MAX. OPERATING TEMPERATURE: 125° C
Between 85° C and 125° C, a voltage derating of 1.25% per °C on the rated voltage has to be applied

APPLICABLE SPECIFICATION: IEC 384-11

CAP. VALUE, RATED VOLTAGE (DC): Refer dimension chart

CAPACITANCE TOLERANCE: ±5%, ±10%

VOLTAGE PROOF: Between terminals: 2 times of rated voltage for 2 seconds

INSULATION RESISTANCE
Minimum Insulation Resistance R_{IS} V_R (or) time constant ? = C × $R_{R\ IS}$ ≤ 100 V DC at 25° C, relative humidity ≤ 70% ≥ 250 V DC

C_R ≤ 0.33 µF	C_R > 0.33 µF
GO10000 s	
GO	10000 s

TAN d: 0.8% (maximum) at 1 kHz

LIFE TEST CONDITIONS:
(Loading at elevated temperature)
Loaded at 1.5 times of rated voltage at 85° C or
1.5 times of category voltage at 100° C 1000 hours
Category voltage is 80% of rated voltage

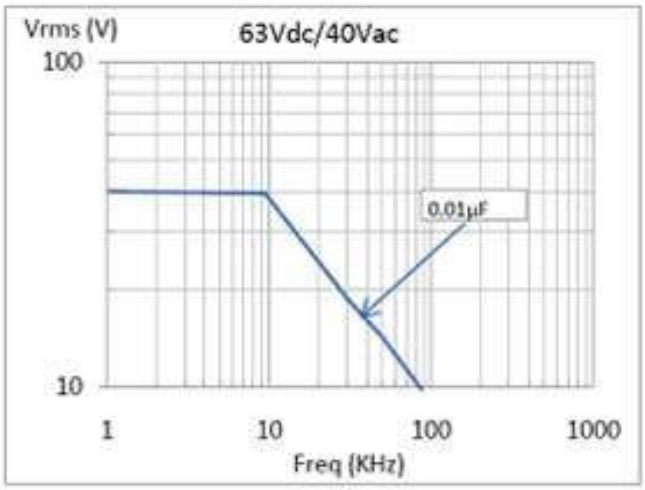
Criteria after the test:
?c/c: ≤ 5% of initial value
Change in Tan d: ≤ 0.01 or 1.2 times the value measured before the test, whichever is higher
Insulation resistance: ≥ 50% of the initial value mentioned in IR chart

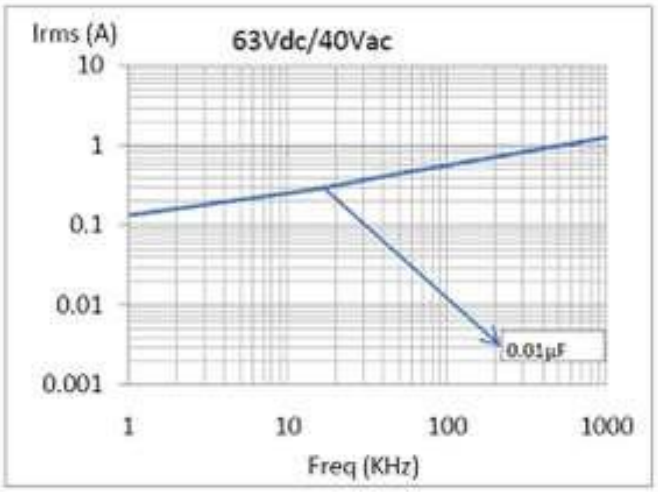
APPROVALS: Capacitors tested at ERTL (North) as per IEC 38411

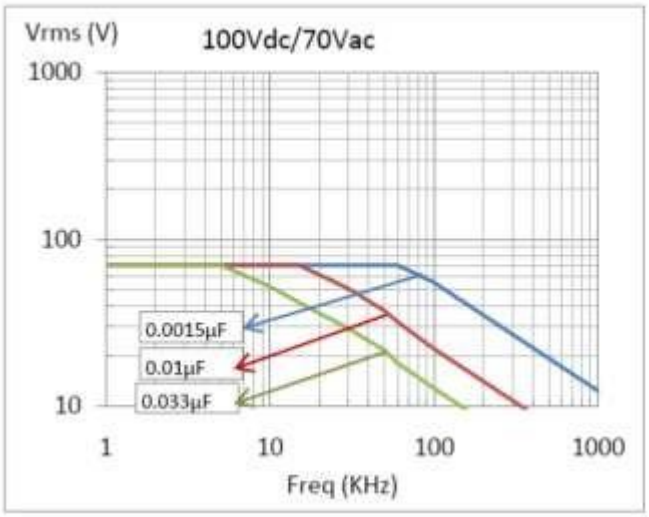
Max. Voltage (Vrms) vs. Frequency
(Sinusoidal Waveform at T ≤ 55° C)

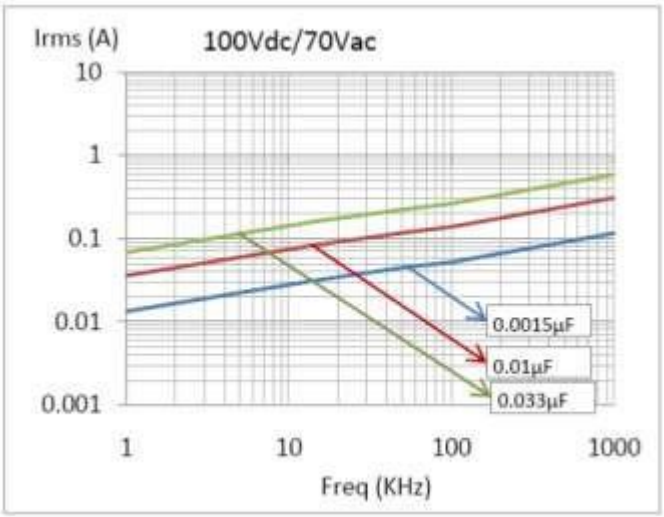
Max. Current (Irms) vs. Frequency
(Sinusoidal Waveform at T ≤ 55° C)

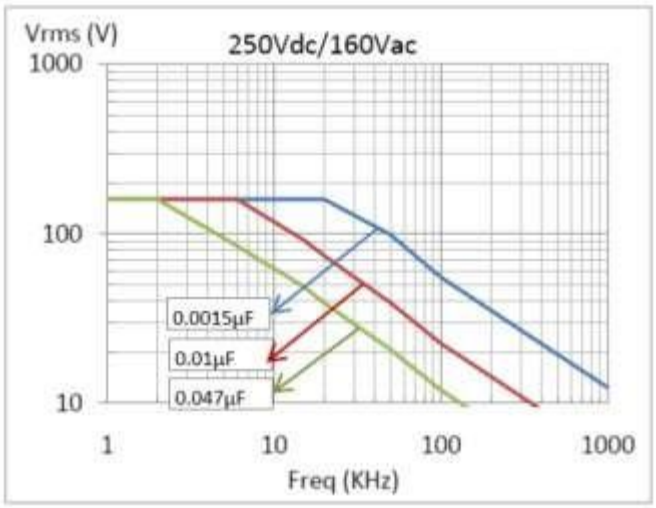
PLAIN POLYESTER FILM CAPACITORS (Inductive)

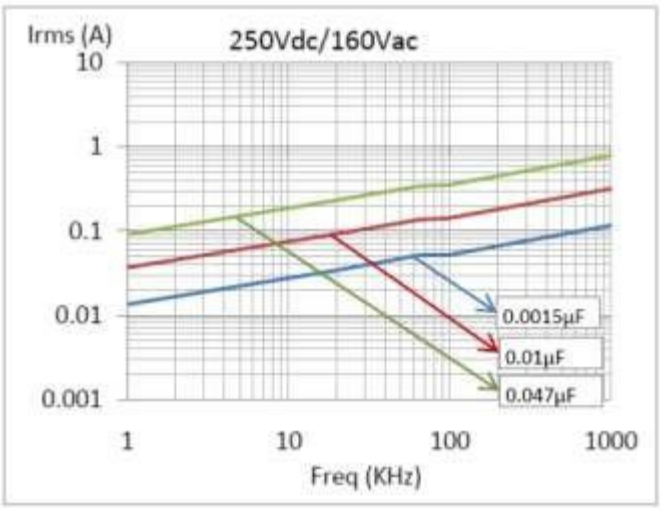


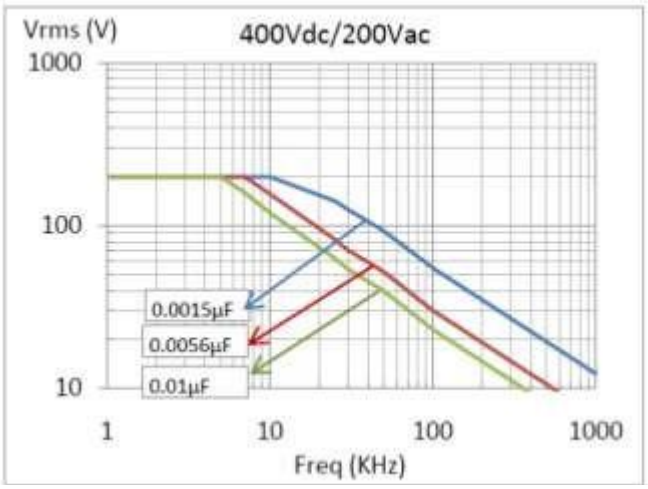


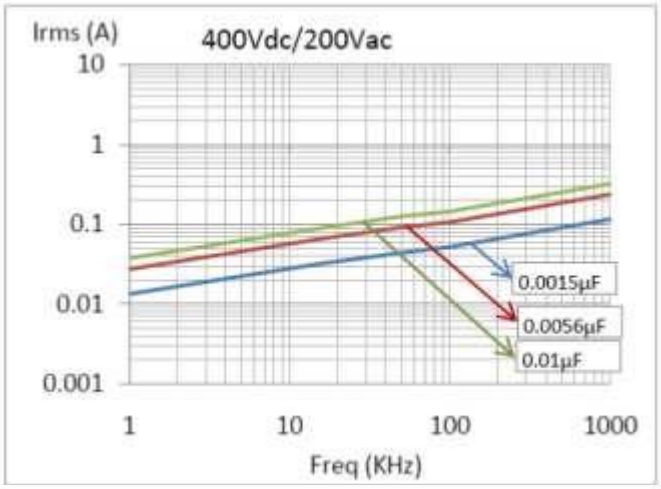


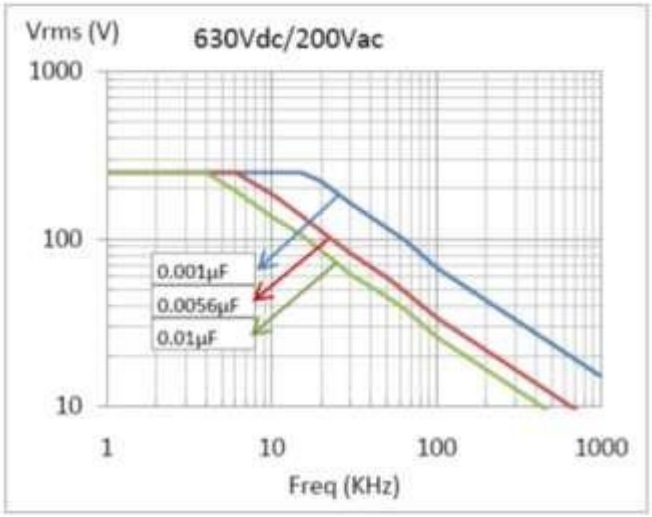


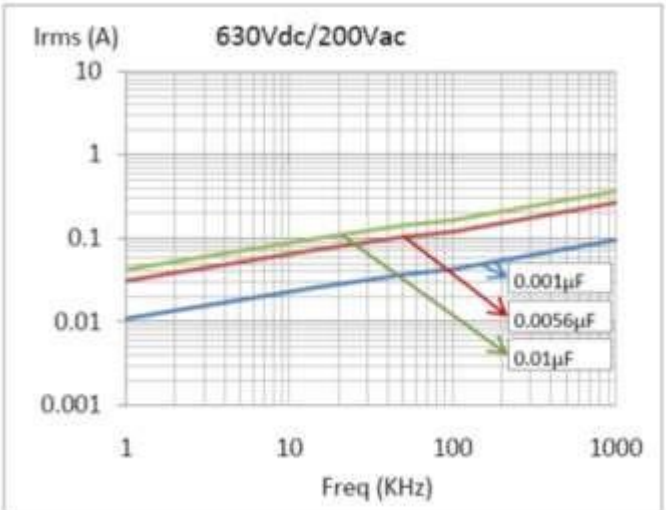

Vrms (V)
250Vdc/160Vac
1000
100
10
0.0015μF
0.01μF
0.047μF
1
10
100
1000
Freq (KHz)

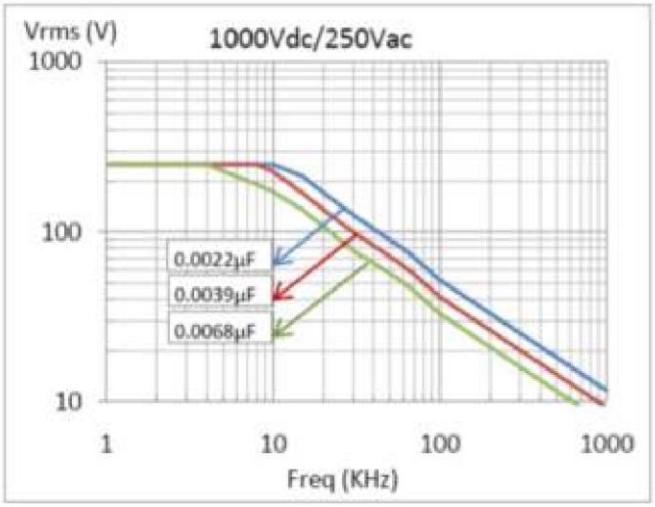

Irms (A)
250Vdc/160Vac
10
1
0.1
0.01
0.001
0.0015μF
0.01μF
0.047μF
1
10
100
1000
Freq (KHz)

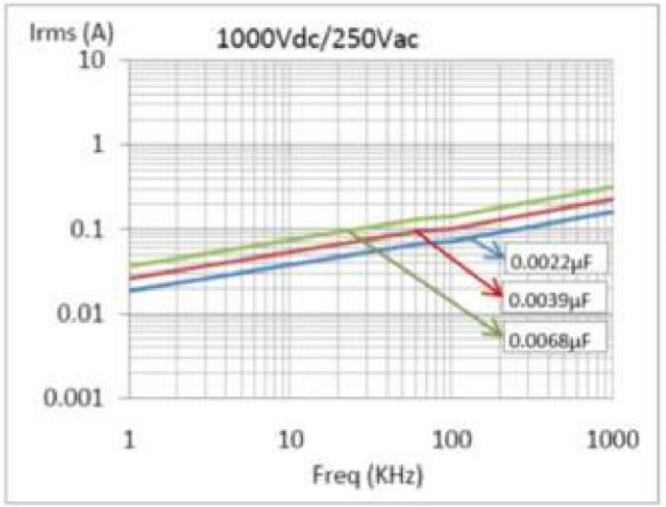

Vrms (V)
400Vdc/200Vac
1000
100
10
0.0015μF
0.0056μF
0.01μF
1
10
100
1000
Freq (KHz)


Irms (A)
400Vdc/200Vac
10
1
0.1
0.01
0.001
0.0015μF
0.0056μF
0.01μF
1
10
100
1000
Freq (KHz)

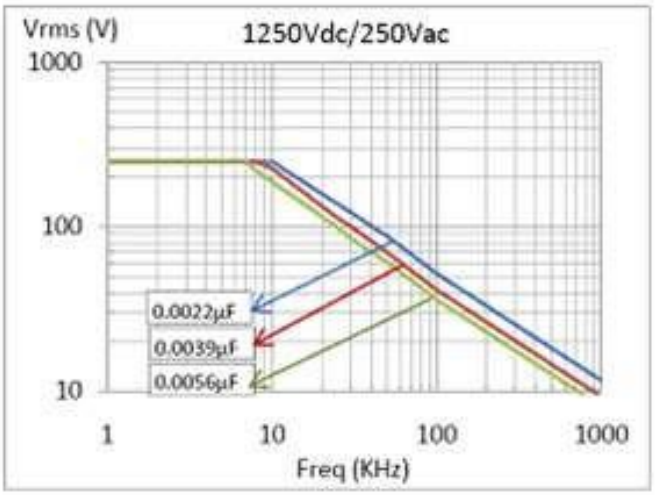

Vrms (V)
630Vdc/200Vac
1000
100
10
0.001μF
0.0056μF
0.01μF
1
10
100
1000
Freq (KHz)

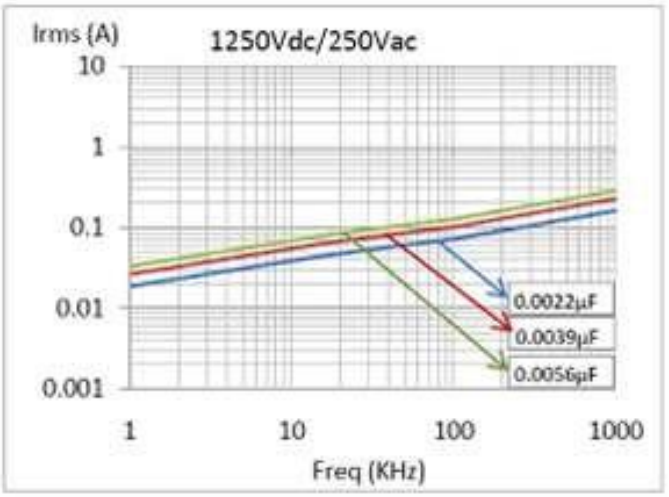

Irms (A)
630Vdc/200Vac
10
1
0.1
0.01
0.001
0.001μF
0.0056μF
0.01μF
1
10
100
1000
Freq (KHz)

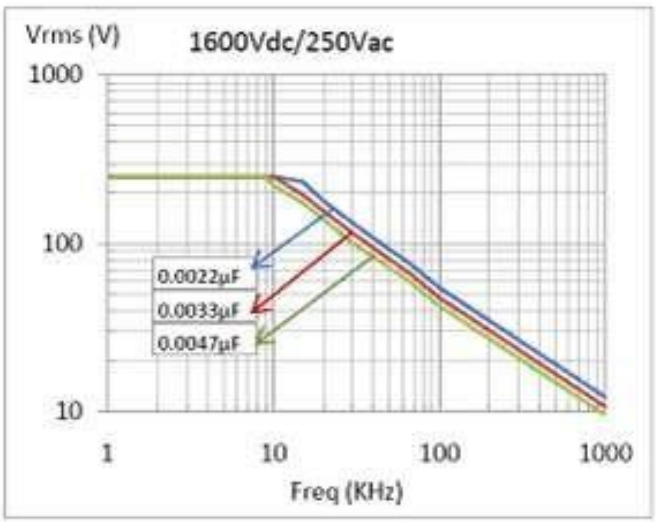

Vrms (V)
1000Vdc/250Vac
1000
100
10
0.0022μF
0.0039μF
0.0068μF
1
10
100
1000
Freq (KHz)

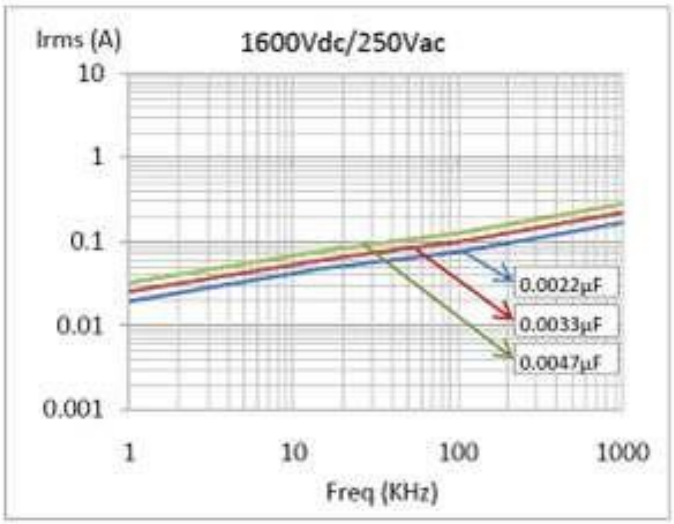

Irms (A)
1000Vdc/250Vac
10
1
0.1
0.01
0.001
0.0022μF
0.0039μF
0.0068μF
1
10
100
1000
Freq (KHz)

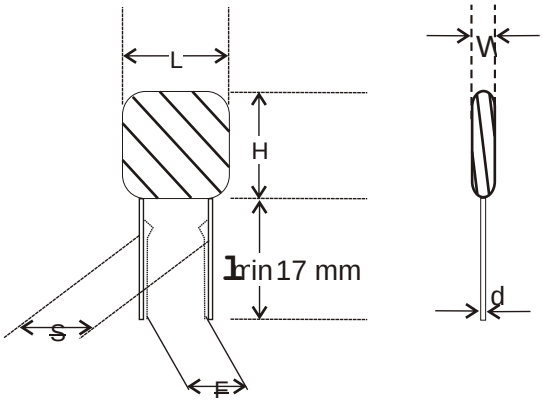
PLAIN POLYESTER FILM CAPACITORS
(Inductive)











PLAIN POLYESTER FILM CAPACITORS (Inductive)

Ordering codes and packaging units

Rated Voltage	Rated Cap. (µF)	Dimensions(mm) W	H	L	d	S ±0.5	F .8/-.2		Wt. g	Ordering code	Packing units	
63V DC	0.1000	6.0	14.0	11.0	0.5	7.0	5.0	10000	0.76	01 104 +1J*^	2000	2000
100V DC	0.0010	3.5	11.5	6.5	0.5	4.0	5.0	10000	0.22	01 102 +2A*^	5000	2000
	0.0015	3.5	11.5	6.5	0.5	4.0	5.0	10000	0.22	01 152 +2A*^	5000	2000

	0.0022	3.5	11.5	6.5	0.5	4.0	5.0	10000	0.28	01 222 +2A*^	5000	2000
	0.0033	3.5	11.5	6.5	0.5	4.0	5.0	10000	0.32	01 332 +2A*^	50	2000
	0.0047	3.5	11.5	6.5	0.5	4.0	5.0	10000	0.25	01 472 +2A*^	5000	2000
	0.0068	3.5	11.5	6.5	0.5	4.0	5.0	10000	0.25	01 682 +2A*^	5000	2000
	0.0091	3.5	11.5	6.5	0.5	4.0	5.0	10000	0.28	01 912 +2A*^	5000	2000
	0.0100	4.0	11.5	7.5	0.5	4.0	5.0	10000	0.35	01 103 +2A*^	4500	2000
	0.0150	4.0	11.5	7.5	0.5	4.0	5.0	10000	0.35	01153 +2A*^	4500	2000
	0.0220	4.0	11.5	7.5	0.5	4.5	5.0	10000	0.35	01 223 +2A*^	4500	2000
	0.0330	5.0	13.0	7.5	0.5	5.0	5.0	10000	0.40	01 333 +2A*^	4000	2000
	0.0470	5.0	13.0	9.5	0.5	5.5	5.0	10000	0.45	01473 +2A*^	2500	2000
	0.0560	5.0	13.0	10.0	0.5	6.0	5.0	10000	0.52	01 563 +2A*^	2500	2000
	0.0680	5.5	14.0	10.0	0.5	7.0	5.0	10000	0.60	01 683 +2A*^	2000	2000
	0.0820	6.0	14.0	11.0	0.5	7.0	5.0	10000	0.70	01 823 +2A*^	2000	2000
	0.1000	6.0	14.0	11.0	0.5	7.0	5.0	10000	0.75	01 104 +2A*^	2000	2000
	0.1500	6.5	15.0	12.0	0.5	7.5	5.0	10000	1.10	01 154 +2A*^	1500	1000
	0.2200	6.5	15.0	12.0	0.5	8.5	-	10000	1.56	01 224 +2A*^	-	1000
	0.4700	8.5	19.0	16.0	0.5	11.5	-	10000	2.88	01 474 +2A*^	-	400
250V DC	0.0010	3.5	11.5	6.5	0.5	4.0	5.0	10000	0.28	01102 +2E*^	5000	2000
	0.0015	3.5	12.0	6.0	0.5	4.0	5.0	10000	0.30	01 152 +2E*^	5000	2000
	0.0022	3.5	12.0	6.0	0.5	4.0	5.0	10000	0.28	01 222 +2E*^	5000	2000
	0.0027	3.5	12.0	6.5	0.5	4.0	5.0	10000	0.32	01 272 +2E*^	5000	2000
	0.0033	3.5	12.0	6.5	0.5	4.0	5.0	10000	0.28	01 332 +2E*^	5000	2000
	0.0047	3.5	12.0	6.0	0.5	4.0	5.0	10000	0.32	01 472 +2E*^	5000	2000
	0.0100	4.0	13.0	7.5	0.5	5.0	5.0	10000	0.35	01 103 +2E*^	2500	2000
	0.0150	4.5	13.0	8.0	0.5	5.5	5.0	10000	0.42	01 153 +2E*^	2500	2000
	0.0220	4.5	13.0	9.0	0.5	6.0	5.0	10000	0.45	01 223 +2E*^	2500	2000
	0.0330	5.0	13.0	9.5	0.5	7.0	5.0	10000	0.64	01 333 +2E*^	2500	2000
	0.0470	6.0	14.0	11.0	0.5	7.0	7.5	10000	0.80	01 473 +2E*^	2000	2000
	0.0560	6.5	14.0	13.0	0.5	7.0	-	10000	0.90	01 563 +2E*^	-	2000
	0.1000	6.5	18.0	13.0	0.5	9.0	-	10000	1.30	01 104 +2E*^	-	1000
400V DC	0.0010	3.5	11.5	6.5	0.5	4.0	5.0	10000	0.28	01 102 +2G*^	5000	2000
	0.0015	3.5	11.5	6.5	0.5	4.0	5.0	10000	0.30	01 152 +2G*^	5000	2000
	0.0022	3.5	11.5	6.5	0.5	4.0	5.0	10000	0.30	01 222 +2G*^	5000	2000
	0.0033	4.0	11.5	6.5	0.5	4.0	5.0	10000	0.35	01 332 +2G*^	5000	2000
	0.0047	4.0	11.5	7.0	0.5	5.0	5.0	10000	0.40	01 472 +2G*^	4500	2000
	0.0056	4.0	11.5	8.5	0.5	5.5	5.0	10000	0.45	01 562 +2G*^	4000	2000

	0.0100	4.5	12.0	8.5	0.5	6.5	5.0	10000	0.65	01 103 +2G*^	4000	2000
	0.0150	5.0	13.0	9.5	0.5	7.0	5.0	10000	0.62	01 153 +2G*^	2000	2000
	0.0220	5.5	14.0	10.0	0.5	7.0	5.0	10000	0.70	01 223 +2G*^	2000	2000
	0.0330	6.5	15.0	11.0	0.5	7.0	7.5	10000	0.95	01 333 +2G*^	2000	2000
	0.0390	6.5	15.0	12.0	0.5	7.0	-	10000	0.98	01 393 +2G^	-	1000
	0.0470	8.0	15.0	12.0	0.5	7.0	-	10000	1.00	01 473 +2G*^	-	1000
	0.0560	8.0	15.0	10.0	0.5	7.5	-	10000	1.30	01 563 +2G*^	-	1000
	0.1000	9.0	18.0	15.0	0.5	11.0	-	10000	2.16	01 104 +2G*^	-	400
630V DC	0.0010	3.5	11.5	6.5	0.5	4.0	5.0	10000	0.28	01 102 +2J*^	5000	2000
	0.0015	3.5	11.5	6.5	0.5	4.0	5.0	10000	0.30	01 152 +2J*^	5000	2000
	0.0022	3.5	11.5	6.5	0.5	4.0	5.0	10000	0.32	01 222 +2J*^	5000	2000
	0.0033	4.5	15.0	8.5	0.5	5.0	5.0	10000	0.45	01 332 +2J*^	4000	2000
	0.0047	4.5	15.0	8.5	0.5	5.0	5.0	10000	0.50	01 472 +2J*^	4000	2000
	0.0056	4.5	15.0	8.5	0.5	5.0	5.0	10000	0.52	01 562 +2J*^	4000	2000
	0.0068	5.0	15.0	9.0	0.5	5.5	5.0	10000	0.55	01 682 +2J*^	2000	2000
	0.0091	5.0	15.0	9.5	0.5	6.5	5.0	10000	0.55	01 912 +2J*^	2000	2000
	0.0100	5.5	15.0	10.0	0.5	7.5	7.5	10000	0.75	01 103 +2J*^	2000	2000
	0.0150	7.0	15.0	11.0	0.5	7.5	-	10000	0.80	01 153 +2J*^	-	2000
	0.0220	7.6	15.0	13.0	0.5	8.5	-	10000	1.08	01 223 +2J*^	-	1000
	0.0330	8.0	15.0	13.0	0.5	8.5	-	10000	1.70	01 333 +2J*^	-	1000
1000V DC	0.0022	5.0	15.0	8.5	0.5	5.0	5.0	10000	0.48	01 222 +3A*^	4000	2000
	0.0027	5.0	15.0	9.0	0.5	5.0	5.0	10000	0.56	01 272 +3A*^	4000	2000
	0.0033	5.0	15.0	9.0	0.5	5.0	5.0	10000	0.62	01 332 +3A*^	4000	2000
	0.0039	6.0	15.0	10.0	0.5	5.0	5.0	10000	0.62	01 392 +3A*^	4000	2000
	0.0047	6.0	15.0	10.0	0.5	5.0	5.0	10000	0.72	01 472 +3A*^	4000	2000
	0.0056	6.5	15.0	10.5	0.5	5.0	5.0	10000	0.84	01 562 +3A*^	3000	2000
	0.0068	6.5	15.0	11.0	0.5	5.0	5.0	10000	0.84	01 682 +3A*^	3000	2000
1250V DC	0.0022	5.0	15.0	8.5	0.5	5.0	5.0	10000	0.48	01 222 +3B*^	3000	2000
	0.0027	5.5	15.0	9.0	0.5	5.0	5.0	10000	0.56	01 272 +3B*^	3000	2000
	0.0033	6.0	15.0	9.5	0.5	5.0	5.0	10000	0.65	01 332 +3B*^	2500	2000
	0.0039	6.5	15.0	9.5	0.5	5.0	5.0	10000	0.72	01 392 +3B*^	2500	2000
	0.0047	7.0	15.0	11.0	0.5	5.0	5.0	10000	0.84	01 472 +3B*^	1500	2000
	0.0056	7.0	15.0	11.0	0.5	5.0	5.0	10000	0.85	01 562 +3B*^	1500	2000
1600V DC	0.0022	6.0	17.0	10.0	0.5	5.0	5.0	10000	0.70	01 222 +3C*^	1500	2000
	0.0027	6.5	18.0	10.0	0.5	7.5	5.0	10000	0.75	01 272 +3C*^	1500	2000

	0.0033	7.0	19.0	10.0	0.5	5.0	5.0	10000	0.80	01 332 +3C*^	1500	2000
	0.0039	6.5	19.0	11.0	0.5	7.5	5.0	10000	1.00	01 392 +3C*^	1000	2000
	0.0047	7.5	20.0	12.0	0.5	7.5	5.0	10000	1.15	01 472 +3C*^	1000	2000

PLAIN POLYESTER FILM CAPACITORS (Starter applications for Lighting)

MAIN APPLICATION: Suitable for radio interference suppression
in starters for fluorescent lamps, compact fluorescent lamps and PL lamps

CONSTRUCTION: Film/foil inductive type construction with aluminum foil as electrode and polyester (PET) film as dielectric coated with flame retardant epoxy resin

CLIMATIC CATEGORY: 40/100/21

INSULATION RESISTANCE
Measured at 500 V DC after 1 minute 50,000 MO (Min. value) **DIELECTRIC STRENGTH:**
At 1500 V AC > 60 seconds (Flat radial type)

TAN d: 0.8% (maximum) at 1 kHz

LIFE TEST CONDITIONS
(Loading at elevated temperature)
Loaded at 1.5 times of rated voltage at 85° C or 1.5 times of
category voltage at 100° C 1000 hours

Epoxy Coated											
630 VDC/	0.0033	4.5	15	8.5	0.5	5.0	5.0	10000	0.56	10 332 +2J*^	4500	2000
250 VAC	0.0047	4.5	15	8.5	0.5	5.0	5.0	10000	0.64	10 472 +2J*^	4500	2000
	0.0068	4.5	15	8.5	0.5	5.5	5.0	10000	0.72	10 602 +2J*^	2000	2000
Only Impregnated											
630 VDC/	0.0030	4.0	14	10.0	0.5	5.0	7.5	10000	0.50	11 302 +2J*^	4500	2000
250 VAC	0.0033	4.5	15	8.5	0.5	5.0	5.0	10000	0.50	11 332 +2J*^	4500	2000
	0.0047	4.5	15	8.5	0.5	5.0	5.0	10000	0.60	11 472 +2J*^	4500	2000
	0.0068	4.5	15	8.5	0.5	5.5	5.0	10000	0.65	11 602 +2J*^	2000	2000

APPLICABLE SPECIFICATION: IEC 384-11, IEC 68

CAPACITANCE VALUE: 0.0012, 0.0033, 0.0047 and 0.006 µf

CAPACITANCE TOLERANCE: ±10%, ±20%

RATED VOLTAGE (DC): 630 V

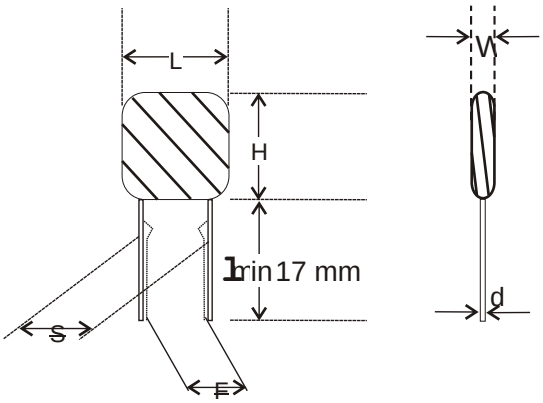
VOLTAGE PROOF: Between terminals: 2 times of rated voltage for 2 seconds

Category voltage is 80% of rated voltage

After the test:
?c/c: ≤ 5% of initial value.
Change in Tan d: ≤ 0.01 or 1.2 times the value measured before
the test, whichever is higher
Insulation resistance: ≥ 50% of the value mentioned in IR chart

ENDURANCE TEST: Deactivated lamp test as per IEC 155 -1993

Rated Voltage	Rated Cap. (µF)	Dimensions(mm) W	H	L	d	S	F	DV/DT	Wt.	Ordering	Packing unit
1000 VDC	0.0050	5.0	19	9.0	0.5	5.5	12.5	10000	0.68	11 502 +3A*^	4000	2000



PLAIN POLYESTER FILM CAPACITORS Film/Foil Non Inductive Type (Dip Type)

MAIN APPLICATION: Blocking, bypassing, filtering, coupling and decoupling, interference suppression in low voltage application, low pulse application

CONSTRUCTION: Film/foil inductive type construction with aluminum foil as electrode and polyester (PET) film as dielectric coated with flame retardant epoxy resin

CLIMATIC CATEGORY: 40/100/56

MAX TEMP RATING: 125° C
Between 85° C and 125° C, a voltage derating of 1.25% per °C on the rated voltage has to be applied

APPLICABLE SPECIFICATION: IEC 384-11

CAP. VALUE, RATED VOLTAGE (DC): Refer dimension chart

CAPACITANCE TOLERANCE: ±5%, ±10%

INSULATION RESISTANCE
Minimum Insulation Resistance R_{IS} V_R (or) time constant ? = C × $R_{R\ IS}$ ≤ 100 V DC at 25° C, relative humidity ≤ 70% ≥ 250 V DC

VOLTAGE PROOF
Between terminals: 2 times of rated voltage for 2 seconds

TAN d: 0.8% (maximum) at 1 kHz

LIFE TEST CONDITIONS
(Loading at elevated temperature)
Loaded at 1.5 times of rated voltage at 85° C for 1000 hours

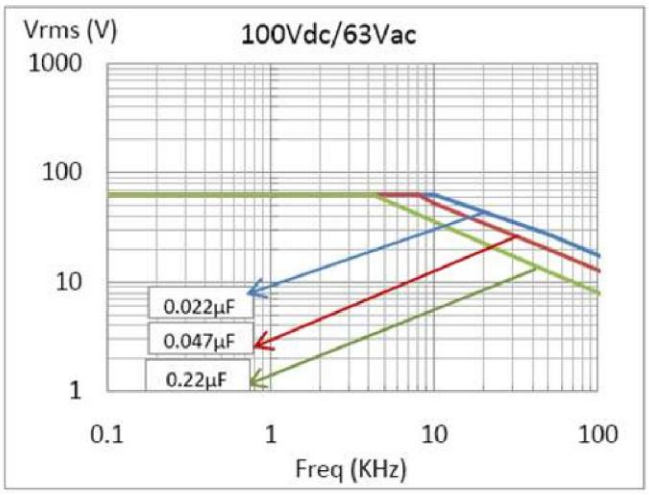
After the test:
?c/c: ≤ 5% of initial value
Change in Tan d: ≤ 0.01 or 1.2 times the value measured before the test, whichever is higher
Insulation resistance: ≥ 50% of the value mentioned in IR chart

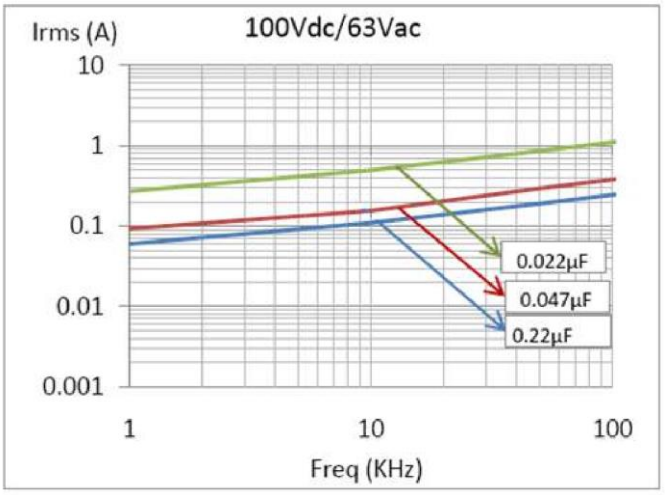
APPROVALS: Capacitors tested at ERTL (North) as per IEC 384-11

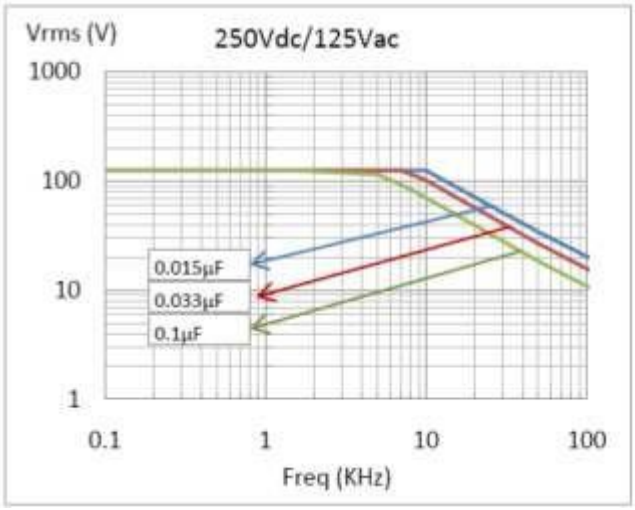
C_R ≤ 0.33 µF	C_R > 0.33 µF
30,000 M O	10000 s
30,000 M O	10000 s

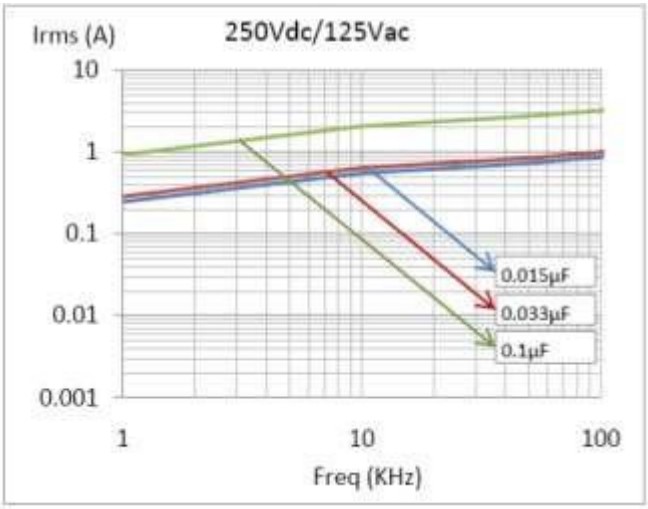
Max. Voltage (Vrms) vs. Frequency

Max. Current (Irms) vs. Frequency





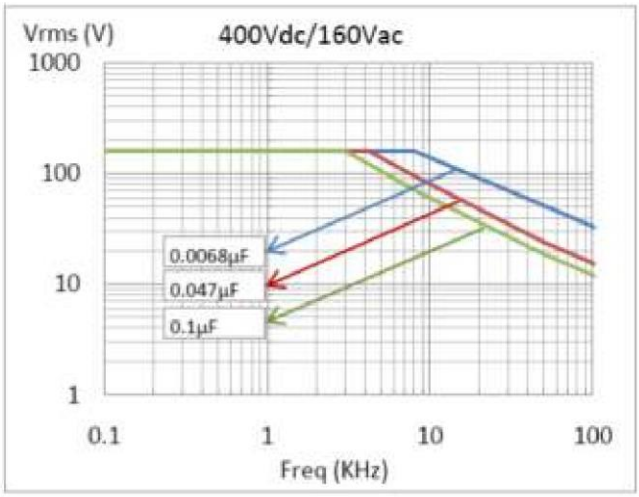


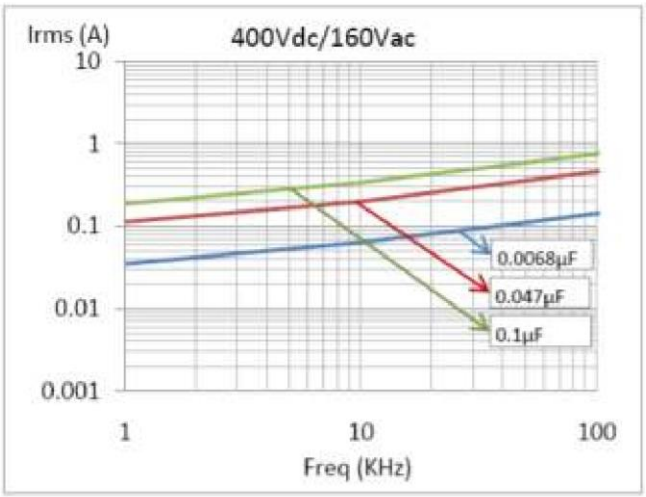


(Sinusoidal Waveform at T ≤ 55° C)

(Sinusoidal Waveform at T ≤ 55° C)

PLAIN POLYESTER FILM CAPACITORS Film/Foil Non Inductive Type (Dip Type)





Ordering codes and packaging units

Rated Voltage	Rated Cap. (µF)	Dimensions(mm) W	H	L	d	S	F .8/-.2	Wt. g	Ordering code	Packing units Ammo

100 V DC	0.0150	4.5	9.5	14.0	0.6	10.0	10	10000	0.4	25 153 +2A*^	-	2000
	0.0220	5.5	10.0	14.0	0.6	10.0	10	10000	0.6	25 223 +2A*^	-	2000
	0.0330	6.0	10.5	14.0	0.6	10.0	10	10000	0.7	25 333 +2A*^	-	2000
	0.0470	7.0	11.5	14.0	0.6	10.0	10	10000	0.9	25 473 +2A*^	-	2000
	0.1000	7.5	13.0	19.0	0.8	15.0	15	10000	1.7	25 104 +2A*^	-	2000
	0.2200	7.5	15.5	27.0	0.8	22.5	-	10000	3.2	25 224 +2A*^	-	1000
0.3300	9.0	17.0	27.0	0.8	22.5	-	10000	4.4	25 334 +2A*^	-	500	
0.4700	11.0	19.0	27.0	0.8	22.5	-	10000	6.0	25 474 +2A*^	-	500	
250 V DC	0.0100	5.0	9.5	14.0	0.6	10.0	10	10000	0.5	25 103 +2E*^	-	2000
	0.0150	5.5	10.0	14.0	0.6	10.0	10	10000	0.6	25 153 +2E*^	-	2000
	0.0220	6.5	11.0	14.0	0.6	10.0	10	10000	0.8	25 223 +2E*^	-	2000
	0.0330	5.5	11.0	19.0	0.8	15.0	15	10000	1.1	25 333 +2E*^	-	2000
	0.0470	7.0	12.5	19.0	0.8	15.0	15	10000	1.4	25 473 +2E*^	-	2000
	0.1000	7.5	15.0	27.0	0.8	22.5	-	10000	2.7	25 104 +2E*^	-	1000
	0.2200	10.0	18.0	27.0	0.8	22.5	-	10000	4.5	25 224 +2E*^	-	500
	0.3300	10.5	19.5	32.0	0.8	27.5	-	10000	6.3	25 334 +2E*^	-	500
	0.4700	12.5	21.5	32.0	0.8	27.5	-	10000	9.1	25 474 +2E*^	-	250 400
V DC	0.0068	6.5	12.0	14.0	0.6	10.0	10	10000	0.5	25 682 +2G*^	-	2000
	0.0100	6.0	10.5	14.0	0.6	10.0	10	10000	0.7	25 103 +2G*^	-	2000
	0.0150	6.5	12.5	19.0	0.6	15.0	15	10000	0.9	25 153 +2G*^	-	2000
	0.0220	7.5	13.5	19.0	0.8	15.0	15	10000	1.2	25 223 +2G*^	-	2000
	0.0330	7.5	16.0	19.0	0.8	15.0	15	10000	1.6	25 333 +2G*^	-	2000
	0.0390	8.5	14.0	19.0	0.8	15.0	15	10000	1.8	25 393 +2G*^	-	2000
	0.0470	9.0	16.0	19.0	0.8	15.0	15	10000	2.1	25 473 +2G*^	-	1000
	0.1000	11.0	19.0	19.0	0.8	15.0	15	10000	3.8	25 104 +2G*^	-	500 630
V DC	0.0047	6.0	10.5	14.0	0.6	10.0	10	10000	0.7	25 472 +2J*^	-	2000
	0.0068	7.0	11.5	14.0	0.6	10.0	10	10000	0.9	25 682 +2J*^	-	2000
	0.0100	6.5	13.0	19.0	0.8	15.0	10	10000	1.2	25 103 +2J*^	-	2000
	0.0150	7.5	13.0	19.0	0.8	15.0	15	10000	1.5	25 153 +2J*^	-	2000
	0.0220	7.5	14.5	19.0	0.8	15.0	15	10000	2.0	25 223 +2J*^	-	1000
	0.0330	7.5	15.5	27.0	0.8	22.5	-	10000	2.8	25 333 +2J*^	-	1000
0.0470	9.0	17.0	27.0	0.8	22.5	-	10000	3.5	25 473 +2J*^	-	500	
0.1000	11.5	20.5	32.0	0.8	27.5	-	10000	6.2	25 104 +2J*^	-	500	
1000 V DC	0.0100	5.2	11.2	13.2	0.8	10.0	-	10000	0.6	31 103 +3A*^	-	500

Note: 100 - 630 V DC in Dip Type and 1000 V DC in Box Type

INDUCTIVE SELF HEALING POLYESTER CAPACITORS DTSH Capacitors

CONSTRUCTION: Film/foil inductive type internally series construction with aluminum foil as electrode and polyester (PET) film as dielectric and MPET film as connecting electrode, coated with flame retardant epoxy resin

CAPACITANCE RANGE: 0.001 µF to 0.01 µF

RATED VOLTAGES: 1250 VDC / 500 VAC, 1600 VDC / 500 VAC,
2000VDC /500 VAC

CAPACITANCE TOLERANCES: ±5%, ±10%

APPLICABLE SPECIFICATION: IEC 60384-

2 **VOLTAGE PROOF:** 1.6 times the rated

voltage for 2 sec **INSULATION RESISTANCE**

AT +20°C: > 30000 M?

OPERATING TEMPERATURE RANGE: -40°C to +125°C
Between 85° C and 125° C, a voltage derating of 1.25% per °C on the rated voltage has to be applied

RATED TEMPERATURE: 85°C

PITCH: 5 mm, 7.5 mm

CAPACITANCE TOLERANCES: ±5%, ±10%

INSULATION RESISTANCE AT +20°C: > 30000 M?
TAN δ: 0.8% at 1 kHz, 3% at 100 kHz

ENDURANCE:
Test conditions (DC)
Temperature: +85°C ±2°C
Test duration: 1000 h
Voltage applied: 1.25 × $V(DC)_R$
Performance
Capacitance change |ΔC/C|: 5%≤
DF change (?tgd): ≤ 0.01 or 1.2 times value measured before
the test whichever is higher
Insulation resistance : ≥ 50% of initial limit

Test conditions (AC)
Temperature: +85°C ±2°C
Test duration: 1000 h

Voltage applied: 1.25 × V (AC)$_R$

Performance

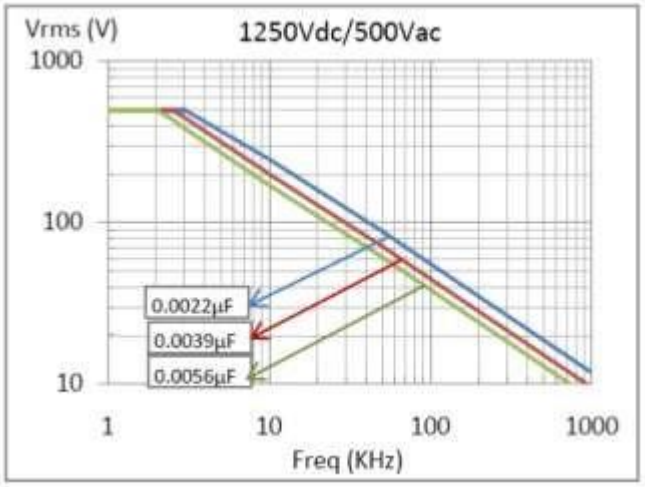
Capacitance change |?C/C|: ≤ 5%

DF change (?tgd): ≤ 0.01 or 1.2 times value measured before

the test whichever is higher Insulation resistance : ≥ 50% of initial limit

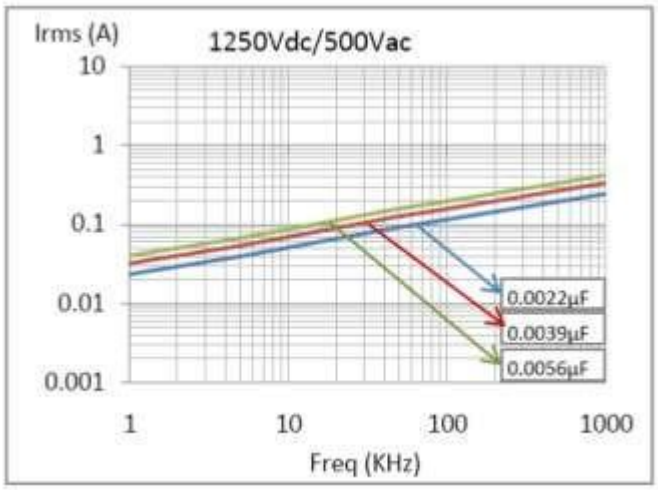
Max. Voltage (Vrms) vs. Frequency

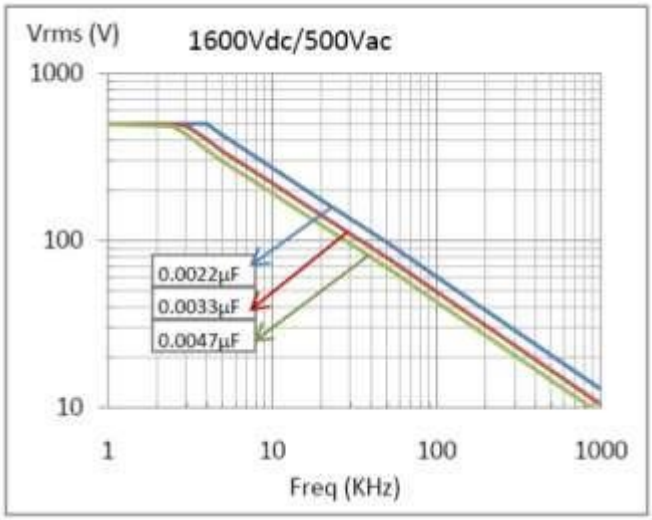
(Sinusoidal Waveform at T ≤ 55° C)

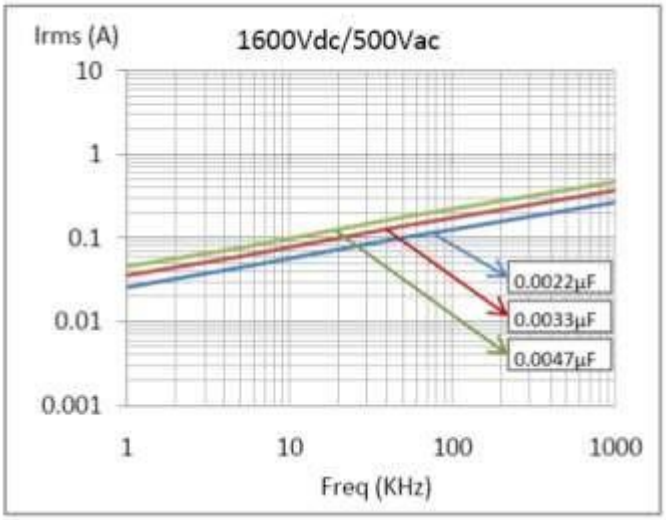


Max. Current (Irms) vs. Frequency

(Sinusoidal Waveform at T ≤ 55° C)



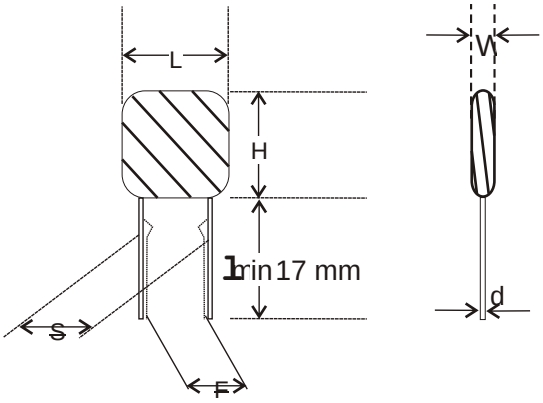




INDUCTIVE SELF HEALING POLYESTER CAPACITORS - DTSH CAPACITORS

Ordering codes and packaging units

Rated Voltage	Rated Cap. (µF)	Dimensions(mm) W ±0.5	H ±0.5	L ±0.5	d ±0.05	S ±0.5	F ±0.5	DV/DT V/µs	Wt. g	Ordering code	Packing unit Bulk
1250 VDC	0.0033	4.5	17.5	8.0	0.5	5.5±0.5	10000	0.52	80	272 + 3B * ^	500
	0.0039	5.0	17.5	8.5	0.5	5.5±0.5	10000	0.64	80	332 + 3B * ^	500



	0.0047	5.5	17.5	8.5	0.5	5.5±0.5	10000	0.66	80	472 + 3B * ^	500
	0.0056	5.5	17.5	9.0	0.5	5.5±0.5	10000	0.69	80	562 + 3B * ^	500
	0.0062	6.0	17.5	9.0	0.5	5.5±0.5	10000	0.71	80	622 + 3B * ^	500
	0.0068	6.0	17.5	9.5	0.5	5.5±0.5	10000	0.78	80	682 + 3B * ^	500
	0.0082	6.0	17.5	10.0	0.5	5.5±0.5	10000	0.87	80	822 + 3B * ^	500
	0.0100	6.5	18.0	10.0	0.5	5.5±0.5	10000	0.97	80	103 + 3B * ^	500
1600 VDC	0.0033	6.0	19.0	9.5	0.5	7.0±0.5	10000	0.65	80	332 + 3C * ^	500
	0.0039	6.0	19.0	9.5	0.5	7.5±0.5	10000	0.8	80	392 + 3C * ^	500
	0.0047	6.5	19.0	10.5	0.5	7.5±0.5	10000	0.83	80	472 + 3C * ^	500
	0.0056	7.0	19.0	11.0	0.5	7.5±0.5	10000	0.86	80	562 + 3C * ^	500
	0.0062	7.5	19.0	11.0	0.5	7.5±0.5	10000	0.89	80	622 + 3C * ^	500
	0.0068	8.0	19.0	11.5	0.5	7.5±0.5	10000	0.97	80	682 + 3C * ^	500
	0.0082	8.5	19.0	12.0	0.5	7.5±0.5	10000	1.08	80	822 + 3C * ^	500
	0.0100	9.0	19.0	12.5	0.5	7.5±0.5	10000	1.20	80	103 + 3C * ^	500

MAIN APPLICATION: Blocking, bypassing, filtering, timing, coupling and decoupling, interference suppression in low voltage applications, low pulse operations

CONSTRUCTION (BOX TYPE): Low inductive cell of metallised polyester film encased in flame retardant box or coated with flame retardant epoxy resin

CLIMATIC CATEGORY: 55/100/56

TEMPERATURE DERATING: Between 85° C and 100° C, a voltage derating of 1.25% per °C on the rated voltage has to be applied

APPLICABLE SPECIFICATION: IEC 384-2

CAP. VALUE, RATED VOLTAGE (DC): Refer dimension chart

CAPACITANCE TOLERANCE: ±5%, ±10%, ±20%

TAN d (DISSIPATION FACTOR) AT 20°C

Frequency (kHz)	C < 0.1 $_R$µF
At 1 ≤ 0.8% At 10 ≤ 1.5%	
At 100	≤ 3.0%

INSULATION RESISTANCE

Minimum Insulation Resistance R_{IS} V_R (or) time constant ? = C × $R_{R\ IS}$ ≤ 100 V DC at 25° C, relative humidity ≤ 70% > 100 V DC

VOLTAGE PROOF: Between terminals: 1.6 times of rated voltage for 2 seconds.

LIFE TEST CONDITIONS

(Loading at elevated temperature)
Loaded at 1.25 times of rated voltage at 85° C or 1.25 times of
category voltage at 100° C for 1000 hours
Category voltage is 80% of rated voltage at 100° C

Criteria after the test:

?c/c: ≤ 5% of initial value

Change in Tan d: ≤ 0.003, C $_R$1≤ µF; 0.002, C≤ $_R$> 1 µF

Insulation resistance: ≥ 50% of the value mentioned in IR chart

APPROVALS: Capacitors are tested at ERTL (North) as per IEC 384-2 and approved by CACT for telecom application.

0.1 µF < C 1 $_R$≤µF	C >1 $_R$µF
≤ 0.8%	1.0%
≤ 1.5%	-
≤ 3.0%	

Max. Voltage (Vrms) vs. Frequency

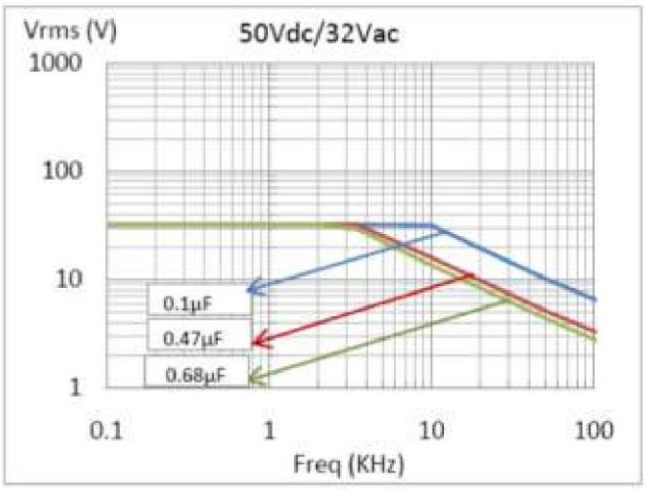
(Sinusoidal Waveform at T ≤55° C)

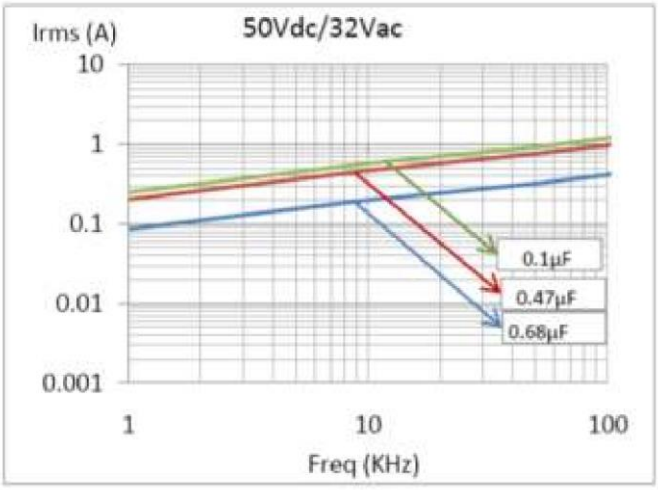
C_R ≤ 0.33 µF	C_R > 0.33 µF
MO	1250 s
MΩ	2500 s

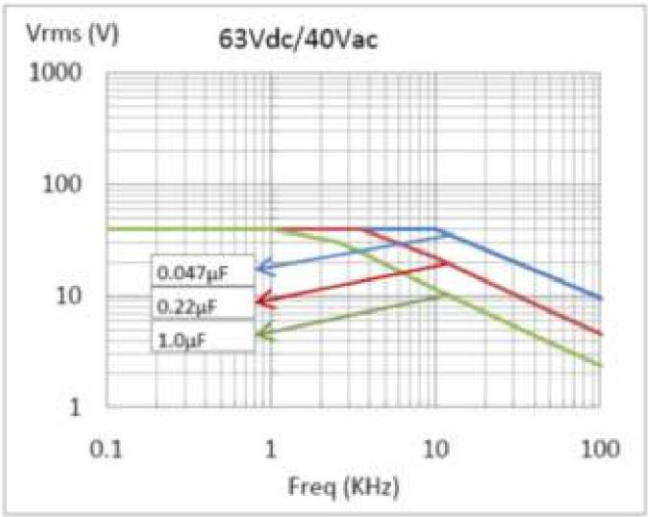
Max. Current (Irms) vs. Frequency

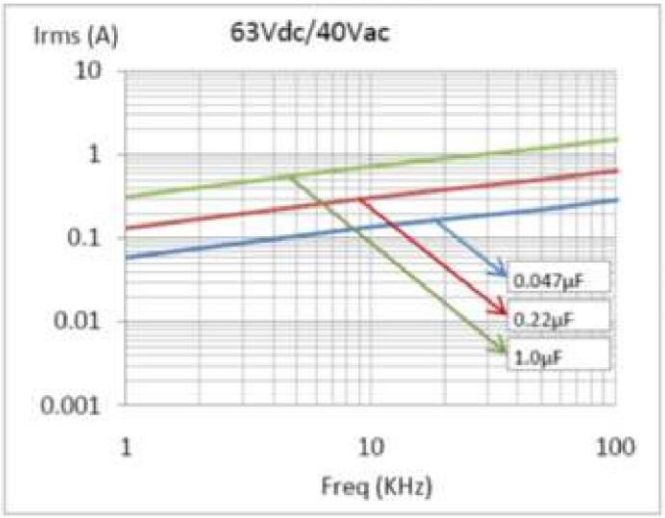
(Sinusoidal Waveform at T ≤ 55° C)

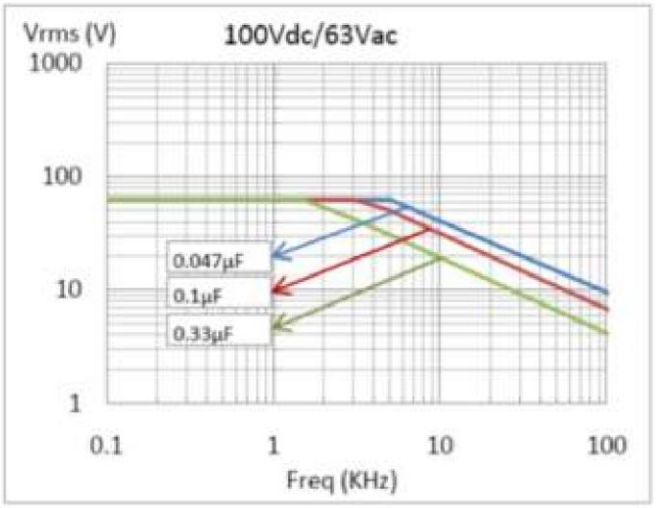
METALLISED POLYESTER FILM CAPACITORS (Sub-Miniature Box / Dip Type) 5.0 mm Pitch

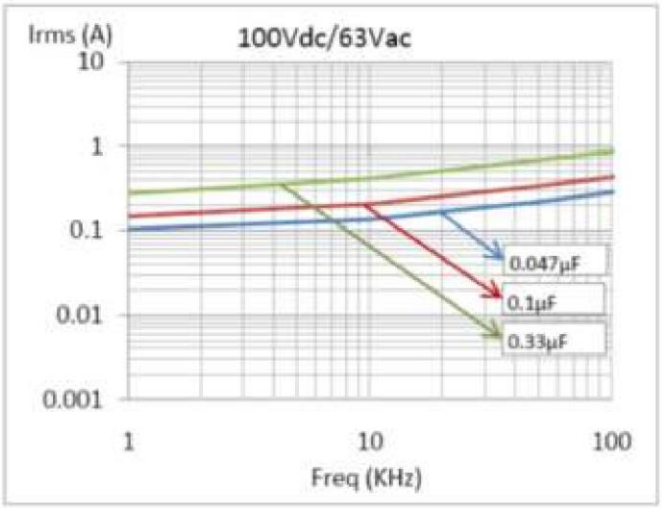


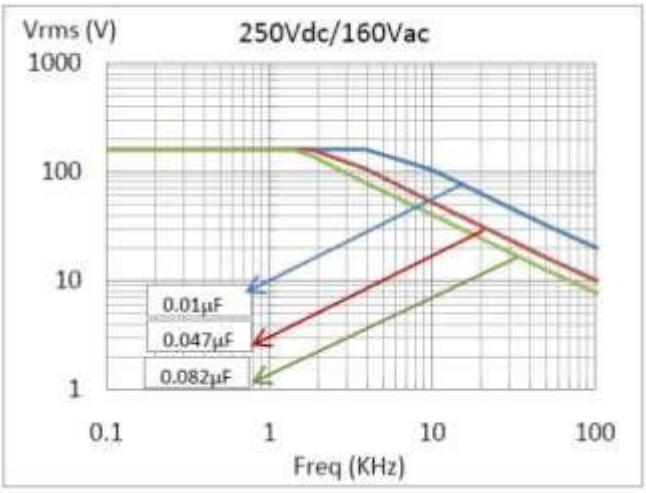


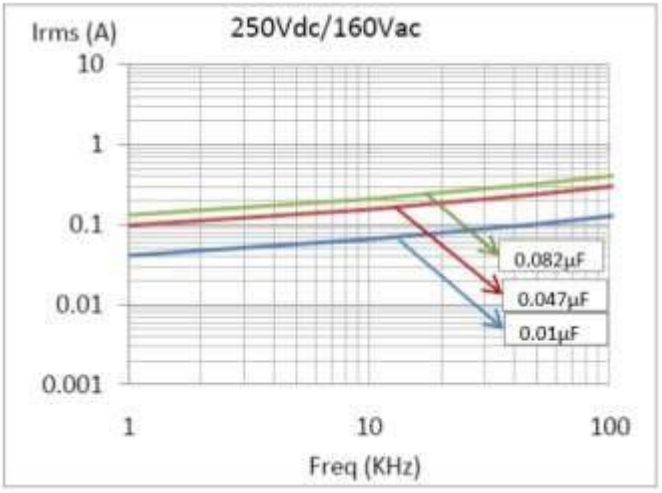


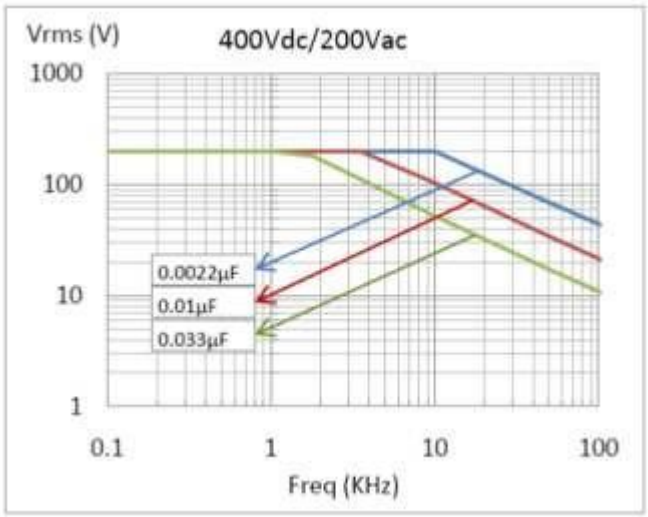


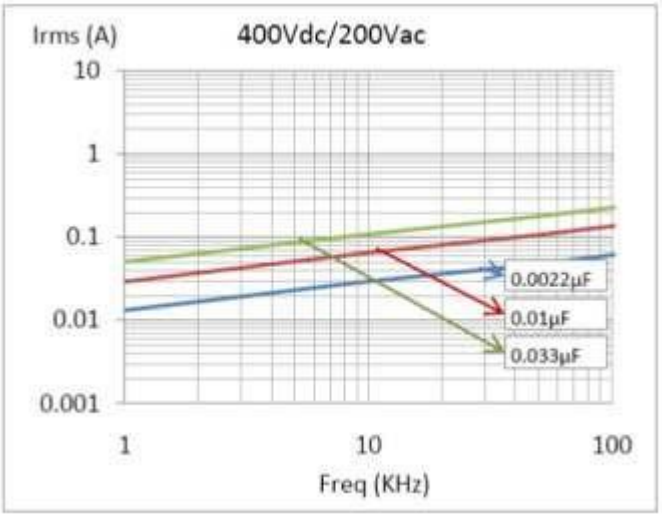

Vrms (V)
100Vdc/63Vac
1000
100
10
1
0.1
1
10
100
Freq (KHz)
0.047μF
0.1μF
0.33μF


Irms (A)
100Vdc/63Vac
10
1
0.1
0.01
0.001
1
10
100
Freq (KHz)
0.047μF
0.1μF
0.33μF


Vrms (V)
250Vdc/160Vac
1000
100
10
1
0.1
1
10
100
Freq (KHz)
0.01μF
0.047μF
0.082μF


Irms (A)
250Vdc/160Vac
10
1
0.1
0.01
0.001
1
10
100
Freq (KHz)
0.082μF
0.047μF
0.01μF

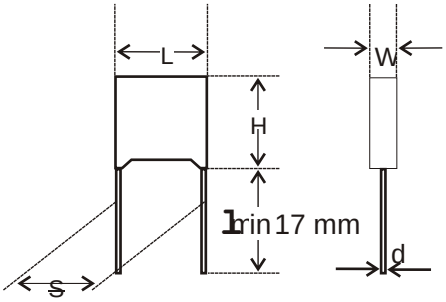

Vrms (V)
400Vdc/200Vac
1000
100
10
1
0.1
1
10
100
Freq (KHz)
0.0022μF
0.01μF
0.033μF


Irms (A)
400Vdc/200Vac
10
1
0.1
0.01
0.001
1
10
100
Freq (KHz)
0.0022μF
0.01μF
0.033μF

METALLISED POLYESTER FILM CAPACITORS (Sub-Miniature Box / Dip Type)

5.0 mm Pitch - Ordering codes and packaging units - *Box Type*

Rated Voltage	Rated Cap. (µF)	Dimensions(mm) W ±0.5	H ±0.5	L ±0.5	d ±0.05	S ±0.5	F .8/-.2	DV/DT V/µs	Wt. g	Ordering code	Packing units Ammo	Bulk
50 V	0.1000	2.5	6.5	7.2	0.6	5	5	50	0.25	16 104 +1H*^	3000	4000
	0.1500	3.5	7.5	7.2	0.6	5	5	50	0.35	16 154 +1H*^	2000	4000
	0.2200	3.5	7.5	7.2	0.6	5	5	50	0.35	16 224 +1H*^	2000	4000
	0.3300	3.5	7.5	7.2	0.6	5	5	50	0.35	16 334 +1H*^	2000	4000
	0.4700	4.5	9.5	7.2	0.6	5	5	50	0.45	16 474 +1H*^	1500	2000
	0.6800	6.0	11.0	7.2	0.6	5	5	50	0.60	16 684 +1H*^	1500	2000
	1.0000	6.0	11.0	7.2	0.6	5	5	50	0.60	16 105 +1H*^	1000	4000
63 V	0.0470	2.5	6.5	7.2	0.6	5	5	60	0.25	16 473 +1J*^	3000	4000
	0.0680	3.5	7.5	7.2	0.6	5	5	60	0.27	16 683 +1J*^	3000	4000
	0.1000	2.5	6.5	7.2	0.6	5	5	60	0.25	16 104 +1J*^	3000	4000
	0.1500	3.5	7.5	7.2	0.6	5	5	60	0.35	16 154 +1J*^	2000	4000
	0.2200	3.5	7.5	7.2	0.6	5	5	60	0.37	16 224 +1J*^	2000	4000
	0.3300	4.5	9.5	7.2	0.6	5	5	60	0.52	16 334 +1J*^	1500	2000
	0.4700	6.0	11.0	7.2	0.6	5	5	60	0.60	16 474 +1J*^	1500	2000
	0.6800	6.0	11.0	7.2	0.6	5	5	60	0.60	16 684 +1J*^	1000	2000
	1.0000	6.0	11.0	7.2	0.6	5	5	60	0.75	16 105 +1J*^	1000	2000
100 V	0.0010	2.5	6.5	7.2	0.6	5	5	110	0.25	16 102 +2A*^	3000	4000
	0.0015	2.5	6.5	7.2	0.6	5	5	110	0.25	16 152 +2A*^	3000	4000
	0.0022	2.5	6.5	7.2	0.6	5	5	110	0.25	16 222 +2A*^	3000	4000
	0.0033	2.5	6.5	7.2	0.6	5	5	110	0.25	16 332 +2A*^	3000	4000
	0.0047	2.7	6.7	7.4	0.6	5	5	110	0.30	16 472 +2A*^	2500	4000
	0.0068	3.0	6.5	7.2	0.6	5	5	110	0.30	16 682 +2A*^	2500	4000
	0.0100	2.7	6.7	7.4	0.6	5	5	110	0.28	16 103 +2A*^	2500	4000
	0.0150	3.0	6.5	7.2	0.6	5	5	110	0.25	16 153 +2A*^	2500	4000
	0.0220	3.0	6.5	7.2	0.6	5	5	110	0.25	16 223 +2A*^	2500	4000



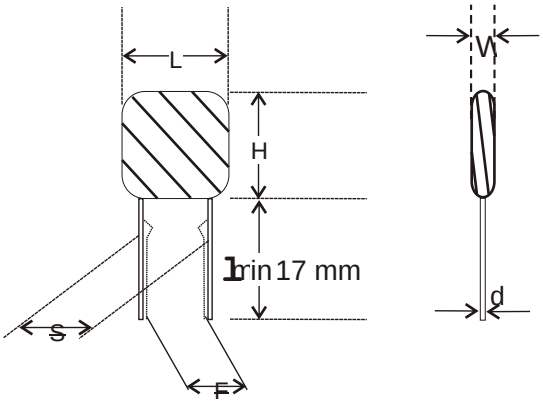
	0.0330	3.7	7.7	7.4	0.6	5	5	110	0.35	16 333 +2A*^	2500	4000
	0.0470	2.7	6.7	7.4	0.6	5	5	110	0.35	16 473 +2A*^	2500	4000
	0.0680	3.5	7.5	7.2	0.6	5	5	110	0.35	16 683 +2A*^	2000	4000
	0.1000	3.7	7.7	7.4	0.6	5	5	110	0.35	16 104 +2A*^	2000	4000
	0.1500	4.7	9.7	7.4	0.6	5	5	110	0.45	16 154 +2A*^	1500	4000
	0.2200	5.0	10.0	7.2	0.6	5	5	110	0.60	16 224 +2A*^	1500	2000
	0.3300	6.0	11.0	7.2	0.6	5	5	110	0.60	16 334 +2A*^	1000	2000
250 V	0.0010	2.5	6.5	7.2	0.6	5	5	320	0.35	16 102 +2E*^	3000	4000
	0.0015	2.5	6.5	7.2	0.6	5	5	320	0.35	16 152 +2E*^	3000	4000
	0.0022	2.5	6.5	7.2	0.6	5	5	320	0.35	16 222 +2E*^	3000	4000
	0.0033	2.5	6.5	7.2	0.6	5	5	320	0.35	16 332 +2E*^	3000	4000
	0.0047	2.5	6.5	7.2	0.6	5	5	320	0.35	16 472 +2E*^	3000	4000
	0.0068	3.0	6.5	7.2	0.6	5	5	320	0.35	16 682 +2E*^	2500	4000
	0.0100	2.7	6.7	7.4	0.6	5	5	320	0.35	16 103 +2E*^	2500	4000
	0.0150	3.0	6.5	7.2	0.6	5	5	320	0.35	16 153 +2E*^	2500	4000
	0.0220	3.0	6.5	7.2	0.6	5	5	320	0.35	16 223 +2E*^	2500	4000
	0.0330	3.5	7.5	7.2	0.6	5	5	320	0.35	16 333 +2E*^	2000	4000
	0.0470	3.7	7.7	7.4	0.6	5	5	320	0.45	16 473 +2E*^	1500	2000
	0.0680	4.5	9.5	7.2	0.6	5	5	320	0.45	16 683 +2E*^	1500	2000
	0.1000	6.0	11.0	7.2	0.6	5	5	320	0.60	16 104 +2E*^	1000	2000
400 V	0.0010	2.5	6.5	7.2	0.6	5	5	600	0.35	16 102 +2G*^	3000	4000
	0.0015	2.5	6.5	7.2	0.6	5	5	600	0.35	16 152 +2G*^	3000	4000
	0.0022	2.5	6.5	7.2	0.6	5	5	600	0.35	16 222 +2G*^	3000	4000
	0.0033	2.5	6.5	7.2	0.6	5	5	600	0.35	16 332 +2G*^	3000	4000
	0.0047	3.0	6.5	7.2	0.6	5	5	600	0.35	16 472 +2G*^	2500	4000
	0.0068	3.0	6.5	7.2	0.6	5	5	600	0.35	16 682 +2G*^	2500	4000
	0.0100	3.7	7.7	7.4	0.6	5	5	600	0.35	16 103 +2G*^	2000	4000
	0.0150	4.5	9.5	7.2	0.6	5	5	600	0.50	16 153 +2G*^	1500	2000
	0.0220	4.7	9.7	7.4	0.6	5	5	600	0.50	16 223 +2G*^	1500	2000
	0.0330	5.0	10.0	7.2	0.6	5	5	600	0.60	16 333 +2G*^	1500	2000
	0.0470	6.0	11.0	7.2	0.6	5	5	600	0.60	16 473 +2G*^	1000	2000

METALLISED POLYESTER FILM CAPACITORS (Sub-Miniature Box / Dip Type)

5.0 mm Pitch - Ordering codes and packaging units - *Dip Type*

	0.0047	2.5	6.5	7.2	0.6	5	5	110	0.25	14 472 +2A*^	2500	4000
	0.0068	2.5	6.5	7.2	0.6	5	5	110	0.25	14 682 +2A*^	2500	4000
		±0.5	±0.5	±0.5	±0.05	±0.5	+.8/-.2	V/µs	g	code	Ammo	Bulk
50 V	0.1000	2.5	6.5	7.2	0.6	5	5	50	0.25	14 104 +1H*^	3000	4000
	0.1500	3.5	8.5	7.2	0.6	5	5	50	0.35	14 154 +1H*^	2000	4000
	0.2200	3.5	8.5	7.2	0.6	5	5	50	0.35	14 224 +1H*^	2000	4000
	0.3300	3.5	8.5	7.2	0.6	5	5	50	0.35	14 334 +1H*^	2000	4000
	0.4700	4.5	9.5	7.2	0.6	5	5	50	0.45	14 474 +1H*^	1500	2000
	0.6800	5.0	11.0	7.2	0.6	5	5	50	0.60	14 684 +1H*^	1500	2000
	1.0000	6.0	11.0	7.2	0.6	5	5	50	0.60	14 105 +1H*^	1000	4000
63V	0.0100	2.5	6.5	7.2	0.6	5	5	60	0.25	14 103 +1J*^	3000	4000
	0.0150	2.5	6.5	7.2	0.6	5	5	60	0.25	14 153 +1J*^	3000	4000
	0.0220	2.5	6.5	7.2	0.6	5	5	60	0.25	14 223 +1J*^	3000	4000
	0.0330	2.5	6.5	7.2	0.6	5	5	60	0.25	14 333 +1J*^	3000	4000
	0.0470	2.5	6.5	7.2	0.6	5	5	60	0.25	14 473 +1J*^	3000	4000
	0.0680	2.5	6.5	7.2	0.6	5	5	60	0.25	14 683 +1J*^	3000	4000
	0.1000	2.5	6.5	7.2	0.6	5	5	60	0.25	14 104 +1J*^	3000	4000
	0.1500	3.5	8.5	7.2	0.6	5	5	60	0.35	14 154 +1J*^	2000	4000
	0.2200	3.5	8.5	7.2	0.6	5	5	60	0.35	14 224 +1J*^	2000	4000
	0.3300	4.5	9.5	7.2	0.6	5	5	60	0.45	14 334 +1J*^	1500	2000
	0.4700	5.0	11.0	7.2	0.6	5	5	60	0.60	14 474 +1J*^	1500	2000
	0.6800	6.0	11.0	7.2	0.6	5	5	60	0.60	14 684 +1J*^	1000	2000
100 V	0.0015	2.5	6.5	7.2	0.6	5	5	110	0.25	14 152 +2A*^	3000	4000
	0.0022	2.5	6.5	7.2	0.6	5	5	110	0.25	14 222 +2A*^	3000	4000
	0.0033	2.5	6.5	7.2	0.6	5	5	110	0.25	14 332 +2A*^	3000	4000

Rated Voltage	Rated Cap. (µF)	Dimensions(mm) W	H	L	d	S	F	DV/DT	Wt.	Ordering	Packing units	
	0.0330	5.0	11.0	7.2	0.6	5	5	600	0.60	14333 +2G*^	1500	2000



	0.0100	2.5	6.5	7.2	0.6	5	5	110	0.25	14 103 +2A*^	2500	4000
	0.0150	2.5	6.5	7.2	0.6	5	5	110	0.25	14 153 +2A*^	2500	4000
	0.0220	2.5	6.5	7.2	0.6	5	5	110	0.25	14 223 +2A*^	2500	4000
	0.0330	2.5	6.5	7.2	0.6	5	5	110	0.25	14 333 +2A*^	2500	4000
	0.0470	3.0	6.5	7.2	0.6	5	5	110	0.35	14 473 +2A*^	2500	4000
	0.0680	3.5	8.5	7.2	0.6	5	5	110	0.35	14 683 +2A*^	2000	4000
	0.1000	3.5	8.5	7.2	0.6	5	5	110	0.35	14 104 +2A*^	2000	4000
	0.1500	4.5	9.5	7.2	0.6	5	5	110	0.45	14 154 +2A*^	2000	4000
	0.2200	5.0	11.0	7.2	0.6	5	5	110	0.60	14 224 +2A*^	1500	2000
	0.3300	6.0	11.0	7.2	0.6	5	5	110	0.60	14 334 +2A*^	1000	2000
250 V	0.0015	2.5	6.5	7.2	0.6	5	5	320	0.35	14 152 +2E*^	3000	4000
	0.0022	2.5	6.5	7.2	0.6	5	5	320	0.35	14 222 +2E*^	3000	4000
	0.0033	2.5	6.5	7.2	0.6	5	5	320	0.35	14 332 +2E*^	3000	4000
	0.0047	2.5	6.5	7.2	0.6	5	5	320	0.35	14 472 +2E*^	3000	4000
	0.0068	2.5	6.5	7.2	0.6	5	5	320	0.35	14 682 +2E*^	2500	4000
	0.0100	3.0	6.5	7.2	0.6	5	5	320	0.35	14 103 +2E*^	2500	4000
	0.0150	3.0	6.5	7.2	0.6	5	5	320	0.35	14 153 +2E*^	2500	4000
	0.0220	3.0	6.5	7.2	0.6	5	5	320	0.35	14 223 +2E*^	2500	4000
	0.0330	3.5	8.5	7.2	0.6	5	5	320	0.35	14 333 +2E*^	2000	4000
	0.0470	4.5	9.5	7.2	0.6	5	5	320	0.45	14 473 +2E*^	1500	2000
	0.0680	4.5	9.5	7.2	0.6	5	5	320	0.45	14 683 +2E*^	1500	2000
	0.1000	6.0	11.0	7.2	0.6	5	5	320	0.60	14 104 +2E*^	1000	2000
400 V	0.0015	2.5	6.5	7.2	0.6	5	5	600	0.35	14 152 +2G*^	3000	4000
	0.0022	2.5	6.5	7.2	0.6	5	5	600	0.35	14 222 +2G*^	3000	4000
	0.0033	2.5	6.5	7.2	0.6	5	5	600	0.35	14 332 +2G*^	3000	4000
	0.0047	2.5	6.5	7.2	0.6	5	5	600	0.35	14 472 +2G*^	2500	4000
	0.0068	3.0	6.5	7.2	0.6	5	5	600	0.35	14 682 +2G*^	2500	4000
	0.0100	3.5	8.5	7.2	0.6	5	5	600	0.35	14 103 +2G*^	2000	4000

MAIN APPLICATION: Blocking, bypassing, filtering, timing, coupling and decoupling, interference suppression in low voltage applications, low pulse operations

CONSTRUCTION (BOX TYPE): Low inductive cell of metallised polyester film encased in flame retardant box or coated with flame retardant epoxy resin

CLIMATIC CATEGORY: 55/100/56

TEMPERATURE DERATING Between 85° C and 100° C, a voltage derating of 1.25% per °C on the rated voltage has to be applied **APPLICABLE SPECIFICATION:** IEC 384-2

CAP. VALUE, RATED VOLTAGE (DC): Refer dimension chart

CAPACITANCE TOLERANCE: ±5%, ±10%, ±20%

VOLTAGE PROOF: Between terminals: 1.6 times of rated voltage for 2 seconds.

LIFE TEST CONDITIONS
(Loading at elevated temperature)
Loaded at 1.25 times of rated voltage at 85° C or 1.25 times of
category voltage at 100° C for 1000 hours
Category voltage is 80% of rated voltage at 100° C

Criteria after the test:

?c/c: ≤ 5% of initial value

Change in Tan d: ≤ 0.003, C_R1≤ µF; 0.002, C≤ $_R$> 1 µF

Insulation resistance: ≥ 50% of the value mentioned in IR chart

APPROVALS: Capacitors are tested at ERTL (North) as per IEC 384-2 and approved by CACT for telecom application.

TAN δ (DISSIPATION FACTOR) AT 20°C

Frequency (kHz)	C < 0.1 µF	0.1 µF < C ≤ 1 µF	C > 1 µF
At 1	≤ 0.8%	≤ 0.8%	1.0%
At 10	≤ 1.5%	≤ 1.5%	-
At 100	≤ 3.0%	≤ 3.0%	

INSULATION RESISTANCE

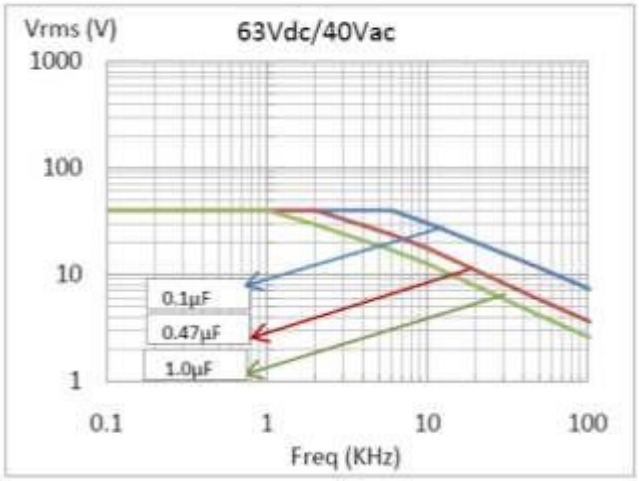
Minimum Insulation Resistance R_{IS} V_R (or) time constant T = C × R_{IS} ≤ 100 V DC at 25° C, relative humidity ≤ 70% ≥ 250 V DC

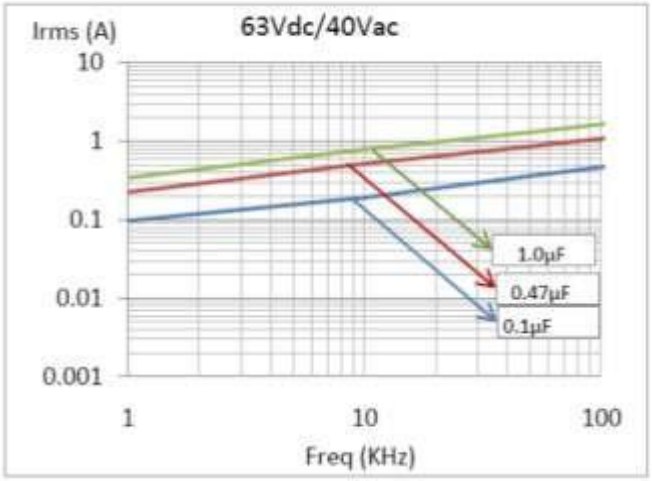
C_R ≤ 0.33 µF	C_R > 0.33 µF
MO 1250 s 7500 MO	2500 s

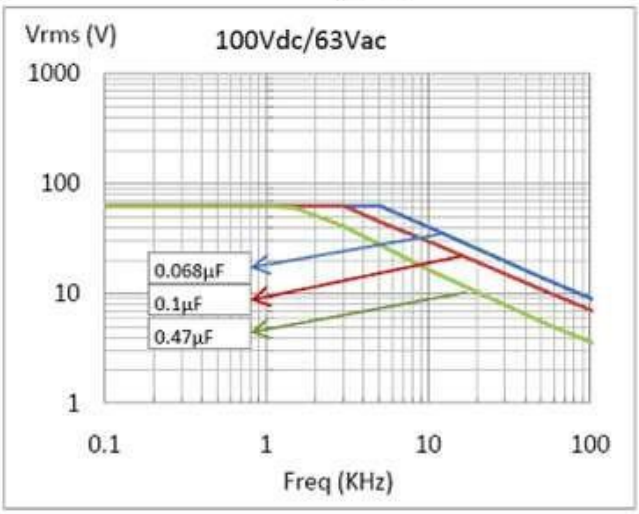
Max. Voltage (Vrms) vs. Frequency
(Sinusoidal Waveform at T ≤ 55° C)

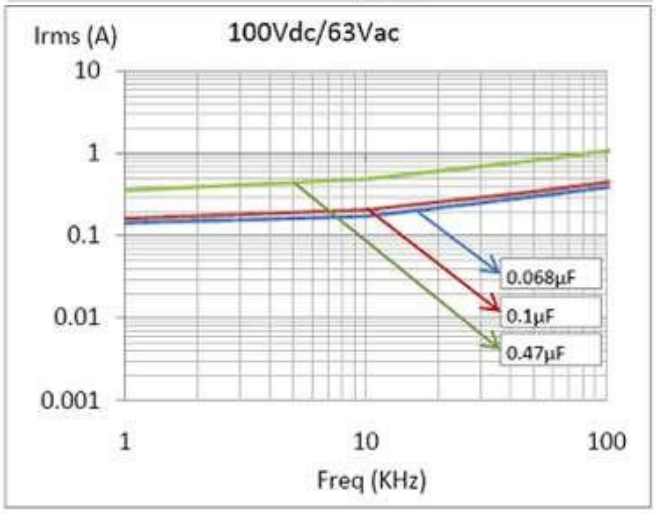
Max. Current (Irms) vs. Frequency
(Sinusoidal Waveform at T ≤ 55° C)

METALLISED POLYESTER FILM CAPACITORS
(Miniature Box / Dip Type) 7.5 mm Pitch

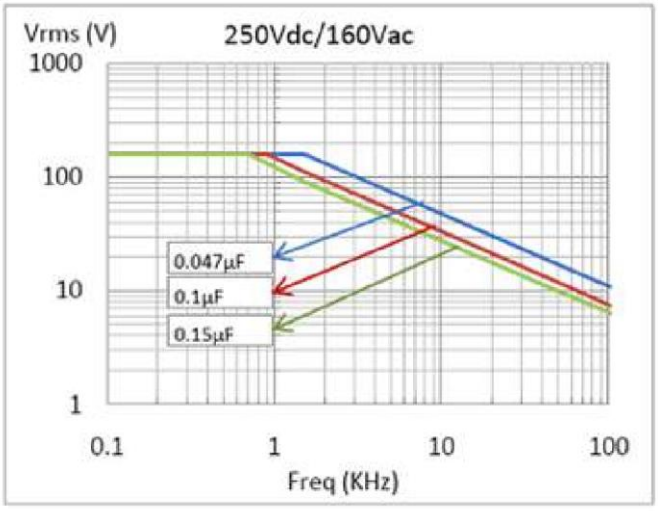


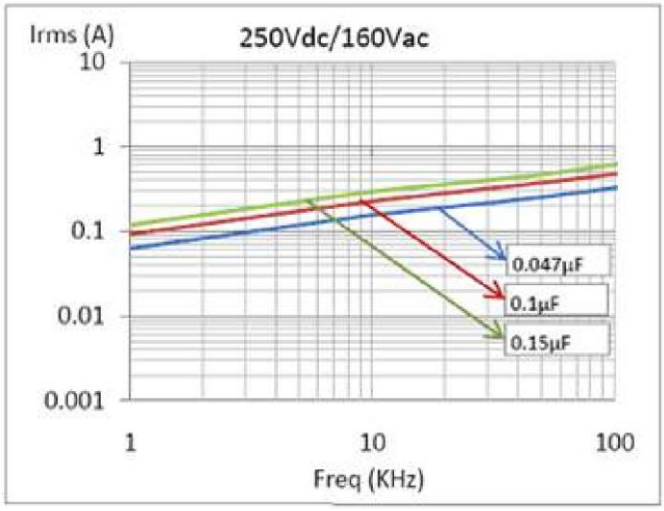


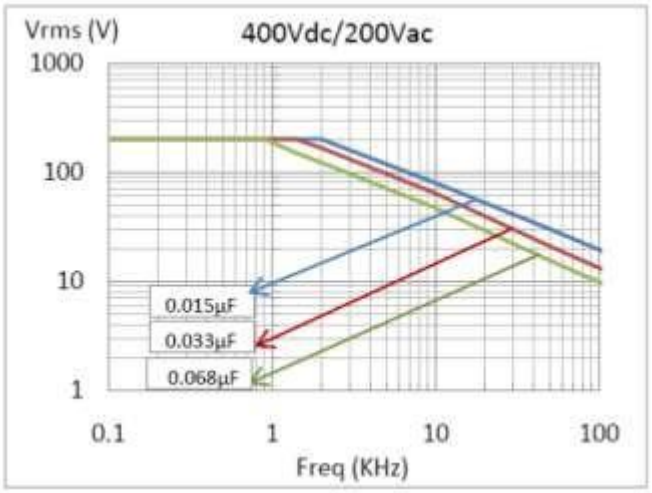


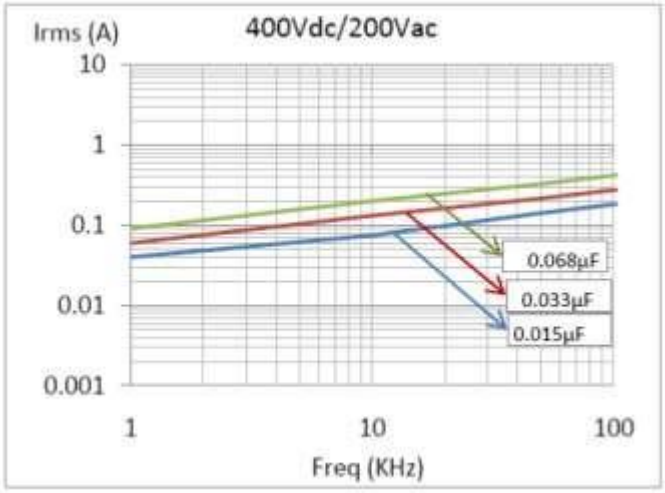


METALLISED POLYESTER FILM CAPACITORS
(Miniature Box / Dip Type) 7.5 mm Pitch





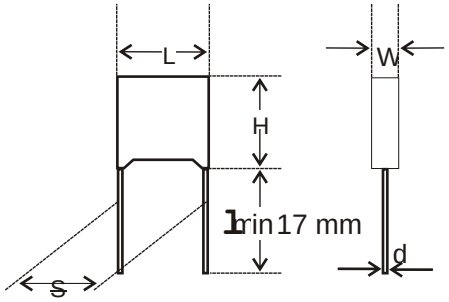




METALLISED POLYESTER FILM CAPACITORS (Miniature Box / Dip Type)

7.5 mm Pitch - Ordering codes and packaging units - *Box Type*

Rated Voltage	Rated Cap. (µF)	Dimensions(mm) W ±0.5	H ±0.5	L ±0.5	d ±0.05	S ±0.5	F ±0.5	DV/DT V/µs	Wt. g	Ordering code	Packing units Ammo	Reel	Bulk
63 V	0.1000	3.5	6.5	10.5	0.6	7.5	7.5	18	0.45	15 104 +1J*^	1500	1500	1000
	0.1500	3.5	6.5	10.5	0.6	7.5	7.5	18	0.45	15 154 +1J*^	1500	1500	1000
	0.2200	3.5	6.5	10.5	0.6	7.5	7.5	18	0.45	15 224 +1J*^	1500	1500	1000
	0.3300	4.0	9.0	10.5	0.6	7.5	7.5	18	0.60	15 334 +1J*^	1500	1000	1000
	0.4700	5.0	11.0	10.5	0.6	7.5	7.5	18	0.70	15 474 +1J*^	1000	1000	1000
	0.6800	5.0	11.0	10.5	0.6	7.5	7.5	18	0.70	15 684 +1J*^	1000	1000	1000

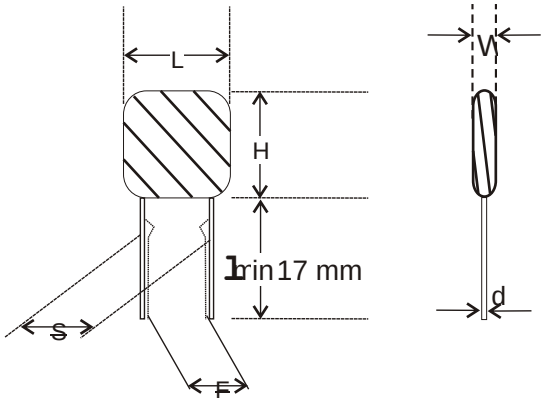


	1.0000	6.0	12.0	10.5	0.6	7.5	7.5	18	0.80	15 105 +1J*^	750	750	1000
100 V	0.0330	3.5	6.5	10.5	0.6	7.5	7.5	36	0.45	15 333 +2A*^	1500	1500	1000
	0.0470	3.5	6.5	10.5	0.6	7.5	7.5	36	0.45	15 473 +2A*^	1500	1500	1000
	0.0680	3.5	6.5	10.5	0.6	7.5	7.5	36	0.45	15 683 +2A*^	1500	1500	1000
	0.1000	4.5	9.0	10.5	0.6	7.5	7.5	36	0.60	15 104 +2A*^	1500	1000	1000
	0.1500	4.5	9.0	10.5	0.6	7.5	7.5	36	0.50	15 154 +2A*^	1500	1000	1000
	0.2200	4.5	9.0	10.5	0.6	7.5	7.5	36	0.50	15 224 +2A*^	1500	1000	1000
	0.3300	5.0	11.0	10.5	0.6	7.5	7.5	36	0.70	15 334 +2A*^	1000	1000	1000
	0.4700	6.0	12.0	10.5	0.6	7.5	7.5	36	0.90	15 474 +2A*^	750	750	1000
250 V	0.0100	3.5	6.5	10.5	0.6	7.5	7.5	70	0.50	15 103 +2E*^	1500	1500	1000
	0.0150	3.5	6.5	10.5	0.6	7.5	7.5	70	0.45	15 153 +2E*^	1500	1500	1000
	0.0220	3.5	6.5	10.5	0.6	7.5	7.5	70	0.45	15 223 +2E*^	1500	1500	1000
	0.0330	3.5	6.5	10.5	0.6	7.5	7.5	70	0.50	15 333 +2E*^	1500	1000	1000
	0.0470	4.0	9.0	10.5	0.6	7.5	7.5	70	0.60	15 473 +2E*^	1500	1000	1000
	0.0680	4.0	9.0	10.5	0.6	7.5	7.5	70	0.70	15 683 +2E*^	1500	1000	1000
	0.1000	4.0	9.0	10.5	0.6	7.5	7.5	70	0.70	15 104 +2E*^	1500	1000	1000
	0.1500	5.0	11.0	10.5	0.6	7.5	7.5	70	0.90	15 154 +2E*^	1000	750	1000
	0.2200	6.0	12.0	10.5	0.6	7.5	7.5	70	0.90	15 224 +2E*^	750	750	1000
400 V	0.0047	3.5	6.5	10.5	0.6	7.5	7.5	190	0.45	15 472 +2G*^	1500	1500	1000
	0.0068	3.5	6.5	10.5	0.6	7.5	7.5	190	0.60	15 682 +2G*^	1500	1500	1000
	0.0100	4.0	9.0	10.5	0.6	7.5	7.5	190	0.60	15 103 +2G*^	1500	1000	1000
	0.0150	4.0	9.0	10.5	0.6	7.5	7.5	190	0.50	15 153 +2G*^	1500	1000	1000
	0.0220	4.0	9.0	10.5	0.6	7.5	7.5	190	0.60	15 223 +2G*^	1500	1000	1000
	0.0330	4.0	9.0	10.5	0.6	7.5	7.5	190	0.80	15 333 +2G*^	1500	1000	1000
	0.0470	5.0	11.0	10.5	0.6	7.5	7.5	190	0.90	15 473 +2G*^	1000	750	1000
	0.0560	5.0	11.0	10.5	0.6	7.5	7.5	190	0.90	15 563 +2G*^	1000	750	1000
	0.0680	6.0	12.0	10.5	0.6	7.5	7.5	190	0.90	15 683 +2G*^	750	750	1000
630 V	0.0100	5.0	11.0	10.5	0.6	7.5	7.5	450	0.60	15 103 +2J*^	1000	1000	1000
	0.0150	6.0	12.0	10.5	0.6	7.5	7.5	450	0.60	15 153 +2J*^	750	750	1000
	0.0220	6.0	12.0	10.5	0.6	7.5	7.5	450	0.70	15 223 +2J*^	750	750	1000

METALLISED POLYESTER FILM CAPACITORS (Miniature Box / Dip Type)

7.5 mm Pitch - Ordering codes and packaging units - *Dip Type*

Rated Voltage	Rated Cap. (µF)	Dimensions(mm) W ±0.5	H ±0.5	L ±0.5	d ±0.05	S ±0.5	F ±0.5	DV/DT V/µs	Wt. g	Ordering code	Packing units Ammo	Reel	Bulk
63 V	0.1000	3.5	6.5	10.5	0.6	7.5	7.5	18	0.45	13 104 +1J*^	1500	1500	1000
	0.1500	3.5	6.5	10.5	0.6	7.5	7.5	18	0.45	13 154 +1J*^	1500	1500	1000
	0.2200	3.5	6.5	10.5	0.6	7.5	7.5	18	0.45	13 224 +1J*^	1500	1500	1000
	0.3300	4.0	9.0	10.5	0.6	7.5	7.5	18	0.50	13 334 +1J*^	1500	1000	1000
	0.4700	5.0	11.0	10.5	0.6	7.5	7.5	18	0.70	13 474 +1J*^	1000	1000	1000
	0.6800	5.0	11.0	10.5	0.6	7.5	7.5	18	0.70	13 684 +1J*^	1000	1000	1000
	1.0000	6.0	12.0	10.5	0.6	7.5	7.5	18	0.80	13 105 +1J*^	750	750	1000
100 V	0.0330	3.5	6.5	10.5	0.6	7.5	7.5	36	0.45	13 333 +2A*^	1500	1500	1000
	0.0470	3.5	6.5	10.5	0.6	7.5	7.5	36	0.45	13 473 +2A*^	1500	1500	1000
	0.0680	3.5	6.5	10.5	0.6	7.5	7.5	36	0.45	13 683 +2A*^	1500	1500	1000
	0.1000	5.0	10.0	10.5	0.6	7.5	7.5	36	0.50	13 104 +2A*^	1500	1000	1000
	0.1500	4.0	9.0	10.5	0.6	7.5	7.5	36	0.50	13 154 +2A*^	1500	1000	1000
	0.2200	4.5	9.0	10.5	0.6	7.5	7.5	36	0.50	13 224 +2A*^	1500	1000	1000
	0.3300	5.0	11.0	10.5	0.6	7.5	7.5	36	0.70	13 334 +2A*^	1000	1000	1000
	0.4700	5.5	11.0	10.5	0.6	7.5	7.5	36	0.90	13 474 +2A*^	750	750	1000
250 V	0.0220	3.5	8.0	10.5	0.6	7.5	7.5	70	0.45	13 223 +2E*^	1500	1500	1000
	0.0330	4.0	9.0	10.5	0.6	7.5	7.5	70	0.50	13 333 +2E*^	1500	1000	1000
	0.0470	4.0	9.0	10.5	0.6	7.5	7.5	70	0.50	13 473 +2E*^	1500	1000	1000
	0.0680	4.0	9.0	10.5	0.6	7.5	7.5	70	0.70	13 683 +2E*^	1500	1000	1000
	0.1000	5.0	10.0	10.5	0.6	7.5	7.5	70	0.70	13 104 +2E*^	1500	1000	1000
	0.1500	5.0	11.0	10.5	0.6	7.5	7.5	70	0.90	13 154 +2E*^	1000	750	1000
	0.2200	6.0	12.0	10.5	0.6	7.5	7.5	70	0.90	13 224 +2E*^	750	750	1000
400 V	0.0220	4.5	10.0	10.5	0.6	7.5	7.5	190	0.50	13 223 +2G*^	1500	1000	1000
	0.0330	5.5	11.0	10.5	0.6	7.5	7.5	190	0.70	13 333 +2G*^	1500	1000	1000



	0.0470	5.5	11.0	10.5	0.6	7.5	7.5	190	0.70	13 473 +2G*^	1000	750	1000
	0.0560	5.5	11.0	10.5	0.6	7.5	7.5	190	1.10	13 563 +2G*^	1000	750	1000
	0.0680	6.0	12.0	10.5	0.6	7.5	7.5	190	1.10	13 683 +2G*^	750	750	1000
630 V	0.0015	3.5	6.5	10.5	0.6	7.5	7.5	450	0.50	13 152 +2J*^	1500	1000	1000
	0.0022	3.5	6.5	10.5	0.6	7.5	7.5	450	0.50	13 222 +2J*^	1500	1000	1000
	0.0033	3.5	6.5	10.5	0.6	7.5	7.5	450	0.55	13 332 +2J*^	1500	1000	1000
	0.0047	4.0	9.0	10.5	0.6	7.5	7.5	450	0.60	13 472 +2J*^	1500	1000	1000
	0.0068	4.0	9.0	10.5	0.6	7.5	7.5	450	0.65	13 682 +2J*^	1500	1000	1000
	0.0100	5.5	11.0	10.5	0.6	7.5	7.5	450	0.70	13 103 +2J*^	1000	1000	1000
	0.0150	6.5	12.0	10.5	0.6	7.5	7.5	450	0.90	13 153 +2J*^	750	750	1000
	0.0220	6.5	12.0	10.5	0.6	7.5	7.5	450	0.90	13 223 +2J*^	750	750	1000

METALLISED POLYESTER FILM CAPACITORS (Standard Pitch: 10-27.5 mm)

MAIN APPLICATION: Blocking, bypassing, filtering, timing, coupling and decoupling, interference suppression in low voltage applications, low pulse operations

CONSTRUCTION (DIP TYPE): Low inductive cell of metallised polyester film coated with flame retardant epoxy resin or enclosed in flame retardant box

CLIMATIC CATEGORY: 40/100/56

TEMPERATURE DERATING: Between 85° C and 100° C, a voltage derating of 1.25% per °C on the rated voltage has to be applied

APPLICABLE SPECIFICATION: IEC 384-2

CAPACITANCE VALUE, RATED VOLTAGE (DC): Refer dimension chart

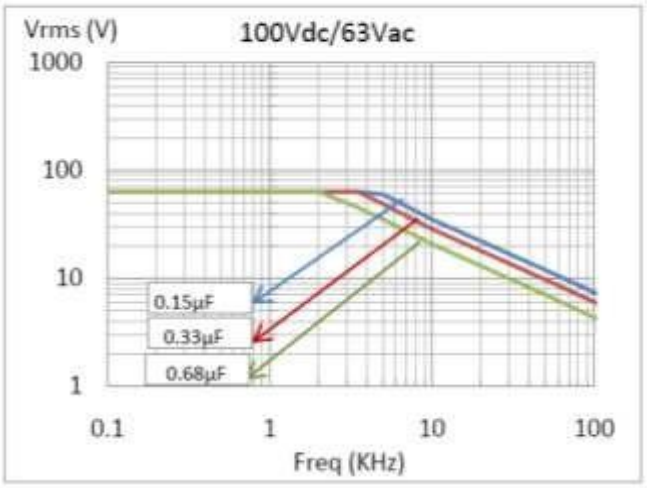
CAPACITANCE TOLERANCE: ±5%, ±10% **TAN δ (DISSIPATION FACTOR) AT 20°C**

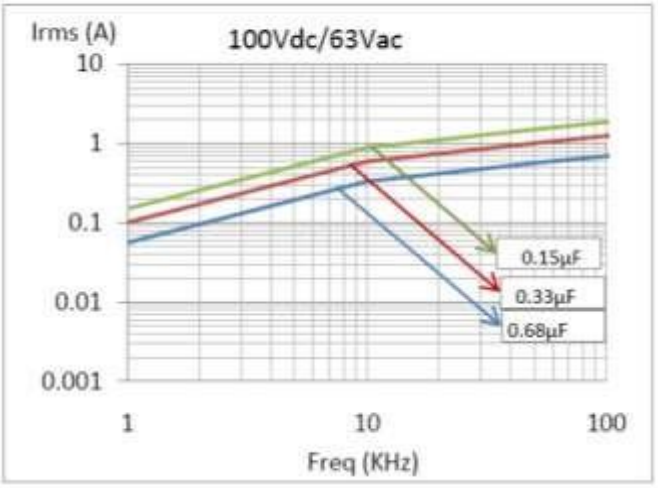
Frequency (kHz)	$C < 0.1\ \mu_R$ F
At 1	0.8%
At 10	1.5%
At 100	3.0%

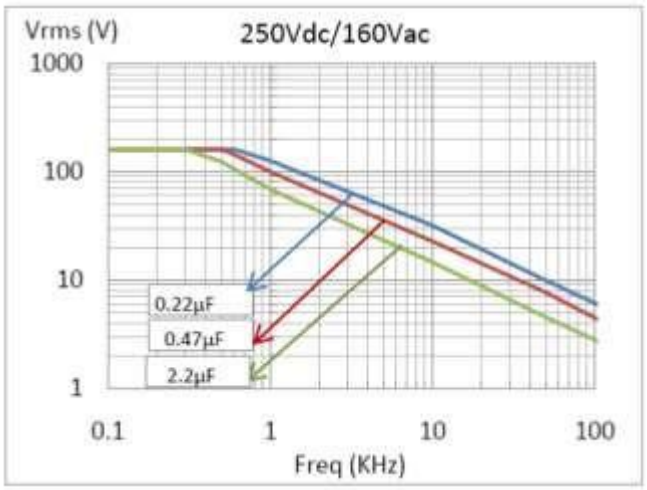
INSULATION RESISTANCE

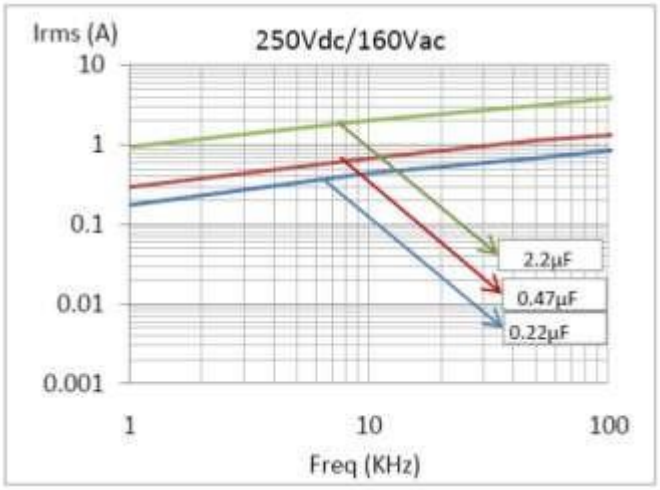
Minimum Insulation Resistance R_{IS}	V_R
(or) time constant $T=C \times R_{IS}$ at 25° C, relative humidity ≤ 70%	≤ 100 V DC
	> 100 V DC

Max. Voltage (Vrms) vs. Frequency









(Sinusoidal Waveform at T ≤ 55° C)

APPROVALS: Capacitors are tested at ERTL (North) as per IEC 384-2 and approved by CACT for telecom application.

VOLTAGE PROOF: Between terminals: 1.6 times of rated voltage for 2 seconds.

LIFE TEST CONDITIONS

(Loading at elevated temperature)

Loaded at 1.25 times of rated voltage at 85° C or 1.25 times of category voltage at 100° C for 1000 hours

Category voltage is 80% of rated voltage at 100° C

Criteria after the test:

?c/c: ≤ 5% of initial value

Change in Tan d: ≤ 0.003, C_R 1≤ µF; 0.002, C≤ $_R$> 1 µF

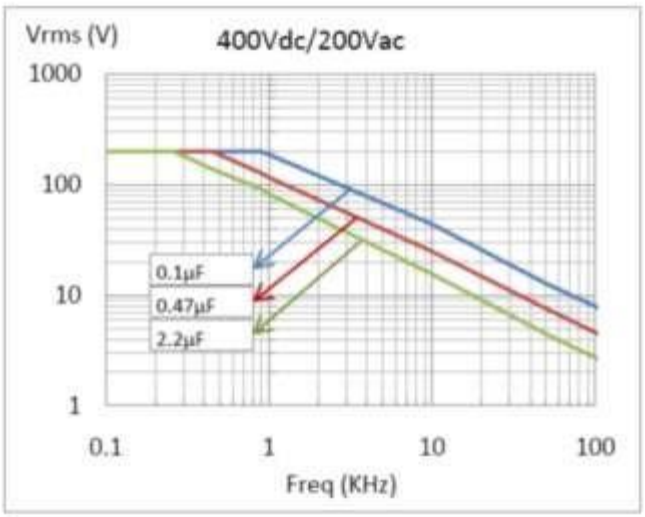
Insulation resistance: ≥ 50% of the value mentioned in IR chart

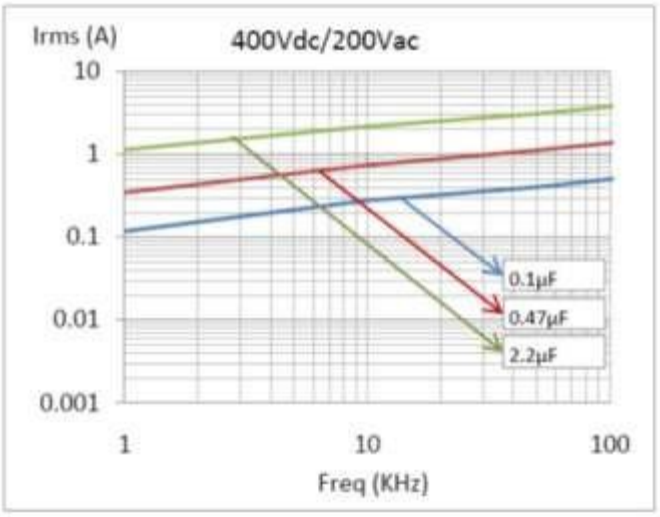
0.1 µF < C 1 $_R$ ≤µF	C >1 $_R$µF
0.8%	1.0%
1.5%	-
3.0%	

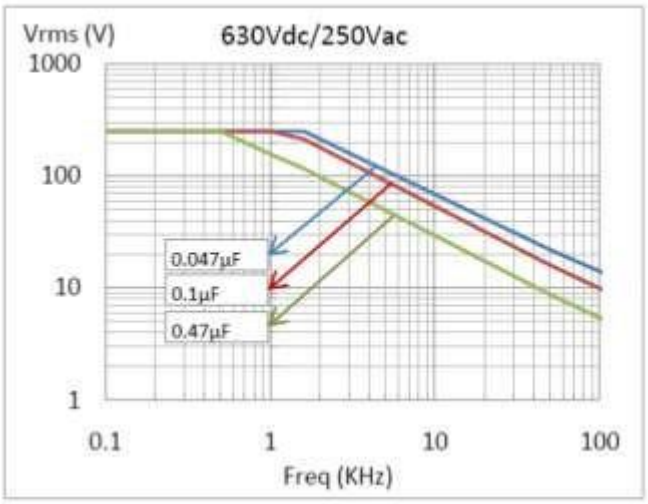
C_R ≤ 0.33 µF	C_R > 0.33 µF
3750 MΩ	1250 s
7500 MΩ	2500 s

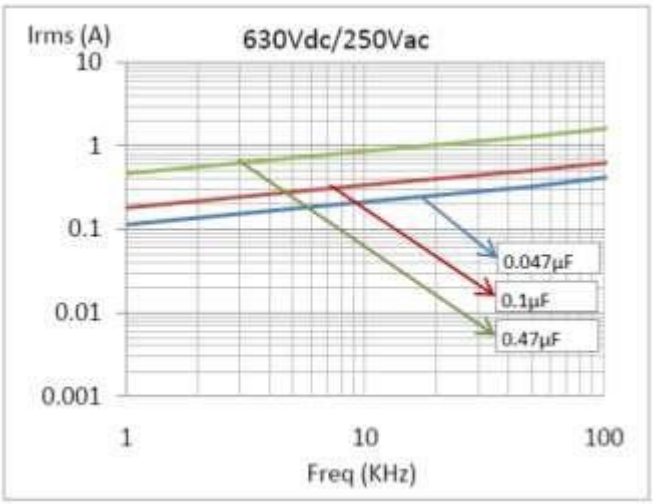
Max. Current (Irms) vs. Frequency

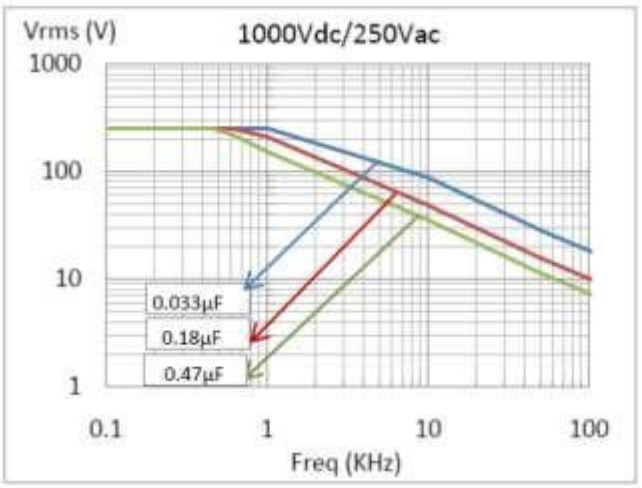
(Sinusoidal Waveform at T ≤ 55° C)

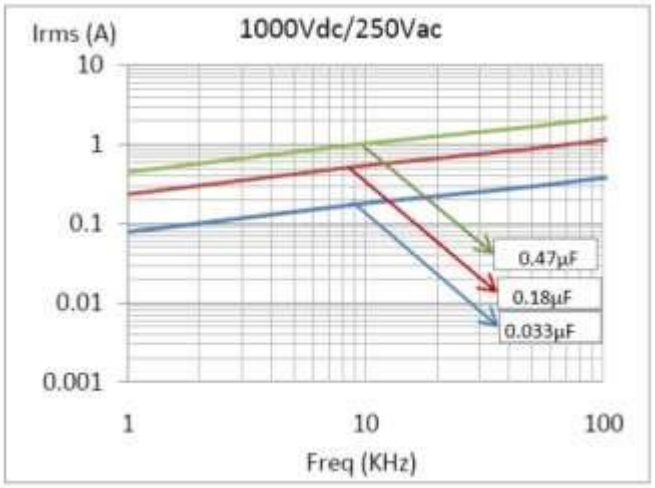












METALLISED POLYESTER FILM CAPACITORS (Standard Pitch: 10-27.5 mm)

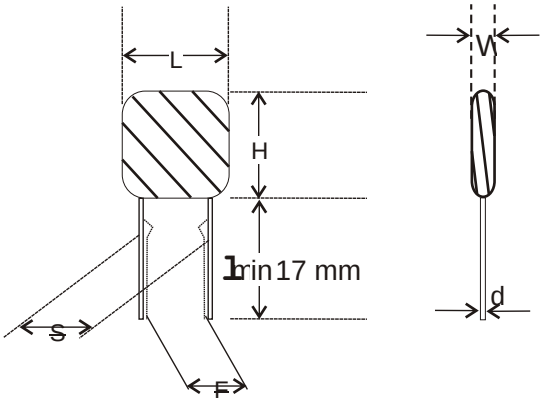
100 V DC	0.100	5.0	10.0	13	0.6	10.0	10.0	28	0.6	02 104 +2A*^	1500	1000
	0.150	6.0	12.0	13	0.6	10.0	10.0	28	0.65	02 154 +2A*^	1500	1000

	0.220	7.0	12.0	13	0.6	10.0	10.0	28	0.9	02 224 +2A*^	1500	1000
	0.330	6.0	12.0	19	0.8	10.0	10.0	20	0.9	02 334 +2A*^	-	1000
	0.470	9.0	15.0	19	0.8	15.0	15.0	20	0.9	02 474 +2A*^	-	1000
	0.680	6.0	12.0	19	0.8	15.0	15.0	20	1.0	02 684 +2A*^	-	1000
	1.000	9.0	15.0	19	0.8	15.0	15.0	20	1.3	02 105 +2A*^	-	1000
	1.500	6.0	15.0	27	0.8	22.5	15.0	8	2.0	02 155 +2A*^	-	1000
	2.200	10.0	18.0	27	0.8	22.5	15.0	8	2.8	02 225 +2A*^	-	500
	3.300	8.5	18.0	27	0.8	22.5	22.5	8	4.0	02 335 +2A*^	-	500
	4.700	15.0	22.0	27	0.8	22.5	-	7	5.2	02 475 +2A*^	-	500
250 V DC	0.027	4.0	9.0	13	0.6	10.0	10.0	70	0.65	02 273 +2E*^	1500	1000
	0.033	4.0	9.0	13	0.6	10.0	10.0	70	0.65	02 333 +2E*^	1500	1000
	0.047	6.0	10.0	13	0.6	10.0	10.0	70	0.7	02 473 +2E*^	1500	1000
	0.068	7.0	12.0	13	0.6	10.0	10.0	70	0.7	02 683 +2E*^	1500	1000
	0.082	5.0	10.0	13	0.6	10.0	10.0	70	0.75	02 823 +2E*^	1500	1000
	0.100	6.0	12.0	13	0.6	10.0	10.0	70	0.75	02 104 +2E*^	1500	1000
	0.150	6.0	12.0	13	0.8	10.0	10.0	70	0.8	02 154 +2E*^	-	1000
	0.220	6.0	12.0	19	0.8	15.0	15.0	28	1.4	02 224 +2E*^	-	1000
	0.330	7.0	13.0	19	0.8	15.0	15.0	28	1.4	02 334 +2E*^	-	1000
	0.470	9.0	15.0	19	0.8	15.0	15.0	28	2.1	02 474 +2E*^	-	1000
	0.680	9.0	14.0	19	0.8	15.0	15.0	28	2.9	02 684 +2E*^	-	1000
	1.000	7.5	16.5	27	0.8	22.5	22.5	12	3.6	02 105 +2E*^	-	500
	1.500	8.5	17.5	27	0.8	22.5	-	12	5.1	02 155 +2E*^	-	500
	2.200	10.0	20.0	27	0.8	22.5	-	12	6.5	02 225 +2E*^	-	250
	3.300	12.0	21.0	27	0.8	22.5		12	7.5	02 335 +2E*^	-	250
400 V DC	0.010	4.0	9.0	13	0.6	10.0	10.0	110	0.6	02 103 +2G*^	1500	1000
	0.015	6.0	15.0	13	0.6	10.0	10.0	110	0.6	02 153 +2G*^	1500	1000
	0.022	6.0	12.0	13	0.6	10.0	10.0	110	0.6	02 223 +2G*^	1500	1000
	0.033	5.0	10.0	13	0.6	10.0	10.0	110	0.6	02 333 +2G*^	1500	1000
	0.047	6.0	12.0	13	0.8	10.0	10.0	110	0.62	02 473 +2G*^	-	1000
	0.068	6.0	12.0	13	0.8	10.0	10.0	110	0.7	02 683 +2G*^	-	1000
	0.100	6.0	12.5	19	0.8	15.0	15.0	44	1.0	02 104 +2G*^	-	1000
	0.150	8.0	16.0	19	0.8	15.0	15.0	44	1.3	02 154 +2G*^	-	1000
	0.220	8.0	15.0	19	0.8	15.0	15.0	44	1.7	02 224 +2G*^	-	1000

	0.330	6.0	15.0	27	0.8	22.5	22.5	20	2.6	02 334 +2G*^	-	1000
	0.470	7.5	16.5	27	0.8	22.5	22.5	20	3.4	02 474 +2G*^	-	500
	0.680	8.0	15.0	27	0.8	22.5	-	20	3.5	02 564 +2G*^	-	500
	0.820	7.0	16.0	32	0.8	27.5	-	16	4.0	02 824 +2G*^	-	500
	1.000	7.0	16.0	32	0.8	27.5	-	16	4.0	02 105 +2G*^	-	250
	1.500	10.0	18.0	32	0.8	27.5	-	16	5.0	02 155 +2G*^	-	250
	2.200	10.3	19.6	31	0.8	27.5	-	16	6.87	02 225 +2G*^	-	250
	3.300	13.7	21.2	31	0.8	27.5	-	16	9.5	02 335 +2G*^	-	250
630 V DC	0.011	5.0	12.0	13	0.6	10.0	10.0	70	0.65	02 103 +2J*^	1500	1000
	0.015	6.0	12.0	13	0.6	10.0	10.0	70	0.65	02 153 +2J*^	1500	1000
	0.022	6.0	12.0	13	0.6	10.0	10.0	70	0.7	02 223 +2J*^	1500	1000
	0.033	6.0	12.0	19	0.8	15.0	15.0	70	1.0	02 333 +2J*^	-	1000
	0.047	7.0	13.0	19	0.8	15.0	15.0	70	1.2	02 473 +2J*^	-	1000
	0.068	8.0	14.0	19	0.8	15.0	15.0	70	1.4	02 683 +2J*^	-	1000
	0.082	8.0	14.5	19	0.8	15.0	15.0	70	1.8	02 823 +2J*^	-	1000
	0.110	8.0	16.0	19	0.8	15.0	15.0	70	2.0	02 104 +2J*^	-	1000
	0.150	8.0	16.0	19	0.8	15.0	15.0	70	2.5	02 154 +2J*^	-	500
	0.220	8.0	15.0	27	0.8	22.5	22.5	28	3.0	02 224 +2J*^	-	500
	0.330	10.0	19.0	32	0.8	27.5	-	24	5.0	02 334 +2J*^	-	250
	0.470	12.0	21.0	32	0.8	27.5	-	24	6.5	02 474 +2J*^	-	250
	1.000	17.0	29.0	31	0.8	27.5		24	9.5	02 105 +2J*^	-	250
1000 V DC	0.180	10.0	22.5	31	0.8	27.5	-			02 184 + 3A*^	-	250
	0.470	16.0	28.0	31	0.8	27.5	-			02 474 + 3A*^	-	250

Rated Voltage	Rated Cap. (µF)	Dimensions(mm) W	H	L	d	S	F	DV/DT	Wt.	Ordering	Packing units

Ordering codes and packaging units - ***Dip Type***

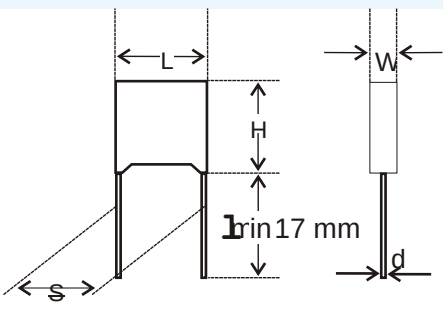


METALLISED POLYESTER FILM CAPACITORS (Standard Pitch: 10-27.5 mm)

Ordering codes and packaging units - ***Box Type***

Rated Voltage	Rated Cap. (µF)	Dimensions(mm) W	H	L	d	S	F	DV/DT V/µs	Wt. g	Ordering code	Packing units Ammo	
100 V DC	0.056	4.0	9.0	13.0	0.6	10.0	10.0	28	0.4	06 563 +2A*^	-	1000
	0.082	4.0	9.0	13.0	0.6	10.0	10.0	28	0.4	06 823 +2A*^	-	1000
	0.100	4.0	9.0	13.0	0.6	10.0	10.0	28	0.4	06 104 +2A*^	-	1000
	0.150	4.0	9.0	13.0	0.6	10.0	10.0	28	0.4	06 154 +2A*^	-	1000
	0.220	4.5	9.5	13.0	0.6	10.0	10.0	28	0.5	06 224 +2A*^	-	1000
	0.330	5.0	11.0	19.0	0.8	15.0	15.0	20	0.6	06 334 +2A*^	-	1000
	0.470	5.5	11.5	19.0	0.8	15.0	15.0	20	0.7	06 474 +2A*^	-	1000
	0.680	6.0	12.0	19.0	0.8	15.0	15.0	20	1.0	06 684 +2A*^	-	1000
	1.000	7.5	13.5	19.0	0.8	15.0	15.0	20	1.3	06 105 +2A*^	-	1000
	1.500	6.0	12.0	18.0	0.8	15.0	15.0	8	2.0	06 155 +2A*^	-	1000
	2.200	6.5	16.5	27.0	0.8	22.5	22.5	8	2.8	06 225 +2A*^	-	500
	3.300	8.5	18.0	27.0	0.8	22.5	22.5	8	4.0	06 335 +2A*^	-	500
	4.700	9.5	18.5	32.0	0.8	27.5	-	7	5.2	06 475 +2A*^	-	500
	6.800	11.5	20.5	32.0	0.8	27.5	-	7	6.5	06 685 +2A*^	-	250
250 V DC	0.027	4.0	9.0	13.0	0.6	10.0	10.0	70	0.4	06 273 +2E*^	-	1000
	0.033	4.0	9.0	13.0	0.6	10.0	10.0	70	0.4	06 333 +2E*^	-	1000
	0.047	4.0	9.0	13.0	0.6	10.0	10.0	70	0.4	06 473 +2E*^	-	1000
	0.068	4.5	9.5	13.0	0.6	10.0	10.0	70	0.4	06 683 +2E*^	-	1000
	0.082	5.0	10.0	13.0	0.6	10.0	10.0	70	0.5	06 823 +2E*^	-	1000
	0.100	5.0	10.0	13.0	0.6	10.0	10.0	70	0.5	06 104 +2E*^	-	1000
	0.150	5.0	11.0	19.0	0.8	15.0	15.0	28	0.7	06 154 +2E*^	-	1000
	0.220	6.0	12.0	18.0	0.8	15.0	15.0	28	0.9	06 224 +2E*^	-	1000
	0.330	7.0	13.0	19.0	0.8	15.0	15.0	28	1.3	06 334 +2E*^	-	1000
	0.470	5.5	14.5	27.0	0.8	22.5	22.5	12	2.1	06 474 +2E*^	-	1000
	0.680	6.5	15.5	27.0	0.8	22.5	22.5	12	2.9	06 684 +2E*^	-	1000
	1.000	7.5	16.5	27.0	0.8	22.5	22.5	12	3.6	06 105 +2E*^	-	500
	1.500	8.5	17.5	32.0	0.8	27.5	-	10	5.1	06 155 +2E*^	-	500

	2.200	10.5	19.5	32.0	0.8	27.5	-	10	6.4	06 224 +2E*^	-	250
400 V DC	0.010	4.0	9.0	13.0	0.6	10.0	10.0	110	0.4	06 103 +2G*^	-	1000
	0.015	4.0	9.0	13.0	0.6	10.0	10.0	110	0.4	06 153 +2G*^	-	1000
	0.022	4.0	9.0	13.0	0.6	10.0	10.0	110	0.4	06 223 +2G*^	-	1000
	0.033	4.5	9.5	13.0	0.6	10.0	10.0	110	0.4	06 333 +2G*^	-	1000
	0.047	4.5	10.5	19.0	0.8	15.0	15.0	44	0.6	06 473 +2G*^	-	1000
	0.068	5.5	11.5	13.5	0.8	15.0	15.0	44	0.7	06 683 +2G*^	-	1000
	0.100	5.5	12.5	19.0	0.8	15.0	15.0	44	0.9	06 104 +2G*^	-	1000
	0.150	5.5	12.5	19.0	0.8	15.0	15.0	44	1.3	06 154 +2G*^	-	1000
	0.220	6.0	15.0	27.0	0.8	22.5	22.5	20	1.9	06 224 +2G*^	-	1000
	0.330	6.0	15.0	27.0	0.8	22.5	22.5	20	2.6	06 334 +2G*^	-	1000
	0.470	7.5	16.5	27.0	0.8	22.5	22.5	20	3.4	06 474 +2G*^	-	500
	0.560	7.5	16.5	32.0	0.8	27.5	-	16	3.5	06 564 +2G*^	-	500
	0.820	9.0	18.0	32.0	0.8	27.5	-	16	4.5	06 824 +2G*^	-	500
	1.000	10.0	19.0	32.0	0.8	27.5	-	16	5.0	06 105 +2G*^	-	250
630 V DC	0.010	5.0	11.0	13.0	0.6	10.0	10.0	70	0.4	06 103 +2J*^	-	1000
	0.015	5.5	10.5	13.0	0.6	10.0	10.0	70	0.6	06 153 +2J*^	-	1000
	0.022	5.0	11.0	13.0	0.6	10.0	10.0	70	0.7	06 223 +2J*^	-	1000
	0.033	6.0	12.0	19.0	0.8	15.0	15.0	70	1.0	06 333 +2J*^	-	1000
	0.047	7.0	13.0	19.0	0.8	15.0	15.0	70	1.2	06 473 +2J*^	-	1000
	0.068	8.0	14.0	19.0	0.8	15.0	15.0	70	1.4	06 683 +2J*^	-	1000
	0.082	5.5	14.5	27.0	0.8	22.5	22.5	28	1.8	06 823 +2J*^	-	1000
	0.100	6.0	15.0	27.0	0.8	22.5	22.5	28	2.1	06 104 +2J*^	-	1000
	0.150	7.5	16.5	27.0	0.8	22.5	22.5	28	2.9	06 154 +2J*^	-	500
	0.220	9.5	18.5	27.0	0.8	22.5	22.5	28	3.5	06 224 +2J*^	-	500
	0.330	10.0	19.0	32.0	0.8	27.5	-	24	5.0	06 334 +2J*^	-	250
	0.470	12.0	21.0	32.0	0.8	27.5	-	24	6.5	06 474 +2J*^	-	250



MAIN APPLICATION:

METALLISED POLYESTER FLAT AXIAL CAPACITORS MPET Flat Axial Series

Blocking, bypassing, filtering, timing, coupling and decoupling, low pulse operations

CONSTRUCTION (BOX TYPE): Low inductive cell of metallised polyester film, axial construction with polyester tape wrapped and end sealed

CLIMATIC CATEGORY: 40/100/21

TEMPERATURE DERATING: Between 85° C and 100° C, a voltage derating of 1.25% per °C on the rated voltage has to be applied

APPLICABLE SPECIFICATION: IEC 384-2

CAP. VALUE, RATED VOLTAGE (DC): Refer dimension chart

CAPACITANCE TOLERANCE: ±5%, ±10%

VOLTAGE PROOF: Between terminals: 1.6 times of rated voltage for 2 seconds

LIFE TEST CONDITIONS
(Loading at elevated temperature)
Loaded at 1.25 times of rated voltage at 85° C for 1000 hours

Criteria after the test:
?c/c: ≤ 10% of initial value

Change in Tan d: ≤ 0.003, C_R ≤1µF; 0.002, C >1µF≤ $_R$

Insulation resistance: ≥ 50% of the value mentioned in IR chart

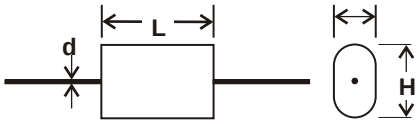
			W
At 10	1.5%	-	L≤15 : d=0.6
At 100	3.0%		L>15 : d=0.8

INSULATION RESISTANCE

Minimum Insulation Resistance	V_R	C_R ≤ 0.33 µF	C_R > 0.33 µF
R_{IS} (or) time constant T=C × R_{IS} at 25° C, relative humidity ≤ 70%	≤ 100 V DC	MΩ	s
	> 100 V DC	MΩ	s

TAN d (DISSIPATION FACTOR) AT 20°C

Frequency (kHz)	0.1 µF < C 1 $_R$ ≤µF	C >1 $_R$µF
At 1	1.0%	1.0%



Ordering codes and packaging units

		Maximum Dimensions (mm) L ±0.5							
100 V DC	0.220	4.0	8.0	15		0.6	10	36 224 +2A*^	1
	0.330	5.0	8.5	15		0.6	10	36 334 +2A*^	1
	0.470	5.5	9.5	15		0.6	10	36 474 +2A*^	1
250 V DC	0.100	4.0	9.0	15		0.6	22	36 104 +2E*^	1
	0.150	5.5	10.0	15		0.6	22	36 154 +2E*^	1
	0.220	7.0	11.0	15		0.6	22	36 224 +2E*^	1
	0.680	5.5	12.0	27		0.8	10	36 684 +2E*^	50
	1.000	7.0	13.0	27		0.8	10	36 105 +2E*^	50
	1.500	8.5	14.5	27		0.8	10	36 155 +2E*^	50
400 V DC	0.047	4.5	8.0	15		0.6	28	36 473 +2G*^	1
	0.100	6.0	10.0	15		0.6	28	36 104 +2G*^	1
	0.150	7.0	11.0	15		0.6	28	36 154 +2G*^	1

MAIN APPLICATION:

	0.220	5.0	10.0	27				0.8	14	36 224 +2G*^	50
	0.330	6.0	10.0	27				0.8	14	36 334 +2G*^	50
	0.470	7.0	11.5	27				0.8	14	36 474 +2G*^	50
	0.680	7.0	14.5	27				0.8	14	36 684 +2G*^	50
	1.000	8.5	17.0	27				0.8	14	36 105 +2G*^	50
	1.500	10.0	17.0	32				0.8	8	36 155 +2G*^	50
	2.200	11.5	19.0	32				0.8	8	36 225 +2G*^	50
	3.300	13.5	22.5	32				0.8	8	36 335 +2G*^	50
	4.700	16.5	25.5	32				0.8	8	36 475 +2G*^	50
630 VDC	0.033	5.0	9.0	15				0.6	44	36 333 +2J*^	1
	0.047	5.5	10.0	15				0.6	44	36 473 +2J*^	1
	0.068	6.5	11.0	15				0.6	44	36 683 +2J*^	1
	0.100	8.0	12.0	15				0.6	44	36 104 +2J*^	1
	0.220	6.0	12.0	27				0.8	22	36 224 +2J*^	50
	0.330	6.5	14.0	27				0.8	22	36 334 +2J*^	50
	0.470	8.0	15.5	27				0.8	22	36 474 +2J*^	50
	0.680	10.0	17.0	27	0.8	22	36 684 +2J*^				500
	0.680	8.5	16.0	32	0.8	12	36 684 +2J*^				500
	1.000	10.0	19.0	32	0.8	12	36 105 +2J*^				500
	1.500	12.0	21.0	32	0.8	12	36 155 +2J*^				500
	2.200	15.0	24.0	32	0.8	12	36 225 +2J*^				500
	3.300	14.5	26.0	32	0.8	12	36 335 +2J*^				500

METALLISED POLYPROPYLENE FLAT AXIAL CAPACITORS MPP Flat Axial Series

Audio circuits, Integrating & filter circuits, SMPS, Timing circuits, etc

CONSTRUCTION (BOX TYPE): Low inductive cell of metallised polypropylene film, axial construction with polyester tape wrapped and end sealed

CLIMATIC CATEGORY: 40/100/21

TEMPERATURE DERATING: Between 85° C and 100° C, a voltage derating of 1.25% per °C on the rated voltage has to be applied **APPLICABLE SPECIFICATION:** IEC 384-16

CAP. VALUE, RATED VOLTAGE (DC): Refer dimension chart **CAPACITANCE TOLERANCE:** ±5%

VOLTAGE PROOF: Between terminals: 1.6 times the rated voltage

TAN d:

Frequency (kHz)	0.1 µF < C_R ≤ 1 µF	C >1 µF_R
• At 1	0.08%	1.0%
•At 10	0.1%	-
•At 100	0.3%	

for 2 seconds

INSULATION RESISTANCE

Minimum Insulation Resistance R_{IS}	C_R ≤ 0.33 µF	C_R > 0.33 µF
(or) time constant T=C × $_R$ R_{IS}	>50000 MO	>10000s

at 25° C, relative humidity ≤ 70%

LIFE TEST CONDITIONS

(Loading at elevated temperature)

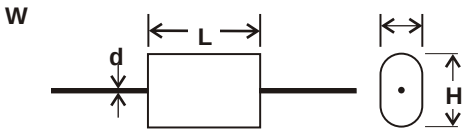
Loaded at 1.25 times of rated voltage at 85° C for 1000 hours

Criteria after the test:

?c/c: ≤ 10% of initial value

Change in Tan d: ≤ 0.003, C >1µF_R

Insulation resistance: ≥ 50% of the value mentioned in IR chart



L≤15 : d=0.6
L>15 : d=0.8

MAIN APPLICATION:

Ordering codes and packaging units

Rated Voltage	Rated cap. (µfd)	Maximum Dimensions (mm) W ±0.5	H ±0.5	L ±0.5	d ±0.5	S ±0.5	Ordering code	Packing units Bulk
250 V DC	0.0470	4.0	8.0	15	0.6	25	50 473 +2E* ^	500
	0.0680	4.5	9.0	15	0.6	25	50 683 +2E* ^	500
	0.1000	5.5	9.0	15	0.6	25	50 104 +2E* ^	500
	0.1500	6.0	10.5	15	0.6	25	50 154 +2E* ^	500
	0.3300	5.0	11.0	27	0.8	10	50 334 +2E* ^	500
	0.4700	6.0	12.0	27	0.8	10	50 474 +2E* ^	500
	0.6800	13.5	27.0	27	0.8	10	50 684 +2E* ^	500
	1.0000	8.0	16.0	27	0.8	10	50 105 +2E* ^	500
	1.5000	10.0	18.0	27	0.8	10	50 155 +2E* ^	500
400 V DC	0.0330	4.5	8.0	15	0.6	32	50 333 +2G* ^	500
	0.0470	5.5	9.5	15	0.6	32	50 473 +2G* ^	500
	0.0680	5.5	10.0	15	0.6	32	50 683 +2G* ^	500
	0.1000	7.0	10.5	15	0.6	32	50 104 +2G* ^	500
	0.2200	6.0	10.0	27	0.8	16	50 224 +2G* ^	500
	0.3300	6.0	12.0	27	0.8	16	50 334 +2G* ^	500
	0.4700	7.0	13.5	27	0.8	16	50 474 +2G* ^	500
	0.6800	8.0	16.0	27	0.8	16	50 684 +2G* ^	500
	1.0000	10.5	18.5	27	0.8	16	50 105 +2G* ^	500
	1.5000	10.0	19.5	32	0.8	9	50 155 +2G* ^	500
630 V DC	0.0330	5.0	10.0	15	0.6	50	50 333 +2J* ^	500
	0.0470	6.0	10.5	15	0.6	50	50 473 +2J* ^	500
	0.2200	6.0	14.0	27	0.8	25	50 224 +2J* ^	500
	0.3300	8.0	15.0	27	0.8	25	50 334 +2J* ^	500
	0.4700	8.5	17.5	27	0.8	25	50 474 +2J* ^	500
	0.6800	10.5	20.0	27	0.8	25	50 684 +2J* ^	500
	1.0000	11.0	20.5	32	0.8	14	50 105 +2J* ^	500
	1.5000	14.0	23.5	32	0.8	14	50 155 +2J* ^	500
1000 V DC	0.0047	4.5	8.5	15	0.6	75	50 472 +3A* ^	500
	0.0068	5.0	9.0	15	0.6	75	50 682 +3A* ^	500
	0.0100	6.0	10.0	15	0.6	75	50 103 +3A* ^	500
	0.0150	7.0	11.0	15	0.6	75	50 153 +3A* ^	500
	0.0330	5.5	11.0	27	0.8	38	50 333 +3A* ^	500
	0.0470	5.5	13.0	27	0.8	38	50 473 +3A* ^	500
	0.0680	7.0	14.0	27	0.8	38	50 683 +3A* ^	500
	0.1000	8.0	15.5	27	0.8	38	50 104 +3A* ^	500
	0.1500	9.5	18.5	27	0.8	38	50 154 +3A* ^	500
	0.1500	8.5	17.0	32	0.8	19	50 154 +3A* ^	500
	0.2200	10.0	19.0	32	0.8	19	50 224 +3A* ^	500
	0.3300	12.5	21.5	32	0.8	19	50 334 +3A* ^	500

PLAIN POLYPROPYLENE + PLAIN POLYESTER FILM (PEP) CAPACITORS (Inductive Type)

Oscillator, timing and LC/RC filter circuits, Snubber circuits, high frequency coupling of fast digital and analog ICs. Wherever stable capacitance with respect to frequency and temperature is required. Mainly used in CFL and where stable temperature characteristics are required

MAIN APPLICATION:

CONSTRUCTION (BOX TYPE): Film/foil inductive type construction with aluminum foil as electrode and PET + PP film as mixed dielectric coated with flame retardant epoxy resin

CLIMATIC CATEGORY: 40/100/56

RATED TEMPERATURE: 85° C. Between 85° C and 110° C, a voltage derating of 1.25% per °C on the rated voltage has to be applied

MAXIMUM OPERATING TEMPERATURE: 110° C

INSULATION RESISTANCE

Minimum Insulation Resistance $R_{IS}C_R \leq 0.33$ µF

(or) time constant $T = C \times R_R$ $_{IS}$ 100 GO

at 25° C, relative humidity ≤ 70%

CAP. VALUE, RATED VOLTAGE (DC): Refer dimension chart **CAPACITANCE TOLERANCE:** ±1%, ±2%, ±2.5%, ±5%, ±10%

VOLTAGE PROOF: Between terminals: 2 times of rated voltage.

TAN d: 0.25% (maximum) at 1.0 kHz, 0.50% at 100 kHz

LIFE TEST CONDITIONS

(Loading at elevated temperature)

Loaded at 1.5 times of rated voltage at 85° C or 1.5 times of category voltage at 100° C for 1000 hours. Category voltage is 80% of rated voltage at 100° C

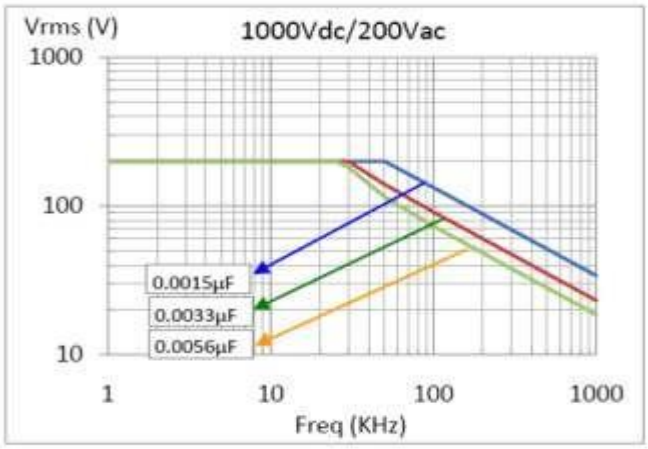
Criteria after the test:

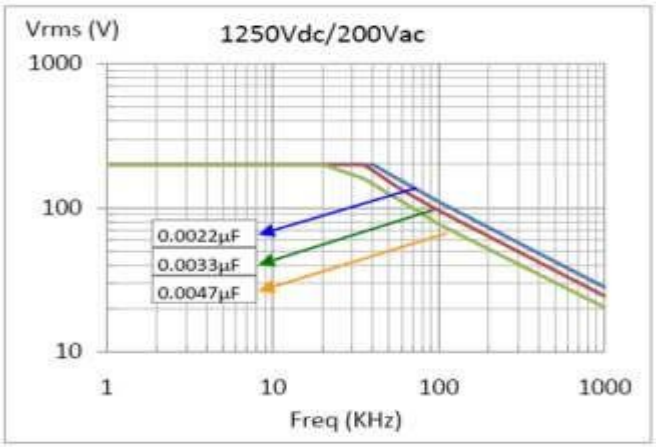
?c/c: ≤ 3% ±5 pfd of initial value

Change in Tan d: ≤ 1.4 times the value measured before the test

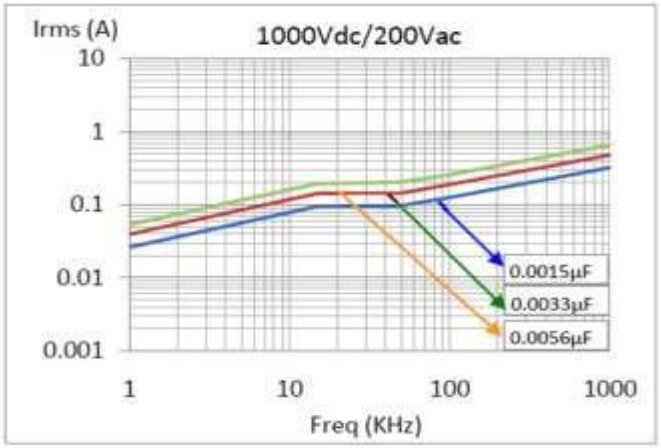
Insulation resistance: ≥ 50% of the value mentioned in IR chart

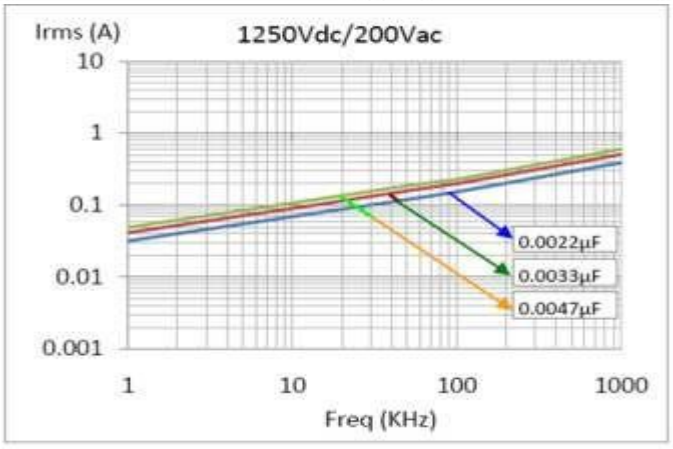
Max. Voltage (Vrms) vs. Frequency
(Sinusoidal Waveform at T ≤ 55° C)





Max. Current (Irms) vs. Frequency
(Sinusoidal Waveform at T ≤ 55° C)



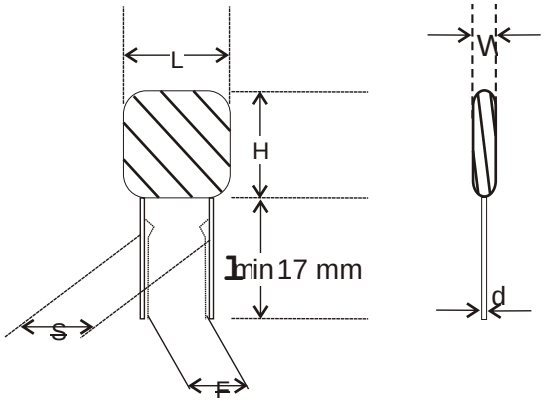


PLAIN POLYPROPYLENE + PLAIN POLYESTER FILM (PEP) CAPACITORS

Rated Voltage	Rated Cap. (µF)	Dimensions(mm) W	H	L	d	S	F .8/-.2	DV/DT V/µs	Wt. g	Ordering code	Packing units	
								10000				

(Inductive Type) - Ordering codes and packaging units

1000 V	0.00068	4.0	12.5	7.0	0.5	5.0	5		0.040	38 681 +3A*^	3500	2000
	0.00100	4.0	13.0	7.5	0.5	4.5	5	10000	0.350	38 102 +3A*^	5000	2000
	0.00150	5.0	14.0	8.5	0.5	5.0	5	10000	0.350	38 152 +3A*^	5000	2000
	0.00220	5.0	14.0	8.5	0.5	5.0	5	10000	0.400	38 222 +3A*^	3000	2000
	0.00270	5.5	14.0	8.5	0.5	5.0	5	10000	0.420	38 272 +3A*^	3000	2000
	0.00330	5.5	14.0	8.5	0.5	5.0	5	10000	0.450	38 332 +3A*^	3000	2000
	0.00390	6.5	14.0	9.5	0.5	5.0	5	10000	0.550	38 392 +3A*^	4000	2000
	0.00470	6.5	14.0	9.5	0.5	5.0	5	10000	0.600	38 472 +3A*^	2500	2000
	0.00560	6.5	14.0	9.5	0.5	5.0	5	10000	0.650	38 562 +3A*^	2000	2000
1250 V	0.00068	5.0	13.5	8.5	0.5	5.0	5	10000	0.550	38 681 +3B*^	3500	2000
	0.00100	4.0	14.0	7.5	0.5	5.0	5	10000	0.045	38 102 +3B*^	3500	2000
	0.00150	5.0	14.0	8.5	0.5	5.0	5	10000	0.500	38 152 +3B*^	3000	2000
	0.00220	5.0	14.0	8.5	0.5	5.0	5	10000	0.055	38 222 +3B*^	3000	2000
	0.00270	5.5	14.0	8.5	0.5	5.0	5	10000	0.550	38 272 +3B*^	2000	2000
	0.00330	6.0	14.0	9.5	0.5	5.0	5	10000	0.550	38 332 +3B*^	2000	2000
	0.00390	6.5	14.0	9.5	0.5	5.0	5	10000	0.720	38 392 +3B*^	1500	2000
	0.00470	6.5	14.0	9.5	0.5	5.0	5	10000	0.750	38 472 +3B*^	1500	2000
	0.00560	6.5	14.0	9.5	0.5	5.0.	5	10000	0.820	38 562 +3B*^	1500	2000



PLAIN POLYPROPYLENE FILM CAPACITORS
PLAIN POLYPROPYLENE FILM CAPACITORS (Inductive)

MAIN APPLICATION: Oscillator, timing and LC/RC filter circuits, high frequency coupling of fast digital and analog ICs

CONSTRUCTION: Film/foil inductive type construction with aluminum foil as electrode and PP film as dielectric coated with flame retardant epoxy resin

CLIMATIC CATEGORY: 40/100/56

MAX TEMP RATING: 100° C. Between 85° C and 100° C, a voltage
derating of 1.25% per °C on the rated voltage has to be applied

APPLICABLE SPECIFICATION: IEC 384-13

CAP. VALUE, RATED VOLTAGE (DC): Refer dimension chart

CAPACITANCE TOLERANCE: ±5%, ±10%

VOLTAGE PROOF: Between terminals: 2 times of rated voltage for 2 seconds

TAN d: 0.08% (maximum) at 1 kHz

LIFE TEST CONDITIONS:
(Loading at elevated temperature)
Loaded at 1.5 times of rated voltage at 85° C or 1.5 times of
category voltage at 100° C 1000 hours
Category voltage is 80% of rated voltage

Criteria after the test:
?c/c: ≤ 5% of initial value
Change in Tan d: ≤ 0.01 or 1.2 times the value measured before the test, whichever is higher
Insulation resistance: ≥ 50% of the initial value mentioned in IR chart

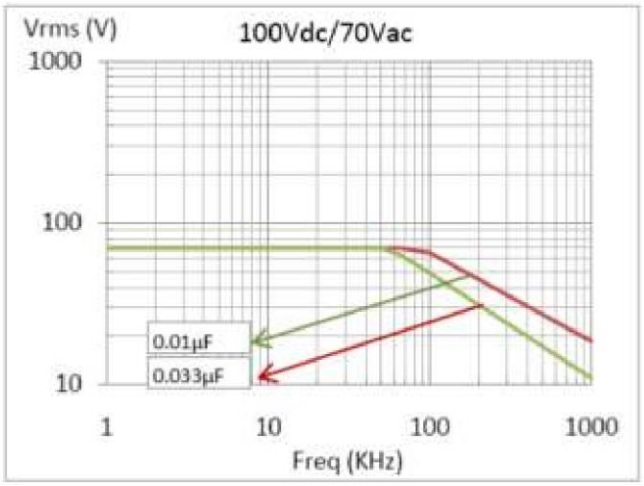
INSULATION RESISTANCE
Minimum Insulation Resistance R_{IS} V_R (or) time constant $T = C \times R_{R\ IS} \leq 100$ V DC at 25° C, relative humidity ≤ 70% ≥ 250 V DC

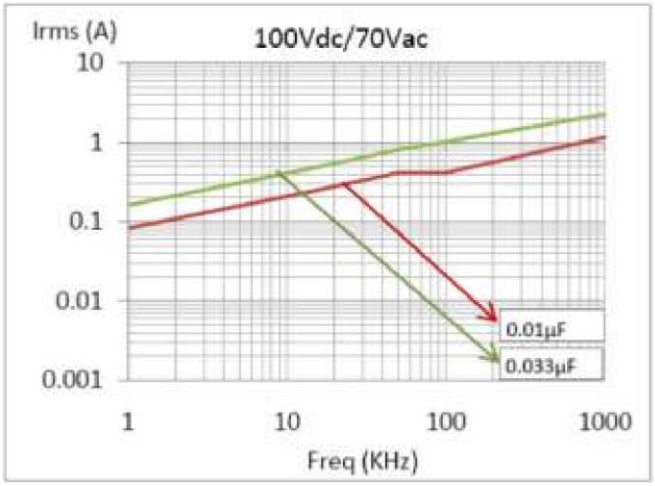
$C_R \leq 0.1$ µF 100 GO 10000

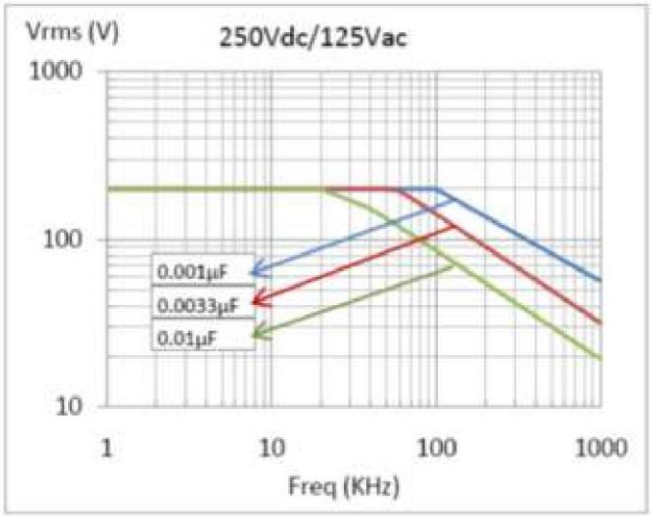
$C_R > 0.1$ µF 10000 100 GO

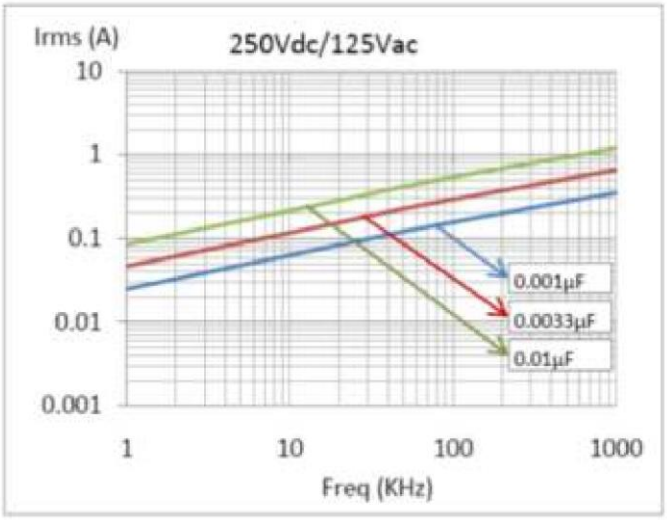
Max. Voltage (Vrms) vs. Frequency
(Sinusoidal Waveform at T ≤ 55° C)

Max. Current (Irms) vs. Frequency
(Sinusoidal Waveform at T ≤ 55° C)

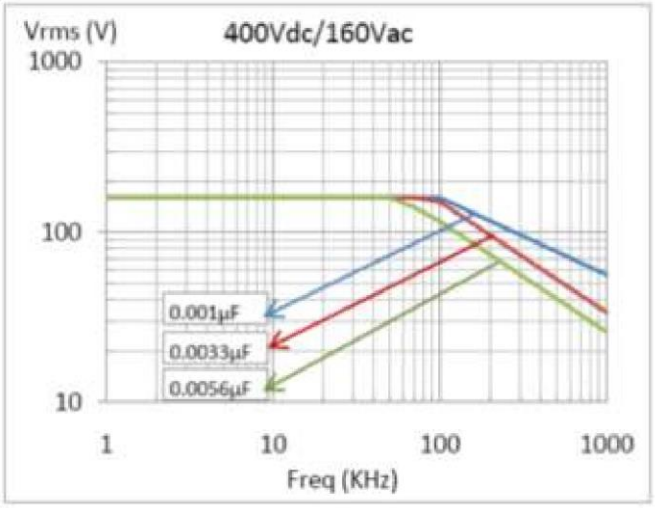

Vrms (V)
100Vdc/70Vac
1000
100
10
0.01μF
0.033μF
1
10
100
1000
Freq (KHz)

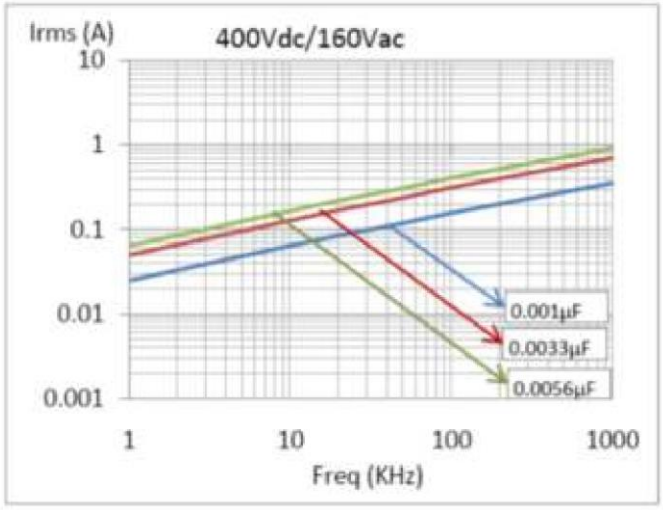

Irms (A)
100Vdc/70Vac
10
1
0.1
0.01
0.001
0.01μF
0.033μF
1
10
100
1000
Freq (KHz)

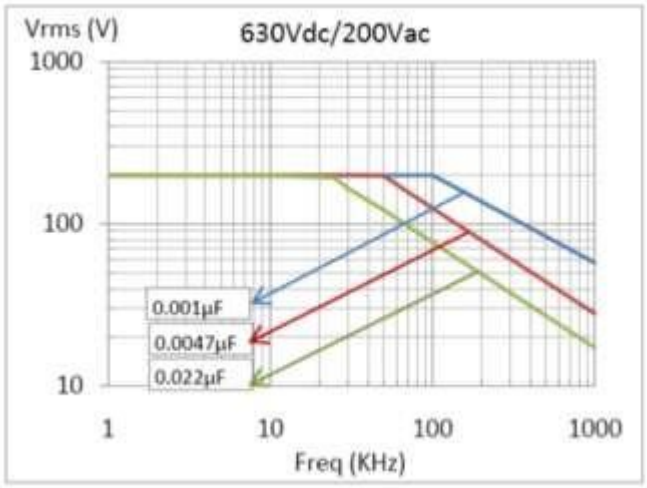

Vrms (V)
250Vdc/125Vac
1000
100
10
0.001μF
0.0033μF
0.01μF
1
10
100
1000
Freq (KHz)

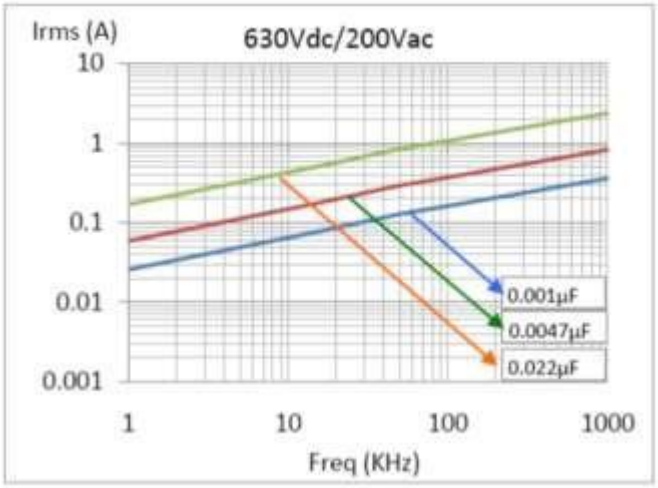

Irms (A)
250Vdc/125Vac
10
1
0.1
0.01
0.001
0.001μF
0.0033μF
0.01μF
1
10
100
1000
Freq (KHz)

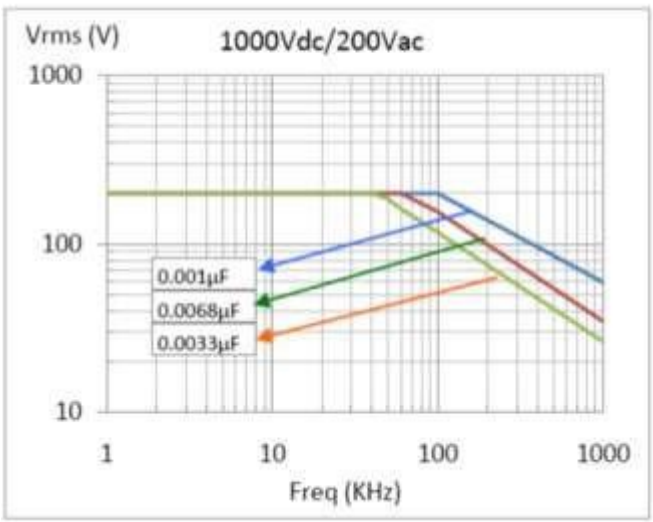
PLAIN POLYPROPYLENE FILM CAPACITORS (Inductive)

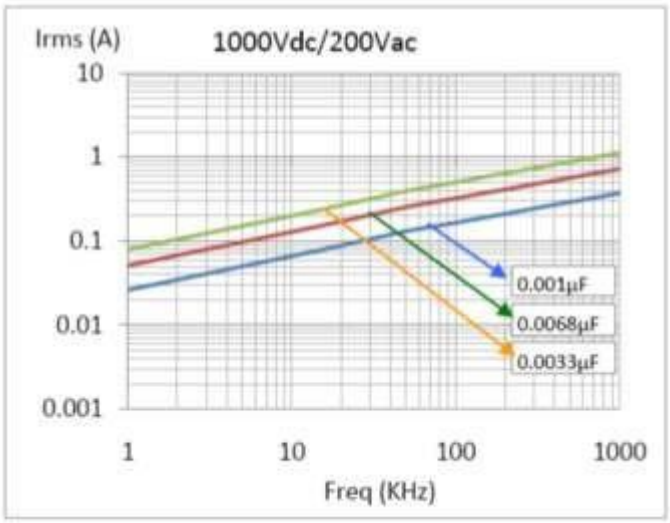












PLAIN POLYPROPYLENE FILM CAPACITORS (Inductive)

Ordering codes and packaging units

Rated Voltage	Rated Cap. (µF)	Dimensions(mm) W ±0.5	H ±0.5	L ±0.5	d ±0.05	S ±0.5	F 0.8/-0.2	DV/DT V/µs	Wt. g	Ordering code	Packing units Ammo	Bulk
100 V DC	0.00022	6.5	14	9.5	0.5	5.0	5	10000	0.38	03 221 +2A*^	4000	2000
	0.00027	6.5	14	9.5	0.5	5.0	5	10000	0.40	03 271 +2A*^	3500	2000
	0.00033	6.5	14	9.5	0.5	5.0	5	10000	0.40	03 331 +2A*^	3500	2000
	0.00047	4.5	13	7.5	0.5	4.0	5	10000	0.17	03 471 +2A*^	4500	2000

	0.00068	4.5	12	7.5	0.5	4.0	5	10000	0.19	03 681 +2A*^	4500	2000
	0.00100	4.5	13	7.5	0.5	4.0	5	10000	0.22	03 102 +2A*^	4500	2000
	0.00150	5.0	13	7.5	0.5	4.0	5	10000	0.20	03 152 +2A*^	4500	2000
	0.00220	5.5	13	7.5	0.5	4.0	5	10000	0.20	03 222 +2A*^	4500	2000
	0.00330	5.5	13	7.5	0.5	4.5	5	10000	0.24	03 332 +2A*^	4500	2000
	0.00390	5.5	13	8.0	0.5	4.5	5	10000	0.25	03 392 +2A*^	4500	2000
	0.00470	5.5	13	8.0	0.5	4.5	5	10000	0.28	03 472 +2A*^	4500	2000
	0.00680	5.5	13	8.0	0.5	4.5	5	10000	0.30	03 682 +2A*^	4500	2000
	0.01000	5.5	13	8.5	0.5	5.0	5	10000	0.30	03 103 +2A*^	4500	2000
	0.02200	6.0	13	10.0	0.5	6.0	5	10000	0.35	03 223 +2A*^	4000	2000
	0.03300	6.5	14	10.0	0.5	7.0	5	10000	0.37	03 333 +2A*^	2500	2000
	0.04700	5.5	13	9.5	0.5	7.5	5	10000	0.60	03 473 +2A*^	2000	2000
	0.08200	6.5	14	11.0	0.5	7.5	5	10000	0.82	03 823 +2A*^	2000	1000
	0.10000	8.0	15	12.5	0.5	7.5	5	10000	0.95	03 104 +2A*^	2000	1000
250 V DC	0.00022	6.5	14	9.5	0.5	5.0	5	10000	0.38	03 221 +2E*^	4000	2000
	0.00033	6.5	14	9.5	0.5	5.0	5	10000	0.40	03 331 +2E*^	4500	2000
	0.00039	5.5	13	8.5	0.5	5.0	5	10000	0.42	03 391 +2E*^	4500	2000
	0.00047	4.5	12	6.5	0.5	4.0	5	10000	0.17	03 471 +2E*^	4500	2000
	0.00068	4.5	12	6.5	0.5	4.0	5	10000	0.19	03 681 +2E*^	4500	2000
	0.00082	5.5	13	8.5	0.5	4.0	5	10000	0.22	03 821 +2E*^	4500	2000
	0.00100	4.5	13	7.5	0.5	4.0	5	10000	0.22	03 102 +2E*^	4500	2000
	0.00220	5.5	13	7.5	0.5	4.0	5	10000	0.24	03 222 +2E*^	4500	2000
	0.00330	5.5	13	7.5	0.5	4.5	5	10000	0.45	03 332 +2E*^	4500	2000
	0.00470	4.5	12	7.5	0.5	4.5	5	10000	0.85	03 472 +2E*^	4500	2000
	0.00680	4.5	12	7.5	0.5	4.5	5	10000	0.84	03 682 +2E*^	4500	2000
	0.01000	6.0	13	9.5	0.5	5.5	5	10000	0.85	03 103 +2E*^	4000	2000
400 V DC	0.00100	4.5	13	7.5	0.5	4.0	5	10000	0.22	03 102 +2G*^	4500	2000
	0.00150	5.0	13	7.5	0.5	4.0	5	10000	0.24	03 152 +2G*^	4500	2000
	0.00220	6.5	13	7.5	0.5	4.0	5	10000	0.24	03 222 +2G*^	4500	2000
	0.00330	6.0	15	8.5	0.5	5.0	5	10000	0.45	03 332 +2G*^	4500	2000
	0.00470	6.0	15	8.5	0.5	5.0	5	10000	0.55	03 472 +2G*^	2500	2000
	0.00560	6.0	15	8.5	0.5	5.5	5	10000	0.60	03 562 +2G*^	2500	2000
630 V DC	0.00100	5.5	13	7.5	0.5	4.0	5	10000	0.24	03 102 +2J*^	4500	2000
	0.00150	5.0	13	7.5	0.5	4.0	5	10000	0.36	03 152 +2J*^	4500	2000
	0.00220	5.5	14	8.5	0.5	5.0	5	10000	0.32	03 222 +2J*^	4500	2000
	0.00330	5.0	14	9.5	0.5	5.0	5	10000	0.28	03 332 +2J*^	4000	2000
	0.00470	6.0	13	9.5	0.5	5.0	5	10000	0.45	03 472 +2J*^	2500	2000
	0.00680	6.5	14	10.5	0.5	5.5	5	10000	0.60	03 682 +2J*^	1500	2000
0.01000	8.0	15	12.5	0.5	7.5	5	10000	0.75	03 103 +2J*^	1500	2000	
0.02200	10.0	20	14.0	0.5	8.5	5	10000	1.12	03 223 +2J*^	1500	1000	
1000 V DC	0.00100	6.0	14	8.5	0.5	4.5	5	10000	0.28	03 102 +3A*^	4500	2000
	0.00220	6.5	15	9.5	0.5	5.0	5	10000	0.28	03 222 +3A*^	4500	2000
	0.00330	6.5	14	10.0	0.5	5.0	5	10000	0.35	03 332 +3A*^	4000	2000
	0.00470	8.0	15	11.0	0.5	5.0	5	10000	0.36	03 472 +3A*^	2500	2000
	0.00680	8.0	15	11.5	0.5	5.0	5	10000	0.55	03 682 +3A*^	2500	2000

(Non Inductive)

MAIN APPLICATION: Oscillator, timing and LC/RC filter circuits, high frequency coupling of fast digital and analog ICs

CONSTRUCTION (DIP/BOX TYPE): Film/foil inductive type construction with aluminum foil as electrode and PP film as dielectric coated with flame retardant epoxy resin

CLIMATIC CATEGORY: 40/100/56 **APPLICABLE SPECIFICATION:** IEC 384-13

MAX TEMP RATING: 100° C. Between 85° C and 100° C, a voltage derating of 1.25% per ° C on the rated voltage has to be applied

CAPACITANCE VALUE, RATED VOLTAGE (DC): Refer dimension chart

VOLTAGE PROOF: Between terminals: 2 times of rated voltage for 2 seconds

INSULATION RESISTANCE

CAPACITANCE TOLERANCE: ±1%, ±2%, ±2.5%, ±5%, ±10%

TAN d AT 20°C: 0.08% (maximum) at 10 kHz

LIFE TEST CONDITIONS

(Loading at elevated temperature)

Loaded at 1.5 times of rated voltage at 85° C or 1.5 times of category voltage at 100° C for 1000 hours

Category voltage is 80% of rated voltage

Criteria after the test:

PLAIN POLYPROPYLENE FILM CAPACITORS

?c/c: ≤ 3% ±5 pfd of initial value

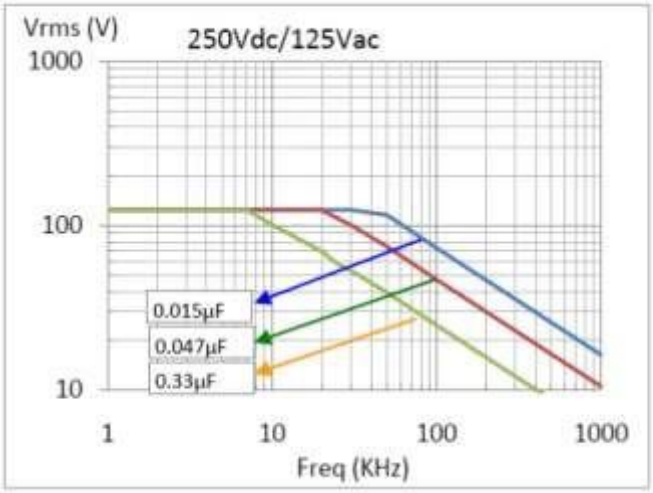
Change in Tan d: ≤ 1.4 times the value measured before the test

Insulation resistance: ≥ 50% of the value mentioned in IR chart

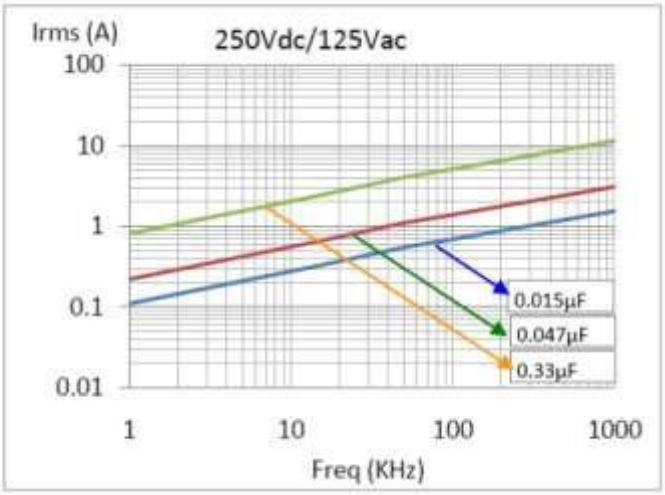
APPROVALS: Capacitors are tested at ERTL (North) as per IEC 384-2 and approved by CACT for telecom application

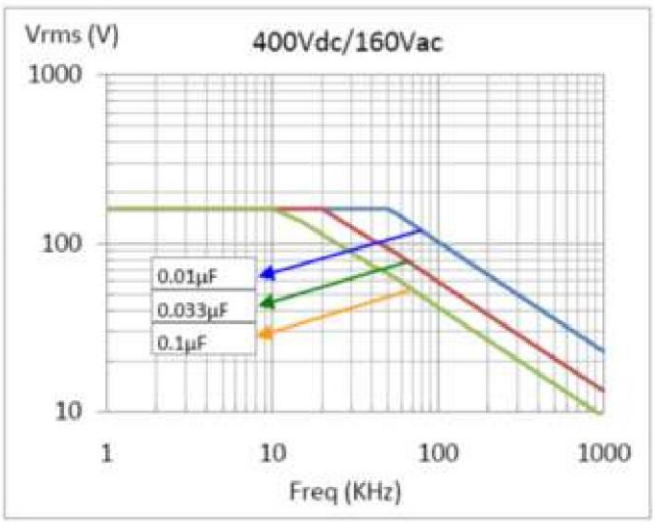
Minimum insulation resistance between terminals: 100 GΩ at 25° C, relative humidity ≤70%

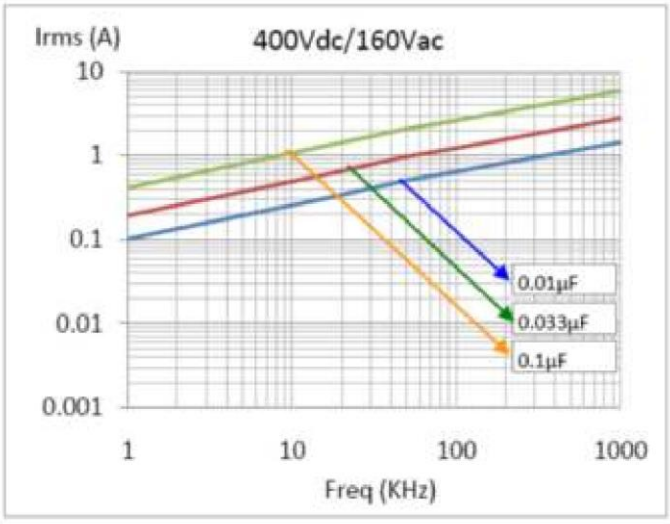
Max. Voltage (Vrms) vs. Frequency
(Sinusoidal Waveform at T ≤ 55° C)

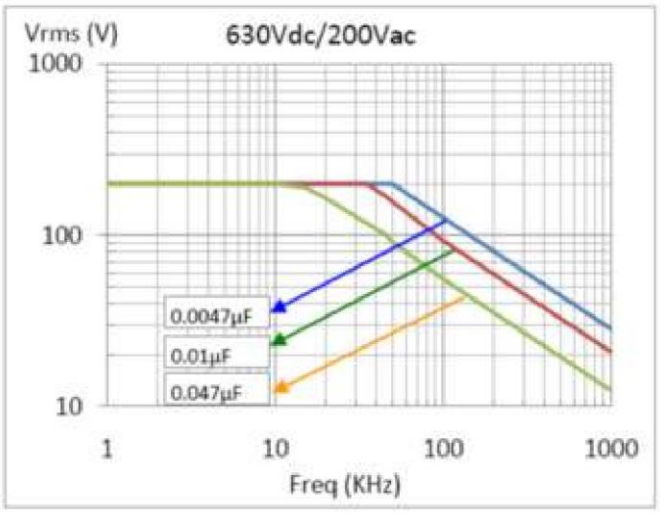


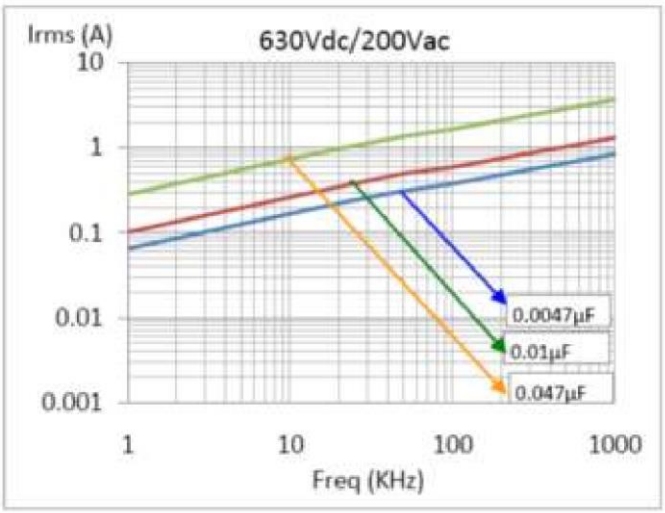
Max. Current (Irms) vs. Frequency
(Sinusoidal Waveform at T ≤ 55° C)









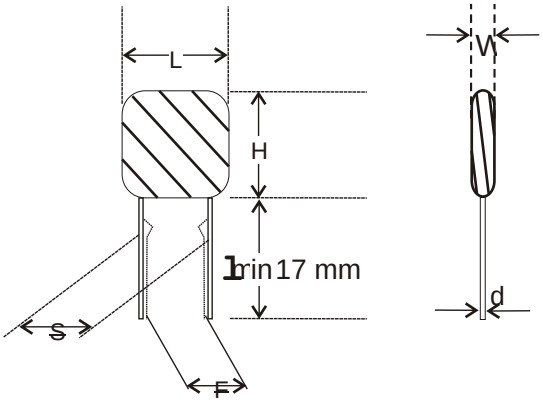


PLAIN POLYPROPYLENE FILM CAPACITORS

Rated Voltage	Rated Cap. (µF)	Dimensions(mm) W	H	L	d	S ±0.5	F 0.8/-0.2		Wt. g	Ordering code	Packing units	

(Non Inductive) Ordering codes and packaging units - ***Dip Type***

250 V DC	0.0150	6.0	11.0	14	0.6	10.0	10	10000	0.5	32 153 +2E*^	2000	1100
	0.0220	5.5	10.5	19	0.8	15.0	15	10000	0.7	32 223 +2E*^	1000	1100
	0.0330	6.0	11.0	19	0.8	15.0	15	10000	0.9	32 333 +2E*^	1000	1100
	0.0470	6.0	13.5	19	0.8	15.0	15	10000	1.2	32 473 +2E*^	1000	1100
	0.1000	6.5	15.5	27	0.8	22.5	-	10000	1.6	32 104 +2E*^	400	650
	0.2200	9.0	18.0	27	0.8	22.5	-	10000	1.8	32 224 +2E*^	400	450
	0.3300	11.0	20.5	27	0.8	22.5	-	10000	2.1	32 334 +2E*^	400	380
	0.4700	13.5	22.5	27	0.8	22.5	-	10000	3.8	32 474 +2E*^	400	400
400 V DC	0.0100	6.0	13.5	19	0.8	15.0	15	10000	0.5	32 103 +2G*^	1000	1100
	0.0150	6.0	13.5	19	0.8	15.0	15	10000	0.6	32 153 +2G*^	1000	1100
	0.0220	6.0	13.5	19	0.8	15.0	15	10000	0.8	32 223 +2G*^	1000	1100
	0.0330	7.0	15.0	19	0.8	15.0	15	10000	1.1	32 333 +2G*^	1000	950
	0.0470	8.0	17.0	19	0.8	15.0	15	10000	1.4	32 473 +2G*^	1000	800
	0.1000	9.0	18.0	27	0.8	22.5	-	10000	2.7	32 104 +2G*^	400	450
	0.2200	11.5	21.0	32	0.8	27.5	-	10000	4.5	32 224 +2G*^	200	-
630 V DC	0.0022	5.5	10.5	14	0.6	10.0	10	10000	0.7	32 222 +2J*^	2000	1100
	0.0047	6.5	13.5	14	0.6	10.0	10	10000	0.9	32 472 +2J*^	2000	1100
	0.0056	5.5	12.0	19	0.8	15.0	15	10000	1.2	32 682 +2J*^	1000	1100
	0.0100	6.0	13.5	19	0.8	15.0	15	10000	1.5	32 103 +2J*^	1000	1100

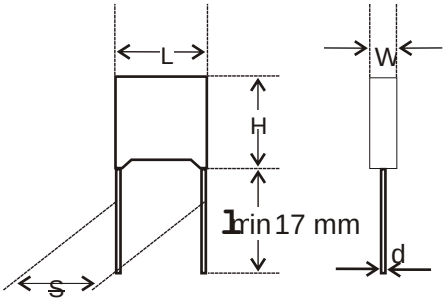


PLAIN POLYPROPYLENE FILM CAPACITORS

	0.0220	8.0	17.0	19	0.8	15.0	15	10000	2	32 223 +2J*^	1000	800
	0.0470	9.0	18.0	27	0.8	22.5	-	10000	2.8	32 473 +2J*^	400	450
	0.1000	11.5	21.0	32	0.8	27.5	-	10000	3.5	32 104 +2J*^	200	-

(Non Inductive) Ordering codes and packaging units - ***Box Type***

Rated Voltage	Rated Cap. (µF)	Dimensions(mm) W	H	L	d	S ±0.5	F 0.8/-0.2	DV/DT V/µs	Wt. g	Ordering code	Packing units	
250 V DC	0.0033	4.0	9.0	13	0.6	10	10	9900	0.6	21 332 +2E*^	2000	1100
	0.0047	4.0	9.0	13	0.6	10	10	9900	0.6	21 472 +2E*^	2000	1100
	0.0068	5.0	11.0	13	0.6	10	10	9900	0.8	21 682 +2E*^	2000	1100
	0.0100	6.0	12.0	13	0.6	10	10	9900	0.9	21 103 +2E*^	1100	1000
	0.0150	5.0	10.8	18	0.8	15	15	4800	1.1	21 153 +2E*^	1100	1000
	0.0220	6.0	11.9	18	0.8	15	15	4800	1.5	21 223 +2E*^	1100	1000
	0.0330	7.5	13.5	18	0.8	15	15	4800	2.0	21 333 +2E*^	900	1000
	0.0470	10.0	16.0	18	0.8	15	15	4800	2.8	21 473 +2E*^	700	1000 400
V DC	0.0022	4.0	9.0	13	0.6	10	10	12000	0.6	21 222 +2G*^	2000	1100
	0.0033	5.0	11.0	13	0.6	10	10	12000	0.8	21 332 +2G*^	2000	1100
	0.0047	5.0	11.0	13	0.6	10	10	12000	0.8	21 472 +2G*^	2000	1100
	0.0068	6.0	12.0	13	0.6	10	10	12000	0.9	21 682 +2G*^	2000	1100
	0.0100	5.0	10.8	18	0.8	15	15	6000	1.1	21 103 +2G*^	1100	1000
	0.0150	6.0	11.9	18	0.8	15	15	6000	1.5	21 153 +2G*^	1100	1000
	0.0220	7.5	13.5	18	0.8	15	15	6000	2.0	21 223 +2G*^	900	1000
	0.0330	8.5	14.5	18	0.8	15	15	6000	2.6	21 333 +2G*^	700	1000
	0.0470	10.0	16.0	18	0.8	15	15	6000	2.8	21 473 +2G*^	700	1000 630
V DC	0.0022	5.0	11.0	13	0.6	10	10	15000	0.8	21 222 +2J*^	2000	1100
	0.0033	6.0	12.0	13	0.6	10	10	15000	0.9	21 332 +2J*^	2000	1100
	0.0047	6.0	12.0	13	0.6	10	10	15000	0.9	21 472 +2J*^	2000	1100
	0.0100	5.0	10.8	18	0.8	15	15	11000	1.1	21 103 +2J*^	1100	1000
	0.0120	5.0	10.8	18	0.8	15	15	11000	1.1	21 123 +2J*^	1100	1000
	0.0150	6.0	11.9	18	0.8	15	15	11000	1.5	21 153 +2J*^	1100	1000
	0.0180	6.0	11.9	18	0.8	15	15	11000	1.5	21 183 +2J*^	1100	1000
	0.0220	7.5	13.5	18	0.8	15	15	11000	2.0	21 223 +2J*^	900	1000
	0.0270	7.5	13.5	18	0.8	15	15	11000	2.0	21 273 +2J*^	900	1000
	0.0330	8.5	14.5	18	0.8	15	15	11000	2.6	21 333 +2J*^	700	1000
	0.0390	10.0	16.0	18	0.8	15	15	11000	2.8	21 393 +2J*^	700	1000



DEKI
Film Capacitor Solutions

AC & PULSE METALLISED POLYPROPYLENE FILM CAPACITORS (PP/MPP Series)

MAIN APPLICATION: SMPS, motor control circuits, deflection circuit in TV sets (fly back) and monitors, electronic ballast, snubber and SCR commutating circuits and applications with high voltage and high current

CONSTRUCTION (DIP/BOX TYPE): Series constructed, impregnated polypropylene film, aluminum foil and metallised polypropylene film as internal electrodes. Protected by hard, water repellant, solvent resistant epoxy resin (or, encased in flame retardant box)

CLIMATIC CATEGORY: 40/100/56

TEMPERATURE DERATING: Between 85° C and 100° C, a voltage derating of 1.25% per °C on the rated voltage has to be applied

APPLICABLE SPECIFICATION: IEC 384-16, 384-17
CAP. VALUE, RATED VOLTAGE (DC): Refer dimension chart **CAPACITANCE TOLERANCE:** ±2% , ±5% , ±10%

VOLTAGE PROOF: Between terminals: 2 times of rated voltage for 2 seconds

INSULATION RESISTANCE
Between leads > 100000 MΩ
Between interconnected leads and case >100000 MΩ
TAN δ AT 20°C (Dip type)

Frequency (kHz)	***C < 0.1 $_R$ ìf***	***0.1 ìf < C $_R$ ≤ 1 ìf***
At 1	0.05%	0.08%
At 10	0.1%	0.1%
At 100	0.3%	0.5%

LIFE TEST CONDITIONS - DC (Loading at elevated temp.): Loaded at 1.25 times of rated DC voltage at 85° C for 1000 hours

AFTER THE TEST
∆***c/c:*** ? 2% of initial value
Change in Tan d: 0.002
Insulation resistance: ≥ 50% of the value mentioned in IR chart

LIFE TEST CONDITIONS - AC (Loading at elevated temp.):
Loaded at 1.25 times of rated AC voltage at 70° C for 1000 hours

AFTER THE TEST ∆***c/c:*** ? **3% of initial value Change in Tan δ:** ≤ 0.002, C_R ≤ 1 µf
Insulation resistance: ≥ 50% of the value mentioned in IR chart

APPROVALS: Tested as per IEC 384-16, 384–17

AC & PULSE METALLISED POLYPROPYLENE FILM CAPACITORS

(PP/MPP Series) Ordering codes and packaging units - *Dip Type*

Rated Voltage	Rated Cap. (µF)	Dimensions(mm) W ±0.5	H ±0.5	L ±0.5	d ±0.05	S ±0.5	F 0.8/-0.2	DV/DT V/µs	Wt. g	Ordering code	Packing units Ammo	Bulk
1000 V DC	0.00330	5.5	11.5	19	0.8	15.0	15.0	28000	1.1	05 332+3A*^	1000	1000
400V AC	0.00390	5.5	11.5	19	0.8	15.0	15.0	28000	1.1	05 392 +3A*^	1000	1000
	0.00470	5.5	11.5	19	0.8	15.0	15.0	28000	1.1	05 472 +3A*^	1000	1000
	0.00560	5.5	11.5	19	0.8	15.0	15.0	28000	1.1	05 562 +3A*^	1000	1000
	0.00680	5.5	11.5	19	0.8	15.0	15.0	28000	1.1	05 682 +3A*^	1000	1000
	0.00820	5.5	11.5	19	0.8	15.0	15.0	28000	1.5	05 822 +3A*^	1000	1000
	0.01000	6.5	12.5	19	0.8	15.0	15.0	28000	1.5	05 103 +3A*^	1000	1000
	0.01200	6.5	12.5	19	0.8	15.0	15.0	28000	1.5	05 123 +3A*^	1000	1000
	0.01500	8.0	14.0	19	0.8	15.0	15.0	28000	2.6	05 153 +3A*^	1000	1000
	0.01800	9.0	15.0	19	0.8	15.0	15.0	28000	2.6	05 183 +3A*^	1000	1000
	0.02200	9.0	15.0	19	0.8	15.0	15.0	28000	3.0	05 223 +3A*^	1000	1000
	0.02700	10.5	16.5	19	0.8	15.0	15.0	28000	3.5	05 273 +3A*^	1000	1000
	0.01500	6.5	15.5	27	0.8	22.5	22.5	11000	2.4	05 153 +3A*^	-	400
	0.01800	6.5	15.5	27	0.8	22.5	22.5	11000	2.5	05 183 +3A*^	-	400
	0.02200	6.5	15.5	27	0.8	22.5	22.5	11000	2.7	05 223 +3A*^	-	400
	0.02700	7.5	16.5	27	0.8	22.5	22.5	11000	3.2	05 273 +3A*^	-	400
	0.03300	7.5	16.5	27	0.8	22.5	22.5	11000	3.5	05 333 +3A*^	-	400
	0.03900	9.0	17.5	27	0.8	22.5	22.5	11000	3.8	05 393 +3A*^	-	400
	0.04700	9.0	17.5	27	0.8	22.5	22.5	11000	4.2	05 473 +3A*^	-	400
	0.05600	10.5	19.0	27	0.8	22.5	22.5	11000	4.7	05 563 +3A*^	-	400
	0.06800	10.5	19.0	27	0.8	22.5	22.5	11000	5.3	05 683 +3A*^	-	400
1250 V DC	0.00220	5.5	11.5	19	0.8	15.0	15.0	30000	1.1	05 222 +3B*^	1000	1000
450 V AC	0.00270	5.5	11.5	19	0.8	15.0	15.0	30000	1.1	05 272 +3B*^	1000	1000
	0.00330	6.5	12.5	19	0.8	15.0	15.0	30000	1.1	05 332 +3B*^	1000	1000
	0.00390	6.5	12.5	19	0.8	15.0	15.0	30000	1.1	05 392 +3B*^	1000	1000
	0.00470	8.0	14.0	19	0.8	15.0	15.0	30000	1.1	05 472 +3B*^	1000	1000
	0.00560	8.0	14.0	19	0.8	15.0	15.0	30000	1.5	05 562 +3B*^	1000	1000
	0.00680	9.0	5.0	19	0.8	15.0	15.0	30000	1.5	05 682 +3B*^	1000	1000
	0.00820	10.5	16.5	19	0.8	15.0	15.0	30000	1.5	05 822 +3B*^	1000	1000
	0.00820	6.5	15.5	27	0.8	22.5	22.5	11000	2.2	05 822 +3B*^	-	400
	0.01000	6.5	15.5	27	0.8	22.5	22.5	11000	2.3	05 103 +3B*^	-	400

AC & PULSE METALLISED POLYPROPYLENE FILM CAPACITORS

	0.01200	6.5	15.5	27	0.8	22.5	22.5	11000	2.5	05 123 +3B*^	-	400
	0.01500	7.5	16.5	27	0.8	22.5	22.5	11000	2.9	05 153 +3B*^	-	400
	0.01800	7.5	16.5	27	0.8	22.5	22.5	11000	3.1	05 183 +3B*^	-	400
	0.02200	9.0	17.5	27	0.8	22.5	22.5	11000	3.3	05 223 +3B*^	-	400
	0.02700	10.5	18.5	27	0.8	22.5	22.5	11000	3.7	05 273 +3B*^	-	400
	0.03300	10.5	18.5	27	0.8	22.5	22.5	11000	4.1	05 333 +3B*^	-	400
1600 VDC	0.00100	5.5	11.5	19	0.8	15.0	15.0	34000	1.1	05 102 +3C*^	1000	1000
450 VAC	0.00120	5.5	11.5	19	0.8	15.0	15.0	34000	1.1	05 122 +3C*^	1000	1000
	0.00150	5.5	11.5	19	0.8	15.0	15.0	34000	1.1	05 152 +3C*^	1000	1000
	0.00180	5.5	11.5	19	0.8	15.0	15.0	34000	1.1	05 182 +3C*^	1000	1000
	0.00220	6.5	12.5	19	0.8	15.0	15.0	34000	1.5	05 222 +3C*^	1000	1000
	0.00270	6.5	12.5	19	0.8	15.0	15.0	34000	1.5	05 272 +3C*^	1000	1000
	0.00330	8.0	14.0	19	0.8	15.0	15.0	34000	1.5	05 332 +3C*^	1000	1000
	0.00390	8.0	14.0	19	0.8	15.0	15.0	34000	2.3	05 392 +3C*^	1000	1000
	0.00470	9.0	15.0	19	0.8	15.0	15.0	34000	2.4	05 472 +3C*^	1000	1000
	0.00560	10.5	16.5	19	0.8	15.0	15.0	34000	2.6	05 562 +3C*^	1000	1000
	0.00680	10.5	16.5	19	0.8	15.0	15.0	34000	3.0	05 682 +3C*^	1000	1000
	0.00560	6.5	26.5	27	0.8	22.5	22.5	11000	2.4	05 562 +3C*^	-	400
	0.00680	6.5	26.5	27	0.8	22.5	22.5	11000	2.5	05 682 +3C*^	-	400
	0.00820	6.5	26.5	27	0.8	22.5	22.5	11000	2.7	05 822 +3C*^	-	400
	0.01000	6.5	26.5	27	0.8	22.5	22.5	11000	2.9	05 103 +3C*^	-	400
	0.01200	7.5	16.5	27	0.8	22.5	22.5	11000	3.2	05 123 +3C*^	-	400
	0.01500	9.0	17.5	27	0.8	22.5	22.5	11000	3.8	05 153 +3C*^	-	400
	0.01800	9.0	17.5	27	0.8	22.5	22.5	11000	4.2	05 183 +3C*^	-	400
	0.02200	10.5	18.5	27	0.8	22.5	22.5	11000	4.7	05 223 +3C*^	-	400
2000VDC	0.00010	5.0	10.0	19	0.8	15.0	15.0	54000	1.1	05 101 +3D*^	1000	1000
500VAC	0.00015	5.0	10.0	19	0.8	15.0	15.0	54000	1.1	05 151 +3D*^	1000	1000
	0.00022	5.0	10.0	19	0.8	15.0	15.0	54000	1.1	05 221 +3D*^	1000	1000
	0.00033	5.0	10.0	19	0.8	15.0	15.0	54000	1.1	05 331 +3D*^	1000	1000
	0.00047	5.0	10.0	19	0.8	15.0	15.0	54000	1.1	05 471 +3D*^	1000	1000
	0.00068	5.5	11.5	19	0.8	15.0	15.0	54000	1.1	05 681 +3D*^	1000	1000
	0.00100	6.5	12.5	19	0.8	15.0	15.0	54000	1.5	05 102 +3D*^	1000	1000
	0.00120	6.5	12.5	19	0.8	15.0	15.0	54000	1.5	05 122 +3D*^	1000	1000

AC & PULSE METALLISED POLYPROPYLENE FILM CAPACITORS

	0.00150	8.0	14.0	19	0.8	15.0	15.0	54000	1.5	05 152 +3D*^	1000	1000
	0.00180	8.0	14.0	19	0.8	15.0	15.0	54000	1.5	05 182 +3D*^	1000	1000
	0.00220	9.0	15.0	19	0.8	15.0	15.0	54000	2.2	05 222 +3D*^	1000	1000
	0.00270	10.5	16.5	19	0.8	15.0	15.0	54000	2.4	05 272 +3D*^	1000	1000
	0.00270	6.5	15.5	27	0.8	22.5	22.5	11000	2.2	05 272 +3D*^	-	400
	0.00330	6.5	15.5	27	0.8	22.5	22.5	11000	2.3	05 332 +3D*^	-	400
	0.00390	6.5	15.5	27	0.8	22.5	22.5	11000	2.4	05 392 +3D*^	-	400
	0.00470	7.5	16.5	27	0.8	22.5	22.5	11000	2.7	05 472 +3D*^	-	400
	0.00560	7.5	16.5	27	0.8	22.5	22.5	11000	2.9	05 562 +3D*^	-	400
	0.00680	9.0	17.5	27	0.8	22.5	22.5	11000	3.1	05 682 +3D*^	-	400
	0.00820	9.0	17.5	27	0.8	22.5	22.5	11000	3.3	05 822 +3D*^	-	400
	0.01000	10.5	19.0	27	0.8	22.5	22.5	11000	3.7	05 103 +3D*^	-	400
	0.01200	10.5	19.0	27	0.8	22.5	22.5	11000	4.0	05 123 +3D*^	-	400

Rated Voltage	Rated Cap. (µF)	Dimensions(mm) W	H	L	d	S	F	DV/DT V/µs	Wt. g	Ordering code	Packing units	
								28000				

(PP/MPP Series) Ordering codes and packaging units - *Box Type*

1000 V DC	0.00330	5.0	10.8	18.0	0.8	15.0	15.0		1.1	29 332 +3A*^	1000	500
400 V AC	0.00390	5.0	10.8	18.0	0.8	15.0	15.0	28000	1.1	29 392 +3A*^	1000	500
	0.00470	5.0	10.8	18.0	0.8	15.0	15.0	28000	1.1	29 472 +3A*^	1000	500
	0.00560	5.0	10.8	18.0	0.8	15.0	15.0	28000	1.1	29 562 +3A*^	1000	500
	0.00680	5.0	10.8	18.0	0.8	15.0	15.0	28000	1.1	29 682 +3A*^	1000	500
	0.00820	5.0	10.8	18.0	0.8	15.0	15.0	28000	1.1	29 822 +3A*^	1000	500
	0.01000	6.0	11.0	18.0	0.8	15.0	15.0	28000	1.5	29 103 +3A*^	1000	500
	0.01200	6.0	11.5	18.0	0.8	15.0	15.0	28000	1.5	29 123 +3A*^	1000	500
	0.01500	7.5	13.5	18.0	0.8	15.0	15.0	28000	2.0	29 153 +3A*^	1000	500
	0.01800	8.5	14.5	18.0	0.8	15.0	15.0	28000	2.6	29 183 +3A*^	1000	500
	0.02200	8.5	14.5	18.0	0.8	15.0	15.0	28000	3.0	29 223 +3A*^	1000	500
	0.02700	10.0	16.0	18.0	0.8	15.0	15.0	28000	3.5	29 273 +3A*^	1000	500
	0.01500	6.0	15.0	26.5	0.8	22.5	22.5	11000	2.4	29 153 +3A*^	-	400
	0.01800	6.0	15.0	26.5	0.8	22.5	22.5	11000	2.5	29 183 +3A*^	-	400
	0.02200	6.0	15.0	26.5	0.8	22.5	22.5	11000	2.7	29 223 +3A*^	-	400

AC & PULSE METALLISED POLYPROPYLENE FILM CAPACITORS

	0.02700	7.0	16.0	26.5	0.8	22.5	22.5	11000	3.2	29 273 +3A*^	-	400
	0.03300	7.0	16.0	26.5	0.8	22.5	22.5	11000	3.5	29 333 +3A*^	-	400
	0.03900	8.5	17.0	26.5	0.8	22.5	22.5	11000	3.8	29 393 +3A*^	-	400
	0.04700	8.5	17.0	26.5	0.8	22.5	22.5	11000	4.2	29 473 +3A*^	-	400
	0.05600	10.0	18.5	26.5	0.8	22.5	22.5	11000	4.7	29 563 +3A*^	-	400
1250 V DC	0.00220	5.0	10.8	18.0	0.8	22.5	22.5	11000	1.1	29 222 +3B*^	1000	400
450 V AC	0.00270	5.0	10.8	18.0	0.8	15.0	15.0	30000	1.1	29 272 +3B*^	1000	500
	0.00330	6.0	11.9	18.0	0.8	15.0	15.0	30000	1.5	29 332 +3B*^	1000	500
	0.00390	6.0	11.9	18.0	0.8	15.0	15.0	30000	1.5	29 392 +3B*^	1000	500
	0.00470	7.5	13.5	18.0	0.8	15.0	15.0	30000	1.9	29 472 +3B*^	1000	500
	0.00560	7.5	13.5	18.0	0.8	15.0	15.0	30000	1.9	29 562 +3B*^	1000	500
	0.00680	8.5	14.5	18.0	0.8	15.0	15.0	30000	2.0	29 682 +3B*^	1000	500
	0.00820	10.0	16.0	18.0	0.8	15.0	15.0	30000	2.2	29 822 +3B*^	1000	500
	0.00820	6.0	15.0	26.5	0.8	22.5	22.5	11000	2.2	29 822 +3B*^	-	400
	0.01000	6.0	15.0	26.5	0.8	22.5	22.5	11000	2.3	29 103 +3B*^	-	400
	0.01200	6.0	15.0	26.5	0.8	22.5	22.5	11000	2.5	29 123 +3B*^	-	400
	0.01500	7.0	16.0	26.5	0.8	22.5	22.5	11000	2.9	29 153 +3B*^	-	400
	0.01800	7.0	16.0	26.5	0.8	22.5	22.5	11000	3.1	29 183 +3B*^	-	400
	0.02200	8.5	17.0	26.5	0.8	22.5	22.5	11000	3.3	29 223 +3B*^	-	400
	0.02700	10.0	18.5	26.5	0.8	22.5	22.5	11000	3.7	29 273 +3B*^	-	400
	0.03300	10.0	18.5	26.5	0.8	22.5	22.5	11000	4.1	29 333 +3B*^	-	400
1600 V DC	0.00100	5.0	10.8	18.0	0.8	15.0	15.0	34000	1.1	29 102 +3C*^	1000	500
450 V AC	0.00120	5.0	10.8	18.0	0.8	15.0	15.0	34000	1.1	29 122 +3C*^	1000	500
	0.00150	5.0	10.8	18.0	0.8	15.0	15.0	34000	1.1	29 152 +3C*^	1000	500
	0.00180	5.0	10.8	18.0	0.8	15.0	15.0	34000	1.1	29 182 +3C*^	1000	500
	0.00220	6.0	11.9	18.0	0.8	15.0	15.0	34000	1.5	29 222 +3C*^	1000	500
	0.00270	6.0	11.9	18.0	0.8	15.0	15.0	34000	1.5	29 272 +3C*^	1000	500
	0.00330	7.5	13.5	18.0	0.8	15.0	15.0	34000	2.1	29 332 +3C*^	1000	500
	0.00390	7.5	13.5	18.0	0.8	15.0	15.0	34000	2.3	29 392 +3C*^	1000	500
	0.00470	8.5	14.5	18.0	0.8	15.0	15.0	34000	2.4	29 472 +3C*^	1000	500
	0.00560	10.0	16.0	18.0	0.8	15.0	15.0	11000	2.6	29 562 +3C*^	1000	500
	0.00680	10.0	16.0	18.0	0.8	15.0	15.0	34000	3.0	29 682 +3C*^	1000	500
	0.00560	6.0	15.0	26.5	0.8	22.5	22.5	11000	2.4	29 562 +3C*^	-	400

AC & PULSE METALLISED POLYPROPYLENE FILM CAPACITORS

	0.00680	6.0	15.0	26.5	0.8	22.5	22.5	11000	2.5	29 682 +3C*^	-	400
	0.00820	6.0	15.0	26.5	0.8	22.5	22.5	11000	2.7	29 822 +3C*^	-	400
	0.01000	6.0	15.0	26.5	0.8	22.5	22.5	11000	2.9	29 103 +3C*^	-	400
	0.01200	7.0	16.0	26.5	0.8	22.5	22.5	11000	3.2	29 123 +3C*^	-	400
	0.01500	8.5	17.0	26.5	0.8	22.5	22.5	11000	3.8	29 153 +3C*^	-	400
	0.01800	8.5	17.0	26.5	0.8	22.5	22.5	11000	4.2	29 183 +3C*^	-	400
	0.02200	10.0	18.5	26.5	0.8	22.5	22.5	11000	4.7	29 223 +3C*^	-	400
2000 V DC	0.00010	5.0	10.8	18.0	0.8	15.0	15.0	11000	1.1	29 101 +3D*^	1000	500
500 V AC	0.00015	5.0	10.8	18.0	0.8	15.0	15.0	54000	1.1	29 151 +3D*^	1000	500
	0.00022	5.0	10.8	18.0	0.8	15.0	15.0	54000	1.1	29 221 +3D*^	1000	500
	0.00033	5.0	10.8	18.0	0.8	15.0	15.0	54000	1.1	29 331 +3D*^	1000	500
	0.00047	5.0	10.8	18.0	0.8	15.0	15.0	54000	1.1	29 471 +3D*^	1000	500
	0.00068	5.0	10.8	18.0	0.8	15.0	15.0	54000	1.1	29 681 +3D*^	1000	500
	0.00100	6.0	11.9	19.0	0.8	15.0	15.0	54000	1.5	29 102 +3D*^	1000	500
	0.00120	6.0	11.9	19.0	0.8	15.0	15.0	54000	1.5	29 122 +3D*^	1000	500
	0.00150	7.5	13.5	19.0	0.8	15.0	15.0	54000	1.9	29 152 +3D*^	1000	500
	0.00180	7.5	13.5	19.0	0.8	15.0	15.0	54000	2.0	29 182 +3D*^	1000	500
	0.00220	8.5	14.5	19.0	0.8	15.0	15.0	54000	2.2	29 222 +3D*^	1000	500
	0.00270	10.0	16.0	19.0	0.8	15.0	15.0	54000	2.4	29 272 +3D*^	1000	500
	0.00270	6.0	15.0	26.5	0.8	22.5	22.5	11000	2.2	29 272 +3D*^	-	400
	0.00330	6.0	15.0	26.5	0.8	22.5	22.5	11000	2.3	29 332 +3D*^	-	400
	0.00390	6.0	15.0	26.5	0.8	22.5	22.5	11000	2.4	29 392 +3D*^	-	400
	0.00470	7.0	16.0	26.5	0.8	22.5	22.5	11000	2.7	29 472 +3D*^	-	400
	0.00560	7.0	16.0	26.5	0.8	22.5	22.5	11000	2.9	29 562 +3D*^	-	400
	0.00680	8.5	17.0	26.5	0.8	22.5	22.5	11000	3.1	29 682 +3D*^	-	400
	0.00820	8.5	17.0	26.5	0.8	22.5	22.5	11000	3.3	29 822 +3D*^	-	400
	0.01000	10.0	18.5	26.5	0.8	22.5	22.5	11000	3.7	29 103 +3D*^	-	400

AC & PULSE METALLISED POLYPROPYLENE FILM CAPACITORS (MPP Series)

MAIN APPLICATION: Where steep pulses occur, e.g., SMPS, motor control circuits, S-correction, etc

CONSTRUCTION: Low inductive wound cell of metallised polypropylene film coated with flame epoxy resin or enclosed in a flame retardant box

CLIMATIC CATEGORY: 40/100/56

MAX OPERATING TEMPERATURE: 100° C

RATED TEMPERATURE: 85° C. Between 85° C and 100° C, a voltage derating of 1.25% per °C on the rated voltage has to be applied

APPLICABLE SPECIFICATION: IEC 384-16

CAP. VALUE RATED VOLTAGE (DC): Refer dimension chart

CAPACITANCE TOLERANCE: ±5%

TAN δ (DISSIPATION FACTOR) AT 20° C

Frequency (kHz)	C < 0.1 $_R$µF	0.1 µF < C 1 $_R$ ≤µF	C > 1 $_R$µF
At 1	≤ 0.08%	≤ 0.08%	0.08%
At 10 ≤ 0.1% At 100 ≤ 0.3%		≤ 0.1%	0.1%
		≤ 0.8%	1.0%

INSULATION RESISTANCE

Minimum Insulation Resistance R_{IS}	$C_R \leq 0.33$		
µF (or) time constant $T = C \times R_{IS}$	> 100000	$C_R > 0.33$	µF
MO		> 30000 s	

at 25° C, relative humidity ≤ 70%

VOLTAGE PROOF: Between terminals: 1.6 times the rated voltage for 2 seconds

LIFE TEST CONDITIONS:

(Loading at elevated temperature)

Loaded at 1.25 times of rated voltage at 85° C or 1.25 times of

category voltage at 100° C for 1000 hours

Category voltage is 80% of the rated voltage at 100° C

Criteria after the test:

?c/c: ≤ 5% of initial value

Increase of Tan d: ≤ 0.002**,** $C_R > 1$ µF

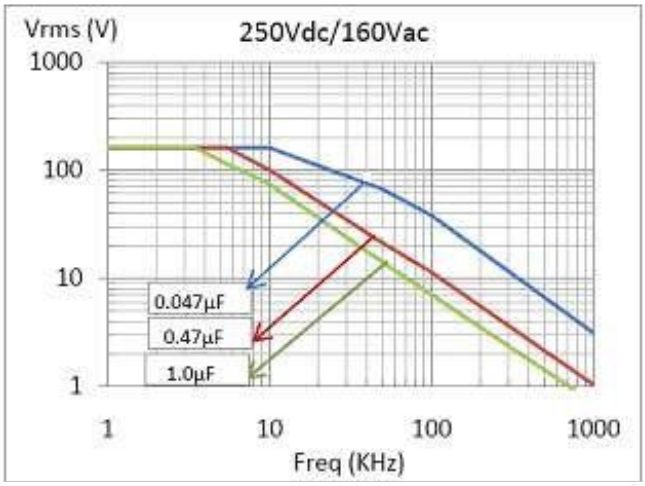
Insulation resistance: ≥ 50% of the initial value mentioned in IR chart

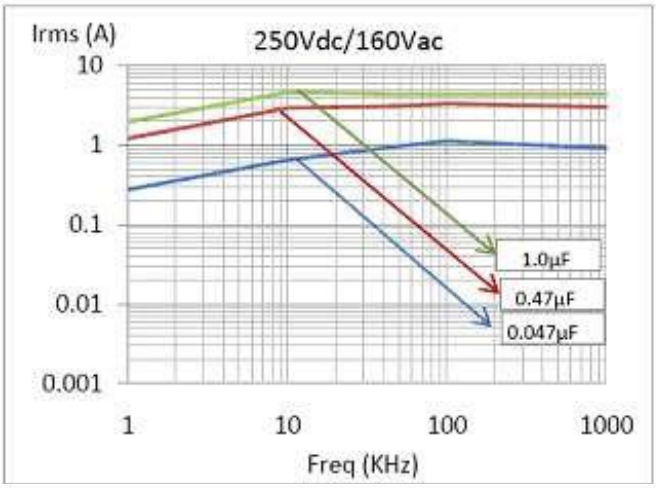
APPROVALS: Capacitors tested as per IEC 384-16

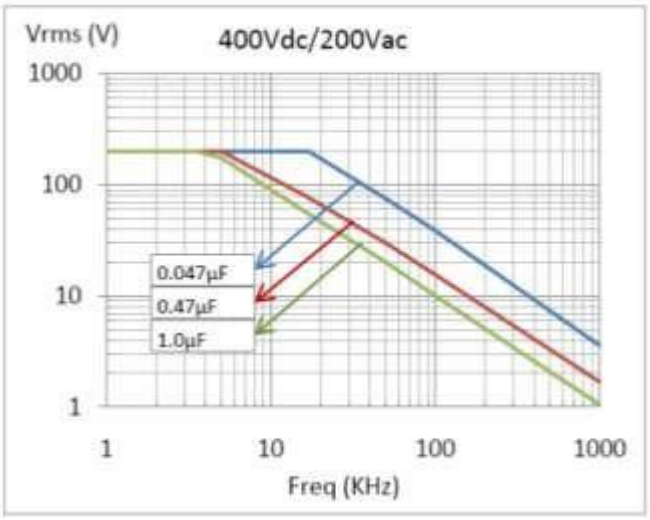
Max. Voltage (Vrms) vs. Frequency

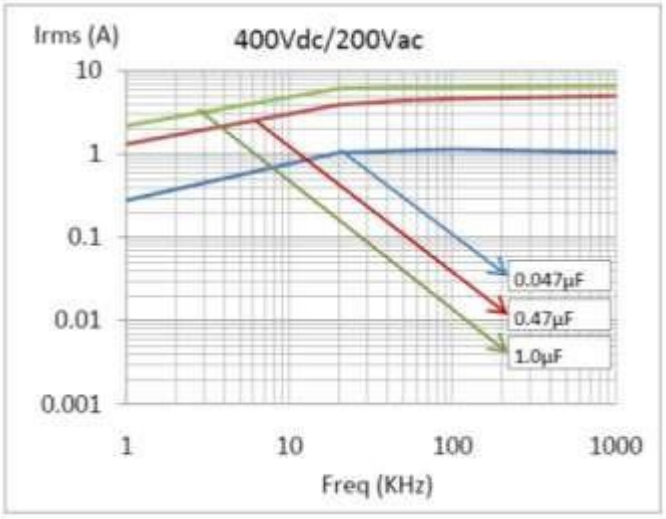
Max. Current (Irms) vs. Frequency

AC & PULSE METALLISED POLYPROPYLENE FILM CAPACITORS



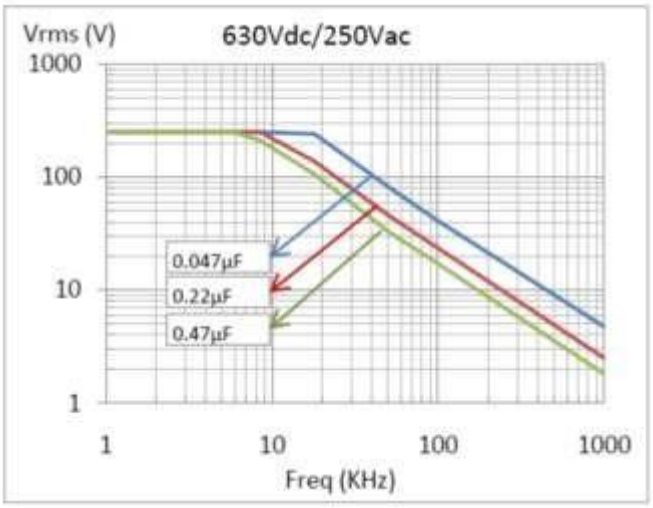


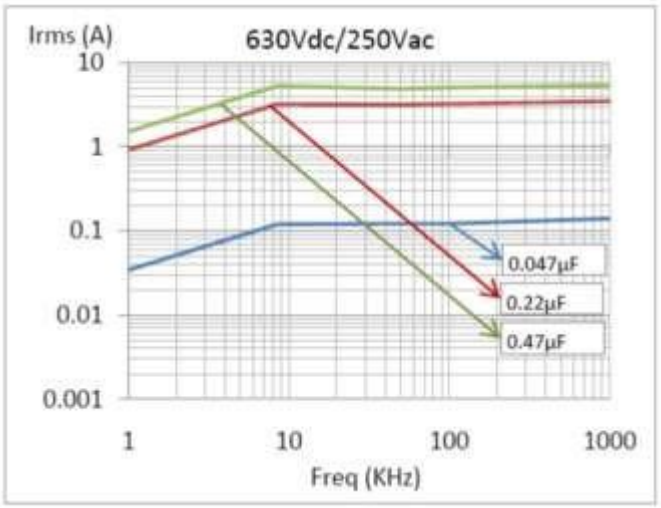




(Sinusoidal Waveform at T ≤ 55° C)

(Sinusoidal Waveform at T ≤ 55° C)



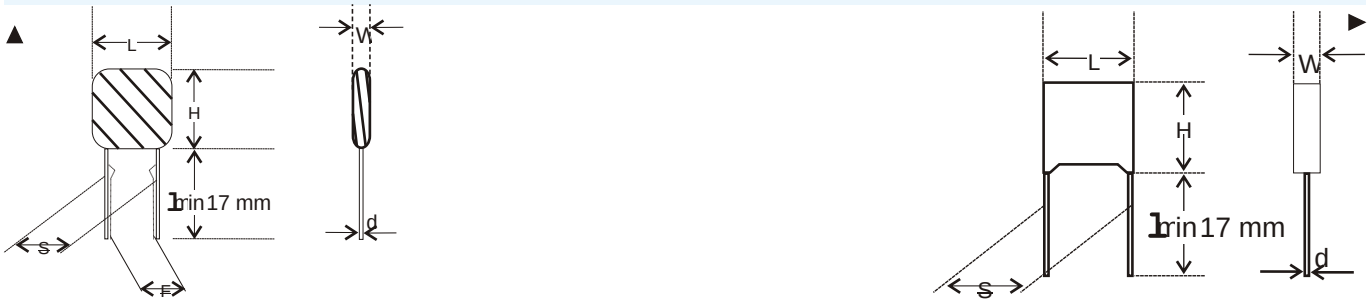


AC & PULSE METALLISED POLYPROPYLENE FILM CAPACITORS (MPP Series)

Ordering codes and packaging units - ***Dip Type***

Rated Voltage	Rated Cap. (µF)	Dimensions(mm) W	H	L	d	S	F	DV/DT V/µs	Wt. g	Ordering code	Packing uni
250 V DC	0.047	6.0	15.0	13	0.6	10.0	10.0	70	0.9	04 473 +2E*^	1000
	0.068	7.0	12.0	13	0.6	10.0	10.0	70	0.9	04 683 +2E*^	1000
	0.082	6.0	12.0	13	0.6	10.0	10.0	70	0.9	04 823 +2E*^	1000
	0.100	6.0	12.0	13	0.6	10.0	10.0	70	1.0	04 104 +2E*^	1000
	0.150	7.0	12.0	19	0.8	15.0	15.0	60	1.3	04 154 +2E*^	1000
	0.220	8.0	12.0	19	0.8	15.0	15.0	60	1.3	04 224 +2E*^	1000
	0.330	8.0	15.0	27	0.8	22.5	22.5	60	1.6	04 334 +2E*^	1250
	0.470	10.0	17.0	27	0.8	22.5	22.5	60	2.5	04 474 +2E*^	900
	0.560	9.0	17.0	27	0.8	22.5	22.5	30	1.8	04 564+2E*^	650
	0.680	9.5	17.0	27	0.8	22.5	22.5	30	1.9	04 684 +2E*^	600
	0.820	10.0	18.5	27	0.8	22.5	22.5	30	2.1	04 824 +2E*^	500
	1.000	11.0	19.5	27	0.8	22.5	22.5	30	2.5	04 105 +2E*^	450
	1.500	10.5	20.5	32	0.8	27.5	-	20	5.0	04 155 +2E*^	450
	2.200	12.0	21.0	31	0.8	27.5	-	20	6.5	04 225 +2E*^	300
400 V DC	0.022	5.0	16.0	13	0.6	10.0	10.0	80	0.9	04 223 +2G*^	1000
	0.033	6.0	12.0	13	0.6	10.0	10.0	80	0.9	04 333 +2G*^	1000
	0.047	5.0	11.0	13	0.6	10.0	10.0	80	0.9	04 473 +2G*^	1000
	0.068	6.0	12.5	19	0.8	15.0	15.0	70	1.3	04 683 +2G*^	1500
	0.082	7.0	12.5	19	0.8	15.0	15.0	70	1.3	04 823 +2G*^	1500
	0.100	7.0	14.0	19	0.8	15.0	15.0	70	1.4	04 104 +2G*^	1250
	0.150	8.0	13.0	19	0.8	15.0	15.0	70	1.5	04 154 +2G*^	1250

	0.220	8.0	16.0	19	0.8	15.0	15.0	70	1.8	04 224 +2G*^	1000
	0.270	7.0	20.0	27	0.8	22.5	22.5	35	1.8	04 274 +2G*^	750
	0.330	8.0	15.0	27	0.8	22.5	22.5	35	1.9	04 334 +2G*^	600
	0.470	9.0	21.5	27	0.8	22.5	22.5	35	2.4	04 474 +2G*^	450
	0.560	10.0	19.0	27	0.8	22.5	22.5	35	2.6	04 564 +2G*^	450
	0.680	9.0	18.0	31	0.8	27.5	-	29	5.0	04 684 +2G*^	450
	0.820	11.0	21.0	31	0.8	27.5	-	29	5.5	04 824 +2G*^	400
	1.000	12.0	22.0	31	0.8	27.5	-	29	6.0	04 105 +2G*^	350
630 V DC	0.010	5.0	10.0	13	0.6	10.0	10.0	100	0.9	04 103 +2J*^	1000
	0.015	6.0	11.0	13	0.6	10.0	10.0	100	0.9	04 153 +2J*^	1000
	0.022	7.0	12.0	13	0.6	10.0	10.0	100	0.9	04 223 +2J*^	1000
	0.033	6.0	11.0	19	0.8	15.0	15.0	90	1.3	04 333 +2J*^	1500
	0.047	7.0	13.0	19	0.8	15.0	15.0	90	1.3	04 473 +2J*^	1500
	0.068	8.0	14.0	19	0.8	15.0	15.0	90	1.5	04 683 +2J*^	1250
	0.082	8.0	14.0	19	0.8	15.0	15.0	90	1.6	04 823 +2J*^	1250
	0.100	9.0	15.0	19	0.8	15.0	15.0	90	1.8	04 104 +2J*^	1000
	0.120	7.0	15.0	27	0.8	22.5	22.5	45	1.7	04 124 +2J*^	750
	0.150	8.0	16.5	27	0.8	22.5	22.5	45	1.9	04 154 +2J*^	600
	0.220	10.0	17.0	27	0.8	22.5	22.5	45	2.4	04 224 +2J*^	450
	0.330	10.0	19.0	31	0.8	27.5	-	30	5.0	04 334 +2J*^	550
	0.470	12.0	20.0	32	0.8	27.5	-	30	5.5	04 474 +2J*^	450



AC & PULSE METALLISED POLYPROPYLENE FILM CAPACITORS (MPP Series)

Ordering codes and packaging units - ***Box Type***

Rated Voltage	Rated Cap. (µF)	Dimensions(mm) W	H	L	d	S ±0.5	F .8/-.2	DV/DT V/µs	Wt. g	Ordering code	Packing unit
250 VDC	0.0330	4.0	9.0	13.0	0.6	10.0	10.0	280	0.6	27 333 +2E*^	2000
1100	0.0470	4.0	9.0	13.0	0.6	10.0	10.0	280	0.6	27 473 +2E*^	2000
											1100
	0.0680	4.0	9.0	13.0	0.6	10.0	10.0	280	0.6	27 683 +2E*^	2000 1100
	0.0820	5.0	11.0	13.0	0.6	10.0	10.0	280	0.8	27 823 +2E*^	2000 1100
	0.1000	5.5	11.5	13.5	0.6	10.0	10.0	280	0.8	27 104 +2E*^	2000 1100
	0.1500	6.0	12.0	13.0	0.6	10.0	10.0	280	0.9	27 154 +2E*^	2000 1100

	0.1500	5.0	10.8	18.0	0.8	15.0	15.0	200	1.1	27 154 +2E*^	1100	1000
	0.1800	5.0	10.8	18.0	0.8	15.0	15.0	200	1.1	27 184 +2E*^	1100	1000
	0.2200	5.0	10.8	18.0	0.8	15.0	15.0	200	1.1	27 224 +2E*^	1100	1000
	0.3300	6.0	11.9	18.0	0.8	15.0	15.0	200	1.5	27 334 +2E*^	1100	1000
	0.4700	7.5	13.5	18.0	0.8	15.0	15.0	200	2.0	27 474 +2E*^	900	1000
	0.5600	7.5	13.5	18.0	0.8	15.0	15.0	200	2.0	27 564 +2E*^	900	1000
	0.6800	8.5	14.5	18.0	0.8	15.0	15.0	200	2.6	27 684 +2E*^	700	1000
	0.8200	10.0	16.0	18.0	0.8	15.0	15.0	200	2.8	27 824 +2E*^	700	1000
	1.0000	10.0	16.0	18.0	0.8	15.0	15.0	200	2.8	27 105 +2E*^	700	1000
	0.3900	6.0	15.0	26.5	0.8	22.5	22.5	125	2.8	27 394 +2E*^	650	400
	0.4700	6.0	15.0	26.5	0.8	22.5	22.5	125	2.8	27 474 +2E*^	650	400
	0.6800	6.0	15.0	26.5	0.8	22.5	22.5	125	2.8	27 684 +2E*^	650	400
	0.8200	7.0	16.0	26.5	0.8	22.5	22.5	125	3.5	27 824 +2E*^	650	400
	1.0000	7.0	16.0	26.5	0.8	22.5	22.5	125	3.5	27 105 +2E*^	650	400
	1.2000	8.5	17.0	26.5	0.8	22.5	22.5	125	4.5	27 125 +2E*^	500	400
	1.5000	10.0	18.5	26.5	0.8	22.5	22.5	125	5.4	27 155 +2E*^	-	200
	1.8000	10.0	18.5	26.5	0.8	22.5	22.5	125	5.4	27 185 +2E*^	-	200 400
VDC	0.0150	4.0	9.0	13.0	0.6	10.0	10.0	420	0.6	27 153 +2G*^	2000	1100
	0.0220	4.0	9.0	13.0	0.6	10.0	10.0	420	0.6	27 223 +2G*^	2000	1100
	0.0270	4.0	9.0	13.0	0.6	10.0	10.0	420	0.6	27 273 +2G*^	2000	1100
	0.0330	5.0	11.0	13.0	0.6	10.0	10.0	420	0.8	27 333 +2G*^	2000	1100
	0.0470	5.0	11.0	13.0	0.6	10.0	10.0	420	0.8	27 473 +2G*^	2000	1100
	0.0560	6.0	12.0	13.0	0.6	10.0	10.0	420	0.9	27 563 +2G*^	2000	1100
	0.0680	6.0	12.0	13.0	0.6	10.0	10.0	420	0.9	27 683 +2G*^	2000	1100
	0.0680	5.0	10.8	18.0	0.8	15.0	15.0	300	1.1	27 683 +2G*^	1100	1000
	0.0820	5.0	10.8	18.0	0.8	15.0	15.0	300	1.1	27 823 +2G*^	1100	1000
	0.1000	5.0	10.8	18.0	0.8	15.0	15.0	300	1.1	27 104 +2G*^	1100	1000
	0.1500	6.0	11.9	18.0	0.8	15.0	15.0	300	1.5	27 154 +2G*^	1100	1000
	0.1800	7.5	13.5	18.0	0.8	15.0	15.0	300	2.0	27 184 +2G*^	900	1000
	0.2200	7.5	13.5	18.0	0.8	15.0	15.0	300	2.0	27 224 +2G*^	900	1000
	0.3300	10.0	16.0	18.0	0.8	15.0	15.0	300	2.8	27 334 +2G*^	700	1000
	0.1800	6.0	15.0	26.5	0.8	22.5	22.5	180	2.8	27 184 +2G*^	650	400
	0.2700	6.0	15.0	26.5	0.8	22.5	22.5	180	2.8	27 274 +2G*^	650	400
	0.3300	6.0	15.0	26.5	0.8	22.5	22.5	180	2.8	27 334 +2G*^	650	400
	0.4700	7.0	16.0	26.5	0.8	22.5	22.5	180	3.5	27 474 +2G*^	650	400
	0.5600	7.0	16.0	26.5	0.8	22.5	22.5	180	3.5	27 564 +2G*^	650	400
	0.6800	10.0	18.5	26.5	0.8	22.5	22.5	180	5.4	27 684 +2G*^	-	200 630
VDC	0.0010	4.0	9.0	13.0	0.6	10.0	10.0	550	0.6	27 102 +2J*^	2000	1100
	0.0015	4.0	9.0	13.0	0.6	10.0	10.0	550	0.6	27 152 +2J*^	2000	1100
	0.0018	4.0	9.0	13.0	0.6	10.0	10.0	550	0.6	27 182 +2J*^	2000	1100
	0.0022	4.0	9.0	13.0	0.6	10.0	10.0	550	0.6	27 222 +2J*^	2000	1100
	0.0033	4.0	9.0	13.0	0.6	10.0	10.0	550	0.6	27 332 +2J*^	2000	1100
	0.0039	4.0	9.0	13.0	0.6	10.0	10.0	550	0.6	27 392 +2J*^	2000	1100
	0.0047	4.0	9.0	13.0	0.6	10.0	10.0	550	0.6	27 472 +2J*^	2000	1100
	0.0056	4.0	9.0	13.0	0.6	10.0	10.0	550	0.6	27 562 +2J*^	2000	1100
	0.0082	4.0	9.0	13.0	0.6	10.0	10.0	550	0.6	27 822 +2J*^	2000	1100
	0.0100	4.0	9.0	13.0	0.6	10.0	10.0	550	0.6	27 102 +2J*^	2000	1100
	0.0120	4.0	9.0	13.0	0.6	10.0	10.0	550	0.6	27 123 +2J*^	2000	1100
	0.1500	5.0	11.0	13.0	0.6	10.0	10.0	550	0.8	27 153 +2J*^	2000	1100
	0.1800	5.0	11.0	13.0	0.6	10.0	10.0	550	0.8	27 183 +2J*^	2000	1100
	0.0220	6.0	12.0	13.0	0.6	10.0	10.0	550	0.9	27 223 +2J*^	2000	1100
	0.0270	6.0	12.0	13.0	0.6	10.0	10.0	550	0.9	27 273 +2J*^	2000	1100
	0.0270	5.0	10.8	18.0	0.8	15.0	15.0	400	1.1	27 273 +2J*^	1100	1000
	0.0330	5.0	10.8	18.0	0.8	15.0	15.0	400	1.1	27 333 +2J*^	1100	1000
	0.0470	6.0	12.0	18.0	0.8	15.0	15.0	400	1.1	27 473 +2J*^	1100	1000
	0.0680	6.0	11.9	18.0	0.8	15.0	15.0	400	1.5	27 683 +2J*^	1100	1000
	0.0820	6.0	11.9	18.0	0.8	15.0	15.0	400	1.5	27 823 +2J*^	1100	1000
	0.1000	7.5	13.5	18.0	0.8	15.0	15.0	400	2.0	27 104 +2J*^	900	1000
	0.1500	8.5	14.5	18.0	0.8	15.0	15.0	400	2.6	27 154 +2J*^	700	1000
	0.1800	10.0	16.0	18.0	0.8	15.0	15.0	400	2.8	27 184 +2J*^	700	1000
	0.2200	10.0	16.0	18.0	0.8	15.0	15.0	400	2.8	27 224 +2J*^	700	1000
	0.0820	6.0	15.0	26.5	0.8	22.5	22.5	250	2.8	27 823 +2J*^	650	400
	0.1000	6.0	15.0	26.5	0.8	22.5	22.5	250	2.8	27 104 +2J*^	650	400
	0.1500	6.0	15.0	26.5	0.8	22.5	22.5	250	2.8	27 154 +2J*^	650	400
	0.1800	7.0	16.0	26.5	0.8	22.5	22.5	250	3.5	27 184 +2J*^	650	400
	0.2200	7.0	16.0	26.5	0.8	22.5	22.5	250	3.5	27 224 +2J*^	650	400
	0.2700	8.5	17.0	26.5	0.8	22.5	22.5	250	4.5	27 274 +2J*^	500	400

0.3300	10.0	18.5	26.5	0.8	22.5	22.5	250	5.4	27 334 +2J*^	-	200
0.3900	10.0	18.5	26.5	0.8	22.5	22.5	250	5.4	27 394 +2J*^	-	200

AC & PULSE METALLISED POLYPROPYLENE FILM CAPACITORS (MPP/MPP) – DC Applications

MAIN APPLICATION: SMPS, Motor control circuits, deflection circuit in TV sets (fly back) and monitors, electronic ballast, snubber and SCR commutating circuits and applications with high voltage and high current

CONSTRUCTION: Series constructed, low inductive wound cell of metallised polypropylene film as electrodes coated with flame retardant epoxy resin or enclosed in a flame retardant box

CLIMATIC CATEGORY: 40/100/56 **MAX OPERATING TEMPERATURE:** 100° C

RATED TEMPERATURE: 85° C. Between 85° C and 100° C, a voltage derating of 1.25% per °C on the rated voltage has to be applied

APPLICABLE SPECIFICATION: IEC 384-16 **CAP. VALUE RATED VOLTAGE (DC):** Refer dimension chart **CAPACITANCE TOLERANCE:** ± 5%, ± 10%, ± 20%

Max. Voltage (Vrms) vs. Frequency
(Sinusoidal Waveform at T ≤ 55° C)

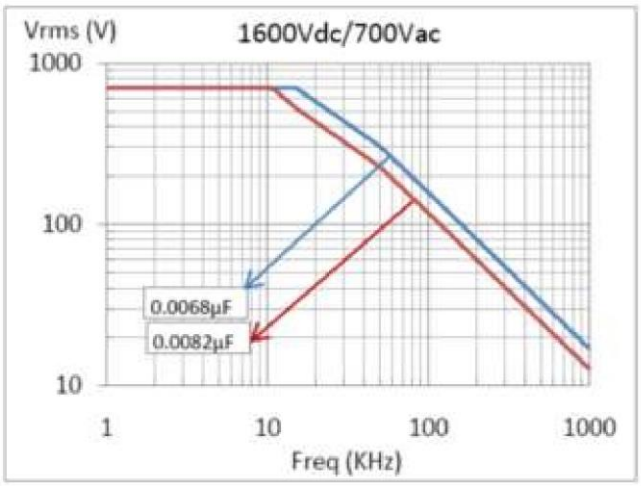
Max. Current (Irms) vs. Frequency
(Sinusoidal Waveform at T ≤ 55° C)

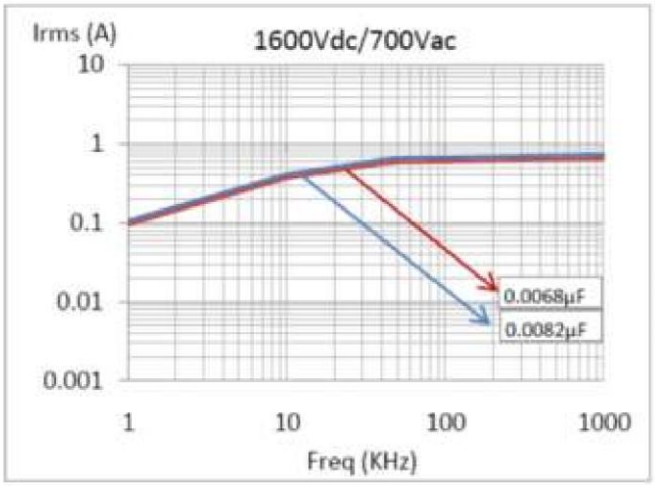
VOLTAGE PROOF: Between terminals: 1.6 times the rated voltage for 2 seconds

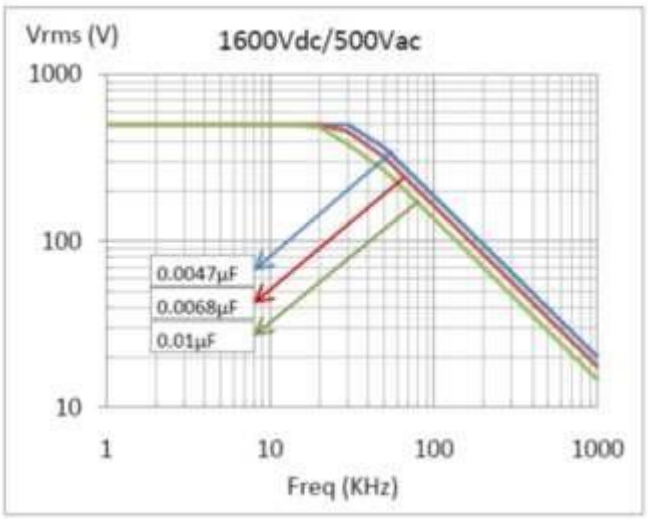
INSULATION RESISTANCE

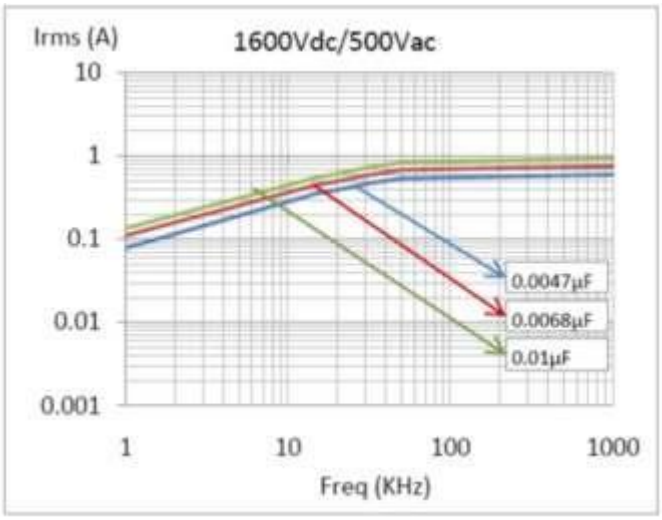
Between leads for $C_R \leq 1\mu F \geq 100{,}000$ MO

Between connected terminals and case >100,000 MO









TAN d (DISSIPATION FACTOR) AT 20° C

Frequency (kHz)	$C_R \leq 0.1$ µF	0.1 µF ≤ $C_R \leq 1$ µF
At 1	0.05%	0.05%
At 10	0.08%	0.08%
At 100	0.50%	

LIFE TEST CONDITIONS:

(Loading at elevated temperature)

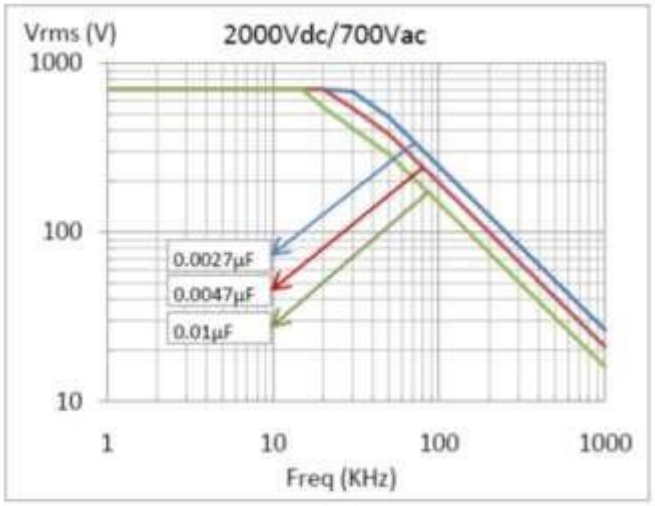
Loaded at 1.25 times of rated DC voltage at 85° C or 1.25 times of category voltage at 100° C for 1000 hours Category voltage is 80% of the rated voltage at 100 °C

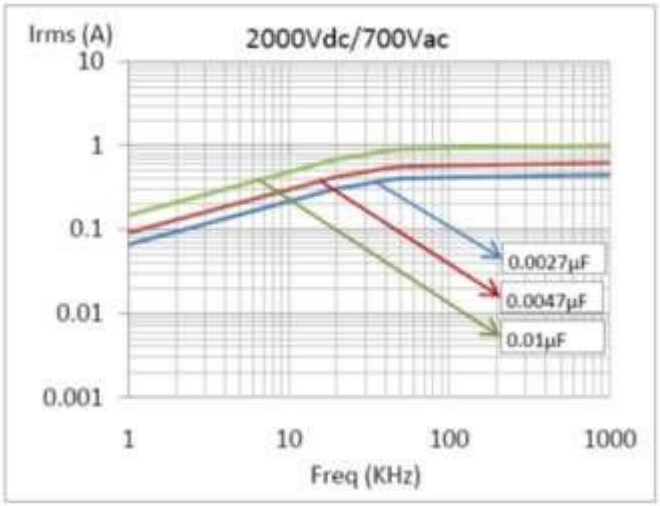
Criteria after the test:

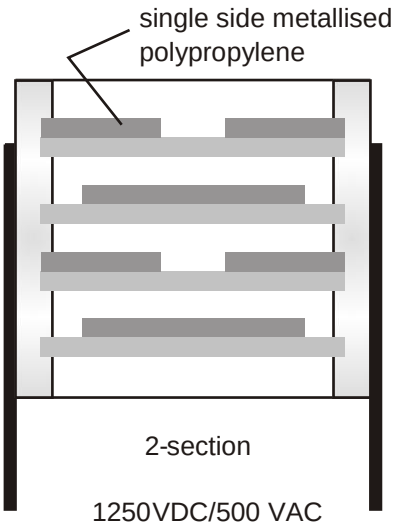
?c/c: ≤ 5% of initial value

Increase of Tan d: ≤ 0.002

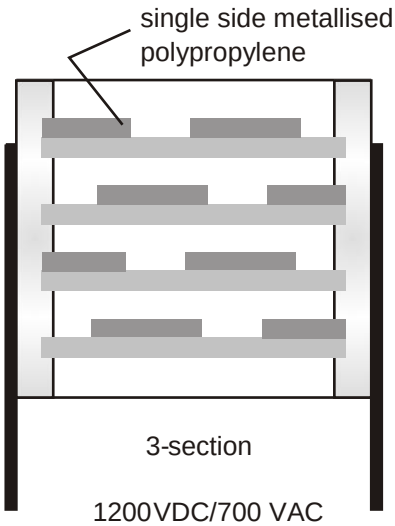
Insulation resistance: ≥ 50% of the initial value mentioned in IR chart







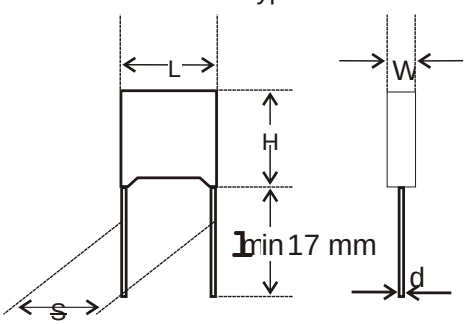
1250VDC/500 VAC
1600VDC/500 VAC



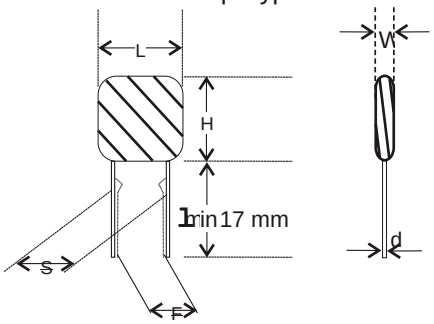
1200VDC/700 VAC
2000VDC/700 VAC

For Ordering Codes and Packing Units overleaf

Box Type



Dip Type



DEKI Film Capacitor Solutions

AC & PULSE METALLISED POLYPROPYLENE FILM CAPACITORS (MPP/MPP) –

DC Applications - Ordering codes and packaging units - *Box Type*

Rated Voltage	Rated Cap. (µF)	Dimensions(mm) W ±0.5	H ±0.5	L ±0.5	d ±0.05	S ±0.5	F ±0.8/-0.2	DV/DT V/us	Wt. g	Ordering code	Packing units Ammo	Bulk
1250 V DC	0.0082	5.0	10.8	18.0	0.8	15.0	15.0	3300	1.1	30 822 +3B*^	1100	1000
500 V AC	0.0100	5.0	10.8	18.0	0.8	15.0	15.0	3300	1.1	30 103 +3B*^	1100	1000
	0.0120	6.0	11.9	18.0	0.8	15.0	15.0	3300	1.5	30 123 +3B*^	1100	1000
	0.0150	6.0	11.9	18.0	0.8	15.0	15.0	3300	1.5	30 153 +3B*^	1100	1000
	0.0180	7.5	13.5	18.0	0.8	15.0	15.0	3300	2.0	30 183 +3B*^	900	1000
	0.0220	7.5	13.5	18.0	0.8	15.0	15.0	3300	2.0	30 223 +3B*^	900	1000
	0.0270	8.5	14.5	18.0	0.8	15.0	15.0	3300	2.6	30 273 +3B*^	700	1000
	0.0330	10.0	16.0	18.0	0.8	15.0	15.0	3300	2.8	30 333 +3B*^	700	1000
	0.0390	10.0	16.0	18.0	0.8	15.0	15.0	3300	2.8	30 393 +3B*^	700	1000
	0.0330	6.0	15.0	26.5	0.8	22.5	22.5	2100	2.8	30 333 +3B*^	650	400
	0.0390	6.0	15.0	26.5	0.8	22.5	22.5	2100	2.8	30 393 +3B*^	650	400
	0.0470	7.0	16.0	26.5	0.8	22.5	22.5	2100	3.5	30 473 +3B*^	650	400
	0.0560	7.0	16.0	26.5	0.8	22.5	22.5	2100	3.5	30 563 +3B*^	650	400
	0.0680	8.5	17.0	26.5	0.8	22.5	22.5	2100	4.5	30 683 +3B*^	500	400
	0.0820	10.0	18.5	26.5	0.8	22.5	22.5	2100	5.4	30 823 +3B*^	-	200
	0.1000	10.0	18.5	26.5	0.8	22.5	22.5	2100	5.4	30 104 +3B*^	-	200
1600 V DC	0.0022	5.0	10.8	18.0	0.8	15.0	15.0	4500	1.1	30 222 +3C*^	1100	1000
500 V AC	0.0033	5.0	10.8	18.0	0.8	15.0	15.0	4500	1.1	30 332 +3C*^	1100	1000
	0.0039	6.0	11.9	18.0	0.8	15.0	15.0	4500	1.5	30 392 +3C*^	1100	1000
	0.0047	6.0	11.9	18.0	0.8	15.0	15.0	4500	1.5	30 473 +3C*^	1100	1000
	0.0056	6.0	11.9	18.0	0.8	15.0	15.0	4500	1.5	30 563 +3C*^	1100	1000
	0.0068	6.0	11.9	18.0	0.8	15.0	15.0	4500	1.5	30 683 +3C*^	1100	1000
	0.0082	7.5	13.5	18.0	0.8	15.0	15.0	4500	2.0	30 823 +3C*^	900	1000
	0.0100	8.5	14.5	18.0	0.8	15.0	15.0	4500	2.0	30 103 +3C*^	900	1000
	0.0150	8.5	14.5	18.0	0.8	15.0	15.0	4500	2.6	30 153 +3C*^	700	1000
	0.0220	10.0	16.0	18.0	0.8	15.0	15.0	4500	2.8	30 223 +3C*^	700	1000
1600 V DC	0.0056	5.0	10.8	18.0	0.8	15.0	15.0	6000	1.1	30 562 +3C*^	1100	1000
700 V AC	0.0068	5.0	10.8	18.0	0.8	15.0	15.0	6000	1.1	30 682 +3C*^	1100	1000
	0.0082	6.0	11.9	18.0	0.8	15.0	15.0	6000	1.5	30 822 +3C*^	1100	1000
	0.0100	6.0	11.9	18.0	0.8	15.0	15.0	6000	1.5	30 103 +3C*^	1100	1000
	0.0120	7.5	13.5	18.0	0.8	15.0	15.0	6000	2.0	30 123 +3C*^	900	1000
	0.0150	7.5	13.5	18.0	0.8	15.0	15.0	6000	2.0	30 153 +3C*^	900	1000

	0.0180	8.5	14.5	18.0	0.8	15.0	15.0	6000	2.6	30 183 +3C*^	700	1000
	0.0220	10.0	16.0	18.0	0.8	15.0	15.0	6000	2.8	30 223 +3C*^	700	1000
	0.0270	10.0	16.0	18.0	0.8	15.0	15.0	6000	2.8	30 273 +3C*^	700	1000
	0.0270	6.0	15.0	26.5	0.8	22.5	22.5	3000	2.8	30 273 +3C*^	650	400
	0.0330	7.0	16.0	26.5	0.8	22.5	22.5	3000	3.5	30 333 +3C*^	650	400
	0.0390	7.0	16.0	26.5	0.8	22.5	22.5	3000	3.5	30 393 +3C*^	650	400
	0.0470	8.5	17.0	26.5	0.8	22.5	22.5	3000	4.5	30 473 +3C*^	500	400
	0.0560	10.0	18.5	26.5	0.8	22.5	22.5	3000	5.4	30 563 +3C*^	-	200
	0.0680	10.0	18.5	26.5	0.8	22.5	22.5	3000	5.4	30 683 +3C*^	-	200
2000 V DC	0.0010	5.0	10.8	18.0	0.8	15.0	15.0	9500	1.1	30 102 +3D*^	1100	1000
700 V AC	0.0012	5.0	10.8	18.0	0.8	15.0	15.0	9500	1.1	30 122 +3D*^	1100	1000
	0.0015	5.0	10.8	18.0	0.8	15.0	15.0	9500	1.1	30 152 +3D*^	1100	1000
	0.0018	5.0	10.8	18.0	0.8	15.0	15.0	9500	1.1	30 182 +3D*^	1100	1000
	0.0022	5.0	10.8	18.0	0.8	15.0	15.0	9500	1.1	30 222 +3D*^	1100	1000
	0.0027	5.0	10.8	18.0	0.8	15.0	15.0	9500	1.1	30 272 +3D*^	1100	1000
	0.0033	5.0	10.8	18.0	0.8	15.0	15.0	9500	1.1	30 332 +3D*^	1100	1000
	0.0039	5.0	10.8	18.0	0.8	15.0	15.0	9500	1.1	30 392 +3D*^	1100	1000
	0.0047	5.0	10.8	18.0	0.8	15.0	15.0	9500	1.1	30 472 +3D*^	1100	1000
	0.0056	6.0	11.9	18.0	0.8	15.0	15.0	9500	1.5	30 562 +3D*^	1100	1000
	0.0068	6.0	11.9	18.0	0.8	15.0	15.0	9500	1.5	30 682 +3D*^	1100	1000
	0.0082	7.5	13.5	18.0	0.8	15.0	15.0	9500	2.0	30 822 +3D*^	1100	1000
	0.0100	7.5	13.5	18.0	0.8	15.0	15.0	9500	2.0	30 103 +3D*^	900	1000
	0.0120	8.5	14.5	18.0	0.8	15.0	15.0	9500	2.6	30 123 +3D*^	700	1000
	0.0150	8.5	14.5	18.0	0.8	15.0	15.0	9500	2.6	30 153 +3D*^	700	1000
	0.0180	10.0	16.0	18.0	0.8	15.0	15.0	9500	2.8	30 183 +3D*^	700	1000
	0.0047	6.0	15.0	26.5	0.8	22.5	22.5	3500	2.8	30 472 +3D*^	650	400
	0.0056	6.0	15.0	26.5	0.8	22.5	22.5	3500	2.8	30 562 +3D*^	650	400
	0.0068	6.0	15.0	26.5	0.8	22.5	22.5	3500	2.8	30 682 +3D*^	650	400
	0.0082	6.0	15.0	26.5	0.8	22.5	22.5	3500	2.8	30 822 +3D*^	650	400
	0.0100	6.0	15.0	26.5	0.8	22.5	22.5	3500	2.8	30 103 +3D*^	650	400
	0.0120	6.0	15.0	26.5	0.8	22.5	22.5	3500	2.8	30 123 +3D*^	650	400
	0.0150	6.0	15.0	26.5	0.8	22.5	22.5	3500	2.8	30 153 +3D*^	650	400
	0.0180	6.0	15.0	26.5	0.8	22.5	22.5	3500	2.8	30 183 +3D*^	650	400
	0.0220	6.0	15.0	26.5	0.8	22.5	22.5	3500	2.8	30 223 +3D*^	650	400

	0.0270	7.0	16.0	26.5	0.8	22.5	22.5	3500	3.5	30 273 +3D*^	650	400
	0.0330	8.5	17.0	26.5	0.8	22.5	22.5	3500	4.5	30 333 +3D*^	500	400
	0.0390	10.0	18.5	26.5	0.8	22.5	22.5	3500	5.4	30 393 +3D*^	-	200
	0.0470	10.0	18.5	26.5	0.8	22.5	22.5	3500	5.4	30 473 +3D*^	-	200

AC & PULSE METALLISED POLYPROPYLENE FILM CAPACITORS (MPP/MPP) –

DC Applications - Ordering codes and packaging units - *Dip Type*

Rated Voltage	Rated Cap. (µF)	Dimensions(mm) W ±0.5	H ±0.5	L ±0.5	d ±0.05	S ±0.5	F .8/-.2	DV/DT V/µs	Wt. g	Ordering code	Packing units Ammo	Bulk
1250 V DC	0.0082	5.5	11.5	19	0.8	15.0	15.0	3300	1.4	18 822 +3B*^	1100	1000
500 V AC	0.0100	5.5	11.5	19	0.8	15.0	15.0	3300	1.4	18 103 +3B*^	1100	1000
	0.0120	6.5	12.5	19	0.8	15.0	15.0	3300	1.5	18 123 +3B*^	1100	1000
	0.0150	6.5	12.5	19	0.8	15.0	15.0	3300	1.6	18 153 +3B*^	1100	1000
	0.0180	8.0	14.0	19	0.8	15.0	15.0	3300	2.0	18 183 +3B*^	900	1000
	0.0220	8.0	14.0	19	0.8	15.0	15.0	3300	2.0	18 223 +3B*^	900	1000
	0.0270	9.0	15.0	19	0.8	15.0	15.0	3300	2.4	18 273 +3B*^	700	1000
	0.0330	10.5	16.5	19	0.8	15.0	15.0	3300	2.6	18 333 +3B*^	700	1000
	0.0390	10.5	16.5	19	0.8	15.0	15.0	3300	2.6	18 393 +3B*^	700	1000
	0.0470	10.5	17.0	19	0.8	15.0	15.0	3300	2.6	18 473 +3B*^	700	1000
	0.0330	6.5	15.5	27	0.8	22.5	22.5	2100	2.5	18 333 +3B*^	650	400
	0.0390	6.5	15.5	27	0.8	22.5	22.5	2100	2.5	18 393 +3B*^	650	400
	0.0470	7.5	16.5	27	0.8	22.5	22.5	2100	3.2	18 473 +3B*^	650	400
	0.0560	7.5	16.5	27	0.8	22.5	22.5	2100	3.2	18 563 +3B*^	650	400
	0.0680	8.5	17.5	27	0.8	22.5	22.5	2100	4.1	18 683 +3B*^	650	400
	0.0820	10.5	19.0	27	0.8	22.5	22.5	2100	5.0	18 823 +3B*^	650	400
	0.1000	10.5	19.0	27	0.8	22.5	22.5	2100	5.0	18 104 +3B*^	500	400
	0.1500	13.0	21.0	27	0.8	22.5	22.5	2100	5.2	18 154 +3B*^	-	200
1600 V DC	0.0022	5.5	12.0	19	0.8	15.0	15.0	4500	1.1	18 222 +3C*^	1100	1000
500 V AC	0.0033	5.5	12.0	19	0.8	15.0	15.0	4500	1.1	18 332 +3C*^	1100	1000
	0.0039	6.0	12.0	19	0.8	15.0	15.0	4500	1.5	18 392 +3C*^	1100	1000
	0.0047	7.0	12.0	19	0.8	15.0	15.0	4500	1.5	18 473 +3C*^	1100	1000
	0.0056	7.0	13.0	19	0.8	15.0	15.0	4500	1.5	18 563 +3C*^	1100	1000
	0.0068	6.5	14.0	19	0.8	15.0	15.0	4500	1.5	18 683 +3C*^	1100	1000
	0.0082	8.0	14.0	19	0.8	15.0	15.0	4500	2.0	18 823 +3C*^	1100	1000
	0.0100	7.0	16.0	19	0.8	15.0	15.0	4500	2.0	18 103 +3C*^	900	1000
	0.0150	9.0	17.0	19	0.8	15.0	15.0	4500	2.6	18 153 +3C*^	700	1000
	0.0220	10.5	17.0	19	0.8	15.0	15.0	4500	2.8	18 223 +3C*^	700	1000
1600 V DC	0.0056	7.0	13.0	19	0.8	15.0	15.0	6000	1.1	18 562 +3C*^	1100	1000
700 V AC	0.0068	6.5	14.0	19	0.8	15.0	15.0	6000	1.1	18 682 +3C*^	1100	1000
	0.0082	8.0	14.0	19	0.8	15.0	15.0	6000	1.5	18 822 +3C*^	1100	1000
	0.0100	7.0	16.0	19	0.8	15.0	15.0	6000	1.5	18 103 +3C*^	1100	1000
	0.0120	9.0	16.0	19	0.8	15.0	15.0	6000	2.0	18 123 +3C*^	1100	1000
	0.0150	8.0	14.0	19	0.8	15.0	15.0	6000	2.0	18 153 +3C*^	1100	1000
	0.0180	8.5	15.0	19	0.8	15.0	15.0	6000	2.4	18 183 +3C*^	1100	1000
	0.0220	10.5	16.5	19	0.8	15.0	15.0	6000	2.6	18 223 +3C*^	1100	1000
	0.0270	10.5	16.5	19	0.8	15.0	15.0	6000	2.6	18 273 +3C*^	900	1000
	0.0330	11.0	18.0	19	0.8	15.0	15.0	6000	2.6	18 333 +3C*^	900	1000
	0.0270	6.5	15.5	27	0.8	22.5	22.5	3000	2.6	18 273 +3C*^	650	400
	0.0330	7.5	16.5	27	0.8	22.5	22.5	3000	3.2	18 333 +3C*^	650	400
	0.0390	7.5	16.5	27	0.8	22.5	22.5	3000	3.2	18 393 +3C*^	650	400
	0.0470	9.0	17.5	27	0.8	22.5	22.5	3000	4.1	18 473 +3C*^	500	400
	0.0560	10.5	19.0	27	0.8	22.5	22.5	3000	5.0	18 563 +3C*^	500	400

	0.0680	10.5	19.0	27	0.8	22.5	22.5	3000	5.0	18 683 +3C*^	-	200
	0.0820	11.0	19.0	27	0.8	22.5	22.5	3000	5.0	18 823 +3C*^	-	200
	0.1000	12.0	21.0	27	0.8	22.5	22.5	3000	5.2	18 104 +3C*^	-	200
2000 V DC	0.0010	5.5	11.5	19	0.8	15.0	15.0	9500	1.1	18 102 +3D*^	1100	1000
700 V AC	0.0012	5.5	11.5	19	0.8	15.0	15.0	9500	1.1	18 122 +3D*^	1100	1000
	0.0015	6.0	15.0	19	0.8	15.0	15.0	9500	1.1	18 152 +3D*^	1100	1000
	0.0018	7.0	17.0	19	0.8	15.0	15.0	9500	1.1	18 182 +3D*^	1100	1000
	0.0022	6.0	11.0	19	0.8	15.0	15.0	9500	1.1	18 222 +3D*^	1100	1000
	0.0027	6.0	15.0	19	0.8	15.0	15.0	9500	1.1	18 272 +3D*^	1100	1000
	0.0033	7.0	13.0	19	0.8	15.0	15.0	9500	1.1	18 332 +3D*^	1100	1000
	0.0039	6.0	15.0	19	0.8	15.0	15.0	9500	1.1	18 392 +3D*^	1100	1000
	0.0047	7.0	15.0	19	0.8	15.0	15.0	9500	1.1	18 472 +3D*^	1100	1000
	0.0056	7.0	15.0	19	0.8	15.0	15.0	9500	1.5	18 562 +3D*^	900	1000
	0.0068	8.0	16.0	19	0.8	15.0	15.0	9500	1.5	18 682 +3D*^	900	1000
	0.0082	9.0	18.0	19	0.8	15.0	15.0	9500	2.0	18 822 +3D*^	900	1000
	0.0100	10.0	17.0	19	0.8	15.0	15.0	9500	2.0	18 103 +3D*^	900	1000
	0.0120	11.0	18.0	19	0.8	15.0	15.0	9500	2.4	18 123 +3D*^	700	1000
	0.0150	9.0	15.0	19	0.8	15.0	15.0	9500	2.4	18 153 +3D*^	700	1000
	0.0180	10.5	16.5	19	0.8	15.0	15.0	9500	2.4	18 183 +3D*^	700	1000
	0.0220	10.5	19.0	19	0.8	15.0	15.0	9500	2.6	18 223 +3D*^	-	1000
	0.0270	11.0	20.0	19	0.8	15.0	15.0	9500	2.6	18 273 +3D*^	-	1000
	0.0047	7.0	15.0	27	0.8	22.5	22.5	3500	2.6	18 472 +3D*^	650	400
	0.0056	6.5	15.5	27	0.8	22.5	22.5	3500	2.6	18 562 +3D*^	650	400
	0.0068	6.5	15.5	27	0.8	22.5	22.5	3500	2.6	18 682 +3D*^	650	400
	0.0082	6.5	15.5	27	0.8	22.5	22.5	3500	2.6	18 822 +3D*^	650	400
	0.0100	6.5	15.5	27	0.8	22.5	22.5	3500	2.6	18 103 +3D*^	650	400
	0.0120	6.5	15.5	27	0.8	22.5	22.5	3500	2.6	18 123 +3D*^	650	400
	0.0150	6.5	15.5	27	0.8	22.5	22.5	3500	2.6	18 153 +3D*^	650	400
	0.0180	6.5	15.5	27	0.8	22.5	22.5	3500	2.6	18 183 +3D*^	650	400
	0.0220	6.5	15.5	27	0.8	22.5	22.5	3500	2.6	18 223 +3D*^	650	400
	0.0270	7.5	16.5	27	0.8	22.5	22.5	3500	3.2	18 273 +3D*^	500	400
	0.0330	9.0	17.5	27	0.8	22.5	22.5	3500	4.1	18 333 +3D*^	500	400
	0.0390	10.5	19.0	27	0.8	22.5	22.5	3500	5.0	18 393 +3D*^	-	200
	0.0470	10.5	19.0	27	0.8	22.5	22.5	3500	5.0	18 473 +3D*^	-	200

AC & PULSE METALLISED POLYPROPYLENE FILM CAPACITORS MMPP (Double side metallised film capacitor) – DC Applications

MAIN APPLICATION: SMPS, Motor control circuits, deflection circuit in TV sets (fly back) and monitors, electronic ballast, snubber and SCR commutating circuits and applications with high voltage and high current

CONSTRUCTION: Series constructed, low inductive wound cell of metallised polypropylene film as electrodes coated with flame retardant epoxy resin or enclosed in a flame retardant box

CLIMATIC CATEGORY: 40/100/56

MAX OPERATING TEMPERATURE: 100° C

RATED TEMPERATURE: 85° C. Between 85° C and 100° C, a voltage derating of 1.25% per °C on the rated voltage has to be applied

APPLICABLE SPECIFICATION: IEC 384-16

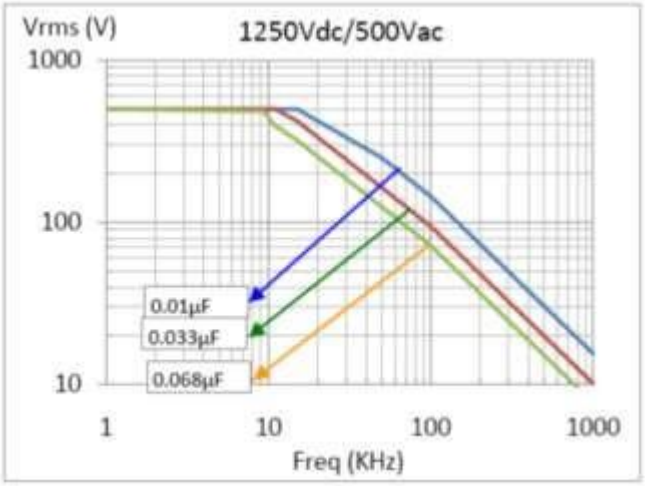
CAP. VALUE RATED VOLTAGE (DC): Refer dimension chart

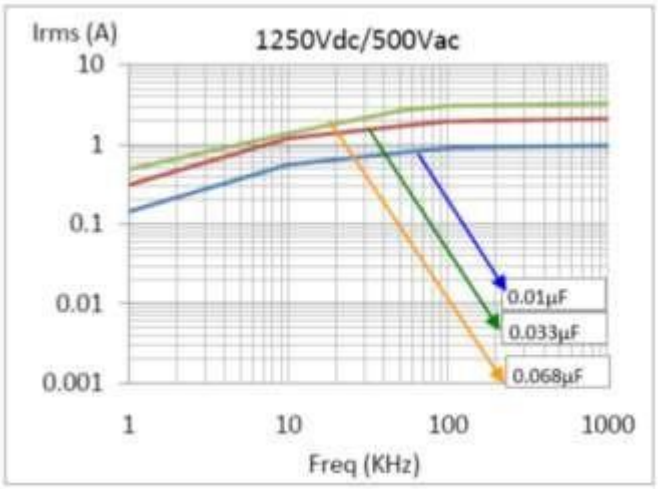
CAPACITANCE TOLERANCE: ± 5%, ± 10%, ± 20%

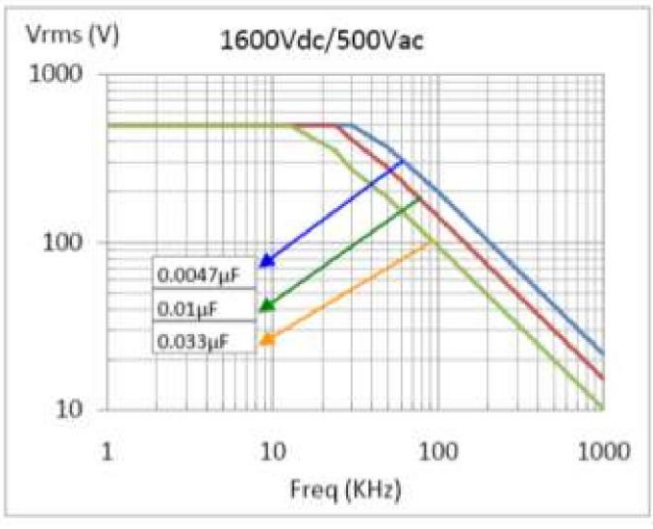
VOLTAGE PROOF: Between terminals: 1.6 times the rated voltage for 2 seconds

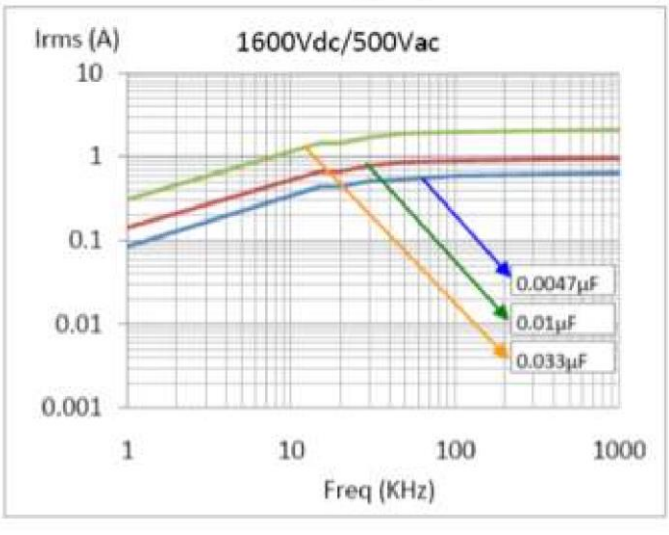
LIFE TEST CONDITIONS:
(Loading at elevated temperature)
Loaded at 1.25 times of rated DC voltage at 85° C or 1.25 times
of category voltage at 100° C for 1000 hours
Category voltage is 80% of the rated voltage at 100° C

Criteria after the test:
?c/c: ≤ 5% of initial value
Increase of Tan d: ≤ 0.0015
Insulation resistance: ≥ 50% of the initial value mentioned in IR chart









TAN d (DISSIPATION FACTOR) AT 20° C

Frequency (kHz)	C < 0.1 µF	0.1 µF < C ≤ 1 µF	C > 1 µF
At 1	0. 03%	0.03%	0.03%
At 10	0. 04%	0. 05%	
At 100	0.15%		

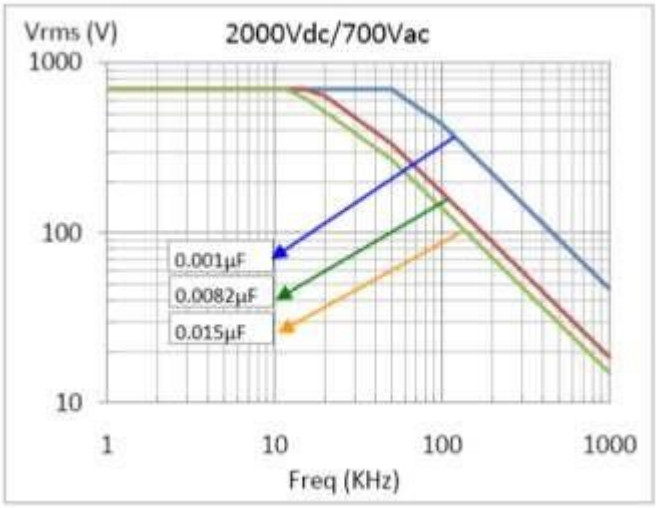
INSULATION RESISTANCE

Minimum Insulation Resistance R_{IS} C_R ≤ 0.33 µF (or) time constant T = C × R = 30000 s $_{R\ IS}$ > 100000 MO at 25° C, relative humidity ≤ 70%

C_R > 0.33 µF
> 30000 s

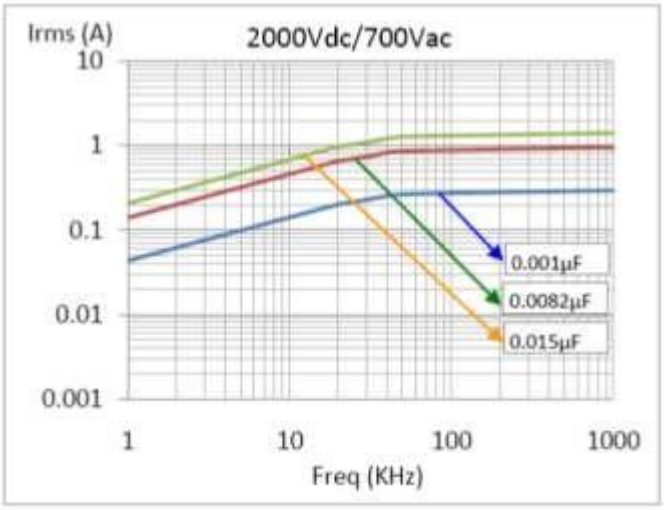
Max. Voltage (Vrms) vs. Frequency

(Sinusoidal Waveform at T ≤ 55° C)



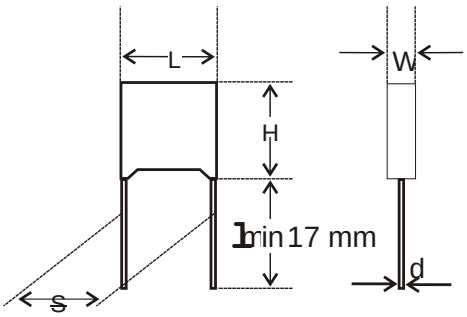
Max. Current (Irms) vs. Frequency

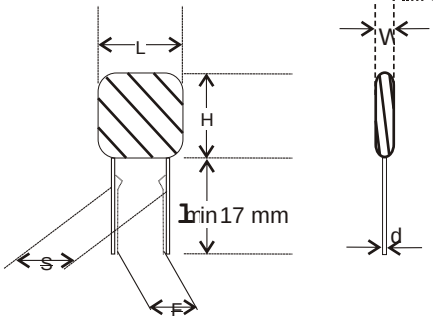
(Sinusoidal Waveform at T ≤ 55° C)



For Ordering Codes and Packing Units overleaf

Box Type Dip Type





AC & PULSE METALLISED POLYPROPYLENE FILM CAPACITORS - MMPP (Double side metallised film capacitor) – DC Applications - Ordering codes and packaging units - *Box Type*

Rated Voltage	Cap. (µF)	Dimensions (mm) W ±0.5	H ±0.5	L ±0.5	d ±0.05	S ±0.5	F .8/-.2	DV/DT V/µs	Wt. g	Ordering code	Packing units Ammo	Bulk
1250 V DC	0.0082	6.0	11.9	18.0	0.8	15.0	15.0	3300	1.5	66 822 +3B*^	1100	1000
500 V AC	0.0100	6.0	11.9	18.0	0.8	15.0	15.0	3300	1.5	66 103 +3B*^	1100	1000
	0.0120	7.5	13.5	18.0	0.8	15.0	15.0	3300	2.0	66 123 +3B*^	900	1000
	0.0150	7.5	13.5	18.0	0.8	15.0	15.0	3300	2.0	66 153 +3B*^	900	1000
	0.0180	7.5	13.5	18.0	0.8	15.0	15.0	3300	2.0	66 183 +3B*^	900	1000
	0.0220	8.5	14.5	18.0	0.8	15.0	15.0	3300	2.6	66 223 +3B*^	700	1000
	0.0270	10.0	16.0	18.0	0.8	15.0	15.0	3300	2.8	66 273 +3B*^	700	1000
	0.0270	6.0	15.0	26.5	0.8	22.5	22.5	2100	2.8	66 273 +3B*^	650	400
	0.0330	7.0	16.0	26.5	0.8	22.5	22.5	2100	3.5	66 333 +3B*^	650	400
	0.0390	7.0	16.0	26.5	0.8	22.5	22.5	2100	3.5	66 393 +3B*^	650	400
	0.0470	8.5	17.0	26.5	0.8	22.5	22.5	2100	4.5	66 473 +3B*^	500	400
	0.0560	10.0	18.5	26.5	0.8	22.5	22.5	2100	5.4	66 563 +3B*^	-	200
	0.0680	10.0	18.5	26.5	0.8	22.5	22.5	2100	5.4	66 683 +3B*^	-	200
1600 V DC	0.0033	5.0	10.8	18.0	0.8	15.0	15.0	6000	1.1	66 332 +3C*^	1100	1000
500 V AC	0.0039	5.0	10.8	18.0	0.8	15.0	15.0	6000	1.1	66 392 +3C*^	1100	1000
	0.0047	5.0	10.8	18.0	0.8	15.0	15.0	6000	1.1	66 472 +3C*^	1100	1000
	0.0056	5.0	10.8	18.0	0.8	15.0	15.0	6000	1.1	66 562 +3C*^	1100	1000
	0.0068	5.0	10.8	18.0	0.8	15.0	15.0	6000	1.1	66 682 +3C*^	1100	1000
	0.0082	6.0	11.9	18.0	0.8	15.0	15.0	6000	1.5	66 822 +3C*^	1100	1000
	0.0100	6.0	11.9	18.0	0.8	15.0	15.0	6000	1.5	66 103 +3C*^	1100	1000
	0.0120	7.5	13.5	18.0	0.8	15.0	15.0	6000	2.0	66 123 +3C*^	900	1000
	0.0150	7.5	13.5	18.0	0.8	15.0	15.0	6000	2.0	66 153 +3C*^	900	1000
	0.0180	8.5	14.5	18.0	0.8	15.0	15.0	6000	2.6	66 183 +3C*^	700	1000
	0.0270	10.0	16.0	18.0	0.8	15.0	15.0	6000	2.8	66 273 +3C*^	700	1000
	0.0150	6.0	15.0	26.5	0.8	22.5	22.5	3000	2.8	66 153 +3C*^	650	400

	0.0180	6.0	15.0	26.5	0.8	22.5	22.5	3000	2.8	66 183 +3C*^	650	400
	0.0220	6.0	15.0	26.5	0.8	22.5	22.5	3000	2.8	66 223 +3C*^	650	400
	0.0270	6.0	15.0	26.5	0.8	22.5	22.5	3000	2.8	66 273 +3C*^	650	400
	0.0330	7.0	16.0	26.5	0.8	22.5	22.5	3000	3.5	66 333 +3C*^	650	400
	0.0390	8.5	17.0	26.5	0.8	22.5	22.5	3000	4.5	66 393 +3C*^	500	400
	0.0470	10.0	18.5	26.5	0.8	22.5	22.5	3000	5.4	66 473 +3C*^	-	200
	0.0560	10.0	18.5	26.5	0.8	22.5	22.5	3000	5.4	66 563 +3C*^	-	200
2000 V DC	0.0002	5.0	10.8	18.0	0.8	15.0	15.0	9500	1.1	66 221 +3D*^	1100	1000
700 V AC	0.0003	5.0	10.8	18.0	0.8	15.0	15.0	9500	1.1	66 271 +3D*^	1100	1000
	0.0003	5.0	10.8	18.0	0.8	15.0	15.0	9500	1.1	66 331 +3D*^	1100	1000
	0.0004	5.0	10.8	18.0	0.8	15.0	15.0	9500	1.1	66 391 +3D*^	1100	1000
	0.0005	5.0	10.8	18.0	0.8	15.0	15.0	9500	1.1	66 471 +3D*^	1100	1000
	0.0006	5.0	10.8	18.0	0.8	15.0	15.0	9500	1.1	66 561 +3D*^	1100	1000
	0.0007	5.0	10.8	18.0	0.8	15.0	15.0	9500	1.1	66 681 +3D*^	1100	1000
	0.0008	5.0	10.8	18.0	0.8	15.0	15.0	9500	1.1	66 821 +3D*^	1100	1000
	0.0010	5.0	10.8	18.0	0.8	15.0	15.0	9500	1.1	66 102 +3D*^	1100	1000
	0.0012	5.0	10.8	18.0	0.8	15.0	15.0	9500	1.1	66 122 +3D*^	1100	1000
	0.0015	5.0	10.8	18.0	0.8	15.0	15.0	9500	1.1	66 152 +3D*^	1100	1000
	0.0018	5.0	10.8	18.0	0.8	15.0	15.0	9500	1.1	66 182 +3D*^	1100	1000
	0.0022	5.0	10.8	18.0	0.8	15.0	15.0	9500	1.1	66 222 +3D*^	1100	1000
	0.0027	5.0	10.8	18.0	0.8	15.0	15.0	9500	1.1	66 272 +3D*^	1100	1000
	0.0033	6.0	11.9	18.0	0.8	15.0	15.0	9500	1.5	66 332 +3D*^	1100	1000
	0.0039	6.0	11.9	18.0	0.8	15.0	15.0	9500	1.5	66 392 +3D*^	1100	1000
	0.0047	6.0	11.9	18.0	0.8	15.0	15.0	9500	1.5	66 472 +3D*^	1100	1000
	0.0056	7.5	13.5	18.0	0.8	15.0	15.0	9500	2.0	66 562 +3D*^	900	1000
	0.0068	7.5	13.5	18.0	0.8	15.0	15.0	9500	2.0	66 682 +3D*^	900	1000
	0.0082	8.5	14.5	18.0	0.8	15.0	15.0	9500	2.6	66 822 +3D*^	700	1000
	0.0100	10.0	16.0	18.0	0.8	15.0	15.0	9500	2.8	66 132 +3D*^	700	1000
	0.0010	6.0	15.0	26.5	0.8	22.5	22.5	3500	2.8	66 102 +3D*^	650	400
	0.0012	6.0	15.0	26.5	0.8	22.5	22.5	3500	2.8	66 122 +3D*^	650	400
	0.0015	6.0	15.0	26.5	0.8	22.5	22.5	3500	2.8	66 152 +3D*^	650	400
	0.0018	6.0	15.0	26.5	0.8	22.5	22.5	3500	2.8	66 182 +3D*^	650	400
	0.0022	6.0	15.0	26.5	0.8	22.5	22.5	3500	2.8	66 222 +3D*^	650	400
	0.0027	6.0	15.0	26.5	0.8	22.5	22.5	3500	2.8	66 272 +3D*^	650	400

	0.0033	6.0	15.0	26.5	0.8	22.5	22.5	3500	2.8	66 332 +3D*^	650	400
	0.0039	6.0	15.0	26.5	0.8	22.5	22.5	3500	2.8	66 392 +3D*^	650	400
	0.0047	6.0	15.0	26.5	0.8	22.5	22.5	3500	2.8	66 472 +3D*^	650	400
	0.0056	6.0	15.0	26.5	0.8	22.5	22.5	3500	2.8	66 562 +3D*^	650	400
	0.0068	6.0	15.0	26.5	0.8	22.5	22.5	3500	2.8	66 682 +3D*^	650	400
	0.0082	6.0	15.0	26.5	0.8	22.5	22.5	3500	2.8	66 822 +3D*^	650	400
	0.0100	6.0	15.0	26.5	0.8	22.5	22.5	3500	2.8	66 103 +3D*^	650	400
	0.0120	6.0	15.0	26.5	0.8	22.5	22.5	3500	2.8	66 123 +3D*^	650	400
	0.0150	7.0	16.0	26.5	0.8	22.5	22.5	3500	3.5	66 153 +3D*^	650	400
	0.0220	8.5	17.0	26.5	0.8	22.5	22.5	3500	4.5	66 223 +3D*^	500	400
	0.0270	10.0	18.5	26.5	0.8	22.5	22.5	3500	5.4	66 273 +3D*^	-	200

The dv/dt test is carried out for 2 times above value

AC & PULSE METALLISED POLYPROPYLENE FILM CAPACITORS - MMPP (Double side metallised film capacitor) – DC Applications - Ordering codes and packaging units - ***Dip Type***

Rated Voltage	Cap. (µF)	Dimensions (mm) W	H	L	d	S ±0.5	F .8/-.2	DV/DT V/µs	Wt. g	Ordering code	Packing units	
1250 V DC	0.00820	6.5	12.5	19	0.8	15.0	15.0	3300	1.5	61 822 +3B*^	1100	1000
500 V AC	0.01000	7.0	12.5	19	0.8	15.0	15.0	3300	1.6	61 103 +3B*^	1100	1000
	0.01200	8.0	14.0	19	0.8	15.0	15.0	3300	1.8	61 123 +3B*^	900	1000
	0.01500	8.0	15.0	19	0.8	15.0	15.0	3300	1.8	61 153 +3B*^	900	1000
	0.01800	8.0	15.0	19	0.8	15.0	15.0	3300	2.0	61 183 +3B*^	900	1000
	0.02200	9.0	16.0	19	0.8	15.0	15.0	3300	2.0	61 223 +3B*^	700	1000
	0.02700	10.0	17.0	19	0.8	15.0	15.0	3300	2.6	61 273 +3B*^	700	1000
	0.03300	12.0	18.0	19	0.8	15.0	15.0	3300	2.8	61 333 +3B*^	650	1000
	0.03900	12.0	18.0	19	0.8	15.0	15.0	3300	2.8	61 393 +3B*^	650	1000
	0.02700	7.0	15.0	27	0.8	22.5	22.5	2100	4.5	61 273 +3B*^	650	400
	0.03300	8.0	16.5	27	0.8	22.5	22.5	2100	4.5	61 333 +3B*^	650	400
	0.03900	9.0	16.0	27	0.8	22.5	22.5	2100	4.5	61 393 +3B*^	650	400
	0.04700	9.5	17.0	27	0.8	22.5	22.5	2100	4.5	61 473 +3B*^	500	400
	0.05600	10.5	19.0	27	0.8	22.5	22.5	2100	4.5	61 563 +3B*^	-	200
	0.06800	10.5	19.0	27	0.8	22.5	22.5	2100	4.5	61 683 +3B*^	-	200
	0.08200	10.5	19.0	27	0.8	22.5	22.5	2100	4.5	61 823 +3B*^	-	200
1600 V DC	0.00330	5.5	11.5	19	0.8	15.0	15.0	6000	1.1	61 332 +3C*^	1100	1000
500 V AC	0.00390	5.5	11.5	19	0.8	15.0	15.0	6000	1.1	61 392 +3C*^	1100	1000
	0.00470	5.5	11.5	19	0.8	15.0	15.0	6000	1.1	61 472 +3C*^	1100	1000
	0.00560	5.5	11.5	19	0.8	15.0	15.0	6000	1.1	61 562 +3C*^	1100	1000
	0.00680	5.5	11.5	19	0.8	15.0	15.0	6000	1.1	61 682 +3C*^	1100	1000
	0.00820	6.5	12.5	19	0.8	15.0	15.0	6000	1.5	61 822 +3C*^	1100	1000
	0.01000	6.5	12.5	19	0.8	15.0	15.0	6000	1.5	61 103 +3C*^	1100	1000
	0.01200	8.0	14.0	19	0.8	15.0	15.0	6000	2.0	61 123 +3C*^	900	1000
	0.01500	8.0	14.0	19	0.8	15.0	15.0	6000	2.0	61 153 +3C*^	900	1000
	0.01800	9.0	15.0	19	0.8	15.0	15.0	6000	2.6	61 183 +3C*^	700	1000
	0.02200	9.0	16.0	19	0.8	15.0	15.0	6000	2.8	61 223 +3C*^	700	1000
	0.02700	10.5	17.0	19	0.8	15.0	15.0	6000	2.8	61 273 +3C*^	700	1000

	0.01500	6.5	15.5	27	0.8	22.5	22.5	3000	2.8	61 153 +3C*^	650
400											
	0.01800	6.5	15.5	27	0.8	22.5	22.5	3000	2.8	61 183 +3C*^	650	400
	0.02200	6.5	15.5	27	0.8	22.5	22.5	3000	2.8	61 223 +3C*^	650	400
	0.02700	6.5	15.5	27	0.8	22.5	22.5	3000	2.8	61 273 +3C*^	650	400
	0.03300	7.5	17.0	27	0.8	22.5	22.5	3000	3.5	61 333 +3C*^	650	400
	0.03900	9.0	18.0	27	0.8	22.5	22.5	3000	4.5	61 393 +3C*^	500	400
	0.04700	10.5	19.0	27	0.8	22.5	22.5	3000	5.4	61 473 +3C*^	-	200
	0.05600	10.5	19.0	27	0.8	22.5	22.5	3000	5.4	61 563 +3C*^	-	200
2000 V DC	0.00022	5.5	11.5	19	0.8	15.0	15.0	9500	1.1	61 221 +3D*^	1100	1000
700 V AC	0.00027	5.5	11.5	19	0.8	15.0	15.0	9500	1.1	61 271 +3D*^	1100	1000
	0.00033	5.5	11.5	19	0.8	15.0	15.0	9500	1.1	61 331 +3D*^	1100	1000
	0.00039	5.5	11.5	19	0.8	15.0	15.0	9500	1.1	61 391 +3D*^	1100	1000
	0.00047	5.5	11.5	19	0.8	15.0	15.0	9500	1.1	61 471 +3D*^	1100	1000
	0.00056	5.5	11.5	19	0.8	15.0	15.0	9500	1.1	61 561 +3D*^	1100	1000
	0.00068	5.5	11.5	19	0.8	15.0	15.0	9500	1.1	61 681 +3D*^	1100	1000
	0.00082	5.5	11.5	19	0.8	15.0	15.0	9500	1.1	61 821 +3D*^	1100	1000
	0.00100	5.5	11.5	19	0.8	15.0	15.0	9500	1.1	61 102 +3D*^	1100	1000
	0.00150	5.5	11.5	19	0.8	15.0	15.0	9500	1.1	61 152 +3D*^	1100	1000
	0.00180	5.5	11.5	19	0.8	15.0	15.0	9500	1.1	61 182 +3D*^	1100	1000
	0.00220	5.5	11.5	19	0.8	15.0	15.0	9500	1.1	61 222 +3D*^	1100	1000
	0.00270	5.5	11.5	19	0.8	15.0	15.0	9500	1.1	61 272 +3D*^	1100	1000
	0.00330	6.5	12.5	19	0.8	15.0	15.0	9500	1.5	61 332 +3D*^	1100	1000
	0.00390	6.5	12.5	19	0.8	15.0	15.0	9500	1.5	61 392 +3D*^	1100	1000
	0.00470	6.5	12.5	19	0.8	15.0	15.0	9500	1.5	61 472 +3D*^	1100	1000
	0.00560	8.0	14.0	19	0.8	15.0	15.0	9500	2.0	61 562 +3D*^	900	1000
	0.00680	8.0	14.0	19	0.8	15.0	15.0	9500	2.0	61 682 +3D*^	900	1000
	0.00820	9.0	15.0	19	0.8	15.0	15.0	9500	2.6	61 822 +3D*^	700	1000
	0.01000	10.5	16.5	19	0.8	15.0	15.0	9500	2.8	61 103 +3D*^	700	1000
	0.00100	6.5	15.5	27	0.8	22.5	22.5	3500	2.8	61 102 +3D*^	650	400
	0.00150	6.5	15.5	27	0.8	22.5	22.5	3500	2.8	61 152 +3D*^	650	400
	0.00180	6.5	15.5	27	0.8	22.5	22.5	3500	2.8	61 182 +3D*^	650	400
	0.00220	6.5	15.5	27	0.8	22.5	22.5	3500	2.8	61 222 +3D*^	650	400
	0.00270	6.5	15.5	27	0.8	22.5	22.5	3500	2.8	61 272 +3D*^	650	400
	0.00330	6.5	15.5	27	0.8	22.5	22.5	3500	2.8	61 332 +3D*^	650	400
	0.00390	6.5	15.5	27	0.8	22.5	22.5	3500	2.8	61 392 +3D*^	650	400
	0.00470	6.5	15.5	27	0.8	22.5	22.5	3500	2.8	61 472 +3D*^	650	400
	0.00560	6.5	15.5	27	0.8	22.5	22.5	3500	2.8	61 562 +3D*^	650	400
	0.00680	6.5	15.5	27	0.8	22.5	22.5	3500	2.8	61 682 +3D*^	650	400
	0.00820	6.5	15.5	27	0.8	22.5	22.5	3500	2.8	61 822 +3D*^	650	400
	0.01000	6.5	15.5	27	0.8	22.5	22.5	3500	2.8	61 103 +3D*^	650	400
	0.01500	7.5	16.5	27	0.8	22.5	22.5	3500	3.5	61 153 +3D*^	650	400
	0.01800	8.5	17.5	27	0.8	22.5	22.5	3500	4.5	61 183 +3D*^	500	400
	0.02200	9.0	17.5	27	0.8	22.5	22.5	3500	5.0	61 223 +3D*^	500	400
	0.02700	10.5	18.5	27	0.8	22.5	22.5	3500	5.4	61 273 +3D*^	500	400
	0.03300	11.5	20.0	27	0.8	22.5	22.5	3500	5.4	61 333 +3D*^	-	200

The dv/dt test is carried out for 2 times above value

AC & PULSE METALLISED POLYPROPYLENE FILM CAPACITORS MPP/MPP Series - AC Applications - Dip/Box Type

MAIN APPLICATION: SMPS, motor control circuits, deflection circuit in TV sets (fly back) and monitors, electronic ballast, snubber and SCR commutating circuits and applications with high voltage and high current

CLIMATIC CATEGORY: 40/100/56 **APPLICABLE SPECIFICATION:** IEC 384-17 **CAPACITANCE VALUE, RATED VOLTAGE (AC/DC):** Refer dimension chart **CAPACITANCE TOLERANCE:** ± 5%, ± 10%

CONSTRUCTION (DIP/BOX TYPE): Series constructed, low inductive wound cell of metallised polypropylene film as electrodes coated with flame retardant epoxy resin (or, encased in flame retardant box)

RATED TEMP. (AC), MAX. APPLICATION TEMP: 85°C, 100°C. Between 85° C and 100° C, a voltage derating of 1.25% per °C on the rated voltage has to be applied

INSULATION RESISTANCE

Between leads for CR ≤ 0.33μf ≥100,000 MO
Between connected terminals and case >100,000MO
VOLTAGE PROOF: Between terminals: 1.6 times of rated voltage for 2 seconds

TAN d

Frequency (kHz)	***C < 0.1μf*** $_R$	***0.1μf < C*** $_R$ ***≤ 1μf***
At 1	0.04%	0.05%
At 10	0.06%	0.08%
At 100	0.25%	

LIFE TEST CONDITIONS

Loaded at 1.25 times of rated AC voltage at 85° C for 1000 hours

AFTER THE TEST

∆c/c: ? 5% of initial value
Increase of Tan d: ≤0.001
Insulation resistance: ≥ 50% of the value mentioned in IR chart

AC & PULSE METALLISED POLYPROPYLENE FILM CAPACITORS - MPP/MPP Series

AC Applications - Dip/Box Type - Ordering codes and packaging units - *Dip Type*

Rated Voltage	Rated Cap. (µF)	Dimensions (mm) W	H ±0.5	L	d ±0.05	S ±0.5	F .8/-.2	DV/DT V/µs	Wt. g	Ordering code	Packing units
500 V AC	0.0010	4.5	9.5	14	0.6	10.0	10.0	4000	0.5	62 102 +07*^	2000
1100	0.0012	4.5	9.5	14	0.6	10.0	10.0	4000	0.6	62 122 +07*^	2000
											1100
	0.0015	4.5	9.5	14	0.6	10.0	10.0	4000	0.6	62 152 +07*^	2000 1100
	0.0018	4.5	9.5	14	0.6	10.0	10.0	4000	0.6	62 182 +07*^	2000 1100
	0.0022	5.5	11.5	14	0.6	10.0	10.0	4000	0.6	62 222 +07*^	2000 1100
	0.0027	5.5	11.5	14	0.6	10.0	10.0	4000	0.9	62 272 +07*^	2000 1100
	0.0033	6.5	12.5	14	0.6	10.0	10.0	4000	0.9	62 332 +07*^	2000 1100
	0.0039	6.5	12.5	14	0.6	10.0	10.0	4000	0.9	62 392 +07*^	2000 1100
	0.0047	6.5	12.5	14	0.6	10.0	10.0	4000	0.9	62 472 +07*^	2000 1100
	0.0015	5.5	11.5	19	0.8	15.0	15.0	2500	1.1	62 152 +07*^	1100 1000
	0.0018	5.5	11.5	19	0.8	15.0	15.0	2500	1.1	62 182 +07*^	1100 1000
	0.0022	5.5	11.5	19	0.8	15.0	15.0	2500	1.1	62 222 +07*^	1100 1000
	0.0027	5.5	11.5	19	0.8	15.0	15.0	2500	1.1	62 272 +07*^	1100 1000
	0.0033	5.5	11.5	19	0.8	15.0	15.0	2500	1.1	62 332 +07*^	1100 1000
	0.0039	5.5	11.5	19	0.8	15.0	15.0	2500	1.1	62 392 +07*^	1100 1000
	0.0047	5.5	11.5	19	0.8	15.0	15.0	2500	1.1	62 472 +07*^	1100 1000
	0.0056	5.5	11.5	19	0.8	15.0	15.0	2500	1.1	62 562 +07*^	1100 1000
	0.0068	6.5	12.5	19	0.8	15.0	15.0	2500	1.5	62 682 +07*^	1100 1000
	0.0082	6.5	12.5	19	0.8	15.0	15.0	2500	1.5	62 822 +07*^	1100 1000
	0.0100	6.5	12.5	19	0.8	15.0	15.0	2500	1.5	62 103 +07*^	1100 1000
	0.0120	8.0	14.0	19	0.8	15.0	15.0	2500	2..0	62 123 +07*^	900 1000
	0.0150	8.0	14.0	19	0.8	15.0	15.0	2500	2.0	62 153 +07*^	900 1000
	0.0180	9.0	15.0	19	0.8	15.0	15.0	2500	2.6	62 183 +07*^	700 1000
	0.0220	10.5	16.5	19	0.8	15.0	15.0	2500	2.8	62 223 +07*^	700 1000
	0.0270	10.5	16.5	19	0.8	15.0	15.0	2500	2.8	62 273 +07*^	700 1000
	0.0180	6.5	15.5	27	0.8	22.5	22.5	1200	2.8	62 183 +07*^	650 400
	0.0220	6.5	15.5	27	0.8	22.5	22.5	1200	2.8	62 223 +07*^	650 400
	0.0270	7.5	16.5	27	0.8	22.5	22.5	1200	3.5	62 273 +07*^	650 400
	0.0330	7.5	16.5	27	0.8	22.5	22.5	1200	3.5	62 333 +07*^	650 400
	0.0390	9.0	17.5	27	0.8	22.5	22.5	1200	4.5	62 393 +07*^	500 400
	0.0470	10.5	19.0	27	0.8	22.5	22.5	1200	5.4	62 473 +07*^	- 200
	0.0560	10.5	19.0	27	0.8	22.5	22.5	1200	5.4	62 563 +07*^	- 200 700
V AC	0.0010	5.5	11.5	19	0.8	15.0	15.0	5000	0.9	62 102 +09*^	1100 1000
	0.0012	5.5	11.5	19	0.8	15.0	15.0	5000	0.9	62 122 +09*^	1100 1000
	0.0015	5.5	11.5	19	0.8	15.0	15.0	5000	0.9	62 152 +09*^	1100 1000
	0.0018	5.5	11.5	19	0.8	15.0	15.0	5000	0.9	62 182 +09*^	1100 1000
	0.0022	5.5	11.5	19	0.8	15.0	15.0	5000	0.9	62 222 +09*^	1100 1000
	0.0027	5.5	11.5	19	0.8	15.0	15.0	5000	1.1	62 272 +09*^	1100 1000
	0.0033	5.5	11.5	19	0.8	15.0	15.0	5000	1.1	62 332 +09*^	1100 1000
	0.0039	6.5	12.5	19	0.8	15.0	15.0	5000	1.5	62 392 +09*^	1100 1000
	0.0047	6.5	12.5	19	0.8	15.0	15.0	5000	1.5	62 472 +09*^	1100 1000
	0.0056	6.5	12.5	19	0.8	15.0	15.0	5000	1.5	62 562 +09*^	1100 1000
	0.0068	8.0	14.0	19	0.8	15.0	15.0	5000	2.0	62 682 +09*^	900 1000
	0.0082	8.0	14.0	19	0.8	15.0	15.0	5000	2.0	62 822 +09*^	900 1000
	0.0100	9.0	15.0	19	0.8	15.0	15.0	5000	2.6	62 103 +09*^	700 1000
	0.0120	10.5	16.5	19	0.8	15.0	15.0	5000	2.8	62 123 +09*^	700 1000
	0.0150	10.5	16.5	19	0.8	15.0	15.0	5000	2.8	62 153 +09*^	700 1000
	0.0082	6.5	15.5	27	0.8	22.5	22.5	3000	2.8	62 822 +09*^	650 400
	0.0100	6.5	15.5	27	0.8	22.5	22.5	3000	2.8	62 103 +09*^	650 400
	0.0120	6.5	15.5	27	0.8	22.5	22.5	3000	2.8	62 123 +09*^	650 400
	0.0150	6.5	15.5	27	0.8	22.5	22.5	3000	2.8	62 153 +09*^	650 400
	0.0180	7.5	16.5	27	0.8	22.5	22.5	3000	3.5	62 183 +09*^	650 400
	0.0220	9.0	17.5	27	0.8	22.5	22.5	3000	4.5	62 223 +09*^	500 400
	0.0270	9.0	17.5	27	0.8	22.5	22.5	3000	4.5	62 273 +09*^	500 400

	0.0330	10.5	19.0	27	0.8	22.5	22.5	3000	5.4	62 333 +09*^	-	200	
	0.0390	10.5	19.0	27	0.8	22.5	22.5	3000	5.4	62 393 +09*^	-	200	900
V AC	0.0010	6.5	15.5	27	0.8	22.5	22.5	2500	2.8	62 102 +11*^	650	400	
	0.0012	6.5	15.5	27	0.8	22.5	22.5	2500	2.8	62 122 +11*^	650	400	
	0.0015	6.5	15.5	27	0.8	22.5	22.5	2500	2.8	62 152 +11*^	650	400	
	0.0018	6.5	15.5	27	0.8	22.5	22.5	2500	2.8	62 182 +11*^	650	400	
	0.0022	6.5	15.5	27	0.8	22.5	22.5	2500	2.8	62 222 +11*^	650	400	
	0.0027	6.5	15.5	27	0.8	22.5	22.5	2500	2.8	62 272 +11*^	650	400	
	0.0033	6.5	15.5	27	0.8	22.5	22.5	2500	2.8	62 332 +11*^	650	400	
	0.0039	6.5	15.5	27	0.8	22.5	22.5	2500	2.8	62 392 +11*^	650	400	
	0.0047	6.5	15.5	27	0.8	22.5	22.5	2500	2.8	62 472 +11*^	650	400	
	0.0056	6.5	15.5	27	0.8	22.5	22.5	2500	2.8	62 562 +11*^	650	400	
	0.0068	6.5	15.5	27	0.8	22.5	22.5	2500	2.8	62 682 +11*^	650	400	
	0.0082	7.5	16.5	27	0.8	22.5	22.5	2500	3.5	62 822 +11*^	650	400	
	0.0100	7.5	16.5	27	0.8	22.5	22.5	2500	3.5	62 103 +11*^	650	400	
	0.0120	9.0	17.5	27	0.8	22.5	22.5	2500	4.5	62 123 +11*^	500	400	
	0.0150	10.5	19.0	27	0.8	22.5	22.5	2500	5.4	62 153 +11*^	-	200	
	0.0180	10.5	19.0	27	0.8	22.5	22.5	2500	5.4	62 183 +11*^	-	200	

AC & PULSE METALLISED POLYPROPYLENE FILM CAPACITORS - MPP/MPP Series

AC Applications - Dip/Box Type - Ordering codes and packaging units - *Box Type*

Rated Voltage	Rated Cap. (µF)	Dimensions (mm) W	H	L	d	S	F .8/-.2	DV/DT	Wt. g	Ordering code	Packing units	
500 V AC	0.0010	4.0	9.0	13.0	0.6	10.0	10	4000	0.5	67 102 +07*^	2000	
1100	0.0012	4.0	9.0	13.0	0.6	10.0	10	4000	0.6	67 122 +07*^	2000	
												1100
	0.0015	4.0	9.0	18.0	0.6	10.0	10	4000	0.6	67 152 +07*^	2000	1100
	0.0018	4.0	9.0	18.0	0.6	10.0	10	4000	0.6	67 182 +07*^	2000	1100
	0.0022	5.0	11.0	18.0	0.6	10.0	10	4000	0.6	67 222 +07*^	2000	1100
	0.0027	5.0	11.0	18.0	0.6	10.0	10	4000	0.9	67 272 +07*^	2000	1100
	0.0033	6.0	12.0	18.0	0.6	10.0	10	4000	0.9	67 332 +07*^	2000	1100
	0.0039	6.0	12.0	18.0	0.6	10.0	10	4000	0.9	67 392 +07*^	2000	1100
	0.0047	6.0	12.0	18.0	0.6	10.0	10	4000	0.9	67 472 +07*^	2000	1100
	0.0015	5.0	10.8	18.0	0.8	15.0	15	2500	1.1	67 152 +07*^	1100	1000
	0.0018	5.0	10.8	18.0	0.8	15.0	15	2500	1.1	67 182 +07*^	1100	1000
	0.0022	5.0	10.8	18.0	0.8	15.0	15	2500	1.1	67 222 +07*^	1100	1000
	0.0027	5.0	10.8	18.0	0.8	15.0	15	2500	1.1	67 272 +07*^	1100	1000
	0.0033	5.0	10.8	18.0	0.8	15.0	15	2500	1.1	67 332 +07*^	1100	1000
	0.0039	5.0	10.8	18.0	0.8	15.0	15	2500	1.1	67 392 +07*^	1100	1000
	0.0047	5.0	10.8	18.0	0.8	15.0	15	2500	1.1	67 472 +07*^	1100	1000
	0.0056	5.0	10.8	18.0	0.8	15.0	15	2500	1.1	67 562 +07*^	1100	1000
	0.0068	6.0	11.9	18.0	0.8	15.0	15	2500	1.5	67 682 +07*^	1100	1000
	0.0082	6.0	11.9	18.0	0.8	15.0	15	2500	1.5	67 822 +07*^	1100	1000
	0.0100	6.0	11.9	18.0	0.8	15.0	15	2500	1.5	67 103 +07*^	1100	1000
	0.0120	7.5	13.5	18.0	0.8	15.0	15	2500	2	67 123 +07*^	900	1000
	0.0150	7.5	13.5	18.0	0.8	15.0	15	2500	2	67 153 +07*^	900	1000
	0.0180	8.5	14.5	18.0	0.8	15.0	15	2500	2.6	67 183 +07*^	700	1000
	0.0220	10.0	16.0	18.0	0.8	15.0	15	2500	2.8	67 223 +07*^	700	1000
	0.0270	10.0	16.0	18.0	0.8	15.0	15	2500	2.8	67 273 +07*^	700	1000
	0.0180	6.0	15.0	26.5	0.8	22.5	22.5	1200	2.8	67 183 +07*^	650	400
	0.0220	6.0	15.0	26.5	0.8	22.5	22.5	1200	2.8	67 223 +07*^	650	400
	0.0270	7.0	16.0	26.5	0.8	22.5	22.5	1200	3.5	67 273 +07*^	650	400
	0.0330	7.0	16.0	26.5	0.8	22.5	22.5	1200	3.5	67 333 +07*^	650	400
	0.0390	8.5	17.0	26.5	0.8	22.5	22.5	1200	4.5	67 393 +07*^	500	400
	0.0470	10.0	18.5	26.5	0.8	22.5	22.5	1200	5.4	67 473 +07*^	-	200
	0.0560	10.0	18.5	26.5	0.8	22.5	22.5	1200	5.4	67 563 +07*^	-	200 700
V AC	0.0010	5.0	10.8	18.0	0.8	15.0	15.0	5000	0.9	67 102 +09*^	1100	1000
	0.0012	5.0	10.8	18.0	0.8	15.0	15.0	5000	0.9	67 122 +09*^	1100	1000
	0.0015	5.0	10.8	18.0	0.8	15.0	15.0	5000	0.9	67 152 +09*^	1100	1000
	0.0018	5.0	10.8	18.0	0.8	15.0	15.0	5000	0.9	67 182 +09*^	1100	1000

	0.0022	5.0	10.8	18.0	0.8	15.0	15.0	5000	0.9	67 222 +09*^	1100	1000
	0.0027	5.0	10.8	18.0	0.8	15.0	15.0	5000	1.1	67 272 +09*^	1100	1000
	0.0033	5.0	10.8	18.0	0.8	15.0	15.0	5000	1.1	67 332 +09*^	1100	1000
	0.0039	6.0	11.9	18.0	0.8	15.0	15.0	5000	1.5	67 392 +09*^	1100	1000
	0.0047	6.0	11.9	18.0	0.8	15.0	15.0	5000	1.5	67 472 +09*^	1100	1000
	0.0056	6.0	11.9	18.0	0.8	15.0	15.0	5000	1.5	67 562 +09*^	1100	1000
	0.0068	7.5	13.5	18.0	0.8	15.0	15.0	5000	2	67 682 +09*^	900	1000
	0.0082	7.5	13.5	18.0	0.8	15.0	15.0	5000	2	67 822 +09*^	900	1000
	0.0100	8.5	14.5	18.0	0.8	15.0	15.0	5000	2.6	67 103 +09*^	700	1000
	0.0120	10.0	16.0	18.0	0.8	15.0	15.0	5000	2.8	67 123 +09*^	700	1000
	0.0150	10.0	16.0	18.0	0.8	15.0	15.0	5000	2.8	67 153 +09*^	700	1000
	0.0082	6.0	15.0	26.5	0.8	22.5	22.5	3000	2.8	67 822 +09*^	650	400
	0.0100	6.0	15.0	26.5	0.8	22.5	22.5	3000	2.8	67 103 +09*^	650	400
	0.0120	6.0	15.0	26.5	0.8	22.5	22.5	3000	2.8	67 123 +09*^	650	400
	0.0150	6.0	15.0	26.5	0.8	22.5	22.5	3000	2.8	67 153 +09*^	650	400
	0.0180	7.0	16.0	26.5	0.8	22.5	22.5	3000	3.5	67 183 +09*^	650	400
	0.0220	8.5	17.0	26.5	0.8	22.5	22.5	3000	4.5	67 223 +09*^	500	400
	0.0270	8.5	17.0	26.5	0.8	22.5	22.5	3000	4.5	67 273 +09*^	500	400
	0.0330	10.0	18.5	26.5	0.8	22.5	22.5	3000	5.4	67 333 +09*^	-	200
	0.0390	10.0	18.5	26.5	0.8	22.5	22.5	3000	5.4	67 393 +09*^	-	200 900
V AC	0.0010	6.0	15.0	26.5	0.8	22.5	22.5	2500	2.8	67 102 +11*^	650	400
	0.0012	6.0	15.0	26.5	0.8	22.5	22.5	2500	2.8	67 122 +11*^	650	400
	0.0015	6.0	15.0	26.5	0.8	22.5	22.5	2500	2.8	67 152 +11*^	650	400
	0.0018	6.0	15.0	26.5	0.8	22.5	22.5	2500	2.8	67 182 +11*^	650	400
	0.0022	6.0	15.0	26.5	0.8	22.5	22.5	2500	2.8	67 222 +11*^	650	400
	0.0027	6.0	15.0	26.5	0.8	22.5	22.5	2500	2.8	67 272 +11*^	650	400
	0.0033	6.0	15.0	26.5	0.8	22.5	22.5	2500	2.8	67 332 +11*^	650	400
	0.0039	6.0	15.0	26.5	0.8	22.5	22.5	2500	2.8	67 392 +11*^	650	400
	0.0047	6.0	15.0	26.5	0.8	22.5	22.5	2500	2.8	67 472 +11*^	650	400
	0.0056	6.0	15.0	26.5	0.8	22.5	22.5	2500	2.8	67 562 +11*^	650	400
	0.0068	6.0	15.0	26.5	0.8	22.5	22.5	2500	2.8	67 682 +11*^	650	400
	0.0082	7.0	16.0	26.5	0.8	22.5	22.5	2500	3.5	67 822 +11*^	650	400
	0.0100	7.0	16.0	26.5	0.8	22.5	22.5	2500	3.5	67 103 +11*^	650	400
	0.0120	8.5	17.0	26.5	0.8	22.5	22.5	2500	4.5	67 123 +11*^	500	400
	0.0150	10.0	18.5	26.5	0.8	22.5	22.5	2500	5.4	67 153 +11*^	-	200
	0.0180	10.0	18.5	26.5	0.8	22.5	22.5	2500	5.4	67 183 +11*^	-	200

INDUCTIVE SELF HEALING POLYPROPYLENE CAPACITOR DPSH CAPACITORS

CONSTRUCTION: Film/foil inductive type internally series construction with aluminum foil as electrode and polypropylene (PP) film dielectric and MPP Film as connecting electrode, coated with flame retardant epoxy resin

CAPACITANCE RANGE: 0.001 µF to 0.01 µF

RATED VOLTAGES: 1250 V DC / 500 V AC, 1600 V DC / 500 V
AC, 2000 V DC / 500 V AC

CAPACITANCE TOLERANCES: ±5%, ±10%

APPLICABLE SPECIFICATION: IEC 384-17

OPERATING TEMPERATURE RANGE: -40° C to +105°C

PITCH: 5 mm, 7.5 mm

VOLTAGE PROOF: 1.6 times the rated voltage for 2 sec

INSULATION RESISTANCE AT +20° C: > 100000 M?

TAN δ: 0.1% at 1 kHz and 0.4% at 100 kHz

VOLTAGE DERATING: For temperatures between 85° C and
105° C a decreasing factor of 1.25% per °C on the rated voltage
Ur (DC and AC) has to be applied

ENDURANCE TEST:

Test conditions (DC)

Temperature: +85°C ±2°C
Test duration: 1000 h
Voltage applied: 1.25 × UR (DC)

Performance

Capacitance change |∆C/C|: ≤5%
DF change (∆tgδ): 1.4 times value measured before the test
***Insulation resistance*:** ≥50% of initial limit

Test conditions (AC)

Temperature: +85°C ±2°C
Test duration: 1000 h
Voltage applied: 1.25 × UR (AC)

Performance

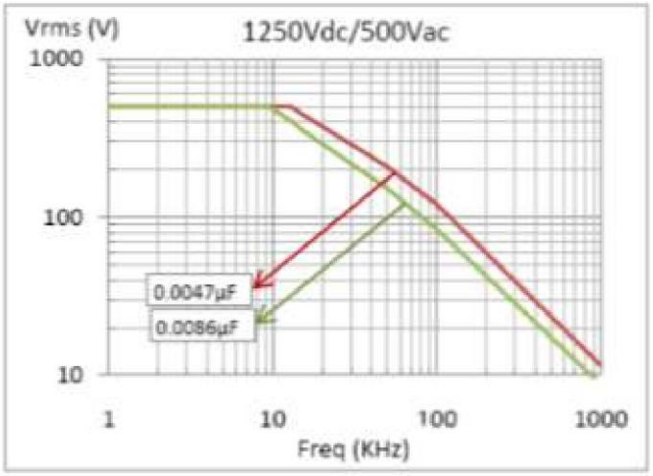
***Capacitance change* |∆*C/C*|:** ≤5%

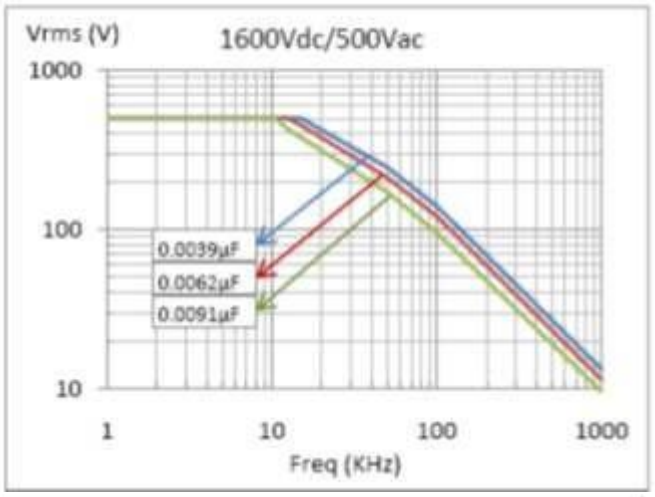
***DF change* (∆*tgδ*):** 1.4 times value measured before the test

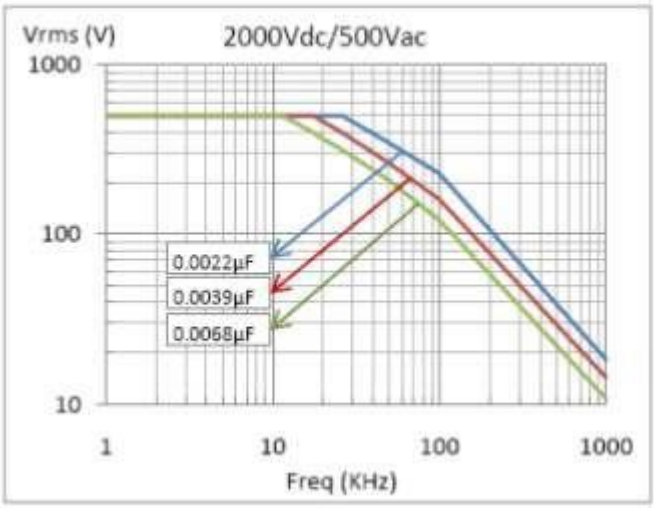
Insulation resistance: ≥50% of initial limit

Max. Voltage (Vrms) vs. Frequency

(Sinusoidal Waveform at T ≤ 55° C)

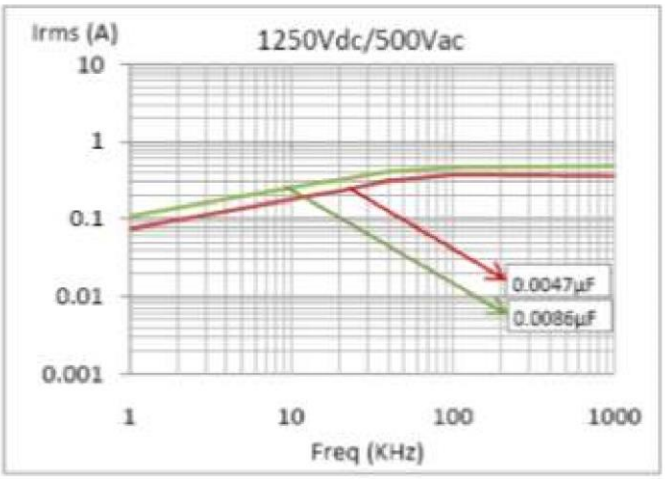


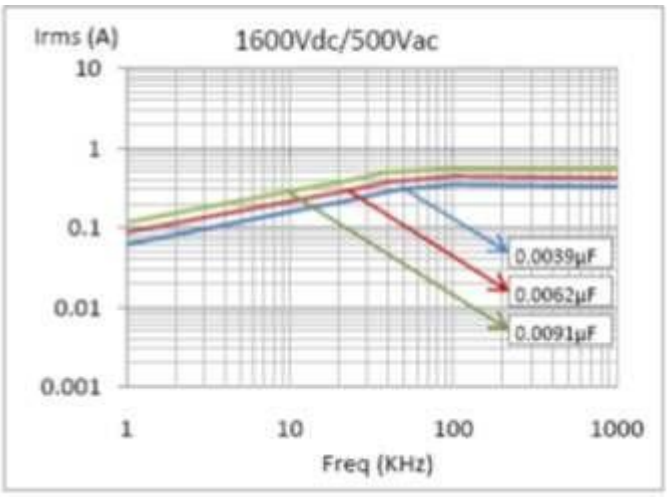


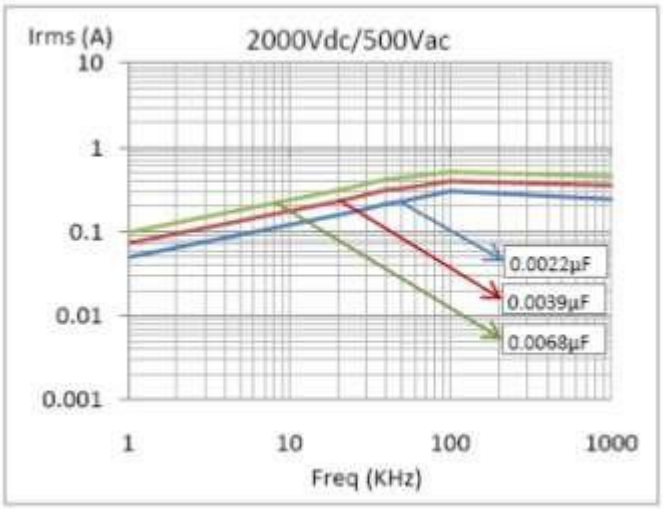


Max. Current (Irms) vs. Frequency

(Sinusoidal Waveform at T ≤ 55° C)



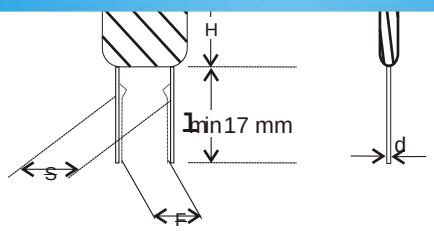




Ordering codes and packaging units

1250 V DC	0.0027	5.00	17.50	8.00	0.5	5.0±0.5	10000	0.500	70 272 + 3B * ^	500
	0.0033	5.00	17.50	8.00	0.5	5.0±0.5	10000	0.570	70 332 + 3B * ^	500
	0.0039	5.50	17.50	8.50	0.5	5.0±0.5	10000	0.680	70 392 + 3B * ^	500
	0.0047	5.50	17.50	9.00	0.5	5.0±0.5	10000	0.770	70 472 + 3B * ^	500
	0.0056	5.50	17.50	9.50	0.5	5.0±0.5	10000	0.820	70 562 + 3B * ^	500
	0.0068	6.50	17.50	10.00	0.5	7.0±0.5	10000	0.910	70 682 + 3B * ^	500
	0.0086	6.50	17.50	10.00	0.5	7.0±0.5	10000	1.070	70 862 + 3B * ^	500
	0.0100	7.00	17.50	10.50	0.5	7.5±0.5	10000	1.192	70 103 + 3B * ^	500
1600 V DC	0.0039	6.50	17.50	9.50	0.5	5.0±0.5	10000	0.860	70 392 + 3C * ^	500
	0.0047	5.17	15.97	8.72	0.5	5.0±0.5	10000	0.970	70 472 + 3C * ^	500
	0.0056	6.50	17.50	11.00	0.5	7.0±0.5	10000	1.070	70 562 + 3C * ^	500
	0.0062	6.50	17.50	11.00	0.5	7.5±0.5	10000	1.100	70 622 + 3C * ^	500
	0.0068	7.00	17.50	11.00	0.5	7.0±0.5	10000	1.140	70 682 + 3C * ^	500
	0.0082	7.50	17.50	11.00	0.5	7.0±0.5	10000	1.270	70 822 + 3C * ^	500
	0.0086	8.00	17.50	11.50	0.5	7.0±0.5	10000	1.340	70 862 + 3C * ^	500
	0.0100	8.50	18.00	12.50	0.5	7.0±0.5	10000	1.490	70 103 + 3C * ^	500
2000 V DC	0.0015	5.50	18.00	8.50	0.5	5.0±0.5	10000	0.550	70 152 + 3D * ^	500
	0.0022	6.00	18.00	9.00	0.5	5.0±0.5	10000	0.640	70 222 + 3D * ^	500
	0.0033	6.50	18.00	10.00	0.5	5.0±0.5	10000	0.820	70 332 + 3D * ^	500
	0.0047	7.50	18.00	11.00	0.5	7.5±0.5	10000	1.130	70 472 + 3D * ^	500
	0.0056	8.50	18.00	11.50	0.5	7.5±0.5	10000	1.240	70 562 + 3D * ^	500
	0.0068	9.50	18.00	12.50	0.5	7.5±0.5	10000	1.330	70 682 + 3D * ^	500
	0.0100	10.00	18.00	14.00	0.5	7.5±0.5	10000	1.740	70 103 + 3D * ^	500

Rated	Rated	Dimensions(mm)								



DEKI
Film Capacitor Solutions

INTERFERENCE SUPPRESSION CAPACITORS (Safety Capacitors)
Class X2

MAIN APPLICATION: Suitable for radio suppression in small household appliances, audio and TV circuits, general industrial applications

CONSTRUCTION: Low inductive cell of metallised polypropylene film encased in flame retardant grade UL 94 V-0 box potted with flame retardant UL 94 V-0 epoxy resin

CLIMATIC CATEGORY: 40/100/56/C

MAXIMUM OPERATING TEMPERATURE: 100° C

APPLICABLE SPECIFICATION: IEC 384-14

CAPACITANCE VALUE: Refer dimension chart

RATED VOLTAGE (AC): 275/305 V

INSULATION RESISTANCE

Minimum Insulation Resistance R_{IS} (or) time constant ? = C × R_{IS} at 25° C, relative humidity ≤ 65%	C_R ≤ 0.33 µF > 30000 MO	C_R > 0.33 µF > 10000 s

CAPACITANCE TOLERANCE: ±10%, ±20%

VOLTAGE PROOF (V DC): 2100 V DC for 2 s

TAN d: 0.1 % (max.) at 1 kHz, 0.3% (max.) at 10 kHz

LIFE TEST CONDITIONS:
(Loading at elevated temperature)
Loaded at 1.25 times of rated voltage at 100 °C for 1000 hours.
Once per hour; 0.1s at 1000 V (RMS) via resistor of 47 O ± 5%

Criteria after the test:
Δ***c/c:*** ≤ 10%
Increase of Tan d: ≤ 0.008, C_R≤ 1µF; ≤ 0.005, CR>1µF at 1 kHz
Insulation resistance: > 50% of the initial value

INSULATION RESISTANCE

Safety Approval X2	Voltage	Value	Certificate Numbers
EN 60384-14:2005 (ENEC) (= IEC 60384-14:2005 ed-3)	275/305 V AC	0.01µf to 2.2 µf	2011031 A1
CB Test Certificate			STIEP-1956

The ENEC-approval together with the CB- Certificate replaces all national 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

Ordering codes and packaging units

0.015	4.0	11.0	13.0	0.6	10.0	350	-	07 153 +03* ^	500	ENEC
0.022	4.0	11.0	13.0	0.6	10.0	350	-	07 223 +03* ^	500	ENEC
0.033	5.0	11.0	13.0	0.6	10.0	350	-	07 333 +03* ^	500	ENEC
0.047	6.0	12.0	13.0	0.6	10.0	350	-	07 473 +03* ^	500	ENEC
0.047	5.0	11.0	18.0	0.8	15.0	250	-	07 473 +03* ^	500	ENEC
0.068	5.0	11.0	18.0	0.8	15.0	250	-	07 683 +03* ^	500	ENEC
0.082	5.0	11.0	18.0	0.8	15.0	250	-	07 823 +03* ^	500	ENEC
0.100	6.0	12.0	18.0	0.8	15.0	250	-	07 104 +03* ^	500	ENEC
0.150	7.0	13.0	18.0	0.8	15.0	250	-	07 154 +03* ^	500	ENEC
0.220	7.5	14.5	18.0	0.8	15.0	250	-	07 224 +03* ^	500	ENEC
0.220	6.0	15.0	26.5	0.8	22.5	150	-	07 224 +03* ^	250	ENEC
0.330	10.0	16.0	18.0	0.8	15.0	250	-	07 334 +03* ^	500	ENEC
0.330	7.0	16.5	26.5	0.8	22.5	150	-	07 334 +03* ^	250	ENEC
0.470	8.5	17.0	26.5	0.8	22.5	150	-	07 474 +03* ^	250	ENEC
0.680	10.0	19.0	26.0	0.8	22.5	150	-	07 684 +03* ^	250	ENEC
0.680	8.5	17.5	32.0	0.8	27.5	100	-	07 684 +03* ^	100	ENEC
1.000	11.0	22.0	32.0	0.8	27.5	100	-	07 105 +03* ^	100	ENEC
1.500	14.0	25.0	32.0	0.8	27.5	100	-	07 155 +03* ^	100	ENEC

	2.200	17.5	27.5	32.0	0.8	27.5	100	-	07 225 +03* ^	100	ENEC
	0.100	6.0	12.0	13.0	0.6	10.0	350	-	07 104 +03* ^	500	ENEC
	0.100	5.0	11.0	18.0	0.8	15.0	250	-	07 104 +03* ^	500	Miniature Size
	0.150	6.0	12.0	18.0	0.6	15.0	250	-	07 154 +03* ^	500	Miniature Size
	0.220	7.0	13.0	18.0	0.8	15.0	250	-	07 224 +03* ^	500	Miniature Size
	0.330	8.5	14.5	18.0	0.8	15.0	250	-	07 334 +03* ^	500	Miniature Size
	0.330	6.0	15.0	26.5	0.8	22.5	150	-	07 334 +03* ^	250	Miniature Size
	0.470	10.0	18.0	18.0	0.8	15.0	250	-	07 474 +03* ^	500	Miniature Size
	0.470	7.0	16.5	26.5	0.8	22.5	150	-	07 474 +03* ^	250	Miniature Size
	0.680	8.5	17.5	26.5	0.8	22.5	150	-	07 684 +03* ^	250	Miniature Size
	1.000	11.0	20.0	26.5	0.8	22.5	150	-	07 105 +03* ^	250	Miniature Size
	1.000	11.0	20.0	32.0	0.8	22.5	150	-	07 105 +03* ^	250	Miniature Size
	1.500	11.0	22.0	32.0	0.8	27.5	100	-	07 155 +03* ^	100	Miniature Size
	2.200	14.0	25.0	31.0	0.8	27.5	100	-	07 225 +03* ^	100	Miniature Size
	3.300	17.5	27.5	32.0	0.8	27.5	100	-	07 335 +03* ^	100	Miniature Size

Rated Voltage	Rated Cap. (µF)	Dimensions(mm) W	H	L	d	S ±0.5	DV/DT V/µs	Wt. g	Ordering code	Packing units	Remarks Approva
											ENEC
275/300 V AC	0.010	4.0	11.0	13.0	0.6	10.0	350	-	07 103 +03* ^	500	

CDI CAPACITORS

MAIN APPLICATION: Capacitor discharge ignition used in twowheeler ignition systems

CONSTRUCTION: Low inductive cell of metallised polyester or metallised polypropylene film coated with flame retardant grade epoxy resin

CLIMATIC CATEGORY: 40/85/56

APPLICABLE SPECIFICATION: IEC 384-2 (MPET), IEC 384-16 (MPP)

CAPACITANCE VALUE: Refer dimension chart

RATED VOLTAGE (DC): 400V

CAPACITANCE TOLERANCE: ±10%

VOLTAGE PROOF
Between terminals: 1.6 times of rated voltage for 2 seconds

INSULATION RESISTANCE
Minimum Insulation Resistance RIS >10000s at 100 VDC (or) time constant T=CR × RIS at 25° C, relative humidity ≤ 70%

TAN d
3.0 % (maximum) at 100 kHz (MPET)
0.5 % (maximum) at 100 kHz (MPP)

LIFE TEST CONDITIONS - MPET (Loading at elevated temperature) Loaded at 1.25 times of rated voltage at 85° C or 1.25 times of the category voltage at 100° C for 1000 hours. Category voltage is 80% of rated voltage

AFTER THE TEST
Δc/c: ? 5% of initial value
Change in Tan d: ≤ 0.002, CR > 1 µf
Insulation resistance: ≥ 50% of the value mentioned in IR chart

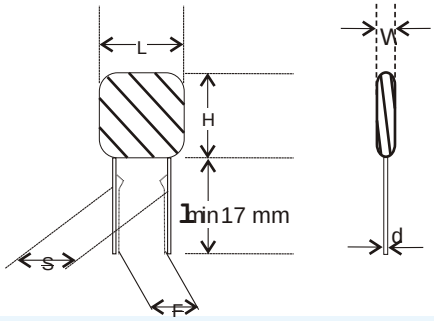
LIFE TEST CONDITIONS - MPP (Loading at elevated temperature) Loaded at 1.25 times of rated voltage at 85° C or 1.25 times of category voltage at 100° C for 1000 hours. Category voltage is 80% of rated voltage

AFTER THE TEST
Δc/c: ? 5% of initial value
Change in Tan d: ≤ 0.002
Insulation resistance: ≥ 50% of the value mentioned in IR chart

APPROVALS: Tested as per IEC 384-16 for MPP and IEC 384-2 for MPET

Ordering codes and packaging units

Rated Voltage	Rated Cap. (µF)	Dimensions(mm) W ±0.5	H	L ±0.5	d	S ±0.5	Wt. g	Ordering code	Packing units
400 V DC	1.00	8	18	32	0.8	27.5	4.0	08 105 +2G*^	500
MPET Series	1.40	9	18	32	0.8	27.5	5.5	08 145 +2G*^	250
	1.50	10	18	32	0.8	27.5	6.1	08 155 +2G*^	250
	2.20	11	22	32	0.8	27.5	10.2	08 225 +2G*^	250
	3.30	13	24	32	0.8	27.5	12.5	08 335 +2G*^	250
400 V DC	0.68	12	20	32	0.8	27.5	4.5	09 684 +2G*^	250
MPP Series	1.00	13	24	32	0.8	27.5	6.0	09 105 +2G*^	250
	1.40	14	25	32	0.8	27.5	10.0	09 145 +2G*^	250



1.50	14	25	32	0.8	27.5	12.5	09 155 +2G*^	250
2.20	16	28	32	0.8	27.5	14.0	09 225 +2G*^	250

METALLISED POLYESTER FILM CAPACITORS Economic type

MAIN APPLICATION: Mainly used in switch type fan regulators

CONSTRUCTION (DIP TYPE): Low inductive cell of metallised polyester film coated with flame retardant grade epoxy powder

CLIMATIC CATEGORY: 40/85/21

CAPACITANCE VALUE, RATED VOLTAGE (DC): Refer dimension chart

CAPACITANCE TOLERANCE: ±5%, ±10%

VOLTAGE PROOF: 1.6*Ur for 2 seconds between the terminals

TAN d (DISSIPATION FACTOR): 0.8% (max) at 1 kHz

INSULATION RESISTANCE

Minimum insulation resistance R measured at 100 V DC for $_{IS}$
1 minute
Or, time constant ? = C × R > 2500 s at 25° C, relative
$_{R}$ $_{IS}$
humidity ≤70%

LIFE TEST CONDITIONS

a) **Endurance Test:** Loaded at 1.1 times of rated voltage at 70° C for 500 hours.

After the test:

Δ***c/c:*** ≤ 5% of initial value

Change in Tan d: ≤ 0.004 of initial value

Insulation resistance: ≥ 50% of the value specified in data sheet

b) **Switching test:** > 20,000 cycles of 4 step / 5 step switch type
fan regulator
Input supply: 240 V AC, Load: Fan
Motor ***After the test:***

Δ***c/c:*** ≤ 5% of initial value

Change in Tan d: ≤ 0.004 of initial value

Insulation resistance: ≥ 50% of the value specified in data sheet

c) **Lot to lot testing:** Loaded at 450 V AC at ambient temperature
for 2 hours
After the test:

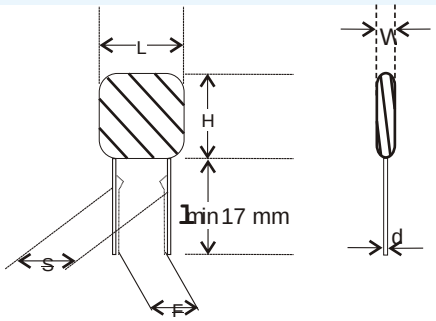
Δ***c/c:*** ≤10% of initial value

Change in Tan δ: ≤ 0.004 of initial value

Ordering codes and packaging units

Rated Voltage	Rated cap. (µfd)	Maximum Dimensions (mm) W ±0.5	H ±0.5	L ±0.5	d ±0.5	S ±0.5	Ordering code	Packing unit Bulk
250 V AC	1.0	6.0	14.0	31	0.8	27.5	57 105 + 02 *^	250
MPP	1.2	7.0	15.0	31	0.8	27.5	57 125 + 02 *^	250
	1.5	7.0	16.0	31	0.8	27.5	57 155 + 02 *^	250
	2.0	8.0	17.0	31	0.8	27.5	57 205 + 02 *^	250
	2.2	8.0	18.0	31	0.8	27.5	57 225 + 02 *^	250
	2.4	7.5	21.0	31	0.8	27.5	57 245 + 02 *^	250
	2.5	9.0	19.0	31	0.8	27.5	57 255 + 02 *^	250
	3.0	10.0	19.0	31	0.8	27.5	57 305 + 02 *^	250
	3.3	8.5	22.5	31	0.8	27.5	57 335 + 02 *^	250
	3.6	9.0	23.0	31	0.8	27.5	57 365 + 02 *^	250
	3.7	11.0	20.0	31	0.8	27.5	57 375 + 02 *^	250

4.3	10.0	24.0	31	0.8	27.5	57 435 + 02 *^	250



Loaded at 1.1 times of rated voltage at 70° C

METALLISED POLYESTER FILM CAPACITORS Switch type

MAIN APPLICATION: Mainly used in switch type fan regulators

CONSTRUCTION (DIP TYPE): Low inductive cell of metallised polyester film coated with flame retardant grade epoxy powder

CLIMATIC CATEGORY: 40/85/21

CAPACITANCE VALUE, RATED VOLTAGE (DC): Refer dimension chart

CAPACITANCE TOLERANCE: ±5%, ±10%

VOLTAGE PROOF: 1.6*Ur for 2 seconds between the terminals.

TAN d (DISSIPATION FACTOR): 0.8% (max) at 1 kHz

INSULATION RESISTANCE
Minimum insulation resistance R measured at 100 V DC for $_{IS}$ 1 minute
Or, time constant ? = C × R > 2500 s at 25° C, relative $_{R IS}$ humidity ≤70%

LIFE TEST CONDITIONS a)
Endurance Test:
for 500 hours.
After the test:
Δc/c: ≤ 5% of initial value
Change in Tan d: ≤ 0.004 of initial value
Insulation resistance: ≥ 50% of the value specified in data sheet

b) Switching test: > 20,000 cycles of 4 step / 5 step switch type fan regulator
Input supply: 240 V AC, Load: Fan Motor ***After the test:***
Δc/c: ≤ 5% of initial value
Change in Tan d: ≤ 0.004 of initial value
Insulation resistance: ≥ 50% of the value specified in data sheet

c) Lot to lot testing: Loaded at 450 V AC at ambient temperature for 2 hours ***After the test:***
Δc/c: ≤10% of initial value
Change in Tan δ: ≤ 0.004 of initial value

Ordering codes and packaging units

Rated Voltage	Rated cap. (µfd)	Maximum Dimensions (mm) W ±0.5	H ±0.5	L ±0.5	d ±0.5	S ±0.5	Ordering code	Packing units Bulk
250	1.0	6.2	14.0	27.0	0.8	22.5	02 105 + 2E1B	400
V DC	1.8	8.2	17.3	27.0	0.8	22.5	02 185 + 2E1B	400
	2.2	8.5	19.0	27.0	0.8	22.5	02 225 + 2E1B	400
	3.3	11.4	20.4	27.0	0.8	22.5	02 335 + 2E1B	400
250	1.0	6.1	13.7	31.0	0.8	27.5	46 105 + SW1A	400
V AC	1.2	6.5	15.0	31.0	0.8	27.5	46 125 + SW1A	250
	1.5	7.0	16.0	31.0	0.8	27.5	46 155 + SW1A	250
	2.2	6.8	20.2	31.0	0.8	27.5	46 225 + SW1A	250
	2.5	8.1	22.0	31.0	0.8	27.5	46 255 + SW1A	250
	2.7	8.2	22.1	31.0	0.8	27.5	46 275 + SW1A	250
	3.3	9.2	22.6	31.0	0.8	27.5	46 335 + SW1A	250
	3.5	9.4	23.1	31.0	0.8	27.5	46 355 + SW1A	250
	3.7	10.0	23.5	31.0	0.8	27.5	46 375 + SW1A	250
	3.9	10.1	23.8	31.0	0.8	27.5	46 395 + SW1A	250

Loaded at 1.1 times of rated v

	4.3	11.0	24.5	31.0	0.8	27.5	46 435 + SW1A	250
250	2.2	9.0	18.0	31.0	0.8	27.5	46 225 + SW1B	250
V AC	2.5	10.0	18.0	31.0	0.8	27.5	46 255 + SW1B	250
	2.7	10.5	19.0	31.0	0.8	27.5	46 275 + SW1B	250
	3.3	11.0	20.0	31.0	0.8	27.5	46 335 + SW1B	250
	3.5	11.0	21.0	31.0	0.8	27.5	46 355 + SW1B	250
	3.7	13.0	20.0	31.0	0.8	27.5	46 375 + SW1B	250
	3.9	13.0	20.0	31.0	0.8	27.5	46 395 + SW1B	250
	4.3	13.0	22.0	31.0	0.8	27.5	46 435 + SW1B	250

METALLISED POLYESTER FILM CAPACITORS Socket type

MAIN APPLICATION: Mainly used in switch type fan regulators

CONSTRUCTION (DIP TYPE): Low inductive cell of metallised polyester film coated with flame retardant grade epoxy powder

CLIMATIC CATEGORY: 40/85/21

CAPACITANCE VALUE, RATED VOLTAGE (DC): Refer dimension chart

CAPACITANCE TOLERANCE: ±5%, ±10%

VOLTAGE PROOF: 1.6*Ur for 2 seconds between the terminals

TAN d (DISSIPATION FACTOR): 0.8% (max) at 1 kHz

INSULATION RESISTANCE

Minimum insulation resistance R measured at 100 V DC for $_{IS}$ 1 minute.

Or, time constant ? = C × R > 2500 s at 25° C, relative

$_{R}$ $_{IS}$

humidity ≤70%

LIFE TEST CONDITIONS a) Endurance Test:

for 500 hours.

After the test:

Δc/c: ≤ 5% of initial value

Change in Tan d: ≤ 0.004 of initial value

Insulation resistance: ≥ 50% of the value specified in data sheet

b) Switching test: > 20,000 cycles of 4 step / 5 step switch type

fan regulator

Input supply: 240 VAC Load: Fan

Motor ***After the test:***

Δc/c: ≤ 5% of initial value

Change in Tan d: ≤ 0.004 of initial value

Insulation resistance: ≥ 50% of the value specified in data sheet

c) Lot to lot testing: Loaded at 450 V AC at ambient temperature

for 2 hours

After the test:

Δc/c: ≤10% of initial value

Change in Tan δ: ≤ 0.004 of initial value

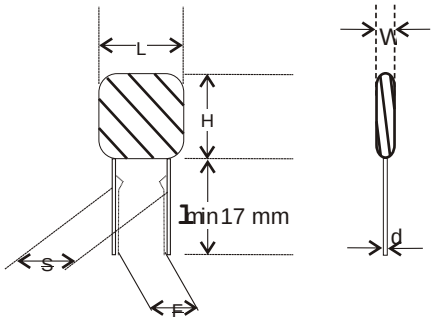
Ordering codes and packaging units

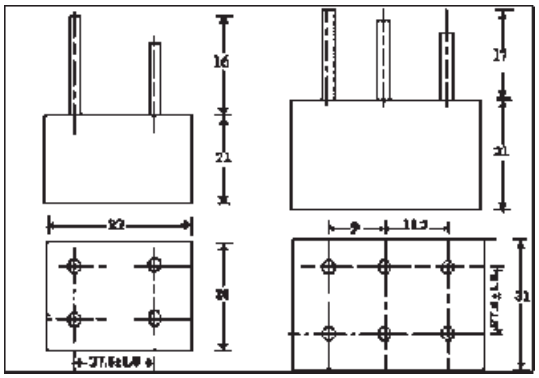
Rated Voltage	Rated cap. (µfd)	Maximum Dimensions (mm) W ±0.5	H ±0.5	L ±0.5	d ±0.5	S ±0.5	Ordering code	Packing units Bulk
250 V AC	1.0	6.2	16.0	31.0	0.8	27.5	02 105 +02*^	250
MPET	1.2	8.0	18.0	31.0	0.8	27.5	02 125 +02*^	250
Series	1.5	10.0	18.0	31.0	0.8	27.5	02 155 +02*^	250

Loaded at 1.1 times of rated voltage at 70° C

	2.2	10.3	19.6	31.0	0.8	27.5	02 225 +02*^	250
	2.4	11.3	20.8	31.0	0.8	27.5	02 245 +02*^	250
	2.7	11.8	21.5	31.0	0.8	27.5	02 275 +02*^	250
	3.3	13.7	21.2	31.0	0.8	27.5	02 335 +02*^	250
	3.5	13.8	22.7	31.0	0.8	27.5	02 355 +02*^	250

EPOXY COATED TYPE:





CAPACITOR PACK
2 Capacitor pack (MPP): Capacitance Value: 2.2, 3.1 µF
Rated Voltage: 220 V AC, Tolerance: +10%

3 Capacitor pack (MPP): Capacitance Value: 1.0, 2.2, 3.1 µF
Rated Voltage: 220 V AC, Tolerance: +10%

METALLISED POLYPROPYLENE FILM CAPACITORS Socket type

MAIN APPLICATION: Mainly used in switch type fan regulators

CONSTRUCTION (DIP TYPE): Low inductive cell of metallised polyester film coated with flame retardant grade epoxy powder

CLIMATIC CATEGORY: 40/85/21

CAPACITANCE VALUE, RATED VOLTAGE (DC): Refer dimension chart

CAPACITANCE TOLERANCE: ±5%, ±10%

VOLTAGE PROOF: 1.6*Ur for 2 seconds between the terminals

TAN d (DISSIPATION FACTOR): 0.1% (max) at 1 kHz

INSULATION RESISTANCE
Minimum insulation resistance R measured at 100 V DC for $_{IS}$
1 minute
Or, time constant ? = C × R > 2500 s at 25° C, relative
$_{R}$ $_{IS}$
humidity ≤70%
LIFE TEST CONDITIONS a) Endurance Test:
for 500 hours.
After the test:
∆***c/c:*** ≤ 5% of initial value
Change in Tan d: ≤ 0.004 of initial value
Insulation resistance: ≥ 50% of the value specified in

data sheet **b) Switching test:** > 20,000 cycles of 4 step

/ 5 step switch type

fan regulator
Input supply: 240 VAC Load: Fan Motor ***After the test:***
∆***c/c:*** ≤ 5% of initial value
Change in Tan d: ≤ 0.004 of initial value
Insulation resistance: ≥ 50% of the value specified in data sheet

Loaded at 1.1 times of ra

c) Lot to lot testing: Loaded at 540 V AC at ambient temperature for 2 hours

After the test:

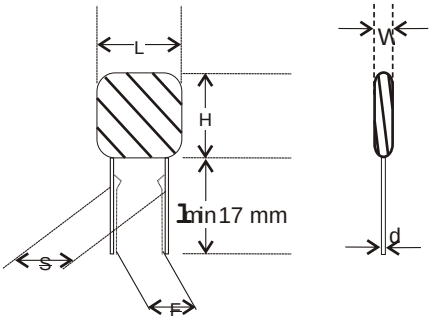
$\Delta c/c$: ≤10% of initial value

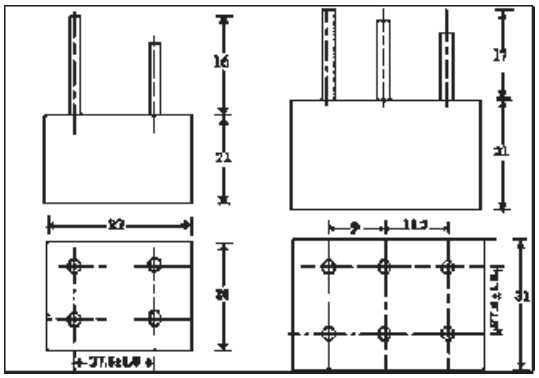
Change in Tan δ: ≤ 0.004 of initial value

Ordering codes and packaging units

Rated Voltage	Rated cap. (µfd)	Maximum Dimensions (mm) W ±0.5	H ±0.5	L ±0.5	d ±0.5	S ±0.5	Ordering code	Packing units Bulk
250	1.0	8.0	17.0	31.0	0.8	27.5	04 105 + 02 *^	200
V AC	1.5	9.0	18.0	31.0	0.8	27.5	04 155 + 02 *^	200
MPP	1.6	10.0	19.0	31.0	0.8	27.5	04 165 + 02 *^	200
	2.2	12.0	20.0	31.0	0.8	27.5	04 225 + 02 *^	200
	2.5	13.0	21.0	31.0	0.8	27.5	04 255 + 02 *^	200
	2.7	14.0	22.0	31.0	0.8	27.5	04 275 + 02 *^	200
	3.2	15.0	23.0	31.0	0.8	27.5	04 325 + 02 *^	200
	3.3	15.0	23.0	31.0	0.8	27.5	04 335 + 02 *^	200
250	2.5	8.0	23.0	31.0	0.8	27.5	64 255 + 02 *^	200
V AC	4.2	13.0	24.0	31.0	0.8	27.5	64 425 + 02 *^	200

EPOXY COATED TYPE:





CAPACITOR PACK

2 Capacitor pack (MPP): Capacitance Value: 2.2, 3.1 µF
Rated Voltage: 220 V AC, Tolerance: +10%

3 Capacitor pack (MPP): Capacitance Value: 1.0, 2.2, 3.1 µF
Rated Voltage: 220 V AC, Tolerance: +10%

METALLISED SAFETY POLYESTER FILM CAPACITORS Ultima safety type

MAIN APPLICATION: Mainly used in switch/socket type fan regulators where no fire/explosion is allowed

CONSTRUCTION (DIP TYPE): Low inductive cell of metallised polyester film coated with flame retardant grade epoxy powder

CLIMATIC CATEGORY: 40/85/21

CAPACITANCE VALUE, RATED VOLTAGE (DC): Refer dimension chart

CAPACITANCE TOLERANCE: ±5%, ±10%

VOLTAGE PROOF: 1.6*Ur for 2 seconds between the terminals

TAN d (DISSIPATION FACTOR): 0.8% (max) at 1 kHz

INSULATION RESISTANCE

Minimum insulation resistance R measured at 100 V DC for $_{IS}$ 1 minute.

Or, time constant ? = C × R > 2500 s at 25° C, relative

$_{R}$ $_{IS}$

humidity ≤70%

LIFE TEST CONDITIONS

a) Endurance Test: Loaded at 1.1 times of rated voltage at 70° C for 500 hours

After the test:

Δ***c/c:*** ≤ 10% of initial value

Change in Tan d: ≤ 0.004 of initial value

Insulation resistance: ≥ 50% of the value specified in data sheet

b) Switching test: > 20,000 cycles of 4 step / 5 step switch type fan regulator

Input supply: 240 V AC Load: Fan Motor ***After the test:***

Δ***c/c:*** ≤ 5% of initial value

Change in Tan d: ≤ 0.004 of initial value

Insulation resistance: ≥ 50% of the value specified in data sheet

c) Lot to lot testing: Loaded at 540 V AC at ambient temperature for 2 hours

After the test:

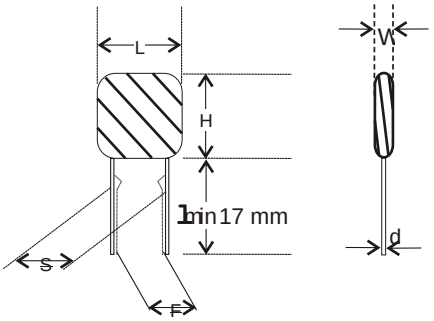
Δ***c/c:*** ≤10% of initial value

Change in Tan δ: ≤ 0.004 of initial value

Ordering codes and packaging units

Rated Voltage	Rated cap. (µfd)	Maximum Dimensions (mm) W ±0.5	H ±0.5	L ±0.5	d ±0.5	S ±0.5	Ordering code	Packing units Bulk
250	1.5	8.5	14.5	31	0.8	27.5	86 155 + 02 *^	250
V AC	1.6	9.0	15.0	31	0.8	27.5	86 165 + 02 *^	250
	2.0	7.5	21.0	31	0.8	27.5	86 205 + 02 *^	250
	2.2	8.5	19.0	31	0.8	27.5	86 225 + 02 *^	250
	2.5	11.0	17.0	31	0.8	27.5	86 255 + 02 *^	250
	2.6	11.0	17.0	31	0.8	27.5	86 265 + 02 *^	250

2.7	10.0	19.0	31	0.8	27.5	86 275 + 02 *^	250
3.2	11.0	19.0	31	0.8	27.5	86 325 + 02 *^	250
3.3	11.0	20.0	31	0.8	27.5	86 335 + 02 *^	250
4.0	13.0	21.5	31	0.8	27.5	86 405 + 02 *^	250
4.3	12.0	22.0	31	0.8	27.5	86 435 + 02 *^	250



METALLISED SAFETY FILM CAPACITORS Optima safety type

MAIN APPLICATION: Mainly used in switch/socket type fan regulators where no fire/explosion is allowed

CONSTRUCTION (DIP TYPE): Low inductive cell of mixed dielectric with flame retardant grade epoxy resin

CLIMATIC CATEGORY: 40/85/21

CAPACITANCE VALUE, RATED VOLTAGE (DC): Refer dimension chart

CAPACITANCE TOLERANCE: ±5%, ±10%

VOLTAGE PROOF: 1.6*Ur for 2 seconds between the terminals.

TAN d (DISSIPATION FACTOR): 0.5% (max) at 1 kHz

INSULATION RESISTANCE

Minimum insulation resistance R measured at 100 V DC for $_{IS}$ 1 minute.

Or, time constant ? = C × R > 2500 s at 25° C, relative

$_{R}$ $_{IS}$

humidity ≤70%

LIFE TEST CONDITIONS

a) Endurance Test: Loaded at 1.1 times of rated voltage at 70° C for 500 hours.

After the test:

Δ***c/c:*** ≤ 10% of initial value

Change in Tan d: ≤ 0.004 of initial value

Insulation resistance: ≥ 50% of the value specified in

data sheet **b) Switching test:** > 20,000 cycles of 4 step

/ 5 step switch type

fan regulator

Input supply: 240 V AC Load: Fan Motor ***After the test:***

Δ***c/c:*** ≤ 5% of initial value

Change in Tan d: ≤ 0.004 of initial value

Insulation resistance: ≥ 50% of the value specified in data sheet

c) Lot to lot testing: Loaded at 540 V AC at ambient temperature

for 2 hours

After the test:

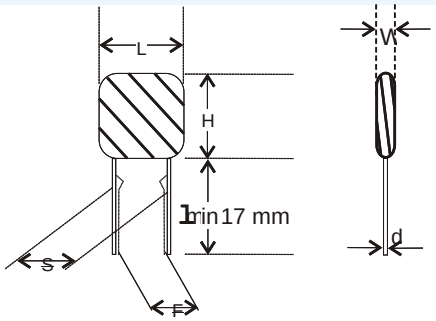
Δ***c/c:*** ≤10% of initial value

Change in Tan δ: ≤ 0.004 of initial value

Ordering codes and packaging units

Rated Voltage	Rated cap. (µfd)	Maximum Dimensions (mm) W ±0.5	H ±0.5	L ±0.5	d ±0.5	S ±0.5	Ordering code	Packing units Bulk
250	1.0	8	17.0	31	0.8	27.5	69 105 + 02 *^	250
V AC	2.2	11	22.5	31	0.8	27.5	69 225 + 02 *^	250

	3.3	12	21.0	31	0.8	27.5	69 335 + 02 *^	250
	3.7	13	21.0	31	0.8	27.5	69 375 + 02 *^	250



METALLISED SAFETY POLYPROPYLENE FILM CAPACITORS Ultima safety type

MAIN APPLICATION: Mainly used in switch/socket type fan regulators where no fire/explosion is desired

CONSTRUCTION (DIP TYPE): Low inductive cell of metallised
polypropylene film coated with flame retardant grade epoxy powder

CLIMATIC CATEGORY: 40/85/21

CAPACITANCE VALUE, RATED VOLTAGE (DC): Refer dimension chart

CAPACITANCE TOLERANCE: ±5%, ±10%

VOLTAGE PROOF: 1.6*Ur for 2 seconds between the terminals.

TAN d (DISSIPATION FACTOR): 0.1% (max) at 1 kHz

INSULATION RESISTANCE
Minimum insulation resistance R measured at 100 V DC for $_{IS}$ 1 minute.
Or, time constant ? = C × R > 2500 s at 25° C, relative
$_{R}$ $_{IS}$
humidity ≤70%

LIFE TEST CONDITIONS
a) Endurance Test: Loaded at 1.1 times of rated voltage at 70° C for 500 hours.
After the test:
Δ***c/c:*** ≤ 10% of initial value
Change in Tan d: ≤ 0.002 of initial value
Insulation resistance: ≥ 50% of the value specified in data sheet

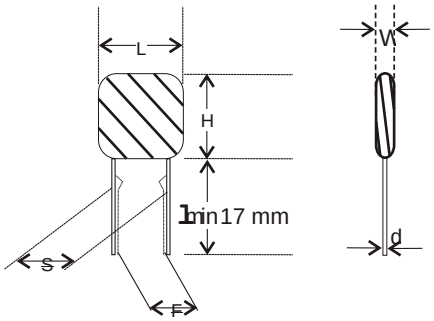
b) Switching test: > 20,000 cycles of 4 step / 5 step switch type
fan regulator
Input supply: 240 V AC Load: Fan
Motor ***After the test:***
Δ***c/c:*** ≤ 5% of initial value
Change in Tan d: ≤ 0.002 of initial value
Insulation resistance: ≥ 50% of the value specified in data sheet

c) Lot to lot testing: Loaded at 540 V AC at ambient temperature
for 2 hours
After the test:
Δ***c/c:*** ≤10% of initial value
Change in Tan δ: ≤ 0.002 of initial value

Ordering codes and packaging units

Rated Voltage	Rated cap. (µfd)	Maximum Dimensions (mm) W ±0.5	H ±0.5	L ±0.5	d ±0.5	S ±0.5	Ordering code	Packing units Bulk
250	1.0	8.0	17.0	31	0.8	27.5	74105 + 02 *^	250
V AC	1.5	10.0	19.0	31	0.8	27.5	74 155 + 02 *^	250
	2.2	11.5	21.0	31	0.8	27.5	74 225 + 02 *^	250
	2.5	14.0	21.0	31	0.8	27.5	74 255 + 02 *^	250
	3.1	14.0	24.0	31	0.8	27.5	74 315 + 02 *^	250

	3.3	14.0	24.0	31	0.8	27.5	74 335 + 02 *^	250
	2.2	9.0	21.0	31	0.8	27.5	44 225 + 02 *^	250
	3.3	14.0	21.0	31	0.8	27.5	44 335 + 02 *^	250
	3.3	11.5	20.5	31	0.8	27.5	84 335 + 02 *^	250



AC METALLISED POLYPROPYLENE FILM CAPACITORS MPP AC Applications

MAIN APPLICATION: This series is specially designed for energy meter applications, voltage dropper, capacitive power supply, etc

CONSTRUCTION (DIP TYPE): Low inductive wound cell of metallised polypropylene film coated with flame retardant epoxy resin or encased in flame retardant box UL 94 V0 with epoxy resin

CLIMATIC CATEGORY: 40/100/56
Between 85°C and 100°C, a voltage derating of 1.25% per °C on the rated voltage has to be applied

APPLICABLE SPECIFICATION: IEC 384-16
CAPACITANCE VALUE RATED VOLTAGE (AC): Refer dimension chart **CAPACITANCE TOLERANCE:** ±5%

VOLTAGE PROOF: Between terminals: 1250 V DC for 2 seconds

INSULATION RESISTANCE
Minimum Insulation Resistance R_{IS} $C_R \leq 0.33$ µF C_R 0.33> µF (or) time constant ? = C × R_{RIS} > 100000 MO > 30000 s at 20° C, relative humidity ≤ 70%

TAN δ (DISSIPATION FACTOR) AT 20° C

Frequency (kHz)	$C_R \leq 0.1$ µF	0.1 µF ≤ $C_R \leq 1$ µF
At 1	0.05%	0.05%
At 10	0.1%	0.08%

DAMP HEAT TEST (Steady state)
Temperature: +40°C ± 2°C
Relative humidity: 93 ± 2% RH
Duration: 1000 hours

Criteria after the test:
∆c/c: ≤ 10% of initial value
Increase in Tan d: ≥ 0.002, C >1µF$_R$
Insulation resistance: ≥ 50% of the value mentioned in IR chart

LIFE TEST CONDITIONS (Loading at elevated temperature) Loaded at 1.25 times of rated voltage at 85° C for 1000 hours ***Criteria after the test:***
∆c/c: ≤ 10% of initial value
Increase in Tan δ: ≥ 0.002, C >1µF$_R$
Insulation resistance: ≥ 50% of the value mentioned in IR chart

APPROVALS: Capacitors are tested as per IEC 384-17

440 V AC	0.10	7.0	13.0	19.0	0.8	15.0	15.0	720	17 104 +06*^	500
	0.15	8.0	14.0	19.0	0.8	15.0	15.0	720	17 154 +06*^	500
	0.22	9.0	16.0	19.0	0.8	15.0	15.0	720	17 224 +06*^	500
	0.27	10.0	16.0	19.0	0.8	15.0	15.0	720	17 274 +06*^	500

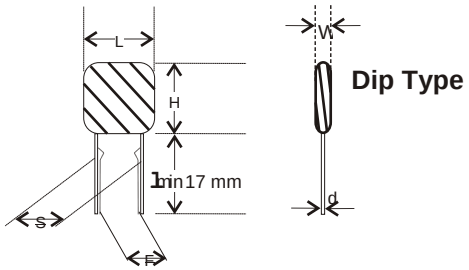
	0.33	10.0	18.0	19.0	0.8	15.0	15.0	720	17 334 +06*^	500
440 V AC	0.15	6.0	13.0	26.0	0.8	22.5	22.5	240	17 154 +06*^	500
	0.22	7.0	14.0	26.0	0.8	22.5	22.5	240	17 224 +06*^	500
	0.27	8.0	14.0	26.0	0.8	22.5	22.5	240	17 274 +06*^	500
	0.33	9.0	15.0	26.0	0.8	22.5	22.5	240	17 334 +06*^	500
	0.39	9.0	16.0	26.0	0.8	22.5	22.5	240	17 394 +06*^	500
	0.41	9.0	17.0	26.0	0.8	22.5	22.5	240	17 414 +06*^	500
	0.47	10.0	17.0	26.0	0.8	22.5	22.5	240	17 474 +06*^	500
	0.56	10.0	18.0	26.0	0.8	22.5	22.5	240	17 564 +06*^	500
	0.68	11.0	20.0	26.0	0.8	22.5	22.5	240	17 684 +06*^	500
	0.82	12.0	21.0	26.0	0.8	22.5	22.5	240	17 824 +06*^	500
	1.00	13.0	23.0	26.0	0.8	22.5	22.5	240	17 105 +06*^	500
440 V AC	0.1	6.0	12.0	18.0	0.8	15.0	15.0	720	22 104 +06*^	500
	0.15	7.5	13.5	18.0	0.8	15.0	15.0	720	22 154 +06*^	500
	0.22	8.5	14.5	18.0	0.8	15.0	15.0	720	22 224 +06*^	500
	0.27	10.0	16.0	18.0	0.8	15.0	15.0	720	22 274 +06*^	500
	0.33	10.0	16.0	18.0	0.8	15.0	15.0	720	22 334 +06*^	500
440 V AC	0.15	6.0	15.0	26.5	0.8	22.5	22.5	240	22 154 +06*^	500
	0.22	6.0	15.0	26.5	0.8	22.5	22.5	240	22 224 +06*^	500
	0.27	7.0	16.0	26.5	0.8	22.5	22.5	240	22 274 +06*^	500
	0.33	8.5	17.0	26.5	0.8	22.5	22.5	240	22 334 +06*^	500
	0.39	8.5	17.0	26.5	0.8	22.5	22.5	240	22 394 +06*^	500
	0.41	8.5	17.0	26.5	0.8	22.5	22.5	240	22 414 +06*^	500
	0.47	10.0	18.5	26.5	0.8	22.5	22.5	240	22 474 +06*^	500
	0.56	10.0	18.5	26.5	0.8	22.5	22.5	240	22 564 +06*^	500
	0.68	10.0	18.5	26.5	0.8	22.5	22.5	240	22 684 +06*^	500
	0.82	11.0	20.0	26.5	0.8	22.5	22.5	240	22 824 +06*^	500
	1.00	12.0	22.0	26.5	0.8	22.5	22.5	240	22 105 +06*^	500

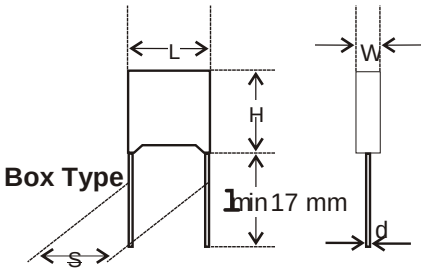
Rated Voltage	Rated Cap. (µF)	Dimensions(mm) W	H	L	d	S	DV/DT	Wt.	Ordering	Packing units

Ordering codes and packaging units

Dip Type

Box Type





CAPACITORS WITH HIGH CAPACITANCE STABILITY DESIGNED FOR AC APPLICATIONS MPET AC

MAIN APPLICATION: This series is specially designed for energy meter applications, voltage dropper, capacitive power supply, etc for long stability of capacitance value

CONSTRUCTION: Series constructed metallized polyester film and normal metallized polyester film as internal electrodes which are protected with solvent resistant and flame retardant epoxy resin

CLIMATIC CATEGORY: 55/100/56 as per IEC 60068-1

OPERATING TEMPERATURE RANGE: -55°C to 100°C

RELATED STANDARD: IEC 384-2 **ELECTRICAL CHARACTERISTICS:** Rated Voltage - 310 V AC

TEMPERATURE DERATING: For temperatures between +85°C and +100°C a decreasing factor of 1.25% per degree Celsius on the rated voltage is applied

CAPACITANCE TOLERANCE: ±5%, ±10%, ±20% **VOLTAGE PROOF BETWEEN TERMINALS (DC):** 800 V DC for 1 min

INSULATION RESISTANCE:
Test conditions:
Temperature: +25°C ±2°C Voltage applied:
100V DC for 1min.

Criteria after the test:

For C ≤ 0.33µf, I_R ≥ 30000MO
For C > 0.33µf, t ≥ 10000S (t=I × C_R)
Tanδ at +25°C ±2°C: *Frequency*

kHz	C<1 µf	C>1 µf
1	0.01	0.01
10	0.015	0.03

DAMP HEAT TEST (Steady state): ***Test***

Temperature	+40°C ± 2°C
Relative humidity	93 ± 2% RH
Duration	1000 hours

Test 2:

Temperature	+40°C ± 2°C
Voltage	250 V AC
Relative humidity	93 ± 2% RH
Duration	1000 hours

Criteria after the test:

Capacitance change (?C/C)	≤5%
?Tan δ :	≤0.005 at 1kHz
Insulation resistance	≥50% of initial limit

LIFE TEST:

Test conditions	
Temperature	+85°C ±2°C
Voltage applied	1.25 * U ~r
Duration	1000 hours

Criteria after the test:

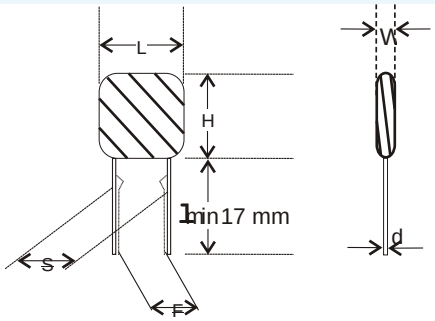
Capacitance change (?C/C):	≤8%
?Tan δ	≤0.003 at 1kHz
Insulation resistance	≥50% of initial limit

1:

Ordering codes and packaging units

Rated Voltage	Rated Cap. (µF)	Dimensions(mm) W ±0.5	H ±0.5	L ±0.5	d ±0.05	S ±0.5	DV/DT V/µs	Ordering code	Packing uni Bulk
325 V AC	0.18	6.5	12.0	25	0.8	22.5	200	24 184 +A5*^	500
	0.22	7.0	12.5	25	0.8	22.5	200	24 224 + A5*^	500
	0.27	7.5	13.0	25	0.8	22.5	200	24 274 + A5*^	500
	0.33	7.5	14.5	25	0.8	22.5	200	24 334 + A5*^	500
	0.39	8.0	15.0	25	0.8	22.5	200	24 394 + A5*^	500
	0.41	8.5	15.5	25	0.8	22.5	200	24 414 + A5*^	500

	0.47	9.0	16.0	25	0.8	22.5	200	24 474 + A5*^	500
	0.56	9.5	16.5	25	0.8	22.5	200	24 564 + A5*^	500
	0.68	10.5	17.5	25	0.8	22.5	200	24 684 + A5*^	500
	1.00	12.5	19.5	25	0.8	22.5	200	24 684 + A5*^	500



Metallised Polypropylene DC Link Capacitors

MAIN APPLICATION: High performance DC filtering applications**CLIMATIC CATEGORY:** 40/85/56

MARKING: C-value; tolerance; rated voltage; code for dielectric **MAXIMUM APPLICATION TEMPERATURE:** 85 °C material; manufacturer symbol

MAXIMUM OPERATING TEMPERATURE (CASE): 100 °C

ELECTRODES: Metallised polypropylene film

TEST VOLTAGE BETWEEN TERMINALS: 1.5 Vr for 10s

ENCAPSULATION: Flame retardant plastic case (UL-class 94 V-0)

INSULATION

RESISTANCE: and epoxy resin

CONSTRUCTION: Low inductive wound cell elements of metallised polypropylene film, potted with resin in a flame
retardant case UL 94 V-0

RC between leads, after 1 min > 10000 s

For Vr ≤ 500 V measuring voltage 100 V
For Vr > 500 V measuring voltage 500 V

TERMINALS: Tinned wire

SELF INDUCTANCE (Ls): < 1 nH per mm of lead spacing

CAPACITANCE RANGE: 1µF to 100 µF

REFERENCE SPECIFICATIONS: IEC 61071

CAPACITANCE TOLERANCE: ± 5%

RATED (DC) VOLTAGE:

Vr @ 85°C	450V	700V	800V	900V	1100V	1200V
Vop @ 70°C	500V	800V	900V	1100V	1350V	1500V
Vop @100°C	300V	500V	570V	650V	800V	850V

Specific Reference Data 450 V DC

2	9.0	19.0	32.0	27.5	-	0.8	75	150	3.0	-	34.5	-	10	-	85	-	91 205+045*^
3	11.0	21.0	32.0	27.5	-	0.8	75	225	4.0	-	23.0	-	10	-	85	-	91 305+045*^
4	11.0	21.0	32.0	27.5	-	0.8	75	300	4.0	-	20.5	-	10	-	85	-	91 405+045*^

5	13.0	23.0	32.0	27.5	-	0.8	75	375	5.0	-	16.5	-	10	-	85	-	91 505+045*^
6	15.0	25.0	32.0	27.5	-	0.8	75	450	6.0	-	13.5	-	10	-	85	-	91 605+045*^
7	15.0	25.0	32.0	27.5	-	0.8	75	525	6.5	-	11.5	-	10	-	85	-	91 705+045*^
8	18.0	28.0	32.0	27.5	-	0.8	75	600	8.5	-	8.5	-	10	-	85	-	91 805+045*^
9	18.0	28.0	32.0	27.5	-	0.8	75	675	8.5	-	9.0	-	10	-	85	-	91 905+045*^
10	18.0	28.0	32.0	27.5	-	0.8	75	750	9.0	-	8.0	-	10	-	85	-	91 106+045*^
12	21.0	31.0	32.0	27.5	-	0.8	75	900	10.0	-	7.0	-	10	-	85	-	91 126+045*^
15	20.0	35.0	32.0	27.5	-	0.8	75	1125	11.5	-	6.0	-	10	-	85	-	91 156+045*^
10	18.5	35.5	43.0	37.5	10.2	1.0	40	400	7.5	8.0	13.5	12.0	18	16	160	140	91 106+045*^
12	18.5	35.5	43.0	37.5	10.2	1.0	40	480	8.0	8.5	11.5	10.0	18	16	160	140	91 126+045*^
15	18.5	35.5	43.0	37.5	10.2	1.0	40	600	9.0	10.0	9.0	8.0	18	16	160	140	91 156+045*^
20	21.5	38.5	43.0	37.5	10.2	1.0	40	800	11.0	12.0	7.0	6.0	18	16	160	140	91 206+045*^
22	21.5	38.5	43.0	37.5	10.2	1.0	40	880	11.0	11.5	7.5	6.5	18	16	160	140	91 226+045*^
25	21.5	38.5	43.0	37.5	10.2	1.0	40	1000	11.5	12.5	6.5	5.5	18	16	160	140	91 256+045*^
30	24.0	44.0	42.0	37.5	10.2	1.0	40	1200	13.5	15.0	5.5	4.5	18	16	160	140	91 306+045*^
35	30.0	45.0	42.0	37.5	10.2/ 20.3	1.0	40	1400	17.0	18.5	4.0	3.5	18	16	160	140	91 356+045*^
40	30.0	45.0	42.0	37.5	10.2/ 20.3	1.0	40	1600	17.0	18.5	4.0	3.5	18	16	160	140	91 406+045*^
40	25.0	45.0	57.5	52.5	10.2	1.2	20	800	13.0	13.5	6.5	6.0	35	30	310	280	91 406+045*^
45	25.0	45.0	57.5	52.5	10.2	1.2	20	900	12.5	13.5	7.0	6.0	35	30	310	280	91 456+045*^
50	30.0	45.0	57.5	52.5	20.3	1.2	20	1000	15.0	15.5	5.5	5.0	35	30	310	280	91 506+045*^
55	30.0	45.0	57.5	52.5	20.3	1.2	20	1100	15.0	15.5	5.5	5.0	35	30	310	280	91 556+045*^
60	30.0	45.0	57.5	52.5	20.3	1.2	20	1200	15.5	16.5	5.0	4.5	35	30	310	280	91 606+045*^
65	35.0	50.0	57.5	52.5	20.3	1.2	20	1300	19.0	20.5	4.0	3.5	35	30	310	280	91 656+045*^
70	35.0	50.0	57.5	52.5	20.3	1.2	20	1400	18.0	19.0	4.5	4.0	35	30	310	280	91 706+045*^
75	35.0	50.0	57.5	52.5	20.3	1.2	20	1500	19.0	20.5	4.0	3.5	35	30	310	280	91 756+045*^
80	35.0	50.0	57.5	52.5	20.3	1.2	20	1600	19.0	20.5	4.0	3.5	35	30	310	280	91 806+045*^
90	45.0	45.0	57.5	52.5	20.3	1.2	20	1800	-	21.5	-	3.0	-	30	-	280	91 906+045*^
95	45.0	45.0	57.5	52.5	20.3	1.2	20	1900	-	21.5	-	3.0	-	30	-	280	91 956+045*^

Vr,85 °C = 450 V DC, Vop,70 °C = 500 V DC,Vop,100 °C = 300 V DC

CAP	DIMENSIONS			P1	P2	? dt	dv/dt	Ipeak	IRMS(A), max@85°C, 10KHz		ESRtyp (m?), @ 10KHz		tanδ max@1 kHz < (10		tanδ max@10 kHz < (10		DEKI PART NO
µF	W	H	L	(mm)	(mm)	(mm)	V/µs	(A)	2 pins	4 pins	2 pins	4 pins	2 pins	4 pins	2 pins	4 pins	
1	9.0	19.0	32.0	27.5	-	0.8	75	75	2.5	-	540	-	10	-	85	-	91105+045*^
100	45.0	45.0	57.5	52.5	20.3	1.2	20	2000	-	23.5	-	2.5	-	30	-	280	91 107+045*^

Specific Reference Data 700 V DC

Vr,85 °C = 700 V DC, Vop,70 °C = 800 V DC,Vop,100 °C = 500 V DC

CAP	DIMENSIONS			P1	P2	? dt	dv/dt	Ipeak	IRMS(A), max@85°C, 10KHz		ESRtyp (m?), @ 10KHz		tanδ max@1 kHz < (10		tanδ max@10 kHz < (10		DEKI PART NO
µF	W	H	L	(mm)	(mm)	(mm)	V/µs	(A)	2 pins	4 pins	2 pins	4 pins	2 pins	4 pins	2 pins	4 pins	
1	9.0	19.0	32.0	27.5	-	0.8	75	75	2.5	-	54.0	-	8	-	68	-	91105+070*^
3	11.0	21.0	32.0	27.5	-	0.8	75	225	4.0	-	23.0	-	8	-	68	-	91 305+070*^
4	13.0	23.0	32.0	27.5	-	0.8	75	300	5.0	-	17.0	-	8	-	68	-	91 405+070*^
5	15.0	25.0	32.0	27.5	-	0.8	75	375	6.0	-	14.0	-	8	-	68	-	91 505+070*^
6	18.0	28.0	32.0	27.5	-	0.8	75	450	7.5	-	11.5	-	8	-	68	-	91 605+070*^
7	18.0	28.0	32.0	27.5	-	0.8	75	525	8.0	-	10.0	-	8	-	68	-	91 705+070*^
8	18.0	28.0	32.0	27.5	-	0.8	75	600	8.5	-	8	-	68	-	91 805+070*^		
9	21.0	31.0	32.0	27.5	-	0.8	75	675	10.0	-	7.5	-	8	-	68	-	91 905+070*^
10	21.0	31.0	32.0	27.5	-	0.8	75	750	10.0	-	7.0	-	8	-	68	-	91 106+070*^
12	20.0	35.0	32.0	27.5	-	0.8	75	900	11.5	-	6.0	-	8	-	68	-	91 126+070*^
10	18.5	35.5	43.0	37.5	10.2	1.0	40	400	7.5	8.0	13.5	12.0	15	13	135	120	91 156+070*^
12	18.5	35.5	43.0	37.5	10.2	1.0	40	480	8.0	8.5	11.5	10.0	15	13	135	120	91 106+070*^
15	18.5	35.5	43.0	37.5	10.2	1.0	40	600	9.0	10.0	9.0	8.0	15	13	135	120	91 126+070*^
20	21.5	38.5	43.0	37.5	10.2	1.0	40	800	11.0	12.0	7.0	6.0	15	13	135	120	91 156+070*^
22	24.0	44.0	42.0	37.5	10.2	1.0	40	880	13.0	13.5	6.0	5.5	15	13	135	120	91 206+070*^
25	24.0	44.0	42.0	37.5	10.2	1.0	40	1000	13.5	14.5	5.5	5.0	15	13	135	120	91 256+070*^
30	30.0	45.0	42.0	37.5	10.2/ 20.3	1.0	40	1200	16.0	17.0	4.5	4.0	15	13	135	120	91 306+070*^
35	30.0	45.0	42.0	37.5	10.2/ 20.3	1.0	40	1400	17.0	18.5	4.0	3.5	15	13	135	120	91 356+070*^
30	25.0	45.0	57.5	52.5	10.2	1.2	20	600	11.0	12.0	9.0	8.0	30	25	270	240	91 306+070*^
35	25.0	45.0	57.5	52.5	10.2	1.2	20	700	12.0	12.5	7.5	7.0	30	25	270	240	91 356+070*^
40	25.0	45.0	57.5	52.5	10.2	1.2	20	800	13.0	13.5	6.5	6.0	30	25	270	240	91 406+070*^
45	30.0	45.0	57.5	52.5	20.3	1.2	20	900	14.5	15.0	6.0	5.5	30	25	270	240	91 456+070*^
50	30.0	45.0	57.5	52.5	20.3	1.2	20	1000	15.0	15.5	5.5	5.0	30	25	270	240	91 506+070*^
55	35.0	50.0	57.5	52.5	20.3	1.2	20	1100	17.0	18.0	5.0	4.5	30	25	270	240	91 556+070*^
60	35.0	50.0	57.5	52.5	20.3	1.2	20	1200	18.0	19.0	4.5	4.0	30	25	270	240	91 606+070*^
65	35.0	50.0	57.5	52.5	20.3	1.2	20	1300	19.0	20.5	4.0	3.5	30	25	270	240	91 656+070*^
70	45.0	45.0	57.5	52.5	20.3	1.2	20	1400	-	20.0	-	3.5	-	25	-	240	91 706+070*^
75	45.0	45.0	57.5	52.5	20.3	1.2	20	1500	-	21.5	-	3.0	-	25	-	240	91 756+070*^
80	45.0	45.0	57.5	52.5	20.3	1.2	20	1600	-	21.5	-	3.0	-	25	-	240	91 806+070*^

Specific Reference Data 800 V DC

DEKI Film Capacitor Solutions

Vr,85 °C = 800 V DC, Vop,70 °C = 900 V DC,Vop,100 °C = 570 V DC

1 9.0 19.0 32.0 27.5 - 0.875 75 2.0 - 62.5 - 7 - 60 -

2 11.0 21.0 32.0 27.5 - 0.875 150 3.5 - 31.0 - 7 - 60 -

3 13.0 23.0 32.0 27.5 - 0.875 225 4.5 - 21.0 - 7 - 60 -

4 18.0 28.0 32 27.5 - 0.8 80 320 6.0 - 16 - 7

5 21.0 31.0 32 27.5 - 0.8 80 400 7.5 - 13 - 7

5 18.0 28.0 32.0 27.5 - 0.875 375 7.0 - 12.5 - 7 - 60 -

6 21.0 31.0 32 27.5 - 0.8 80 480 8.5 - 10 - 7

7 20.0 35.0 32 27.5 - 0.8 80 560 9.0 - 9 - 7

7 21.0 31.0 32.0 27.5 - 0.875 525 9.0 - 9.0 - 7 - 60 -

5 18.5 35.5 43 37.5 10.2 1.0 20 100 6.0 6.5 21 19 12

6 18.5 35.5 43 37.5 10.2 1.0 40 240 6.5 7.0 18 16 12

9 20.0 35.0 32.0 27.5 - 0.875 675 10.0 - 8.0 - 7 - 60 -

7 18.5 35.5 43 37.5 10.2 1.0 40 280 6.5 7.0 18 16 12

8 18.5 35.5 43 37.5 10.2 1.0 40 320 7.0 7.5 16 14 12

12 18.5 35.5 43.0 37.5 10.2 1.0 40 480 8.5 9.0 10.5 9.0 14 12 122 110

9 18.5 35.5 43 37.5 10.2 1.0 40 360 7.5 8.0 14 12 12

10 21.5 38.5 43 37.5 10.2 1.0 40 400 8.5 9.0 12 11 12

20 24.0 44.0 42.0 37.5 10.2 1.0 40 800 14.5 15.5 5.5 5.0 14 12 122 110 91 226+080*^ 13.5 6.0 5.5 14 12 122 110

12 21.5 38.5 43 37.5 10.2 1.0 10.0 10 9 12

15 24.0 44.0 42 37.5 10.2 1.0 40 600 11.0 12.0 8 7 12

25 30.0 45.0 42.0 37.5 10.2 / 20.3 1.0 40 1000 15.5 16.0 5.0 4.5 14 12 122 110

16 24.0 44.0 42 37.5 10.2 1.0 40 640 11.0 12.0 8 7 12

20 30.0 45.0 42 37.5 10.2 1.0 40 800 14.0 15.5 6 5 12

35 30.0 45.0 57.5 52.5 20.3 1.2 10 350 13.0 14.5 7.0 6.0 25 22 240 215

20.3

15 25.0 45.0 57.5 52.5 10.2 1.2 20 300 9.5 10.0 12 11 25 20 200 185 91 206+090*^ 9.5 14 12 25

45 35.0 50.0 57.5 52.5 20.3 1.2 10 450 16.0 10.0 10.5 11 10 25 20 200 185 91 226+090*^ 5.0 25 22 240 215

50 35.0 50.0 57.5 52.5 20.3 1.2 10 500 17.0 18.0 5.0 4.5 25 22 240 215

25 30.0 45.0 57.5 52.5 20.3 1.2 20 500 11.0 11.5 10 9 25

55 45.0 45.0 57.5 52.5 20.3 1.2 10 550 - 18.5 - 4.0 - 22 - 215

30 30.0 45.0 57.5 52.5 20.3 1.2 20 600 12.5 13.0 8 7 25

35 35.0 50.0 57.5 52.5 20.3 1.2 20 700 14.5 15.5 7 6 25

5 25

5 -

-

CAP	DIMENSIONS			P1	P2	? dt	dv/dt	Ipeak	IRMS(A), max@85°C, 10KHz		ESRtyp (m?), @ 10KHz		tanδ max@1 kHz < (10⁴)		tanδ max@10 kHz < (10⁴)		DEKI PART NO
μF	W	H	L	(mm)	(mm)	(mm)	V/μs	(A)	2	4	2	4	2	4	2	4	

Vr,85°C =

Specific Reference Data 1100 V DC

1100 V DC, Vop,70 °C = 1350 V DC,Vop,100 °C = 800 V

10K
2
pins

1	11.0	21.0	32.0	27.5	-	0.8	95	95	3.0	-	45.5	-	6
2	15.0	25.0	32.0	27.5	-	0.8	95	190	4.5	-	23.0	-	6
3	18.0	28.0	32.0	27.5	-	0.8	95	285	6.0	-	15.5	-	6
4	21.0	31.0	32.0	27.5	-	0.8	95	380	8.0	-	11.5	-	6
5	20.0	35.0	32.0	27.5	-	0.8	95	475	9.0	-	9.5	-	6
5	18.5	35.5	43.0	37.5	10.2	1.0	45	225	6.5	7.0	18.0	16.0	10
6	18.5	35.5	43.0	37.5	10.2	1.0	45	270	7.0	7.5	15.0	13.5	10
7	21.5	38.5	43.0	37.5	10.2	1.0	45	315	8.0	8.5	13.0	11.5	10
8	21.5	38.5	43.0	37.5	10.2	1.0	45	360	9.0	9.5	11.0	10.0	10
9	24.0	44.0	42.0	37.5	10.2	1.0	45	405	10.0	10.5	10.0	9.0	10
10	24.0	44.0	42.0	37.5	10.2	1.0	45	450	10.5	11.0	9.0	8.0	10
12	30.0	45.0	42.0	37.5	10.2/								
					20.3	1.0	45	540		13.5	7.5	6.5	10

8.0	8.5	18.0	16.0	20	17.0	175	155	91 106+110*^
8.5	9.0	15.0	13.0	20	17.0	175	155	91 126+110*^

15	25.0	45.0	57.5	52.5	10.2	1.2	23	345	9.5	10.5	12.0	10.5	20
20	30.0	45.0	57.5	52.5	20.3	1.2	23	460	11.5	12.5	9.0	8.0	20
22	35.0	50.0	57.5	52.5	20.3	1.2	23	506	13.5	14.5	8.0	7.0	20
25	35.0	50.0	57.5	52.5	20.3	1.2	23	575	14.5	15.0	7.0	6.5	20
30	45.0	45.0	57.5	52.5	20.3	1.2	23	690	-	16.5	-	5.0	-

CAP	DIMENSIONS			P1	P2	? dt	dv/dt	Ipeak	IRMS(A), max@85°C, 10KHz		ESRtyp (m?), @ 10KHz		tanδ max@1 kHz < (10⁴)		tanδ max@10 kHz < (10⁴)		DEKI PART NO
μF	W	H	L	(mm)	(mm)	(mm)	V/μs	(A)	2 pins	4 pins	2 pins	4 pins	2 pins	4 pins	2 pins	4 pins	
1	9.0	19.0	32	27.5	-	0.8	40	40	2.0	-	63	-	7	-	50	-	91 105+090*^
2	13.0	23.0	32	27.5	-	0.8	80	160	3.5	-	32	-	7	-	50	-	91 205+090*^
3	15.0	25.0	32	27.5	-	0.8	80	240	5.0	-	21	-	7	-	50	-	91 305+090*^

Specific Reference Data 900 V DC Vr,85 °C = 900 V DC,
Vop,70 °C = 1100 V DC,Vop,100 °C = 650 V DC

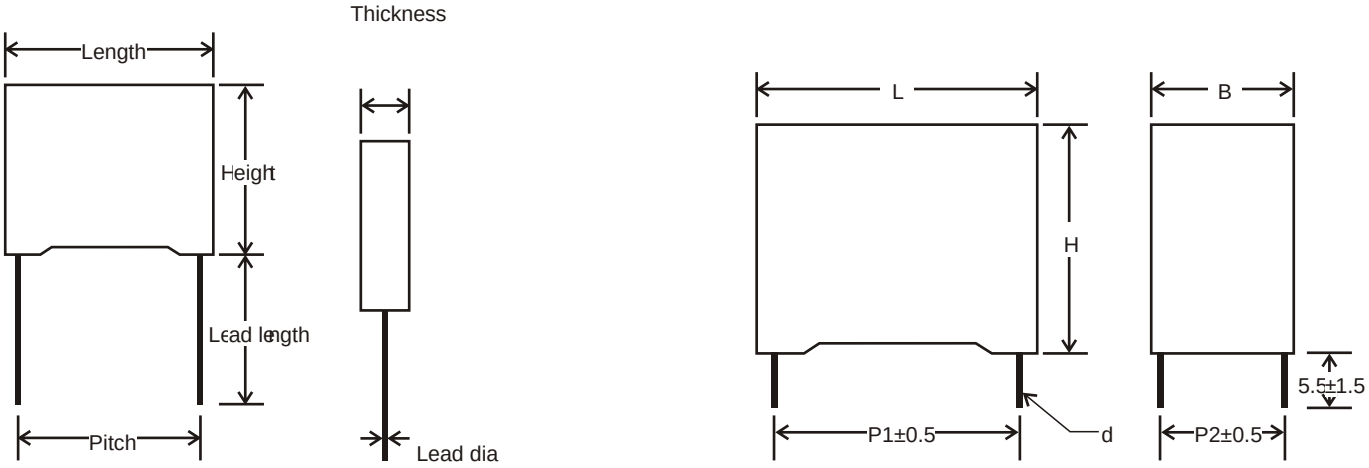
DEKI
Film Capacitor Solutions

Specific Reference Data 1200 V DC

Vr,85 °C = 1200 V DC, Vop,70 °C = 1500 V DC,Vop,100 °C = 850 V DC

CAP	DIMENSIONS			P1	P2	? dt	dv/dt	Ipeak	IRMS(A), max@85°C, 10KHz		ESRtyp (m?), @ 10KHz		tanδ max@1 kHz < (10)		tanδ max@10 kHz < (10)		DEKI PART NO
µF	W	H	L	(mm)	(mm)	(mm)	V/µs	(A)	2 pins	4 pins	2 pins	4 pins	2 pins	4 pins	2 pins	4 pins	
1	11.0	21.0	32.0	27.5	-	0.8	100	100	3.0	-	43.0	-	6	-	40	-	91105+120*^
3	18.0	28.0	32.0	27.5	-	0.8	100	300	6.5	-	14.5	-	6	-	40	-	91 305+120*^
4	21.0	31.0	32.0	27.5	-	0.8	100	400	8.0	-	11.0	-	6	-	40	-	91 405+120*^
5	18.5	35.5	43.0	37.5	10.2	1	48	240	6.5	7.0	17.0	15.0	10	8.5	80	70	91 505+120*^
6	18.5	35.5	43.0	37.5	10.2	1	48	288	7.5	8.0	14.0	12.5	10	8.5	80	70	91 605+120*^
7	21.5	38.5	43.0	37.5	10.2	1	48	336	8.5	9.0	12.0	11.0	10	8.5	80	70	91 705+120*^
8	21.5	38.5	43.0	37.5	10.2	1	48	384	9.0	9.5	10.5	9.5	10	8.5	80	70	91 805+120*^
9	24.0	44.0	42.0	37.5	10.2	1	48	432	10.5	11.0	9.5	8.5	10	8.5	80	70	91 905+120*^
10	24.0	44.0	42.0	37.5	10.2	1	48	480	11.0	11.5	8.5	7.5	10	8.5	80	70	91 106+120*^
12	30.0	45.0	42.0	37.5	10.2/ 20.3	1	48	576	13.0	13.5	7.0	6.5	10	8.5	80	70	91 126+120*^
10	25.0	45.0	57.5	52.5	10.2	1.2	24	240	8.0	8.5	17.0	15.0	18	16.0	165	150	91 106+120*^
12	25.0	45.0	57.5	52.5	10.2	1.2	24	288	9.0	9.5	14.0	12.5	18	16.0	165	150	91 126+120*^
15	25.0	45.0	57.5	52.5	10.2	1.2	24	360	10.0	10.5	11.0	10.0	18	16.0	165	150	91 156+120*^
20	35.0	50.0	57.5	52.5	20.3	1.2	24	480	13.0	14.0	8.5	7.5	18	16.0	165	150	91 206+120*^
22	35.0	50.0	57.5	52.5	20.3	1.2	24	528	14.0	14.5	7.5	7.0	18	16.0	165	150	91 226+120*^
25	35.0	50.0	57.5	52.5	20.3	1.2	24	600	15.0	15.5	6.5	6.0	18	16.0	165	150	91 256+120*^
30	45.0	45.0	57.5	52.5	20.3	1.2	24	720	-	16.5	-	5.0	-	16.0	-	150	91 306+120*^

2 Terminals **4 Terminals**



AQL AND INSPECTION LEVEL

1. Inspection level and AQLs are selected from ISO-2859 / IS-2500 or IEC-410. Sampling plan is single sampling for normal inspection.
2. Symbols used: IL = inspection level (ISO-2859 / IS-2500 / IEC-410) AQL = acceptable quality level

NO	ITEM	PERFORMANCE REQUIREMENTS	TEST METHOD	I.L.	A.Q.L.

1	VISUAL INSPECTION					
	Marking	Rated capacitance Rated voltage Tolerance Trade mark	Marking should be legible	Visual inspection	General inspection level II	1.0 %
	Mechanical Insufficient coating	Lead wire broken	There shall be no mechanical failure	-doFailure		
2	DIMENSION	Should confirm to the specification chart	As specified in the data sheet	Gauging	Special inspection level S-1	2.5%
3	ELECTRICAL PROPERTIES					
	Voltage Proof	Between termination As per relevant specification	No break down or flash over of application:	Test voltage and duration of level I	General inspection	0.1%
	Capacitance	Within specified tolerance	Measuring frequency according to IEC spec.			
		Tangent of loss angle specifications	As per Measuring frequency relevant according to IEC spec.			
	Insulation Resistance	As per relevant specifications	As per test method in the specifications			
4	SOLDERABILITY		Good shine, free flowing of solder with wetting of the terminations	Without aging Dip test as per IS - 9000 Non-activated Colophony Flux		2.5%

PACKING STANDARDS

Bulk packing

Capacitors, packed in 4 inner polybags, are sealed in identified outer polybags and despatched in cartons.

Each box / inner polybag bears an identification slip carrying the lot number. This lot number should be referred to in all feedback / correspondence.

Note: For CDI, Film Foil Non-Inductive capacitors, and other capacitors not included here, please ask for packing standard.

Enquiry information

When making an enquiry, please specify:

1. Working voltage
2. Capacitance value and tolerance

3. Finished product: Colour TV, audio, industrial equipment, electronic ballast, etc
4. Application or circuit diagram, noise suppression, resonance, etc.
5. Condition of operation: Pulse,frequencies, waveform, current
6. Operating temperature
7. Dimensions and type of capacitor
8. Safety: Influence on other components when the capacitor gets short-circuited or opened. Influence on the capacitor when other components or the circuit works irregularly.
9. Current source and specification reference
10. Approximate monthly requirement
11. Any other relevant information

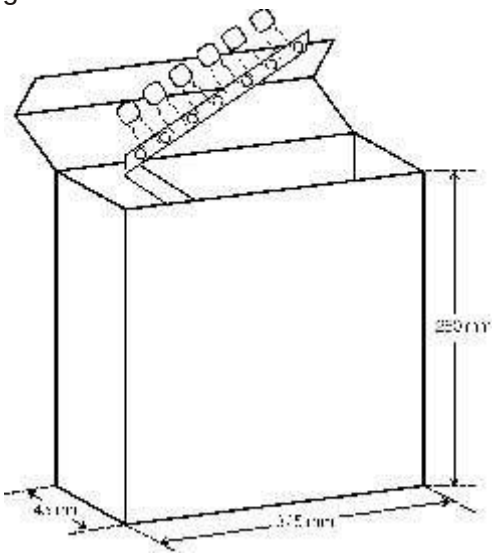
Cautions

1. Change of capacitance value in the course of time.The capacitor changes in its characteristics depending on ambient temperature and environmental conditions. Details on the permissible / expected change w.r.t. time can be requested from the Technical Cell.

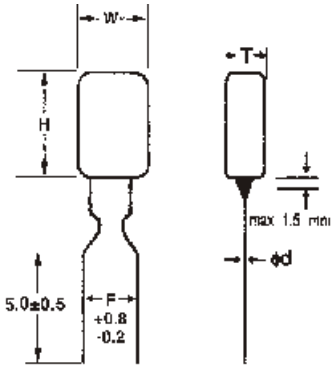
2. Hum (Buzz). Hum produced by capacitors may be due to mechanical vibration of the film caused by the Coulomb force existing between electrodes of opposite polarity. A louder hum is produced when applied voltage waveform has distortion or has a higher frequency component. Hum, though, does not spoil the characteristics of the capacitor.

Handling cautions

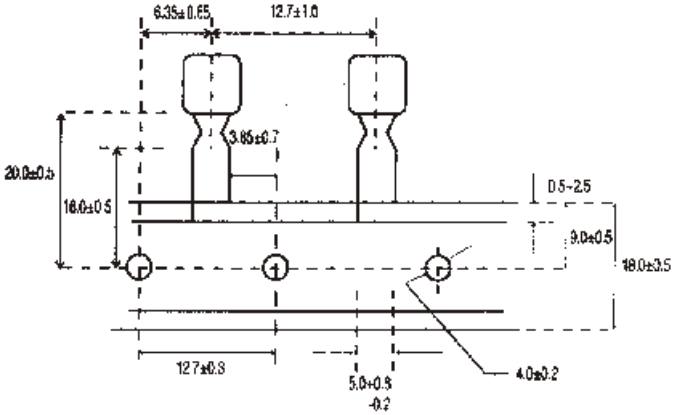
Sudden charging or discharging may cause deterioration of the capacitor such as shorting and opening due to charging or discharging current. When charging or discharging pass through a resistance of 20 to 1000 W / V or more. Be careful not to apply excessive force to the lead wire root area which may cause crack or clearance in the coating resin near the root area.



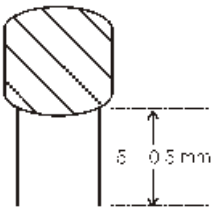
Formed & cut



Formed & taped



Straight lead & cut



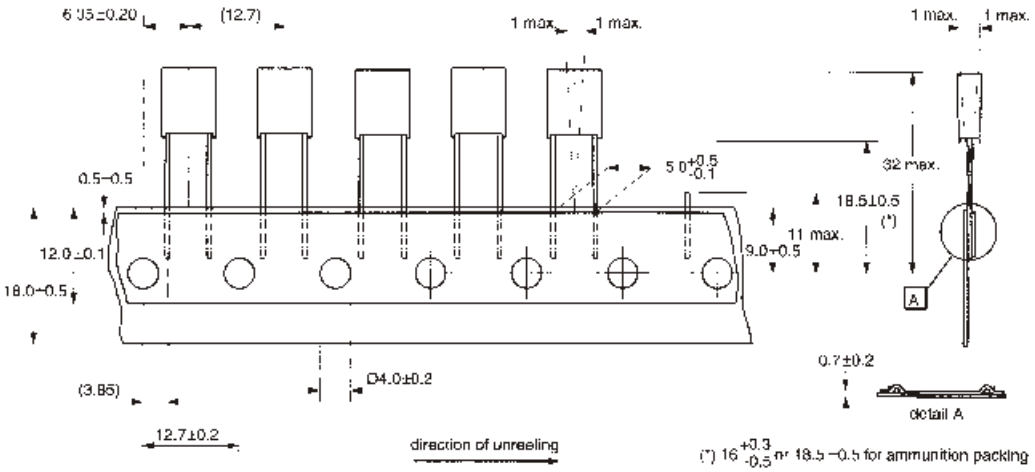
DEKI
Film Capacitor Solutions

PACKING STYLES

Dimensions (mm)	n	w	d	e	f	h
Lead spacing ≤ 7.5	42+1	52 max	dia 360-1	dia 90	dia 30.5 ⁻ 0.2	dia 82+1

PACKING STYLES

Lead spacing ≥ 10	54+1	70 max	dia 500-1	dia 130	dia 30.5 ⁻ 0.2	dia 126+1

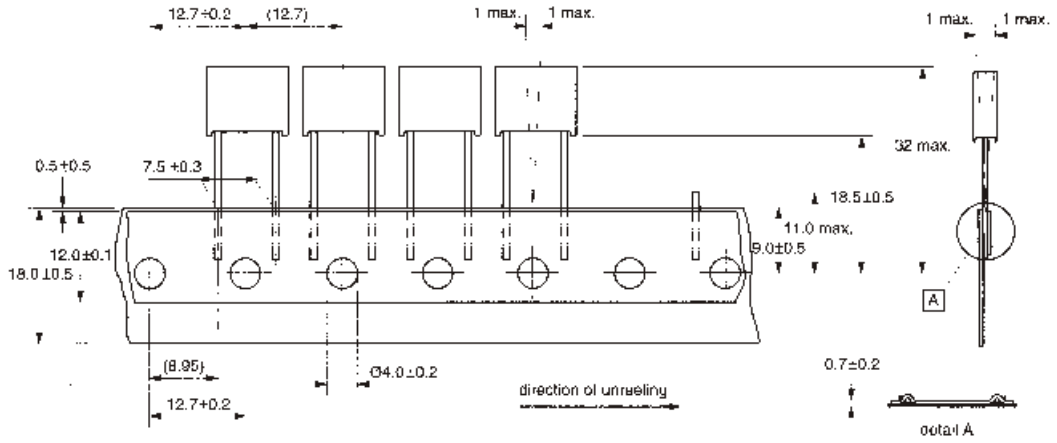


Ammo Packing: 5 mm Pitch

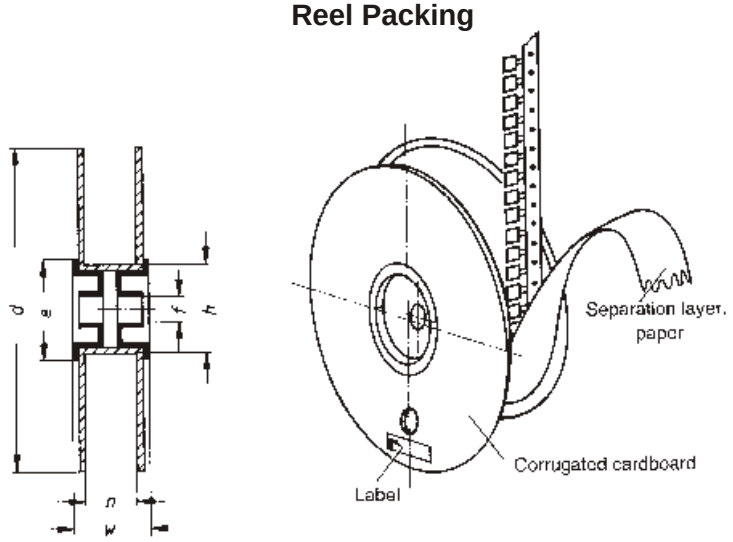
Ammo Packing: 7.5 mm

Pitch

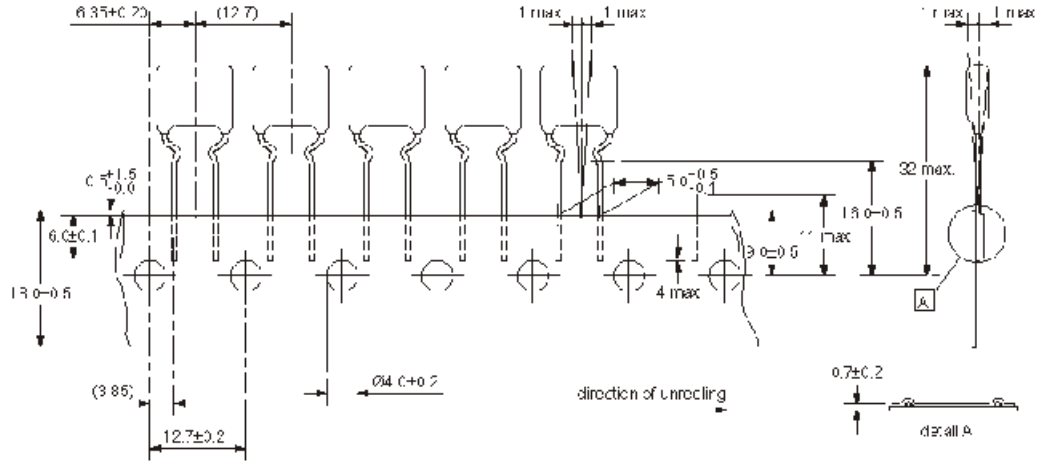
PACKING STYLES



Reel Packing

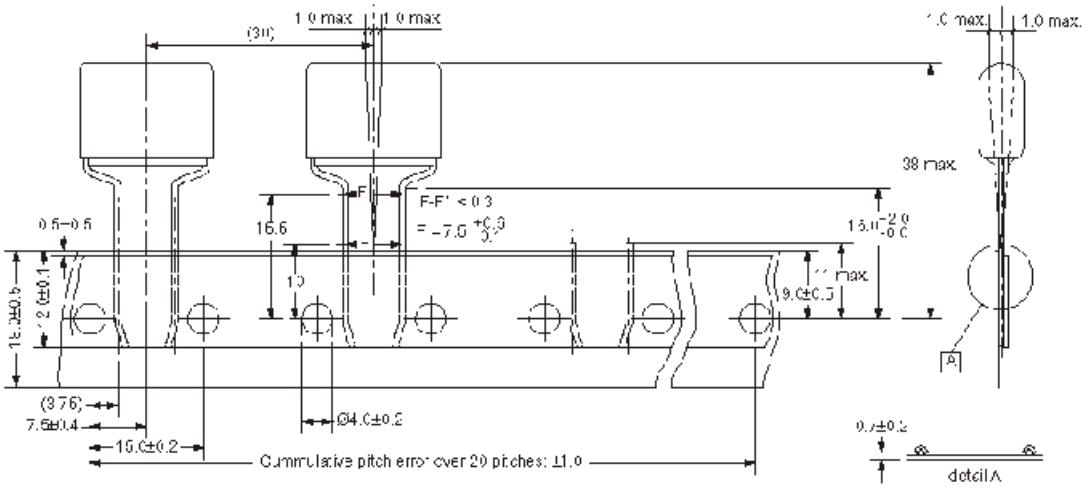


Ammo Packing: 7.5-5.0 mm Pitch

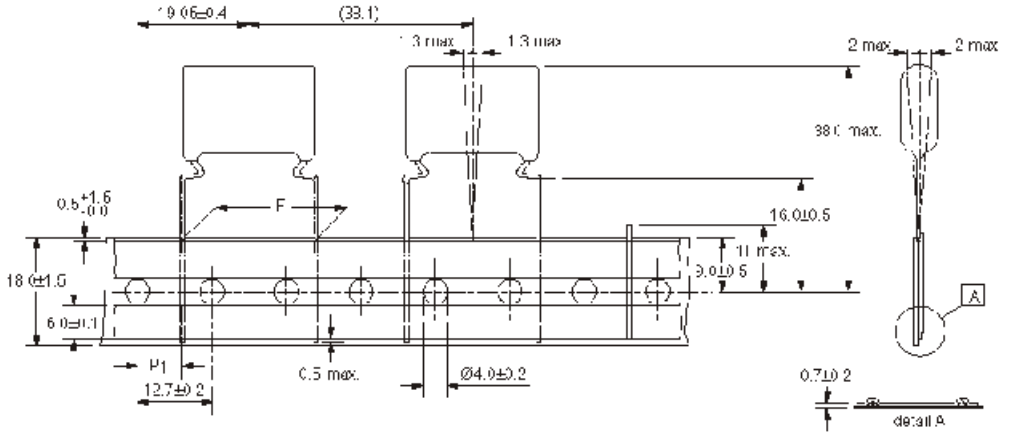


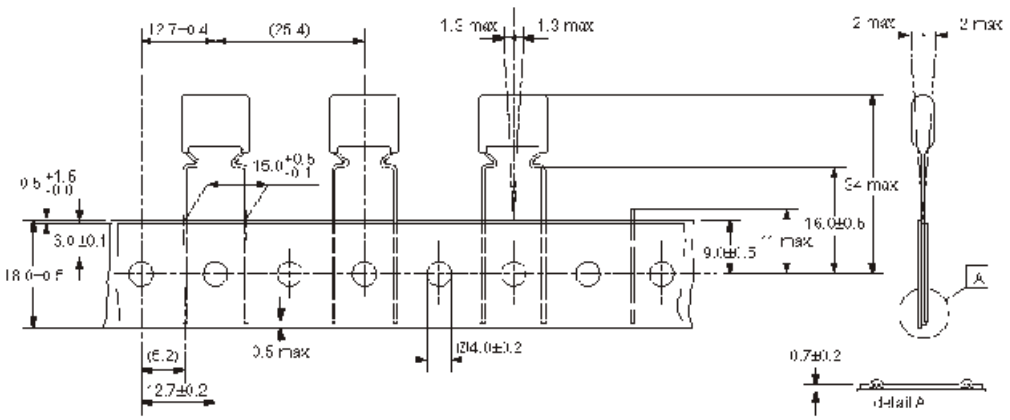
PACKING STYLES

Ammo Packing: 15.0-7.5 mm Pitch



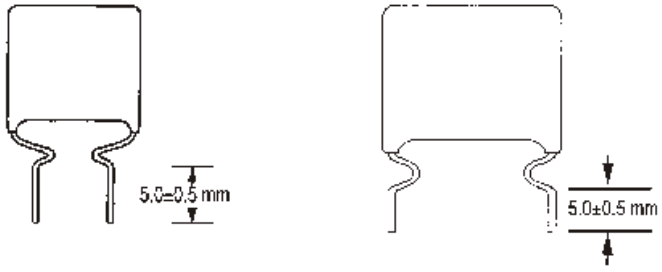
Ammo Packing: 15 mm Pitch
Ammo Packing: 22.5 mm Pitch





PACKING STYLES

Formed and Cut
Film / Foil Non-Inductive and Metallised Film Capacitors



ORDERING INFORMATION

Ten alphanumeric code ordering system: 01 234 J 2A 1 A 1st group

Two digits (01) represent capacitor type

Description	**Series code**		
	Box	**Dip**	**Other**

NOTES

Plain polyester (inductive)	—	01	—
Metallised polyester (general purpose)	06	02	—
Plain polypropylene (inductive)	—	03	—
AC & Pulse (MPP series)	27	04	—
Fan regulator (MPP series)	—	04	—
AC & Pulse (PP/MPP series)	29	05	—
IS (X2 MPP box)	07	39	—
CDI-MPET	—	08	—
CDI-MPP	—	09	—
Fluorescent lamp starter (Brown epoxy coated)	—	10	—
Fluorescent lamp starter (Clear epoxy coated)	—	11	—
MPET (Round axial tape wrapped)	—	—	12
MPET (7.5mm pitch)	15	13	—
MPET (5mm pitch)	16	14	—
MPP (AC application)	22	17	—
AC & Pulse (MPP/ MPP series)	30	18	—
PP (Film / foil non-inductive)	21	32	—
PET (Film / foil non-inductive)	31	25	—
MPP (Cap. bank)	26	—	—
MPET (Cap. bank)	28	—	—
IS Y2 capacitor (MPP series)	33	—	—
MPP (5mm pitch)	35	34	—
MPET (flat axial tape wrapped)	—	—	36
PP + PET mixed dielectric (PEP)	—	38	—
MPP round axial tape wrapped	—	—	40
PET straight lead taped (5.0 mm pitch)	—	41	—
PET straight lead taped (7.5 mm pitch)	—	42	—
PP straight lead taped (5.0 mm pitch)	—	43	—
MPET fan regulator (switch type)	—	46	—
PP (non-inductive flat axial series)	—	—	47
MPP-DC (flat axial series)	—	—	50
PET (inductive low profile)	—	51	—
MPP-AC (flat axial series_	—	—	52
Mixed dielectric extra strength (PES)	—	53	—
Plain polyester extra strength (PES)	—	54	—

AC & Pulse (MPP / MPP AC series)	67	62	—
AC & Pulse (MMPP series)	66	61	—
PP/MPP	68	63	—
MPP/MPP (with resistor)	83	81	—
MPP/MPP-AC (for electronics ballast)	59	58	—

...continued

Description	Series code		
	Box	Dip	Other

NOTES

. . . . . .

. . . . . .

Fan regulator-Economic type	56	57	—
Fan regulator-Ultima MPET	87	86	—
Fan regulator-Ultima MPET	75	76	—
Fan regulator-Ultima MPET	71	72	—
Fan regulator-Ultima MPP	73	74	—
Fan regulator-Ultima	45	44	—
MPP Fan regulator-MPP	49	48	—
Fan regulator-Ultima MPP	85	84	—
Fan regulator-MPP	65	64	—
DPSH (PP inductive-self healing)	—	70	—
DTSH (PET inductive-self healing)	—	80	—
PET (non-inductive)	—	—	90
Fan regulator-Optima	79	69	—
Metallised polyester-AC application	23	24	—
MPP-DC Link	91	—	—

2nd group

Three-digit (234) indicate rated capacitance in pico farad (First two digits indicate value & third digit indicates number of zeroes to be suffixed to first two digits).

For example:

221 = 22 × 10 = 220 pf = 0.00022 [1] µf

104 = 10 × 10 = 100000 pf = 0.1 [4] µf

225 = 22 × 10 = 2200000 pf = 2.2 [5] µf

4th group

One digit and one letter (2A) or two digits indicate rated voltage

For DC Capacitors (One digit and one letter)		For AC Capacitors (Two digits)	
1H	: 50 V	01	: 190 V AC
1J	: 63 V	02	: 250 V AC
2A	: 100 V	03	: 275 V AC
2D	: 200 V	04	: 300 V AC
2E	: 250 V	05	: 310 V AC
2G	: 400 V	06	: 440 V AC
2J	: 630 V	07	: 500 V AC
3A	: 1000 V	08	: 600 V AC
3B	: 1250 V	09	: 700 V AC
3C	: 1600 V		
3D	: 2000 V		
3E	: 2500 V		

3rd group

One letter (J) indicates capacitance tolerance

F = ±1% K = ±10.0%

G = ±2% M = ±20.0%

H = ±2.5% N = +40%

I = ±3.5%

J = ±5.0%

5th group

One digit (1) indicates packing type.

1: Bulk packing (original pitch)

2: Bulk Packing (after forming & cutting)

3: Ammo packing (after forming & taping)

4: Bulk Packing (after forming in original pitch without cut)

5: Bulk packing (after formed & without cut)

6: Ammo Packing (Straight lead)

7: Bulk Packing (Straight lead cut)

8: Reel Packing (Straight lead)

6th group

One letter (A) indicates drawing reference A: As per catalogue.

B-Z: Special drawings not covered in "A" (decided by Deki)

. . . . . .

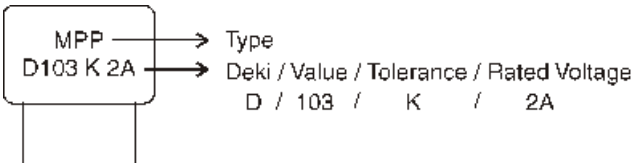
. . . . . .

. . . . . .

. . . . . .

. . . . . .

MARKING STYLE / SEQUENCE is replacing the last alphanumerics.



For AC Capacitors, rated voltage indicated directly, (For DC Capacitors)two

DEKI
Film Capacitor Solutions

NOTES

DEKI
Film Capacitor Solutions

NOTES

. . . . . .

. . . . . .

. . . . . .

Deki's Mission

To consistently provide customers with reliable, good quality capacitors on time at internationally competitive prices.

Quality Policy

We, at Deki, are commited to the manufacture and sale of film capacitors complying with customer requirements and to continually improve the product, process and practices.

Environmental Policy

We at Deki Electronics Limited, Noida, manufacturers of Plastic Film Capacitors in India are committed to prevent pollution and to continually improve our environmental performance by:

Conserving resources such as power, diesel, chemicals & compressed air.

Minimising emission of volatile compounds such as Xylene & Styrene.

Maximising reuse and recycling of waste packaging and plastic material.

Proper handling and disposal of inevitable wastes such as epoxy mixture, used oils, cores, plastic film, aluminum foil and lead wire.

Complying with applicable environmental legislation and customer-specific list of banned substances.

Building awareness of employees on environmental issues.

. . . . . .

. . . . . .

. . . . . .

. . . . . .

. . . . . .

This policy will be made available to the public.

Owing to continuous development, specifications are subject to change without prior notice.

Deki's Dealer Network

North

Capco India
234 Sant Nagar, East of Kailash, **New Delhi** 110065 Tel: 011-26217519, 26469187, Fax: 011-26217519 Email: Cap_India@yahoo.co.in
Contact Person: Mr Shailendra Sharma

Dewan Radios Pvt Ltd
1681/26 Mangal Market, Bhagirath Palace, **Delhi** 110006
Tel: 011-23865190, 23862439, Fax: 011-23869312 Email: sales@dewanradios.com
Contact Person: Mr. Subhash Dewan

Elco Sales Corporation
D-191 Flatted Factory Complex Okhla, **New Delhi** 110 020 Tel: 011-26846356, 26839523, Fax: 011-26924783 Email: elcodelhi@hotmail.com
Contact Person: Mr S P Arora

Ramakrishna Electro Components Pvt Ltd
1201-07 KLJ Tower, Netaji Subhash Place, Pitampura
Delhi 110034. Tel : 011-41423126, Mobile: 0-9999054559 Website: www.rkelectro.com
Contact Person: Mr Aditya Shrivastava

West

Electro Enterprises
312 Bharat Bhawan 'B', 1360 Shukrawar Peth, **Pune** 411002
Tel: 020-24491394, Email: Medhi@vsnl.com
Contact Person: Mr Suhas Medhi

Electromark Devices (Bombay) Ltd
304 Lotus House, 33-A New Marine Lines, **Mumbai** 400 020 Tel: 022-22034545(10 Lines) Fax: 022-22088003, 22034779 Email: mahavir@electromarkindia.com
Contact Person: Mr Mahavir Seth

Gtek Electro Mechanics Co.
Off. No. 101, Bldg. No. 33, Arihant Compound, Opp. Kopar Bus Stop, Kopar, **Bhiwandi**, Dist. Thane 421 302
Tel: 0252-22722949, 320933, Fax: 02522-270200
Email: gtck@gtekelectro.com
Contact Person: Mr. Pankaj Gardi

Industrial Product Corporation
"Krushani" 1st Floor, 211 Shukrawar Peth, Nr. Akra Maruti
Pune 411002. Tel: 020-24460830, Fax: 24460830 Email: ipcorporation@eth.net
Contact Person: Mr Raju Kale

Radiant Electronics
302, 3rd Floor, Raj Deep Bldg, Tara Temple Lane
Off Lamington Road, Grant Road (East), **Mumbai** 400 007
Tel: 022-23851319/33152341/23881822, Fax: 022-23851319 Email: radiant.electronics@gmail.com
Contact Person: Mr Vaibhav Shah

R.R. Electronics
49 Amra Kunj Apartments, Gurukul Main Road, Mem Nagar
Ahmedabad 380052. Tel: 079-27451601, 27447188 Email: ravirrelectronics@rediffmail.com
Contact Person: Mr Ravi Raj

South

Electronika Sales Corporation
16 Narsingapuram Street, Anna Salai, **Chennai** 600 002
Tel: 044-28587765, 28587165, 28585889, Fax: 044-28419833 Email: sunil@elektronikasales.com
Contact Person: Mr Sunil Hasija

Shilpa Electronics
3B Surya Towers, 105 Sardar Patel Road, **Secunderabad** 500 003
Tel: 040-27849020, 27840698, Fax: 040-27849018
Email: shilpagp@satyam.net.in, Website: www.shilpagroup.com
Contact Person: Mr G N Rao

SM Electronic Technologies Pvt Ltd
1790, 5th Main, 9th Cross, R.P.C. Layout, Vijaynagar 2nd Stage
Bangalore 560040. Tel: 080-23301030, Fax: 080-23387197 E-mail: vinod@mysmindia.com
Contact Person: Mr Vinod Shekar

Deki's International Agents

Germany
Contact Person: Mr Wolfram Herold
Email: info@light-traffic.de

rep.com **Israel**
Contact Person: Mr Israel Wertheimer
Email: israelw@rfmw.com

amazumdar@comcast.net **Philippines**
Pangaea International Trading Corporation

Spain
ELCOS S.L.
Contact Person: Mr Rafael Rabandan
Email: rrabandan@elcos-

USA
Contact Person: Mr Ashok Mazumdar
Email:

Contact Person: Mr Noli Hernandez / Mr Chris Carunungan
Email: noli@pangaea.com.ph / chris@pangaea.com.ph

DEKI
Film Capacitor Solutions

Deki Electronics Ltd
B-20 Sector 58, NOIDA 201 301, India
T +91 120 2585457, 2585458 • **F** www.dekielectronics.com+91 120 2585289 •
E mktg@dekielectronics.com • **W**