

K05 TYPE -40°C +105°C 5000H

RoHS Compliant

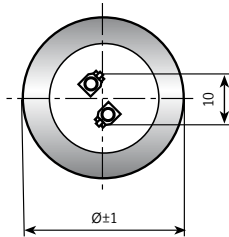
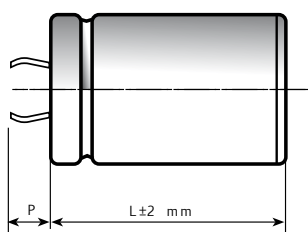
- Surge-proof capacitor in aluminium can with insulation sleeve
- Safety vent at bottom case or aside case.
- Snap in terminals for PCB mounting.
- Very high CV for unit volume with low ESR.
- High ripple current, in small dimensions case size.
- Extended temperature range with outstanding reliability.

APPLICATIONS

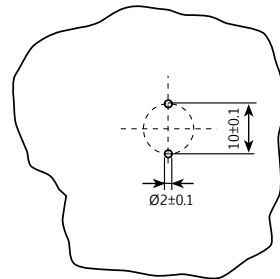
Professional switch mode power supplies. Professional power electronics.

Dimensions in mm.

2 PIN CAPACITOR

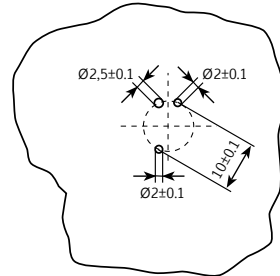
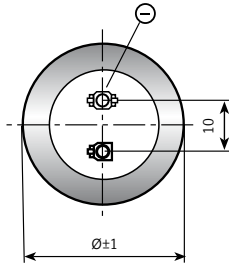
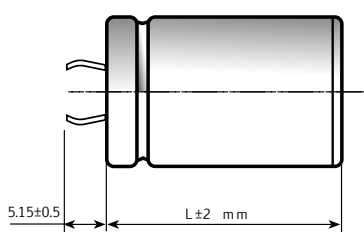


Circuit board
hole dimensions

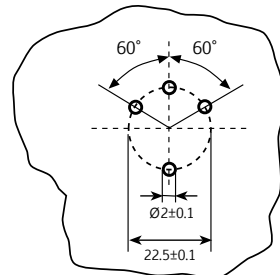
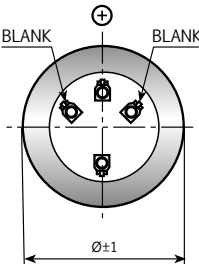
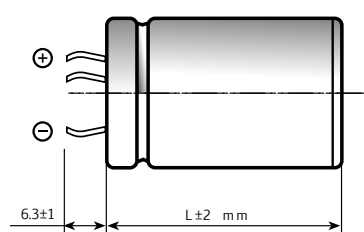


PIN LENGTH
P 4.5 short pin
P 6.3 long pin (standard)

3 PIN CAPACITOR



4 PIN CAPACITOR



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

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

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 _r)	from 16V to 500V DC																																																					
Surge Voltage (V _p)	V _p = 1.15 V _r (V _r ≤ 250V DC) V _p = 1.10 V _r (V _r > 250V DC)																																																					
Rated Capacitance Range	from 68 µF to 47,000 µF																																																					
Capacitance Tolerance	±20% at 100 Hz, 20°C [M class IEC-62]																																																					
Leakage Current (I _L) (mA, 5 min, 20°C)	max I _L = 0.006 C _r V _r + 4 µA Kendeil product limit : I _L = 0.003 C _r V _r At 85°C max I _L = 0.02 C _r V _r µA																																																					
Ripple current (I _r)	Refer to table at 105°C and 100Hz. For different temperature and frequency multiplier must be used as follows: <table><tr><td>FREQUENCY</td><td>50Hz</td><td>100Hz</td><td>500 Hz</td><td>1000Hz</td><td>>10kHz</td></tr><tr><td>MULTIPLIER (0-25V V_r DC)</td><td>0.91</td><td>1.0</td><td>1.15</td><td>1.15</td><td>1.2</td></tr><tr><td>MULTIPLIER (40-100V V_r DC)</td><td>0.88</td><td>1.0</td><td>1.35</td><td>1.40</td><td>1.45</td></tr><tr><td>MULTIPLIER (160-450V V_r DC)</td><td>0.88</td><td>1.0</td><td>1.45</td><td>1.50</td><td>1.55</td></tr></table> <table><tr><td>AMBIENT TEMP.</td><td>35°C</td><td>45°C</td><td>55°C</td><td>65°C</td><td>75°C</td><td>85°C</td><td>95°C</td><td>105°C</td><td>110°C</td></tr><tr><td>MULTIPLIER</td><td>3.0</td><td>2.80</td><td>2.60</td><td>2.40</td><td>2.20</td><td>1.80</td><td>1.50</td><td>1.0</td><td>0.5</td></tr></table> Maximum internal temperature 108°C										FREQUENCY	50Hz	100Hz	500 Hz	1000Hz	>10kHz	MULTIPLIER (0-25V V _r DC)	0.91	1.0	1.15	1.15	1.2	MULTIPLIER (40-100V V _r DC)	0.88	1.0	1.35	1.40	1.45	MULTIPLIER (160-450V V _r DC)	0.88	1.0	1.45	1.50	1.55	AMBIENT TEMP.	35°C	45°C	55°C	65°C	75°C	85°C	95°C	105°C	110°C	MULTIPLIER	3.0	2.80	2.60	2.40	2.20	1.80	1.50	1.0	0.5
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AMBIENT TEMP.	35°C	45°C	55°C	65°C	75°C	85°C	95°C	105°C	110°C																																													
MULTIPLIER	3.0	2.80	2.60	2.40	2.20	1.80	1.50	1.0	0.5																																													
Insulation Resistance	At 100V DC for 1 min is >100 MΩ across insulating sleeve and terminals.																																																					
Vibration Resistance	Frequency range: 10 Hz to 500 Hz, amplitude 0.75 mm max acceleration 10g for 3x2 h																																																					
Life test	After 2,000 hours application of rated voltage at 105°C capacitors meet characteristics aside: <table><tr><td>for all sizes with V ≤ 100V; all voltage capacitors with diameter ≤ 35mm</td><td>Cap change tan δ Leakage current (I_L) Impedance (Z)</td><td>≤ ±20% ≤ 200% < initial limit ≤ 200%</td></tr><tr><td>for V ≥ 160V and for capacitors with diameter ≥ 40mm</td><td>Cap change tan δ Leakage current (I_L) Impedance (Z)</td><td>≤ ±10% ≤ 130% < initial limit ≤ 130%</td></tr></table>										for all sizes with V ≤ 100V; all voltage capacitors with diameter ≤ 35mm	Cap change tan δ Leakage current (I _L) Impedance (Z)	≤ ±20% ≤ 200% < initial limit ≤ 200%	for V ≥ 160V and for capacitors with diameter ≥ 40mm	Cap change tan δ Leakage current (I _L) Impedance (Z)	≤ ±10% ≤ 130% < initial limit ≤ 130%																																						
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Shelf life	After leaving capacitors under no load for 500 hours at 105°C, when restored at 20°C meet specifications aside <table><tr><td>Cap change tan δ Leakage current (I_L)</td><td>≤ ±15% ≤ 150% < initial limit</td></tr></table>										Cap change tan δ Leakage current (I _L)	≤ ±15% ≤ 150% < initial limit																																										
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Useful life (V _n , Temp rated I ripple applied)	250,000 h at 40°C 15,000 h at 85°C 5,000 h at 105°C																																																					
Failure percentage Failure rate	≤ 1% (during useful life) ≤ 30 fit (30 10 ⁻⁹ /h) (V _r ≤ 160V DC) ≤ 40 fit (40 10 ⁻⁹ /h) (V _r > 160V DC)																																																					
Self inductance	Approx. 20 nH																																																					
Reference standards	CECC 30.301 - IEC 60384-4 LONG LIFE GRADE																																																					

K05 TYPE STANDARD RATINGS

Cap μ F	Ø x L mm	Tan δ MAX 100 Hz 20°C	ESR TYP m Ω 100 Hz 20°C	Z TYP m Ω 10 kHz 20°C	Ir a.c. A max 100 Hz 105°C	PART NUMBER termination digit excluded
6800	25x30	0.30	55	40	1.9	K05016682_PM0C030
10000	25x40	0.40	45	35	2.0	K05016103_PM0C040
10000	30x30	0.40	40	35	2.0	K05016103_PM0D030
15000	25x40	0.45	40	35	2.6	K05016153_PM0C040
15000	30x40	0.45	40	35	2.8	K05016153_PM0D040
22000	30x40	0.60	35	24	3.1	K05016223_PM0D040
22000	35x40	0.60	35	24	3.3	K05016223_PM0E040
33000	35x50	0.70	25	20	3.6	K05016333_PM0E050
47000	35x50	0.90	22	20	4.9	K05016473_PM0E050

**RATED
VOLTAGE
VDC**

16V

Cap μ F	Ø x L mm	Tan δ MAX 100 Hz 20°C	ESR TYP m Ω 100 Hz 20°C	Z TYP m Ω 10 kHz 20°C	Ir a.c. A max 100 Hz 105°C	PART NUMBER termination digit excluded
4700	25x30	0.25	53	45	1.8	K05025472_PM0C030
6800	25x30	0.25	50	38	2.0	K05025682_PM0C030
6800	30x30	0.30	50	38	2.2	K05025682_PM0D030
10000	25x40	0.40	40	35	2.4	K05025103_PM0C040
10000	30x30	0.40	40	35	2.3	K05025103_PM0D030
15000	30x40	0.45	39	28	2.9	K05025153_PM0D040
15000	35x40	0.45	39	28	3.2	K05025153_PM0E040
22000	35x50	0.60	30	22	3.3	K05025223_PM0E050
33000	35x50	0.70	22	18	4.3	K05025333_PM0E050

**RATED
VOLTAGE
VDC**

25V

Cap μ F	Ø x L mm	Tan δ MAX 100 Hz 20°C	ESR TYP m Ω 100 Hz 20°C	Z TYP m Ω 10 kHz 20°C	Ir a.c. A max 100 Hz 105°C	PART NUMBER termination digit excluded
3300	25x30	0.20	72	58	1.5	K05040332_PM0C030
4700	25x30	0.20	50	38	1.8	K05040472_PM0C030
4700	30x25	0.20	50	38	1.8	K05040472_PM0D025
6800	25x40	0.30	48	33	2.3	K05040682_PM0C040
6800	30x30	0.30	48	33	2.4	K05040682_PM0D030
10000	30x40	0.40	39	28	2.8	K05040103_PM0D040
10000	35x30	0.40	39	28	2.9	K05040103_PM0E030
10000	35x40	0.40	39	28	3.1	K05040103_PM0E040
15000	30x40	0.45	32	22	2.8	K05040153_PM0D040
15000	35x40	0.45	32	22	3.7	K05040153_PM0E040
22000	35x40	0.55	28	20	5.1	K05040223_PM0E040
22000	35x50	0.55	28	20	5.4	K05040223_PM0E050

**RATED
VOLTAGE
VDC**

40V

K05 TYPE STANDARD RATINGS

Cap µF	Ø x L mm	Tan δ MAX 100 Hz 20°C	ESR TYP m Ω 100 Hz 20°C	Z TYP m Ω 10 kHz 20°C	Ir a.c. A max 100 Hz 105°C	PART NUMBER termination digit excluded
2200	25x30	0.20	72	58	1.5	K05050222_PM0C030
3300	25x30	0.20	48	38	1.6	K05050332_PM0C030
4700	25x30	0.20	50	35	2.0	K05050472_PM0C030
4700	30x25	0.20	50	35	2.0	K05050472_PM0D025
6800	30x30	0.30	46	28	2.9	K05050682_PM0D030
6800	30x40	0.30	46	28	3.2	K05050682_PM0D040
10000	30x40	0.35	31	22	3.4	K05050103_PM0D040
10000	35x30	0.35	31	22	3.2	K05050103_PM0E030
15000	35x50	0.45	26	18	4.7	K05050153_PM0E050
22000	40x50	0.50	25	18	5.5	K05050223_PM0F050

**RATED
VOLTAGE
VDC**

50V

Cap µF	Ø x L mm	Tan δ MAX 100 Hz 20°C	ESR TYP m Ω 100 Hz 20°C	Z TYP m Ω 10 kHz 20°C	Ir a.c. A max 100 Hz 105°C	PART NUMBER termination digit excluded
2200	25x30	0.15	79	60	1.5	K05063222_PM0C030
3300	25x40	0.15	50	40	2.3	K05063332_PM0C040
3300	30x30	0.15	50	40	2.1	K05063332_PM0D030
4700	25x40	0.20	40	29	2.2	K05063472_PM0C040
4700	30x30	0.20	40	29	2.4	K05063472_PM0D030
4700	30x40	0.20	40	29	2.8	K05063472_PM0D040
6800	30x40	0.30	35	25	3.0	K05063682_PM0D040
6800	35x40	0.30	35	25	4.4	K05063682_PM0E040
10000	35x50	0.35	30	23	5.3	K05063103_PM0E050

**RATED
VOLTAGE
VDC**

63V

Cap µF	Ø x L mm	Tan δ MAX 100 Hz 20°C	ESR TYP m Ω 100 Hz 20°C	Z TYP m Ω 10 kHz 20°C	Ir a.c. A max 100 Hz 105°C	PART NUMBER termination digit excluded
1000	22x30	0.10	127	100	1.3	K05100102_PM0B030
1000	25x30	0.10	127	100	1.7	K05100102_PM0C030
1000	30x25	0.10	127	100	1.7	K05100102_PM0D025
1500	25x40	0.12	105	82	2.0	K05100152_PM0C040
1500	30x30	0.12	105	82	1.8	K05100152_PM0D030
2200	30x30	0.15	71	60	2.7	K05100222_PM0D030
2200	30x40	0.15	71	60	2.7	K05100222_PM0D040
3300	30x50	0.15	48	39	3.0	K05100332_PM0D050
3300	35x40	0.15	48	39	3.3	K05100332_PM0E040
4700	35x40	0.15	42	30	3.6	K05100472_PM0E040
4700	35x50	0.20	33	26	4.4	K05100472_PM0E050
5600	35x50	0.20	33	24	4.5	K05100562_PM0E050
5600	40x50	0.20	33	24	4.8	K05100562_PM0F050
6800	35x50	0.20	32	23	4.5	K05100682_PM0E050
6800	40x50	0.20	33	24	4.9	K05100682_PM0F050

**RATED
VOLTAGE
VDC**

100V

K05 TYPE STANDARD RATINGS

Cap μF	$\varnothing \times \text{L}$ mm	Tan δ MAX 100 Hz 20°C	ESR TYP m Ω 100 Hz 20°C	Z TYP m Ω 10 kHz 20°C	I _r a.c. A max 100 Hz 105°C	PART NUMBER termination digit excluded
220	22x30	0.10	440	340	0.9	K05200221_PM0B030
220	25x30	0.10	440	340	1.1	K05200221_PM0C030
330	22x30	0.10	240	133	1.1	K05200331_PM0B030
330	25x25	0.10	240	133	0.7	K05200331_PM0C025
330	25x30	0.10	240	133	1.2	K05200331_PM0C030
470	25x30	0.10	169	98	1.6	K05200471_PM0C030
680	25x40	0.10	145	87	1.7	K05200681_PM0C040
680	30x40	0.10	145	87	2.0	K05200681_PM0D040
1000	30x40	0.10	95	63	2.1	K05200102_PM0D040
1000	35x30	0.10	95	63	2.4	K05200102_PM0E030
1500	30x50	0.10	70	41	2.4	K05200152_PM0D050
1500	35x50	0.10	70	41	2.6	K05200152_PM0E050
2200	35x50	0.12	45	33	2.8	K05200222_PM0E050

Cap μF	$\varnothing \times \text{L}$ mm	Tan δ MAX 100 Hz 20°C	ESR TYP m Ω 100 Hz 20°C	Z TYP m Ω 10 kHz 20°C	I _r a.c. A max 100 Hz 105°C	PART NUMBER termination digit excluded
100	25x30	0.10	950	730	0.7	K05250101_PM0C030
150	25x30	0.10	530	290	0.7	K05250151_PM0C030
220	25x30	0.10	370	240	0.9	K05250221_PM0C030
330	30x30	0.10	260	153	1.2	K05250331_PM0D030
470	25x40	0.10	180	110	1.5	K05250471_PM0C040
470	30x30	0.10	180	110	1.5	K05250471_PM0D030
680	35x40	0.10	145	95	1.8	K05250681_PM0E040
1000	35x40	0.10	98	65	2.0	K05250102_PM0E040
1000	35x50	0.10	98	65	2.6	K05250102_PM0E050
1500	35x50	0.12	75	43	2.8	K05250152_PM0E050

**RATED
VOLTAGE
VDC**

200V

**RATED
VOLTAGE
VDC**

250V

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

K05 TYPE STANDARD RATINGS

Cap µF	Ø x L mm	Tan δ MAX 100 Hz 20°C	ESR TYP m Ω 100 Hz 20°C	Z TYP m Ω 10 kHz 20°C	Ir a.c. A max 100 Hz 105°C	PART NUMBER termination digit excluded
68	22x30	0.10	1405	1050	0.47	K05400680_PM0B030
100	22x30	0.10	796	550	0.5	K05400101_PM0B030
100	25x30	0.10	796	550	0.5	K05400101_PM0C030
150	25x30	0.10	530	380	0.6	K05400151_PM0C030
150	30x30	0.10	530	380	0.8	K05400151_PM0D030
220	25x40	0.10	360	250	1.0	K05400221_PM0C040
220	30x30	0.10	360	250	1.1	K05400221_PM0D030
270	25x40	0.10	320	199	1.2	K05400271_PM0C040
330	25x45	0.10	249	170	1.3	K05400331_PM0C045
330	30x40	0.10	240	170	1.4	K05400331_PM0D040
330	35x30	0.10	240	170	1.4	K05400331_PM0E030
470	30x50	0.10	170	125	1.9	K05400471_PM0D050
470	35x40	0.10	170	125	1.9	K05400471_PM0E040
470	35x50	0.10	170	125	2.2	K05400471_PM0E050
680	35x50	0.10	158	110	2.2	K05400681_PM0E050
680	40x50	0.10	158	110	2.4	K05400681_PM0F050
820	35x60	0.10	121	97	2.5	K05400821_PM0E060
1000	40x60	0.10	110	90	3.1	K05400102_PM0F060
1500	40X97	0.10	99	68	5.8	K05400152_PM0F097

**RATED
VOLTAGE
VDC**

400V

Cap µF	Ø x L mm	Tan δ MAX 100 Hz 20°C	ESR TYP m Ω 100 Hz 20°C	Z TYP m Ω 10 kHz 20°C	Ir a.c. A max 100 Hz 105°C	PART NUMBER termination digit excluded
68	22x30	0.10	1405	1050	0.47	K05450680_PM0B030
100	25x30	0.10	796	710	0.5	K05450101_PM0C030
100	30x25	0.10	796	550	0.7	K05450101_PM0D025
100	30x30	0.10	796	550	0.8	K05450101_PM0D030
150	25x40	0.10	660	490	0.9	K05450151_PM0C040
150	30x30	0.10	530	380	0.8	K05450151_PM0D030
150	30x40	0.10	530	380	1.0	K05450151_PM0D040
220	25x50	0.10	380	310	0.9	K05450221_PM0C050
220	30x40	0.10	360	250	1.1	K05450221_PM0D040
220	35x30	0.10	360	250	1.0	K05450221_PM0E030
330	30x50	0.10	240	170	1.25	K05450331_PM0D050
330	35x40	0.10	240	170	1.3	K05450331_PM0E040
330	35x50	0.10	240	170	1.4	K05450331_PM0E050
470	35x50	0.10	170	125	1.8	K05450471_PM0E050
680	35x50	0.15	160	116	2.1	K05450681_PM0E050
680	35x60	0.12	158	110	2.2	K05450681_PM0E060
820	40x60	0.13	125	100	2.3	K05450821_PM0F060
1000	40x60	0.13	110	90	3.2	K05450102_PM0F060
1500	40X97	0.15	90	80	5.1	K05450152_PM0F097

**RATED
VOLTAGE
VDC**

450V

K05 TYPE STANDARD RATINGS

Cap μF	$\varnothing \times L$ mm	Tan δ MAX 100 Hz 20°C	ESR TYP m Ω 100 Hz 20°C	Z TYP m Ω 10 kHz 20°C	Ir a.c. A max 100 Hz 105°C	PART NUMBER termination digit excluded
68	25x30	0.10	1490	1070	0.42	K05500680_PM0C030
100	30x30	0.10	935	620	0.55	K05500101_PM0D030
150	30x40	0.10	620	410	0.75	K05500151_PM0D040
180	30x50	0.10	512	340	0.90	K05500181_PM0D050
220	35x40	0.10	455	295	0.95	K05500221_PM0E040
270	35x50	0.11	320	214	1.60	K05500271_PM0E050
330	35x50	0.11	296	203	1.65	K05500331_PM0E050
330	35x60	0.11	296	203	1.78	K05500331_PM0E060
330	40x50	0.11	296	203	1.80	K05500331_PM0F050
470	40x60	0.13	211	156	2.00	K05500471_PM0F060

**RATED
VOLTAGE
VDC**

500V