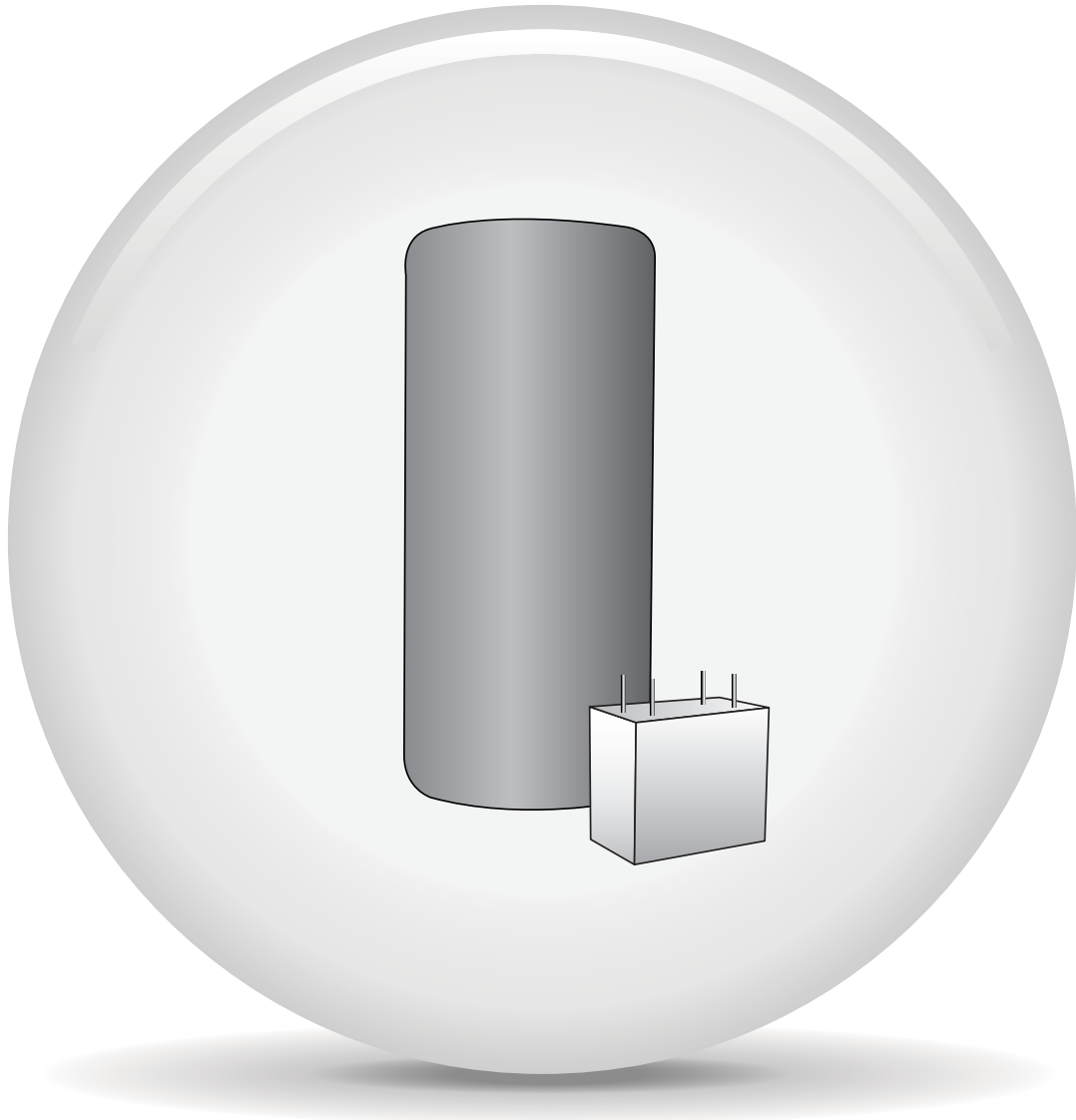


Featured Products Film Capacitors for Power Conversion

DC Link & AC Filter



One world. One KEMET.

The Capacitance Company
KEMET
CHARGED.

Table of Contents	Page
Printed Circuit Board Mount Power Film Capacitors	
C4AE, Radial, 2 or 4 Leads, 450 - 1,100 VDC, for DC Link.....	4
Radial Aluminum Case Power Film Capacitors	
C44U, 700 - 1,300 VDC, for DC Link	9
C44P/C20A, 250 - 1,000 VAC, 400 - 1400 VDC, for PFC & AC Filter.....	14
Environmental Compliance & Safety.....	18
KEMET Corporation Sales Offices	21
Other KEMET Resources.....	22

Overview

Polypropylene metallized film with rectangular plastic box type filled with resin and 2 or 4 tinned copper wires.

Applications

Typical applications include DC filtering and energy storage.

Benefits

- Self-healing
- Low losses
- High ripple current
- High capacitance density
- High contact reliability
- Suitable for high frequency applications



Part Number Decoding

C4	A	E	G	B	W	4	4	5	0	A	1	W	J
Series		DC Voltage	Case Code	Terminals Code	Capacitance Code (pF)				Variants	Terminals Diameter (mm)	Case Letter ²	Tolerance	
C4 = MKP Power Capacitors	A = Box - Wire Terminals	E = DC Link	E = 300 V G = 450 V H = 600 V I = 800 V J = 700 V K = 750 V L = 500 V M = 850 V N = 1000 V O = 900 V Q = 1100 V U = 1300 V	B = Box plastic case	U = Single copper wire W = Double copper wire Z = Special wire	Digits 9, 10, & 11 indicate the first 3 digits of capacitance value. Digit 8 indicates the number of zeros that must be added to obtain rated capacitance in pF.				A = Standard B = Special H ¹ = 100°C	1 = 0.8 2 = 1 3 = 1.2	0, A, B, C, D, E, F, G, H, J, L, M, N, W, X, Y, 1, 2	J = 5% K = 10%

¹ True 100°C high temperature film with no voltage derating available on request.

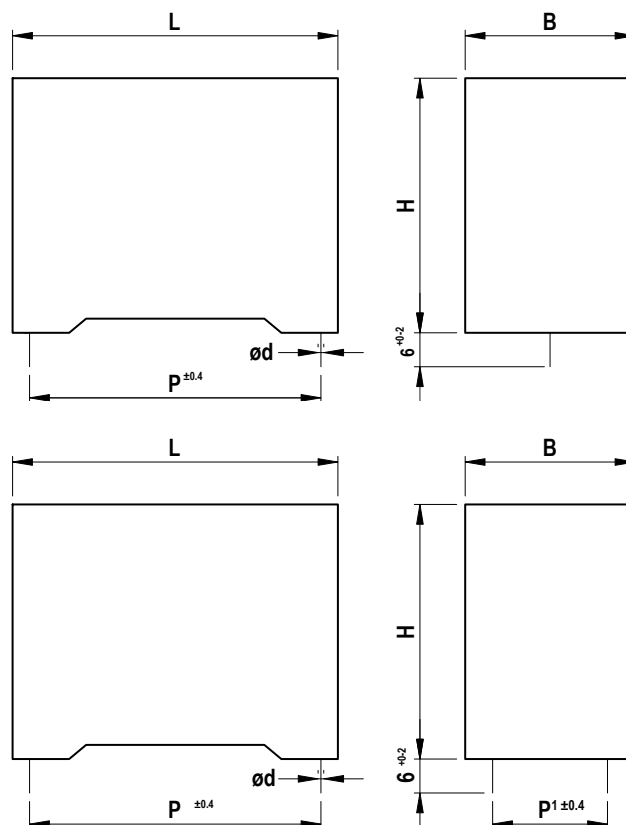
² Please see Dimension Table.

Lead Wire Table

Wire	0.8 mm	1.2 mm
Diameter	20 AWG	16 AWG
13th Digit Code	1	3

Dimensions – Millimeters

Case Code	B	H	L	P	P ¹
A	10	20	32	27.5	
B	13	22	32	27.5	
C	14	28	32	27.5	
D	15	24	32	27.5	
E	18	33	32	27.5	
F	20	40	41.5	37.5	10.2
G	22	37	32	27.5	
H	24	44	41.5	37.5	10.2
J	28	37	42.5	37.5	10.2
L	30	45	42	37.5	20.3
M	30	45	57.5	52.5	20.3
N	35	50	57.5	52.5	20.3
W	11	20	31.5	27.5	
X	13	25	31.5	27.5	
Y	14	28	31.5	27.5	
1	19	29	31.5	27.5	
2	22	37	31.5	27.5	
0	Internal				



Qualification

Reference Standards	IEC 61071
Climatic Category	40/85/56 according to IEC 60068-1

General Technical Data

Dielectric	Polypropylene metallized film, non inductive self-healing
Application	DC filtering / DC link
Maximum Operating Temperature	+105°C
Upper Temperature T _{MAX}	+85°C IEC 61071, Endurance Test Temperature
Lower Temperature T _{MIN}	-40°C
Protection	Solvent resistant plastic case UL 94 V-0 Thermosetting resin sealing UL 94 V-0 compliant
Installation	Any position
Leads	Tinned copper wires, standard lead wire length 6 (0/-2) mm
Packaging	Packed in cardboard trays with protection for the terminals
RoHS Compliant	Compliant with the restricted substance requirements of Directive 2002/95/EC

Electrical Characteristics

Capacitance Tolerance	±5% at T = 25°C
Dissipation Factor PP Typical (tgδ ₀)	≤ 0.0002 at 10 kHz with T = 25°C ±5°C
Surge Voltage	1.5 * V _{NDC} for maximum 10 times in lifetime at 25°C
Overvoltage (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 _{pk} - maximum 1,000 times in lifetime
Insulation Resistance	IR x C ≥ 30,000 seconds at 100 VDC 1 minute T = 25°C
Capacitance Deviation in Operation	±1.5% maximum on capacitance value measured at T = 25°C
Permissible Relative Humidity	Annual average ≤ 70%, 85% on 30 days/year randomly distributed throughout the year. Dewing not admissible.

Life Expectancy

Life Expectancy	100,000 hours at V _{NDC} at hot spot temperature T _{HS} = 85°C
Capacitance Drop at End of Life	-5% (typical)
Failure Rate IEC 61709	300 FIT at V _{NDC} at hot spot temperature T _{HS} = 85°C

Test Method

Test Voltage Between Terminals	1.5 * V _{NDC} for 10 seconds or 1.65 V _{NDC} for 2 seconds at T = 25°C
Test Voltage Between Terminals and Case	3.2 k VAC 50 Hz for 2 seconds
Damp Heat	IEC 60068-2-78
Change of Temperature	IEC 60068-2-14

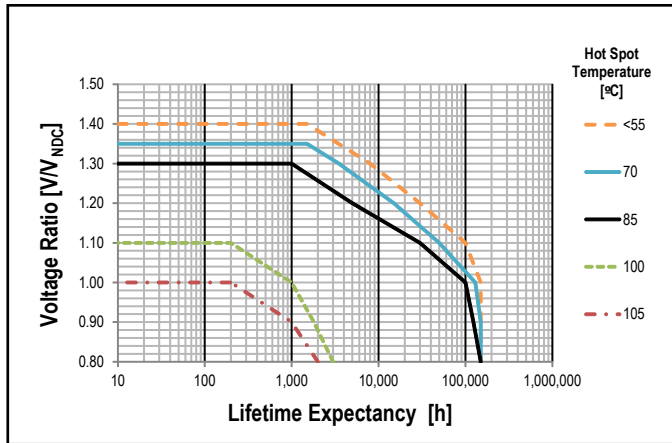
Table 1 – Ratings & Part Number Reference

VDC	Cap Value (µF)	Dimensions (mm)					dV/dt (V/µs)	I _{pk} A	ESL nH	ESR 70°C @ 10 kHz mΩ	I _{rms} * 70°C @ 10 kHz A	RTH (Hs/Amb)	Part Number
		B	H	L	P	P1							
450	4.5	11	20	31.5	27.5	\	14	65	25	14.2	4.5	44	C4AEGBU4450A1WJ
450	6.8	13	25	31.5	27.5	\	15	101	25	10	6	36	C4AEGBU4680A1XJ
450	10	14	28	31.5	27.5	\	14	145	26	7.4	7.5	33	C4AEGBU5100A1YJ
450	12.5	19	29	31.5	27.5	\	15	187	26	6.2	8.5	29	C4AEGBU5125A11J
450	20	22	37	31.5	27.5	\	15	303	28	4.8	11	23	C4AEGBU5200A12J
450	30	20	40	41.5	37.5	10.2	10	298	30	4.1	13	20	C4AEGBW5300A3FJ
450	35	28	37	42.5	37.5	10.2	10	355	30	3.5	14	18	C4AEGBW5350A3JJ
450	40	24	44	41.5	37.5	10.2	10	406	30	3.1	16	17	C4AEGBW5400A3HJ
450	50	30	45	42	37.5	20.3	10	508	30	2.5	18	15	C4AEGBW5500A3LJ
450	75	30	45	57.5	52.5	20.3	7	503	35	3.4	18	12	C4AEGBW5750A3MJ
450	100	35	50	57.5	52.5	20.3	7	677	35	2.6	22	10	C4AEGBW6100A3NJ
600	3.3	11	20	31.5	27.5	\	17	55	25	17	4	44	C4AEHBU4330A1WJ
600	5.6	13	25	31.5	27.5	\	17	94	25	10.7	6	36	C4AEHBU4560A1XJ
600	7	14	28	31.5	27.5	\	17	118	26	9	7	33	C4AEHBU4700A1YJ
600	10	19	29	31.5	27.5	\	17	169	26	6.8	8.5	29	C4AEHBU5100A11J
600	15	22	37	31.5	27.5	\	17	253	28	5.3	10.5	23	C4AEHBU5150A12J
600	20	20	40	41.5	37.5	10.2	11	229	30	5.3	11	20	C4AEHBU5200A3FJ
600	30	28	37	42.5	37.5	10.2	11	337	30	3.6	14	18	C4AEHBU5300A3JJ
600	40	30	45	42	37.5	20.3	11	458	30	2.8	18	15	C4AEHBU5400A3LJ
600	55	30	45	57.5	52.5	20.3	8	425	35	4.1	16.5	12	C4AEHBU5550A3MJ
600	75	35	50	57.5	52.5	20.3	8	579	35	3.1	20.5	10	C4AEHBU5750A3NJ
700	2.7	11	20	31.5	27.5	\	19	51	25	18.3	4	44	C4AEJBU4270A1WJ
700	4	13	25	31.5	27.5	\	19	77	25	12.9	5.5	36	C4AEJBU4400A1XJ
700	5	14	28	31.5	27.5	\	19	96	26	10.7	6	33	C4AEJBU4500A1YJ
700	8	19	29	31.5	27.5	\	19	154	26	7.3	8	29	C4AEJBU4800A11J
700	12.5	22	37	31.5	27.5	\	19	241	28	5.5	10	23	C4AEJBU5125A12J
700	15	20	40	41.5	37.5	10.2	13	196	30	6.2	10	20	C4AEJBU5150A3FJ
700	20	28	37	42.5	37.5	10.2	13	262	30	4.7	12.5	18	C4AEJBU5200A3JJ
700	22	24	44	41.5	37.5	10.2	13	288	30	4.3	13	17	C4AEJBU5220A3HJ
700	30	30	45	42	37.5	20.3	13	389	30	3.2	16.5	15	C4AEJBU5300A3LJ
700	45	30	45	57.5	52.5	20.3	9	389	35	4.4	16	12	C4AEJBU5450A3MJ
700	55	35	50	57.5	52.5	20.3	9	485	35	3.6	19	10	C4AEJBU5550A3NJ
700	60	35	50	57.5	52.5	20.3	9	530	35	3.4	19.5	10	C4AEJBU5600A3NJ
900	1.5	11	20	31.5	27.5	\	24	36	25	26.3	3.5	44	C4AEQBU4150A1WJ
900	2.7	13	25	31.5	27.5	\	24	65	25	15.3	5	36	C4AEQBU4270A1XJ
900	3.3	14	28	31.5	27.5	\	24	79	26	12.9	5.5	33	C4AEQBU4330A1YJ
900	5	19	29	31.5	27.5	\	24	120	26	9.1	7	29	C4AEQBU4500A11J
900	8	22	37	31.5	27.5	\	24	193	28	6.6	9.5	23	C4AEQBU4800A12J
900	12	20	40	41.5	37.5	10.2	16	190	30	6.3	10	20	C4AEQBU5120A3FJ
900	14	28	37	42.5	37.5	10.2	16	229	30	5.4	11.5	18	C4AEQBU5140A3JJ
900	16	24	44	41.5	37.5	10.2	16	256	30	4.8	13	17	C4AEQBU5160A3HJ
900	20	30	45	42	37.5	20.3	16	321	30	3.9	15	15	C4AEQBU5200A3LJ
900	30	30	45	57.5	52.5	20.3	11	324	35	5.2	15	12	C4AEQBU5300A3MJ
900	40	35	50	57.5	52.5	20.3	11	428	35	4	18	10	C4AEQBU5400A3NJ
1100	1	11	20	31.5	27.5	\	28	28	25	33.1	3	44	C4AEQBU4100A1WJ
1100	1.8	13	25	31.5	27.5	\	29	52	25	19.1	4.5	36	C4AEQBU4180A1XJ
1100	2.2	14	28	31.5	27.5	\	29	63	26	16	5	33	C4AEQBU4220A1YJ
1100	3.3	19	29	31.5	27.5	\	29	95	26	11.2	6.5	29	C4AEQBU4330A11J
1100	5	22	37	31.5	27.5	\	29	145	28	8.2	8.5	23	C4AEQBU4500A12J
1100	8	20	40	41.5	37.5	10.2	20	157	30	7.9	9	20	C4AEQBU4800A3FJ
1100	10	28	37	42.5	37.5	10.2	20	196	30	6.3	11	18	C4AEQBU5100A3JJ
1100	12	30	45	42	37.5	20.3	20	235	30	5.3	13	15	C4AEQBU5120A3LJ
1100	20	30	45	57.5	52.5	20.3	13	262	35	6.5	13	12	C4AEQBU5200A3MJ
1100	25	35	50	57.5	52.5	20.3	13	331	35	5.2	16	10	C4AEQBU5250A3NJ
1100	27	35	50	57.5	52.5	20.3	13	354	35	4.9	16.5	10	C4AEQBU5270A3NJ
VDC	Cap Value (µF)	B (mm)	H (mm)	L (mm)	P (mm)	P1 (mm)	dV/dt (V/µs)	I _{pk} A	ESL	ESR	I _{rms} A	RTH (Hs/Amb)	Part Number

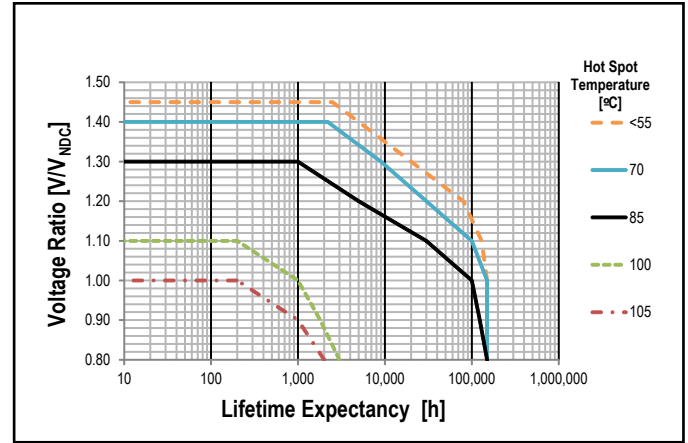
* I_{rms} value that leads to a ΔT of ~ 15°C in the hot spot → T_{HS} = T_{AMB} + ΔT = 70°C + 15°C = 85°C

Lifetime Expectancy/Failure Quota Graphs

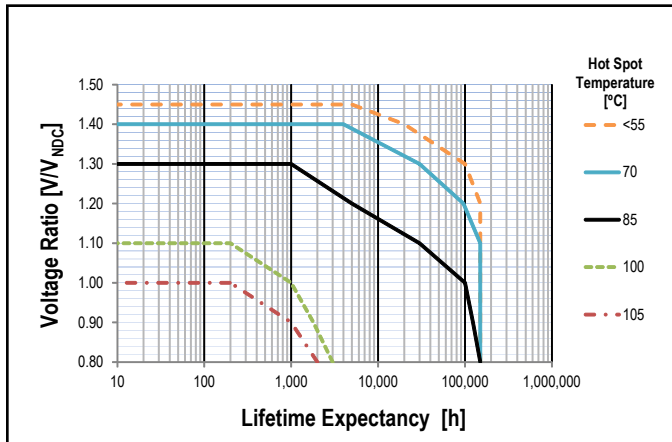
Lifetime Curve $V_{NDC} = 450$ V-



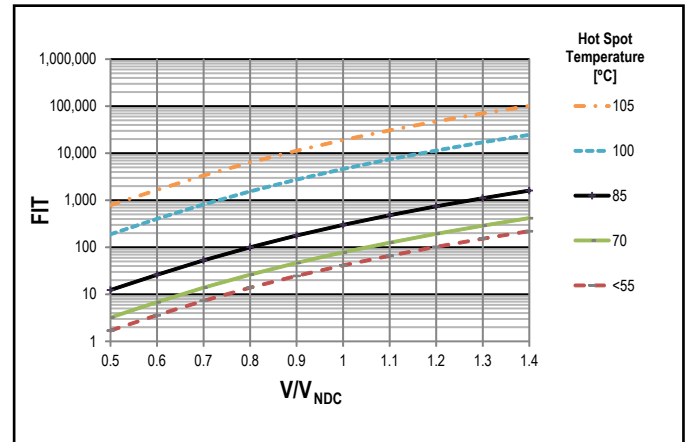
Lifetime Curve $V_{NDC} = 600$ V- and $V_{NDC} = 700$ V-



Lifetime Curve $V_{NDC} = 900$ V- and $V_{NDC} = 1,100$ V-



FIT @ Hot Spot Temperatures



Notes:

$$T_{HS} = T_{AMB} + \Delta T$$

$$\Delta T = ESR * I_{rms}^2 * Rth$$

I_{rms} should be limited to values granting $\Delta T \leq 30^{\circ}\text{C}$

Overview

Polypropylene segmented metallized film with cylindrical aluminium can type filled with resin, screw terminals and plastic deck.

Applications

Typical applications include DC filtering and energy storage.

Benefits

- Controlled self-healing
- Low losses
- High ripple current
- High capacitance density
- Long lifetime



Part Number Decoding

C4	4	U	J	G	T	6	1	2	0	A	7	T	K
Series		DC Voltage	Case and Fixing	Terminals Code	Capacitance Code (pF)				Variants	Case Diameter	Film Type	Tolerance	
MKP Capacitors for Power Applications	Cylindrical Types	DC Link	J = 700 V O = 900 V Q = 1100 V U = 1300 V	G = Cylindrical case with threaded bolt M12 E = Cylindrical case without threaded bolt	T = M6 Female Terminals Q = M8 Male Terminals Y = M8 Female Terminals	Digits 9, 10, & 11 indicate the first 3 digits of capacitance value. Digit 8 indicates the number of zeroes that must be added in order to obtain rated capacitance in pF				A = 85°C Hot Spot Temperature Series F = 70°C Hot Spot Temperature Series	7 = 76 mm 8 = 85 mm	T = Standard Film S = Segmented Film	J = 5% K = 10%

Qualification

Reference Standards	IEC 61071
IEC Climatic Category	40/85/21 according to IEC 60068-1

General Technical Data

Dielectric	Polypropylene Metallized Film – non inductive self-healing
Application	DC Filtering/DC Link
Climatic Category	40/85/21 IEC 60068-1
Maximum Operating Temperature	+90°C
Upper Temperature T _{MAX} Group A	+85°C IEC 61071 – Endurance Test Temperature
Upper Temperature T _{MAX} Group B	+70°C IEC 61071 – Endurance Test Temperature
Lower Temperature T _{min}	-40°C
Standard	IEC 61071
Protection	Aluminium case with or without, threaded bolt M12
	Plastic deck flame retardant execution UL 94 V-0
	Thermosetting resin sealing UL 94 V-0 compliant
Installation	Any position
Leads	High current M6 or M8 terminals
Packaging	Packed in cardboard boxes with protection for the terminals
RoHS Compliant	Compliant with the restricted substance requirements of Directive 2002/95/EC

Electrical Characteristics

Capacitance Tolerance	± 10% at T = 25°C
Dissipation Factor PP Typical (tgδ0)	≤ 0.0002 at 10 kHz with T = 25°C ±5°C
Surge Voltage	1.5 x V _{NDC} for maximum 10 times in lifetime at 25°C
Over-Voltage (IEC 61071)	1.15 x V _{NDC} for maximum 30 minimum - once per day
	1.3 x V _{NDC} for maximum 1 minimum - once per day
Peak Non-Repetitive Current	1.5 x I _{pk} maximum 1,000 times in life time
Insulation Resistance	IR x C ≥ 30,000 seconds at 100 VDC 1 minute T = 25°C
Capacitance Deviation in Operation	±1.5% maximum on capacitance value measured at T = 25°C
Permissible Relative Humidity	Annual average ≤ 70%. 85% on 30 days/year randomly distributed throughout the year. Dewing not admissible.

Life Expectancy

Life Expectancy Group A	100,000 hours at V_{NDC} @ hot spot temperature $T_{HS} = 85^{\circ}\text{C}$
Life Expectancy Group B	100,000 hours at V_{NDC} @ hot spot temperature $T_{HS} = 70^{\circ}\text{C}$
Capacitance Drop at End of Life	-10% (typical)
Failure Rate IEC 61709	50 FIT at V_{NDC} @ reference T_{HS} (see FIT curves)

Test Method

Test Voltage Between Terminals	$1.5 \times V_{NDC}$ for 10 seconds or $1.65 V_{NDC}$ for 2 seconds at $T = 25^{\circ}\text{C}$
Test Voltage Between Terminals and Case	3.2 k VAC 50 Hz for 2 seconds
Damp Heat	IEC 60068-2-78
Change of Temperature	IEC 60068-2-14

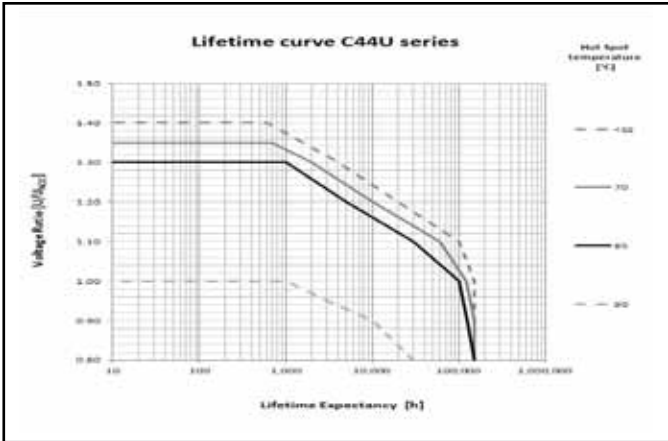
Table 1 – Ratings & Part Number Reference

VDC	Cap Value (µF)	Dimensions (mm)			SPQ pcs	W gr	dV/dt (V/µs)	I _{pk} A	ESL nH	ESR 10 kHz mΩ	I _{rms} * 40°C @ 10 kHz A	RTH (Hs/Amb)	Part Number Group A Heavy Duty
		∅	H	H1									
700	120	76	55	61	18	280	21	2520	36	1:01	63	9:09	C44UJGT6120A7TK
700	160	85	55	61	10	354	21	3360	36	0:09	73	8:06	C44UJGT6160A8TK
700	175	76	70	76	18	348	14	2450	40	1:04	62	8:02	C44UJGT6175A7TK
700	225	85	70	76	10	414	14	3150	40	1:02	70	7:02	C44UJGT6225A8TK
700	350	76	120	126	9	569	7	2450	50	2:08	55	5:03	C44UJGT6350A7SK
700	425	76	140	146	9	656	6	2550	60	3:02	55	4:06	C44UJGT6425A7SK
700	450	85	120	126	5	723	7	3150	50	2:03	65	4:06	C44UJGT6450A8SK
700	550	85	140	146	5	831	6	3300	60	2:06	65	4:01	C44UJGT6550A8SK
900	75	76	55	61	18	283	26	1950	36	1:04	57	9:09	C44UOGT6750A7TK
900	100	85	55	61	10	355	26	2600	36	1:02	65	8:06	C44UOGT6100A8TK
900	110	76	70	76	18	324	17	1870	40	1:06	57	8:02	C44UOGT6110A7TK
900	150	85	70	76	10	437	17	2550	40	1:04	65	7:02	C44UOGT6150A8TK
900	220	76	120	126	9	574	9	1980	50	3:03	50	5:03	C44UOGT6220A7SK
900	275	76	140	146	9	654	7	1925	60	3:08	50	4:06	C44UOGT6275A7SK
900	300	85	120	126	5	711	9	2700	50	2:07	60	4:06	C44UOGT6300A8SK
900	350	85	140	146	5	833	7	2450	60	3:00	60	4:01	C44UOGT6350A8SK
1100	50	76	55	61	18	265	31	1550	36	1:06	52	9:09	C44UOGT5500A7TK
1100	70	85	55	61	10	356	31	2170	36	1:03	62	8:06	C44UOGT5700A8TK
1100	75	76	70	76	18	352	21	1575	40	1:06	58	8:02	C44UOGT5750A7TK
1100	100	85	70	76	10	414	21	2100	40	1:07	60	7:02	C44UOGT6100A8TK
1100	150	76	120	126	9	577	11	1650	50	4:01	45	5:03	C44UOGT6150A7SK
1100	190	76	140	146	9	654	9	1710	60	4:03	47	4:06	C44UOGT6190A7SK
1100	200	85	120	126	5	723	11	2200	50	3:02	55	4:06	C44UOGT6200A8SK
1100	250	85	140	146	5	824	9	2250	60	3:06	55	4:01	C44UOGT6250A8SK
VDC	Cap Value (µF)	∅	H (mm)	H1 (mm)	SPQ	W	dV/dt (V/µs)	I _{pk} A	ESL	ESR	I _{rms} A	RTH (Hs/Amb)	Part Number

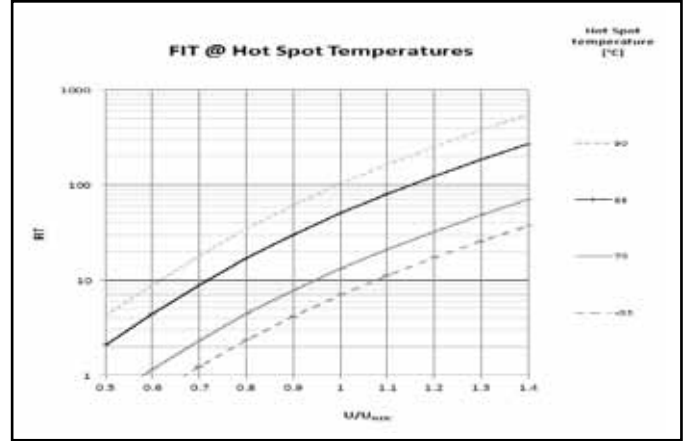
VDC	Cap Value (µF)	Dimensions (mm)			SPQ pcs	W gr	dV/dt (V/µs)	I _{pk} A	ESL nH	ESR 10 kHz mΩ	I _{rms} * 40°C @ 10 kHz A	RTH (Hs/Amb)	Part Number Group B Standard Duty
		∅	H	H1									
900	200	∅	H	H1	9	645	10	2000	36	2:03	45	6:04	C44UOGQ6200F7SK
900	270	76	95	101	9	610	10	2700	36	1:08	50	6:04	C44UOGQ6270F7SK
900	370	76	95	101	5	715	10	3700	40	1:04	60	5:06	C44UOGQ6370F8SK
900	510	85	95	101	5	840	7	3570	40	1:08	60	4:06	C44UOGQ6510F8SK
900	600	85	120	126	5	950	7	4200	40	2:02	58	4:01	C44UOGQ6600F8SK
1100	130	85	140	146	9	580	12	1560	36	2:08	40	6:04	C44UOGQ6130F7SK
1100	175	76	95	101	9	610	12	2100	36	2:02	46	6:04	C44UOGQ6175F7SK
1100	240	76	95	101	5	710	12	2880	40	1:07	56	5:06	C44UOGQ6240F8SK
1100	280	85	95	101	9	805	7	1960	40	3:04	43	4:06	C44UOGQ6280F7SK
1100	330	76	140	146	5	990	7	2310	40	2:09	50	4:01	C44UOGQ6330F8SK
1100	500	85	140	146	5	1120	12	6000	80	1:01	90	3:04	C44UOGQ6500F8SK
1300	90	85	174	180	9	580	15	1350	36	3:03	37	6:04	C44UUGQ65900F7SK
1300	120	76	95	101	9	610	15	1800	36	2:05	43	6:04	C44UUGQ6120F7SK
1300	165	76	95	101	5	716	15	2475	40	2:00	52	5:06	C44UUGQ6165F8SK
1300	195	85	95	101	9	797	9	1755	50	4:00	40	4:06	C44UUGQ6195F7SK
1300	250	76	140	146	5	957	9	2250	50	3:03	47	4:01	C44UUGQ6250F8SK
1300	320	85	140	146	5	1130	15	4800	80	1:03	82	3:04	C44UUGQ6320F8SK
1300	550	85	174	180	5	1600	9	4950	100	1:09	82	2:03	C44UUGQ6550F8SK
VDC	Cap Value (µF)	∅	H (mm)	H1 (mm)	SPQ	W	dV/dt (V/µs)	I _{pk} A	ESL	ESR	I _{rms} A	RTH (Hs/Amb)	Part Number

Lifetime Expectancy/Failure Quota Graphs

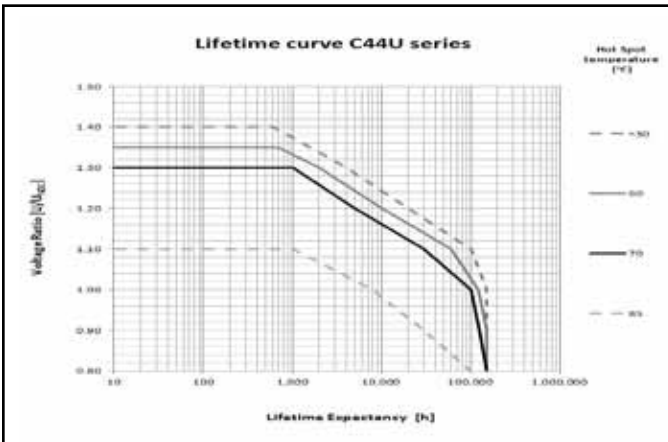
Lifetime Curve Group A – Heavy Duty



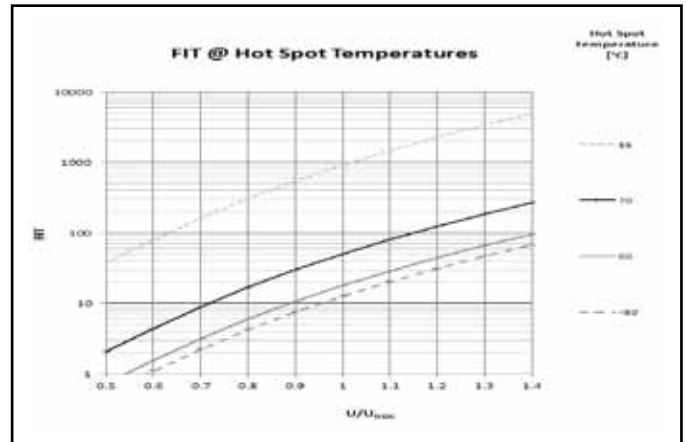
FIT Group A – Heavy Duty



Lifetime Curve Group B – Standard Duty



FIT Group B – Standard Duty



Notes :

$$T_{HS} = T_{AMB} + \Delta T \text{ with } \Delta T = ESR * I_{rms}^2 * Rth$$

I_{rms} should be limited to always grant $\Delta T \leq 45^\circ C$

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.

Applications

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

Benefits

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

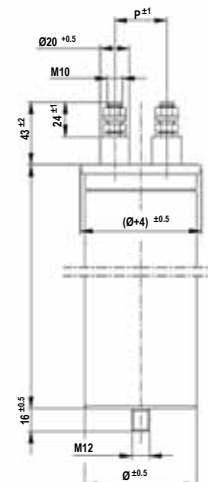


Part Number Decoding

C	44	P	F	G	R	6	2	2	0	Z	A	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 _{rms} 20 = 550 – 1,000 V _{rms}	AC Filter P = C44 A = C20	For C44P F = 25 L = 330 K = 440	For C20A K = 550 L = 640 Q = 780 Z = 1,000	G = with M12 bolt	R = Male M10	Digits 9, 10, & 11 indicate the first 3 digits of capacitance value. Digit 8 indicates the number of zeros that must be added to obtain rated capacitance in 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



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_{TT})	2.15 V_{RMS} for 10 seconds at 25°C
Test Voltage Terminal to Case (V_{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_{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 (µF)	Dimensions (mm)			Vpk VDC	I _{pk} A	I _{rms} A	Weight (kg)	Part Number
			D	H	P					
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	C44PLGR6400ZASJ
500	330	500	75	247	35	700	7500	58	1.2	C44PLGR6500ZASJ
500	330	600	85	270	35	700	9000	70	1.3	C44PLGR6600ZASJ
750	440	100	75	147	35	940	2000	30	0.7	C44PKGR6100AASJ
750	440	133	65	247	28	940	3000	40	0.8	C44PKGR6133AASJ
750	440	150	65	247	28	940	3000	45	1	C44PKGR6150AASJ
750	440	200	75	247	35	940	4000	55	1.2	C44PKGR6200AASJ
750	440	300	85	247	35	940	4000	60	1.6	C44PKGR6300AASJ
750	550	22	65	117	28	940	1540	40	0.4	C20AKGR5220AASK
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	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	35	1380	2200	45	0.8	C20AQGR5220AASK
1100	780	33	85	147	35	1380	3300	50	1.2	C20AQGR5330AASK
1100	780	47	75	247	35	1380	4700	55	1.5	C20AQGR5470AASK
1100	780	68	85	247	35	1380	6800	60	2	C20AQGR5680AASK
1100	780	100	95	280	35	1380	10000	60	2.5	C20AQGR6100AASK
1000	1400	10	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 _{pk} 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.



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 Chlorurate, 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 $\text{tg}\delta$ 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 R^2 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.

KEMET Corporation World Headquarters

2835 KEMET Way
Simpsonville, SC 29681

Mailing Address:
P.O. Box 5928
Greenville, SC 29606

www.kemet.com
Tel: 864-963-6300
Fax: 864-963-6521

Corporate Offices

Fort Lauderdale, FL
Tel: 954-766-2800

North America

Southeast

Lake Mary, FL
Tel: 407-855-8886

Northeast

Wilmington, MA
Tel: 978-658-1663

West Chester, PA
Tel: 610-692-4642

Central

Novi, MI
Tel: 248-994-1030

Carmel, IN
Tel: 317-706-6742

West

Milpitas, CA
Tel: 408-433-9950

Mexico

Zapopan, Jalisco
Tel: 52-33-3123-2141

Europe

Southern Europe

Geneva, Switzerland
Tel: 41-22-715-0100

Paris, France
Tel: 33-1-4646-1009

Sasso Marconi, Italy
Tel: 39-051-939111

Milan, Italy
Tel: 39-02-57518176

Rome, Italy
Tel: 39-06-23231718

Madrid, Spain
Tel: 34-91-804-4303

Central Europe

Landsberg, Germany
Tel: 49-8191-3350800

Dortmund, Germany
Tel: 49-2307-3619672

Kwidzyn, Poland
Tel: 48-55-279-7025

Northern Europe

Bishop's Stortford, United Kingdom
Tel: 44-1279-757201

Weymouth, United Kingdom
Tel: 44-1305-830747

Coatbridge, Scotland
Tel: 44-1236-434455

Färjestaden, Sweden
Tel: 46-485-563934

Espoo, Finland
Tel: 358-9-5406-5000

Asia

Northeast Asia

Hong Kong
Tel: 852-2305-1168

Shenzhen, China
Tel: 86-755-2518-1306

Beijing, China
Tel: 86-10-5829-1711

Shanghai, China
Tel: 86-21-6447-0707

Taipei, Taiwan
Tel: 886-2-27528585

Southeast Asia

Singapore
Tel: 65-6586-1900

Penang, Malaysia
Tel: 60-4-6430200

Bangalore, India
Tel: 91-806-53-76817

Note: KEMET reserves the right to modify minor details of internal and external construction at any time in the interest of product improvement. KEMET does not assume any responsibility for infringement that might result from the use of KEMET Capacitors in potential circuit designs. KEMET is a registered trademark of KEMET Electronics Corporation.

Other KEMET Resources

Tools	
Resource	Location
Configure A Part: CapEdge	http://capacitoredge.kemet.com
SPICE & FIT Software	http://www.kemet.com/spice
Search Our FAQs: KnowledgeEdge	http://www.kemet.com/keask

Product Information	
Resource	Location
Products	http://www.kemet.com/products
Technical Resources (Including Soldering Techniques)	http://www.kemet.com/technicalpapers
RoHS Statement	http://www.kemet.com/rohs
Quality Documents	http://www.kemet.com/qualitydocuments

Product Request	
Resource	Location
Sample Request	http://www.kemet.com/sample
Engineering Kit Request	http://www.kemet.com/kits

Contact	
Resource	Location
Website	www.kemet.com
Contact Us	http://www.kemet.com/contact
Investor Relations	http://www.kemet.com/ir
Call Us	1-877-MyKEMET
Twitter	http://twitter.com/kemetcapacitors

Disclaimer

All product specifications, statements, information and data (collectively, the "Information") are subject to change without notice.

All Information given herein is believed to be accurate and reliable, but is presented without guarantee, warranty, or responsibility of any kind, expressed or implied.

Statements of suitability for certain applications are based on our knowledge of typical operating conditions for such applications, but are not intended to constitute – and we specifically disclaim – any warranty concerning suitability for a specific customer application or use. This 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 us with reference to the use of our products is given gratis, and we assume no obligation or liability for the advice given or results obtained.

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.

Product & Process Design

Sales & Marketing

Supplier

Material Management

Quality

Manufacturing

Logistics & Distribution

People: Leadership
& Development

KEMET Production System

Corporate Offices

KEMET Corporation
2835 KEMET Way
Simpsonville, SC 29681
USA
Tel: 864.963.6300
Fax: 864.963.6521

KEMET Electronics S.A.
15bis chemin des Mines
1202 Geneva
Switzerland
Tel: 41.22.715.0100
Fax: 41.22.715.0170

KEMET Electronics Marketing (S) Pte Ltd.
73 Bukit Timah Road
#05-01 Rex House
Singapore 229832
Tel: 65.6586.1900
Fax: 65.6586.1901

www.kemet.com

Copyright © 2012 KEMET Corporation. All rights reserved.

The Capacitance Company
KEMET
CHARGED®