

# K42 TYPE -40°C +105°C 5000H

RoHS Compliant

- Surge-proof capacitor in aluminium can with insulation sleeve.
- To be mounted with ring clips or with threaded stud.
- Design optimized for long term vibration stress, traction market.
- Octagonal can shape.

## APPLICATIONS

Designed for professional application under high mechanical stress.

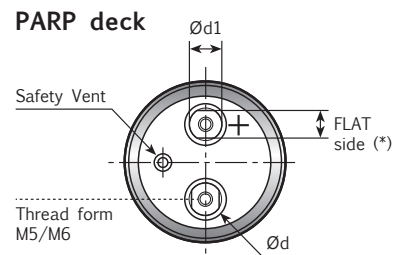
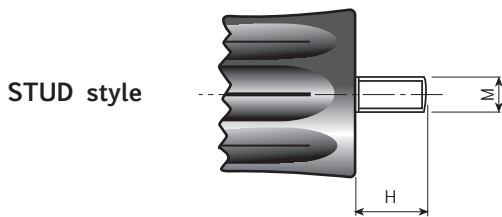
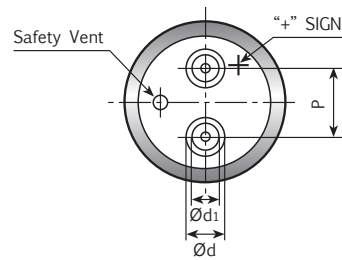
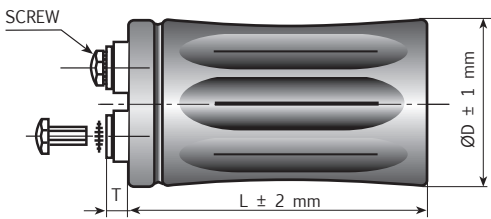


Diagram of dimensions (unit=mm) - Insert and screw threads: Metric (mm), UNF (inches)

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 P ARP deck of the flat side (PARP = Protection Against Reverse Polarity).

## K42 TYPE SPECIFICATIONS

<b>Temperature Range</b>	Operating: -40°C +105°C Storage : Preferably below +25°C, not exceeding +40°C	[Environmental classification 40/105/56 IEC-68]																																																								
<b>Rated Voltage Range (V<sub>r</sub>)</b>	from 16V to 450V DC																																																									
<b>Surge Voltage (V<sub>p</sub>)</b>	V <sub>p</sub> = 1.15 V <sub>r</sub> (V <sub>r</sub> ≤ 250V DC) V <sub>p</sub> = 1.10 V <sub>r</sub> (V <sub>r</sub> > 250V DC)																																																									
<b>Rated Capacitance Range</b>	from 100 μF to 470,000 μF																																																									
<b>Capacitance Tolerance</b>	±20% at 100 Hz, 20°C [M class IEC-62] on request: -10% +30% at 100 Hz, 20°C [Q class IEC-62]																																																									
<b>Leakage Current (I<sub>L</sub>)</b> (mA, 5 min, 20°C)	max I <sub>L</sub> = 0.003 C <sub>r</sub> V <sub>r</sub> + 4 μA At 85°C max I <sub>L</sub> = 0.02 C <sub>r</sub> V <sub>r</sub> μA																																																									
<b>Ripple current (I<sub>r</sub>)</b>	Refer to table at 105°C and 100Hz. For different temperature and frequency multiplier must be used as follows:																																																									
	<table style="width: 100%; border-collapse: collapse;"> <tr> <td style="text-align: left;">FREQUENCY</td> <td>50Hz</td> <td>100Hz</td> <td>500 Hz</td> <td>1000Hz</td> <td>&gt;10kHz</td> <td></td> <td></td> <td></td> <td></td> <td></td> </tr> <tr> <td style="text-align: left;">MULTIPLIER</td> <td>0.8</td> <td>1.0</td> <td>1.2</td> <td>1.3</td> <td>1.5</td> <td></td> <td></td> <td></td> <td></td> <td></td> </tr> <tr> <td style="text-align: left;">AMBIENT TEMP</td> <td>35°C</td> <td>45°C</td> <td>55°C</td> <td>65°C</td> <td>75°C</td> <td>85°C</td> <td>95°C</td> <td>105°C</td> <td>110°C</td> <td></td> </tr> <tr> <td style="text-align: left;">MULTIPLIER</td> <td>3.0</td> <td>2.80</td> <td>2.60</td> <td>2.40</td> <td>2.20</td> <td>1.80</td> <td>1.5</td> <td>1.0</td> <td>0.5</td> <td></td> </tr> </table> <p>Maximum internal temperature 108°C 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>35mm</td> <td>51mm</td> <td>63mm</td> <td>76mm</td> <td>90mm</td> </tr> <tr> <td style="text-align: left;">Maximum current</td> <td>20A</td> <td>30A</td> <td>40A</td> <td>50A</td> <td>70A</td> </tr> </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	105°C	110°C		MULTIPLIER	3.0	2.80	2.60	2.40	2.20	1.80	1.5	1.0	0.5		CAPACITOR DIAMETER	35mm	51mm	63mm	76mm	90mm	Maximum current	20A	30A	40A	50A	70A
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	105°C	110°C																																																	
MULTIPLIER	3.0	2.80	2.60	2.40	2.20	1.80	1.5	1.0	0.5																																																	
CAPACITOR DIAMETER	35mm	51mm	63mm	76mm	90mm																																																					
Maximum current	20A	30A	40A	50A	70A																																																					
<b>Insulation Resistance</b>	At 100V DC for 1 min is >100 MΩ across insulating sleeve and terminals.																																																									
<b>Vibration Resistance</b>	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 Centrifugal acceleration 20g for 48 hours																																																									
<b>Withstand voltage</b> (between terminals bundled and plate)	2500 VAC for 1 min																																																									
<b>Life test</b>	After 2,000 hours application of rated voltage at 105°C capacitors meet characteristics aside	Cap change ≤ 10% tan δ ≤ 130% Leakage current (I <sub>L</sub> ) < initial limit Impedance (Z) ≤ 130%																																																								
<b>Shelf life</b>	After leaving capacitors under no load for 500 hours at 105°C when restored at 20°C meet specifications aside	Cap change ≤ ±15% tan δ ≤ 150% Leakage current (I <sub>L</sub> ) < initial limit																																																								
<b>Useful life</b> (V <sub>n</sub> , Temp rated I ripple applied)	250000 h at 40°C 5000 h at 105°C																																																									
<b>Failure percentage</b> <b>Failure rate</b>	≤ 1% (during useful life) ≤ 40 fit (40 10 <sup>-9</sup> /h)																																																									
<b>Self inductance</b>	Approx. 20 nH																																																									
<b>Damp heat test</b> (V <sub>n</sub> applied, 2000 hours, 85% RH)	Stable electrical parameters in humidity ambient condition 85°C																																																									
<b>Electrolyte</b>	All the capacitors of this series have self-extinguishing electrolyte in accordance with IEC EN 60695-11-10																																																									
<b>Reference standards</b>	CECC 30.300 IEC 60384-4 LONG LIFE GRADE																																																									

## K42 TYPE STANDARD RATINGS

Cap $\mu\text{F}$	$\varnothing$ x L mm	Tan $\delta$ MAX 100 Hz 20°C	ESR TYP m $\Omega$ 100 Hz 20°C	Z TYP m $\Omega$ 10 kHz 20°C	Ir a.c. A max 100 Hz 105°C	PART NUMBER stud and insert style excluded
10000	35x60	0.25	25	24	3.3	K42016103_M0E060
15000	35x60	0.30	16	16	3.5	K42016153_M0E060
22000	35x60	0.35	12	12	4.4	K42016223_M0E060
33000	35x79	0.40	12	12	5.9	K42016333_M0E079
47000	35x79	0.55	9	10	7.5	K42016473_M0E079
68000	51x79	0.60	8	8	11.9	K42016683_M0G079
100000	51x105	0.80	8	8	12.3	K42016104_M0G105
150000	63x105	1.10	7	7	15.4	K42016154_M0H105
220000	76x105	1.50	7	7	18.8	K42016224_M0J105
330000	76x105	1.90	7	7	19.7	K42016334_M0J105
470000	76x143	2.00	6	6	22.5	K42016474_M0J143

**RATED  
VOLTAGE  
VDC**

**16V**

Cap $\mu\text{F}$	$\varnothing$ x L mm	Tan $\delta$ MAX 100 Hz 20°C	ESR TYP m $\Omega$ 100 Hz 20°C	Z TYP m $\Omega$ 10 kHz 20°C	Ir a.c. A max 100 Hz 105°C	PART NUMBER stud and insert style excluded
10000	35x60	0.20	23	18	3.8	K42025103_M0E060
15000	35x60	0.25	16	12	4.8	K42025153_M0E060
22000	35x79	0.30	12	12	7.2	K42025223_M0E079
33000	51x79	0.35	10	10	8.9	K42025333_M0G079
47000	51x79	0.40	9	9	11.6	K42025473_M0G079
68000	51x105	0.50	8	8	13.0	K42025683_M0G105
100000	63x105	0.60	8	8	15.8	K42025104_M0H105
150000	76x105	0.90	7	7	18.3	K42025154_M0J105
220000	76x143	1.30	7	7	21.6	K42025224_M0J143
330000	76x143	2.00	7	7	23.8	K42025334_M0J143

**RATED  
VOLTAGE  
VDC**

**25V**

## K42 TYPE STANDARD RATINGS

Cap $\mu\text{F}$	$\varnothing \times L$ mm	Tan $\delta$ MAX 100 Hz 20°C	ESR TYP m $\Omega$ 100 Hz 20°C	Z TYP m $\Omega$ 10 kHz 20°C	I <sub>r</sub> a.c. A max 100 Hz 105°C	PART NUMBER stud and insert style excluded
4700	35x60	0.20	31	29	3.3	K42040472_M0E060
6800	35x60	0.20	23	20	3.9	K42040682_M0E060
10000	35x79	0.20	16	12	4.8	K42040103_M0E079
15000	35x79	0.20	12	10	5.4	K42040153_M0E079
22000	51x79	0.25	10	10	8.9	K42040223_M0G079
33000	51x105	0.35	10	10	11.2	K42040333_M0G105
47000	51x105	0.45	9	9	13.8	K42040473_M0G105
47000	63x105	0.45	9	9	14.5	K42040473_M0H105
68000	63x105	0.60	7	7	15.0	K42040683_M0H105
68000	76x105	0.60	7	7	15.9	K42040683_M0J105
100000	76x105	0.90	7	7	19.1	K42040104_M0J105
100000	76x143	0.90	7	7	21.0	K42040104_M0J143
150000	76x143	1.30	7	7	25.9	K42040154_M0J143

**RATED  
VOLTAGE  
VDC**

**40V**

Cap $\mu\text{F}$	$\varnothing \times L$ mm	Tan $\delta$ MAX 100 Hz 20°C	ESR TYP m $\Omega$ 100 Hz 20°C	Z TYP m $\Omega$ 10 kHz 20°C	I <sub>r</sub> a.c. A max 100 Hz 105°C	PART NUMBER stud and insert style excluded
2200	35x60	0.15	72	60	2.5	K42063222_M0E060
3300	35x60	0.15	48	39	3.5	K42063332_M0E060
4700	35x60	0.15	33	28	4.2	K42063472_M0E060
6800	35x79	0.18	18	13	6.3	K42063682_M0E079
10000	51x79	0.20	15	11	8.2	K42063103_M0G079
15000	51x79	0.25	15	13	8.9	K42063153_M0G079
15000	51x105	0.25	13	10	18.0	K42063153_M0G105
22000	51x105	0.30	11	10	11.8	K42063223_M0G105
22000	63x105	0.30	11	10	13.5	K42063223_M0H105
33000	63x105	0.35	11	10	14.8	K42063333_M0H105
33000	76x105	0.35	11	8	16.6	K42063333_M0J105
47000	76x105	0.45	9	8	17.7	K42063473_M0J105
47000	76x143	0.45	9	8	19.0	K42063473_M0J143
68000	76x105	0.45	8	8	20.1	K42063683_M0J105
68000	76x143	0.70	8	8	22.8	K42063683_M0J143
100000	76x143	0.70	8	8	24.1	K42063104_M0J143

**RATED  
VOLTAGE  
VDC**

**63V**

## K42 TYPE STANDARD RATINGS

Cap $\mu\text{F}$	$\varnothing \times L$ mm	Tan $\delta$ MAX 100 Hz 20°C	ESR TYP $\text{m}\Omega$ 100 Hz 20°C	Z TYP $\text{m}\Omega$ 10 kHz 20°C	Ir a.c. A max 100 Hz 105°C	PART NUMBER stud and insert style excluded
1000	35x60	0.15	110	100	2.9	K42100102_M0E060
1500	35x60	0.15	80	73	3.2	K42100152_M0E060
2200	35x60	0.15	59	53	4.4	K42100222_M0E060
3300	35x79	0.15	33	31	5.8	K42100332_M0E079
4700	51x79	0.15	25	22	7.2	K42100472_M0G079
6800	51x79	0.15	19	17	8.9	K42100682_M0G079
6800	51x105	0.15	19	17	8.9	K42100682_M0G105
10000	51x105	0.15	17	15	11.0	K42100103_M0G105
10000	63x105	0.15	17	15	12.5	K42100103_M0H105
15000	63x105	0.15	12	12	15.1	K42100153_M0H105
22000	76x105	0.18	10	9	16.5	K42100223_M0J105
33000	76x143	0.22	8	8	20.9	K42100333_M0J143

**RATED  
VOLTAGE  
VDC**

**100V**

Cap $\mu\text{F}$	$\varnothing \times L$ mm	Tan $\delta$ MAX 100 Hz 20°C	ESR TYP $\text{m}\Omega$ 100 Hz 20°C	Z TYP $\text{m}\Omega$ 10 kHz 20°C	Ir a.c. A max 100 Hz 105°C	PART NUMBER stud and insert style excluded
1000	35x79	0.11	105	90	3.3	K42160102_M0E079
1500	51x79	0.11	65	60	4.1	K42160152_M0G079
2200	51x105	0.11	46	43	4.8	K42160222_M0G105
3300	63x105	0.11	32	30	6.8	K42160332_M0H105
4700	63x105	0.11	27	25	8.5	K42160472_M0H105
6800	76x105	0.13	23	20	11.3	K42160682_M0J105
10000	76x105	0.14	22	20	14.2	K42160103_M0J105
10000	76x143	0.15	17	16	14.9	K42160103_M0J143
15000	76x143	0.20	16	12	17.2	K42160153_M0J143
22000	76x214	0.20	11	10	19.0	K42160223_M0J214

**RATED  
VOLTAGE  
VDC**

**160V**

## K42 TYPE STANDARD RATINGS

Cap $\mu\text{F}$	$\varnothing \times L$ mm	Tan $\delta$ MAX 100 Hz 20°C	ESR TYP m $\Omega$ 100 Hz 20°C	Z TYP m $\Omega$ 10 kHz 20°C	I <sub>r</sub> a.c. A max 100 Hz 105°C	PART NUMBER stud and insert style excluded
680	35x60	0.11	133	98	2.5	K42200681_M0E060
1000	51x79	0.11	85	64	4.6	K42200102_M0G079
1500	51x105	0.11	65	58	5.1	K42200152_M0G105
2200	51x105	0.11	60	53	6.1	K42200222_M0G105
3300	63x105	0.11	40	35	7.9	K42200332_M0H105
4700	63x105	0.11	25	23	8.7	K42200472_M0H105
6800	76x105	0.11	18	16	11.8	K42200682_M0J105
8200	76x105	0.11	17	15	12.8	K42200822_M0H105
10000	76x105	0.13	15	13	14.5	K42200103_M0J105
10000	76x143	0.15	13	12	16.0	K42200103_M0J143
15000	76x143	0.20	12	11	17.3	K42200153_M0J143
22000	76x214	0.20	11	10	18.9	K42200223_M0J214

**RATED  
VOLTAGE  
VDC**

**200V**

Cap $\mu\text{F}$	$\varnothing \times L$ mm	Tan $\delta$ MAX 100 Hz 20°C	ESR TYP m $\Omega$ 100 Hz 20°C	Z TYP m $\Omega$ 10 kHz 20°C	I <sub>r</sub> a.c. A max 100 Hz 105°C	PART NUMBER stud and insert style excluded
470	35x60	0.11	211	193	2.0	K42250471_M0E060
680	35x79	0.11	130	98	2.2	K42250681_M0E079
1000	51x79	0.11	110	85	4.1	K42250102_M0G079
1500	51x105	0.11	74	65	5.4	K42250152_M0G105
2200	51x105	0.11	41	39	6.8	K42250222_M0G105
3300	63x105	0.11	30	26	8.2	K42250332_M0H105
4700	76x105	0.11	18	17	11.9	K42250472_M0J105
6800	76x143	0.15	15	14	14.3	K42250682_M0J143
8200	76x143	0.15	14	14	15.2	K42250822_M0J143
10000	76x143	0.20	14	13	16.0	K42250103_M0J143
15000	76x214	0.20	12	10	17.4	K42250153_M0J214

**RATED  
VOLTAGE  
VDC**

**250V**

## K42 TYPE STANDARD RATINGS

Cap $\mu\text{F}$	$\varnothing \times L$ mm	Tan $\delta$ MAX 100 Hz 20°C	ESR TYP m $\Omega$ 100 Hz 20°C	Z TYP m $\Omega$ 10 kHz 20°C	Ir a.c. A max 100 Hz 105°C	PART NUMBER stud and insert style excluded
330	35x60	0.11	255	196	1.8	K42350331__M0E060
470	35x79	0.11	170	141	2.1	K42350471__M0E079
680	51x79	0.11	128	96	3.8	K42350681__M0G079
1000	51x105	0.11	85	68	5.0	K42350102__M0G105
1500	63x105	0.11	59	52	6.4	K42350152__M0H105
2200	76x105	0.11	44	40	8.1	K42350222__M0J105
3300	76x105	0.11	26	23	10.2	K42350332__M0J105
4700	76x143	0.11	18	16	13.5	K42350472__M0J143
5600	76x143	0.12	18	17	14.3	K42350562__M0J143
6800	76x143	0.15	16	15	15.1	K42350682__M0J143
10000	76x214	0.20	15	14	19.9	K42350103__M0J214

**RATED  
VOLTAGE  
VDC**

**350V**

Cap $\mu\text{F}$	$\varnothing \times L$ mm	Tan $\delta$ MAX 100 Hz 20°C	ESR TYP m $\Omega$ 100 Hz 20°C	Z TYP m $\Omega$ 10 kHz 20°C	Ir a.c. A max 100 Hz 105°C	PART NUMBER stud and insert style excluded
220	35x60	0.11	350	280	1.4	K42400221__M0E060
330	35x60	0.11	250	210	2.2	K42400331__M0E060
470	51x79	0.11	170	150	2.8	K42400471__M0G079
680	51x79	0.11	110	100	3.2	K42400681__M0G079
1000	51x105	0.11	95	82	4.1	K42400102__M0G105
1500	63x105	0.11	64	53	5.8	K42400152__M0H105
2200	63x105	0.11	45	53	6.0	K42400222__M0H105
2200	76x105	0.11	45	39	7.3	K42400222__M0J105
3300	76x143	0.11	28	25	11.1	K42400332__M0J143
4700	76x143	0.11	24	23	12.8	K42400472__M0J143
6800	76x214	0.15	19	15	15.0	K42400682__M0J214
10000	90x220	0.20	16	14	22.5	K42400103__M0L220

**RATED  
VOLTAGE  
VDC**

**400V**

## K42 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 kHz 20°C	Ir a.c. A max 100 Hz 105°C	PART NUMBER stud and insert style excluded
100	35x60	0.11	800	650	1.2	K42450101__M0E060
150	35x60	0.11	550	490	1.6	K42450151__M0E060
220	35x60	0.11	370	310	1.8	K42450221__M0E060
330	35x79	0.11	240	210	2.4	K42450331__M0E079
470	51x79	0.11	200	179	3.0	K42450471__M0G079
680	51x105	0.11	140	128	4.2	K42450681__M0G105
1000	51x105	0.11	100	88	4.4	K42450102__M0G105
1000	63x105	0.11	100	88	5.3	K42450102__M0H105
1500	63x105	0.11	63	57	5.7	K42450152__M0H105
1500	76x105	0.11	63	57	6.6	K42450152__M0J105
2200	76x105	0.11	48	38	7.6	K02450222__M0J105
2200	76x143	0.11	48	38	8.8	K02450222__M0J143
3300	76x143	0.15	35	30	10.4	K42450332__M0J143
4700	76x143	0.15	28	25	10.9	K42450472__M0J143
6800	76x214	0.15	21	16	23.7	K42450682__M0J214
10000	90x220	0.20	16	14	22.5	K42450103__M0L220

**RATED  
VOLTAGE  
VDC**

**450V**

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