

## KC Type Screw Terminal -40°C +105°C 5000H

Surge-proof capacitor in aluminium can with insulation sleeve

Heavy duty screw terminal connectors.

Mounted with ring clip or threaded stud

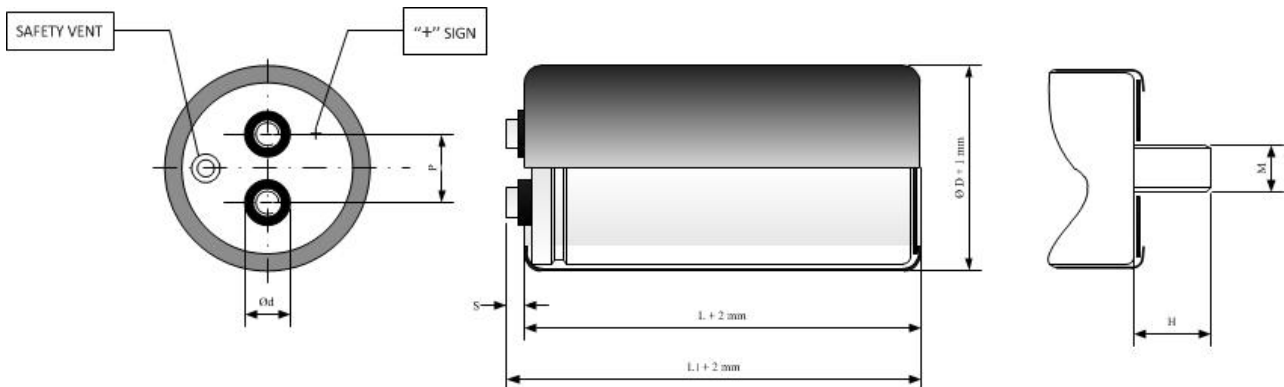
Very high CV for unit volume with low ESR and impedance

High ripple current capability.

High level of reliability with outstanding high frequency characteristics

### APPLICATIONS

Professional power supplies. Switch mode power supplies, power convertors, filtering devices.



ØD	Ød	P	M	H	Screw
35	11	12.7	M 8	12	5MA x 9.5
51	18.5	22.7	M 12	16	5MA x 9.5
63	18.5	28.6	M 12	16	5MA x 9.5
76	18.5	31.8	M 12	16	5MA x 9.5
76	18.5	31.8	M 12	16	6MA x 10
90	18.5	31.8	M 12	16	6MA x 10

M5	S = 5mm -0 +1mm from top of deck	L1 = L + 2.5mm	L1 tol = -0 +3mm
M6	S = 7mm -1 +1mm from top of deck	L1 = L + 4.5mm	L1 tol = -1 +3mm

# KC TYPE SPECIFICATIONS

<b>Temperature Range</b>	Operating: -40°C +105°C [Environmental classification 40/85/56 IEC-68] Storage : Preferably below +25°C, not exceeding +40 °C																																													
<b>Rated Voltage Range (V<sub>r</sub>)</b>	from 16V to 450V DC																																													
<b>Surge Voltage (V<sub>p</sub>)</b>	V <sub>p</sub> = 1.15 V <sub>r</sub> (V <sub>r</sub> ≤ 250 V DC) V <sub>p</sub> = 1.10 V <sub>r</sub> (V <sub>r</sub> > 250 V DC)																																													
<b>Rated Capacitance Range</b>	from 100 µF to 470,000 µF																																													
<b>Capacitance Tolerance</b>	±20% at 100 Hz, 20°C [M class IEC-62] on request: -10% +30% at 100 Hz, 20°C [Q class IEC-62]																																													
<b>Leakage Current (I<sub>L</sub>) (mA, 5 min, 20°C)</b>	max I <sub>L</sub> = 0.003 C <sub>r</sub> V <sub>r</sub> + 4 µA At 85°C max I <sub>L</sub> = 0.02 C <sub>r</sub> V <sub>r</sub> µA																																													
<b>Ripple current (I<sub>r</sub>)</b>	<p>Refer to table at 105°C and 100Hz. For different temperature and frequency, multiplier must be used as follows :</p> <table border="1"> <tr> <td>FREQUENCY</td> <td>50Hz</td> <td>100Hz</td> <td>500 Hz</td> <td>1000Hz</td> <td>&gt;10kHz</td> </tr> <tr> <td>MULTIPLIER</td> <td>0.8</td> <td>1.0</td> <td>1.2</td> <td>1.3</td> <td>1.5</td> </tr> </table> <table border="1"> <tr> <td>AMBIENT TEMP</td> <td>35°C</td> <td>45°C</td> <td>55°C</td> <td>65°C</td> <td>75°C</td> <td>85°C</td> <td>95°C</td> <td>105°C</td> <td>110°C</td> </tr> <tr> <td>MULTIPLIER</td> <td>3.0</td> <td>2.80</td> <td>2.60</td> <td>2.40</td> <td>2.20</td> <td>1.80</td> <td>1.5</td> <td>1.0</td> <td>0.5</td> </tr> </table> <p>Maximum internal temperature 108°C</p> <p>Due to the current load capability of the contact elements, the following limits must not be exceeded:</p> <table border="1"> <tr> <td>CAPACITOR DIAMETER</td> <td>35mm</td> <td>51mm</td> <td>63mm</td> <td>76mm</td> <td>90mm</td> </tr> <tr> <td>Maximum current</td> <td>20A</td> <td>30A</td> <td>40A</td> <td>50A</td> <td>70A</td> </tr> </table>		FREQUENCY	50Hz	100Hz	500 Hz	1000Hz	>10kHz	MULTIPLIER	0.8	1.0	1.2	1.3	1.5	AMBIENT TEMP	35°C	45°C	55°C	65°C	75°C	85°C	95°C	105°C	110°C	MULTIPLIER	3.0	2.80	2.60	2.40	2.20	1.80	1.5	1.0	0.5	CAPACITOR DIAMETER	35mm	51mm	63mm	76mm	90mm	Maximum current	20A	30A	40A	50A	70A
FREQUENCY	50Hz	100Hz	500 Hz	1000Hz	>10kHz																																									
MULTIPLIER	0.8	1.0	1.2	1.3	1.5																																									
AMBIENT TEMP	35°C	45°C	55°C	65°C	75°C	85°C	95°C	105°C	110°C																																					
MULTIPLIER	3.0	2.80	2.60	2.40	2.20	1.80	1.5	1.0	0.5																																					
CAPACITOR DIAMETER	35mm	51mm	63mm	76mm	90mm																																									
Maximum current	20A	30A	40A	50A	70A																																									
<b>Insulation Resistance</b>	At 100V DC for 1 min is >100 MΩ across insulating sleeve and terminals.																																													
<b>Vibration Resistance</b>	Frequency range: 10 Hz to 55 Hz, amplitude 0.75 mm Capacitor length ≤ 143 : max acceleration 10g for 3x2 h Capacitor length > 143 : max acceleration 5g for 3x0.5 h																																													
<b>Life test</b>	After 2,000 hours application of rated voltage at 105°C capacitors meet characteristics	Cap change ≤ 20% tan δ ≤ 200% Leakage current (I <sub>L</sub> ) < initial limit Impedance (Z) ≤ 200%																																												
<b>Shelf life</b>	After leaving capacitors under no load for 500 hours at 105°C, when restored to 20°C meet specifications	Cap change ≤ ±15% tan δ ≤ 150% Leakage current (I <sub>L</sub> ) < initial limit																																												
<b>Useful life</b>	250.000 h at 40°C 15.000 h at 85°C 5,000 h at 105°C																																													
<b>Failure percentage Failure rate</b>	≤ 1% (during useful life) ≤ 40 fit (40 10 <sup>-9</sup> /h)																																													
<b>Self inductance</b>	Approx. 20 nH																																													
<b>Reference standards</b>	CECC 30.300 IEC 60384-4 LONG LIFE GRADE																																													

# KC TYPE SPECIFICATIONS

	Capacitance $\mu\text{F}$	$\varnothing \times \text{L}$ mm	Tan $\delta$ MAX 100 Hz 20°C	ESR TYP m $\Omega$ 100 Hz 20°C	Z TYP m $\Omega$ 10 kHz 20°C	I <sub>r</sub> a.c. A max 100 Hz 105°C	PART NUMBER standard insert style no stud
RATED VOLTAGE VDC  16V	10,000	35x60	0.25	25	24	3.3	KC103MA35060AA1
	15,000	35x60	0.30	16	16	3.5	KC153MA35060AA1
	22,000	35x60	0.35	12	12	4.4	KC223MA35060AA1
	33,000	35x60	0.40	12	12	4.6	KC333MA35060AA1
	47,000	35x79	0.55	9	10	7.5	KC473MA35079AA1
	68,000	51x79	0.60	8	8	11.9	KC683MA51079AA1
	100,000	51x105	0.80	8	8	12.3	KC104MA51105AA1
	150,000	63x105	1.10	7	7	15.4	KC154MA63105AA1
	220,000	76x105	1.50	7	7	18.8	KC224MA76105AA1
	330,000	76x105	1.90	7	7	19.7	KC334MA76105AA1
	470,000	76x143	2.00	6	6	22.5	KC474MA76143AA1

	Capacitance $\mu\text{F}$	$\varnothing \times \text{L}$ mm	Tan $\delta$ MAX 100 Hz 20°C	ESR TYP m $\Omega$ 100 Hz 20°C	Z TYP m $\Omega$ 10 kHz 20°C	I <sub>r</sub> a.c. A max 100 Hz 105°C	PART NUMBER standard insert style no stud
RATED VOLTAGE VDC  25V	10,000	35x60	0.20	23	18	3.8	KC103MB35060AA1
	15,000	35x60	0.25	16	12	4.8	KC153MB35060AA1
	22,000	35x60	0.30	12	12	7.0	KC223MB35060AA1
	33,000	51x79	0.35	10	10	8.9	KC333MB51079AA1
	47,000	51x79	0.40	9	9	11.6	KC473MB51079AA1
	68,000	51x105	0.50	8	8	13.0	KC683MB51105AA1
	100,000	63x105	0.60	8	8	15.8	KC104MB63105AA1
	150,000	76x105	0.90	7	7	18.3	KC154MB76105AA1
	220,000	76x143	1.30	7	7	21.6	KC224MB76143AA1
	330,000	76x143	2.00	7	7	23.8	KC334MB76143AA1

	Capacitance $\mu\text{F}$	$\varnothing \times \text{L}$ mm	Tan $\delta$ MAX 100 Hz 20°C	ESR TYP m $\Omega$ 100 Hz 20°C	Z TYP m $\Omega$ 10 kHz 20°C	I <sub>r</sub> a.c. A max 100 Hz 105°C	PART NUMBER standard insert style no stud
RATED VOLTAGE VDC  40V	4,700	35x60	0.20	31	29	3.3	KC472MC35060AA1
	6,800	35x60	0.20	23	20	3.9	KC682MC35060AA1
	10,000	35x79	0.20	16	12	4.8	KC103MC35079AA1
	15,000	35x79	0.20	12	10	5.4	KC153MC35079AA1
	22,000	51x79	0.25	10	10	8.9	KC223MC51079AA1
	33,000	51x105	0.35	10	10	11.2	KC333MC51105AA1
	47,000	51x105	0.45	9	9	13.8	KC473MC51105AA1
	47,000	63x105	0.45	9	9	14.5	KC473MC63105AA1
	68,000	63x105	0.60	7	7	15.0	KC683MC63105AA1
	68,000	76x105	0.60	7	7	15.9	KC683MC76105AA1
	100,000	76x105	0.90	7	7	19.1	KC104MC76105AA1
	100,000	76x143	0.90	7	7	21.0	KC104MC76143AA1
	150,000	76x143	1.30	7	7	25.9	KC154MC76143AA1

# KC TYPE SPECIFICATIONS

	Capacitance $\mu\text{F}$	$\varnothing \times L$ mm	Tan $\delta$ MAX 100 Hz 20°C	ESR TYP m $\Omega$ 100 Hz 20°C	Z TYP m $\Omega$ 10 kHz 20°C	I <sub>r</sub> a.c. A max 100 Hz 105°C	PART NUMBER standard insert style no stud
<b>RATED VOLTAGE VDC  63V</b>	2,200	35x60	0.15	72	60	2.5	KC222ME35060AA1
	3,300	35x60	0.15	48	39	3.5	KC332ME35060AA1
	4,700	35x60	0.15	33	28	4.2	KC472ME35060AA1
	6,800	35x79	0.18	18	13	6.3	KC682ME35079AA1
	10,000	51x79	0.20	15	11	8.2	KC103ME51079AA1
	15,000	51x105	0.25	13	10	18.0	KC153ME51105AA1
	15,000	51x79	0.25	15	13	8.9	KC153ME51079AA1
	22,000	51x105	0.30	11	10	11.8	KC223ME51105AA1
	22,000	63x105	0.30	11	10	13.5	KC223ME63105AA1
	33,000	63x105	0.35	11	10	14.8	KC333ME63105AA1
	33,000	76x105	0.35	11	8	16.6	KC333ME76105AA1
	47,000	76x105	0.45	9	8	17.7	KC473ME76105AA1
	47,000	76x143	0.45	9	8	19.0	KC473ME76143AA1
	68,000	76x105	0.45	8	8	20.1	KC683ME76105AA1
	68,000	76x143	0.70	8	8	22.8	KC683ME76143AA1
	100,000	76x143	0.70	8	8	24.1	KC104ME76143AA1

	Capacitance $\mu\text{F}$	$\varnothing \times L$ mm	Tan $\delta$ MAX 100 Hz 20°C	ESR TYP m $\Omega$ 100 Hz 20°C	Z TYP m $\Omega$ 10 kHz 20°C	I <sub>r</sub> a.c. A max 100 Hz 105°C	PART NUMBER standard insert style no stud
<b>RATED VOLTAGE VDC  100V</b>	1,000	35x60	0.15	110	100	2.9	KC102MG35060AA1
	1,500	35x60	0.15	80	73	3.2	KC152MG35060AA1
	2,200	35x60	0.15	59	53	4.4	KC222MG35060AA1
	3,300	35x79	0.15	33	31	5.8	KC332MG35079AA1
	4,700	51x79	0.15	25	22	7.2	KC472MG51079AA1
	6,800	51x105	0.15	19	17	8.9	KC682MG51105AA1
	6,800	51x79	0.15	19	17	8.9	KC682MG51079AA1
	10,000	51x105	0.15	17	15	11.0	KC103MG51105AA1
	10,000	63x105	0.15	17	15	12.5	KC103MG63105AA1
	15,000	63x105	0.15	12	12	15.1	KC153MG63105AA1
	22,000	76x105	0.18	10	9	16.5	KC223MG76105AA1
	33,000	76x143	0.22	8	8	20.9	KC333MG76143AA1

# KC TYPE SPECIFICATIONS

	Capacitance $\mu\text{F}$	$\varnothing \times \text{L}$ mm	Tan $\delta$ MAX 100 Hz 20°C	ESR TYP m $\Omega$ 100 Hz 20°C	Z TYP m $\Omega$ 10 kHz 20°C	I <sub>r</sub> a.c. A max 100 Hz 105°C	PART NUMBER standard insert style no stud
<b>RATED VOLTAGE VDC</b>  <b>160V</b>	1,000	35x79	0.11	105	90	3.3	KC102MH35079AA1
	1,500	51x79	0.11	65	60	4.1	KC152MH51079AA1
	2,200	51x105	0.11	46	43	4.8	KC222MH51105AA1
	3,300	63x105	0.11	32	30	6.8	KC332MH63105AA1
	4,700	63x105	0.11	27	25	8.5	KC472MH63105AA1
	6,800	76x105	0.13	23	20	11.3	KC682MH76105AA1
	10,000	76x105	0.14	22	20	14.2	KC103MH76105AA1
	10,000	76x143	0.15	17	16	14.9	KC103MH76143AA1
	15,000	76x143	0.20	16	12	17.2	KC153MH76143AA1
	22,000	76x214	0.20	11	10	19.0	KC223MH76214AA1

	Capacitance $\mu\text{F}$	$\varnothing \times \text{L}$ mm	Tan $\delta$ MAX 100 Hz 20°C	ESR TYP m $\Omega$ 100 Hz 20°C	Z TYP m $\Omega$ 10 kHz 20°C	I <sub>r</sub> a.c. A max 100 Hz 105°C	PART NUMBER standard insert style no stud
<b>RATED VOLTAGE VDC</b>  <b>200V</b>	680	35x60	0.11	133	98	2.5	KC681MI35060AA1
	1,000	51x79	0.11	85	64	4.6	KC102MI51079AA1
	1,500	51x105	0.11	65	58	5.1	KC152MI51105AA1
	2,200	51x105	0.11	60	53	6.1	KC222MI51105AA1
	3,300	63x105	0.11	40	35	7.9	KC332MI63105AA1
	4,700	63x105	0.11	30	28	8.7	KC472MI63105AA1
	6,800	76x105	0.11	23	12	11.8	KC682MI76105AA1
	10,000	76x105	0.13	21	14	14.5	KC103MI76105AA1
	10,000	76x143	0.15	19	12	16.0	KC103MI76143AA1
	15,000	76x143	0.20	19	12	17.3	KC153MI76143AA1
22,000	76x214	0.20	11	10	18.9	KC223MI76214AA1	

	Capacitance $\mu\text{F}$	$\varnothing \times \text{L}$ mm	Tan $\delta$ MAX 100 Hz 20°C	ESR TYP m $\Omega$ 100 Hz 20°C	Z TYP m $\Omega$ 10 kHz 20°C	I <sub>r</sub> a.c. A max 100 Hz 105°C	PART NUMBER standard insert style no stud
<b>RATED VOLTAGE VDC</b>  <b>250V</b>	470	35x60	0.11	211	193	2.0	KC471MJ35060AA1
	680	35x79	0.11	130	98	2.2	KC681MJ35079AA1
	1,000	51x79	0.11	110	85	4.1	KC102MJ51079AA1
	1,500	51x105	0.11	74	65	5.4	KC152MJ51105AA1
	2,200	51x105	0.11	51	48	6.8	KC222MJ51105AA1
	3,300	63x105	0.11	35	30	8.2	KC332MJ63105AA1
	4,700	76x105	0.11	26	24	11.9	KC472MJ76105AA1
	6,800	76x143	0.15	23	21	14.3	KC682MJ76143AA1
	10,000	76x143	0.20	20	19	16.0	KC103MJ76143AA1
	15,000	76x214	0.20	18	15	17.4	KC153MJ76214AA1

# KC TYPE SPECIFICATIONS

	Capacitance μF	Ø x L mm	Tan δ MAX 100 Hz 20°C	ESR TYP m Ω 100 Hz 20°C	Z TYP m Ω 10 kHz 20°C	Ir a.c. A max 100 Hz 105°C	PART NUMBER standard insert style no stud
<b>RATED VOLTAGE VDC</b>  <b>350V</b>	330	35x60	0.11	255	196	1.8	KC331MK35060AA1
	470	35x79	0.11	170	141	2.1	KC471MK35079AA1
	680	51x79	0.11	128	96	3.8	KC681MK51079AA1
	1,000	51x105	0.11	85	68	5.0	KC102MK51105AA1
	1,500	63x105	0.11	59	52	6.4	KC152MK63105AA1
	2,200	76x105	0.11	44	40	8.1	KC222MK76105AA1
	3,300	76x105	0.11	31	27	10.2	KC332MK76105AA1
	4,700	76x143	0.11	29	25	13.5	KC472MK76143AA1
	6,800	76x143	0.15	23	21	15.1	KC682MK76143AA1
	10,000	76x214	0.20	20	18	19.9	KC103MK76214AA1

	Capacitance μF	Ø x L mm	Tan δ MAX 100 Hz 20°C	ESR TYP m Ω 100 Hz 20°C	Z TYP m Ω 10 kHz 20°C	Ir a.c. A max 100 Hz 105°C	PART NUMBER standard insert style no stud
<b>RATED VOLTAGE VDC</b>  <b>400V</b>	220	35x60	0.11	350	280	1.4	KC221ML35060AA1
	330	35x60	0.11	250	210	2.2	KC331ML35060AA1
	470	51x79	0.11	170	150	2.8	KC471ML51079AA1
	680	51x79	0.11	110	100	3.2	KC681ML51079AA1
	1,000	51x105	0.11	95	82	4.1	KC102ML51105AA1
	1,500	63x105	0.11	64	53	5.8	KC152ML63105AA1
	2,200	63x105	0.11	45	53	6.0	KC222ML63105AA1
	2,200	76x105	0.11	45	39	7.3	KC222ML76105AA1
	3,300	76x143	0.11	28	25	11.1	KC332ML76143AA1
	4,700	76x143	0.11	24	23	12.8	KC472ML76143AA1
	6,800	76x214	0.15	19	15	15.0	KC682ML76214AA1
	10,000	90x220	0.20	16	14	29.7	KC103ML90220AA1

	Capacitance μF	Ø x L mm	Tan δ MAX 100 Hz 20°C	ESR TYP m Ω 100 Hz 20°C	Z TYP m Ω 10 kHz 20°C	Ir a.c. A max 100 Hz 105°C	PART NUMBER standard insert style no stud
<b>RATED VOLTAGE VDC</b>  <b>450V</b>	100	35x60	0.11	800	650	1.2	KC101MN35060AA1
	150	35x60	0.11	550	490	1.6	KC151MN35060AA1
	220	35x60	0.11	370	310	1.8	KC221MN35060AA1
	330	35x79	0.11	240	210	2.4	KC331MN35079AA1
	470	51x79	0.11	200	179	3.0	KC471MN51079AA1
	680	51x105	0.11	140	128	4.2	KC681MN51105AA1
	1,000	51x105	0.11	100	88	4.4	KC102MN51105AA1
	1,000	63x105	0.11	100	88	5.3	KC102MN63105AA1
	1,500	63x105	0.11	70	63	5.7	KC152MN63105AA1
	1,500	76x105	0.11	70	63	6.6	KC152MN76105AA1
	2,200	76x143	0.11	60	47	8.8	KC222MN76143AA1
	3,300	76x143	0.15	35	30	10.4	KC332MN76143AA1
	4,700	76x143	0.15	28	25	10.9	KC472MN76143AA1
	4,700	76x214	0.15	28	25	12.8	KC472MN76214AA1
	6,800	76x214	0.15	21	14	23.7	KC682MN76214AA1
	10,000	90x220	0.20	16	14	29.4	KC103MN90220AA1