

AVIONICAPS[®]

Sub-Miniature Metallized Polycarbonate Capacitors

Capacitors



A new innovation pioneered by Electronic Concepts leads the way to a new era of smaller metallized film capacitors. Now a combination of excellent electrical characteristics and compactness is offered the equipment designer in a size comparable to a ceramic CK05 capacitor.

Besides the superior electrical characteristics these capacitors are self-healing, as is the case with all metallized film capacitors.

The radial leaded type ECR is also offered in an established reliability version, qualified under MIL-C-55514 in a capacitance range from .0010 to 1.0 microfarad.

ADDITIONALLY, THESE CAPACITORS DO NOT EXHIBIT ANY OF THE DRAWBACKS INHERENT IN ALL CERAMIC CAPACITORS.

*NO PIEZOELECTRIC EFFECT
NOT FREQUENCY SENSITIVE
NOT VOLTAGE SENSITIVE*

electronic concepts, inc. 

CAT. NO. L83-105 REV. 11
P/N 161011050

Specifications

INTERNAL CONSTRUCTION

Extended foil winding (non-inductive)

ENCLOSURE

Premolded epoxy case, epoxy encapsulated.

TERMINALS

Terminal leads are solid wire of tinned copper clad steel.

TERMINAL STRENGTH

There shall be no permanent damage to the terminals when tested in accordance with method 211 of MIL-STD-202.

The following test conditions shall apply:

- Test Condition "A" – 5 Pounds
- Test Condition "C" – 5 Pounds

SOLDERABILITY

Capacitors shall be tested in accordance with method 208 of MIL-STD-202 and shall conform to the solid-wire termination criteria thereof.

The following details shall apply:

- A. Number of terminations of each capacitor to be tested – 2.
- B. Depth of immersion in flux and solder – both terminals shall be immersed to within 0.125 inch of the capacitor body.

ENVIRONMENTAL

These capacitors will be capable of withstanding the following tests in accordance with MIL-STD-202:

Test	Method	Test Condition
Vibration	204	D
Immersion	104	B
Shock	213	I
Humidity	103	B
Thermal Shock	107	A*

*(Except change Step #3 to 125°C)

DATE-CODE

The first two digits represents the year, the second two digits represent the week. ie: 9752 is the 52nd week of 1997.

Dimensional Data

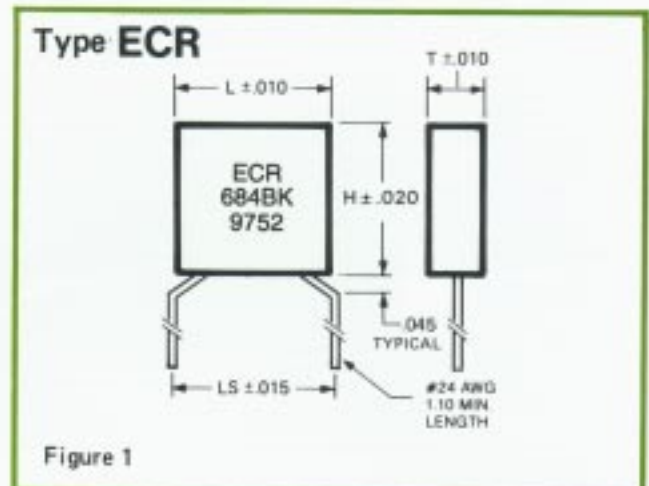


Figure 1

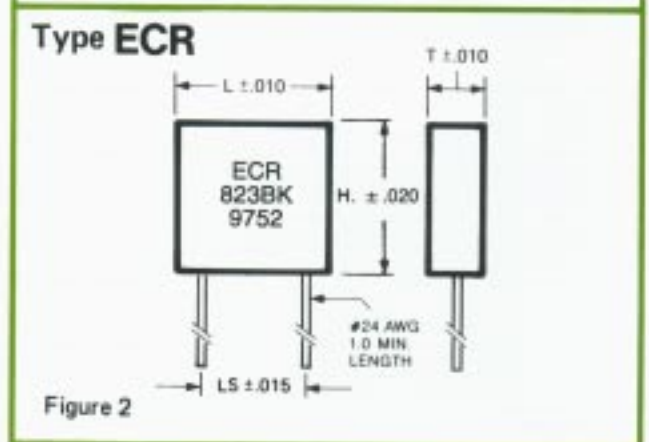


Figure 2

APPLICATION NOTES

- 1) Because of its subminiature size, care must be taken to assure that the body temperature of the ECR capacitor does not exceed 125°C during installation, so as not to adversely affect performance.
- 2) If the ECR is to be immersed in a solvent, the temperature of the solvent should always remain at least 10°F higher than the temperature of the capacitor.

Type **ECR**
RADIAL LEAD WIRES

VALUE IN MFD	VDC	PHYSICAL SIZE T H L	LEAD SPACING LS	SEE FIGURE	PART NO.
.0010	250	.090 .190 .190	.200	1	ECR102G-
.0012	250	.090 .190 .190	.200	1	ECR122G-
.0015	250	.090 .190 .190	.200	1	ECR152G-
.0018	250	.090 .190 .190	.200	1	ECR182G-
.0022	250	.090 .190 .190	.200	1	ECR222G-
.0027	250	.090 .190 .190	.200	1	ECR272G-
.0033	250	.090 .190 .190	.200	1	ECR332G-
.0039	200	.090 .190 .190	.200	1	ECR392F-
.0047	200	.090 .190 .190	.200	1	ECR472F-
.0056	200	.090 .190 .190	.200	1	ECR562F-
.0068	150	.090 .190 .190	.200	1	ECR682E-
.0082	150	.090 .190 .190	.200	1	ECR822E-
.010	100	.090 .190 .190	.200	1	ECR103D-
.012	100	.090 .190 .190	.200	1	ECR123D-
.015	100	.090 .190 .190	.200	1	ECR153D-
.018	100	.090 .190 .190	.200	1	ECR183D-
.022	75	.090 .190 .190	.200	1	ECR223C-
.027	75	.090 .190 .190	.200	1	ECR273C-
.033	50	.090 .190 .190	.200	1	ECR333B-
.039	50	.090 .190 .190	.200	1	ECR393B-
.047	50	.090 .190 .190	.200	1	ECR473B-
.056	50	.090 .190 .190	.200	1	ECR563B-
.068	50	.095 .245 .295	.200	2	ECR683B-
.082	50	.095 .245 .295	.200	2	ECR823B-
.10	50	.095 .245 .295	.200	2	ECR104B-
.12	50	.095 .295 .295	.200	2	ECR124B-
.15	50	.095 .295 .295	.200	2	ECR154B-
.18	50	.095 .295 .295	.200	2	ECR184B-
.22	50	.095 .395 .395	.300	2	ECR224B-
.27	50	.095 .395 .395	.300	2	ECR274B-
.33	50	.095 .395 .395	.300	2	ECR334B-
.39	50	.095 .395 .395	.300	2	ECR394B-
.47	50	.145 .395 .395	.300	2	ECR474B-
.56	50	.145 .395 .395	.300	2	ECR564B-
.68	50	.195 .395 .395	.300	2	ECR684B-
.82	50	.195 .395 .395	.300	2	ECR824B-
1.0	50	.195 .395 .395	.300	2	ECR105B-

When ordering, please use Electronic Concepts Catalog number.

Catalog Numbering System

ECR 104 B K

TYPE
ECR - Radial Leads

CAPACITANCE

The first two digits are significant figures, the third digit represents the number of zeros to follow to express the capacitance in picofarads.

TOLERANCE

F = ±1%, G = ±2%,
J = ±5%, K = ±10%, M = ±20%

VOLTAGE

B = 50VDC, C = 75 VDC,
D = 100VDC, E = 150VDC,
F = 200VDC, G = 250VDC

Characteristics

OPERATING TEMPERATURE RANGE

-55°C +125°C

CAPACITANCE RANGE

See Table

CAPACITANCE TOLERANCE

Available in Tolerances of 1%, 2%, 5%, 10% and 20%.

Note: Capacitance shall be measured at 25°C, and at or referred to a frequency of 1 KHz.

VOLTAGE RATING

DC Working Voltages of 30V, 50V, 75V, 100V, 150V, 200V, and 250V are standard. See Table.

DIELECTRIC STRENGTH

Capacitors shall withstand a DC potential of 200% rated voltage for two (2) minutes without damage or breakdown. Test voltage must be applied and discharged through a resistance of 1 OHM per volt, minimum, and at 25°C.

DISSIPATION FACTOR

When measured at 1kHz, the dissipation factor shall not exceed 0.3% from +25°C to +125°C.

INSULATION RESISTANCE

When measured at the applicable test temperature, and rated voltage, the insulation resistance shall equal or exceed the following values:

	25°C	85°C	125°C
Megohm x Microfarads	100,000	7,000	7,000
Except the insulation resistance in megohms need not exceed	200,000	70,000	7,000

CAPACITANCE CHANGE

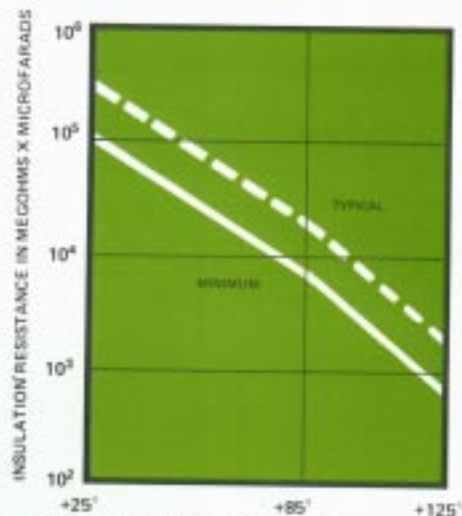
The Capacitance change vs. temperature for these capacitors shall not exceed the following:

Temperature Degrees C.	-55	+25	+85	+125
Percent Change	-2.5	0	±1.0	±2.0

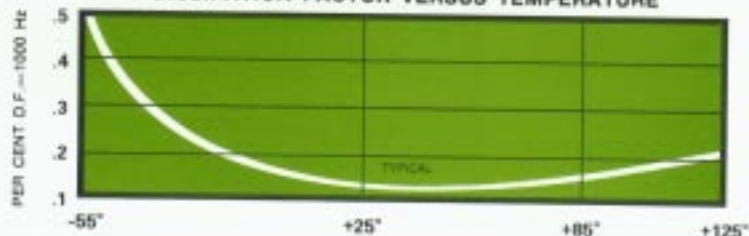
ELECTRICAL CHARACTERISTICS VS. TEMPERATURE

TEMPERATURE IN DEGREES CENTIGRADE

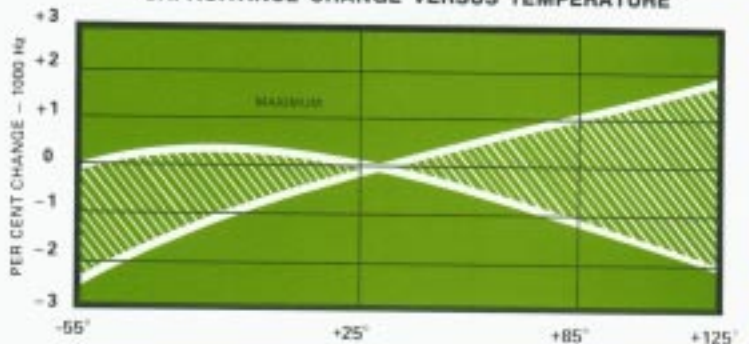
INSULATION RESISTANCE VS. TEMPERATURE



DISSIPATION FACTOR VERSUS TEMPERATURE



CAPACITANCE CHANGE VERSUS TEMPERATURE



In the construction of the components described, the full intent of the specification will be met. Electronic Concepts, Inc., however, reserves the right to make, from time to time, such departures from the detail specifications as may be required to permit improvements in the design of its products. Components made under military approvals will be in accordance with the approval requirements.

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