

K04 TYPE

- Extended life
- Surge-proof capacitor in aluminium can with insulation sleeve.
- To be mounted with ring clips or with threaded stud.
- Design optimized for parallel connection and high density of energy

APPLICATIONS

Power supplies, motor drives, welding, energy storage.



SPECIFICATIONS

Temperature Range	Operating: -40°C +85°C Storage : Preferably below +25°C, not exceeding +40 °C																																					
Rated Voltage Range (V_r)	from 350V to 550V DC																																					
Surge Voltage (V_p)	$V_p = 1.10 V_r$ ($V_r \leq 500$ VDC)	$V_p = 1.05 V_r$ ($V_r > 500$ VDC)																																				
Rated Capacitance Range	from 1500 μ F to 15000 μ F																																					
Capacitance Tolerance	$\pm 20\%$ at 100 Hz, 20°C [M class IEC-62] on request: -10% +30% at 100 Hz, 20°C [Q class IEC-62]																																					
Leakage Current (I_L) (5 min, 20°C)	max $I_L = 0.006 C_r V_r + 4 \mu$ A																																					
Ripple current (I_r)	<p>Refer to table at 85°C and 100Hz :</p> <table border="1"> <thead> <tr> <th>FREQUENCY</th> <th>50Hz</th> <th>100Hz</th> <th>500 Hz</th> <th>1000Hz</th> <th>>10kHz</th> </tr> </thead> <tbody> <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> </tbody> </table> <table border="1"> <thead> <tr> <th>AMBIENT TEMP</th> <th>35°C</th> <th>45°C</th> <th>55°C</th> <th>65°C</th> <th>75°C</th> <th>85°C</th> <th>95°C</th> </tr> </thead> <tbody> <tr> <td>MULTIPLIER</td> <td>2.2</td> <td>2.1</td> <td>1.8</td> <td>1.6</td> <td>1.4</td> <td>1.0</td> <td>0.5</td> </tr> </tbody> </table> <p>Maximum internal temperature 98°C</p> <p>Due to the current load capability of the contact elements, the following limits must not be exceeded:</p> <table border="1"> <thead> <tr> <th>CAPACITOR DIAMETER</th> <th>63mm</th> <th>76mm</th> <th>90mm</th> </tr> </thead> <tbody> <tr> <td>Maximum current</td> <td>40A</td> <td>50A</td> <td>70A</td> </tr> </tbody> </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	MULTIPLIER	2.2	2.1	1.8	1.6	1.4	1.0	0.5	CAPACITOR DIAMETER	63mm	76mm	90mm	Maximum current	40A	50A	70A
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CAPACITOR DIAMETER	63mm	76mm	90mm																																			
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Insulation Resistance	At 100V DC for 1 min is >100 M Ω across insulating sleeve and terminals.																																					
Vibration Resistance	<p>Frequency range: 10 Hz to 55 Hz, amplitude 0.75 mm</p> <p>Capacitor length ≤ 143 : max acceleration 10g for 3x2 h</p> <p>Capacitor length > 143 : max acceleration 5g for 3x0.5 h</p>																																					
Life test	After 4,000 hours application of rated voltage at 85°C capacitors meet characteristics aside	<table border="1"> <tr> <td>Cap change</td> <td>$\leq \pm 10\%$</td> </tr> <tr> <td>tan δ</td> <td>$\leq 200\%$</td> </tr> <tr> <td>Leakage current (I_L)</td> <td>< initial limit</td> </tr> <tr> <td>Impedance (Z)</td> <td>$\leq 200\%$</td> </tr> </table>	Cap change	$\leq \pm 10\%$	tan δ	$\leq 200\%$	Leakage current (I_L)	< initial limit	Impedance (Z)	$\leq 200\%$																												
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Shelf life	After leaving capacitors under no load for 2000 hours at 85°C, when restored at 20°C meet specifications aside	<table border="1"> <tr> <td>Cap change</td> <td>$\leq \pm 15\%$</td> </tr> <tr> <td>tan δ</td> <td>$\leq 150\%$</td> </tr> <tr> <td>Leakage current (I_L)</td> <td>< initial limit</td> </tr> </table>	Cap change	$\leq \pm 15\%$	tan δ	$\leq 150\%$	Leakage current (I_L)	< initial limit																														
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Working life	<p>≥ 20000H 85°C for $V \leq 450$ V</p> <p>≥ 15000H for $V = 500$V</p> <p>> 12000H for $V = 550$V</p>	<table border="1"> <tr> <td>Cap change</td> <td>$\leq \pm 25\%$</td> </tr> <tr> <td>tan δ</td> <td>$\leq 300\%$</td> </tr> <tr> <td>Leakage current (I_L)</td> <td>< initial limit</td> </tr> </table>	Cap change	$\leq \pm 25\%$	tan δ	$\leq 300\%$	Leakage current (I_L)	< initial limit																														
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Failure percentage Failure rate	<p>$\leq 1\%$ (during working life)</p> <p>≤ 70 fit ($70 \cdot 10^{-9}$/h)</p>																																					
Self inductance	Approx. 20 nH																																					
Reference standards	CECC 30.300 IEC 60384-4 LONG LIFE GRADE																																					

K04 TYPE STANDARD RATINGS

RATED VOLTAGE VDC	Capacitance μ F	\varnothing x L mm	Tan δ MAX 100 Hz 20°C	ESR TYP m Ω 100 Hz 20°C	Z TYP m Ω 10KHz 20°C	Ir a.c. A max 100 Hz 85°C	PART NUMBER Stud and insert style excluded
350V	2200	63x105	0.13	42	30	11.0	K04350222_M0H105
	3300	63x105	0.13	30	22	12.6	K04350332_M0H105
	3300	76x105	0.13	30	22	13.8	K04350332_M0J105
	4700	76x105	0.13	23	15	16.1	K04350472_M0J105
	4700	76x143	0.13	23	15	18.5	K04350472_M0J143
	5600	76x143	0.15	19	14	20.0	K04350562_M0J143
	6800	76x143	0.15	15	11	21.8	K04350682_M0J143
	8200	76x143	0.15	13	9	23.6	K04350822_M0J143
	10000	76x214	0.17	11	8	31.7	K04350103_M0J214
	15000	90x220	0.18	7	5	42.0	K04350153_M0L220

RATED VOLTAGE VDC	Capacitance μ F	\varnothing x L Mm	Tan δ MAX 100 Hz 20°C	ESR TYP m Ω 100 Hz 20°C	Z TYP m Ω 10KHz 20°C	Ir a.c. A max 100 Hz 85°C	PART NUMBER Stud and insert style excluded
400V	1500	63x105	0.15	105	85	7.5	K04400152_M0H105
	2200	63x105	0.15	80	63	8.8	K04400222_M0H105
	2200	76x105	0.15	80	63	10.2	K04400222_M0J105
	3300	63x105	0.15	50	40	10.7	K04400332_M0H105
	3300	76x143	0.15	50	40	14.1	K04400332_M0J143
	4700	76x105	0.17	40	32	14.7	K04400472_M0J105
	4700	76x143	0.17	40	32	17.7	K04400472_M0J143
	6800	76x143	0.17	27	22	18.0	K04400682_M0J143
	10000	76x214	0.20	20	17	27.8	K04400103_M0J220

RATED VOLTAGE VDC	Capacitance μ F	\varnothing x L mm	Tan δ MAX 100 Hz 20°C	ESR TYP m Ω 100 Hz 20°C	Z TYP m Ω 10KHz 20°C	Ir a.c. A max 100 Hz 85°C	PART NUMBER Stud and insert style excluded
420V	1500	63x105	0.15	105	85	7.5	K04420152_M0H205
	2200	63x105	0.15	80	63	8.8	K04420222_M0H205
	2200	76x105	0.15	80	63	10.2	K04420222_M0J205
	3300	63x105	0.15	50	40	10.7	K04420332_M0H105
	3300	76x143	0.15	50	40	14.1	K04420332_M0J143
	4700	76x105	0.17	40	32	14.7	K04420472_M0J105
	4700	76x143	0.17	40	32	17.7	K04420472_M0J143
	6800	76x143	0.17	27	22	18.0	K04420682_M0J143
	10000	76x214	0.20	20	17	27.8	K04420103_M0J214

RATED VOLTAGE VDC	Capacitance μ F	\varnothing x L mm	Tan δ MAX 100 Hz 20°C	ESR TYP m Ω 100 Hz 20°C	Z TYP m Ω 10KHz 20°C	Ir a.c. A max 100 Hz 85°C	PART NUMBER Stud and insert style excluded
450V	1500	63x105	0.15	105	85	7.5	K04450152_M0H105
	2200	63x105	0.15	80	63	8.8	K04450222_M0H105
	2200	76x105	0.15	80	63	10.2	K04450222_M0J105
	3300	63x105	0.15	50	40	10.7	K04450332_M0J105
	3300	76x143	0.15	50	40	14.1	K04450332_M0J143
	4700	76x105	0.17	40	32	14.7	K04450472_M0J105
	4700	76x143	0.17	40	32	17.7	K04450472_M0J143
	6800	76x143	0.17	27	22	18.0	K04450682_M0J143
	10000	76x214	0.20	20	17	27.8	K04450103_M0J214
	12000	90x220	0.20	15	11	34.5	K04450103_M0L220

RATED VOLTAGE VDC	Capacitance μ F	\varnothing x L mm	Tan δ MAX 100 Hz 20°C	ESR TYP m Ω 100 Hz 20°C	Z TYP m Ω 10KHz 20°C	Ir a.c. A max 100 Hz 85°C	PART NUMBER
							Stud and insert style excluded
500V	1500	63x105	0.15	95	76	7.7	K04500152_M0H105
	2200	63x105	0.15	65	55	8.9	K04500222_M0H105
	2200	76x105	0.15	65	55	10.0	K04500222_M0J105
	2200	76x143	0.15	65	55	11.4	K04500222_M0J143
	3300	76x143	0.15	48	39	13.9	K04500332_M0J143
	3900	76x143	0.17	38	34	14.7	K04500392_M0J143
	4700	76x143	0.17	38	33	16.1	K04500472_M0J143
	5600	76x143	0.17	30	26	17.5	K04500562_M0J143
	6800	76x214	0.17	27	22	23.0	K04500682_M0J214
	10000	90x220	0.20	20	17	30.4	K04500103_M0L220

PRELIMINARY

RATED VOLTAGE VDC	Capacitance μ F	\varnothing x L mm	Tan δ MAX 100 Hz 20°C	ESR TYP m Ω 100 Hz 20°C	Z TYP m Ω 10KHz 20°C	Ir a.c. A max 100 Hz 85°C	PART NUMBER
							Stud and insert style excluded
550V	1500	63x105	0.19	109	88	6.5	K04550152_M0H105
	1800	76x105	0.19	99	80	7.6	K04550182_M0J105
	2200	76x143	0.19	81	70	9.5	K04550222_M0J143
	4700	76x214	0.20	48	41	16.0	K04550472_M0J214
	6800	90x220	0.21	34	28	18.1	K04550682_M0L220

PLEASE TO CONTACT OUR TECHNICAL SERVICE FOR MORE INFORMATION OR SPEC-IN ANALYSIS.