

CAPACITORS SELECTION GUIDE

COMPONENTS FOR RADIO INTERFERENCE SUPPRESSION

CLASSES	X1			X2				Y1	Y2
TYPE	KPB23xx	KNB154x *	KNB155x *	KNB156x *	KNB153x *	KNR153x - RC UNITS	KNB158x	KNB253x	KNB252x
PRODUCT PICTURE									
DIELECTRIC	PAPER IMPREGNATED	POLYPROPYLENE FILM	POLYPROPYLENE FILM	POLYPROPYLENE FILM	POLYPROPYLENE FILM	POLYPROPYLENE FILM	POLYPROPYLENE FILM	POLYPROPYLENE FILM	POLYPROPYLENE FILM
RATED AC VOLTAGE	275 V	440 V	310 V	275 V, 300 V	275 V, 300 V	275 V	310 V	440 V	250 V, 300 V
CAPACITANCE RANGE	0.01 - 0.47 μ F	0.0022 - 0.68 μ F	0.01 - 2.2 μ F	0.01 - 6.8 μ F	0.01 - 10 μ F	0.01 - 0.47 μ F R = 2.2 - 470 Ω	0.01 - 15 μ F	470 - 22000 pF	1000 - 150000 pF
CAPACITANCE TOLERANCE	\pm 20%	\pm 10%, \pm 20%	\pm 10%, \pm 20%	\pm 10%, \pm 20%	\pm 10%, \pm 20%	\pm 10%, \pm 20%	\pm 10%, \pm 20%	\pm 10%, \pm 20%	\pm 10%, \pm 20%
INDUCTANCE	-	-	-	-	-	-	-	-	-
RATED CURRENT	-	-	-	-	-	-	-	-	-
TEMPERATURE	-	-	-	-	-	-	-	-	-
CLIMATIC CATEGORY	25/100/21	40/100/56	40/110/56	40/110/56 40/125/56	40/100/56	40/085/56	40/110/56	40/100/56	40/100/56
STANDARDS/APPROVALS	EN 60384-14	 IEC/UL 60384-14 	 IEC/UL 60384-14 	 IEC/UL 60384-14 	 IEC/UL 60384-14 	 IEC/UL 60384-14	 IEC/UL 60384-14 	 IEC/UL 60384-14 	 IEC/UL 60384-14

NOTE: * TYPES KNB1530, KNB1540, KNB1550 AND KNB1560 ARE AVAILABLE IN CD VERSION; WHICH IS RECOMMENDED FOR SERIAL CONNECTION WITH THE MAINS

CAPACITORS FOR USE IN ELECTRONICS

APPLICATION	AC/DC GENERAL PURPOSE					MOTOR RUNNING
TYPE	KEU1910	KEU1012	KLI1910	KNI1910	KNU1910	KNM12xx, KNM22xx, KNM32xx
PRODUCT PICTURE						
DIELECTRIC	POLYESTER FILM	POLYESTER FILM	POLYPROPYLENE FILM	POLYPROPYLENE FILM	POLYPROPYLENE FILM	POLYPROPYLENE FILM
ELECTRODES	METALLIZED	METALLIZED	METAL FOIL AND METALLIZED	DOUBLE METALLIZED AND METALLIZED	METALLIZED	METALLIZED
CAPACITANCE RANGE	1000 pF - 22 μ F	1000 pF - 10 μ F	1000 pF - 0.22 μ F	680 pF - 2.2 μ F	1000 pF - 6.8 μ F	0.33 - 10 μ F
RATED VOLTAGE	63 - 1000 V DC	100 - 2000 V DC	100 - 2000 V DC	250 - 2000 V DC	250 - 1600 V DC	275 - 460 V AC
CAPACITANCE TOLERANCE	\pm 10%, \pm 20%	\pm 5%, \pm 10%, \pm 20%	\pm 5%, \pm 10%, \pm 20%	\pm 5%, \pm 10%, \pm 20%	\pm 5%, \pm 10%, \pm 20%	\pm 5%, \pm 10%
PULSE LOADING	2.5 - 90 V/ μ s	2.5 - 90 V/ μ s	2200 - 20500 V/ μ s	300 - 7000 V/ μ s	45 - 450 V/ μ s	\leq 1 μ F: 100 V/ μ s > 1 μ F: 50 V/ μ s
CLIMATIC CATEGORY	55/100/56	55/100/56	55/100/56	55/100/56	55/100/56	25/085/21 40/085/56
PITCH	10 - 27.5 mm	AXIAL	7.5 - 27.5 mm	7.5 - 27.5 mm	10 - 27.5 mm	22.5 - 37.5 mm
STANDARDS/APPROVALS	EN 60384-2	EN 60384-2	EN 60384-13, EN 60384-16	EN 60384-16, EN 60384-17	EN 60384-16	EN 60252-1, UL 810 CSA C22.2 No. 190 EN 60252-1

LECTION GUIDE





X2Y2 TWO-POLE		X1 RC FILTER		X1Y2 TWO-POLE		X1Y2 FOUR-POLE		X1Y2		X1Y2 LCR FILTERS									
KNB753x		KPR23xx		KPB73xx, KPB70xx		KPB83xx		KPB7325		KPB7077		KNB7425		KPL30xx		KPL35xx		KNL35xx	
POLYPROPYLENE FILM		PAPER IMPREGNATED		PAPER IMPREGNATED		PAPER IMPREGNATED		PAPER IMPREGNATED		PAPER IMPREGNATED		POLYPROPYLENE FILM - METALIZED		PAPER IMPREGNATED		PAPER IMPREGNATED		POLYPROPYLENE FILM - METALIZED	
275 V		275 V		275 V		275 V		275 V		275 V		275 V		275 V		275 V		250 V	
0.1 - 0.25 μ F ... X2 2x1000 - 2x4700 pF ... Y2		0.01 - 0.1 μ F ... X1 R = 50 - 100 Ω		0.022 - 0.47 μ F ... X1 2x2500 - 2x27000 pF ... Y2		0.022 - 0.27 μ F ... X1 2x2500 - 2x27000 pF ... Y2		0.01 - 0.27 μ F ... X1 2x2500 - 2x27000 pF ... Y2		0.1 - 0.47 μ F ... X1 2x5000 - 2x27000 pF ... Y2		0.1 μ F - 2x2500 pF 0.47 μ F - 2x0.027 μ F		0.15 - 1 μ F ... X1 2x2000 - 2x27000 pF ... Y2		0.25 - 1 μ F ... X1 2x2000 - 2x27000 pF ... Y2		0.33 - 1 μ F ... X1 2x2000 - 2x27000 pF ... Y2	
\pm 20%		\pm 20%		\pm 20%		\pm 20%		\pm 20%		\pm 20%		\pm 20%		\pm 20%		\pm 20%		\pm 20%	
-		-		-		-		-		-		-		0.3 - 1.5 mH		0.3 - 1.8 mH		0.3 - 1.8 mH	
-		-		-		6 A		16 A		16 A		16 A		3 - 16 A		10 - 16 A		10 A; 12.5 A; 16 A	
-		9, 50 $^{\circ}$ C		-		9, 50 $^{\circ}$ C		9, 85 $^{\circ}$ C		WKG 85 $^{\circ}$ C		9, 85 $^{\circ}$ C		-40 TO 100 $^{\circ}$ C		-25 TO 100 $^{\circ}$ C		-25 TO 100 $^{\circ}$ C	
40/100/56		25/100/21		25/100/21		25/085/21		25/100/21		25/100/21		25/100/21		40/100/56		25/100/21		25/100/21	
		EN 60384-14				EN 60384-14													

POWER ELECTRONIC CAPACITORS

APPLICATION	AC/DC GENERAL PURPOSE			DC LINK			SNUBBER	
TYPE	KNB191x	KN15048	KNG191x	KNG204x, KNG304x	KNG491x	KNO19Ax, KNO19Bx	KNO191x	
PRODUCT PICTURE								
DIELECTRIC	POLYPROPYLENE FILM	POLYPROPYLENE FILM	POLYPROPYLENE FILM	POLYPROPYLENE FILM	POLYPROPYLENE FILM	POLYPROPYLENE FILM	POLYPROPYLENE FILM	
ELECTRODES	METALLIZED	METALLIZED	METALLIZED	METALLIZED	METALLIZED	DOUBLE METALLIZED AND METALLIZED	DOUBLE METALLIZED AND METALLIZED	
RATED CAPACITANCE	0.1 - 80 μ F	10 - 600 μ F	0.1 - 480 μ F	75 - 1740 μ F	0.22 - 100 μ F	0.047 - 8 μ F	0.047 - 8 μ F	
CAPACITANCE TOLERANCE	\pm 5%, \pm 10%	\pm 5%, \pm 10%	\pm 5%, \pm 10%	\pm 5%, \pm 10%	\pm 5%, \pm 10%	\pm 5%, \pm 10%	\pm 5%, \pm 10%	
RATED VOLTAGE	250 - 440 V AC	250 - 480 V AC	450 - 1300 V DC	600 - 2200 V DC	250 - 875 V DC	630 - 3000 V DC	630 - 3000 V DC	
CLIMATIC CATEGORY	40/085/56	40/085/56	40/085/56	40/085/56	40/110/56	40/085/56	40/085/56	
LIFE EXPECTANCY	> 60 000 h at U_{rms}	> 60 000 h at U_{rms}	> 100 000 h at U_{DC}	> 100 000 h at U_{DC}	> 100 000 h at U_{DC}	> 100 000 h at U_{DC}	> 100 000 h at U_{DC}	
TERMINAL	PARALLEL TINNED COPPER WIRE (2 OR 4 PINS)	SCREW: M6, M10	PARALLEL TINNED COPPER WIRE (2, 4 OR 12 PINS)	FEMALE: M6x10 MALE: M8x23	PARALLEL TINNED COPPER WIRE (2 OR 4 PINS)	FIXING LUGS FOR M6 OR M8 SCREWS	PARALLEL TINNED COPPER WIRE (2 OR 4 PINS)	
STANDARDS	IEC 61071	IEC 61071 	IEC 61071	IEC 61071 	IEC 61071	IEC 61071	IEC 61071	

CAPACITORS SELECTION GUIDE

POWER CAPACITORS

APPLICATION	LOW VOLTAGE PFC	HIGH VOLTAGE PFC	INDUCTION HEATING	RADIO FREQUENCY REMOTE CONTROL	HIGH VOLTAGE DIVIDER
TYPE	KNK	KLV	KLS	KLT	KID
PRODUCT PICTURE					
DIELECTRIC	POLYPROPYLENE FILM	ALL- FILM	ALL- FILM	ALL- FILM	MIXED
ELECTRODES	METALLIZED	METAL FOIL	METAL FOIL	METAL FOIL	METAL FOIL
RATED AC VOLTAGE	230 - 690 V	1 - 25 kV	500 - 3000 V	1 - 35/3 kV	UP TO 765 kV
RATED FREQUENCY	50/60 Hz	50/60 Hz	50 - 10000 Hz	50 Hz (UP TO 1050 WORKING)	50/60 Hz
RATED POWER OF CAPACITANCE	1.67 - 100 kvar	UP TO 600 kvar	UP TO 4000 kvar	0.1 - 280 µF	2000 pF - 22000 pF
CAPACITANCE TOLAERANCE	± 5%, ± 10%	- 5% ... + 10%	± 5% ... ± 10%	± 5%	- 5% ... + 10%
CLIMATIC CATEGORY	-25/D	-25/C -40/D ON REQUEST	-25/45 AN +5/+45 WF	-25/C -40/D ON REQUEST	-40/D
STANDARDS	IEC 60831-1/2	IEC 60871, NEMA CP1, IEEE Std 18, IEC 60358	IEC 60110	IEC 60871-1	IEC 60358

POWER FACTOR CORRECTION EQUIPMENT

TYPE	FIXED PF BANKS WITH OR WITHOUT FILTER REACTORS	AUTOMATIC PFC BANKS	AUTOMATIC PFC BANKS WITH HARMONICS FILTER	DYNAMIC PFC BANKS	HIGH VOLTAGE PFC (TURN KEY SOLUTIONS)
PRODUCT PICTURE					
RATED POWER	10 - 100 kvar	17.5 - 1000 kvar *	50 - 1000 kvar * 7 % 189 Hz *	50 - 1000 kvar *	0.3 - 100 Mvar
RATED VOLTAGE	400 V, 50 Hz OTHER VOLTAGES ON REQUEST	400 V, 50 Hz OTHER VOLTAGES ON REQUEST	400 V, 50 Hz OTHER VOLTAGES ON REQUEST	400 V, 50 Hz OTHER VOLTAGES ON REQUEST	UP TO 36 kV
ALLOWED OVERLOADING	1.0 x U _n , PERMANENT 1.1 x U _n , 8 h/DAY 1.3 x I _n , PERMANENT	1.0 x U _n , PERMANENT 1.1 x U _n , 8 h/DAY 1.3 x I _n , PERMANENT	1.0 x U _n , PERMANENT 1.1 x U _n , 8 h/DAY 1.3 x I _n , PERMANENT	1.0 x U _n , PERMANENT 1.1 x U _n , 8 h/DAY 1.3 x I _n , PERMANENT	1.0 x U _n , PERMANENT 1.1 x U _n , 8 h/DAY 1.3 x I _n , PERMANENT
TEMPERATURE RANGE	-25 ... +50 °C	-10 ... +50 °C	-10 ... +50 °C	-10 ... +50 °C	-25 ... +55 °C
DIELECTRIC LOSSES	≤ 0.2 W/kvar	≤ 0.2 W/kvar	≤ 0.2 W/kvar	≤ 0.2 W/kvar	≤ 0.2 W/kvar
TOTAL LOSSES	< 1.5 W/kvar	< 1.5 W/kvar	≤ 5 W/kvar	≤ 8 W/kvar	≤ 5 W/kvar
PROTECTION AGAINST EXCESSIVE VOLTAGE CONTACT	TN-C	TN-C OR TN-S	TN-C OR TN-S	TN-C OR TN-S	DIFFERENT VERSIONS AVAILABLE: - OPEN RACK - ENCLOSED - ONE OR MULTI STEPS
STANDARDS	EN 60831/1-2 EN 60439	EN 60831/1-2 EN 60439	EN 60831/1-2 EN 60439	EN 60831/1-2 EN 60439	IEC 60871 2014 IEC 60071-1/2 IEC 60289 IEC 60529 IEC 62271-100

NOTE: * OTHER TYPES ON REQUEST



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