

SCR COMMUTATION FILM - PAPER CAPACITORS 400 - 2000 Vp

APPLICATIONS

SCR Commutation ---- Snubber ---- Frequency Changers ---- Motor Speed Controls ----
Static Power Supplies ---- Harmonic Filters ---- and Others.

CONSTRUCTION

The capacitor is constructed by winding alternate layers of low loss polypropylene film and kraft paper between two high grade aluminum foil electrodes. The foil electrodes are extended out each end of the winding forming a low loss extended foil (non-inductive) capacitor. Tinned copper leads are securely soldered to each end of the winding and to the terminal stud. The cover is sealed to the case by a double-lock roll seam. The unit is completely impregnated in LEKTROL, a non-PCB fluid which is biodegradable, low toxic, and environmentally compatible. The terminal assembly consists of a molded pillar insulator and a one piece copper stud capable of 120 amps rms. The terminal assembly is securely locked to the cover to withstand a 30 inch-lb max. torque on steel covers and 20 inch-lb max. torque on non-ferrous covers.

CHARACTERISTICS

Polypropylene film is a low loss dielectric possessing high voltage stress capabilities. Combined with the extended foil construction, which minimizes series-resistance and series-inductance losses and allows for maximum heat transfer from within the winding, make these capacitors ideal for handling the fast rise time and high repetition rates associated with SCR commutation and other similar applications.

CASE RUPTURE PROTECTION

The internal construction of commutation capacitors, using heavy leads and secure connections necessary to handle the high currents, does not permit the use of an internal protective device to minimize case rupture. Since the non-PCB impregnant is a combustible liquid, it is extremely important that the capacitor user exercise caution to insure the safest possible application of the capacitor to minimize the case rupture hazards.

CAPACITANCE

The capacitance is rated in microfarads (MF) at 25°C. The capacitance change over the temperature range of -40°C to +90°C shall not exceed ±5%.

DISSIPATION FACTOR

The dissipation factor shall not exceed 0.3% when measured at the 60 Hz rated voltage and any case temperature between 25°C and 90°C.

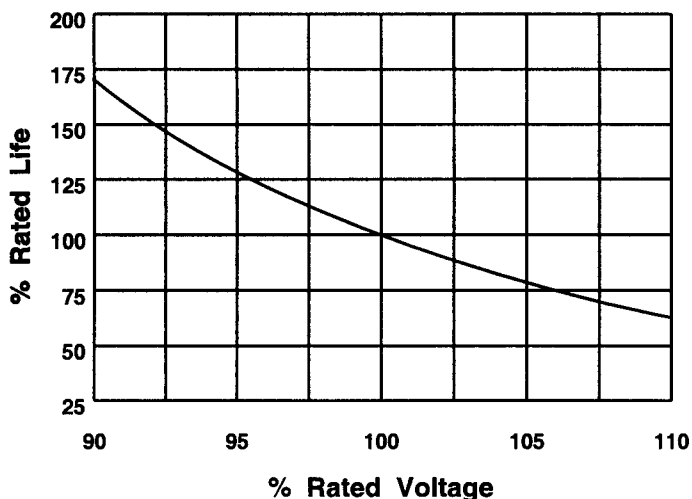
TEMPERATURE

The operating case temperature range is -40°C to +80°C.

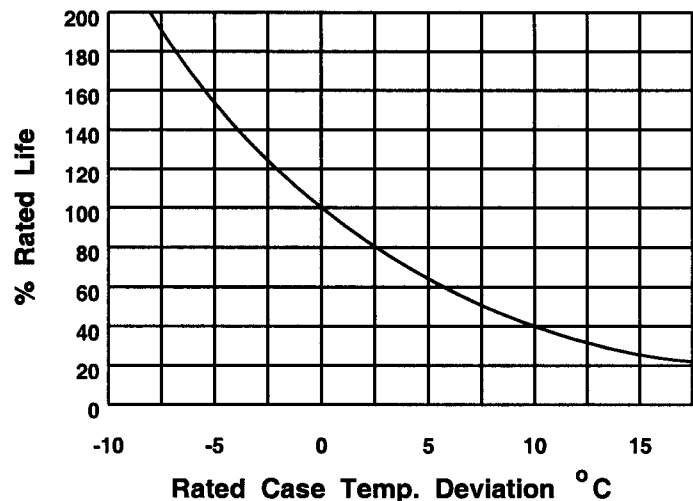
LIFE

The capacitors are designed to provide a minimum of 40,000 hours life with a 95% survival when operated at rated voltage, current, case temperature, and volt-amperes. Exceeding the capacitor ratings without proper derating will result in a reduction of full rated life.

Life vs Voltage

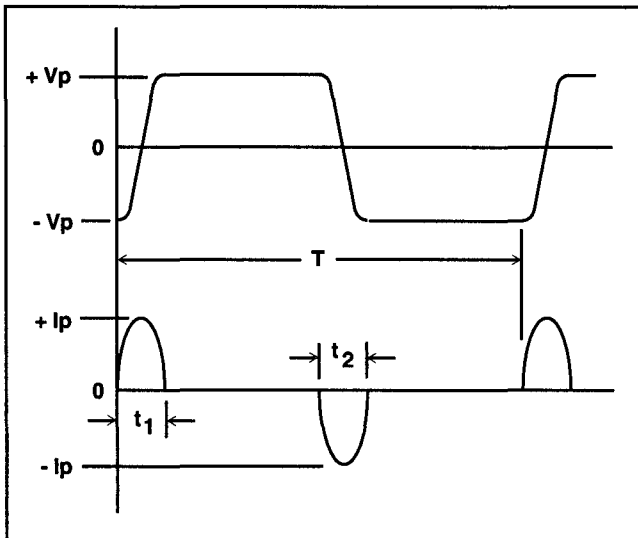


Life vs Case Temperature



VOLT-AMPERE LOADING

The volt-ampere rating for each capacitor listed in the table is the maximum VA loading that may be applied to the capacitor for full rated life provided the rated case temperature, rms current, and peak voltage is not exceeded. The volt-ampere rating is the product of the effective voltage and the effective current calculated only during the time current flows.



$$VA = V_{eff} \times I_{eff}$$

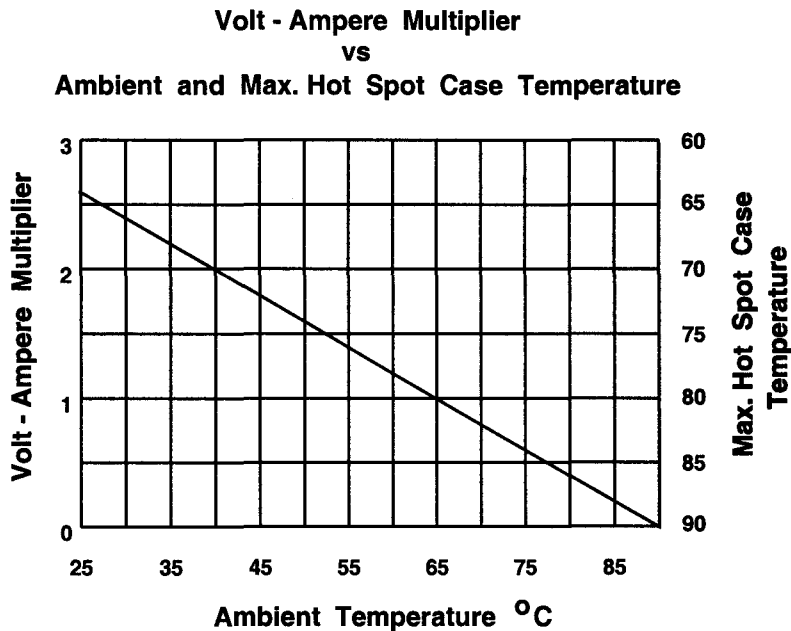
$$\text{Where: } V_{eff} = .707 V_p \sqrt{\frac{t_1 + t_2}{T}}$$

$$I_{eff} = .707 I_p \sqrt{\frac{t_1 + t_2}{T}}$$

$$\text{Then: } VA = .707 V_p \sqrt{\frac{t_1 + t_2}{T}} \times .707 I_p \sqrt{\frac{t_1 + t_2}{T}}$$

$$VA = \frac{V_p I_p (t_1 + t_2)}{2T}$$

Capacitors may be operated at the ambient temperature shown with volt-ampere loading equal to or less than the rated volt-ampere times the multiplier. Maximum case temperatures must correspond to ambient temperatures shown on the graph with rms current and peak voltage not in excess of ratings. Under these conditions, capacitors will have a full service life as defined above.



CAPACITOR DESIGNS

The standard capacitors satisfy the majority of applications; however, other ratings than those listed are available. For a custom design, complete the APPLICATION DATA sheet, or contact RONKEN direct to discuss the application.

MF ± 10%	CATALOG NO.	CASE STYLE	CASE HT.	MAX. RMS AMPS	MAX. VOLT- AMPS	CATALOG NO.	CASE STYLE	CASE HT.	MAX. RMS AMPS	MAX. VOLT- AMPS
	400 Vp					600 Vp				
1	USE 1000 Vp					USE 1000 Vp				
2	USE 600 Vp					86A79205K80	A	2.63	60	1015
3	86A77305K80	A	3.13	60	1055	86A79305K80	A	3.13	60	1165
5	86A77505K80	A	3.88	60	1255	86A79505K80	A	4.25	60	1500
10	86B77106K80	B	4.75	60	1930	86C79106K80	C	4.25	60	2330
10	86C77106K80	C	3.88	60	1960	86D79106K80	D	3.50	60	2515
12	86C77126K80	C	4.25	60	2105	86C79126K80	C	5.25	60	2765
12	86D77126K80	D	3.50	60	2270	86D79126K80	D	4.25	60	2910
15	86C77156K80	C	5.25	60	2500	86C79156K80	C	5.75	60	2980
15	86D77156K80	D	3.88	60	2455	86D79156K80	D	4.75	60	3175
20	86C77206K80	C	6.25	60	2890	86C79206K80	C	7.25	60	3630
20	86D77206K80	D	5.25	60	3110	86D79206K80	D	5.75	60	3705
25	86C77256K80	C	7.25	60	3280	86D79256K80	D	6.75	60	4235
25	86D77256K80	D	5.75	60	3350	86E79256K80	E	5.13	100	5390
30	86D77306K80	D	6.75	60	3830	86D79306K80	D	8.00	60	4900
30	86E77306K80	E	4.25	100	4365	86E79306K80	E	5.13	100	5530
35	86D77356K80	D	7.25	60	4070	86E79356K80	E	5.88	100	6130
40	86E77406K80	E	5.13	100	5000	86E79406K80	E	6.25	100	6425
45	86E77456K80	E	5.88	100	5540	86E79456K80	E	6.75	100	6825
50	86E77506K80	E	6.25	100	5805	86E79506K80	E	7.25	100	7225
	800 Vp					1000 Vp				
1	USE 1000 Vp					86A81105K80	A	2.13	60	935
2	USE 1000 Vp					86A81205K80	A	3.13	60	1255
3	86A80305K80	A	3.50	60	1330	86A81305K80	A	3.88	60	1495
5	86A80505K80	A	4.75	60	1715	86B81505K80	B	4.25	60	2100
10	86C80106K80	C	4.75	60	2655	86C81106K80	C	5.75	60	3210
10	86D80106K80	D	3.88	60	2830	86D81106K80	D	4.25	60	3135
12	86C80126K80	C	5.75	60	3105	86C81126K80	C	6.25	60	3445
12	86D80126K80	D	4.75	60	3310	86D81126K80	D	5.25	60	3705
15	86C80156K80	C	6.75	60	3560	86C81156K80	C	7.25	60	3910
15	86D80156K80	D	5.25	60	3585	86D81156K80	D	5.75	60	3990
20	86D80206K80	D	6.75	60	4415	86D81206K80	D	7.25	60	4850
20	86E80206K80	E	4.25	100	5030	86E81206K80	E	5.13	100	5810
25	86D80256K80	D	8.00	60	5105	86D81256K80	D	9.00	60	5850
25	86E80256K80	E	5.13	100	5765	86E81256K80	E	5.13	100	5960
30	86D80306K80	D	9.00	60	5655	86E81306K80	E	6.25	100	6920
30	86E80306K80	E	5.88	100	6390	86E81356K80	E	6.75	100	7350
35	86E80356K80	E	6.25	100	6695	86E81406K80	E	7.25	100	7780
40	86E80406K80	E	6.75	100	7110	86E81456K80	E	9.00	100	9055
45	86E80456K80	E	7.25	100	7525	86E81506K80	E	9.00	100	9285
50	86E80506K80	E	8.00	100	8150					

Consult factory for rating and sizes not listed.

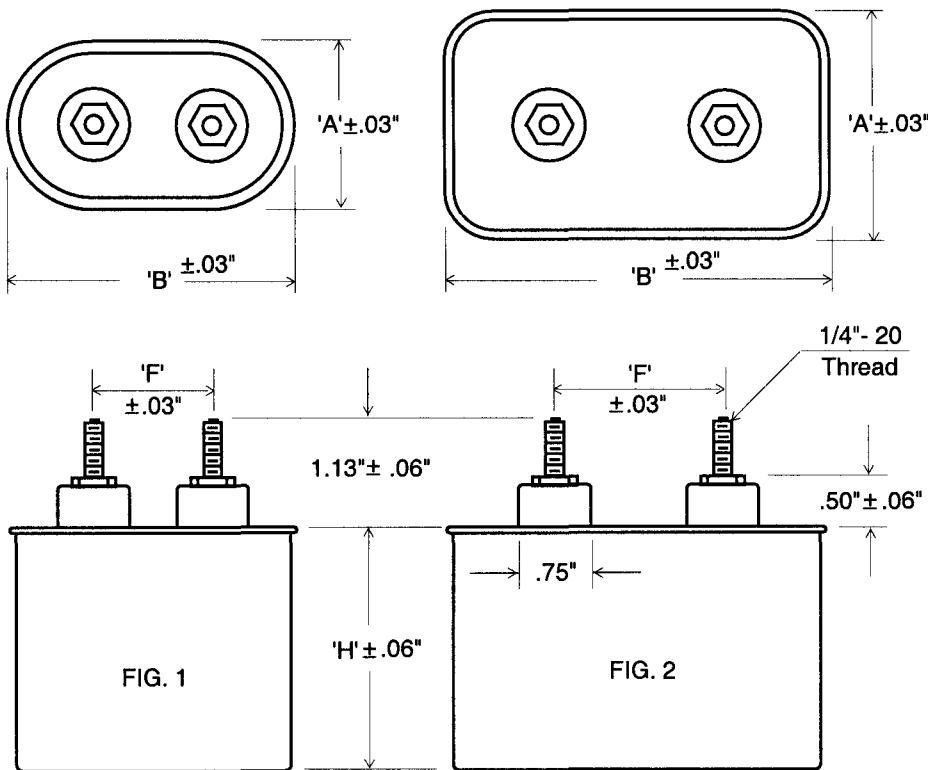
MF ± 10%	CATALOG NO.	CASE STYLE	CASE HT.	MAX. RMS AMPS	MAX. VOLT- AMPS	CATALOG NO.	CASE STYLE	CASE HT.	MAX. RMS AMPS	MAX. VOLT- AMPS
	1500 Vp					2000 Vp				
.10	USE 2000 Vp					86A88104K80	A	2.13	60	1205
.25	USE 2000 Vp					86A86254K80	A	2.13	60	1220
.50	86A85504K80	A	2.13	60	1075	86A86504K80	A	2.63	60	1295
1	86A85105K80	A	3.13	60	1440	86A86105K80	A	3.13	60	1485
2	86B85205K80	B	3.13	60	1895	86B86205K80	B	4.25	60	2550
3	86C85305K80	C	3.88	60	2685	86C86305K80	C	4.25	60	3045
5	86C85505K80	C	4.75	60	3150	86C86505K80	C	5.75	60	3895
5	86D85505K80	D	3.88	60	3360	86D86505K80	D	5.25	60	4495
10	86D85106K80	D	6.75	60	5240	86D86106K80	D	9.00	60	7095
10	86E85106K80	E	3.88	100	5605	86E86106K80	E	5.13	100	7220
12	86D85126K80	D	7.25	60	5565					
12	86E85126K80	E	5.13	100	6840	86E86126K80	E	5.88	100	7875
15	86E85156K80	E	5.88	100	7580	86E86156K80	E	7.25	100	9440
20	86E85206K80	E	6.75	100	8440	86E86206K80	E	9.00	100	11260
25	86E85256K80	E	8.00	100	9670					
30	86E85306K80	E	9.00	100	10660					

Consult factory for rating and sizes not listed.

RONKEN STANDARD CAPACITOR

Tinplated steel case and cover.
Terminal stud size 1/4" - 20 thread.

Also available with-
Non-ferrous case and cover for oval style (A,B,C,and D).
Steel case and non-ferrous cover for rectangular style (E).
Corrosion resistant gray painted case for greater heat dissipation.
Solder type terminals with webbed cups for "Snubber" applications.



CASE STYLE	FIG. NO.	'A'	'B'	'F'
A	1	1.31	2.16	.81
B	1	1.56	2.69	1.25
C	1	1.91	2.91	1.38
D	1	1.97	3.66	1.38
E	2	2.84	4.56	2.00