

SCR COMMUTATION ALL FILM CAPACITORS 600 - 1500 Vp

APPLICATIONS

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

CONSTRUCTION

The capacitor is constructed by winding low loss rough surfaced polypropylene film 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 20 inch-lb max. torque on the 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 0.05% when measured at the 60 Hz rated voltage and any case temperature between 25 °C and 90 °C.

TEMPERATURE

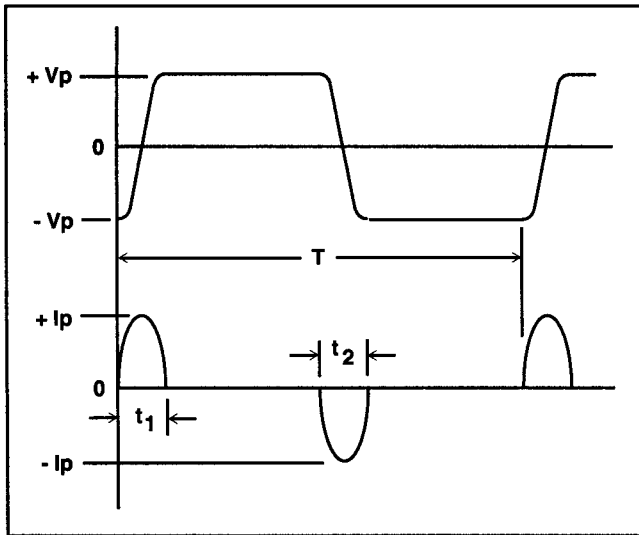
The operating case temperature range is -40 °C to +80 °C.

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.

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.



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

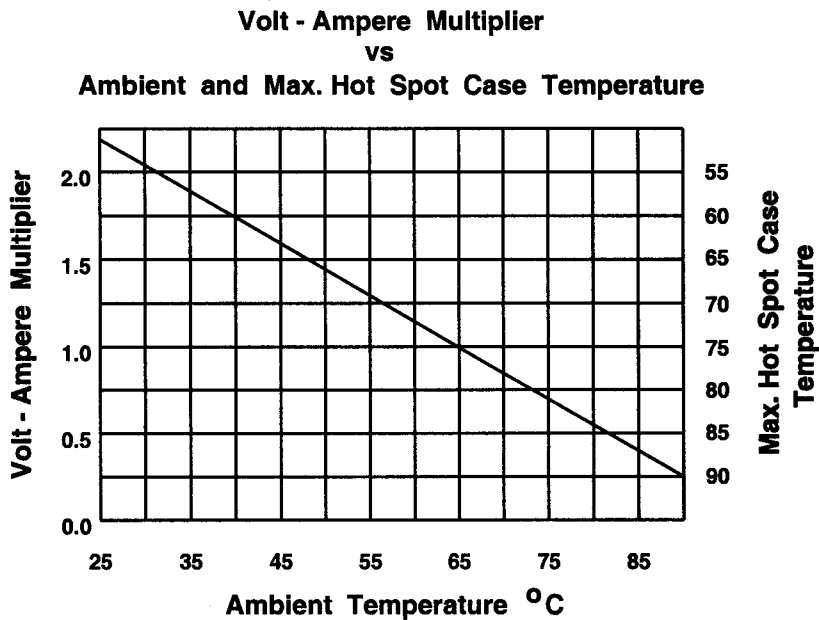
$$\text{Where: } V_{eff} = .707 V_p \sqrt{\frac{t_1 + t_2}{T}}$$

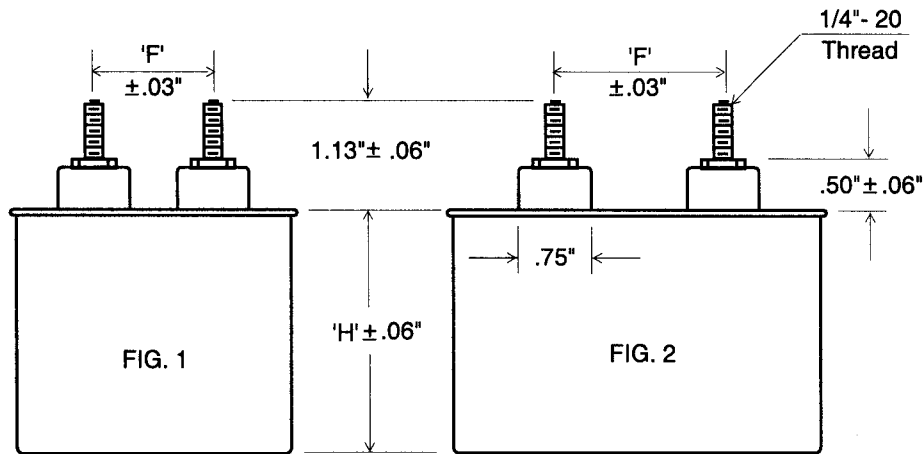
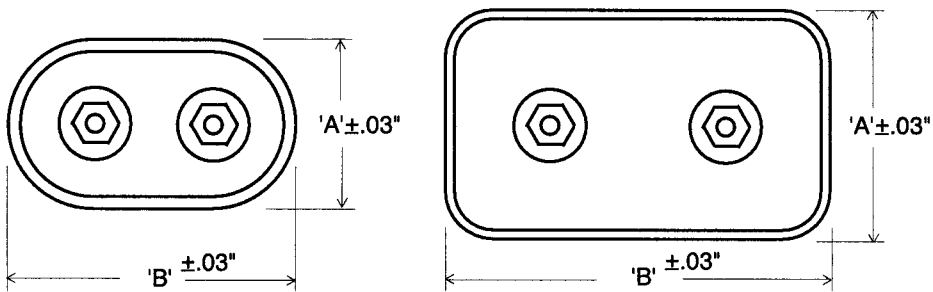
$$I_{eff} = .707 I_p \sqrt{\frac{t_1 + t_2}{T}}$$

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

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

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.



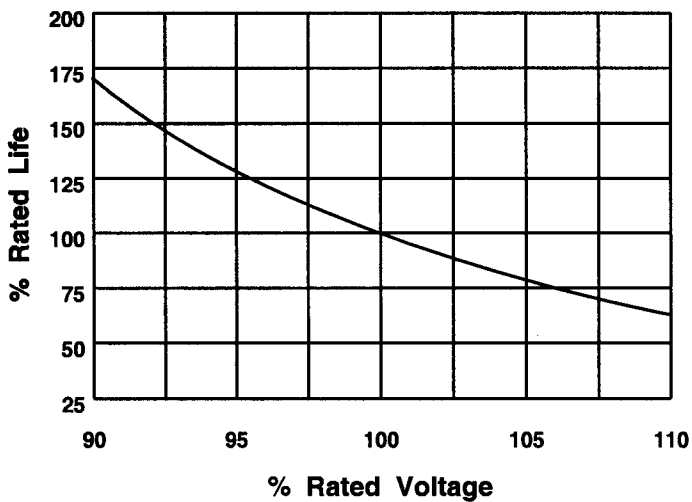


CASE STYLE	FIG. NO.	'A'	'B'	'F'
A	1	1.31	2.16	.81
B	1	1.56	2.69	1.25
C	1	1.91	2.91	1.38
D	1	1.97	3.66	1.38
E	2	2.84	4.56	2.00

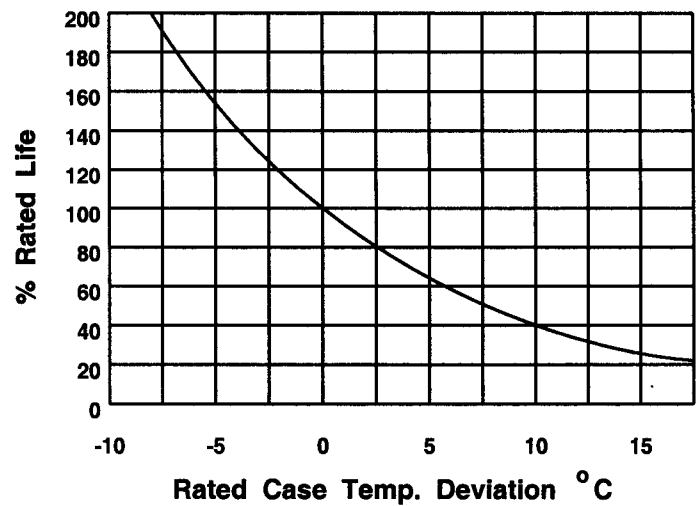
RONKEN STANDARD CAPACITOR

Terminal stud size 1/4" - 20 thread.
 Non-ferrous case and cover for oval style (A,B,C,and D).
 Steel case and non-ferrous cover for rectangular style (E).

Life vs Voltage



Life vs Case Temperature



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
	600 Vp					800 Vp				
1	64A79105K82	A	2.13	60	11390	64A80105K82	A	2.63	60	13335
2	64A79205K82	A	2.63	60	13335	64A80205K82	A	2.88	60	14310
3	64A79305K82	A	3.88	60	17295	64A80305K82	A	3.88	60	18205
5	64A79505K82	A	3.88	60	18205	64C80505K82	C	3.88	60	27760
5	64C79505K82	C	2.88	60	22205					
10	64C79106K82	C	3.88	60	27760	64C80106K82	C	5.75	60	39150
10	64D79106K82	D	3.88	60	35635	64D80106K82	D	3.88	60	35635
15	64C79156K82	C	5.25	60	36300	64D80156K82	D	5.75	60	48685
15	64D79156K82	D	3.88	60	35635					
20	64C79206K82	C	6.25	60	40950	64D80206K82	D	6.75	60	55645
20	64D79206K82	D	5.25	60	45205	64E80206K82	E	4.75	100	68670
25	64D79256K82	D	5.75	60	48685	64E80256K82	E	5.13	100	72600
30	64D79306K82	D	7.25	60	59125	64E80306K82	E	5.88	100	76630
40	64E79406K82	E	5.13	100	72600					
50	64E79506K82	E	6.25	100	84390					
	1000 Vp					1500 Vp				
.50	64A81504K82	A	2.13	60	11390	64A85504K82	A	2.63	60	13335
1	64A81105K82	A	2.63	60	13335	64A85105K82	A	3.88	60	18205
2	64A81205K82	A	3.88	60	18205	64C85205K82	C	3.88	60	27760
3	64C81305K82	C	3.88	60	27760	64C85305K82	C	4.75	60	33455
5	64C81505K82	C	4.75	60	33455	64C85505K82	C	6.25	60	42000
5						64D85505K82	D	4.75	60	41725
10	64D81106K82	D	6.25	60	52165	64E85106K82	E	5.13	100	72600
10	64E81106K82	E	3.88	100	56660					
15	64E81156K82	E	5.13	100	72600	64E85156K82	E	6.75	100	89635
20	64E81206K82	E	5.88	100	79150					

Consult factory for rating and sizes not listed.

CAPACITOR DESIGNS

The standard capacitors listed on this page 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.