

# MKCA · PCB mount · 105 °C

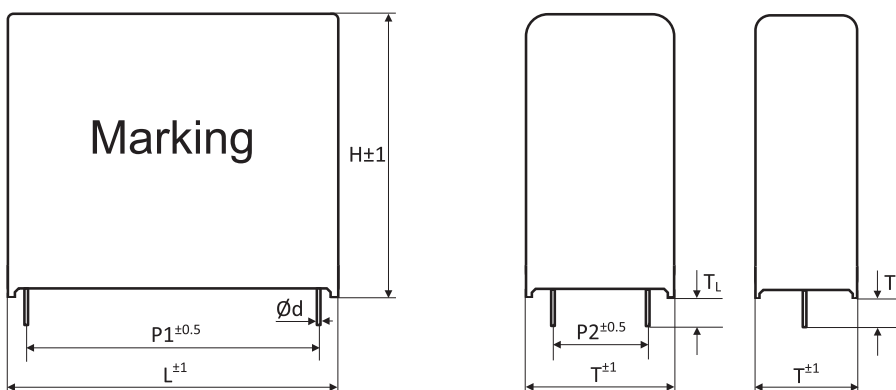
Resin-encased box type · Standard Performances

## > Specifications · Spezifikationen

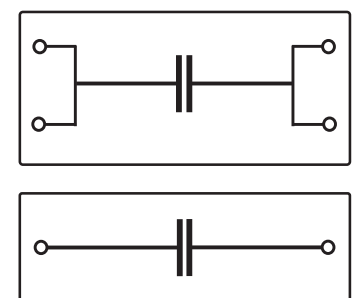
Items	Characteristics
Temperature range	-40 °C ~ +105 °C voltage derating when hotspot temp $\geq 85$ °C
Rated Voltage $U_N$	450, 700, 1100Vdc at 85 °C other rated voltage on request
Voltage test between terminals $U_{TT}$	1.5 X $U_N$ / 10s
Maximum ripple Voltage $U_{AC}$ peak to peak	0.2 X $U_N$ 85 °C
Terminals	tinned wired leads
Life Time Test / Standard	IEC 61071:2007
Life Time Expectancy	117 000 hrs ( $T_{HOTSPOT}$ 70 °C, 1.0 x $U_N$ )
Failure Rate	$\leq 50$ FIT = $50 \times 10^{-9}$ Failures / hour
Dielectric	Polypropylene
Safety function	Self healing film
Case material	PBT conform to UL94V-0
Filling material	resin conform to UL94V-0
Product Compliance	RoHS, REACH, Conflict Minerals a.o. - refer to p.10-11



## > Dimensions · Abmessungen

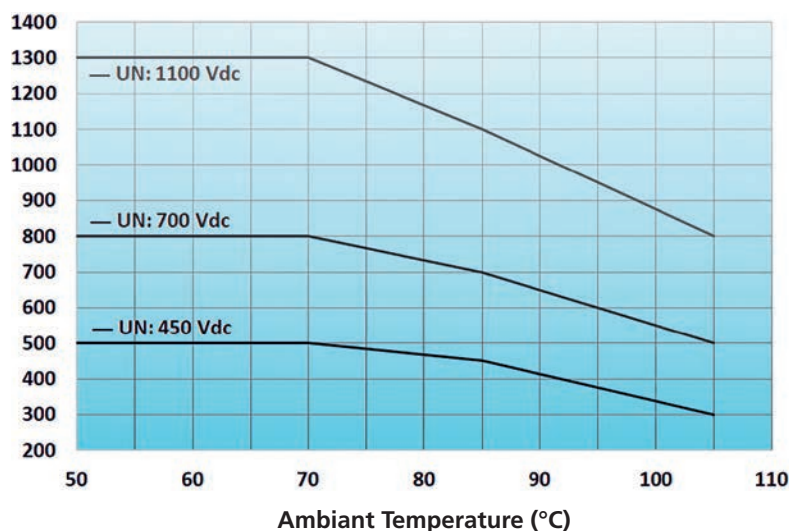


internal circuit



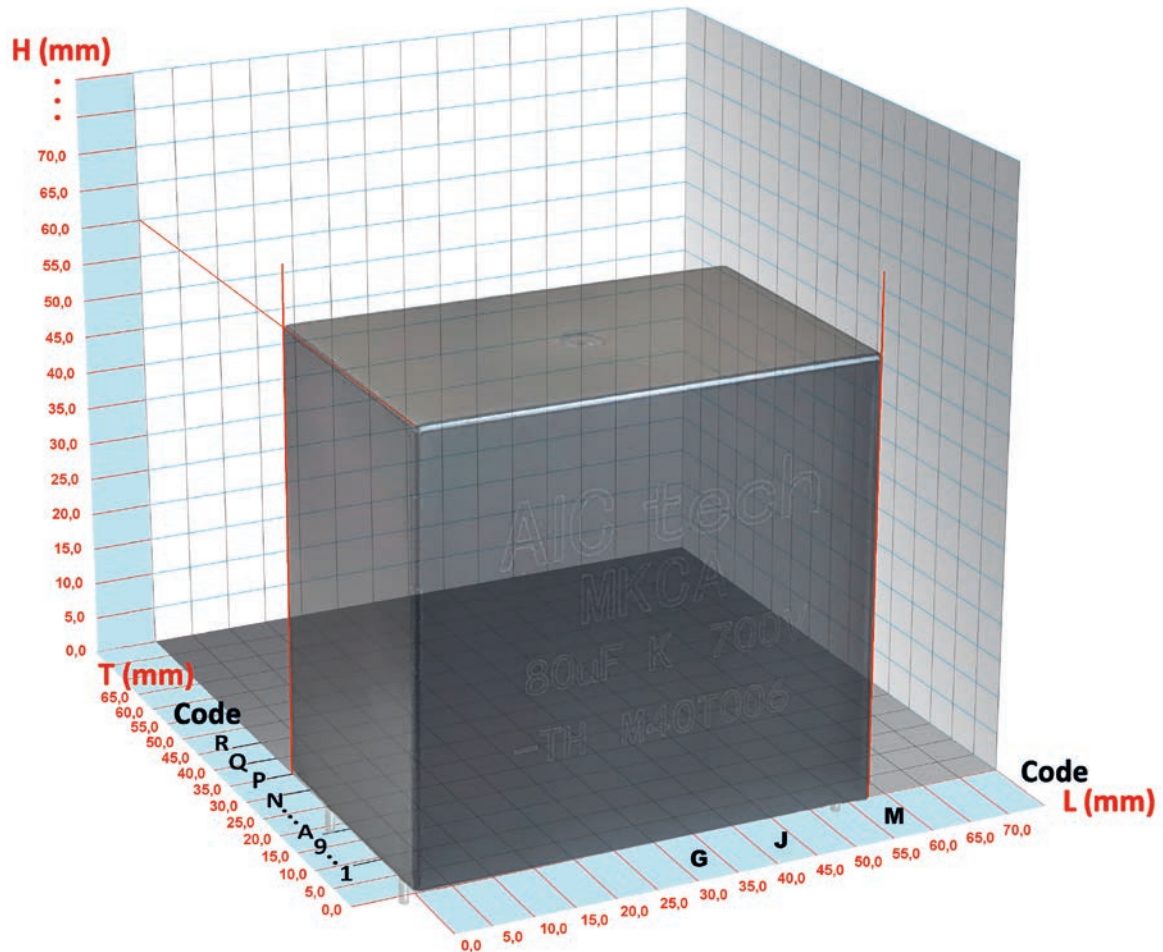
For details refer to p. 9  
Technische Details siehe S. 9

## > Voltage derating · Spannung Abstufung



> Case Code · Gehäuse Codierung

**Example:** MKCA 700 Vdc · 80 µF · T=35.0 mm, H=60.0 mm, L=57.5 mm, 4 pins Ø 1.2x5.0  
 Product Code MKCA700V806K**MP3**4ED

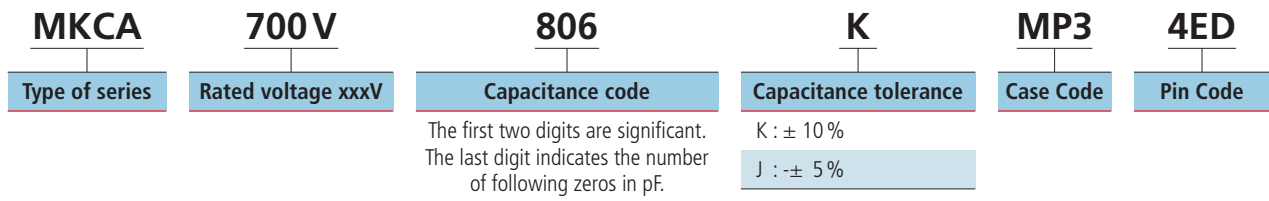


Case dimension code	Case (mm)			Case dimension code	Case (mm)			Wire Length (mm)		Wire diam. (mm)	
	T	H	L		T	H	L	Length	Code	Ød	Code
G10	9.0	18.0	32.0	JN0	30.0	45.0	42.5	3.0	A	0.6	A
G30	11.0	20.0	32.0	JP0	35.0	50.0	42.5	3.5	B	0.8	B
G50	13.0	22.0	32.0	MH0	25.0	45.0	57.5	4.0	C	1.0	C
G60	14.0	28.0	32.0	MN0	30.0	45.0	57.5	4.5	D	1.2	D
G70	15.0	28.5	32.0	MP0	35.0	45.0	57.5	5.0	E		
GA0	18.0	28.0	32.0	MP1	35.0	50.0	57.5	5.5	F		
GA1	18.0	33.0	32.0	MP2	35.0	55.0	57.5	6.0	G		
GE0	22.0	37.0	32.0	MP3	35.0	60.0	57.5				
JB0	19.0	32.0	42.5	MP4	35.0	65.0	57.5				
JC0	20.0	40.0	42.5	MP5	35.0	70.0	57.5				
JE0	22.0	33.5	42.5	MP6	35.0	75.0	57.5				
JE1	22.0	37.0	42.5	MP7	35.0	80.0	57.5				
JG0	24.0	18.0	42.5	MR0	45.0	55.0	57.5				
JG1	24.0	44.0	42.5	MR1	45.0	60.0	57.5				
JL0	28.0	37.0	42.5	MR2	45.0	65.0	57.5				

Additional designs on request · Weitere Designs auf Anfrage

## > Product Code · Bestellbezeichnung

**Example:** Series MKCA · 700V · 80µF +/- 10% · T=35mm · H=60mm · L = 57.5mm · 4 pins Ø 1.2x5.0



Rated DC Voltage $U_N$ derating  Voltage test between terminals $U_T$	Nominal Capacitance  $C_N$ [µF]	Ripple Current at 70 °C 1 k–10 kHz $I_r$ [A RMS]	Peak Current Maximum value $\hat{I}$ [A]	ESR $ESR$ [mΩ]	Thermal Resist. $R_{th}$ [K/W]	dv/dt [V/µs]	Dimensions			Product Code	
							Case Size $T \times H \times L$ [mm]	Terminals $P1$ [mm] $P2$ [mm] $\varnothing d$ [mm]			
<b>450 Vdc at 85°C</b> 500Vdc at 70 °C 300Vdc at 105 °C $U_T$ 650Vdc / 10s	3	4.0	150	28	41.3	50	11x20x32	27.5	–	0.8	MKCA450V305KG302EB
	10	10.0	500	8	22.5	50	18x33x32	27.5	–	0.8	MKCA450V106KGA12EB
	50	19.5	1500	5	10.4	30	35x50x42.5	37.5	20.3	1.2	MKCA450V506KJP04ED
	75	20.0	1125	5	8.4	15	35x50x57.5	52.5	20.3	1.2	MKCA450V756KMP14ED
<b>700 Vdc at 85°C</b> 800Vdc at 70 °C 500Vdc at 105 °C $U_T$ 1050Vdc / 10s	1	2.5	50	54	48.7	50	9x18x32	27.5	–	0.8	MKCA700V105KG102EB
	8	9.0	400	10	22.5	50	18x33x32	27.5	–	0.8	MKCA700V805KGA12EB
	35	18.5	1050	5,5	10.4	30	35x50x42.5	37.5	20.3	1.2	MKCA700V356KJP04ED
	80	23.0	1200	3,5	7.3	15	35x60x57.5	52.5	20.3	1.2	MKCA700V806KMP34ED
<b>1100 Vdc at 85°C</b> 1300Vdc at 70 °C 800Vdc at 105 °C $U_T$ 1650Vdc / 10s	1	1.5	70	80	41.3	70	11x20x32	27.5	–	0.8	MKCA1100V105KG302EB
	4	7.5	280	15,3	22.5	70	18x33x32	27.5	–	0.8	MKCA1100V405KGA12EB
	18	14.5	720	8,1	10.4	40	35x50x42.5	37.5	20.3	1.2	MKCA1100V186KJP04ED
	35	16.0	700	5.5	7.3	20	35x60x57.5	52.5	20.3	1.2	MKCA1100V356KMP34ED

Additional designs on request · Weitere Designs auf Anfrage

> Life Time Table · Brauchbarkeitsdauer – Tabelle

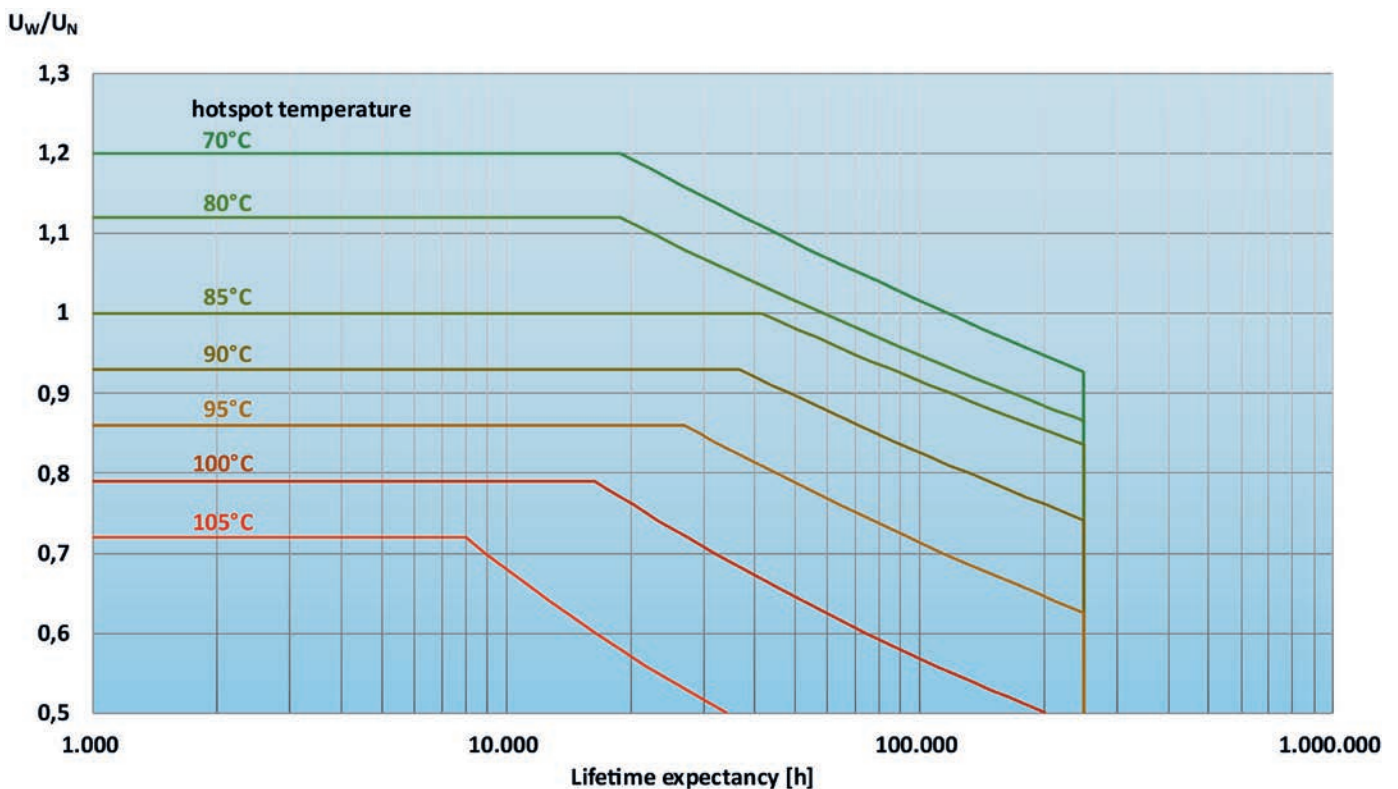
Lifetime as function of ratio between the effective working voltage $U_w$ and the rated DC voltage $U_N$													
$T_{HOTSPT}$	x 0.5	x 0.6	x 0.7	x 0.75	x 0.8	x 0.85	x 0.9	x 0.95	x 1.0	x 1.05	x 1.1	x 1.15	x 1.20
50 °C	250	250	250	250	250	250	250	250	250	250	181	116	76
60 °C	250	250	250	250	250	250	250	250	234	144	91	58	38
70 °C	250	250	250	250	250	250	250	196	117	72	45	29	19
75 °C	250	250	250	250	250	250	238	138	83	51	32	21	
80 °C	250	250	250	250	250	250	168	98	59	36	23		
85 °C	250	250	250	250	250	210	119	69	42				
90 °C	250	250	250	228	132	79	48	30					
95 °C	250	250	114	70	45	30							
100 °C	200	75	32	22	16								
105 °C	34	17	9										

khrs value limited to 250 000 hours.

> Life Time Graph · Brauchbarkeitsdauer – Diagramm

Lifetime expectancy depending on hotspot temperature  $T_{HOTSPT}$  versus ratio between the effective working voltage  $U_w$  and the rated DC voltage  $U_N$

Lebenserwartung in Abhängigkeit von der hotspot Temperatur  $T_{HOTSPT}$  und dem Verhältnis der tatsächlich anliegenden Spannung zur DC Nennspannung  $U_N$



$$T_{HOTSPT} = T_a + I^2 \times ESR \times R_{th}$$