

# 5MPF Series

## Polypropylene Capacitor with Fuseac™ Technology Cylindrical Can with Radial Terminals and Mounting Bolt

Polypropylene film capacitor for AC applications. Internal fuse electrically disconnects when capacitor's hot spot reaches a defined temperature, without deforming the case.



### FEATURES:

- ~ Patent Pending Technology
- ~ AC Rated
- ~ Operating temperature range: -40°C to +85°C
- ~ Dry Film construction
- ~ Permanent thermal disconnect, preventing catastrophic failures
- ~ Inverter output filtering, for Wye and Delta circuits
- ~  Recognized Component 
- ~ *A Revolutionary SAFETY Feature*

# Fuseac™

## SPECIFICATION SUMMARY

### Capacitance Range

10uF - 250uF

### Capacitance Tolerance

Standard tolerances are  $\pm 5\%$  &  $\pm 3\%$

### Operating Temperature Range

From  $-40^{\circ}\text{C}$  to  $+85^{\circ}\text{C}$

### Storage Temperature Range

From  $-40^{\circ}\text{C}$  to  $+85^{\circ}\text{C}$

### Enclosure/ Construction

Polypropylene film capacitor in a cylindrical aluminum housing with high current threaded terminations and mounting bolt

### Voltage Rating

AC working voltage ratings at  $+85^{\circ}\text{C}$ ,  
300, 600 and 900 VAC at 60Hz Maximum

### Quality Control

Capacitors are tested 100% for:

- Capacitance tolerance
- Dissipation Factor
- Dielectric withstanding voltage
- Insulation Resistance
- Equivalent Series Resistance (ESR)

Process and inspection data are maintained on file and available on special request.

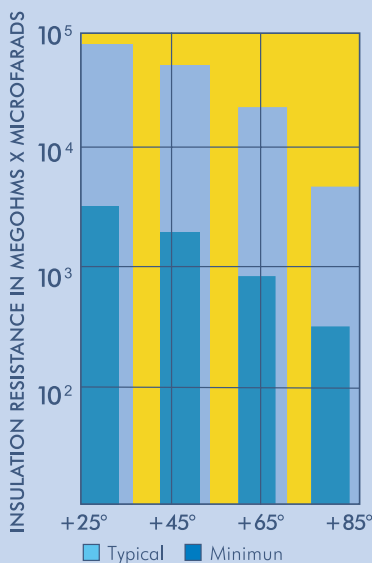
### Environmental < MIL-STD-202 >

Parameter	Condition	Method
Vibration	204	B
Immersion	104	B
Shock	213	I
Humidity	103	B
Thermal Shock	107	A
Life	108	F

## CHARACTERISTICS

### Insulation Resistance

Temperature ( $^{\circ}\text{C}$ )	$25^{\circ}\text{C}$	$85^{\circ}\text{C}$
Megaohms x Microfarads	25,000	5,000

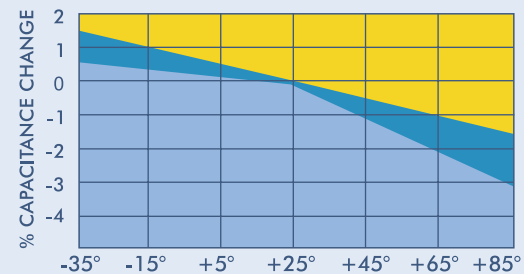


### Dielectric Strength

Capacitors withstand a DC potential of 1.5 times rated DC voltage for one (1) minute without damage or breakdown. Test voltage is applied and discharged through a minimum resistance of 1 OHM per volt, minimum.

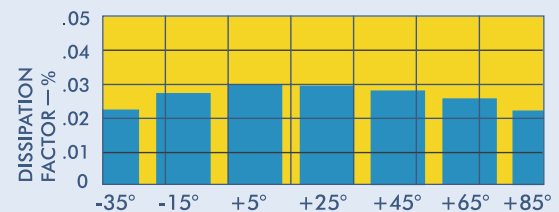
### Capacitance Change

Temperature ( $^{\circ}\text{C}$ )	$-40^{\circ}\text{C}$	$25^{\circ}\text{C}$	$85^{\circ}\text{C}$
Percent Change (typical)	+1.1	0	-2.1



### Dissipation Factor

When measured at 120Hz specified for capacitance measurement, the Dissipation Factor will not exceed 0.10%.





# ELECTRICAL DATA

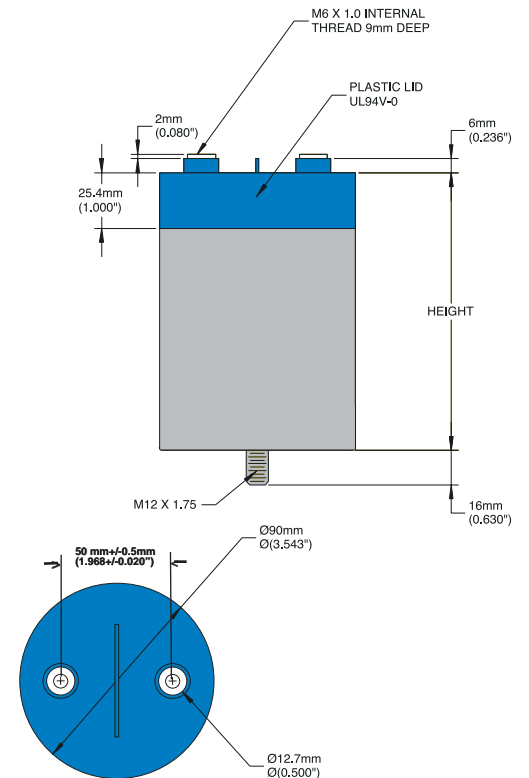
Part No.	Value	Voltage		E.S.R.*	E.S.L	Fres	I pk	dv/dt	Current			
		VDC	Vrms						Amps	Amps	Amps	Amps
		uF							Milliohms	nH	kHz	AMPS
5MPF1 107_	200	450	300	3.4	49	72	3309	33	56.8	47.8	37.2	23.5
5MPF1 157_	150	450	300	5.1	79	46	3217	21	40.5	32.9	24.0	12.4
5MPF1 207_	200	450	300	6.9	110	34	3173	16	27.4	20.8	13.0	3.0
5MPF1 257_	250	450	300	9.0	146	26	3096	12	14.3	8.7	2.1	1.0
5MPF2 206_	20	900	600	3.8	48	163	2903	145	46.5	39.8	31.8	21.5
5MPF2 406_	40	900	600	5.9	90	84	3167	79	41.6	34.9	27.0	16.8
5MPF2 506_	50	900	600	6.6	109	68	3313	66	40.1	33.3	25.3	15.0
5MPF2 606_	60	900	600	8.7	142	55	3126	52	34.2	27.9	20.5	10.8
5MPF3 106_	10	1350	900	4.5	57	210	2982	298	48.4	41.6	33.5	23.1
5MPF3 156_	15	1350	900	5.3	79	147	3215	214	45.6	38.9	31.0	20.8
5MPF3 206_	20	1350	900	7.2	110	107	3082	154	33.4	28.1	21.9	13.8
5MPF3 256_	25	1350	900	9.2	143	84	3008	120	29.7	24.6	18.7	11.0

\*E.S.R. MEASURED AT RESONANT FREQUENCY



# MECHANICAL DATA

Part No.	Value	Voltage	Height	
			Vrms	+/-2.0mm (0.080")
			mm	in
5MPF1 107_	100	300	77	3.031
5MPF1 157_	150	300	102	4.016
5MPF1 207_	200	300	127	5.000
5MPF1 257_	250	300	152	5.984
5MPF2 206_	20	600	77	3.031
5MPF2 406_	40	600	112	4.409
5MPF2 506_	50	600	127	5.000
5MPF2 606_	60	600	152	5.984
5MPF3 106_	10	900	77	3.031
5MPF3 156_	15	900	102	4.016
5MPF3 206_	20	900	127	5.000
5MPF3 256_	25	900	152	5.984



TOLERANCES: +/-0.8mm (0.031")

## REVOLUTIONARY SAFETY TECHNOLOGY

Fuseac™ technology was created to provide designers of power management systems, utilizing metallized dry film capacitors, with a superior protection mechanism. Electronic Concepts, Inc. has developed a revolutionary fuse to detect the capacitor's hot spot and electrically disconnect upon reaching a defined critical value. Metallized film capacitors, mainly due to self healing of inherent defects, are reliable and long lasting over the life of the product. However, excessive self healings can create an overheating run-away condition, especially in uncontrolled, unmonitored circuits, and fail catastrophically. Fuseac™ provides added insurance against disastrous failures.

Fuseac™ is a patent pending technology and on request can be incorporated in a host of Electronic Concepts' products, especially into designs needing added overheating protection.



## HOW TO ORDER

<b>TYPE</b> Metallized polypropylene	→	<b>5MP</b>
<b>STYLE</b> AC high power, F1 (300VAC) - F2 (600VAC) - F3 (900VAC)	→	<b>F2</b>
<b>CAPACITANCE IN PICOFARADS</b> The first two digits are significant, the third represents the number of zeros (e.g 506=50,000,000pF)	→	<b>506</b>
<b>TOLERANCE</b> J=±5% Also available: E = ±3%	→	<b>J</b>

### Marking and DateCode

All capacitors are marked with the company initials EC and/or EC trademark, type (5MP), capacitance, tolerance, rated DC working voltage and date code. The first two digits of the date code represent the year, the second two digits the week, i.e., 0152 is the 52nd week of 2001, 0202 is the 2nd week of 2002.

### Quality Assurance

Major emphasis is placed on quality assurance. The function of raw material inspection and SPC manufacturing procedures, are employed to assure the highest quality standards. Complete procedures are described in the EC quality control manual. Electronic Concepts, Inc. will continue to advance the state-of-the-art by utilizing leading edge technology, ultra miniature capacitor designs and establishing reliability procedures. In the construction of the components described, the full intent of the specification will be met. Electronic Concepts, Inc., does however reserve the right to depart from detail specifications in order to improve the design of its products. Components made under military approvals will be done so in accordance with specification requirements. This information is believed to be accurate and reliable. However, Electronic Concepts, Inc. assumes no responsibility for its use, nor for any infringements of patents or other rights of third parties which may result.

## SALES OFFICES

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