

# K21 TYPE -40°C +85°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.

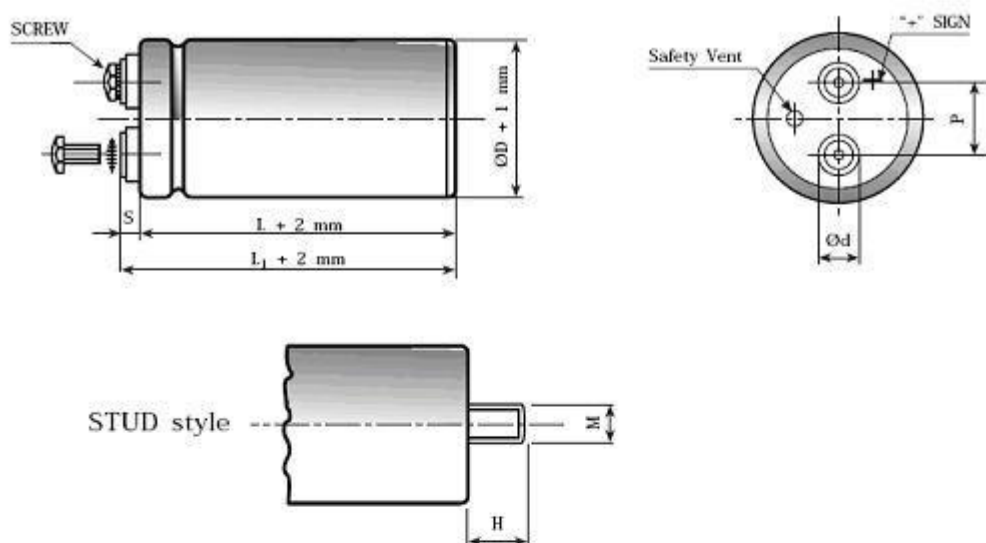


Diagram of dimensions (unit=mm)

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 +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 $\mu$ F to 15000 $\mu$ F																																							
Capacitance Tolerance	$\pm 20\%$ at 100 Hz, 20°C [M class IEC-62] on request: -10% +30% at 100 Hz, 20°C [Q class IEC-62]																																							
Leakage Current ( $I_L$ ) (5 min, 20°C)	max $I_L = 0.006 C_r V_r + 4 \mu$ A																																							
Ripple current ( $I_r$ )	<p>Refer to table at 85°C and 100Hz :</p> <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;">500 Hz</td> <td style="text-align: center;">1000Hz</td> <td style="text-align: center;">&gt;10kHz</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> </tr> </table> <table style="width: 100%; border-collapse: collapse;"> <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>Maximum internal temperature 98°C</p> <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> </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> </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	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
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Maximum current	30A	40A	50A	70A																																				
Insulation Resistance	At 100V DC for 1 min is >100 M $\Omega$ across insulating sleeve and terminals.																																							
Vibration Resistance	Frequency range: 10 Hz to 55 Hz, amplitude 0.75 mm Capacitor length $\leq 143$ : 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 85°C capacitors meet characteristics aside	Cap change $\leq 20\%$ tan $\delta \leq 200\%$ Leakage current ( $I_L$ ) < initial limit Impedance (Z) $\leq 200\%$																																						
Shelf life	After leaving capacitors under no load for 2000 hours at 85°C, when restored at 20°C meet specifications aside	Cap change $\leq \pm 15\%$ tan $\delta \leq 150\%$ Leakage current ( $I_L$ ) < initial limit																																						
Useful life	> 200.000 h at 40°C > 12.000 h at 85°C																																							
Failure percentage Failure rate	$\leq 1\%$ (during useful life) $\leq 70$ fit ( $70 \cdot 10^{-9}/h$ )																																							
Self inductance	Approx. 20 nH																																							
Reference standards	CECC 30.300 IEC 60384-4 LONG LIFE GRADE																																							

## K21 TYPE STANDARD RATINGS

**RATED  
VOLTAGE  
VDC**

Capacitance $\mu\text{F}$	$\varnothing \times \text{L}$ mm	Tan $\delta$ MAX 100 Hz 20°C	ESR TYP m $\Omega$ 100 Hz 20°C	Z TYP m $\Omega$ 10KHz 20°C	Ir a.c. A max 100 Hz 85°C	PART NUMBER Stud and insert style excluded
<b>350V</b> 1500	51x79	0.06	46	30	7.9	K21350152_M0G079
1500	51x105	0.06	46	30	8.8	K21350152_M0G105
2200	51x105	0.06	33	22	10.4	K21350222_M0G105
2200	63x105	0.06	28	17	12.8	K21350222_M0H105
2200	76x79	0.06	32	21	12.1	K21350222_M0J079
2200	76x98	0.06	32	21	13.0	K21350222_M0J098
3300	63x105	0.06	20	15	15.1	K21350332_M0H105
3300	76x79	0.06	24	17	14.0	K21350332_M0J079
3300	76x105	0.06	22	16	16.1	K21350332_M0J105
4700	76x105	0.06	16	12	19.0	K21350472_M0J105
4700	76x143	0.06	16	12	22.0	K21350472_M0J143
4700	90x98	0.06	17	13	20.0	K21350472_M0L098
5600	76x143	0.06	14	10	23.5	K21350562_M0J143
6800	76x143	0.06	11	8	25.8	K21350682_M0J143
6800	90x145	0.06	11	8	28.8	K21350682_M0L145
8200	90x145	0.06	10	7	30.7	K21350822_M0L145
10000	76x214	0.08	8	6	36.4	K21350103_M0J214
10000	90x145	0.08	8	6	32.4	K21350103_M0L145
12000	76x214	0.08	7	6	37.5	K21350123_M0J214
15000	90x220	0.10	6	5	42.5	K21350153_M0L220

**RATED  
VOLTAGE  
VDC**

Capacitance $\mu\text{F}$	$\varnothing \times \text{L}$ mm	Tan $\delta$ MAX 100 Hz 20°C	ESR TYP m $\Omega$ 100 Hz 20°C	Z TYP m $\Omega$ 10KHz 20°C	Ir a.c. A max 100 Hz 85°C	PART NUMBER Stud and insert style excluded
<b>400V</b> 1500	51x79	0.08	59	41	7.0	K21400152_M0G079
1500	51x105	0.08	59	41	7.8	K21400152_M0G105
2200	51x105	0.08	42	29	9.3	K21400222_M0G105
2200	76x79	0.08	42	29	10.1	K21400222_M0J079
2200	76x98	0.08	42	29	12.2	K21400222_M0J098
3300	63x105	0.08	26	19	13.4	K21400332_M0H105
3300	76x79	0.08	29	21	12.4	K21400332_M0J079
3300	76x98	0.08	29	21	13.5	K21400332_M0J098
3300	76x105	0.08	29	21	14.3	K21400332_M0J105
3900	76x105	0.08	24	19	15.7	K21400392_M0J105
4400	90x98	0.08	24	19	17.3	K21400442_M0L098
4700	76x105	0.09	20	15	17.0	K21400472_M0J105
4700	76x143	0.09	20	15	19.4	K21400472_M0J143
4700	90x98	0.09	21	16	17.7	K21400472_M0L098
5600	76x143	0.09	17	13	21.0	K21400562_M0J143
6800	76x143	0.09	14	11	23.0	K21400682_M0J143
6800	90x145	0.09	14	11	25.0	K21400682_M0L145
8200	90x145	0.09	12	9	27.3	K21400822_M0L145
10000	76x214	0.09	10	8	32.0	K21400103_M0J214
10000	90x145	0.10	10	8	29.2	K21400103_M0L145
14000	90x220	0.10	8	6	40.0	K21400143_M0L220
15000	90x220	0.10	7	6	41.0	K21400153_M0L220

**RATED  
VOLTAGE  
VDC**  
  
**450V**

Capacitance μF	Ø x L mm	Tan δ MAX 100 Hz 20°C	ESR TYP mΩ 100 Hz 20°C	Z TYP mΩ 10KHz 20°C	Ir a.c. A max 100 Hz 85°C	PART NUMBER Stud and insert style excluded	
1200	51x79	0.08	64	43	6.7	K21450122	M0G079
1200	51x105	0.08	64	43	7.5	K21450122	M0G105
1500	51x105	0.08	59	41	7.8	K21450152	M0G105
2200	63x105	0.08	42	29	11.0	K21450222	M0H105
2200	76x79	0.08	42	29	10.1	K21450222	M0J079
2200	76x98	0.08	42	29	12.2	K21450222	M0J098
3300	76x105	0.08	29	21	14.3	K21450332	M0J105
3300	90x98	0.08	29	21	16.1	K21450332	M0L098
3900	76x105	0.08	24	19	15.7	K21450392	M0J105
4700	76x143	0.09	20	15	19.4	K21450472	M0J143
4700	90x98	0.09	21	16	17.7	K21450472	M0L098
5600	76x143	0.09	17	13	21.0	K21450562	M0J143
6800	76x214	0.09	14	11	29.0	K21450682	M0J214
6800	90x145	0.09	14	11	25.0	K21450682	M0L145
8200	90x145	0.09	12	9	27.3	K21450822	M0L145
10000	90x220	0.10	10	8	37.2	K21450103	M0L220
12000	90x220	0.10	9	8	40.0	K21450123	M0L220

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