

K11 TYPE -40°C +85°C 15000H

RoHS Compliant

- Surge-proof capacitor in aluminium can with insulation sleeve.
- To be mounted with ring clips or with threaded stud.
- Design optimized for parallel connection and high density of energy.

APPLICATIONS

Energy Storage, Bulk.

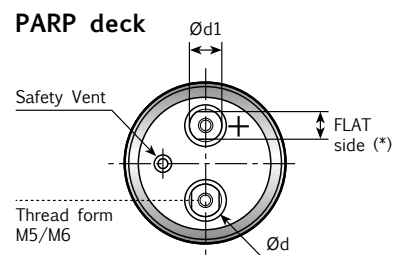
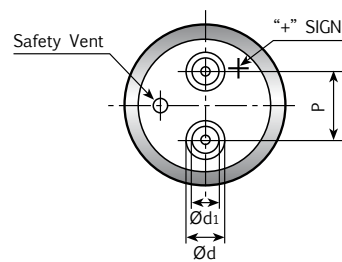
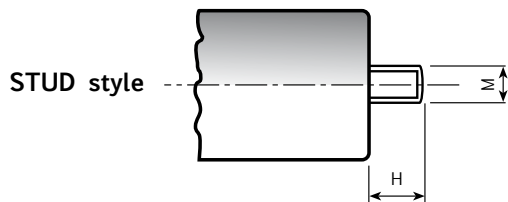
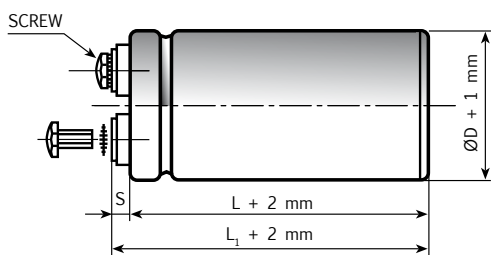


Diagram of dimensions (unit=mm)
Insert and screw threads: Metric (mm), UNF (inches)

ØD	d	d1	P	STUD		INSERT	SCREW	L1 -L[-1+3]	S[-1+1]	INSERT STYLE CODE
				M	H					
35	11	7.9	12.7	M8	12	M5	5MA x 9.5	2.5	5	0
51	18.5	13	22.7	M12	16	M5	5MA x 9.5	2.5	5	H
63	18.5	13	28.6	M12	16	M5	5MA x 9.5	2.5	5	H
63	17.3	17.3	28.6	M12	16	UNF 1/4-28 Low Post	1/4-28 x 3/8"	3	4	W
63	17.3	17.3	28.6	M12	16	UNF 1/4-28 High Post	1/4-28 x 1/2"	6	7	R
63	7.9	7.9	28.6	M12	16	UNF 10-32 Low Post	10-32 x 1/4"	2	2.5	Z
63	12	7.9	28.6	M12	16	UNF 10-32 High Post	10-32 x 3/8"	6	7	U
76	18.5	13	31.8	M12	16	M5	5MA x 9.5	2.5	5	H
76	18.5	13	31.8	M12	16	M5	5MA x 9.5	2.5	7	L
76	23.2	17.7	31.8	M12	16	M6	6MA x 10	4.5	7	6
76	17.3	17.3	31.8	M12	16	UNF 1/4-28 Low Post	1/4-28 x 3/8"	3	4	W
76	17.3	17.3	31.8	M12	16	UNF 1/4-28 High Post	1/4-28 x 1/2"	6	7	R
76	7.9	7.9	31.8	M12	16	UNF 10-32 Low Post	10-32 x 1/4"	2	2.5	Z
76	12	7.9	31.8	M12	16	UNF 10-32 High Post	10-32 x 3/8"	6	7	U
90	23.2	17.7	31.8	M12	16	M6	6MA x 10	4.5	7	H
51	13	13 (10)*	22.7	M12	16	PARP M5	5MA x 9.5	6	7	K
63	15	15 (13)*	28.6	M12	16	PARP M5	5MA x 9.5	6	7	K
76	19	15 (13)*	31.8	M12	16	PARP M5	5MA x 9.5	6	7	K
76	19	15 (13)*	31.8	M12	16	PARP M6	6MA x 10	6	7	Q
90	19	15 (13)*	31.8	M12	16	PARP M6	6MA x 10	6	7	Q

Note: (*) quote on the PARP deck of the flat side (PARP = Protection Against Reverse Polarity).

SPECIFICATIONS

Temperature Range	Operating: -40°C +85°C 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 (V _r ≥ 250V DC)																																			
Rated Capacitance Range	from 12000 μF to 34000 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) (mA, 5 min, 20°C)	max I _L = 0.006 C _r V _r + 4 μA At 85°C max I _L = 0.04 C _r V _r μA	Kendeil product limit: I _L = 0.003 C _r V _r																																		
Ripple current (I_r)	Refer to table at 85°C and 100Hz: <table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>FREQUENCY</th> <th>50Hz</th> <th>100 Hz</th> <th>500Hz</th> <th>1000Hz</th> <th>>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> </tr> </thead> <tbody> <tr> <td>MULTIPLIER</td> <td>2.2</td> <td>2.1</td> <td>1.8</td> <td>1.6</td> <td>1.4</td> <td>1.0</td> <td>0.5</td> </tr> </tbody> </table> Due to the current load capability of the contact elements, the following limits must not be exceeded: <table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>CAPACITOR DIAMETER</th> <th>76mm</th> <th>90mm</th> </tr> </thead> <tbody> <tr> <td>Maximum current</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	MULTIPLIER	2.2	2.1	1.8	1.6	1.4	1.0	0.5	CAPACITOR DIAMETER	76mm	90mm	Maximum current	50A	70A
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CAPACITOR DIAMETER	76mm	90mm																																		
Maximum current	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 max acceleration 10G for 3x2 h																																			
Withstand voltage (between terminals bundled and plate)	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)	> 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 (V_n applied, 2000 hours, 85% RH)	Stable electrical parameters in humidity ambient condition 85°C																																			
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																																			

K11 TYPE STANDARD RATINGS

Cap μF	$\varnothing \times L$ mm	Tan δ MAX 100 Hz 20°C	I _r a.c. A max 100 Hz 85°C	PART NUMBER stud and insert style excluded
19000	76x214	0.25	18.0	K11350193__M0J214
20000	76x240	0.25	18.0	K11350203__M0J240
22000	76x214	0.25	18.4	K11350223__M0J214
24000	76x240	0.25	18.5	K11350243__M0J240
27000	90x220	0.25	21.0	K11350273__M0L220
30000	90x220	0.25	21.4	K11350303__M0L220
30000	90x240	0.25	22.0	K11350303__M0L240
34000	90x240	0.25	22.5	K11350343__M0L240

**RATED
VOLTAGE
VDC**

350V

Cap μF	$\varnothing \times L$ mm	Tan δ MAX 100 Hz 20°C	I _r a.c. A max 100 Hz 85°C	PART NUMBER stud and insert style excluded
15000	76x214	0.25	16.0	K11400153__M0J214
16000	76x240	0.25	17.7	K11400163__M0J240
18000	76x214	0.25	16.3	K11400183__M0J214
20000	76x240	0.25	18.1	K11400203__M0J240
21000	90x220	0.25	21.5	K11400213__M0L220
23000	90x240	0.25	23.2	K11400233__M0L240
25000	90x220	0.25	21.9	K11400253__M0L220
29000	90x240	0.25	23.7	K11400293__M0L240

**RATED
VOLTAGE
VDC**

400V

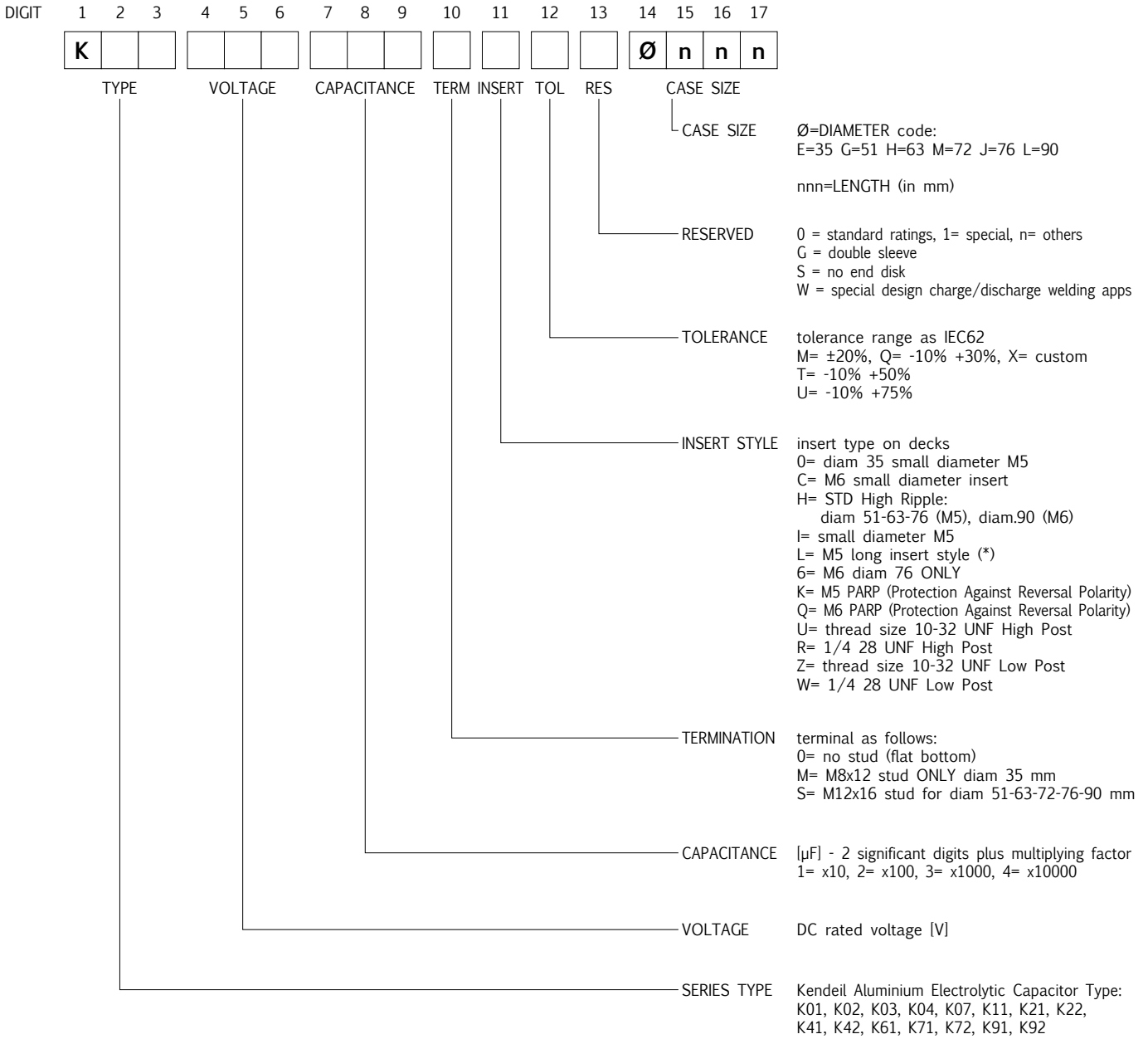
Cap μF	$\varnothing \times L$ mm	Tan δ MAX 100 Hz 20°C	I _r a.c. A max 100 Hz 85°C	PART NUMBER stud and insert style excluded
12000	76x214	0.20	16.0	K11450123__M0J214
13000	76x240	0.20	17.5	K11450133__M0J240
15000	76x214	0.20	16.4	K11450153__M0J214
16000	76x240	0.20	18.0	K11450163__M0J240
17000	90x220	0.20	20.9	K11450173__M0L220
18000	90x240	0.20	22.5	K11450183__M0L240
20000	90x220	0.20	21.6	K11450203__M0L220
23000	90x240	0.20	23.1	K11450233__M0L240

**RATED
VOLTAGE
VDC**

450V

PART NUMBER SYSTEM FOR SCREW TYPE CAPACITORS

New PART-NUMBER CODE in use since Sep 2010. Total length is 17 digits.
Please see examples below and have a reference code from the standard ratings capacitors pages.



EXAMPLES

K	0	1	1	0	0	2	2	3	0	H	M	0	H	1	0	5	K01 100V 22000µF, Hi ripple, -20%+20%, 63x105
K	0	1	0	6	3	2	2	3	S	H	Q	0	G	1	0	5	K01 63V 22000µF, stud M12x16, Hi rip. -10%+30%, 51x105
K	0	2	0	4	0	1	0	4	0	H	M	0	J	1	4	3	K02 40V 100000µF, Hi ripple, -20%+20%, 76x143

Specifications subject to change without notice

(*) Note for INSERT STYLE digit_11

M5 long insert style dedicated to not insulated bus bar (+2 mm height versus STD High Ripple code)