Radial Aluminum and Plastic Case Power Film Capacitors C44P/C20A, 250 - 1,000 VAC, 400 - 1,400 VDC, for PFC and AC Filter

Overview

Polypropylene metallized film with cylindrical aluminium can type filled with oil, screw terminals, plastic insulator and overpressure safety device.

Benefits

- · Overpressure safety device
- · High peak current capability
- · High torque screw terminals with plastic insulator
- · Long lifetime
- · Self-healing

Applications

Typical applications include commutation, power factor correction and AC harmonic filtering.

Part Number Decoding

С	44	Р	F		G	R	6	2	2	0	Z	Α	0	J
Series	Series	Application	Rated Voltage (VAC)		Case Type	Terminal Style	Capacitance Code (pF)		Internal Code	Internal Code	Internal Code	Tolerance		
MKP Capacitors for Power Applications	44 = 250 - 440 V _{ms} 20 = 550 - 1,000 V _{ms}	AC Filter P = C44 A = C20	For C44P For C20A F = 25 K = 550 L = 330 L = 640 K = 440 Q = 780 Z = 1,000		G = with M12 bolt	R= Male M10	D ind digi indid of zo add ca	igits 9, dicate ts of ca value. cates t eros th ed to c pacita	10, & the firs apacita Digit a he nui hat mu obtain nce in	11 st 3 ance ber st be rated pF.	A = Standard Z = Special			J = 5% K = 10%

Mechanical Data

P (Terminals Pitch)	28 mm for D = 65 mm 35 mm for D ≥ 75 mm				
Maximum Driving Torque	10 Nm				
Creepage Distance	> 10 mm				
Clearance in Air	> 10 mm				
Insulation Group	D				



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Qualification

Reference Standards	EIC 61071
Application Class (DIN 40040)	HSF/LR

Performance Characteristics

Reference Standards	IEC 1071, EN 61071, VDE 0560–12
Application Class (DIN 40040)	HSF/LR according to DIN 40040
Temperature Range (Case)	-25 to + 70°C
Temperature Storage	-55 to + 85°C
Maximum Permissible Ambient Temperature	+70°C
Capacitance Tolerance Code (15th Digit)	J = ± 5%, K = ± 10%
Test Voltage Terminal to Terminal (V $_{\scriptscriptstyle TT}$)	2.15 V_{RMS} for 10 seconds at 25°C
Test Voltage Terminal to Case (V $_{_{\rm TC}})$	4 kV – 50 Hz for 60 seconds
Rated Insulation Voltage V_i	3,600 VAC for 10 seconds at 25°C for V _{rms} < 600 VAC
Insulation Resistance	≥ 10,000 MΩ x μF
Dissipation Factor (tgδ)	≤ 3 x 10 ⁻⁴ (V _n , 50 Hz)
Acceptable Relative Humidity	Annual average ≤ 70% ≤ 85% for ≤ 30 intermittent days annually Dewing not admissible
IEC Climatic Category	25/70/56 according to IEC 68–1
Degree of Protection	IP00
Capacitance Deviation in the Operating Temperature Range of -40 to +70°C	±1.5% maximum on capacitance value measured at +20°C
Change of Capacitance vs. Operating Time	-3% after 100,000 hours at $V_{\rm rms}$
Terminations	Plastic insulator with screw terminals M10
Installation	Space for safety device ≥ 15 mm
Life Expectancy	≥ 100,000 hours at V _{rms}
Failure Quota	300/10 ⁹ components per hour



Table 1 – Ratings & Part Number Reference

VDC	VAC	Cap Value	Dimensions (mm)			Vpk	l _{kr}	l rms	Weight	Dort Number	
VDC	VAC	(µF)	D	Н	Р	VDC	A	A	(kg)	Fait Nulliber	
400	250	300	75	268	35	600	3000	60	1.2	C44PFGR6300ZA0J	
400	250	400	85	268	35	600	4000	65	1.7	C44PFGR6400ZA0J	
400	250	500	85	268	35	600	5000	65	1.7	C44PFGR6500AA0J	
400	250	600	95	280	35	600	6000	65	2.1	C44PFGR6600AA0J	
500	330	100	65	115	28	700	1500	25	0.5	C44PLGR6100AASJ	
500	330	200	65	145	28	700	3000	43	0.6	C44PLGR6200ZASJ	
500	330	300	65	247	28	700	4500	50	0.8	C44PLGR6300ZASJ	
500	330	400	65	247	28	700	6000	50	1		
500	330	500	/5	247	35	700	7500	58	1.2		
750	330	100	00 75	270	35	940	9000	70	1.3		
750	440	100	65	247	28	940	3000	40	0.7		
750	440	150	65	247	28	940	3000	45	1	C44PKGR6150AASJ	
750	440	200	75	247	35	940	4000	55	12	C44PKGR6200AAS1	
750	440	300	85	247	35	940	4000	60	1.2	C44PKGR6300AASJ	
750	550	22	65	117	28	940	1540	40	0.4	C20AKGB5220AASK	
750	550	33	75	117	35	940	2310	45	0.5	C20AKGR5330AASK	
750	550	47	65	247	28	940	3290	50	0.8	C20AKGR5470AASK	
750	550	68	65	247	28	940	4760	55	1	C20AKGR5680AASK	
750	550	100	75	247	35	940	7000	60	1.5	C20AKGR6100AASK	
750	550	120	85	247	35	940	8400	60	2	C20AKGR6120AASK	
750	550	150	95	247	35	940	10500	60	2.3	C20AKGR6150AASK	
900	640	15	65	117	28	1130	1350	45	0.4	C20ALGR5150AASK	
900	640	22	75	147	35	1130	1980	45	0.5	C20ALGR5220AASK	
900	640	33	75	147	35	1130	2970	50	0.8	C20ALGR5330AASK	
900	640	47	65	247	28	1130	4230	55	1	C20ALGR5470AASK	
900	640	68	75	247	35	1130	6120	60	1.5	C20ALGR5680AASK	
900	640	100	95	247	35	1130	9000	60	2.3	C20ALGR6100AASK	
900	640	120	95	280	35	1130	10800	60	2.5	C20ALGR6120AASK	
900	640	150	116	280	35	1130	13500	60	3	C20ALGR6150AASK	
1100	780	10	65 75	147	28	1380	1000	30	0.4	C20AQGR5100AASK	
1100	780	15	75	147	35	1380	1500	45	0.5	C20AQGR5150AASK	
1100	780	22	75	147	25	1300	2200	40	0.0	C20AQGR5220AASK	
1100	780	33	75	247	35	1380	4700	50	1.2	C20AQGR5350AASK	
1100	780	68	85	247	35	1380	6800	60	2	C20AQGR5470AAGR	
1100	780	100	95	280	35	1380	10000	60	25	C20AQGR6100AASK	
1000	1400	100	65	147	28	1700	1000	25	0.56	C20AZGR5100AASK	
1000	1400	15	75	147	35	1700	1500	33	0.75	C20AZGR5150AASK	
1000	1400	22	75	147	35	1700	2200	35	0.75	C20AZGR5220AASK	
1000	1400	33	75	247	35	1700	3300	40	1.25	C20AZGR5330AASK	
1000	1400	47	85	247	35	1700	4700	45	1.65	C20AZGR5470AASK	
1000	1400	68	95	247	35	1700	6800	55	2	C20AZGR5680AASK	
VDC	VAC	Cap Value (µF)	D (mm)	H (mm)	P (mm)	Vpk VDC	I _{pkr} A	I _{rms} A	Weight (kg)	Part Number	



Environmental Compliance

As an environmentally conscious company, KEMET is working continuously with improvements concerning the environmental effects of both our capacitors and their production.

In Europe (RoHS Directive) and in some other geographical areas like China, legislation has been put in place to prevent the use of some hazardous materials, like Lead (Pb), in electronic equipment. All products in this catalog are produced to help our customers' obligations to guarantee their products to fulfill these legislative requirements. The only material of concern in our products has been Lead (Pb), which has been removed from all designs to fulfill the requirement of containing less than 0.1% of Lead in any homogeneous material.

KEMET will closely follow any changes in legislation world wide and makes any necessary changes in its products, whenever needed. Some customer segments like Medical, Military and Automotive Electronics may still require the use of Lead in electrode coatings. To clarify the situation and distinguish products from each other, a special symbol is used on the packaging labels for RoHS compatible capacitors.

Because of customer requirements there may appear additional markings like LF = Lead Free or LFW = Lead Free Wires on the label.

All KEMET power film products are RoHS Compliant.



Materials & Environment

The selection of materials used by KEMET for the production of capacitors is the result of extensive experience and constant attention to environmental protection. KEMET selects its suppliers according to ISO 9001 standards and carries out statistical analysis on the materials purchased before acceptance. All materials are, to the company's present knowledge, non-toxic and free from Cadmium, Mercury, Chrome and compounds, PCB (Polychlorine Triphenyl), Bromide and Chlorine Dioxins Bromurate Clorurate, CFC and HCFC and Asbestos.

Insulation Resistance

When the capacitor temperature increases, the insulation resistance decreases. This is due to increased electron activity. Low insulation resistance can also be the result of moisture trapped in the windings, caused by a prolonged exposure to excessive humidity.

Dissipation Factor

Dissipation factor is a complex function involved with the inefficiency of the capacitor. The tg δ may change up and down with increased temperature. For more information, please refer to Performance Characteristics.



Hermetically Sealed Capacitors

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

Resin Encased/Wrap & Fill Capacitors

The resin seals on resin encased and wrap and fill capacitors will withstand short-term exposure to high humidity environments without degradation. Resins and plastic tapes will form a pseudo-impervious barrier to humidity and chemicals. These case materials are somewhat porous and through osmosis can cause contaminants to enter the capacitor. The second area of contaminated absorption is the lead-wire/resin interface. Since resins cannot bond 100% to tinned wires, there can be a path formed up to the lead wire into the capacitor section. Aqueous cleaning of circuit boards can aggravate this condition.

Barometric Pressure

The altitude at which hermetically sealed capacitors are operated controls the voltage rating of the capacitor. 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. This can be in the form of capacitance changes or dielectric arc-over as well as low insulation resistance. Heat transfer can also be affected by altitude operation. Heat generated in operation cannot be dissipated properly and can result in high R¹² losses and eventual failure.

Radiation

Radiation capabilities of capacitors must be taken into consideration. Electrical degradation in the form of dielectric embitterment can take place causing shorts or opens.



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SPICE & FIT Software	http://www.kemet.com/spice					
Search Our FAQs: KnowledgeEdge	http://www.kemet.com/keask					

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Although we design and manufacture our 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 indicated or that other measures may not be required.



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