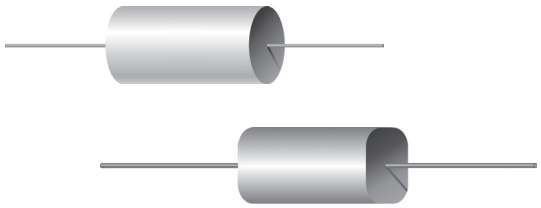
MCW (Not for new design)

Metallized polycarbonate film capacitor
MKC - General purpose - High stability



Main applications: Filtering, timing, coupling and decoupling, high temperature / high stability applications in electronics. Low pulse operation.

Dielectric	Polycarbonate
Electrodes	Vacuum deposited metal layers
Coating	UL 510 / CSA TIL I-26 polyester tape wrapping; UL 94 V-0 resin end fill (flame retardant execution)
Construction	Extended metallized film (refer to general technical information). Non inductive type
Leads	Tinned copper wire
Reference standard	IEC 60384/6, IEC 60068, CECC 30000, CECC 30500
Climatic category	55/100/56 (IEC 60068/1), FMD (DIN40040)
Operating temperature range	-55°...+125°C
Rated capacitance (Cr)	1000pF to 22µF, in compliance with IEC60063, E6 series. Refer to article table
Capacitance tolerance (at 1kHz)	±10% (code=K), ±5% (code=J) and ±20% (code=M). Other tolerances upon request
Capacitance temperature coefficient	Refer to graphs in general technical information
Long term stability (at 1kHz)	Capacitance variation≤ ±1% after a period of 2 years at standard environmental conditions
Rated voltage (Ur)	63, 100, 250, 400, 630 Vdc (Permissible AC voltage at 60Hz: 40, 63, 160, 200, 220 Vac)
Category voltage (Uc)	Uc=Ur at +85°C; Uc=0,5xUr at +125°C
Temperature derated voltage	For T> +85°C, Ur must be decreased 1.25% for every °C exceeding +85°C
Self inductance	≤ 1nH/mm of capacitor and leads length used for connection
Maximum pulse rise time	Refer to article table. The pulse characteristic Ko depends on the voltage waveform. In any case the value given in the article table must not be exceeded
Dissipation factor (DF), max.	(tgδ x10^{-4}, measured at 25±5°C)

Freq.	Cr ≤ 0.1µF	0.1µF< Cr ≤ 1µF	Cr> 1µF
1kHz	30	30	30
10kHz	40	40	-
100kHz	100	-	-

Insulation resistance (IR)

(Measured between terminals, at 25±°C, after 1 minute of electrification at 100Vdc for Ur≥ 100Vdc and 50Vdc for Ur< 100Vdc)

Ur	Cr	IR
≤ 100	≤ 0.33µF	≥ 15000MΩ
> 100	≤ 0.33µF	≥ 30000MΩ
≤ 100	> 0.33µF	≥ 5000s
> 100	> 0.33µF	≥ 10000s

Test voltage between terminals(Ut): 1.6xUr (DC) applied for 2s at 25±5°C (1 minute for type test)

Damp heat test (steady state)

Test conditions:
Temperature= +40±2°C
Relative humidity= 93±2%
Test Duration= 56 days

Performance:
Capacitance change≤ ±5%
DF change≤ 0.0030 at 1kHz
IR≥ 50% of initial limit value

Endurance test

Test conditions:
Temperature= +85±2°C
Test duration= 1000h
Voltage applied= 1.25 x Ur(DC)

Performance:
Capacitance change≤ ±5%
DF change≤ 0.0030 at 10kHz for Cr≤ 1µF
DF change≤ 0.0020 at 1kHz for Cr> 1µF
IR≥ 50% of initial limit value

MCW (Not for new design)

Resistance to soldering heat test

Test conditions:
Solder bath temperature= +260±5°C
Dipping time (with heat screen)= 10±1s

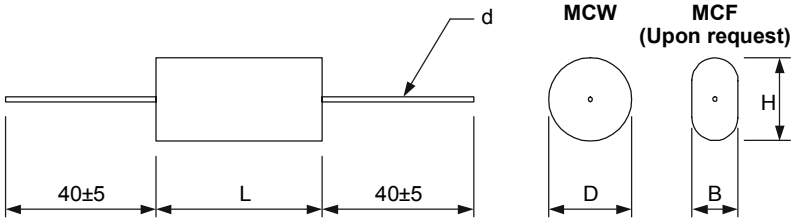
Performance:
Capacitance change≤ ±2%
DF change≤ 0,0030 at10kHz for Cr≤ 1µF
DF change≤ 0,0020 at 1kHz for Cr> 1µF
IR≥ 50% initial limit value

Reliability (MIL HDB 217)

Application conditions:
Applied voltage= 0,5xUr(DC)
Temperature= +40±2°C

Failure rate: (1FIT=1x10^{-9} failures/components x hours)
≤ 8FIT for Ur≤100Vdc
≤ 6FIT for Ur>100Vdc

Failure criteria (DIN44122):
Capacitance change> ±10%
DF change> 2 x initial limit
IR< 0,005 x initial limit value
Short or open circuit



Dimensional tolerances (mm)

L	L±	D±	H±	B±
10,5	1,0	1,0	-	-
13,0	1,5	1,0	-	-
19,0	1,5	1,5	1,5	1,0
27,0	2,0	2,0	2,0	1,5
32,0	2,0	2,0	2,0	2,0

MCW article table (different values and flat execution= **MCF** available upon request)

Rated voltage Vdc	Rated voltage Vac	Cap. value (µF)	Dimension in mm D	Dimension in mm L	Dimension in mm d	du/dt V/µs	Ko V²/µs	ICEL ordering code(1)
63	40	0,33	5,5	13	0,6	14	1760	MCW0633330*B
63	40	0,47	6	13	0,6	14	1760	MCW0633470*B
63	40	0,68	7	13	0,6	14	1760	MCW0633680*B
63	40	1	6	19	0,6	9	1130	MCW0634100*D
63	40	1,5	7	19	0,6	9	1130	MCW0634150*D
63	40	2,2	9	19	0,8	9	1130	MCW0634220*D
63	40	2,2	8,5	27	0,8	6	760	MCW0634220*G
63	40	3,3	9,5	27	0,8	6	760	MCW0634330*G
63	40	4,7	10	27	0,8	6	760	MCW0634470*G
63	40	6,8	12,5	27	0,8	6	760	MCW0634680*G
63	40	6,8	10	32	0,8	5	630	MCW0634680*J
63	40	10	13	32	0,8	5	630	MCW0635100*J
63	40	15	14,5	32	0,8	5	630	MCW0635150*J
63	40	22	17	32	0,8	5	630	MCW0635220*J
100	63	0,1	5	13	0,6	16	3200	MCW1103100*B
100	63	0,15	5	13	0,6	16	3200	MCW1103150*B
100	63	0,22	5	13	0,6	16	3200	MCW1103220*B
100	63	0,33	6	13	0,6	16	3200	MCW1103330*B
100	63	0,47	6,5	13	0,6	16	3200	MCW1103470*B
100	63	0,68	6	19	0,6	9	1800	MCW1103680*D
100	63	1	7	19	0,6	9	1800	MCW1104100*D
100	63	1,5	9	19	0,8	9	1800	MCW1104150*D
100	63	1,5	7	27	0,8	6	1200	MCW1104150*G
100	63	2,2	9	27	0,8	6	1200	MCW1104220*G
100	63	3,3	10,5	27	0,8	6	1200	MCW1104330*G
100	63	4,7	13	27	0,8	6	1200	MCW1104470*G
100	63	4,7	10,5	32	0,8	5	1000	MCW1104470*J
100	63	6,8	14	32	0,8	5	1000	MCW1104680*J
100	63	10	16,5	32	0,8	5	1000	MCW1105100*J
100	63	15	20	32	0,8	5	1000	MCW1105150*J
100	63	22	25	32	1	5	1000	MCW1105220*J
250	160	0,047	5	13	0,6	21	10500	MCW1252470*B
250	160	0,068	5	13	0,6	21	10500	MCW1252680*B
250	160	0,1	6	13	0,6	21	10500	MCW1253100*B
250	160	0,15	7	13	0,8	21	10500	MCW1253150*B
250	160	0,22	6,5	19	0,6	17	8500	MCW1253220*D
250	160	0,33	7,5	19	0,8	17	8500	MCW1253330*D

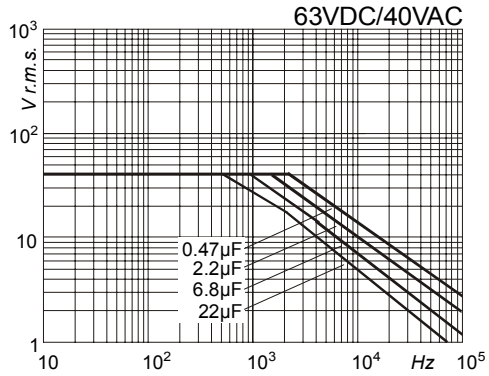
(1)Change the * symbol with the needed capacitance tolerance code: J=±5%, K=±10%, M=±20%

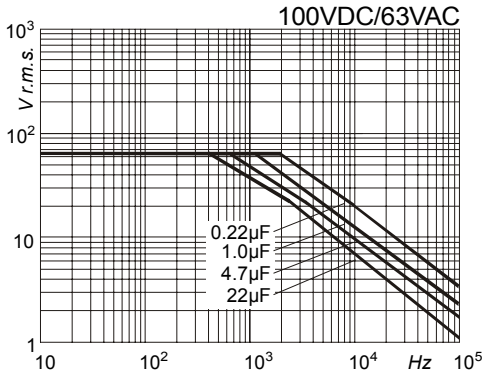
MCW (Not for new design)

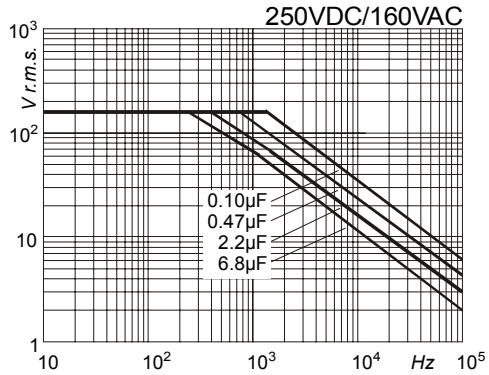
Rated voltage Vdc	Rated voltage Vac	Cap. value (µF)	Dimension in mm D	Dimension in mm L	Dimension in mm d	du/dt V/µs	Ko V²/µs	ICEL ordering code[1]
250	160	0,47	9,5	19	0,8	17	8500	MCW1253470*D
250	160	0,68	8,5	27	0,8	12	6000	MCW1253680*G
250	160	1	9,5	27	0,8	12	6000	MCW1254100*G
250	160	1,5	11	27	0,8	12	6000	MCW1254150*G
250	160	2,2	13	32	0,8	6	3000	MCW1254220*J
250	160	3,3	14,5	32	0,8	6	3000	MCW1254330*J
250	160	4,7	17,5	32	0,8	6	3000	MCW1254470*J
250	160	6,8	21	32	1	6	3000	MCW1254680*J
400	200	0,0047	4,5	10,5	0,6	42	33600	MCW1401470*A
400	200	0,0068	4,5	10,5	0,6	42	33600	MCW1401680*A
400	200	0,01	5	10,5	0,6	42	33600	MCW1402100*A
400	200	0,015	5	13	0,6	42	33600	MCW1402150*B
400	200	0,022	5	13	0,6	42	33600	MCW1402220*B
400	200	0,033	5	13	0,6	42	33600	MCW1402330*B
400	200	0,047	6	13	0,6	42	33600	MCW1402470*B
400	200	0,068	7	13	0,6	42	33600	MCW1402680*B
400	200	0,1	6,5	19	0,6	23	18400	MCW1403100*D
400	200	0,15	7,5	19	0,8	23	18400	MCW1403150*D
400	200	0,22	9	19	0,8	23	18400	MCW1403220*D
400	200	0,22	7,5	27	0,8	18	14400	MCW1403220*G
400	200	0,33	8,5	27	0,8	18	14400	MCW1403330*G
400	200	0,47	10	27	0,8	18	14400	MCW1403470*G
400	200	0,68	12,5	27	0,8	18	14400	MCW1403680*G
400	200	0,68	11	32	0,8	13	10400	MCW1403680*J
400	200	1	13	32	0,8	13	10400	MCW1404100*J
400	200	1,5	16,5	32	0,8	13	10400	MCW1404150*J
400	200	2,2	19,5	32	0,8	13	10400	MCW1404220*J
630	220[2]	0,001	4,5	10,5	0,6	78	98000	MCW1631100*A
630	220[2]	0,0015	4,5	10,5	0,6	78	98000	MCW1631150*A
630	220[2]	0,0022	4,5	10,5	0,6	78	98000	MCW1631220*A
630	220[2]	0,0033	4,5	10,5	0,6	78	98000	MCW1631330*A
630	220[2]	0,0047	5	10,5	0,6	78	98000	MCW1631470*A
630	220[2]	0,0068	5	10,5	0,6	78	98000	MCW1631680*A
630	220[2]	0,01	5	13	0,6	78	98000	MCW1632100*B
630	220[2]	0,015	5,5	13	0,6	78	98000	MCW1632150*B
630	220[2]	0,022	6,5	13	0,6	78	98000	MCW1632220*B
630	220[2]	0,033	6	19	0,6	42	53000	MCW1632330*D
630	220[2]	0,047	6,5	19	0,6	42	53000	MCW1632470*D
630	220[2]	0,068	8,5	19	0,8	42	53000	MCW1632680*D
630	220[2]	0,1	7,5	27	0,8	26	32800	MCW1633100*G
630	220[2]	0,15	9	27	0,8	26	32800	MCW1633150*G
630	220[2]	0,22	10,5	27	0,8	26	32800	MCW1633220*G
630	220[2]	0,33	13	27	0,8	26	32800	MCW1633330*G
630	220[2]	0,33	12	32	0,8	18	22700	MCW1633330*J
630	220[2]	0,47	14	32	0,8	18	22700	MCW1633470*J
630	220[2]	0,68	17	32	0,8	18	22700	MCW1633680*J
630	220[2]	1	20,5	32	1	18	22700	MCW1634100*J

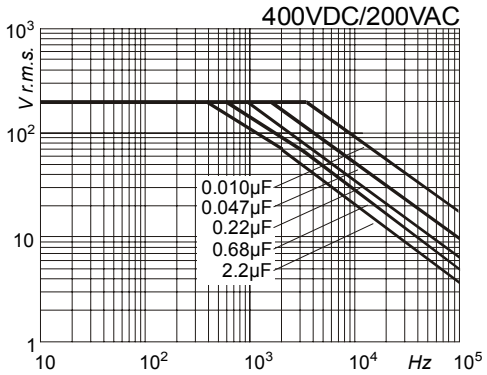
(1)Change the * symbol with the needed capacitance tolerance code: J=±5%, K=±10%, M=±20%
[2]Not suitable for across the line application,

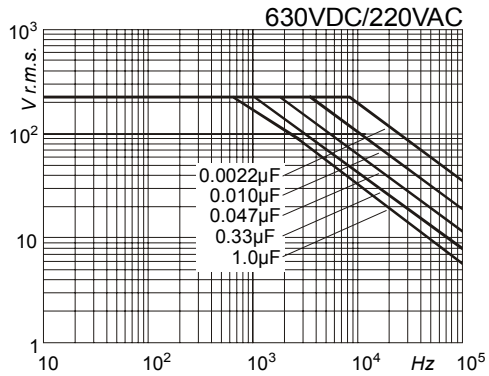
Permissible AC voltage versus frequency (sinusoidal waveform) for ΔT= +10°C











Warning

This specification must be completed with the data given in the "General technical information" chapter