

APPLICATIONS

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

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

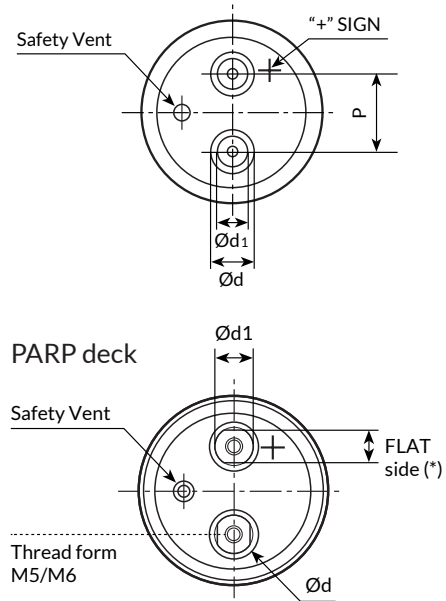
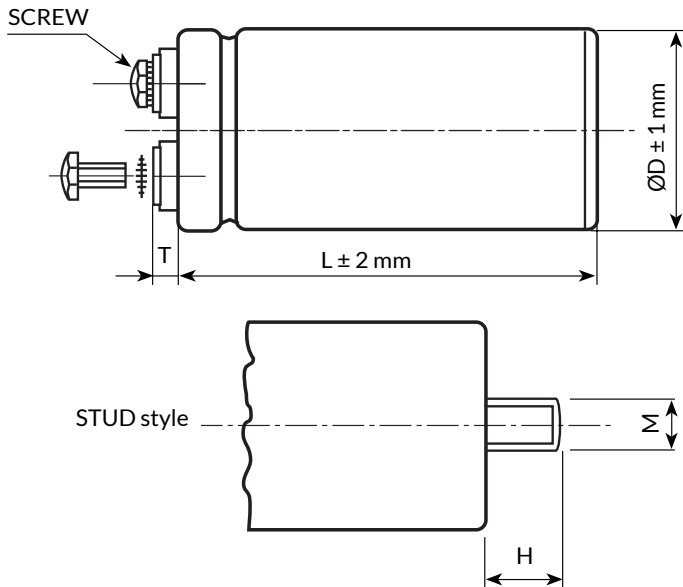


Diagram of dimensions (unit=mm) - Insert and screw threads: Metric (mm), UNF (inches)

ØD	d ±0.3	d1 ±0.3	P ±0.5	T ±0.5	STUD		INSERT	SCREW	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
76	17.2	17.2	31.4	6.4	M12	16	M6 NO COLLAR	6MA x 11	F
90	23.2	17.7	31.8	5	M12	16	M6	6MA x 10	H
100	23	17.3	41.5	11	M12	16	M8	8MA x 15,5	8
51	13	13(10)*	22.2	5	M12	16	PARP M5	5MA x 9.5	B
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	M8	12	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 flat side of PARP deck (PARP = Protection Against Reverse Polarity)

K21 TYPE

-40°C +85°C 15000H



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 350V to 450V DC							
Surge Voltage (V_p)	V _p = 1.10 V _r							
Rated Capacitance Range	from 1200 µF to 15.000 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) (µA, 5 min, 20°C)	max I _L = 0.006 C _r V _r + 4 µA		Kendeil product limit: I _L = 0.003 C _r V _r					
	at 85°C max I _L = 0.04 C _r V _r µA							
Ripple current (I_r)	Refer to table at 85°C and 100Hz. For different temperature and frequency multiplier must be used as follows:							
	FREQUENCY	50 Hz	100 Hz	500 Hz	1000 Hz	>10 KHz		
	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
	max internal temperature 98°C							
	Due to the current load capability of the contact elements, the following limits must not be exceeded:							
	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	2500 VAC for 1 min							
Life test	After 2,000 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 500 hours at 85°C, when restored at 20°C meet specifications aside				Cap change	≤ ±15%		
					tan (δ)	≤ 150%		
					Leakage current (I _L)	< initial limit		
Useful life (V_n, Temp rated I ripple applied)	> 200000 h at 40°C > 15000 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	Stable electrical parameters in humidity ambient condition 85°C. V _n applied, 2000 hours. 85% RH							
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							

Cap μF	Ø x L mm	Tan δ max 100 Hz 20°C	ESR TYP mΩ 100 Hz 20°	Z TYP mΩ 10 kHz 20°C	Ir a.c. A max 100 Hz 85°C	PART NUMBER stud and insert style excluded
1500	51x79	0,08	40	24	9,3	K21350152_M0G079
1500	51x105	0,08	40	24	10,1	K21350152_M0G105
2200	51x105	0,08	29	20	11,9	K21350222_M0G105
2200	63x105	0,08	29	20	14,5	K21350222_M0H105
2200	76x79	0,08	29	20	14,2	K21350222_M0J079
2200	76x98	0,08	29	20	15,3	K21350222_M0J098
3300	63x105	0,08	17	13	17,7	K21350332_M0H105
3300	76x79	0,08	21	16	16,0	K21350332_M0J079
3300	76x105	0,08	20	13	18,8	K21350332_M0J105
4700	76x105	0,09	13	10	22,1	K21350472_M0J105
4700	76x143	0,09	13	10	25,8	K21350472_M0J143
4700	90x98	0,09	14	11	22,5	K21350472_M0L098
5600	76x143	0,09	10	8	27,4	K21350562_M0J143
6800	76x143	0,09	9,5	7	30,0	K21350682_M0J143
6800	90x145	0,09	9,5	7	32,2	K21350682_M0L145
8200	90x145	0,09	8,5	6	35,3	K21350822_M0L145
10000	76x214	0,09	7	5	41,8	K21350103_M0J214
10000	90x145	0,10	7	5	36,7	K21350103_M0L145
12000	76x214	0,10	7	5	41,9	K21350123_M0J214
15000	90x220	0,10	5,5	4	52,5	K21350153_M0L220

Rated
Voltage
VDC

350V

Cap μF	Ø x L mm	Tan δ max 100 Hz 20°C	ESR TYP mΩ 100 Hz 20°	Z TYP mΩ 10 kHz 20°C	Ir a.c. A max 100 Hz 85°C	PART NUMBER stud and insert style excluded
1500	51x79	0,08	40	24	9,3	K21400152_M0G079
1500	51x105	0,08	40	24	10,1	K21400152_M0G105
2200	51x105	0,08	29	20	11,9	K21400222_M0G105
2200	76x79	0,08	29	20	14,2	K21400222_M0J079
2200	76x98	0,08	29	20	15,3	K21400222_M0J098
3300	63x105	0,08	17	13	17,7	K21400332_M0H105
3300	76x79	0,08	21	16	16,0	K21400332_M0J079
3300	76x98	0,08	21	16	17,2	K21400332_M0J098
3300	76x105	0,08	20	13	18,8	K21400332_M0J105
3900	76x105	0,08	16	11	20,9	K21400392_M0J105
4400	90x98	0,08	14	11	22,2	K21400442_M0L098
4700	76x105	0,09	13	10	22,1	K21400472_M0J105
4700	76x143	0,09	13	10	25,8	K21400472_M0J143
4700	90x98	0,09	13	11	22,5	K21400472_M0L098
5600	76x143	0,09	10	8	27,4	K21400562_M0J143
6800	76x143	0,09	9,5	7	30,0	K21400682_M0J143
6800	90x145	0,09	9,5	7	32,2	K21400682_M0L145
8200	90x145	0,09	8,5	6	35,3	K21400822_M0L145
10000	76x214	0,09	7	5	41,8	K21400103_M0J214
10000	90x145	0,10	7	5	36,7	K21400103_M0L145
14000	90x220	0,10	6	5	50,1	K21400143_M0L220
15000	90x220	0,10	5,5	4	52,5	K21400153_M0L220

Rated
Voltage
VDC

400V

K21 TYPE

-40°C +85°C 15000H



Rated
Voltage
VDC
420V

Cap μF	Ø x L mm	Tan δ max 100 Hz 20°C	ESR TYP mΩ 100 Hz 20°	Z TYP mΩ 10 kHz 20°C	Ir a.c. A max 100 Hz 85°C	PART NUMBER stud and insert style excluded
1500	51x79	0,08	40	24	9,3	K21420152_M0G079
1500	51x105	0,08	40	24	10,1	K21420152_M0G105
2200	51x105	0,08	29	20	11,9	K21420222_M0G105
2200	76x79	0,08	29	20	14,2	K21420222_M0J079
2200	76x98	0,08	29	20	15,3	K21420222_M0J098
3300	63x105	0,08	17	13	17,7	K21420332_M0H105
3300	76x79	0,08	21	16	16,0	K21420332_M0J079
3300	76x98	0,08	21	16	17,2	K21420332_M0J098
3300	76x105	0,08	20	13	18,8	K21420332_M0J105
3900	76x105	0,08	16	11	20,9	K21420392_M0J105
4400	90x98	0,08	16	12	22,2	K21420442_M0L098
4700	76x105	0,09	13	10	22,1	K21420472_M0J105
4700	76x143	0,09	13	10	25,8	K21420472_M0J143
4700	90x98	0,09	13	11	22,5	K21420472_M0L098
5600	76x143	0,09	10	8	27,4	K21420562_M0J143
6800	76x143	0,09	9,5	7	30,0	K21420682_M0J143
6800	90x145	0,09	9,5	7	32,2	K21420682_M0L145
8200	90x145	0,09	8,5	6	35,3	K21420822_M0L145
10000	76x214	0,09	7	5	41,8	K21420103_M0J214
10000	90x145	0,10	7	5	36,7	K21420103_M0L145
14000	90x220	0,10	6	5	50,1	K21420143_M0L220
15000	90x220	0,10	5,5	4	52,5	K21420153_M0L220

Rated
Voltage
VDC
450V

Cap μF	Ø x L mm	Tan δ max 100 Hz 20°C	ESR TYP mΩ 100 Hz 20°	Z TYP mΩ 10 kHz 20°C	Ir a.c. A max 100 Hz 85°C	PART NUMBER stud and insert style excluded
1200	51x79	0,08	60	36	8,9	K21450122_M0G079
1200	51x105	0,08	60	36	9,5	K21450122_M0G105
1500	51x105	0,08	49	29	10,7	K21450152_M0G105
2200	63x105	0,08	30	17	15,4	K21450222_M0H105
2200	76x79	0,08	32	20	14,3	K21450222_M0J079
2200	76x98	0,08	32	20	15,4	K21450222_M0J098
3300	76x105	0,08	26	16	18,8	K21450332_M0J105
3300	90x98	0,08	26	16	20,5	K21450332_M0L098
3900	76x105	0,08	21	13	21,1	K21450392_M0J105
4700	76x143	0,09	17	10	26,0	K21450472_M0J143
4700	90x98	0,09	19	13	22,1	K21450472_M0L098
5600	76x143	0,09	15	10	28,3	K21450562_M0J143
6800	76x214	0,09	11	8	37,2	K21450682_M0J214
6800	90x145	0,09	13	10	31,9	K21450682_M0L145
8200	90x145	0,09	11	8	34,9	K21450822_M0L145
10000	90x220	0,10	9	6	46,5	K21450103_M0L220
12000	90x220	0,10	8	6	49,8	K21450123_M0L220