

K02 TYPE

- Surge-proof electrolytic capacitor in aluminium can with insulation sleeve.
- Poles brought out to heavy duty screw terminals.
- To be mounted with ring clips or with threaded stud.

Very high CV for unit volume with low ESR and impedance. High ripple current capability. Extended temperature range. High level of reliability with outstanding high frequency characteristics.



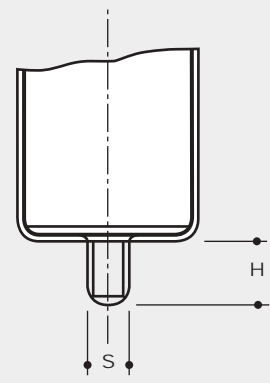
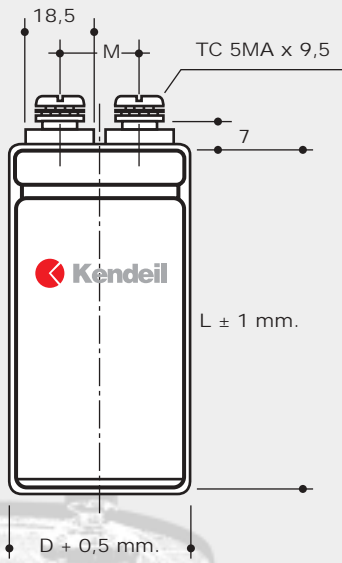
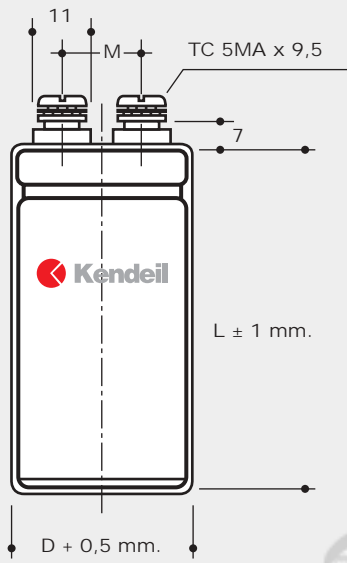
APPLICATIONS

High professional power supplies. Switch power supplies, power converters, filtering devices.

SPECIFICATIONS

GENERAL CHARACTERISTICS

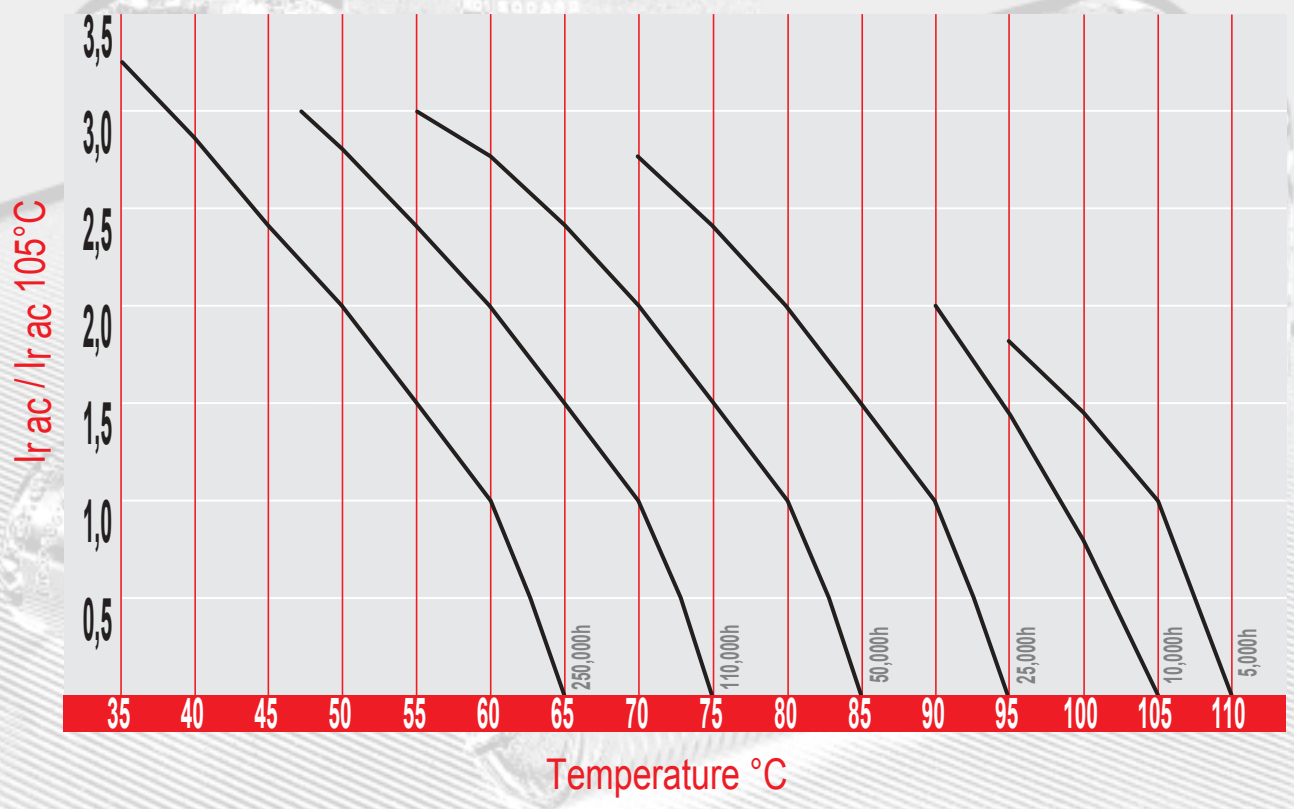
Temperature Range	Operating: -40°C +105°C ($V_r \leq 350V$ DC) Storage : -60°C +85°C	
Rated Voltage Range (V_r)	from 16V to 450V DC	
Surge Voltage (V_p)	$V_p = 1.15 V_r$ ($V_r \leq 250V$ DC) $V_p = 1.10 V_r$ ($V_r > 250V$ DC)	
Rated Capacitance Range	from 100 μF to 470,000 μF	
Capacitance Tolerance	$\pm 20\%$ 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 $I_L = 0.003 C_r V_r + 4 \mu A$ At 85°C max $I_L = 0.02 C_r V_r \mu A$	
Ripple current (I_r)	Refer to table at 105°C and 100Hz. For different temperature and frequency multiplier must be used as follows:	
	FREQUENCY MULTIPLIER	50Hz 100Hz 500 Hz 1000Hz >10kHz
		0.8 1.0 1.2 1.3 1.5
	AMBIENT TEMP MULTIPLIER	35°C 45°C 55°C 65°C 75°C 85°C 95°C 105°C
		3.20 3.0 2.80 2.6 2.4 2.0 1.5 1
	Maximum internal temperature	108°C
	Due to the current load capability of the contact elements, the following limits must not be exceeded:	
	CAPACITOR DIAMETER	35mm 51mm 63mm 76mm 90mm
	Maximum current	20A 30A 40A 50A 70A
Insulation Resistance	At 100V DC for 1 min is >100 M Ω across insulating sleeve and terminals.	
Vibration Resistance	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	
Life test	After 2,000 hours application of rated voltage at 105°C capacitors meet characteristics aside	Cap change $\leq 30\%$ tan $\delta \leq 100\%$ Leakage current (I_L) < initial limit Impedance (Z) $\leq 200\%$
Shelf life	After leaving capacitors under no load for 500 hours at 85°C, when restored at 20°C meet specifications aside	Cap change $\leq \pm 15\%$ tan $\delta \leq 150\%$ Leakage current (I_L) < initial limit
Useful life	250,000 h at 40°C 15,000 h at 85°C 5,000 h at 105°C	
Failure percentage Failure rate	$\leq 1\%$ (during useful life) ≤ 40 fit (40 $10^{-9}/h$)	
Self inductance	Approx. 20 nH	
Reference standards	CECC 30.300 IEC 60384-4 LONG LIFE GRADE	



DIMENSIONS (mm)

D	L	M	S	H
35	51	12,7	M 8	12
35	60	12,7	M 8	12
35	79	12,7	M 8	12
35	105	12,7	M 8	12
51	60	22,2	M12	16
51	79	22,2	M12	16
51	105	22,2	M12	16
63	105	28,6	M12	16
76	105	31,8	M12	16
76	143	31,8	M12	16
76	220	31,8	M12	16
90	220	31,8	M12	16

USEFUL LIFE K02



K02 TYPE STANDARD RATINGS

RATED VOLTAGE V DC	CAPACITANCE μF	$\varnothing \times L$ mm	Tan δ	ESR	Z	I _{r a.c.}	PART NUMBER <i>stud and insert style excluded</i>	
			MAX 100 Hz 20°C	TYP m Ω 100 Hz 20°C	m Ω 10 kHz 20°C	A 100 Hz 105°C		
16V	10000	35x60	0.25	25	24	3.3	K02016103__M0EH	
	15000	35x60	0.30	16	16	3.5	K02016153__M0EH	
	22000	35x60	0.35	12	12	4.4	K02016223__M0EH	
	33000	35x60	0.40	12	12	4.6	K02016333__M0EH	
	47000	35x79	0.55	9	10	7.5	K02016473__M0EJ	
	68000	51x79	0.60	8	8	11.9	K02016683__M0GJ	
	100000	51x105	0.80	8	8	12.3	K02016104__M0GL	
	150000	63x105	1.10	7	7	15.4	K02016154__M0HL	
	220000	76x105	1.50	7	7	18.8	K02016224__M0JL	
	330000	76x105	1.90	7	7	19.7	K02016334__M0JL	
	470000	76x143	2.00	6	6	22.5	K02016474__M0JP	
	25V	10000	35x60	0.20	23	18	3.8	K02025103__M0EH
15000		35x60	0.25	16	12	4.8	K02025153__M0EH	
22000		35x60	0.30	12	12	7.0	K02025223__M0EH	
33000		51x79	0.35	10	10	8.9	K02025333__M0GJ	
47000		51x79	0.40	9	9	11.6	K02025473__M0GJ	
68000		51x105	0.50	8	8	13.0	K02025683__M0GL	
100000		63x105	0.60	8	8	15.8	K02025104__M0HL	
150000		76x105	0.90	7	7	18.3	K02025154__M0JL	
220000		76x143	1.30	7	7	21.6	K02025224__M0JP	
330000		76x143	2.00	7	7	23.8	K02025334__M0JP	
40V		4700	35x60	0.20	31	29	3.3	K02040472__M0EH
		6800	35x60	0.20	23	20	3.9	K02040682__M0EH
	10000	35x79	0.20	16	12	4.8	K02040103__M0EJ	
	15000	35x79	0.20	12	10	5.4	K02040153__M0EJ	
	22000	51x79	0.25	10	10	8.9	K02040223__M0GJ	
	33000	51x105	0.35	10	10	11.2	K02040333__M0GL	
	47000	51x105	0.45	9	9	13.8	K02040473__M0GL	
	47000	63x105	0.45	9	9	14.5	K02040473__M0HL	
	68000	63x105	0.60	7	7	15.0	K02040683__M0HL	
	68000	76x105	0.60	7	7	15.9	K02040683__M0JL	
	100000	76x105	0.90	7	7	19.1	K02040104__M0JL	
	100000	76x143	0.90	7	7	21.0	K02040104__M0JP	
	150000	76x143	1.30	7	7	25.9	K02040154__M0JP	

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RATED VOLTAGE V DC	CAPACITANCE μF	∅ x L mm	Tan δ	ESR	Z	I _{r a.c.}	PART NUMBER stud and insert style excluded	
			MAX 100 Hz 20°C	TYP mΩ 100 Hz 20°C	mΩ 10 kHz 20°C	A 100 Hz 105°C		
63V	2200	35x60	0.15	72	60	2.5	K02063222__M0EH	
	3300	35x60	0.15	48	39	3.5	K02063332__M0EH	
	4700	35x60	0.15	33	28	4.2	K02063472__M0EH	
	6800	35x79	0.18	18	13	6.3	K02063682__M0EJ	
	10000	51x79	0.20	15	11	8.2	K02063103__M0GJ	
	15000	51x79	0.25	15	13	8.9	K02063153__M0GJ	
	15000	51x105	0.25	13	10	18.0	K02063153__M0GL	
	22000	51x105	0.30	13	11	11.8	K02063223__M0GL	
	22000	63x105	0.30	13	11	13.5	K02063223__M0HL	
	33000	63x105	0.35	11	10	14.8	K02063333__M0HL	
	33000	76x105	0.35	11	8	16.6	K02063333__M0JL	
	47000	76x105	0.45	9	8	17.7	K02063473__M0JL	
	47000	76x143	0.45	9	8	19.0	K02063473__M0JP	
	68000	76x105	0.45	8	8	20.1	K02063683__M0JL	
	68000	76x143	0.70	8	8	22.8	K02063683__M0JP	
	100000	76x143	0.70	8	8	24.1	K02063104__M0JP	
	100V	1000	35x60	0.15	110	100	2.9	K02100102__M0EH
1500		35x60	0.15	80	73	3.2	K02100152__M0EH	
2200		35x60	0.15	59	53	4.4	K02100222__M0EH	
3300		35x79	0.15	33	31	5.8	K02100332__M0EJ	
4700		51x79	0.15	25	22	7.2	K02100472__M0GJ	
6800		51x105	0.15	19	17	8.9	K02100682__M0GL	
10000		51x105	0.15	17	15	11.0	K02100103__M0GL	
10000		63x105	0.15	17	15	12.5	K02100103__M0HL	
15000		63x105	0.15	12	12	15.1	K02100153__M0HL	
22000		76x105	0.18	10	9	16.5	K02100223__M0JL	
33000		76x143	0.22	8	8	20.9	K02100333__M0JP	
160V		1000	35x79	0.11	105	90	3.3	K02160102__M0EJ
		1500	51x79	0.11	65	60	4.1	K02160152__M0GJ
	2200	51x105	0.11	46	43	4.8	K02160222__M0GL	
	3300	63x105	0.11	32	30	6.8	K02160332__M0HL	
	4700	63x105	0.11	27	25	8.5	K02160472__M0HL	
	6800	76x105	0.13	23	20	11.3	K02160682__M0JL	
	10000	76x143	0.15	17	16	14.9	K02160103__M0JP	
	15000	76x143	0.20	16	12	17.2	K02160153__M0JP	
	22000	76x220	0.20	11	10	19.0	K02160223__M0JS	
	200V	680	35x60	0.11	133	98	2.5	K02200681__M0EH
1000		51x79	0.11	85	64	4.6	K02200102__M0GJ	
1500		51x105	0.11	65	58	5.1	K02200152__M0GL	
2200		51x105	0.11	60	53	6.1	K02200222__M0GL	
3300		63x105	0.11	40	35	7.9	K02200332__M0HL	
4700		63x105	0.11	30	28	8.7	K02200472__M0HL	
6800		76x105	0.11	23	12	11.8	K02200682__M0JL	
10000		76x143	0.15	19	12	16.0	K02200103__M0JP	
15000		76x143	0.20	19	12	17.3	K02200153__M0JP	
22000		76x220	0.20	11	10	18.9	K02200223__M0JS	

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RATED VOLTAGE V DC	CAPACITANCE μF	$\varnothing \times L$ mm	Tan δ MAX 100 Hz 20°C	ESR TYP m Ω 100 Hz 20°C	Z m Ω 10 kHz 20°C	I _r a.c. A 100 Hz 105°C	PART NUMBER stud and insert style excluded	
250V	470	35x60	0.11	211	193	2.0	K02250471__M0EH	
	680	35x79	0.11	130	98	2.2	K02250681__M0EJ	
	1000	51x79	0.11	110	85	4.1	K02250102__M0GJ	
	1500	51x105	0.11	74	65	5.4	K02250152__M0GL	
	2200	51x105	0.11	51	48	6.8	K02250222__M0GL	
	3300	63x105	0.11	35	30	8.2	K02250332__M0HL	
	4700	76x105	0.11	26	24	11.9	K02250472__M0JL	
	6800	76x143	0.15	23	21	14.3	K02250682__M0JP	
	10000	76x143	0.20	20	19	16.0	K02250103__M0JP	
	15000	76x220	0.20	18	15	17.4	K02250153__M0JS	
	350V	330	35x60	0.11	255	196	1.8	K02350331__M0EH
470		35x79	0.11	170	141	2.1	K02350471__M0EJ	
680		51x79	0.11	128	96	3.8	K02350681__M0GJ	
1000		51x105	0.11	85	68	5.0	K02350102__M0GL	
1500		63x105	0.11	59	52	6.4	K02350152__M0HL	
2200		76x105	0.11	44	40	8.1	K02350222__M0JL	
3300		76x105	0.11	31	27	10.2	K02350332__M0JL	
4700		76x143	0.11	29	25	13.5	K02350472__M0JP	
6800		76x143	0.15	23	21	15.1	K02350682__M0JP	
10000		76x220	0.20	20	18	19.9	K02350103__M0JS	
400V		220	35x60	0.11	350	280	1.4	K02400221__M0EH
	330	35x60	0.11	250	210	2.2	K02400331__M0EH	
	470	51x79	0.11	170	150	2.8	K02400471__M0GJ	
	680	51x79	0.11	110	100	3.2	K02400681__M0GJ	
	1000	51x105	0.11	95	82	4.1	K02400102__M0GL	
	1500	63x105	0.11	64	53	5.8	K02400152__M0HL	
	2200	63x105	0.11	45	53	6.0	K02400222__M0HL	
	2200	76x105	0.11	45	39	7.3	K02400222__M0JL	
	3300	76x143	0.11	28	25	11.1	K02400332__M0JP	
	4700	76x143	0.11	24	23	12.8	K02400472__M0JP	
	6800	76x220	0.15	19	15	15.0	K02400682__M0JS	
	450V	100	35x60	0.11	800	650	1.2	K02450101__M0EH
		150	35x60	0.11	550	490	1.6	K02450151__M0EH
220		35x60	0.11	370	310	1.8	K02450221__M0EH	
330		35x79	0.11	240	210	2.4	K02450331__M0EJ	
470		51x79	0.11	200	179	3.0	K02450471__M0GJ	
680		51x105	0.11	140	128	4.2	K02450681__M0GL	
1000		51x105	0.11	100	88	4.4	K02450102__M0GL	
1000		63x105	0.11	100	88	5.3	K02450102__M0HL	
1500		63x105	0.11	70	63	5.7	K02450152__M0HL	
1500		76x105	0.11	70	63	6.6	K02450152__M0JL	
2200		76x143	0.11	60	47	8.8	K02450222__M0JP	
3300		76x143	0.15	35	30	10.4	K02450332__M0JP	
4700		76x143	0.15	28	25	10.9	K02450472__M0JP	
4700		76x220	0.15	28	25	12.8	K02450472__M0JS	