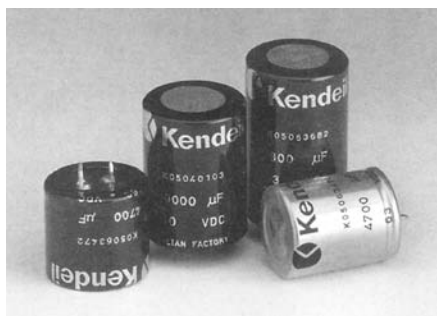


K05 TYPE



- Surge-proof electrolytic 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.

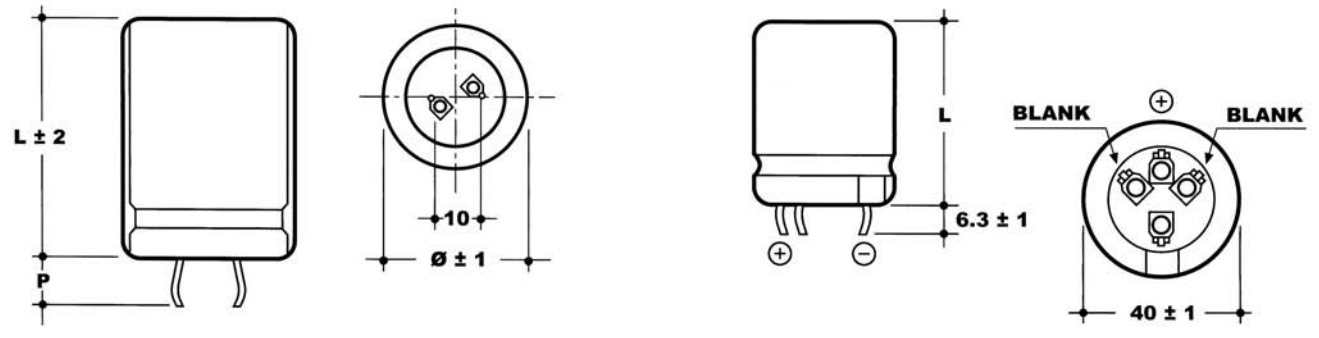
RoHS Compliant.

SPECIFICATION

General Characteristics																																											
Temperature Range	Operating: -40°C +105°C [Environmental classification 40/105/56 IEC-68] Storage: Preferably below +25°C, not exceeding +40°C																																										
Rated Voltage Range (V _r)	From 16V to 450V 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 100 Hz. For different temperature and frequency multiplier must be used as follows: <table border="1"> <thead> <tr> <th>Frequency</th> <th>50 Hz</th> <th>100 Hz</th> <th>500 Hz</th> <th>1.000 Hz</th> <th>>10k Hz</th> </tr> </thead> <tbody> <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> </tbody> </table> <table border="1"> <thead> <tr> <th>Ambient Temperature</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> </tr> </thead> <tbody> <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> </tr> </tbody> </table> Maximum internal temperature 108°C	Frequency	50 Hz	100 Hz	500 Hz	1.000 Hz	>10k Hz	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 Temperature	35°C	45°C	55°C	65°C	75°C	85°C	95°C	105°C	Multiplier	3.0	2.80	2.60	2.40	2.20	1.80	1.50	1.0
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Ambient Temperature	35°C	45°C	55°C	65°C	75°C	85°C	95°C	105°C																																			
Multiplier	3.0	2.80	2.60	2.40	2.20	1.80	1.50	1.0																																			
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 border="1"> <tbody> <tr> <td>Cap change</td> <td>≤ 20%</td> </tr> <tr> <td>tan δ</td> <td>≤ 200%</td> </tr> <tr> <td>Leakage current (I_L)</td> <td>< initial limit</td> </tr> <tr> <td>Impedance (Z)</td> <td>≤ 200%</td> </tr> </tbody> </table>	Cap change	≤ 20%	tan δ	≤ 200%	Leakage current (I _L)	< initial limit	Impedance (Z)	≤ 200%																																		
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Shelf life	After leaving capacitors under no load for 500 hours at 85°C, when restored at 20°C meet specifications aside <table border="1"> <tbody> <tr> <td>Cap change</td> <td>≤ ±15%</td> </tr> <tr> <td>tan δ</td> <td>≤ 150%</td> </tr> <tr> <td>Leakage current (I_L)</td> <td>< initial limit</td> </tr> </tbody> </table>	Cap change	≤ ±15%	tan δ	≤ 150%	Leakage current (I _L)	< initial limit																																				
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Leakage current (I _L)	< initial limit																																										
Useful life	> 250,000 h at 40°C > 15,000 h at 85°C ≤ 5,000 h at 105°C																																										
Failure percentage	≤ 1% (during useful life)																																										
Failure rate	≤ 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																																										

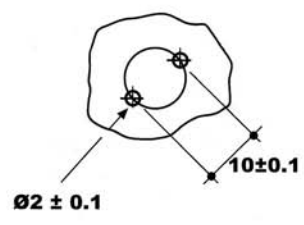
DIMENSIONS (mm)

(only $\varnothing 40$ mm)

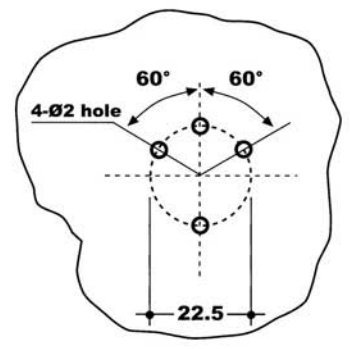


PIN LENGTH
 P 4.5 short pin
 6.3 long pin (standard)

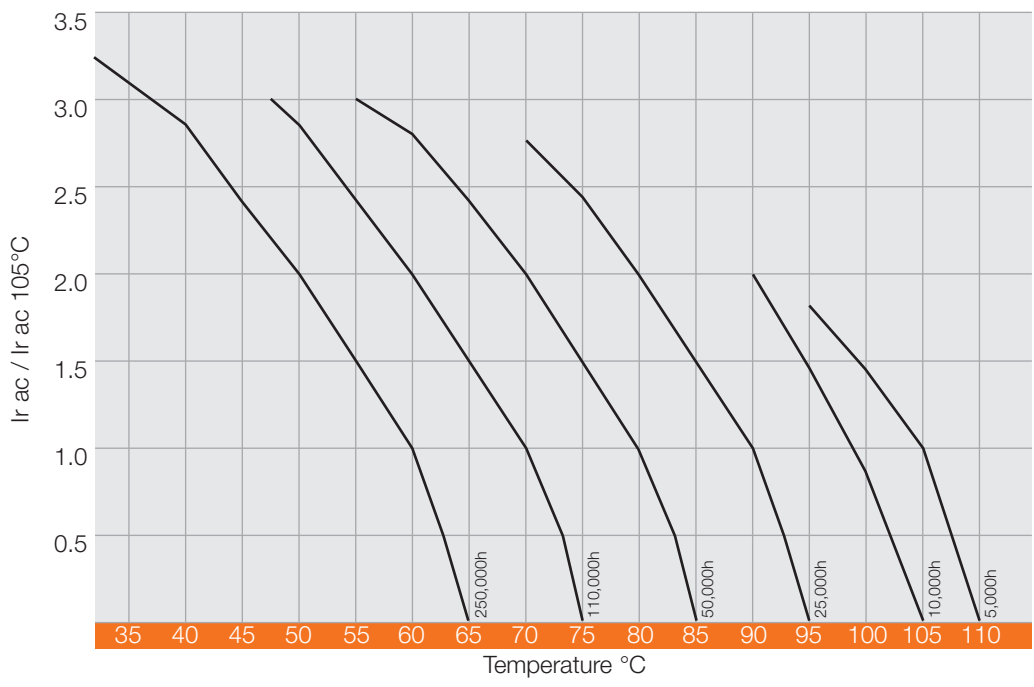
Circuit board hole dimensions



Circuit board hole dimensions



USEFUL LIFE K05



K05 Type Standard Ratings

Rated Voltage V DC	Capacitance µF	ØxL 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 stud and insert style excluded	
16V	6.800	25x30	0.30	55	40	1.9	K05016682_PM0CB	
	10.000	25x40	0.40	45	35	2.0	K05016103_PM0CD	
	10.000	30x30	0.40	40	35	2.0	K05016103_PM0DB	
	15.000	25x40	0.45	40	35	2.6	K05016153_PM0CD	
	15.000	30x40	0.45	40	35	2.8	K05016153_PM0DD	
	22.000	30x40	0.60	35	24	3.1	K05016223_PM0DD	
	22.000	35x40	0.60	35	24	3.3	K05016223_PM0ED	
	33.000	35x50	0.70	25	20	3.6	K05016333_PM0EF	
	47.000	35x50	0.90	22	20	4.9	K05016473_PM0EF	
25V	4.700	25x30	0.25	53	45	1.8	K05025472_PM0CB	
	6.800	25x30	0.25	50	38	2.0	K05025682_PM0CB	
	6.800	30x30	0.30	50	38	2.2	K05025682_PM0DB	
	10.000	25x40	0.40	40	35	2.4	K05025103_PM0CD	
	10.000	30x30	0.40	40	35	2.3	K05025103_PM0DB	
	15.000	30x40	0.45	39	28	2.9	K05025153_PM0DD	
	15.000	35x40	0.45	39	28	3.2	K05025153_PM0ED	
	22.000	35x50	0.60	30	22	3.3	K05025223_PM0EF	
	33.000	35x50	0.70	22	18	4.3	K05025333_PM0EF	
	40V	3.300	25x30	0.20	72	58	1.5	K05040332_PM0CB
4.700		25x30	0.20	50	38	1.8	K05040472_PM0CB	
4.700		30x25	0.20	50	38	1.8	K05040472_PM0DA	
6.800		25x40	0.30	48	33	2.3	K05040682_PM0CD	
6.800		30x30	0.30	48	33	2.4	K05040682_PM0DB	
10.000		30x40	0.40	39	28	2.8	K05040103_PM0DD	
10.000		35x30	0.40	39	28	2.9	K05040103_PM0EB	
15.000		30x40	0.45	32	22	2.8	K05040153_PM0DD	
15.000		35x40	0.45	32	22	3.7	K05040153_PM0ED	
22.000		35x50	0.55	28	20	5.4	K05040223_PM0EF	
50V		2.200	25x30	0.20	72	58	1.5	K05050222_PM0CB
		3.300	25x30	0.20	48	38	1.6	K05050332_PM0CB
	4.700	25x30	0.20	50	35	2.0	K05050472_PM0CB	
	4.700	30x25	0.20	50	35	2.0	K05050472_PM0DA	
	4.700	30x30	0.20	50	35	2.4	K05050472_PM0DB	
	6.800	30x30	0.30	46	28	2.9	K05050682_PM0DB	
	6.800	30x40	0.30	46	28	3.2	K05050682_PM0DD	
	10.000	30x40	0.35	31	22	3.4	K05050103_PM0DD	
	10.000	35x40	0.35	31	22	3.6	K05050103_PM0ED	
	15.000	35x50	0.45	26	18	4.7	K05050153_PM0EF	
	22.000	40x50	0.50	25	18	5.5	K05050223_PM0FF	

K05 Type Standard Ratings

Rated Voltage V DC	Capacitance μF	$\text{Ø} \times \text{L}$ 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 stud and insert style excluded
63V	2.200	25x30	0.15	79	60	1.5	K05063222_PM0CB
	3.300	25x40	0.15	50	40	2.3	K05063332_PM0CD
	3.300	30x30	0.15	50	40	2.1	K05063332_PM0DB
	4.700	30x30	0.20	40	29	2.4	K05063472_PM0DB
	4.700	30x40	0.20	40	29	2.8	K05063472_PM0DD
	6.800	30x40	0.30	35	25	3.0	K05063682_PM0DD
	6.800	35x40	0.30	35	25	4.4	K05063682_PM0ED
	10.000	35x50	0.35	30	23	5.3	K05063103_PM0EF
100V	1.000	25x30	0.10	127	100	1.7	K05100102_PM0CB
	1.000	30x25	0.10	127	100	1.7	K05100102_PM0DA
	1.500	25x40	0.12	105	82	2.0	K05100152_PM0CD
	1.500	30x30	0.12	105	82	1.8	K05100152_PM0DB
	2.200	30x40	0.15	71	60	2.7	K05100222_PM0DD
	3.300	30x50	0.15	48	39	3.0	K05100332_PM0DF
	3.300	35x40	0.15	48	39	3.3	K05100332_PM0ED
	4.700	35x50	0.20	33	26	4.4	K05100472_PM0EF
	5.600	40x50	0.20	33	24	4.8	K05100562_PM0FF
	6.800	40x50	0.20	33	24	4.9	K05100682_PM0FF
200V	220	22x30	0.10	440	340	0.9	K05200221_PM0BB
	220	25x30	0.10	440	340	1.1	K05200221_PM0CB
	330	22x30	0.10	240	133	1.1	K05200331_PM0BB
	330	25x30	0.10	240	133	1.2	K05200331_PM0CB
	470	25x30	0.10	169	98	1.3	K05200471_PM0CB
	470	30x30	0.10	169	98	1.6	K05200471_PM0DB
	680	25x40	0.10	145	87	1.7	K05200681_PM0CD
	680	30x40	0.10	145	87	2.0	K05200681_PM0DD
	1.000	30x40	0.10	95	63	2.1	K05200102_PM0DD
	1.000	35x40	0.10	95	63	2.4	K05200102_PM0ED
	1.500	30x50	0.10	70	41	2.4	K05200152_PM0DF
	1.500	35x50	0.10	70	41	2.6	K05200152_PM0EF
	2.200	35x50	0.12	45	33	2.8	K05200222_PM0EF
	250V	100	25x30	0.10	950	730	0.7
150		25x30	0.10	530	290	0.7	K05250151_PM0CB
220		25x30	0.10	370	240	0.9	K05250221_PM0CB
330		30x30	0.10	260	153	1.2	K05250331_PM0DB
470		25x40	0.10	180	110	1.5	K05250471_PM0CD
470		30x30	0.10	180	110	1.5	K05250471_PM0DB
680		35x40	0.10	145	95	1.8	K05250681_PM0ED
1.000		35x50	0.10	98	65	2.6	K05250102_PM0EF
1.500		35x50	0.12	75	43	2.8	K05250152_PM0EF

K05 Type Standard Ratings

Rated Voltage V DC	Capacitance µF	ØxL 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 stud and insert style excluded
400V	68	25x30	0.10	1405	1050	0.5	K05400680_PM0CB
	100	25x30	0.10	796	550	0.5	K05400101_PM0CB
	150	25x30	0.10	530	380	0.6	K05400151_PM0CB
	150	30x30	0.10	530	380	0.8	K05400151_PM0DB
	220	25x40	0.10	360	250	1.0	K05400221_PM0CD
	220	30x30	0.10	360	250	1.1	K05400221_PM0DD
	330	30x40	0.10	240	170	1.4	K05400331_PM0DD
	330	35x30	0.10	240	170	1.4	K05400331_PM0EB
	330	35x40	0.10	240	170	1.6	K05400331_PM0ED
	470	35x40	0.10	170	125	1.6	K05400471_PM0ED
	470	35x50	0.10	170	125	1.8	K05400471_PM0EF
	680	35x50	0.10	158	110	1.9	K05400681_PM0EF
	680	40x50	0.10	158	110	2.2	K05400681_PM0FF
	820	35x60	0.10	110	95	2.5	K05400821_PM0EH
	1.000	40x60	0.10	95	70	3.1	K05400102_PM0FH
	1.500	40x97	0.10	99	68	5.79	K05400152_PM0FL

450V	68	25x30	0.10	1405	1050	0.5	K05450680_PM0CB
	100	25x30	0.10	796	710	0.5	K05450101_PM0CB
	100	30x25	0.10	796	550	0.7	K05450101_PM0DA
	100	30x30	0.10	796	550	0.8	K05450101_PM0DB
	150	30x30	0.10	530	380	0.8	K05450151_PM0DB
	150	30x40	0.10	530	380	1.0	K05450151_PM0DD
	220	30x40	0.10	360	250	1.1	K05450221_PM0DD
	220	35x30	0.10	360	250	1.1	K05450221_PM0EB
	330	30x50	0.10	240	170	1.4	K05450331_PM0DF
	330	35x40	0.10	240	170	1.4	K05450331_PM0ED
	330	35x50	0.10	240	170	1.8	K05450331_PM0EF
	470	35x50	0.10	170	125	1.8	K05450471_PM0EF
	680	35x60	0.12	158	110	2.2	K05450681_PM0EH
	1.000	40x60	0.13	110	90	4.2	K05450102_PM0FH
	1.500	40x97	0.15	90	80	5.1	K05450152_PM0FL