

Avionicap[®] Series Minature Metallized Polycarbonate - Hermetically Sealed

The Avionicap[®] HECR type capacitor is a hermetically sealed version of our Avionicap[®] ECR type series, which has gained broad acceptance in the electronic industry. It is hermetically sealed in ceramic case with metal end caps so it offers excellent environmental protection.



FEATURES

- For Hostile environments where pcb density and system miniaturization are required.
- Effective replacement for conventional tubular axial leaded capacitors

STANDARD CONFIGURATION

- #22 AWG tinned copper clad steel terminals

Specification Summary

Capacitance Range

0.001 μ F to 1.0 μ F Capacitance is measured at 25°C and at, or referred to, a frequency of 1KHz.

Capacitance Tolerance

K=±10%, J=±5%, G=±2%, F=±1%

Operating Temperature Range

-55°C to 125°C

Enclosure/ Construction

Hermetically sealed ceramic case with tinned metal end caps.

Voltage Rating

DC working voltage ratings at +85°C, 30VDC, 50VDC, 100VDC, 150VDC, 200VDC and 300VDC. Voltage derating of 1.25% per degree C is necessary to +125°C.

Quality Control

Capacitors are tested 100% for:

- o Capacitance
- o Tolerance
- o Dissipation Factor
- o Dielectric withstanding Voltage
- o Insulation Resistance
- o Seal Per Method 112 of MIL-STD-202 HECR - test condition A M39022/11 - also tested to condition C, procedure IIIa.

Process and inspection data are maintained on file and available on special request.

Environmental

Parameter	Method	Condition
Vibration	204	D
Immersion	104	C
Shock	213	I
Humidity	106	-
Thermal Shock	107	B
Life	108	F

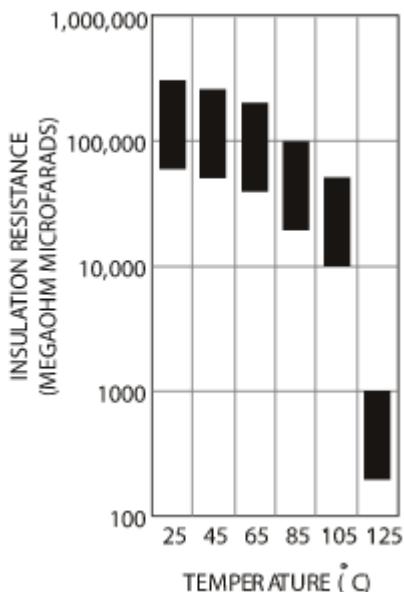
Reference MIL-STD-202

Characteristics

Insulation Resistance

Temperature(°C)	25	85	125
Megaohmsx Microfarads	100,000	7,000	700

Insulation Resistance



Dielectric Strength

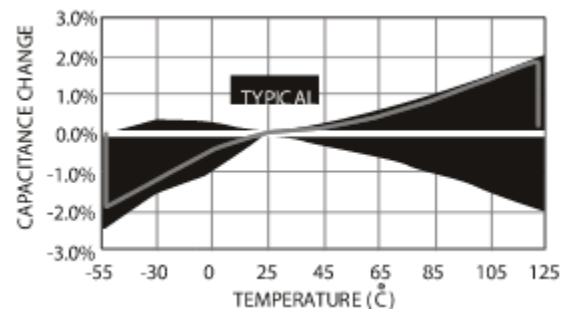
Capacitors will withstand a DC potential of 200% rated voltage for two (2) minutes without damage or breakdown.

Test voltage is applied and discharged through a resistance of 1 OHM per volt minimum, and at 25°C.

Capacitance Change

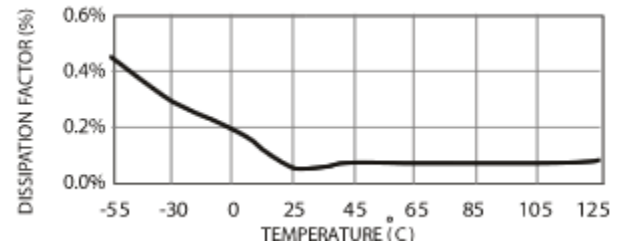
Temperature(°C)	-55	25	85	125
PercentageChange (typical)	-2.5	0	±1.0	±2.0

CapacitanceChange



Dissipation Factor

When measured at 1KHz, the dissipation factor will not exceed 0.2% from +25° to 125°C



Electrical Data

VALUE IN MFD	VDC						VALUE IN MFD	VDC						VALUE IN MFD	VDC					
	30	50	100	150	200	300		30	50	100	150	200	300		30	50	100	150	200	300
0.0010	-	-	-	-	-	1	0.010	-	1	2	-	-	3	0.10	-	3	5	6	-	-
0.0012	-	-	-	-	-	1	0.012	-	1	2	-	3	4	0.12	-	3	5	-	-	-
0.0015	-	-	-	-	-	1	0.015	-	1	2	-	3	4	0.15	-	3	6	-	-	-
0.0018	-	-	-	-	-	1	0.018	-	1	-	-	3	5	0.18	3	4	6	-	-	-
0.0022	-	-	-	-	1	2	0.022	-	1	-	3	4	5	0.22	3	4	6	-	-	-
0.0027	-	-	-	-	1	2	0.027	-	1	-	3	4	5	0.27	3	4	-	-	-	-
0.0033	-	-	-	1	2	3	0.033	1	2	3	4	5	6	0.33	4	5	-	-	-	-
0.0039	-	-	-	1	2	3	0.039	1	2	3	4	5	6	0.39	4	5	-	-	-	-
0.0047	-	-	-	1	2	3	0.047	1	2	3	-	5	-	0.47	5	6	-	-	-	-
0.0056	-	-	1	2	-	3	0.056	2	0	3	5	6	-	0.56	5	6	-	-	-	-
0.0068	-	-	1	2	-	3	0.068	2	3	4	5	6	-	0.68	5	6	-	-	-	-
0.0082	-	-	1	-	-	3	0.082	2	3	4	6	-	-	0.82	6	-	-	-	-	-
-	-	-	-	-	-	-	-	-	-	-	-	-	-	1.00	6	-	-	-	-	-

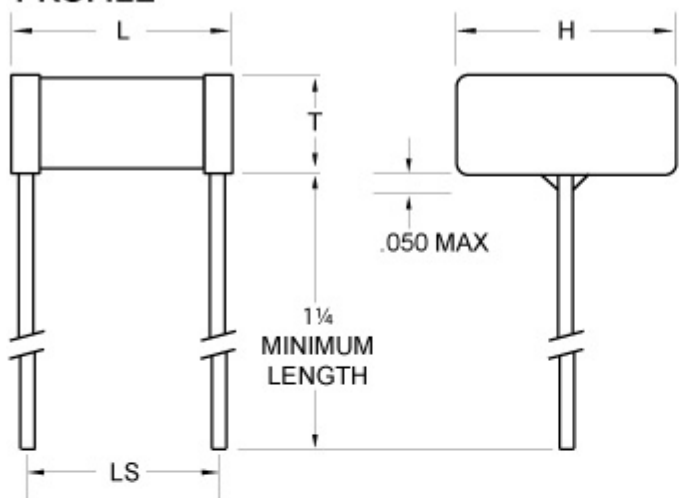
CASE DIMENSIONS				
CASE NO.	T	H	L	LS
		+0.030 - 0.010	+ 0.030 - 0.010	+ 0.030 - 0.020
1	0.110	0.210	0.240	0.200
2	0.170	0.270	0.240	0.200
3	0.170	0.270	0.340	0.300
4	0.190	0.380	0.340	0.300
5	0.190	0.380	0.450	0.400
6	0.220	0.500	0.450	0.400

Note: When specifying insulated case capacitors, add 0.025" to the T and L dimensions, and 0.040" to the H dimension.

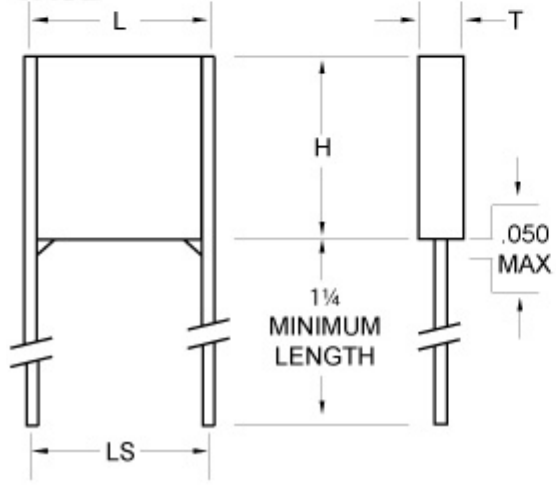
Mechanical Data

All Dimensions in Inches

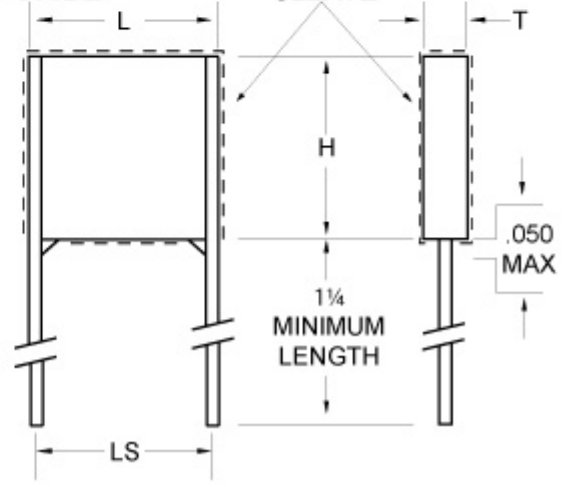
LOW PROFILE



UNINSULATED CASE



INSULATED CASE



ADDITIONAL INFORMATION

Because of its sub miniature size, care must be taken to assure that the body temperature of the HECR capacitor does not exceed 125°C during installation, so as not to adversely affect performance.

How To Order

TYPE Metallized Polycarbonate - Hermetically Sealed	→	HECR
CAPACITANCE IN PICO FARADS The first digits are significant, the third digit represents the number of zeros to follow to express capacitance in picofarads.	→	102
STYLE / VOLTAGE A=30VDC, B=50VDC, D=100VDC, E=150VDC, F=200VDC, H=300VDC	→	A
TOLERANCE K=±10% J=±5% G=±2% F=±1%	→	K

Marking And Date Code

All capacitors are marked with company initials "EC", corporate logo or EC trademark—in addition to type HECR, capacitance, tolerance, rated DC working voltage and date code. The first two digits of the date code represent the year, the second two digits the week, i.e., 0952 is the 52nd week of 2009, 0902 is the second week of 2009. NOTE: Those supplied to MIL-C-39022/11 are marked in accordance with the military specification.

Quality Assurance

Major emphasis is placed on quality assurance. EC is an ISO 9001-2000 and AS9100:2004 Certified Company. Raw material inspection and the use of SPC manufacturing procedures assure the highest quality standards. Procedures are fully described in the EC Quality Control Manual. Electronic Concepts will continue to advance the state-of-the-art by utilizing leading edge technology, compact capacitor designs and establishing reliability procedures.

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