

Evans CAPACITOR Company www.evanscap.com	Product Specification HYCAP	NUMBER	HC
		ISSUE	01
		REVISION	B ECO 11-018
		DATE	08/11/11

1.0 SCOPE

This document contains specific electrical, mechanical, and environmental requirements and specifications for double-sealed, axial-leaded hybrid capacitors.

2.0 CONSTRUCTION

2.1 General

The capacitors shall be comprised of sintered tantalum anodes and ruthenium oxide coated cathodes operating in aqueous electrolyte. The components shall be confined within a tantalum case, first by a compressed gasket, followed by a hermetically welded glass to metal seal.

2.2 Package

The configuration and dimensions shall be as per Figure I.

2.3 Mass

The maximum mass is specified in Table II.

2.4 Hermetic Seal

The capacitor shall be hermetically sealed such that the package does not leak electrolyte or vent any gas when exposed to a vacuum, per MIL-STD-202, Method 112, Condition C, Procedure IIIa.

2.5 Part Marking

The capacitor shall be permanently and legibly marked on the case circumference with the following information, at a minimum:

- i. Manufacturer's name and/or cage code
- ii. Manufacturer's part number
- iii. Date/lot code
- iv. Individual unit serial number

The marking shall be resistant to solvents per MIL-STD-202, Method 215J.

2.6 Solderability

The terminations shall be solderable per ANSI J-STD-002.

2.7 Resistance to Soldering Heat

The capacitor shall be able to withstand solder dipping of the terminations at 260°C for 10 seconds per MIL-STD-202, Method 210, Condition B. The capacitor shall not be visibly damaged, and the electrical characteristics shall not be affected.

2.8 Terminal Strength

The terminations shall be able to withstand a 5-lb, 30-second pull test per MIL-STD-202, Method 211, Condition A. The capacitor shall not be visibly damaged, and the electrical characteristics shall not be affected.

2.9 Fungus Resistance

The capacitor materials shall not support fungus growth, nor shall they be a nutrient to fungus.

Evans CAPACITOR Company www.evanscap.com	Product Specification HYCAP	NUMBER	HC
		ISSUE	01
		REVISION	B ECO 11-018
		DATE	08/11/11

3.0 ENVIRONMENTAL REQUIREMENTS

3.1 Operating Temperature

-55°C to +125°C (with voltage de-rating)

3.2 Storage Temperature

-62°C to +130°C

3.3 Mechanical Environmental Testing

The capacitors shall be designed to withstand environmental testing in accordance with Table I below.

TABLE I. Mechanical Environmental Tests

TEST	REFERENCE	CONDITION	COMMENTS
Shock	MIL-STD-202, Method 213	I	6mS, 100g peak
Vibration, high freq	MIL-STD-202, Method 204	D	12 sweeps/axis, 20g peak
Thermal Shock	MIL-STD-202, Method 107	A	30 cycles, step 3 at +125C
Moisture Resistance	MIL-STD-202, Method 106		6V bias
Altitude	MIL-STD-202, Method 105	D	100,000-ft test

4.0 ELECTRICAL REQUIREMENTS

4.1 Capacitance

25°C, 120Hz capacitance is specified ($\pm 10\%$) in Table II.

4.2 Equivalent Series Resistance

Maximum 25°C, 120Hz ESR is specified in Table II.

4.3 DC Leakage

Maximum 25°C, 5-min rated voltage DCL is specified in Table II.

4.4 Rated Voltage

Maximum rated voltages up to 85°C are specified in Table II. Voltage de-rating at 125°C is specified in Table II. Between 85°C and 125°C, voltage requires linear de-rating.

4.5 Surge Voltage

Capacitors shall be able to withstand 1000 charge/discharge cycles at 110% of rated voltage at 85C through a 1K- Ω resistor. Each cycle shall consist of a 30-second surge voltage application, followed by a 330-second discharge period. Capacitors shall not be visibly damaged, and the electrical characteristics shall not be affected.

4.6 Life Test

Capacitors shall be able to withstand 2000 hours life test at rated voltage and 85°C or at de-rated voltage (per Table II) and 125°C. Upon completion of life test, capacitors shall not be visibly damaged, and the capacitor electrical parameters shall remain within initial specifications.

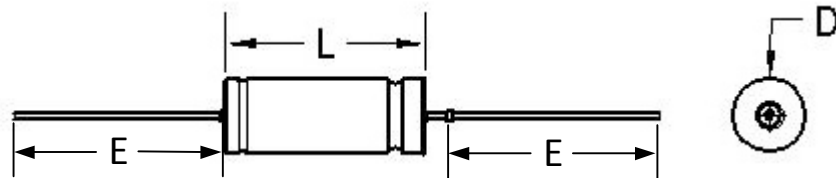
Evans CAPACITOR Company www.evanscap.com	Product Specification HYCAP	NUMBER	HC
		ISSUE	01
		REVISION	B ECO 11-018
		DATE	08/11/11

TABLE II. SPECIFICATIONS BY PART NUMBER

Part Number	Case Size	Max mass (g)	Max WVDC $\leq 85^{\circ}\text{C}$	Max WVDC @125°C	25°C AC/DC			Max DCL (μA) @85°C
					Nominal Cap (μF)	Max ESR (Ω)	Max DCL (μA)	
HCB010102	B	5.5	10	7	1000	0.8	3	10
HC2B025102	B	5.5	25	15	1000	0.8	7.5	75
HCB050221	B	5.5	50	30	220	0.9	2	10
HC2B050471	B	5.5	50	30	470	0.9	5	50
HCD050681	D	15	50	30	680	0.7	5	40
HC2D050152	D	15	50	30	1500	0.45	15	110
HCB060151	B	5.5	60	40	150	1.1	2	10
HC2B060331	B	5.5	60	40	330	0.9	5	50
HCD060561	D	15	60	40	560	0.8	5	40
HC2D060122	D	15	60	40	1200	0.5	20	200
HCB075111	B	6	75	50	110	1.3	2	10
HC2B075221	B	5.5	75	50	220	1.0	5	50
HCD075471	D	15	75	50	470	1.0	5	50
HC2D075941	D	15	75	50	940	0.5	20	200
HCB100680	B	6	100	65	68	2.1	2	10
HC2B100151	B	5.5	100	65	150	1.2	7.5	75
HCD100221	D	18	100	65	220	1.6	5	50
HC2D100471	D	15	100	65	470	0.7	25	250
HCB125470	B	6	125	85	47	2.3	2	10
HC2B125101	B	5.5	125	85	100	1.5	7.5	75
HCD125151	D	18	125	85	150	1.8	5	50
HC2D125241	D	18	125	85	240	1.6	10	100
HC2D125331	D	15	125	85	330	0.8	25	250

Evans CAPACITOR Company www.evanscap.com	Product Specification HYCAP	NUMBER	HC
		ISSUE	01
		REVISION	B ECO 11-018
		DATE	08/11/11

FIGURE I. MECHANICAL DIMENSIONS



Case Size	Dimensions mm (inches)			
	Basic Case		Insulated Case	
	L +0.79 (0.031) -0.41 (0.016)	D ± 0.41 (.016)	D MAX	E ±6.35 (.250)
B	16.28 (.641)	7.14 (.281)	7.92 (.312)	57.15 (2.250)
D	26.97 (1.062)	9.52 (.375)	10.31 (.406)	57.15 (2.250)