

<b>Evans</b> <b>Capacitor</b> <b>Company</b> www.evanscap.com	<b>Product Specification</b>  <b>HYBRID<sup>®</sup> CAPACITOR</b>	<b>NUMBER</b>	<b>HQ1</b>
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## 1.0 Scope

This document contains specific electrical, mechanical, and environmental requirements and specifications for HQ1 series polymer case Hybrid<sup>®</sup> Capacitors. These specifications are subject to change without notice.

## 2.0 Construction

### 2.1 General

The capacitor shall utilize sintered tantalum anodes and ruthenium oxide coated cathodes operating in aqueous electrolyte with additives. The components shall be sealed in a polymer case.

### 2.2 Package

The configuration and dimensions shall be as per Figure 1.

### 2.3 Mass

0-50 volt parts: 25 ± 3 grams; 63-125 volt parts: 31 ± 3 grams.

### 2.4 Part Markings

The capacitor shall be permanently and legibly labeled on the case with the following information.

- |   |                     |
|---|---------------------|
| i. Manufacturer's name and cage code          | iv. Working voltage |
| ii. Manufacturer's part identification number | v. Date/lot code    |
| iii. Capacitance                              | vi. Polarity        |

### 2.5 Solderability

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

### 2.6 Resistance To Soldering Heat

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

## 3.0 Environmental Requirements

### 3.1 Operating Temperature

-40 °C to +70 °C.

### 3.2 Storage Temperature

-40 °C to +80 °C

## 4.0 Electrical Requirements

### 4.1 Capacitance

The capacitance is specified in Table 2 at 120 Hz and 25 °C, ± 20%.

#### 4.2 Working Voltage

The working voltage rating is from 0 to V as specified in Table 2.

#### 4.3 Surge Voltage

The test shall be 1000 cycles at 110% of rated voltage at 70°C. Each cycle shall consist of a 30 second surge voltage application followed by a 330 second discharge period. The part shall be charged and discharged through a 1000 ohm resistor. The capacitor must not be visibly damaged and the electrical characteristics must remain within specification.

#### 4.4 Equivalent Series Resistance

The maximum equivalent series resistance (ESR) is specified in Table 2 at 1 kHz and 25°C.

#### 4.5 DC Leakage Current

The maximum DC leakage current is specified in Table 2 following 5 minutes at working voltage and 25°C.

**Table 2. Electrical Specifications**

V (VDC)	Capacitance	Part Number	DCL (max)	ESR (max)
10 V	50 000 $\mu$ F	HQ1010503	150 $\mu$ A	0.050 $\Omega$
16 V	36 000 $\mu$ F	HQ1016363	150 $\mu$ A	0.050 $\Omega$
25 V	23 000 $\mu$ F	HQ1025233	150 $\mu$ A	0.050 $\Omega$
35 V	12 000 $\mu$ F	HQ1035123	150 $\mu$ A	0.050 $\Omega$
50 V	8000 $\mu$ F	HQ1050802	170 $\mu$ A	0.060 $\Omega$
63 V	4000 $\mu$ F	HQ1063402	170 $\mu$ A	0.100 $\Omega$
80 V	2800 $\mu$ F	HQ1080282	200 $\mu$ A	0.100 $\Omega$
100 V	1900 $\mu$ F	HQ1100192	200 $\mu$ A	0.125 $\Omega$
110 V	1500 $\mu$ F	HQ1110152	200 $\mu$ A	0.200 $\Omega$
125 V	1100 $\mu$ F	HQ1125112	200 $\mu$ A	0.200 $\Omega$

Figure 1. Part Sketch.

