



# Power Film Capacitors

C4AF Automotive Grade, for Harsh Environmental  
AC Filtering & PCB Applications



## Why Choose KEMET

KEMET Electronics Corporation is a leading global supplier of electronic components. We offer our customers the broadest selection of capacitor technologies in the industry, along with an expanding range of electromagnetic compatibility solutions and supercapacitors. Our vision is to be the preferred supplier of electronic component solutions for customers demanding the highest standards of quality, delivery and service.

## Features & Benefits

- Rated voltage: 250 – 400 VAC
- Capacitance range: 1.0 – 62.0  $\mu$ F
- Lead spacing: 27.5 – 52.5 mm
- Capacitance tolerance:  $\pm 5\%$ ,  $\pm 10\%$
- Endurance test:
  - 500 + 500 hours @  $1.3 \times V_{NDC}$  @ 85°C
  - 500 + 500 hours @  $1.3 \times V_{OP105}$  @ 105°C
- Maximum operating temperature  $T_{MAX}$ : +105°C
- Climatic category: 55/105/56 IEC 60068-1
- RoHS compliant and lead-free
- THB test @ 85°C, 85% RH and 240 VAC/310 VAC, 500 hours
- Automotive grade (AEC-Q200)

## Product Checklist

- What is the nominal AC voltage?
- What is the circuit position and function of the capacitor?
- What is the ripple current spectrum?
- What is the capacitance value?
- What is the required capacitance stability?
- What are the size and lead terminations (diameter and number of pins) required?
- Are there any environmental concerns such as temperature, moisture or vibration?

For more information, samples and engineering kits, please visit us at [www.kemet.com](http://www.kemet.com) or call 1.877.myKEMET.

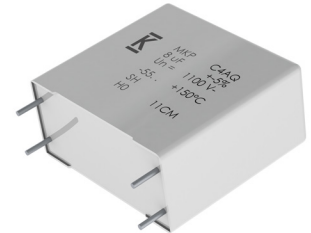
## Overview

The C4AF is a polypropylene metallized film with a rectangular plastic box-type design (white or grey color), filled with resin and 2 or 4 tinned copper wires.

## Applications

Typical applications include AC filtering in harsh environmental conditions (automotive grade):

- Alternative energy
- Industrial
- Automotive



## Ordering Information

C4	A	F	U	B	W	5270	A	3	N	J
Series	Type	Application	Rated Voltage (VDC)	Case	Number of Leads	Capacitance Code (pF)	C-Spec	Lead Diameter (mm)	Size Code	Tolerance
C4 = MKP capacitors Power	A = Radial box - wires terminals	F = AC filtering automotive grade	1 = 250 9 = 310 7 = 350 3 = 400	B = Box, plastic case E = Extended box, plastic case	U = 2 pins W = 4 pins	Digits 2 - 4 indicate the first three digits of the capacitance value. First digit indicates the number of zeros to be added.	A = Standard B...Z = Special	1 = 0.8 3 = 1.2	Digit 6 = B W = 11 x 20 x 31.5 X = 13 x 25 x 31.5 Y = 14 x 28 x 31.5 1 = 19 x 29 x 31.5 2 = 22 x 37 x 31.5 F = 20 x 40 x 42 J = 28 x 37 x 42 L = 30 x 45 x 42 O = 35 x 50 x 42 M = 30 x 45 x 57.5 N = 35 x 50 x 57.5 Digit 6 = E A = 45 x 56 x 57.5 B = 45 x 65 x 57.5	J = 5% K = 10%

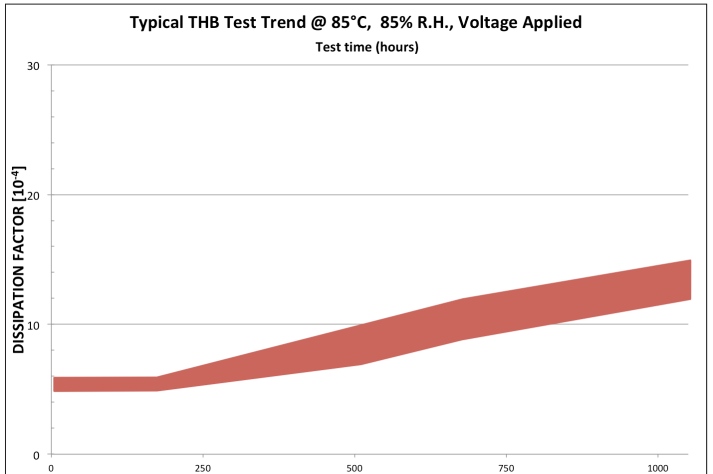
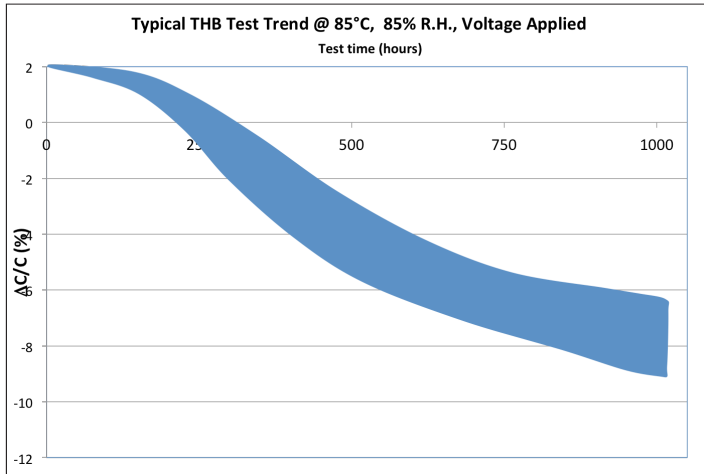
## KEMET Electrical/Physical Characteristics

Temperature Range	-55°C to 105°C
Qualification	AEC-Q200
Dissipation Factor PP Typical (tg $\delta_0$ )	$\leq 0.0002$ at 10 kHz and +25°C, $\pm 5^\circ$ C
Surge Voltage	$1.5 * V_{NDC}$ for maximum 10 times in a lifetime @ 25°C, $\pm 5^\circ$ C
Overtoltage (IEC 61071)	$1.15 * V_{NDC}$ for maximum 30 minutes - once per day $1.3 * V_{NDC}$ for maximum 1 minute - once per day
Peak Non-Repetitive Current	$1.5 * I_{PKR}$ - maximum 1,000 times in a lifetime
Insulation Resistance	$IR \times C \geq 30.000$ seconds at 100 VDC 1 minute (+25°C, $\pm 5^\circ$ C)
Capacitance Deviation in Operation Temperature Range -55 to 105°C	$\pm 2.5\%$ maximum on capacitance value measured at (+25°C, $\pm 5^\circ$ C)
Temperature Storage	-40 to +80°C
Test Voltage Between Terminations	$1.5 * V_{NDS}$ for 10 seconds or $1.65 * V_{NDS}$ for 2 seconds @ +25°C, $\pm 5^\circ$ C
Storage Time	$\leq 36$ months from the date marked on the label glued to the package
Permissible Relative Humidity - Storage	Annual average $\leq 70\%$ , 85% on 30 days/year randomly distributed throughout the year. Dewing not admissible.
Rated Voltage (VDC) @ 85°C	250, 310, 350, 400
Operating Voltage (VAC) @ 105°C	175, 217, 245, 280



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Case Size (B x H x L – p) mm	Voltage (VAC)			
	250	310	350	400
11 x 20 x 31.5 – 27.5	1.0 – 1.5 μF	1.0 μF		
13 x 25 x 31.5 – 27.5	2.2 μF	1.5 μF	1.0 μF	
14 x 28 x 31.5 – 27.5		2.2 μF	1.5 μF	1.0 μF
19 x 29 x 31.5 – 27.5	3.3 – 4.7 μF	3.3 μF	2.2 μF	1.5 μF
22 x 37 x 31.5 – 27.5	6.8 – 7.5 μF	4.7 μF	3.3 – 3.7 μF	2.2 – 2.5 μF
20 x 40 x 42 – 37.5	10 μF	6.8 μF	4.7 μF	3.3 μF
28 x 37 x 42 – 37.5		10 μF	6.8 μF	4.7 μF
30 x 45 x 42 – 37.5	15 μF			6.8 μF
35 x 50 x 42 – 37.5	22 – 24.5 μF	15 – 17 μF	10 – 12.5 μF	9.0 μF
30 x 45 x 57.5 – 52.5				10 μF
35 x 50 x 57.5 – 52.5	33 μF	22 μF	15 μF	
45 x 56 x 57.5 – 52.5	47 – 55 μF	33 – 37.5 μF	22 – 27 μF	15 – 20 μF
45 x 65 x 57.5 – 52.5	62 μF	42 μF	32 μF	22.5 μF