

K04 TYPE -40°C +85°C 20000H

RoHS Compliant

- Extended life
- Surge-proof capacitor in aluminium can with insulation sleeve.
- To be mounted with ring clips or with threaded stud.
- Designed for high resistances to voltage spikes.

APPLICATIONS

Power supplies, motor drives, welding, energy storage.

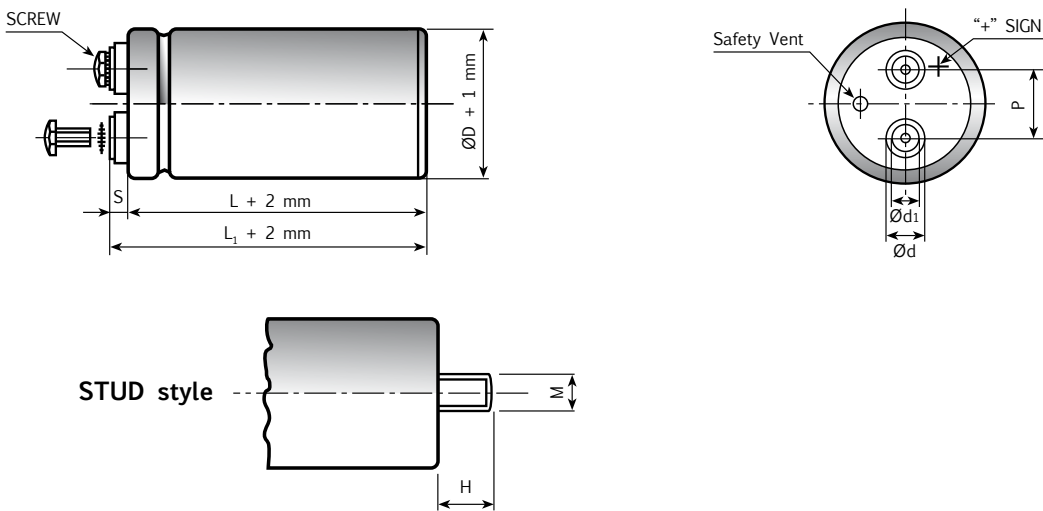


Diagram of dimensions (unit=mm)
Insert and screw threads: Metric (mm), UNF (inches)

ØD	d	d1	P	STUD M	H	INSERT	SCREW	L1	-L[-1+3]	S[-1+1]	INSERT STYLE CODE
35	11	7.9	12.7	M8	12	M5	5MA x 9.5	2.5		5	O
51	18.5	13	22.7	M12	16	M5	5MA x 9.5	2.5		5	H
63	18.5	13	28.6	M12	16	M5	5MA x 9.5	2.5		5	H
63	17.3	17.3	28.6	M12	16	UNF 1/4-28 Low Post	1/4-28 x 3/8"	3		4	W
63	17.3	17.3	28.6	M12	16	UNF 1/4-28 High Post	1/4-28 x 1/2"	6		7	R
63	7.9	7.9	28.6	M12	16	UNF 10-32 Low Post	10-32 x 1/4"	2		2.5	Z
63	12	7.9	28.6	M12	16	UNF 10-32 High Post	10-32 x 3/8"	6		7	U
76	18.5	13	31.8	M12	16	M5	5MA x 9.5	2.5		5	H
76	18.5	13	31.8	M12	16	M5	5MA x 9.5	2.5		7	L
76	23.2	17.7	31.8	M12	16	M6	6MA x 10	4.5		7	6
76	17.3	17.3	31.8	M12	16	UNF 1/4-28 Low Post	1/4-28 x 3/8"	3		4	W
76	17.3	17.3	31.8	M12	16	UNF 1/4-28 High Post	1/4-28 x 1/2"	6		7	R
76	7.9	7.9	31.8	M12	16	UNF 10-32 Low Post	10-32 x 1/4"	2		2.5	Z
76	12	7.9	31.8	M12	16	UNF 10-32 High Post	10-32 x 3/8"	6		7	U
90	23.2	17.7	31.8	M12	16	M6	6MA x 10	4.5		7	H

SPECIFICATIONS

Temperature Range	Operating: -40°C +85°C Storage : Preferably below +25°C, not exceeding +40°C	[Environmental classification 40/85/56 IEC-68]																																				
Rated Voltage Range (V_r)	from 350V to 600V DC																																					
Surge Voltage (V_p)	V _p = 1.10 V _r (V _r ≤ 500 V DC)	V _p = 1.05 V _r (V _r > 500 V DC)																																				
Rated Capacitance Range	from 1500 µF to 15000 µF																																					
Capacitance Tolerance	±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) (mA, 5 min, 20°C)	max I _L = 0.006 C _r V _r + 4 µA At 85°C max I _L = 0.04 C _r V _r µA	Kendeil product limit: I _L = 0.003 C _r V _r																																				
Ripple current (I_r)	Refer to table at 85°C and 100Hz: <table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>FREQUENCY</th> <th>50Hz</th> <th>100 Hz</th> <th>500Hz</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" style="width: 100%; border-collapse: collapse;"> <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> Due to the current load capability of the contact elements, the following limits must not be exceeded: <table border="1" style="width: 100%; border-collapse: collapse;"> <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	100 Hz	500Hz	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
FREQUENCY	50Hz	100 Hz	500Hz	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																																			
Insulation Resistance	At 100V DC for 1 min is >100 MΩ 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 4,000 hours application of rated voltage at 85°C capacitors meet characteristics aside	Cap change ≤ 10% tan δ ≤ 130% Leakage current (I _L) < initial limit Impedance (Z) ≤ 130%																																				
Shelf life	After leaving capacitors under no load for 2000 hours at 85°C, when restored at 20°C meet specifications aside	Cap change ≤ ±15% tan δ ≤ 150% Leakage current (I _L) < initial limit																																				
Working life (V _n , Temp rated I ripple applied)	> 20000 h 85°C for V< 450V > 15000 h for V≤ 500V > 12000 h for V= 550V > 6000 h for V= 600V	Cap change ≤ ±25% tan δ ≤ 300% Leakage current (I _L) < initial limit																																				
Failure percentage Failure rate	≤ 1% (during working life) ≤ 33 fit (33 10 ⁻⁹ /h)																																					
Self inductance	Approx. 20 nH																																					
Reference standards	CECC 30.300 IEC 60384-4 LONG LIFE GRADE																																					

K04 TYPE STANDARD RATINGS

Cap μF	$\varnothing \times L$ mm	Tan δ MAX 100 Hz 20°C	ESR TYP m Ω 100 Hz 20°C	Z TYP m Ω 10 kHz 20°C	I _r a.c. A max 100 Hz 85°C	PART NUMBER stud and insert style excluded
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__M0H105
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**

350V

Cap μF	$\varnothing \times L$ mm	Tan δ MAX 100 Hz 20°C	ESR TYP m Ω 100 Hz 20°C	Z TYP m Ω 10 kHz 20°C	I _r a.c. A max 100 Hz 85°C	PART NUMBER stud and insert style excluded
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__M0J214

**RATED
VOLTAGE
VDC**

400V

Cap μF	$\varnothing \times L$ mm	Tan δ MAX 100 Hz 20°C	ESR TYP m Ω 100 Hz 20°C	Z TYP m Ω 10 Hz 20°C	I _r a.c. A max 100 Hz 85°C	PART NUMBER stud and insert style excluded
1500	63x105	0.15	105	85	7.5	K04420152__M0H105
2200	63x105	0.15	80	63	8.8	K04420222__M0H105
2200	76x105	0.15	80	63	10.2	K04420222__M0J105
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**

420V

K04 TYPE STANDARD RATINGS

Cap μF	$\varnothing \times L$ mm	Tan δ MAX 100 Hz 20°C	ESR TYP m Ω 100 Hz 20°C	Z TYP m Ω 10 Hz 20°C	Ir a.c. A max 100 Hz 85°C	PART NUMBER stud and insert style excluded
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__M0H105
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	K04450123__M0L220

**RATED
VOLTAGE
VDC**

450V

Cap μF	$\varnothing \times L$ mm	Tan δ MAX 100 Hz 20°C	ESR TYP m Ω 100 Hz 20°C	Z TYP m Ω 10 Hz 20°C	Ir a.c. A max 100 Hz 85°C	PART NUMBER stud and insert style excluded
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

**RATED
VOLTAGE
VDC**

500V

Cap μF	$\varnothing \times L$ mm	Tan δ MAX 100 Hz 20°C	ESR TYP m Ω 100 Hz 20°C	Z TYP m Ω 10 Hz 20°C	Ir a.c. A max 100 Hz 85°C	PART NUMBER stud and insert style excluded
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
3300	76x143	0.20	59	49	10.2	K04550332__M0J143
4700	76x214	0.20	48	41	16.0	K04550472__M0J214
6800	90x220	0.21	34	28	18.1	K04550682__M0L220

**RATED
VOLTAGE
VDC**

550V

K04 TYPE STANDARD RATINGS

Cap 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 Hz 20°C	Ir a.c. A max 100 Hz 85°C	PART NUMBER termination digit excluded
1500	63x105	0.15	71	54	7.9	K04600152__HM0H105
1800	76x105	0.15	61	47	9.5	K04600182__HM0J105
2200	76x143	0.15	48	37	11.9	K04600222__HM0J143
3300	76x143	0.15	36	27	14.1	K04600332__HM0J143
3900	90x145	0.15	28	22	17.3	K04600392__HM0L145
4700	76x214	0.15	21	17	18.7	K04600472__HM0J214
4700	90x145	0.15	23	19	20.1	K04600472__HM0L145
6800	90x220	0.15	16	13	26.9	K04600682__HM0L220

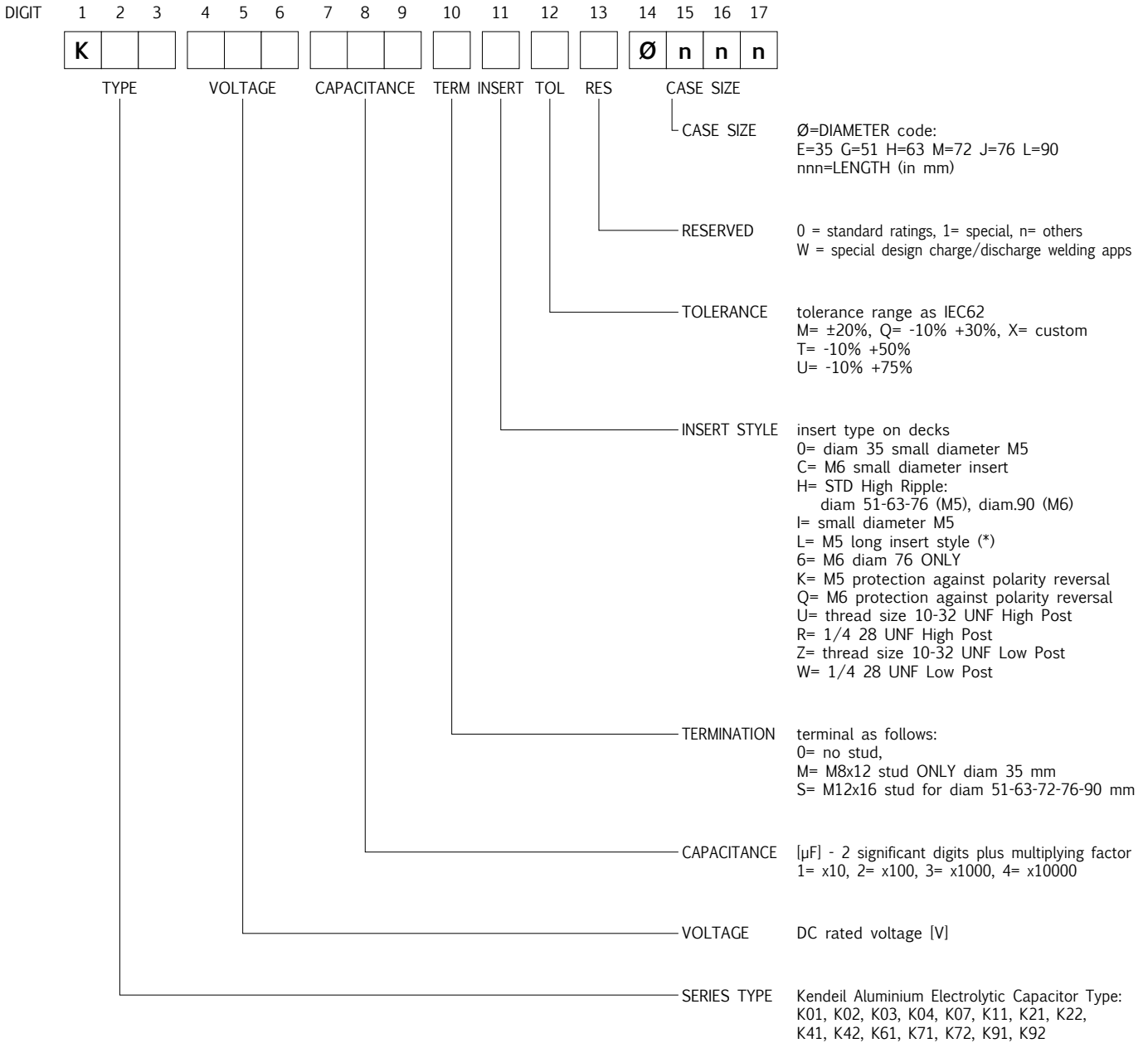
**RATED
VOLTAGE
VDC**

600V

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

PART NUMBER SYSTEM FOR SCREW TYPE CAPACITORS

New PART-NUMBER CODE in use since Sep 2010. Total length is 17 digits.
Please see examples below and have a reference code from the standard ratings capacitors pages.



EXAMPLES

K	0	1	1	0	0	2	2	3	0	H	M	0	H	1	0	5	K01 100V 22000µF, Hi ripple, -20%+20%, 63x105
K	0	1	0	6	3	2	2	3	S	H	Q	0	G	1	0	5	K01 63V 22000µF, stud M12x16, Hi rip. -10%+30%, 51x105
K	0	2	0	4	0	1	0	4	0	H	M	0	J	1	4	3	K02 40V 100000µF, Hi ripple, -20%+20%, 76x143

Specifications subject to change without notice

(*) Note for INSERT STYLE

M5 long insert style dedicated to not insulated bus bar
(+2 mm height versus STD High Ripple code)