

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.

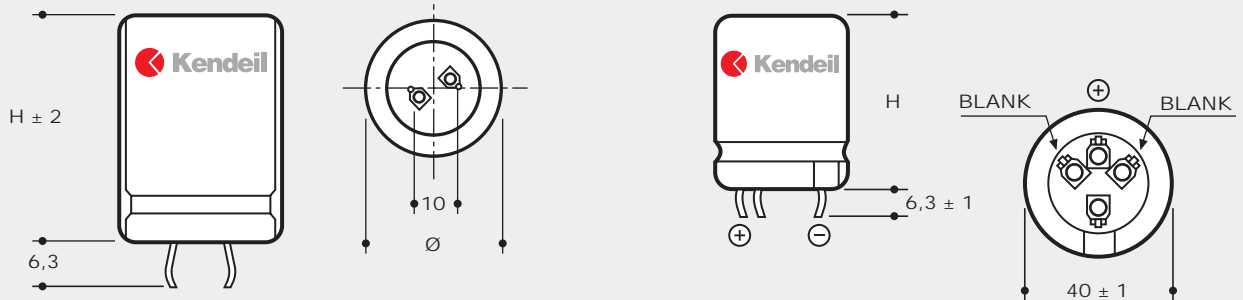
SPECIFICATIONS

GENERAL CHARACTERISTICS

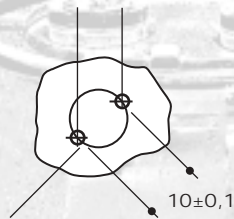
Temperature Range	Operating: -40°C +105°C ($V_r \leq 400V$ DC) Storage : -60°C +85°C	
Rated Voltage Range (V_r)	from 16V to 450V DC	
Surge Voltage (V_p)	$V_p = 1.15 V_r$ ($V_r \leq 250V$ DC) $V_p = 1.10 V_r$ ($V_r > 250V$ DC)	
Rated Capacitance Range	from 68 μF to 47,000 μF	
Capacitance Tolerance	$\pm 20\%$ at 100 Hz, 20°C [M class IEC-62]	
Leakage Current (I_L) (5 min, 20°C)	max $I_L = 0.006 C_r V_r + 4 \mu A$ At 85°C max $I_L = 0.02 C_r V_r \mu A$	Kendeil product limit : $I_L = 0.003 C_r V_r$
Ripple current (I_r)	Refer to table at 105°C and 100Hz. For different temperature and frequency multiplier must be used as follows:	
	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
	MULTIPLIER	3.0 2.80 2.60 2.40 2.20 1.80 1.50 1.0
	Maximum internal temperature	108°C
Insulation Resistance	At 100V DC for 1 min is >100 M Ω 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	Cap change $\leq 30\%$ tan $\delta \leq 100\%$ Leakage current (I _L) < initial limit Impedance (Z) $\leq 200\%$
Shelf life	After leaving capacitors under no load for 500 hours at 85°C, when restored at 20°C meet specifications aside	Cap change $\leq \pm 15\%$ tan $\delta \leq 150\%$ 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 Failure rate	$\leq 1\%$ (during useful life) ≤ 40 fit (40 10^{-9} /h ($V_r \leq 160V$ DC)	
Self inductance	Approx. 20 nH	
Reference standards	CECC 30.301 - IEC 60384-4 LONG LIFE GRADE	

Dimensions in mm.

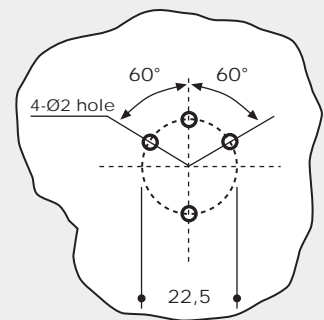
(only $\varnothing 40$ mm.)



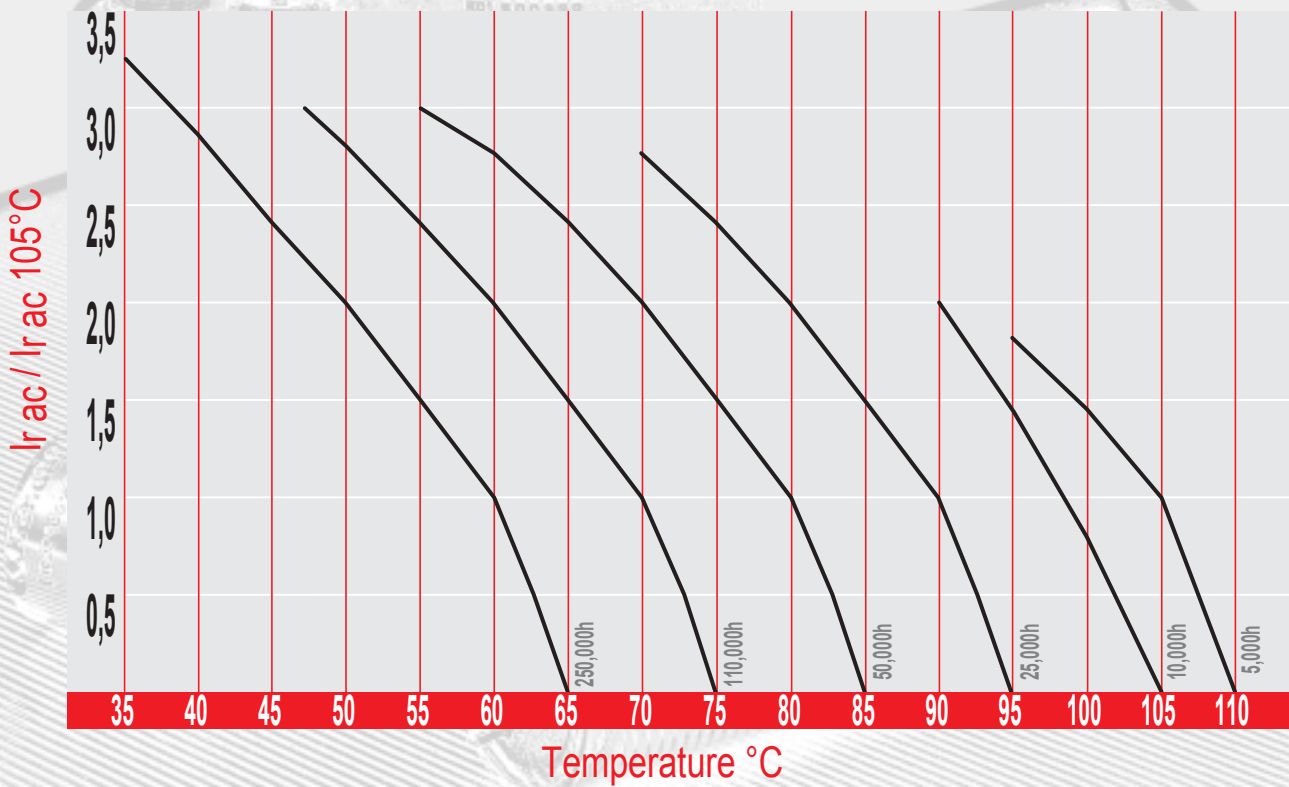
Circuit board hole dimensions



Circuit board hole dimensions



USEFUL LIFE K05



K05 TYPE STANDARD RATINGS

RATED VOLTAGE V DC	CAPACITANCE μF	$\varnothing \times L$ mm	Tan δ MAX 100 Hz 20°C	ESR TYP $m\Omega$ 100 Hz 20°C	Z $m\Omega$ 10 kHz 20°C	I _{r a.c.} A 100 Hz 105°C	PART NUMBER <i>stud and insert style excluded</i>
16V	6800	25x30	0.30	55	40	1.9	K05016682_PM0CB
	10000	25x40	0.40	45	35	2.0	K05016103_PM0CD
	10000	30x30	0.40	40	35	2.0	K05016103_PM0DB
	15000	25x40	0.45	40	35	2.6	K05016153_PM0CD
	15000	30x40	0.45	40	35	2.8	K05016153_PM0DD
	22000	30x40	0.60	35	24	3.1	K05016223_PM0DD
	22000	35x40	0.60	35	24	3.3	K05016223_PM0ED
	33000	35x50	0.70	25	20	3.6	K05016333_PM0EF
	47000	35x50	0.90	22	20	4.9	K05016473_PM0EF
25V	4700	25x30	0.25	53	45	1.8	K05025472_PM0CB
	6800	25x30	0.25	50	38	2.0	K05025682_PM0CB
	6800	30x30	0.30	50	38	2.2	K05025682_PM0DB
	10000	25x40	0.40	40	35	2.4	K05025103_PM0CD
	10000	30x30	0.40	40	35	2.3	K05025103_PM0DB
	15000	30x40	0.45	39	28	2.9	K05025153_PM0DD
	15000	35x40	0.45	39	28	3.2	K05025153_PM0ED
	22000	35x50	0.60	30	22	3.3	K05025223_PM0EF
	33000	35x50	0.70	22	18	4.3	K05025333_PM0EF
40V	3300	25x30	0.20	72	58	1.5	K05040332_PM0CB
	4700	25x30	0.20	50	38	1.8	K05040472_PM0CB
	4700	30x25	0.20	50	38	1.8	K05040472_PM0DA
	6800	25x40	0.30	48	33	2.3	K05040682_PM0CD
	6800	30x30	0.30	48	33	2.4	K05040682_PM0DB
	10000	30x40	0.40	39	28	2.8	K05040103_PM0DD
	10000	35x30	0.40	39	28	2.9	K05040103_PM0EB
	15000	30x40	0.45	32	22	2.8	K05040153_PM0DD
	15000	35x40	0.45	32	22	3.7	K05040153_PM0ED
	22000	35x50	0.55	28	20	5.4	K05040223_PM0EF
	50V	2200	25x30	0.20	72	58	1.5
3300		25x30	0.20	48	38	1.6	K05050332_PM0CB
4700		25x30	0.20	50	35	2.0	K05050472_PM0CB
4700		30x25	0.20	50	35	2.0	K05050472_PM0DA
4700		30x30	0.20	50	35	2.4	K05050472_PM0DB
6800		30x30	0.30	46	28	2.9	K05050682_PM0DB
6800		30x40	0.30	46	28	3.2	K05050682_PM0DD
10000		30x40	0.35	31	22	3.4	K05050103_PM0DD
10000		35x40	0.35	31	22	3.6	K05050103_PM0ED
15000		35x50	0.45	26	18	4.7	K05050153_PM0EF
22000		40x50	0.50	25	18	5.5	K05050223_PM0FF

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RATED VOLTAGE V DC	CAPACITANCE μF	$\varnothing \times L$ mm	Tan δ	ESR	Z	I _{r a.c.}	PART NUMBER <i>stud and insert style excluded</i>
			MAX 100 Hz 20°C	TYP m Ω 100 Hz 20°C	m Ω 10 kHz 20°C	A 100 Hz 105°C	
63V	2200	25x30	0.15	79	60	1.5	K05063222_PM0CB
	3300	25x40	0.15	50	40	2.3	K05063332_PM0CD
	3300	30x30	0.15	50	40	2.1	K05063332_PM0DB
	4700	30x30	0.20	40	29	2.4	K05063472_PM0DB
	4700	30x40	0.20	40	29	2.8	K05063472_PM0DD
	6800	30x40	0.30	35	25	3.0	K05063682_PM0DD
	6800	35x40	0.30	35	25	4.4	K05063682_PM0ED
	10000	35x50	0.35	30	23	5.3	K05063103_PM0EF
100V	1000	25x30	0.10	127	100	1.7	K05100102_PM0CB
	1000	30x25	0.10	127	100	1.7	K05100102_PM0DA
	1500	25x40	0.12	105	82	2.0	K05100152_PM0CD
	1500	30x30	0.12	105	82	1.8	K05100152_PM0DB
	2200	30x40	0.15	71	60	2.7	K05100222_PM0DD
	3300	30x50	0.15	48	39	3.0	K05100332_PM0DF
	3300	35x40	0.15	48	39	3.3	K05100332_PM0ED
	4700	35x50	0.20	33	26	4.4	K05100472_PM0EF
	5600	40x50	0.20	33	24	4.8	K05100562_PM0FF
	6800	40x50	0.20	33	24	4.9	K05100682_PM0FF
	200V	220	22x30	0.10	440	340	0.9
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	3.0	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
1000		30x40	0.10	95	63	2.1	K05200102_PM0DD
1000		35x40	0.10	95	63	2.4	K05200102_PM0ED
1500		30x50	0.10	70	41	2.4	K05200152_PM0DF
1500		35x50	0.10	70	41	2.6	K05200152_PM0EF
2200		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
	1000	35x50	0.10	98	65	2.6	K05250102_PM0EF
	1500	35x50	0.12	75	43	2.8	K05250152_PM0EF

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RATED VOLTAGE V DC	CAPACITANCE μF	$\varnothing \times L$ mm	Tan δ MAX 100 Hz 20°C	ESR TYP $m\Omega$ 100 Hz 20°C	Z $m\Omega$ 10 kHz 20°C	I _{r a.c.} A 100 Hz 105°C	PART NUMBER <i>stud and insert style excluded</i>
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	30x40	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
	1000	40x60	0.10	95	70	3.1	K05400102_PM0FH
	450V	68	25x30	0.10	1405	1050	0.5
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
1000		40x79	0.15	120	100	3.1	K05450102_PM0FJ