

# C93, 320 – 460 VAC/400 – 600 VDC, for PFC & AC Filter

## Overview

The C93 capacitor is a polypropylene metallized film capacitor with a cylindrical, aluminium can-type design filled with oil. It uses double faston terminals, a plastic insulator, and an overpressure safety device.

## Applications

Typical applications include power factor correction and AC harmonic filtering.

## Benefits

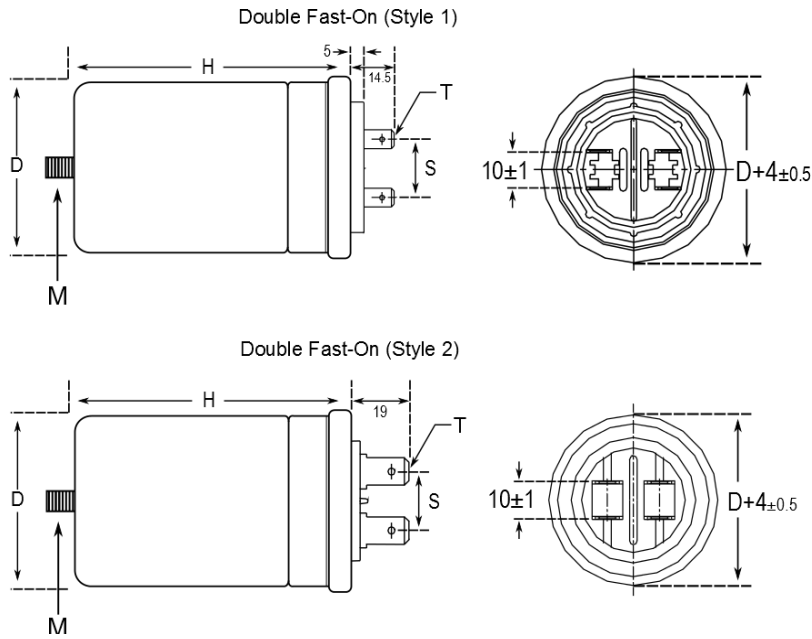
- Overpressure safety device
- High peak current capability
- Useful for PFC bank applications
- Self-healing



## Part Number System

C93	0	Z	G	3	5500	ZA0	X
Series	Rated Voltage (VAC)	Internal Code	Case and Mounting	Terminal Style	Capacitance Code (pF)	Internal Code	Tolerance
C93 = Single Phase Power Factor Correction Capacitors	0 = 320 1 = 415 3 = 460	Z = Standard	G = Cylindrical aluminum case with M12 bolt	3 = Double fasten	Digits 2 – 4 indicate the first three digits of the capacitance value. First digit indicates the number of zeros to be added.	ZA0, RA0 and RS0 = Standard	X = -5/+15%

## Dimensions – Millimeters



Style	D	H	S	Terminations (T)	Mounting Stud (M)
	±0.5	±2	Nominal		
1	40	78	13.4	6.3 x 0.8	M12 x 12.5
	45	78	13.4	6.3 x 0.8	M12 x 12.5
	60	98	18.8	6.3 x 0.8	M12 x 16
	60	133	18.8	6.3 x 0.8	M12 x 16
2	60	133	15	6.3 x 0.8	M12 x 16
	75	150	15	6.3 x 0.8	M12 x 16

## Qualification

Reference Standards	IEC 60831-1, IEC 60831-2
Protected 10,000 AFC	-25°C to +70°C
Approval	UL 810
Vibration Test	IEC 68-2-6

## Performance Characteristics

Type of Service	Continuous
Temperature Range	-25 to +55°C
Storage Temperature	-40 to +90°C
Rated Voltage VAC	320 VAC, 415 VAC, 440 VAC, 525 VAC
Nominal Frequency	50 – 60 Hz
Maximum dV/dt	30 V/μs
Maximum Admissible Tension	Temporarily 1.1 times the nominal voltage 8 hours/24 hours
Life Expectancy at Nominal Voltage	30,000 hours with ( $\Delta C/C > 5\%$ ) at the operating temperature
Maximum Dissipation Factor (DF)	$10 \times 10^{-4}$ at +20°C and 50 Hz
Capacitance Tolerance	-5 to +15%
Installation	Any position
Case	Aluminum
Dielectric	Metallized polypropylene
Test Voltage Terminal to Terminal (VTT)	$2.15 V_n$ for 2 seconds
Test Voltage Terminal to Case (VTC)	3,600 V for 2 seconds
Air Distance Between Live Parts	$\geq 5$ mm
Air Distance Between Live Parts and Case	$\geq 6$ mm
Vibration Test	IEC 68-2-6
Safety	Overpressure safety device

## Environmental Compliance

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For military, medical, automotive, and some commercial applications, the use of lead (Pb) in the termination is necessary and/or required by design. KEMET is committed to communicating RoHS compliance to our customers. Information related to RoHS compliance will be provided in data sheets and using specific identifiers on the packaging labels.

All KEMET power film capacitors are RoHS compliant.

**Table 1 – Ratings & Part Number Reference**

Cap Value ( $\mu\text{F}$ )	VDC	VAC	Maximum Dimensions (mm)		Rated Current	Packaging Quantity	Part Number
			D	L	(A)		
50	400	320	60	98	4.5	40	C930ZG35500ZA0X
70	400	320	60	98	9.1	28	C930ZG35700ZA0X
100	400	320	60	133	13	28	C930ZG36100ZA0X
10	600	415	40	78	1.7	62	C931ZG35100ZA0X
16.6	600	415	60	98	2.1	28	C931ZG35166RA0X
30	600	415	60	98	5	28	C931ZG35300ZA0X
33.3	600	415	60	98	4.2	28	C931ZG35333RA0X
49.8	600	415	60	133	6.3	28	C931ZG35498RA0X
60	600	415	60	133	10.1	28	C931ZG35600ZA0X
66.3	600	415	60	133	8.3	28	C931ZG35663RA0X
83	600	415	60	133	13.5	28	C931ZG35830ZA0X
100	600	415	75	150	16.9	28	C931ZG36100ZA0X
16.5	600	460	45	78	2.5	28	C933ZG35165RS0X
33.3	600	460	60	98	5	28	C933ZG35333RS0X
66.3	600	460	60	133	10	28	C933ZG35663RS0X
77.1	600	460	60	133	11.6	28	C933ZG35771RS0X
83	600	460	60	133	12.5	28	C933ZG35830RS0X
<b>Capacitance Value (<math>\mu\text{F}</math>)</b>	<b>VDC</b>	<b>VAC</b>	<b>D (mm)</b>	<b>L (mm)</b>	<b>Rated Current</b>	<b>Packaging Quantity</b>	<b>Part Number</b>

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## Dissipation Factor

Dissipation factor is a complex function involved with capacitor inefficiency. The  $\text{tg}\delta$  may vary up and down with increased temperature. For more information, refer to Performance Characteristics.

## Sealing

### Hermetically Sealed Capacitors

As the temperature increases, the pressure inside the capacitor increases. If the internal pressure is high enough, it can cause a breach in the capacitor. Such a breach can result in leakage, impregnation, filling fluid, or moisture susceptibility.

### Barometric Pressure

The altitude at which hermetically sealed capacitors are operated controls the capacitor's voltage rating. As the barometric pressure decreases, the susceptibility to terminal arc-over increases. Non-hermetic capacitors can be affected by internal stresses due to pressure changes. These effects can be in the form of capacitance changes, dielectric arc-over, and/or low insulation resistance. Altitude can also affect heat transfer. Heat that is generated in an operation cannot be dissipated properly, and high  $\text{RI}^2$  losses and eventual failure can result.

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