

## K22 TYPE -40°C +105°C 12000H

RoHS Compliant  
Directive 2002/95/EC

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

### APPLICATIONS

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

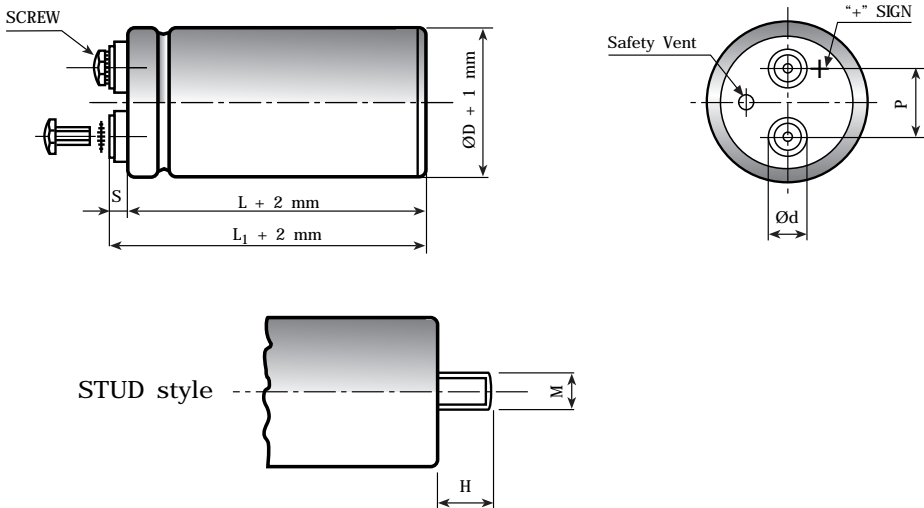


Diagram of dimensions (unit=mm)

ØD	d	P	M	H	SCREW
35	11	12.7	M 8	12	5MA x 9,5
51	18.5	22.7	M 12	16	5MA x 9,5
63	18.5	28.6	M 12	16	5MA x 9,5
76	18.5	31.8	M 12	16	5MA x 9,5
76	18.5	31.8	M 12	16	6MA x 10
90	18.5	31.8	M 12	16	6MA x 10
L <sub>1</sub>	L <sub>1</sub> = L + 2.5 mm L <sub>1</sub> toll. - 0+3 mm			L <sub>1</sub> = L + 4.5 mm L <sub>1</sub> toll. - 1+3 mm	
S	M5 = 5 - 0 + 1 mm From top of deck			M6 = 7 - 1 + 1 mm From top of deck	

## SPECIFICATIONS

Temperature Range	Operating: -40°C +105°C Storage : Preferably below +25°C, not exceeding +40°C	[Environmental classification 40/105/56 IEC-68]																																										
Rated Voltage Range (V <sub>r</sub> )	from 350V to 450V DC																																											
Surge Voltage (V <sub>p</sub> )	V <sub>p</sub> = 1.10 V <sub>r</sub>																																											
Rated Capacitance Range	from 1000 µF to 12000 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 <sub>l</sub> ) (5 min, 20°C)	max I <sub>l</sub> = 0.006 C <sub>r</sub> V <sub>r</sub> + 4 µA																																											
Ripple current (I <sub>r</sub> )	<p>Refer to table at 105°C and 100Hz:</p> <table border="1"> <thead> <tr> <th>FREQUENCY</th> <th>50Hz</th> <th>100 Hz</th> <th>500Hz</th> <th>1000Hz</th> <th>&gt;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"> <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> <th>105°C</th> <th>110°C</th> </tr> </thead> <tbody> <tr> <td>MULTIPLIER</td> <td>3.0</td> <td>2.8</td> <td>2.6</td> <td>2.4</td> <td>2.2</td> <td>1.8</td> <td>1.5</td> <td>1.0</td> <td>0.5</td> </tr> </tbody> </table> <p>Maximum internal temperature 110°C</p> <p>Due to the current load capability of the contact elements, the following limits must not be exceeded:</p> <table border="1"> <thead> <tr> <th>CAPACITOR DIAMETER</th> <th>51mm</th> <th>63mm</th> <th>76mm</th> <th>90mm</th> </tr> </thead> <tbody> <tr> <td>Maximum current</td> <td>30A</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	105°C	110°C	MULTIPLIER	3.0	2.8	2.6	2.4	2.2	1.8	1.5	1.0	0.5	CAPACITOR DIAMETER	51mm	63mm	76mm	90mm	Maximum current	30A	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	105°C	110°C																																			
MULTIPLIER	3.0	2.8	2.6	2.4	2.2	1.8	1.5	1.0	0.5																																			
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, 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 ≤ 200% tan δ ≤ 200% Leakage current (I <sub>l</sub> ) < initial limit Impedance (Z) ≤ 200%																																										
Shelf life	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																																										
Useful life	> 250000 h at 40°C > 5000 h at 105°C																																											
Failure percentage Failure rate	≤ 1% (during useful life) ≤ 70 fit (70 10 <sup>-9</sup> /h)																																											
Self inductance	Approx. 20 nH																																											
Reference standards	CECC 30.300 IEC 60384-4 LONG LIFE GRADE																																											

## K22 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
1200	51x79	0.06	51	35	4.5	K22350122__M0G079
1200	51x105	0.06	51	35	5.3	K22350122__M0G105
1500	51x105	0.06	46	30	5.8	K22350152__M0G105
1800	51x105	0.06	40	25	6.2	K22350182__M0G105
2200	63x105	0.06	28	17	8.1	K22350222__M0H105
2200	76x79	0.06	32	21	7.7	K22350222__M0J079
2200	76x98	0.06	32	21	8.3	K22350222__M0J098
2800	63x105	0.06	27	19	9.0	K22350282__M0H105
3300	76x79	0.06	24	17	8.8	K22350332__M0J079
3300	76x105	0.06	22	16	10.8	K22350332__M0J105
3900	76x105	0.06	19	13	11.2	K22350392__M0J105
3900	90x98	0.06	19	13	11.8	K22350392__M0L098
4700	76x143	0.06	16	12	14.4	K22350472__M0J143
5600	76x143	0.06	14	10	15.5	K22350562__M0J143
6800	76x214	0.06	11	8	19.0	K22350682__M0J214
6800	90x145	0.06	11	8	18.3	K22350682__M0L145
8200	76x214	0.06	10	7	20.0	K22350822__M0J214
8200	90x145	0.06	10	7	19.0	K22350822__M0L145
10000	76x214	0.08	8	6	23.0	K22350103__M0J214
10000	90x145	0.08	8	6	19.6	K22350103__M0L145
12000	90x220	0.08	7	6	26.0	K22350123__M0L220

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
1200	51x79	0.08	66	45	4.1	K22400122__M0G079
1200	51x105	0.08	66	45	4.6	K22400122__M0G105
1500	51x105	0.08	54	41	5.2	K22400152__M0G105
2200	63x105	0.08	41	28	7.0	K22400222__M0H105
2200	76x79	0.08	41	28	6.9	K22400222__M0J079
2200	76x98	0.08	41	28	7.4	K22400222__M0J098
3300	76x105	0.08	29	21	9.2	K22400332__M0J105
3900	76x105	0.08	24	19	10.0	K22400392__M0J105
4400	90x98	0.08	24	19	11.0	K22400442__M0L098
4700	76x143	0.09	19	15	13.4	K22400472__M0J143
5600	76x143	0.09	17	13	13.9	K22400562__M0J143
6800	76x214	0.09	14	11	18.0	K22400682__M0J214
6800	90x145	0.09	14	11	16.0	K22400682__M0L145
8200	90x145	0.09	12	9	17.0	K22400822__M0L145
10000	90x220	0.09	10	8	23.0	K22400103__M0L220
12000	90x220	0.10	8	6	25.0	K22400123__M0L220

RATED  
VOLTAGE  
VDC

**400V**

## K22 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
1000	51x79	0.08	69	47	4.0	K22450102__M0G079
1000	51x105	0.08	69	47	4.6	K22450102__M0G105
1200	51x105	0.08	64	43	4.7	K22450122__M0G105
2200	63x105	0.08	41	28	7.0	K22450222__M0H105
2200	76x79	0.08	41	28	6.9	K22450222__M0J079
2200	76x98	0.08	41	28	7.4	K22450222__M0J098
2800	90x98	0.08	30	23	9.2	K22450282__M0L098
3300	76x105	0.08	29	21	9.2	K22450332__M0J105
3900	76x143	0.08	22	17	12.0	K22450392__M0J143
4700	76x143	0.09	19	15	12.4	K22450472__M0J143
5600	90x145	0.09	16	13	15.4	K22450562__M0L145
6800	76x214	0.09	14	11	18.0	K22450682__M0J214
6800	90x145	0.09	13	10	16.6	K22450682__M0L145
8200	90x220	0.09	12	9	17.0	K22450822__M0L220
10000	90x220	0.10	10	8	23.0	K22450103__M0L220

RATED  
VOLTAGE  
VDC

**450V**

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