The Capacitance Company
KEMET
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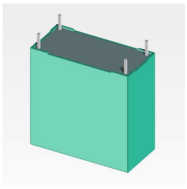
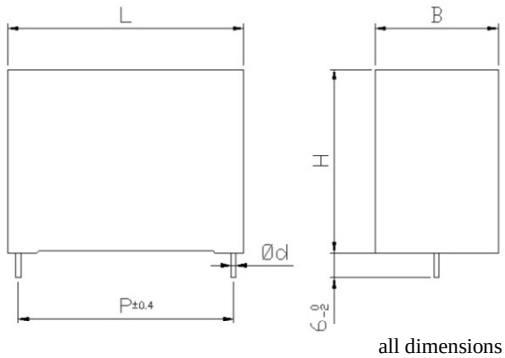
C4AE



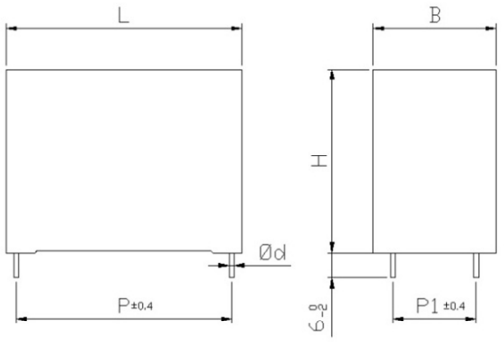
BOX CAPACITORS
DC LINK

C4AE SERIES
RoHS COMPLIANT

CAPACITORS
FOR PCB APPLICATIONS



BOX Style: 2 Wires



BOX Style: 4 Wires

all dimensions are in mm

P [mm]	nr pins	Ød [mm]
27.5	2	0.8
37.5	4	1.2
52.5	4	1.2

GENERAL TECHNICAL DATA

Dielectric	Polypropylene metallized film - non inductive self-healing
Application	DC filtering / DC-Link
Climatic category	40/85/56 IEC 60068-1
Max. operating temperature	+105°C
Upper temperature T_{MAX}	+85°C IEC 61071 - Endurance Test Temperature
Lower temperature T_{MIN}	-40°C
Standard	IEC 61071
Protection	Solvent resistant plastic case UL94 V-0 Thermosetting resin sealing UL94 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 compliance	Compliant with the restricted substance requirements of Directive 2002/95/EC

ELECTRICAL CHARACTERISTICS

Capacitance tolerance	± 5% at T = 25°C
Dissipation factor PP typical ($tg\delta_0$)	≤ 0.0002 at 10kHz with T = 25°C ±5°C
Surge voltage	1.5 * U_{NDC} for max 10 times in life time at 25°C
Overvoltage (IEC 61071)	1.15 * U_{NDC} for max 30 min - once per day 1.3 * U_{NDC} for max 1 min - once per day
Peak non Repetitive current	1.5 * Ipkr - max 1000 times in life time
Insulation Resistance	IR x C ≥ 30.000 seconds at 100Vdc 1 min. T = 25°C
Capacitance deviation in operation	±1.5% max. 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 U_{NDC} @ Hot-Spot temperature T_{HS} = 85°C
Capacitance drop at end of life	-5% (typical)
Failure rate IEC 61709	300 FIT at U_{NDC} @ Hot-Spot temperature T_{HS} = 85°C

TEST METHOD

Test voltage between terminals	1.5 * U_{NDC} for 10sec or 1.65 U_{NDC} for 2sec, at T = 25°C
Test voltage between terminals and case	3.2 kVac 50Hz for 2sec
Damp Heat	IEC 60068-2-78
Change of temperature	IEC 60068-2-14

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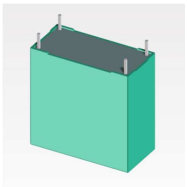

PART NUMBER	C µF	U_{NDC} Vdc	dV/dt V/µs	Ipkr Apk	ESL nH	ESR 70°C@10kHz mΩ	Irms* 70°C@10kHz Arms	Rth (°C/W)	DIMENSIONS (mm)				
									B	H	L	P	P1
C4AEGBU4450A1WJ	4.5	450	14	65	25	14.2	4.5	44	11	20	31.5	27.5	\
C4AEGBU4680A1XJ	6.8	450	15	101	25	10.0	6.0	36	13	25	31.5	27.5	\
C4AEGBU5100A1YJ	10	450	14	145	26	7.4	7.5	33	14	28	31.5	27.5	\
C4AEGBU5125A11J	12.5	450	15	187	26	6.2	8.5	29	19	29	31.5	27.5	\
C4AEGBU5200A12J	20	450	15	303	28	4.8	11.0	23	22	37	31.5	27.5	\
C4AEGBW5300A3FJ	30	450	10	298	30	4.1	13.0	20	20	40	41.5	37.5	10.2
C4AEGBW5350A3JJ	35	450	10	355	30	3.5	14.0	18	28	37	42.5	37.5	10.2
C4AEGBW5400A3HJ	40	450	10	406	30	3.1	16.0	17	24	44	41.5	37.5	10.2
C4AEGBW5500A3LJ	50	450	10	508	30	2.5	18.0	15	30	45	42	37.5	20.3
C4AEGBW5750A3MJ	75	450	7	503	35	3.4	18.0	12	30	45	57.5	52.5	20.3
C4AEGBW6100A3NJ	100	450	7	677	35	2.6	22.0	10	35	50	57.5	52.5	20.3
C4AEHBU4330A1WJ	3.3	600	17	55	25	17.0	4.0	44	11	20	31.5	27.5	\
C4AEHBU4560A1XJ	5.6	600	17	94	25	10.7	6.0	36	13	25	31.5	27.5	\
C4AEHBU4700A1YJ	7	600	17	118	26	9.0	7.0	33	14	28	31.5	27.5	\
C4AEHBU5100A11J	10	600	17	169	26	6.8	8.5	29	19	29	31.5	27.5	\
C4AEHBU5150A12J	15	600	17	253	28	5.3	10.5	23	22	37	31.5	27.5	\
C4AEHBW5200A3FJ	20	600	11	229	30	5.3	11.0	20	20	40	41.5	37.5	10.2
C4AEHBW5300A3JJ	30	600	11	337	30	3.6	14.0	18	28	37	42.5	37.5	10.2
C4AEHBW5400A3LJ	40	600	11	458	30	2.8	18.0	15	30	45	42	37.5	20.3
C4AEHBW5550A3MJ	55	600	8	425	35	4.1	16.5	12	30	45	57.5	52.5	20.3
C4AEHBW5750A3NJ	75	600	8	579	35	3.1	20.5	10	35	50	57.5	52.5	20.3
C4AEJBU4270A1WJ	2.7	700	19	51	25	18.3	4.0	44	11	20	31.5	27.5	\
C4AEJBU4400A1XJ	4	700	19	77	25	12.9	5.5	36	13	25	31.5	27.5	\
C4AEJBU4500A1YJ	5	700	19	96	26	10.7	6.0	33	14	28	31.5	27.5	\
C4AEJBU4800A11J	8	700	19	154	26	7.3	8.0	29	19	29	31.5	27.5	\
C4AEJBU5125A12J	12.5	700	19	241	28	5.5	10.0	23	22	37	31.5	27.5	\
C4AEJBW5150A3FJ	15	700	13	196	30	6.2	10.0	20	20	40	41.5	37.5	5.1
C4AEJBW5200A3JJ	20	700	13	262	30	4.7	12.5	18	28	37	42.5	37.5	10.2
C4AEJBW5220A3HJ	22	700	13	288	30	4.3	13.0	17	24	44	41.5	37.5	10.2
C4AEJBW5300A3LJ	30	700	13	389	30	3.2	16.5	15	30	45	42	37.5	20.3
C4AEJBW5450A3MJ	45	700	9	389	35	4.4	16.0	12	30	45	57.5	52.5	20.3
C4AEJBW5550A3NJ	55	700	9	485	35	3.6	19.0	10	35	50	57.5	52.5	20.3
C4AEJBW5600A3NJ	60	700	9	530	35	3.4	19.5	10	35	50	57.5	52.5	20.3
C4AEOBU4150A1WJ	1.5	900	24	36	25	26.3	3.5	44	11	20	31.5	27.5	\
C4AEOBU4270A1XJ	2.7	900	24	65	25	15.3	5.0	36	13	25	31.5	27.5	\
C4AEOBU4330A1YJ	3.3	900	24	79	26	12.9	5.5	33	14	28	31.5	27.5	\
C4AEOBU4500A11J	5	900	24	120	26	9.1	7.0	29	19	29	31.5	27.5	\
C4AEOBU4800A12J	8	900	24	193	28	6.6	9.5	23	22	37	31.5	27.5	\
C4AEOBW5120A3FJ	12	900	16	190	30	6.3	10.0	20	20	40	41.5	37.5	10.2
C4AEOBW5140A3JJ	14	900	16	229	30	5.4	11.5	18	28	37	42.5	37.5	10.2
C4AEOBW5160A3HJ	16	900	16	256	30	4.8	13.0	17	24	44	41.5	37.5	10.2
C4AEOBW5200A3LJ	20	900	16	321	30	3.9	15.0	15	30	45	42	37.5	20.3
C4AEOBW5300A3MJ	30	900	11	324	35	5.2	15.0	12	30	45	57.5	52.5	20.3
C4AEOBW5400A3NJ	40	900	11	428	35	4.0	18.0	10	35	50	57.5	52.5	20.3

** Irms value that leads to a ΔT of ~15°C in the Hot Spot → $T_{HS} = T_{AMB} + \Delta T = 70°C + 15°C = 85°C$*

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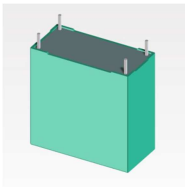


PART NUMBER	C µF	U_{NDC} Vdc	dV/dt V/µs	Ipkr Apk	ESL nH	ESR 70°C@10kHz mΩ	Irms* 70°C@10kHz Arms	Rth (°C/W)	DIMENSIONS (mm)				
									B	H	L	P	P1
C4AEQBU4100A1WJ	1	1100	28	28	25	33.1	3.0	44	11	20	31.5	27.5	\
C4AEQBU4180A1XJ	1.8	1100	29	52	25	19.1	4.5	36	13	25	31.5	27.5	\
C4AEQBU4220A1YJ	2.2	1100	29	63	26	16.0	5.0	33	14	28	31.5	27.5	\
C4AEQBU4330A11J	3.3	1100	29	95	26	11.2	6.5	29	19	29	31.5	27.5	\
C4AEQBU4500A12J	5	1100	29	145	28	8.2	8.5	23	22	37	31.5	27.5	\
C4AEQBW4800A3FJ	8	1100	20	157	30	7.9	9.0	20	20	40	41.5	37.5	10.2
C4AEQBW5100A3JJ	10	1100	20	196	30	6.3	11.0	18	28	37	42.5	37.5	10.2
C4AEQBW5120A3LJ	12	1100	20	235	30	5.3	13.0	15	30	45	42	37.5	20.3
C4AEQBW5200A3MJ	20	1100	13	262	35	6.5	13.0	12	30	45	57.5	52.5	20.3
C4AEQBW5250A3NJ	25	1100	13	331	35	5.2	16.0	10	35	50	57.5	52.5	20.3
C4AEQBW5270A3NJ	27	1100	13	354	35	4.9	16.5	10	35	50	57.5	52.5	20.3

** Irms value that leads to a ΔT of ~15°C in the Hot Spot → $T_{HS} = T_{AMB} + \Delta T = 70°C + 15°C = 85°C$*

Part number decoding

C4	A	E	G	B	U	4	5	0	0	A	1	W	J
1-2	3	4	5	6	7	8	9	10	11	12	13	14	15
Series			DC Voltage	Case Code	Terminals Code	Capacitance Code (pF)				Variants	Terminals Diameter	Case Size B x H x L - mm	Tolerance
MKP capacitors Power	Box - Wire Terminals	DC-Link	E = 300V G = 450V H = 600V I = 800V J = 700V K = 750V L = 500V M = 850V N = 1000V O = 900V Q = 1100V U = 1300V	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* = 100℃	1 = 0.8 mm 2 = 1.0 mm 3 = 1.2 mm	0=INTERNAL A=10x20x32 B=13x22x32 C=14x28x32 D=15x24x32 E=18x33x32 F=20x40x41.5 G=22x37x32 H=24x44x41.5 J=28x37x42.5 L=30x45x42 M=30x45x57.5 N=35x50x57.5 W=11x20x31.5 X=13x25x31.5 Y=14x28x31.5 1=19x29x31.5 2=22x37x31.5	J = 5% K = 10%

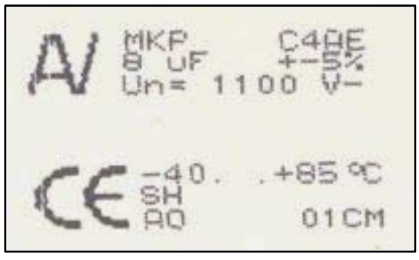
Reminder

It is not possible to manufacture every part number which could be created from the coding description. Please refer to the table of standard part numbers above and ask Kemet for other possibilities

(*) available on request → 100℃ true High Temperature Film with no Voltage derating

Marking

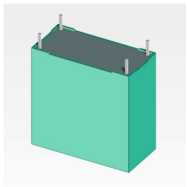
Typical data on marking:



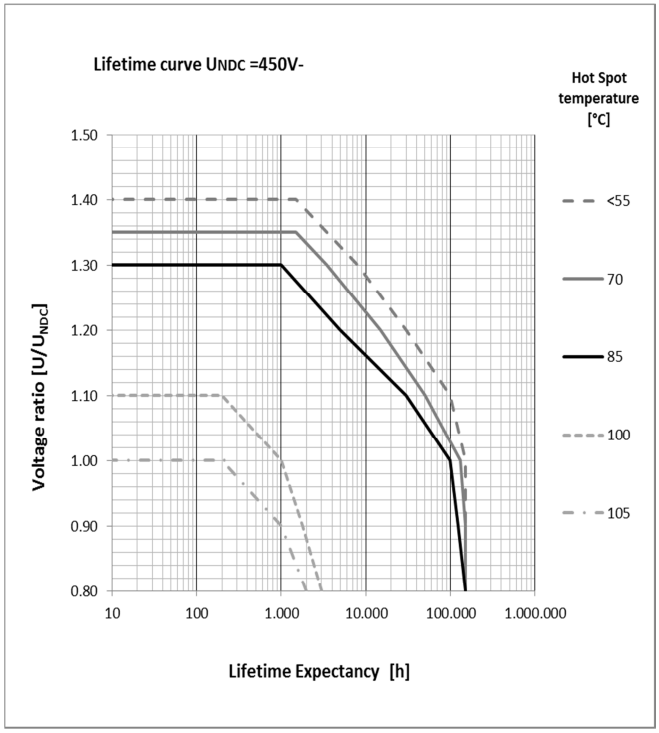
MKP C4AE → *Dielectric type Series*
8 uF +-5% → *Capacitance Tolerance*
Un = 1100 V- → *Rated Voltage*

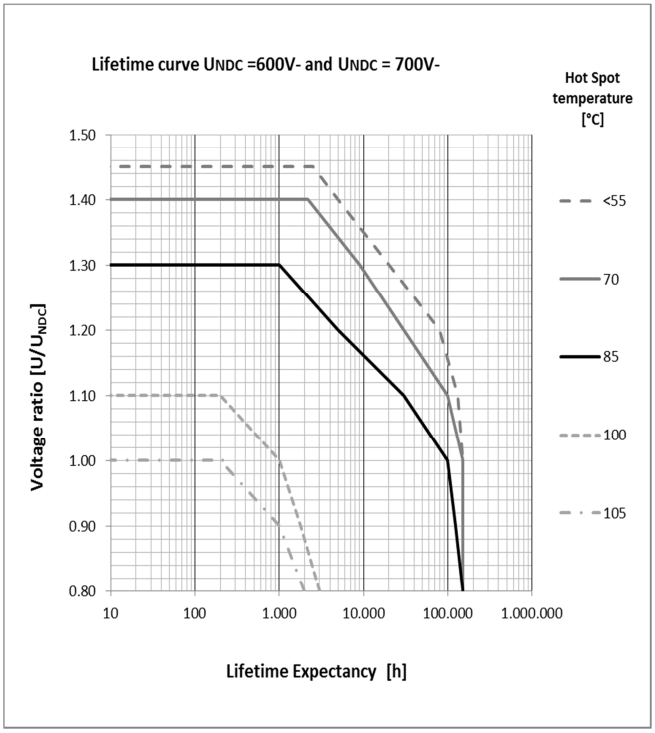
-40 + 85℃ → *Climatic Category Temperatures - Min / Max*
SH → *Self-Healing dielectric*
AO 01CM → *Production date**: Year/Month - Day - Prod Line (Internal Code)*

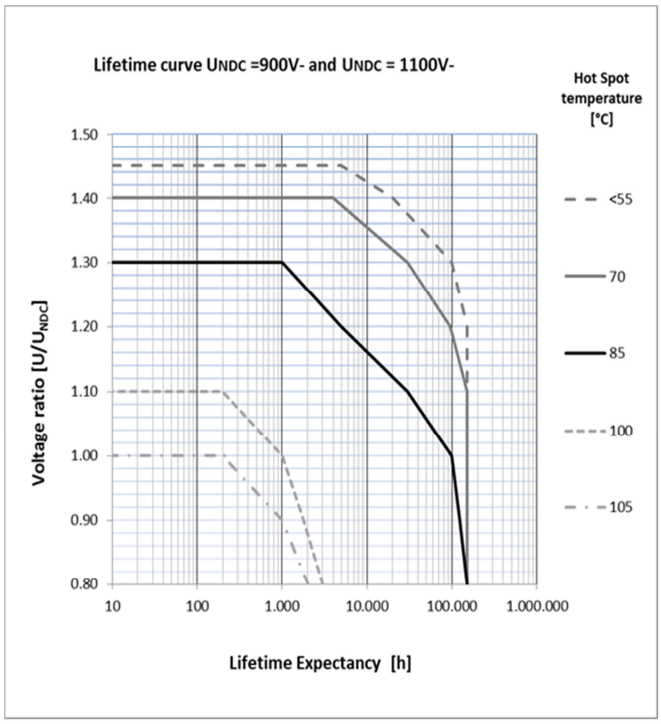
*** Year/Month correspondence table available on General Catalog - in the example A=2010 / O=October / 01=1st / CM=internal*

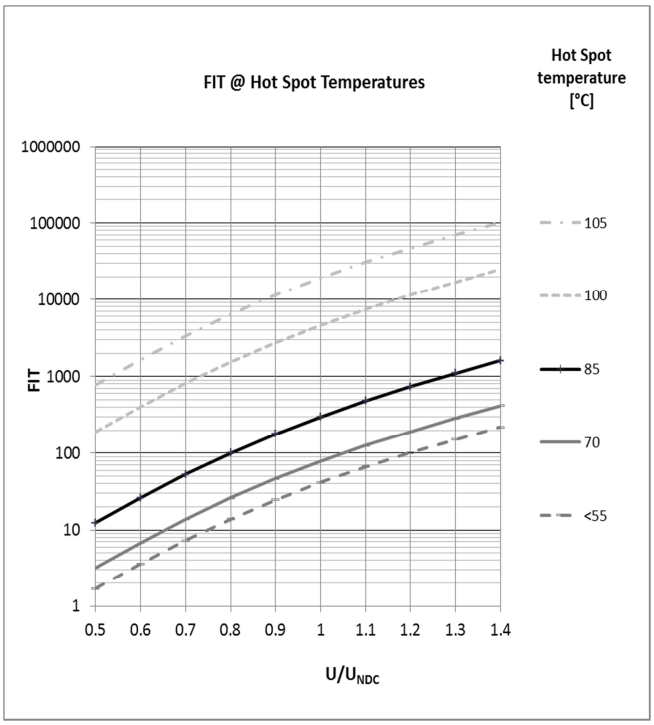


Lifetime expectancy / Failure quota









Notes :

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

$\Delta T = ESR * Irms^2 * Rth$

Irms should be limited to values granting $\Delta T \leq 30°C$