Aluminum Can Power Film Capacitors

C44A, 400 – 1,500 VDC/250 – 630 VAC, for General Purpose & Snubbing

Overview

The C44A capacitor is a polypropylene metallized film capacitor with a cylindrical, aluminium can-type design filled with resin. It uses screw or faston terminals and a plastic insulator.

Applications

Typical applications include snubber, commutation, resonance, DC filtering, AC harmonic filtering, pulse, and energy storage.

Benefits

- High capacitance density
- High peak current
- Self-healing

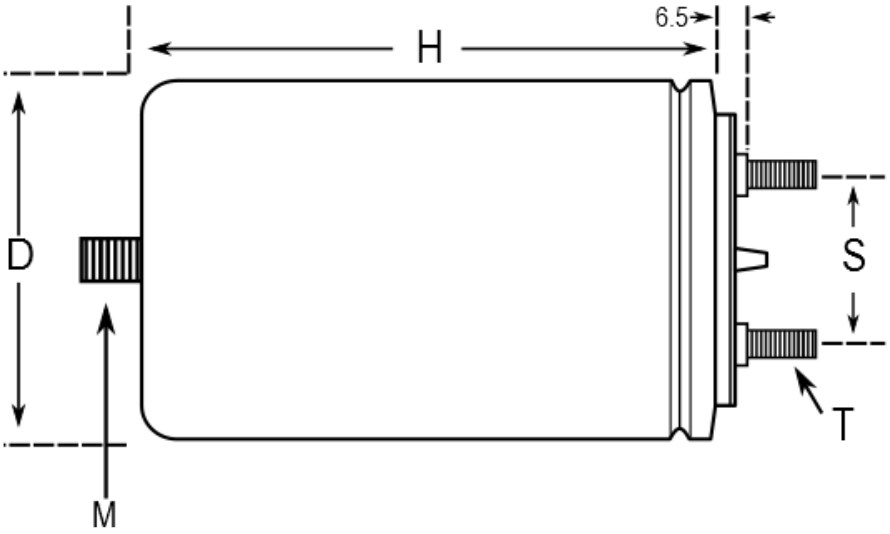


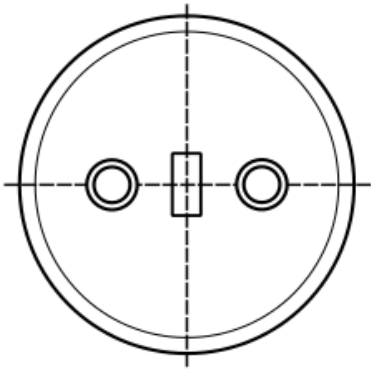
Part Number System

C44A	F	F	P	5150	ZA0	J
Series	Rated Voltage (VDC)	Case and Fixing Bolt Code	Terminal Style	Capacitance Code (pF)	Internal Code	Tolerance
C44A = MKP, General Purpose	F = 400 H = 600 J = 700 M = 850 P = 1,200 S = 1,500	F = Cylindrical aluminum case with M8 bolt G = Cylindrical aluminum case with M12 bolt	P = M6 Threaded posts R = M10 Threaded posts Q = M8 Threaded posts (on request) 2 = Simple faston 6.3 x 0.8 mm (on request) 3 = Double faston 6.3 x 0.8 mm (on request)	Digits 2 – 4 indicate the first three digits of the capacitance value. First digit indicates the number of zeros to be added.	ZA0, ZB0, ZC0, ZD0, ZE0, ZF0, ZG0, ZH0 = Standard	J = 5% K = 10%

© KEMET Electronics Corporation • KEMET Tower • One East Broward Boulevard
Fort Lauderdale, FL 33301 USA • 954-766-2800 • www.kemet.com

Dimensions – Millimeters





D	H	S	Terminations (T)	Mounting Stud (M)
±0.5	±2	±0.5		
45	80	22.3	M6 x 13	M8 x 10
45	101	22.3	M6 x 13	M8 x 10
45	105	22.3	M6 x 13	M8 x 10
50	76	22.3	M6 x 13	M8 x 10
50	101	22.3	M6 x 13	M8 x 10
50	138	22.3	M6 x 13	M8 x 10
55	101	22.3	M6 x 13	M12 x 12.5
55	138	22.3	M6 x 13	M12 x 12.5
60	100	22.3	M6 x 13	M12 x 12.5
60	101	22.3	M6 x 13	M12 x 12.5
60	138	22.3	M6 x 13	M12 x 12.5
65	101	22.3	M6 x 13	M12 x 12.5
65	135	22.3	M6 x 13	M12 x 12.5
65	138	22.3	M6 x 13	M12 x 12.5
65	158	22.3	M6 x 13	M12 x 12.5
70	138	22.3	M6 x 13	M12 x 12.5
76	135	35	M6 x 13	M12 x 12.5
76	138	35	M6 x 13	M12 x 12.5
76	200	35	M6 x 13	M12 x 12.5
85	137	35	M10 x 25	M12 x 12.5
85	138	35	M10 x 25	M12 x 12.5
85	150	35	M10 x 25	M12 x 12.5
85	185	35	M10 x 25	M12 x 12.5

Qualification

Reference Standards	VDE 0560, IEC 071, EN 61071
Application Class (DIN 40040)	GPD/LS

Performance Characteristics

Reference Standards	VDE 0560, IEC 071, EN 61071
Application Class (DIN 40040)	GPD/LS
Temperature Range	−40°C to +85°C
Maximum Permissible Ambient Temperature	+70°C
Capacitance Tolerance	±5%, ±10%
Test Voltage Terminal to Case (V_{TT})	1.5 V_{RMS} for 60 seconds
Test Voltage Terminal to Case (V_{TC})	3 kV – 50 Hz for 60 seconds
Rated Insulation Voltage (V_i)	700 V – 50 Hz Insulation Group B (VDE 0110 Part 1)
Dissipation Factor (DF)	≤ 3 x 10^{-4} (V_n, 50 Hz)
Acceptable Relative Humidity	Annual average ≤ 70% ≤ 85% for ≤ 30 intermittant days annually Dewing not admissible
IEC Climatic Category	40/85/21
Degree of Protection	IP00
Capacitance Deviation in the Operating Temperature Range of −40°C to + 85°C	±1.5 maximum on capacitance value measured at +20°C
Change of Capacitance vs. Operating Time	−3% after 30,000 hours at V_{RMS} or after 100,000 hours at V_n
Case Components	Aluminum case plus plastic insulating deck with flame retardant execution (UL 94 V1)
Terminations	Tinned brass fastons or screws
Installation	Any position
Life Expectancy	≥ 30,000 hours at V_{RMS}, ≥ 100,000 hours at V_n
Failure Quota	300/10^9 components per hour

Table 1 – Ratings & Part Number Reference

Cap Value (µF)	VDC	VAC	Peak VDC	Dimensions (mm)		Ripple Current	Peak Current	ESR (typ.)	dV/dt (V/µs)	Thermal Resistance	Packaging Quantity	Part Number
				D	H	(A)	(A)	(mΩ)		(°C/W)		
15	400	250	600	45	80	16	450	5	30	7.8	60	C44AFF(1)5150ZA0(3)
20	400	250	600	45	80	18	600	5	30	6.2	60	C44AFF(1)5200ZE0(3)
22	400	250	600	45	80	18	660	5	30	6.2	60	C44AFF(1)5220ZA0(3)
25	400	250	600	45	80	18	750	5	30	6.2	60	C44AFF(1)5250ZA0(3)
30	400	250	600	50	101	22	600	6	20	3.5	25	C44AFF(1)5300ZA0(3)
40	400	250	600	50	101	25	800	6	20	2.7	25	C44AFF(1)5400ZA0(3)
50	400	250	600	50	101	25	1000	6	20	2.6	25	C44AFF(1)5500ZE0(3)
60	400	250	600	60	101	25	1200	6	20	2.6	16	C44AFG(1)5600ZA0(3)
75	400	250	600	60	101	30	1500	5	20	3.2	16	C44AFG(1)5750ZA0(3)
100	400	250	600	60	138	32	1500	4	15	4	20	C44AFG(1)6100ZG0(3)
130	400	250	600	65	138	32	2000	4	15	4	12	C44AFG(1)6130ZA0(3)
150	400	250	600	70	138	32	2250	4	15	4	12	C44AFG(1)6150ZA0(3)
200	400	250	600	76	138	32	2000	4	10	4	9	C44AFG(1)6200ZE0(3)
250	400	250	600	85	150	32	2500	4	10	4	5	C44AFG(2)6250ZA0(3)
300	400	250	600	85	185	50	6000	5	20	1.25	9	C44AFG(2)6300ZA0(3)
330	400	250	600	85	185	50	6000	5	20	1.25	5	C44AFG(2)6330ZA0(3)
10	600	330	800	45	80	16	400	5	40	7.8	60	C44AHF(1)5100ZA0(3)
15	600	330	800	45	105	18	600	4	40	7.7	30	C44AHF(1)5150ZA0(3)
20	600	330	800	45	101	22	600	4	30	5.2	30	C44AHF(1)5200ZB0(3)
22	600	330	800	50	101	25	660	3	30	5.3	25	C44AHF(1)5220ZA0(3)
25	600	330	800	50	101	22	600	6	20	3.5	25	C44AHF(1)5250ZB0(3)
30	600	330	800	50	101	25	900	2	30	10.3	20	C44AHF(1)5300ZC0(3)
33	600	330	800	55	101	25	990	2	30	8	20	C44AHG(1)5330ZA0(3)
40	600	330	800	60	101	25	1200	2	30	8	16	C44AHG(1)5400ZB0(3)
50	600	330	800	55	138	25	1000	5	20	3.2	20	C44AHG(1)5500ZG0(3)
60	600	330	800	60	138	32	1200	5	20	3.1	16	C44AHG(1)5600ZB0(3)
70	600	330	800	65	138	32	1400	5	20	3.2	12	C44AHG(1)5700ZA0(3)
75	600	330	800	65	138	32	1500	5	20	3.2	12	C44AHG(1)5750ZA0(3)
80	600	330	800	65	135	32	1600	5	20	3.2	12	C44AHG(1)5800ZA0(3)
100	600	330	800	76	135	32	2000	5	20	3.2	9	C44AHG(1)6100ZA0(3)
100	600	330	800	85	138	50	3000	5	30	1.25	5	C44AHG(2)6100ZB0(3)
5	700	400	900	45	80	16	250	3	50	13	60	C44AJF(1)4500ZA0(3)
6	700	400	900	45	80	16	300	3	50	13	60	C44AJF(1)4600ZA0(3)
7.5	700	400	900	45	80	18	375	3	50	10.3	60	C44AJF(1)4750ZA0(3)
10	700	400	900	50	101	18	500	3	50	10	25	C44AJF(1)5100ZA0(3)
15	700	400	900	50	101	25	600	3	40	5.3	25	C44AJF(1)5150ZB0(3)
20	700	400	900	50	101	25	800	3	40	5.3	25	C44AJF(1)5200ZD0(3)
22	700	400	900	55	101	25	880	3	40	5.3	20	C44AJG(1)5220ZA0(3)
25	700	400	900	60	101	25	1000	3	40	5.3	16	C44AJG(1)5250ZA0(3)
30	700	400	900	60	138	25	900	3	30	5.3	16	C44AJG(1)5300ZB0(3)
33	700	400	900	60	138	25	990	3	35	5.3	16	C44AJG(1)5330ZA0(3)
40	700	400	900	65	138	32	1200	4	35	4	12	C44AJG(1)5400ZA0(3)
50	700	400	900	65	138	32	1500	4	35	4	12	C44AJG(1)5500ZA0(3)
60	700	400	900	76	138	32	1800	4	30	4	9	C44AJG(1)5600ZA0(3)
70	700	400	900	76	138	32	2100	4	30	4	9	C44AJG(1)5700ZA0(3)
Cap Value (µF)	VDC	VAC	Peak VDC	D	H	(A)	(A)	(mΩ)	dV/dt (V/µs)	(°C/W)	Packaging Quantity	Part Number
				Dimensions (mm)		Ripple Current	Peak Current	ESR (typ.)		Thermal Resistance		

(1) P = M6, Q = M8 (on request), 2 = Single Fast-On (on request), 3 = Double Fast-On (on request)
(2) R = M10, 2 = Single Fast-On (on request), 3 = Double Fast-On (on request)
(3) K = ±10%, J = ±5%

Table 1 – Ratings & Part Number Reference cont.

Cap Value (µF)	VDC	VAC	Peak VDC	Dimensions (mm)		Ripple Current	Peak Current	ESR (typ.)	dV/dt (V/µs)	Thermal Resistance	Packaging Quantity	Part Number
				D	H	(A)	(A)	(mΩ)		(°C/W)		
75	700	400	900	85	137	32	2250	4	30	4	9	C44AJG(2)5750ZA0(3)
100	700	400	900	85	185	50	4000	3	40	2	5	C44AJG(2)6100ZA0(3)
3	850	450	1000	45	80	16	180	5	60	7.8	60	C44AMF(1)4300ZA0(3)
5	850	450	1000	45	80	16	300	5	60	7.8	60	C44AMF(1)4500ZA0(3)
6	850	450	1000	45	80	18	360	5	60	6.2	60	C44AMF(1)4600ZA0(3)
8	850	450	1000	45	105	22	400	5	50	4.1	30	C44AMF(1)4800ZA0(3)
10	850	450	1000	50	97	25	500	5	50	3.2	25	C44AMF(1)5100ZD0(3)
15	850	450	1000	60	101	25	750	8	50	2	16	C44AMG(1)5150ZA0(3)
20	850	450	1000	65	101	25	1000	6	50	2.6	12	C44AMG(1)5200ZA0(3)
22	850	450	1000	55	138	25	880	4	40	1.5	20	C44AMG(1)5220ZA0(3)
25	850	450	1000	55	138	25	1000	5	40	3.2	20	C44AMG(1)5250ZA0(3)
30	850	450	1000	65	138	32	1200	5	40	3.2	12	C44AMG(1)5300ZA0(3)
33	850	450	1000	65	138	32	1320	5	40	3.2	12	C44AMG(1)5330ZA0(3)
35	850	450	1000	65	138	32	1400	5	40	3.2	12	C44AMG(1)5350ZA0(3)
40	850	450	1000	76	138	32	1600	5	40	3.2	9	C44AMG(1)5400ZB0(3)
50	850	450	1000	76	138	32	2000	5	40	3.2	9	C44AMG(1)5500ZA0(3)
60	850	450	1000	85	137	32	2400	5	40	3.2	5	C44AMG(2)5600ZA0(3)
1	1200	500	1600	45	80	15	300	2.5	300	17.7	60	C44APF(1)4100ZA0(3)
1.5	1200	500	1600	45	80	15	450	2.5	300	17.7	60	C44APF(1)4150ZA0(3)
2	1200	500	1600	45	80	15	600	2.5	300	17.7	60	C44APF(1)4200ZD0(3)
2.2	1200	500	1600	45	80	16	660	2	300	19.5	60	C44APF(1)4220ZA0(3)
2.5	1200	500	1600	45	80	18	750	2	300	15.4	60	C44APF(1)4250ZA0(3)
3	1200	500	1600	50	76	20	900	2	300	12.5	50	C44APF(1)4300ZB0(3)
4	1200	500	1600	50	101	20	1200	2	300	12.5	25	C44APF(1)4400ZA0(3)
5	1200	500	1600	50	101	22	1500	2	300	10.3	20	C44APF(1)4500ZB0(3)
5	1200	500	1600	50	138	40	2000	2	400	3.3	25	C44APF(1)4500ZA0(3)
6	1200	500	1600	55	101	25	1800	2	300	8	20	C44APG(1)4600ZB0(3)
6.8	1200	500	1600	60	101	25	2040	2	300	8	16	C44APG(1)4680ZB0(3)
7.5	1200	500	1600	50	138	25	2250	1.5	300	10.6	25	C44APG(1)4750ZF0(3)
8	1200	500	1600	55	138	25	2000	3.5	250	4.5	20	C44APG(1)4800ZE0(3)
10	1200	500	1600	55	138	25	2500	3	250	5.3	20	C44APG(1)5100ZE0(3)
10	1200	500	1600	60	138	50	3000	2	300	3.2	16	C44APG(1)5100ZF0(3)
10	1200	500	1600	65	158	60	3500	2	350	1.4	12	C44APG(1)5100ZH0(3)
15	1200	500	1600	76	138	32	3750	2.5	250	6.4	9	C44APG(1)5150ZB0(3)
20	1200	500	1600	85	137	32	5000	2.5	250	6.4	5	C44APG(2)5200ZB0(3)
22	1200	500	1600	76	200	50	6600	2.5	300	1.1	9	C44APG(2)5220ZA0(3)
1	1500	630	2000	45	80	15	700	2.5	400	17.7	60	C44ASF(1)4100ZA0(3)
2	1500	630	2000	50	76	16	800	2.5	400	15.6	50	C44ASF(1)4200ZB0(3)
3	1500	630	2000	50	101	22	1200	2	400	10.3	25	C44ASF(1)4300ZA0(3)
4	1500	630	2000	60	101	25	1600	2	400	8	16	C44ASG(1)4400ZA0(3)
5	1500	630	2000	65	101	25	2000	2	400	8	12	C44ASG(1)4500ZB0(3)
7.5	1500	630	2000	65	138	25	2250	3	300	5.3	12	C44ASG(1)4750ZA0(3)
10	1500	630	2000	70	138	32	3000	3	300	5.3	12	C44ASG(1)5100ZA0(3)
12	1500	630	2000	85	137	32	3600	3	300	5.3	5	C44ASG(2)5120ZA0(3)
15	1500	630	2000	85	137	32	4500	3	300	5.3	9	C44ASG(2)5150ZA0(3)
Cap Value (µF)	VDC	VAC	Peak VDC	D	H	(A)	(A)	(mΩ)	dV/dt (V/µs)	(°C/W)	Packaging Quantity	Part Number
				Dimensions (mm)		Ripple Current	Peak Current	ESR (typ.)		Thermal Resistance		

(1) P = M6, Q = M8 (on request), 2 = Single Fast-On (on request), 3 = Double Fast-On (on request)
(2) R = M10, 2 = Single Fast-On (on request), 3 = Double Fast-On (on request)
(3) K = ±10%, J = ±5%

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.

Marking



Materials & Environment

The selection of raw materials that KEMET uses for the production of its electronic components is the result of extensive experience. KEMET directs specific attention toward environmental protection. KEMET selects its suppliers according to ISO 9001 standards and performs statistical analyses on raw materials before acceptance for use in manufacturing our electronic components. All materials are, to the best of KEMET's knowledge, non-toxic and free from cadmium; mercury; chrome and compounds; polychlorine triphenyl (PCB); bromide and chlorinedioxins bromurate clorurate; CFC and HCFC; and asbestos.

Dissipation Factor

Dissipation factor is a complex function involved with capacitor inefficiency. The tgδ 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.

KEMET Electronics Corporation Sales Offices

For a complete list of our global sales offices, please visit www.kemet.com/sales.

Disclaimer

All product specifications, statements, information and data (collectively, the "Information") in this datasheet are subject to change. The customer is responsible for checking and verifying the extent to which the Information contained in this publication is applicable to an order at the time the order is placed. All Information given herein is believed to be accurate and reliable, but it is presented without guarantee, warranty, or responsibility of any kind, expressed or implied.

Statements of suitability for certain applications are based on KEMET Electronics Corporation's ("KEMET") knowledge of typical operating conditions for such applications, but are not intended to constitute – and KEMET specifically disclaims – any warranty concerning suitability for a specific customer application or use. The Information is intended for use only by customers who have the requisite experience and capability to determine the correct products for their application. Any technical advice inferred from this Information or otherwise provided by KEMET with reference to the use of KEMET's products is given gratis, and KEMET assumes no obligation or liability for the advice given or results obtained.

Although KEMET designs and manufactures its products to the most stringent quality and safety standards, given the current state of the art, isolated component failures may still occur. Accordingly, customer applications which require a high degree of reliability or safety should employ suitable designs or other safeguards (such as installation of protective circuitry or redundancies) in order to ensure that the failure of an electrical component does not result in a risk of personal injury or property damage.

Although all product–related warnings, cautions and notes must be observed, the customer should not assume that all safety measures are indicted or that other measures may not be required.

KEMET is a registered trademark of KEMET Electronics Corporation.