

# K19 TYPE -55°C +105°C 4000H

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.

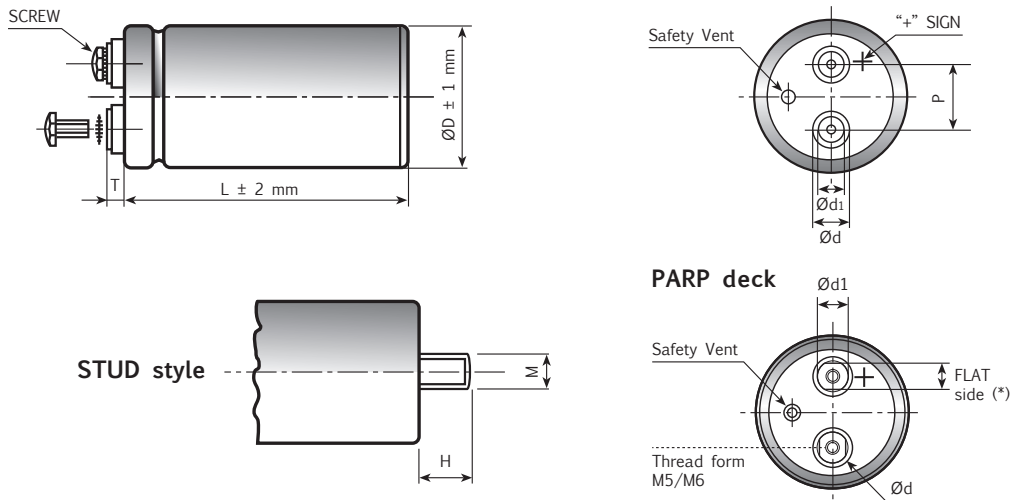


Diagram of dimensions (unit=mm) - Insert and screw threads: Metric (mm), UNF (inches)

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).

## K19 TYPE SPECIFICATIONS

<b>Temperature Range</b>	Operating: -55°C +105°C Storage : Preferably below +25°C, not exceeding +40°C	[Environmental classification 55/105/56 IEC-68]																																										
<b>Rated Voltage Range (V<sub>r</sub>)</b>	from 400V to 450V DC																																											
<b>Surge Voltage (V<sub>p</sub>)</b>	V <sub>p</sub> = 1.10 V <sub>r</sub>																																											
<b>Rated Capacitance Range</b>	from 330 μF to 15000 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> = 0.006 C <sub>r</sub> V <sub>r</sub> + 4 μA																																											
<b>Ripple current (I<sub>r</sub>)</b>	Refer to table at 105°C and 100Hz :																																											
	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>FREQUENCY</th> <th>50Hz</th> <th>100Hz</th> <th>500 Hz</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" style="width: 100%; border-collapse: collapse;"> <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>Due to the current load capability of the contact elements, the following limits must not be exceeded:</p> <table border="1" style="width: 100%; border-collapse: collapse;"> <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	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	2.8	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
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<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																																											
<b>Life test</b>	After 2,000 hours application of rated voltage at 105°C capacitors meet characteristics aside	<table border="1" style="width: 100%; border-collapse: collapse;"> <tr> <td>Cap change</td> <td>≤ 10%</td> </tr> <tr> <td>tan δ</td> <td>≤ 130%</td> </tr> <tr> <td>Leakage current (I<sub>l</sub>)</td> <td>&lt; initial limit</td> </tr> <tr> <td>Impedance (Z)</td> <td>≤ 130%</td> </tr> </table>	Cap change	≤ 10%	tan δ	≤ 130%	Leakage current (I <sub>l</sub> )	< initial limit	Impedance (Z)	≤ 130%																																		
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<b>Shelf life</b>	After leaving capacitors under no load for 500 hours at 105°C, when restored at 20°C meet specifications aside	<table border="1" style="width: 100%; border-collapse: collapse;"> <tr> <td>Cap change</td> <td>≤ ±15%</td> </tr> <tr> <td>tan δ</td> <td>≤ 150%</td> </tr> <tr> <td>Leakage current (I<sub>l</sub>)</td> <td>&lt; initial limit</td> </tr> </table>	Cap change	≤ ±15%	tan δ	≤ 150%	Leakage current (I <sub>l</sub> )	< initial limit																																				
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<b>Useful life</b> (105°C, V <sub>n</sub> , I <sub>r</sub> applied)	> 4000 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>Reference standards</b>	CECC 30.300 IEC 60384-4 LONG LIFE GRADE																																											

## K19 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 $m\Omega$ 10KHz 20°C	Ir a.c. A max 100 Hz 105°C	PART NUMBER Stud and insert style excluded
330	35x60	0.11	250	210	2.1	K19400331_M0E060
470	35x79	0.11	170	150	2.2	K19400471_M0E079
680	51x79	0.11	110	100	3.2	K19400681_M0G079
1000	51x79	0.11	95	82	3.4	K19400102_M0G079
1500	51x79	0.11	64	53	3.8	K19400152_M0G079
2200	51x105	0.11	45	39	4.5	K19400222_M0G105
3300	63x105	0.11	28	25	6.6	K19400332_M0H105
4700	76x105	0.11	24	23	9.5	K19400472_M0J105
4700	76x143	0.11	24	23	10.9	K19400472_M0J143
5600	76x143	0.12	21	17	11.2	K19400562_M0J143
6800	76x143	0.15	19	15	15.5	K19400682_M0J143
10000	76x214	0.15	16	14	19.2	K19400103_M0J214
15000	90x220	0.20	15	12	23.0	K19400153_M0L220

**RATED  
VOLTAGE  
VDC**

**400V**

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 $m\Omega$ 10KHz 20°C	Ir a.c. A max 100 Hz 105°C	PART NUMBER Stud and insert style excluded
330	35x60	0.11	240	210	1.5	K19450331_M0E060
470	35x79	0.11	200	179	2.1	K19450471_M0E079
680	51x79	0.11	140	128	3.1	K19450681_M0G079
1000	51x105	0.11	100	88	4.4	K19450102_M0G105
1500	51x105	0.11	63	57	4.8	K19450152_M0G105
2200	63x105	0.11	48	38	6.3	K19450222_M0H105
3300	76x105	0.11	35	30	10.4	K19450332_M0J105
4700	76x143	0.11	28	25	10.9	K19450472_M0J143
5600	76x143	0.12	21	17	11.2	K19450562_M0J143
6800	76x214	0.15	21	16	15.5	K19450682_M0J214
8200	76x214	0.15	18	16	19.2	K19450822_M0J214
10000	90x220	0.15	16	14	22.5	K19450103_M0L220

**RATED  
VOLTAGE  
VDC**

**450V**

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