

# K16 TYPE -40°C +85°C 5000H

RoHS Compliant

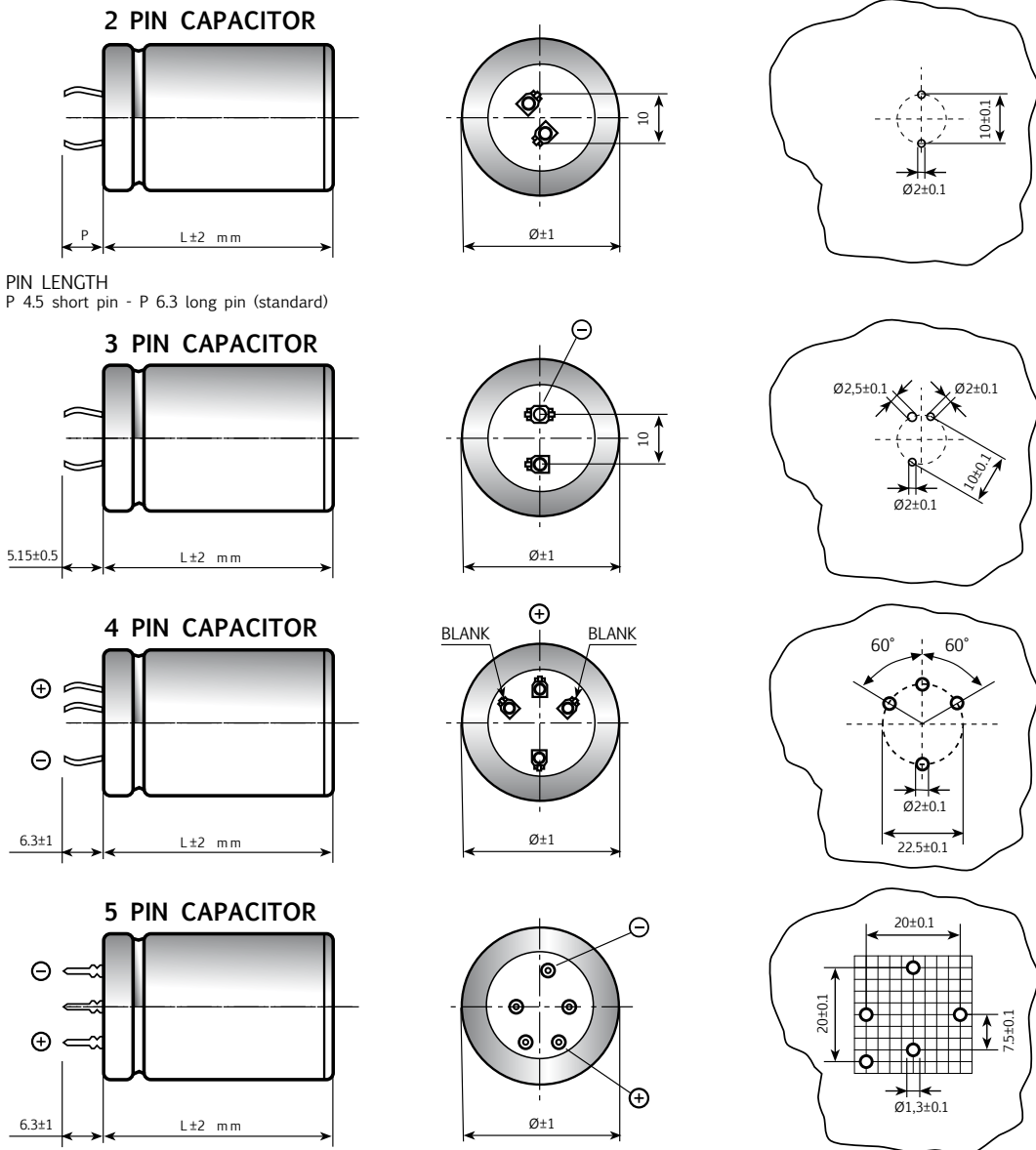
- Surge-proof capacitor in aluminium can with insulation sleeve.
- Safety vent at bottom case or aside case.
- Snap in terminals for PCB mounting.
- 2-4 pins available (d=45mm: 4 pins only).
- Large size snap in.

## APPLICATIONS

Professional switch mode power supplies. Professional power electronics.

Dimensions in mm.

Circuit board hole dimensions



Ø	22	25	30	35	40	45	50
2 PIN	●	●	●	●	●		
3 PIN		●	●	●			
4 PIN				●	●	●	●
5 PIN					●		

On demand, only for capacitors with diam  $\geq 35$ mm: octagonal can shape for long stress vibration applications.

## SPECIFICATIONS

<b>Temperature Range</b>	Operating: -40°C +85°C Storage : Preferably below +25°C, not exceeding +40°C						
<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 820 µF to 2700 µF						
<b>Capacitance Tolerance</b>	±20% at 100 Hz, 20°C [M class IEC-62]						
<b>Leakage Current (I<sub>L</sub>) (mA, 5 min, 20°C)</b>	max I <sub>L</sub> = 0.006 C <sub>r</sub> V <sub>r</sub> + 4 µA At 85°C max I <sub>L</sub> = 0.04 C <sub>r</sub> V <sub>r</sub> µA		Kendeil product limit: I <sub>L</sub> = 0.003 C <sub>r</sub> V <sub>r</sub>				
<b>Ripple current (I<sub>r</sub>)</b>	Refer to table at 85°C and 100Hz :						
	FREQUENCY	50Hz	100Hz	500 Hz	1000Hz	>10kHz	
	MULTIPLIER	0.88	1.0	1.45	1.5	1.55	
	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
	Maximum internal temperature	98°C					
<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, amplitude 0.75 mm max acceleration 10 G for 3x2 h						
<b>Withstand voltage (between terminals bundled and plate)</b>	2500 VAC for 1 min						
<b>Life test</b>	After 2,000 hours application of rated voltage at 85°C capacitors meet characteristics aside		Cap change tan δ Leakage current (I <sub>L</sub> ) Impedance (Z)	≤ 10% ≤ 130% < initial limit ≤ 130%			
<b>Shelf life</b>	After leaving capacitors under no load for 500 hours at 85°C, when restored at 20°C meet specifications aside		Cap change tan δ Leakage current (I <sub>L</sub> )	≤ ±15% ≤ 150% < initial limit			
<b>Useful life (V<sub>n</sub>, Temp rated I ripple applied)</b>	> 5,000 h at 85°C > 200000 h at 40°C						
<b>Failure percentage Failure rate</b>	≤ 1% (during useful life) ≤ 33 fit (33 10 <sup>-9</sup> /h)						
<b>Self inductance</b>	Approx. 20 nH						
<b>Damp heat test (V<sub>n</sub> applied, 2000 hours, 85% RH)</b>	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>Marking information</b>	minus pole band aside within an angle of 41° ± 25°						
<b>Reference standards</b>	CECC 30.301 - IEC 60384-4 LONG LIFE GRADE						

## K16 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 85°C	PART NUMBER termination digit excluded
1000	35x77	0.10	90	80	4.50	K16400102_PM0E077
1200	40x60	0.10	89	79	4.50	K16400122_PM0F060
1500	40x77	0.10	75	64	5.80	K16400152_PM0F077
1500	45x60	0.10	80	70	4.90	K16400152_PM0N060
1800	40x97	0.10	60	50	6.60	K16400182_PM0F097
1800	45x77	0.10	70	60	6.00	K16400182_PM0N077
1800	50x60	0.10	70	60	6.30	K16400182_PM0V060
2000	40x105	0.10	45	35	7.60	K16400202_PM0F105
2200	45x97	0.10	55	45	7.30	K16400222_PM0N097
2200	50x77	0.10	55	45	7.40	K16400222_PM0V077
2700	45x105	0.10	39	27	9.00	K16400272_PM0N105
3300	50x105	0.10	37	25	10.00	K16400332_PM0V105

**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 $\Omega$ 10 kHz 20°C	I <sub>r</sub> a.c. A max 100 Hz 85°C	PART NUMBER termination digit excluded
820	35x77	0.15	220	200	3.65	K16420821_PM0E077
1000	40x60	0.15	200	170	4.90	K16420102_PM0F060
1200	40x77	0.15	190	150	4.90	K16420122_PM0F077
1200	45x60	0.15	180	140	4.90	K16420122_PM0N060
1500	40x97	0.15	140	110	5.56	K16420152_PM0F097
1500	45x77	0.15	150	120	5.36	K16420152_PM0N077
1500	50x60	0.10	150	110	4.70	K16420152_PM0V060
1800	40x105	0.15	120	100	6.40	K16420182_PM0F105
1800	50x77	0.10	120	106	5.60	K16420182_PM0V077
2200	45x97	0.15	112	102	6.70	K16420222_PM0N097
2200	50x105	0.10	112	100	7.00	K16420222_PM0V105
2700	50x105	0.10	101	102	7.40	K16420272_PM0V105

**RATED  
VOLTAGE  
VDC**

**420V**

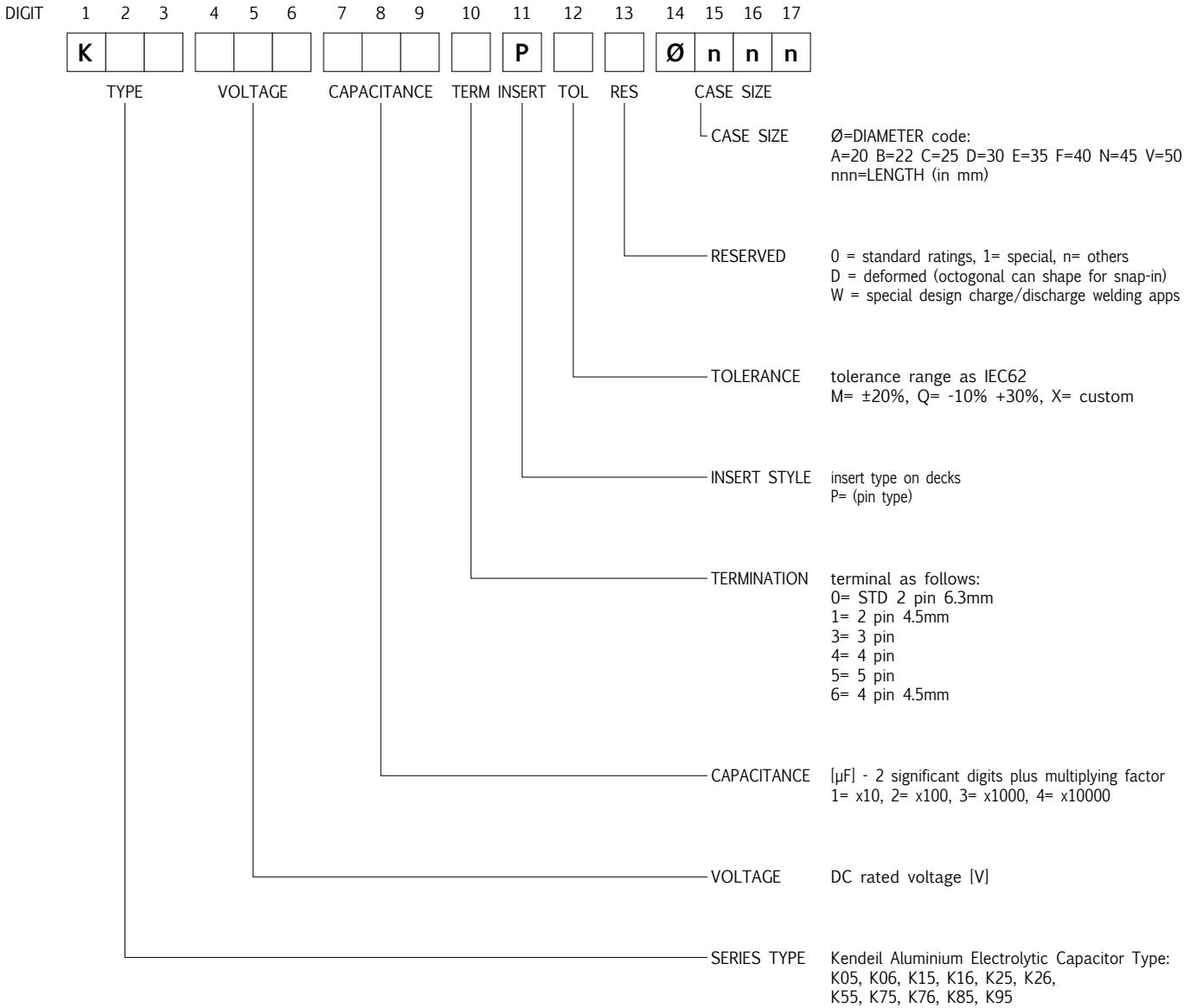
Cap $\mu\text{F}$	$\varnothing \times L$ mm	Tan $\delta$ MAX 100 Hz 20°C	ESR TYP m $\Omega$ 100 Hz 20°C	Z TYP m $\Omega$ 10 kHz 20°C	I <sub>r</sub> a.c. A max 100 Hz 85°C	PART NUMBER termination digit excluded
820	35x77	0.15	215	195	3.65	K16450821_PM0E077
1000	40x60	0.15	195	165	4.90	K16450102_PM0F060
1200	40x77	0.15	183	142	4.90	K16450122_PM0F077
1200	45x60	0.15	180	140	4.90	K16450122_PM0N060
1500	40x97	0.15	140	110	5.56	K16450152_PM0F097
1500	45x77	0.15	150	120	5.36	K16450152_PM0N077
1500	50x60	0.10	140	110	4.7	K16450152_PM0V060
1800	45x97	0.15	128	110	6.50	K16450182_PM0N097
1800	50x77	0.10	128	108	5.6	K16450182_PM0V077
2200	45x105	0.15	112	102	6.80	K16450222_PM0N105
2700	50x105	0.10	112	102	7.4	K16450272_PM0V105

**RATED  
VOLTAGE  
VDC**

**450V**

## PART NUMBER SYSTEM FOR SNAP-IN 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	5	4	5	0	4	7	1	0	P	M	0	E	0	5	0
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K05 450V 470µF, standard pin, ±20%, 35x50

Specifications subject to change without notice