

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.



Fuseac™

FEATURES:

- AC rated
- Range: -40°C to +85°C
- Dry film construction
- Permanent thermal disconnect, preventing catastrophic failures
- Inverter output filtering, for Wye and Delta circuits

STANDARD CONFIGURATION

- Bolt Mounting Package

Specification Summary

Capacitance Range

10uF - 250uF

Capacitance Tolerance

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

Operating Temperature Range

-40°C to +85°C

Enclosure/ Construction

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

Voltage Rating

AC working voltage ratings at +85°C, 300, 600 and 900 VAC at 60Hz Maximum

Quality Control

- Capacitors are tested 100% for:
- o Capacitance tolerance
 - o Dissipation Factor
 - o Dielectric withstanding Voltage
 - o Insulation Resistance
 - o Equivalent Series Resistance

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

Environmental

Parameter	Method	Condition
Vibration	204	D
Immersion	104	B
Shock	213	I
Humidity	106	-
Thermal Shock	107	A
Life	108	F

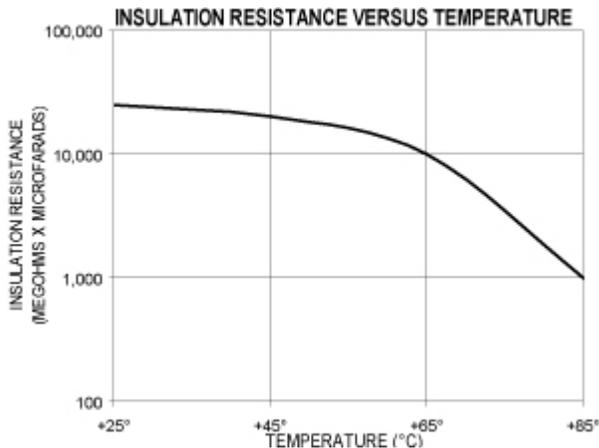
Reference MIL-STD-202

Characteristics

Insulation Resistance

Temperature (°C)	25	85		
Megaohms x Microfarads	25,000	5,000		

Insulation Resistance



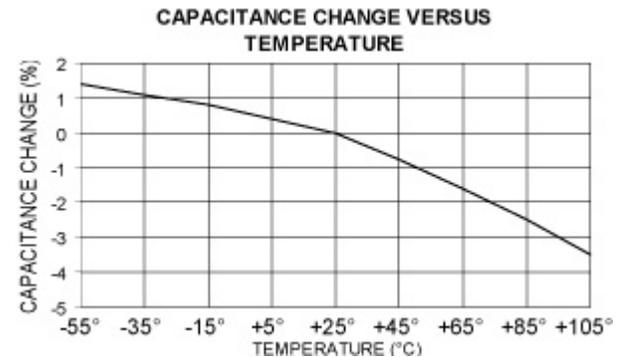
Dielectric Strength

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

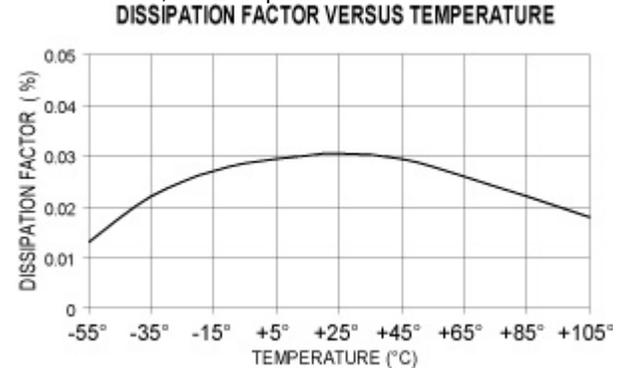
Temperature (°C)	-55	25	85	105
Percentage Change (typical)	1.4	0	-2.5	-3.5

Capacitance Change



Dissipation Factor

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

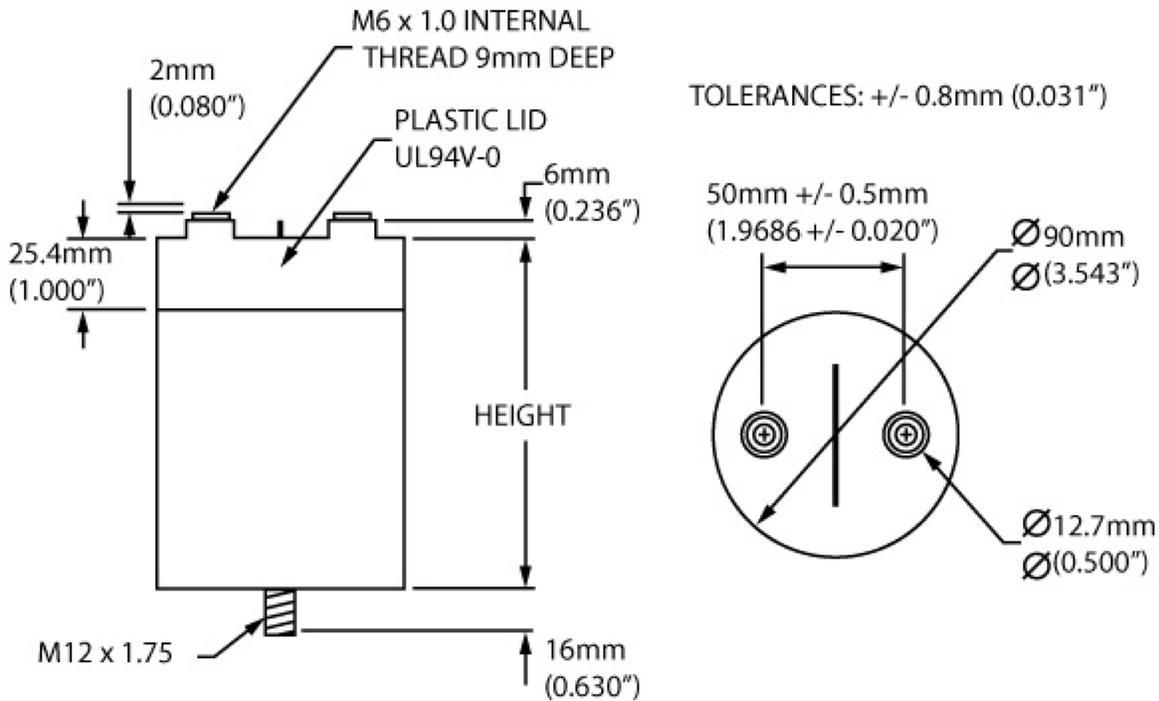


DETAIL DATA

EC PART NUMBER	CAP μ F	VAC	VDC	HEIGHT "H"		ESR mOhms	ESL nH	Fres kHz	I PEAK AMPS	dv/dt (V/ μ s)	TEMPERATURE Arms				Rth $^{\circ}$ C/W
				in	mm						25 $^{\circ}$ C	45 $^{\circ}$ C	65 $^{\circ}$ C	85 $^{\circ}$ C	
5MPF1107_	100	300	450	3.031	77	2.2	49	72.1	3324	33	63.0	53.4	41.7	25.0	7.68
5MPF1157_	150	300	450	4.016	102	3.4	79	46.3	3227	22	53.3	45.2	35.3	21.2	7.01
5MPF1207_	200	300	450	5.000	127	4.6	110	33.9	3180	16	46.4	39.4	30.7	18.4	6.87
5MPF1257_	250	300	450	5.984	152	5.8	143	26.6	3153	13	40.4	34.3	26.7	16.0	7.21
5MPF2206_	20	600	900	3.031	77	2.7	49	161.2	2709	135	52.6	44.6	34.8	20.9	8.80
5MPF2406_	40	600	900	4.409	112	3.9	90	83.9	3167	79	49.8	42.2	33.0	19.8	7.00
5MPF2506_	50	600	900	5.000	127	4.4	110	68.2	3313	66	47.9	40.6	31.7	19.0	6.76
5MPF2606_	60	600	900	5.984	152	5.8	143	54.6	3126	52	40.1	34.0	26.5	15.9	7.29
5MPF3106_	10	900	1350	3.031	77	2.2	49	225.3	3429	343	62.3	52.8	41.2	24.7	7.48
5MPF3156_	15	900	1350	4.016	102	3.1	79	146.5	3547	236	56.7	48.1	32.5	22.5	6.62
5MPF3206_	20	900	1350	5.000	127	4.5	110	107.2	3305	165	47.5	40.3	31.4	18.8	6.72
5MPF3256_	25	900	1350	5.984	152	5.8	143	84.1	3175	127	40.4	34.3	26.8	16.0	7.19

Notes: (1) ESR is Measured at Resonant Frequency (2) Current referenced at 10kHz (3) VAC rating at 60Hz

STYLE



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 healing 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

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

Marking And Date Code

All capacitors are marked with company initials "EC", corporate logo or EC trademark—in addition to type 5MPA, 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., 0952 is the 52nd week of 2009, 0902 is the second week of 2009.

Quality Assurance

Major emphasis is placed on quality assurance. EC is an ISO 9001-2000 and AS9100:2004 Certified Company. Raw material inspection and the use of SPC manufacturing procedures assure the 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, compact capacitor designs and establishing reliability procedures.

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Rev. B

