

K91 TYPE -40°C +85°C 15000H

RoHS Compliant

- Design optimized for low equivalent series resistance and high ripple current.
- Surge-proof capacitor in aluminium can with insulation sleeve.
- To be mounted with ring clips or with threaded stud.

APPLICATIONS

Designed for professional application.
Switch mode power suppliers, high ripple current converters, motor drives.

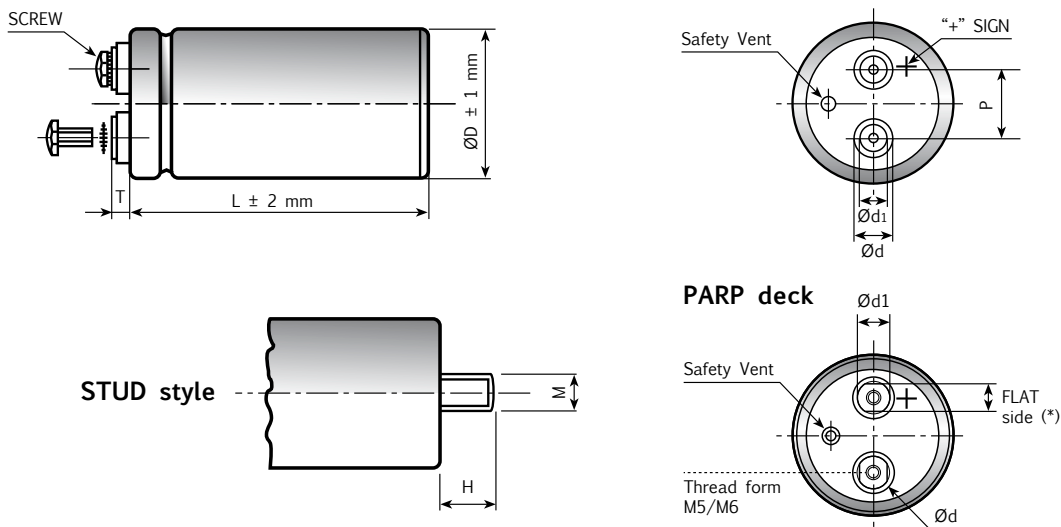


Diagram of dimensions (unit=mm) - Insert and screw threads: Metric (mm), UNF (inches)

ØD	d ±0.3	d1 ±0.3	P ±0.5	T ±2.0	STUD		INSERT	SCREW	INSERT STYLE CODE
					M	H			
35	11.6	7.9	12.7	6.5	M8	12	M5	5MA x 9.5	0
51	18.2	13	22.2	5	M12	16	M5	5MA x 9.5	H
63	18.2	13	28.5	5	M12	16	M5	5MA x 9.5	H
76	18.2	13	31.8	4.5	M12	16	M5	5MA x 9.5	H
76	18.2	13	31.8	6.5	M12	16	M5 long	5MA x 9.5	L
76	23.2	17.7	31.8	5	M12	16	M6	6MA x 10	6
90	23.2	17.7	31.8	5	M12	16	M6	6MA x 10	H
51	13	13(10)*	22.2	5	M12	16	PARP M5	5MA x 9.5	K
63	13	13(10)*	28.5	5	M12	16	PARP M5	5MA x 9.5	B
63	19	15(13)*	28.5	6	M12	16	PARP M5	5MA x 9.5	K
76	19	15(13)*	31.8	6	M12	16	PARP M5	5MA x 9.5	K
76	19	15(13)*	31.8	6	M12	16	PARP M6	6MA x 10	Q
90	19	15(13)*	31.8	6	M12	16	PARP M6	6MA x 10	Q
35	11.6	7.9	12.7	6.5	M12	16	UNF 10-32 High Post	10-32 x 3/8"	U
63	17.3	17.3	28.5	2.5	M12	16	UNF 1/4-28 Low Post	1/4-28 x 3/8"	W
63	17.3	17.3	28.5	6	M12	16	UNF 1/4-28 High Post	1/4-28 x 1/2"	R
63	7.9	7.9	28.5	2	M12	16	UNF 10-32 Low Post	10-32 x 1/4"	Z
63	12	7.9	28.5	6.5	M12	16	UNF 10-32 High Post	10-32 x 3/8"	U
76	17.3	17.3	31.8	2.5	M12	16	UNF 1/4-28 Low Post	1/4-28 x 3/8"	W
76	17.3	17.3	31.8	6	M12	16	UNF 1/4-28 High Post	1/4-28 x 1/2"	R
76	7.9	7.9	31.8	2	M12	16	UNF 10-32 Low Post	10-32 x 1/4"	Z
76	12	7.9	31.8	6.5	M12	16	UNF 10-32 High Post	10-32 x 3/8"	U

Note: (*) quote on the PARP deck of the flat side (PARP = Protection Against Reverse Polarity).

K91 TYPE SPECIFICATIONS

Temperature Range	Operating : -40°C +85°C [Environmental classification 40/85/56 IEC-68] Storage : Preferably below +25°C, not exceeding +40°C																																																										
Rated Voltage Range (V_r)	from 400V to 500V DC																																																										
Surge Voltage (V_p)	V _p = 1.10 V _r																																																										
Rated Capacitance Range	from 470 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																																																										
Ripple current (I_r)	Refer to table at 85°C and 100Hz : <table style="width: 100%; border-collapse: collapse;"> <tr> <td style="text-align: left;">FREQUENCY</td> <td style="text-align: center;">50Hz</td> <td style="text-align: center;">100Hz</td> <td style="text-align: center;">500Hz</td> <td style="text-align: center;">1000Hz</td> <td style="text-align: center;">>10kHz</td> <td colspan="2"></td> </tr> <tr> <td style="text-align: left;">MULTIPLIER</td> <td style="text-align: center;">0.8</td> <td style="text-align: center;">1.0</td> <td style="text-align: center;">1.2</td> <td style="text-align: center;">1.3</td> <td style="text-align: center;">1.5</td> <td colspan="2"></td> </tr> <tr> <td colspan="8"> </td> </tr> <tr> <td style="text-align: left;">AMBIENT TEMP</td> <td style="text-align: center;">35°C</td> <td style="text-align: center;">45°C</td> <td style="text-align: center;">55°C</td> <td style="text-align: center;">65°C</td> <td style="text-align: center;">75°C</td> <td style="text-align: center;">85°C</td> <td style="text-align: center;">95°C</td> </tr> <tr> <td style="text-align: left;">MULTIPLIER</td> <td style="text-align: center;">2.2</td> <td style="text-align: center;">2.1</td> <td style="text-align: center;">1.8</td> <td style="text-align: center;">1.6</td> <td style="text-align: center;">1.4</td> <td style="text-align: center;">1.0</td> <td style="text-align: center;">0.5</td> </tr> </table> <p>Due to the current load capability of the contact elements, the following limits must not be exceeded:</p> <table style="width: 100%; border-collapse: collapse;"> <tr> <td style="text-align: left;">CAPACITOR DIAMETER</td> <td style="text-align: center;">51mm</td> <td style="text-align: center;">63mm</td> <td style="text-align: center;">76mm</td> <td style="text-align: center;">90mm</td> <td colspan="3"></td> </tr> <tr> <td style="text-align: left;">Maximum current</td> <td style="text-align: center;">30A</td> <td style="text-align: center;">40A</td> <td style="text-align: center;">50A</td> <td style="text-align: center;">70A</td> <td colspan="3"></td> </tr> </table>			FREQUENCY	50Hz	100Hz	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	51mm	63mm	76mm	90mm				Maximum current	30A	40A	50A	70A			
FREQUENCY	50Hz	100Hz	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																																																				
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CAPACITOR DIAMETER	51mm	63mm	76mm	90mm																																																							
Maximum current	30A	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 Capacitor length ≤ 143 : max acceleration 0.75mm or 10g for 3x2 h Capacitor length > 143 : max acceleration 0.35mm or 5g for 3x0.5 h																																																										
Withstand voltage (between terminals bundled and plate)	2500 VAC for 1 min																																																										
Life test	After 2,000 hours application of rated voltage at 85°C capacitors meet characteristics aside	Cap change tan δ Leakage current (I _L) Impedance (Z)	≤ 10% ≤ 130% < initial limit ≤ 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 tan δ Leakage current (I _L)	≤ ±15% ≤ 150% < initial limit																																																								
Useful life (85°C, V_n, I_r applied) Operation up to 105°C with voltage derating 0,88 x V rated	> 15.000 h at 85°C																																																										
Failure percentage Failure rate	≤ 1% (during useful life) ≤ 33 fit (33 10 ⁻⁹ /h)																																																										
Self inductance	Approx. 20 nH																																																										
Damp heat test (V_n applied, 2000 hours, 85% RH)	Stable electrical parameters in humidity ambient condition 85°C																																																										
Electrolyte	All the capacitors of this series have self-extinguishing electrolyte in accordance with IEC EN 60695-11-10																																																										
Reference standards	CECC 30.300 IEC 60384-4 LONG LIFE GRADE																																																										

K91 TYPE STANDARD RATINGS

Cap µF	Ø x L mm	Tan δ MAX 100 Hz 20°C	ESR TYP mΩ 100 Hz 20°C	Z TYP mΩ 10 kHz 20°C	I _r a.c. A max 100 Hz 85°C	PART NUMBER stud and insert style excluded
680	51x79	0.08	97	75	5.11	K91400681_M0G079
680	51x105	0.08	97	75	5.74	K91400681_M0G105
1000	51x79	0.08	75	67	6.06	K91400102_M0G079
1000	51x105	0.08	75	67	6.87	K91400102_M0G105
1500	51x105	0.08	53	40	8.18	K91400152_M0G105
1500	63x105	0.08	53	40	9.29	K91400152_M0H105
2200	51x105	0.08	40	31	9.40	K91400222_M0G105
2200	63x105	0.08	40	31	10.70	K91400222_M0H105
2200	76x105	0.08	40	31	12.30	K91400222_M0J105
3300	63x105	0.08	25	16	13.60	K91400332_M0H105
3300	76x105	0.08	25	16	14.50	K91400332_M0J105
3300	76x143	0.08	25	16	16.80	K91400332_M0J143
4700	76x105	0.08	20	15	16.40	K91400472_M0J105
4700	76x143	0.08	20	15	19.50	K91400472_M0J143
5600	76x143	0.08	17	11	20.90	K91400562_M0J143
6800	76x143	0.08	15	10	22.20	K91400682_M0J143
10000	76x143	0.09	13	10	23.00	K91400103_M0J143
10000	76x214	0.09	13	10	28.70	K91400103_M0J214
15000	90x220	0.10	9	8	36.50	K91400153_M0L220

**RATED
VOLTAGE
VDC**

400V

Cap µF	Ø x L mm	Tan δ MAX 100 Hz 20°C	ESR TYP mΩ 100 Hz 20°C	Z TYP mΩ 10 kHz 20°C	I _r a.c. A max 100 Hz 85°C	PART NUMBER stud and insert style excluded
680	51x79	0.08	97	75	5.11	K91420681_M0G079
680	51x105	0.08	97	75	5.74	K91420681_M0G105
1000	51x79	0.08	75	67	6.06	K91420102_M0G079
1000	51x105	0.08	75	67	6.87	K91420102_M0G105
1500	51x105	0.08	53	40	8.18	K91420152_M0G105
1500	63x105	0.08	53	40	9.29	K91420152_M0H105
2200	51x105	0.08	40	31	9.40	K91420222_M0G105
2200	63x105	0.08	40	31	10.70	K91420222_M0H105
2200	76x105	0.08	40	31	12.30	K91420222_M0J105
3300	63x105	0.08	25	16	13.60	K91420332_M0H105
3300	76x105	0.08	25	16	14.50	K91420332_M0J105
3300	76x143	0.08	25	16	16.80	K91420332_M0J143
4700	76x105	0.08	20	15	16.40	K91420472_M0J105
4700	76x143	0.08	20	15	19.50	K91420472_M0J143
5600	76x143	0.08	17	11	20.90	K91420562_M0J143
6800	76x143	0.08	15	10	22.20	K91420682_M0J143
10000	76x143	0.09	13	10	23.00	K91420103_M0J143
10000	76x214	0.09	13	10	28.70	K91420103_M0J214
15000	90x220	0.10	9	8	36.50	K91420153_M0L220

**RATED
VOLTAGE
VDC**

420V

K91 TYPE STANDARD RATINGS

Cap μF	$\varnothing \times L$ mm	Tan δ MAX 100 Hz 20°C	ESR TYP $m\Omega$ 100 Hz 20°C	Z TYP $m\Omega$ 10 kHz 20°C	I _r a.c. A max 100 Hz 85°C	PART NUMBER stud and insert style excluded
470	51x79	0.08	159	120	4.36	K91450471_M0G079
680	51x79	0.08	114	105	4.94	K91450681_M0G079
680	51x105	0.08	114	105	5.57	K91450681_M0G105
1000	51x79	0.08	83	70	5.84	K91450102_M0G079
1000	51x105	0.08	83	70	6.60	K91450102_M0G105
1500	51x105	0.08	57	42	7.89	K91450152_M0G105
1500	63x105	0.08	57	42	8.97	K91450152_M0H105
2200	63x105	0.08	44	33	10.20	K91450222_M0H105
2200	76x105	0.08	44	33	11.90	K91450222_M0J105
2200	76x143	0.08	44	33	13.60	K91450222_M0J143
3300	76x105	0.08	30	18	14.00	K91450332_M0J105
3300	76x143	0.08	30	18	16.30	K91450332_M0J143
4700	76x143	0.08	21	15	18.80	K91450472_M0J143
5600	76x143	0.08	18	12	20.20	K91450562_M0J143
6800	76x143	0.08	16	11	21.30	K91450682_M0J143
8200	76x143	0.08	14	10	23.00	K91450822_M0J143
10000	76x143	0.09	13	10	23.10	K91450103_M0J143
10000	76x214	0.09	13	10	26.20	K91450103_M0J214
12000	76x214	0.09	13	10	26.20	K91450123_M0J214
15000	90x220	0.10	11	9	35.00	K91450153_M0L220

**RATED
VOLTAGE
VDC**

450V

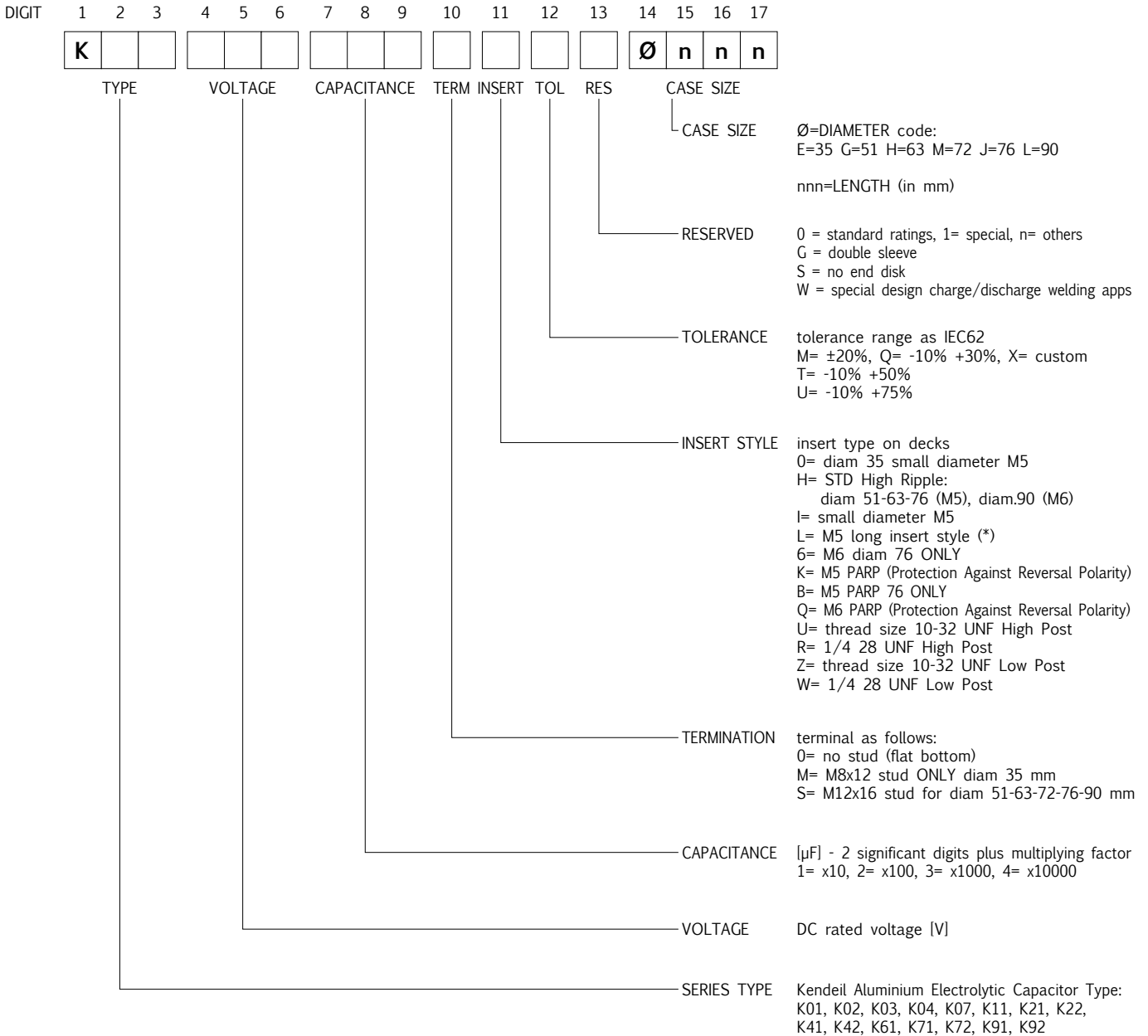
Cap μF	$\varnothing \times L$ mm	Tan δ MAX 100 Hz 20°C	ESR TYP $m\Omega$ 100 Hz 20°C	Z TYP $m\Omega$ 10 kHz 20°C	I _r a.c. A max 100 Hz 85°C	PART NUMBER stud and insert style excluded
1500	51x105	0.12	59	44	8.00	K91500152_M0G105
2200	63x105	0.12	47	37	10.20	K91500222_M0H105
2900	63x105	0.12	45	35	10.50	K91500292_M0H105
3300	76x105	0.12	33	22	14.00	K91500332_M0J105
3900	76x105	0.12	26	18	15.00	K91500392_M0J105
4700	76x143	0.12	23	17	19.20	K91500472_M0J143
5600	76x143	0.12	20	14	20.30	K91500562_M0J143
6800	76x143	0.12	17	12	21.10	K91500682_M0J143
8200	76x214	0.12	16	11	28.50	K91500822_M0J214
10000	90x220	0.12	13	10	34.10	K91500103_M0L220
12000	90x220	0.12	12	9	34.30	K91500123_M0L220
15000	90x220	0.12	12	9	34.30	K91500153_M0L220

**RATED
VOLTAGE
VDC**

500V

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 digit_11

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