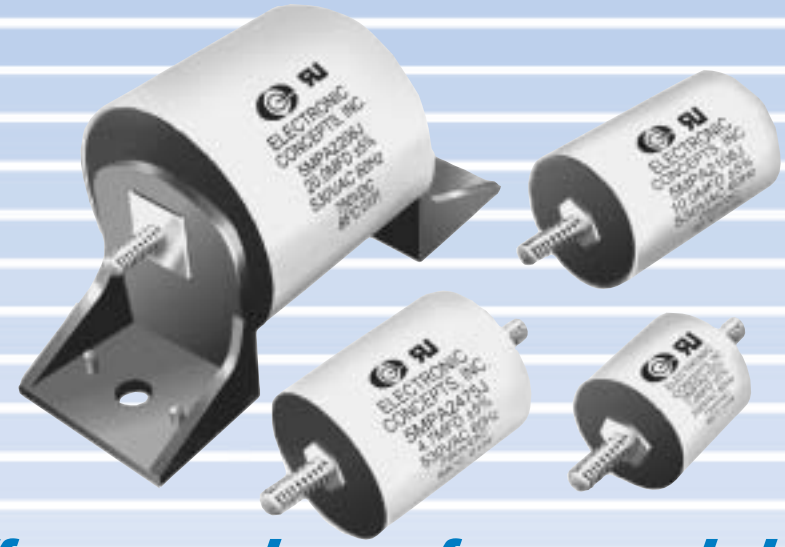
BULLETIN NO. L02-142 REV. 1

capacitors

5MPA SERIES

METALLIZED POLYPROPYLENE



offers superior performance in high power AC filtering for motor run applications

- VOLTAGE OF 530VAC at 60Hz max., 750 VDC
- DRY FILM CONSTRUCTION
- CAPACITANCE TO l00µF
- CONTINUOUS OPERATING TEMPERATURE TO +85° C
- FLAME RETARDANT
- CURRENT HANDLING CAPABILITY TO 83.2 Arms

The **5MPA SERIES** represents an excellent solution for AC motor run applications where high PWM and other feedback currents are present on top of line frequency. The 5MPA is superior to other brands. This is due to its unique high current and frequency response terminations, plus a dry film construction.

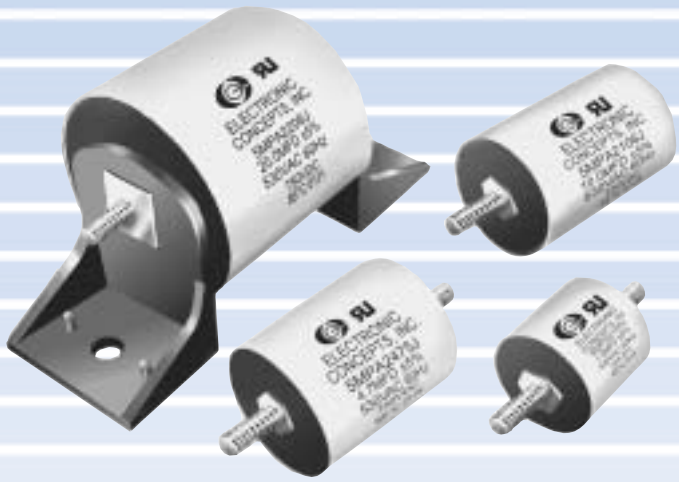
There are two different types of terminal configurations, both with voltage ratings to 530 VAC. For capacitance values up to 10.0µF, there is a brass bolt termination.

Values up to 100.0µF are supplied with an exclusive "bridge & bolt" construction – both with multiple internal soldered contact points for high current distribution. Units are wrapped with flame retardant insulating sleeves and end-filled with a flame retardant potting compound. Current handling capabilities from normal line frequency currents to 83amps, RMS from 2kHz to resonant frequency. Each capacitor also undergoes a series of electrical property tests to ensure in-the-field quality.

With the introduction of the **5MPA SERIES**, the designer now has a dry film AC capacitor with a combination of physical and electrical properties to maximize performance, reliability and space utilization. With the realistic potential for significant production and overall system cost savings.

electronic concepts®

specifications



CONSTRUCTION
Extended foil.

SERVICE LIFE
Designed to meet the requirements of MIL-STD-202, Method 108, condition F.

HUMIDITY RESISTANCE
Exceeds requirements of MIL-STD-202, Method 103.

QUALITY CONTROL
Capacitors are tested 100% for:

- CAPACITANCE TOLERANCE
- DISSIPATION FACTOR
- DIELECTRIC WITHSTANDING VOLTAGE
- INSULATION RESISTANCE
- ESR

Complete process and inspection data is maintained on file and is available on special request.

MARKING
All capacitors are marked with one or more of the following: company initials “EC”, corporate logo or EC trademark — in addition to style, capacitance, tolerance, rated DC working voltage and date code.

DATE CODE
The first two digits of the date code represent the year, the second two digits the week.

QUALITY ASSURANCE
Emphasis is placed on quality assurance. Raw material inspection and the use of SPC monitored manufacturing procedures assure highest quality standards. Procedures are fully described in the EC Quality Control Manual. Electronic Concepts will continue to advance the state-of-the-art by utilizing leading edge technology, ultra-miniature capacitor designs and established reliability procedures.

In constructing the components described, the full intent of the specification will be met. Electronic Concepts does, however, reserves the right to depart from the detail specifications in order to improve the design of its products.

This information is believed to be accurate and reliable. However, Electronic Concepts assumes no responsibility for its use; nor for any infringement of patents or other rights of third parties which may result.

how to order

5MP A2 475 J

TYPE
Metallized polypropylene

STYLE
AC high power

CAPACITANCE IN PICOFARADS
The first two digits are significant, the third represents the number of zeros (e.g. 475=4,700,000pF)

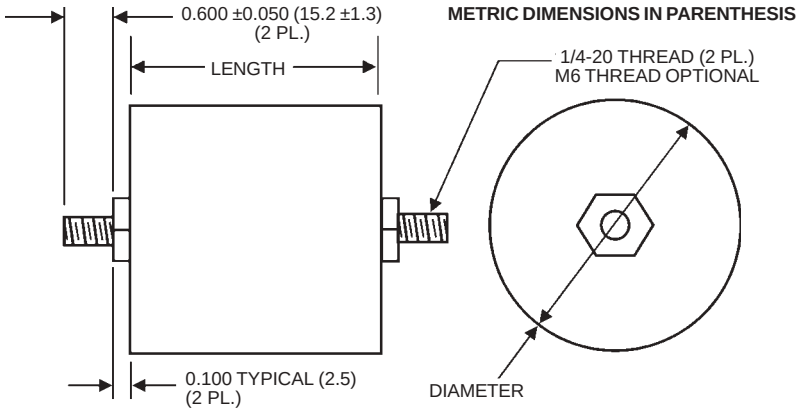
TOLERANCE
J = ±5% Also available: E = ±3%

dimensional data

VOLTAGE RATINGS: 530VAC@60Hz MAX., 750 VDC

PART NO	Value µF	E.S.R.* milli-ohms	E.S.L. nH	Fres kHz	I pk AMPS	dv/dt v/µs	Arms 25°C	Arms 45°C	Arms 65°C	Arms 85°C	Diameter Max	Length ±0.098"[2.4mm]
5MPA2105J	1.0	3.1	11.5	1490	639	639	22.2	19.2	15.8	11.3	1.300[33.0mm]	1.125 [28.6mm]
5MPA2205J	2.0	2.1	17.3	855	726	363	31.1	27.0	22.1	15.9	1.600[40.6mm]	1.125[28.6mm]
5MPA2475J	4.7	1.2	24.0	474	1181	251	52.0	45.2	37.0	26.6	1.700[43.2mm]	1.875[47.6mm]
5MPA2106J	10.0	1.5	48.7	228	1129	113	56.6	49.1	40.3	28.9	1.700[43.2mm]	2.250[57.2mm]

*ESR Measured at Resonant Frequency or 10mΩ MAX @10kHz



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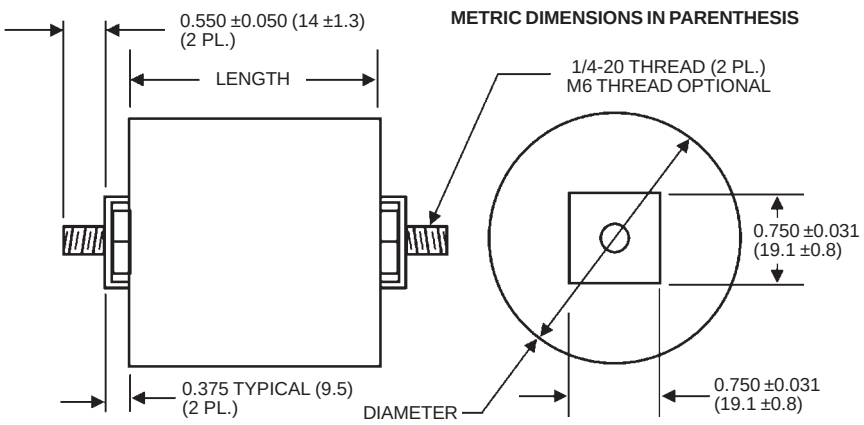
PART NO	Value µF	E.S.R.* milli-ohms	E.S.L. nH	F res kHz	I pk AMPS	dv/dt v/µs	Arms 25°C	Arms 45°C	Arms 65°C	Arms 85°C	Diameter Max	Length ±0.098"[2.4mm]
5MPA2206J	20.0	1.3	48.7	161.2	2709	135	65.8	57.1	46.8	33.6	2.800[71.1mm]	2.375[60.3mm]
5MPA2306J	30.0	1.0	48.7	131.6	3725	124	83.9	72.8	59.8	42.9	3.200[81.3mm]	2.375[60.3mm]
5MPA2406J	40.0	1.9	89.9	83.9	2903	73	64.2	55.7	45.7	32.8	2.800[71.7mm]	3.750[82.6mm]
5MPA2506J	50.0	1.5	89.9	75.1	3629	73	77.0	66.9	54.9	39.4	3.200[81.3mm]	3.750[82.6mm]
5MPA2606J	60.0	1.7	109.0	62.2	3811	64	78.7	68.3	56.0	40.2	3.200[81.3mm]	4.375[111.1mm]
5MPA2756J	75.0	2.5	141.2	48.8	3372	49	66.0	57.3	47.0	33.7	2.800[71.1mm]	5.375[136.5mm]
5MPA2107J	100.0	1.9	141.2	42.2	4496	45	83.2	72.2	59.2	42.5	3.200[81.3mm]	5.375[136.5mm]

*ESR Measured at Resonant Frequency or 5mΩ MAX @10kHz



performance CHARACTERISTICS

OPERATING TEMPERATURE RANGE

From -55°C to +85°C with 50% voltage derating from 85°C to 105°C.

INSULATION RESISTANCE

When measured at test temperature and rated voltage for a minimum of two (2) minutes, the insulation resistance equals or exceeds the following values:

Temperature	25°C	85°C
Megohms x Microfarads	25,000	5,000
Insulation resistance in megohms need not exceed:	25,000	5,000

DISSIPATION FACTOR

When measured at the frequency specified for capacitance measurement, the dissipation factor will not exceed 0.1%.

CAPACITANCE CHANGE

Capacitance change versus temperature for these capacitors shall not exceed the following:

Temperature Degrees C.	-55	+25	+85
Typical	+1.4	0	-2.5

DIELECTRIC STRENGTH

Capacitors withstand a DC potential of 1000 VDC for one (1) minute without damage or breakdown. Test voltage is applied and discharged through a minimum resistance of 1 OHM per volt minimum.

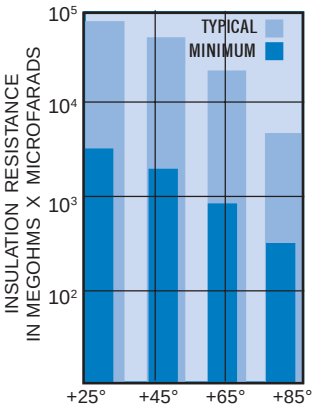
CAPACITANCE TOLERANCE

Standard tolerance is ±5%. Tolerance of ±3% is also available.

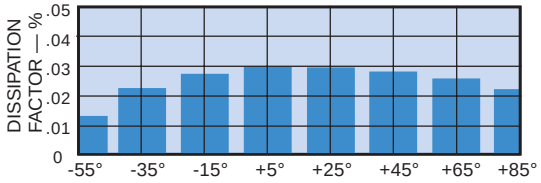
NOTE: Capacitance is measured at 25°C, and at a frequency of 120Hz for all values.

electrical characteristics vs. temperature *(centigrade)*

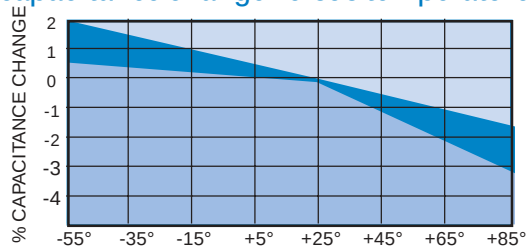
insulation resistance versus temperature



dissipation factor versus temperature



capacitance change versus temperature



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