

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

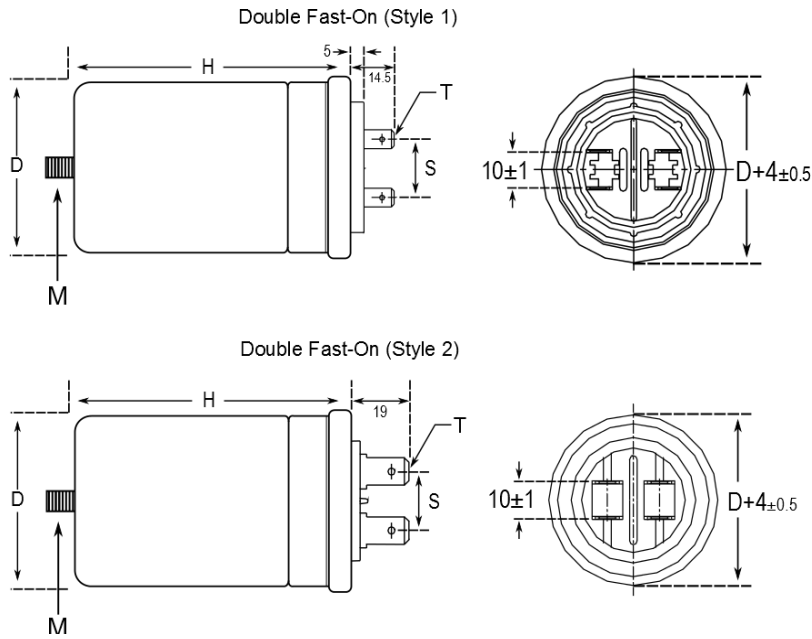
- Overpressure safety device
- High peak current capability
- Useful for PFC bank applications
- Self-healing



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) | 10×10^{-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 | ≥ 5 mm |
| Air Distance Between Live Parts and Case | ≥ 6 mm |
| Vibration Test | IEC 68-2-6 |
| Safety | Overpressure safety device |

Environmental Compliance

As a leading global supplier of electronic components and an environmentally conscious company, KEMET continually aspires to improve the environmental effects of our manufacturing processes and our finished electronic components.

In Europe (RoHS Directive) and in some other geographical areas such as China (China RoHS), legislation has been enacted to prevent or otherwise limit the use of certain hazardous materials, including lead (Pb), in electronic equipment. KEMET monitors legislation globally to ensure compliance and endeavors to adjust our manufacturing processes and/or electronic components as may be required by applicable law.

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 (μF) | 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 |
| Capacitance Value (μF) | VDC | VAC | D (mm) | L (mm) | Rated Current | Packaging Quantity | Part Number |

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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 RI^2 losses and eventual failure can result.

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