1.0 Scope
This document contains specific electrical, mechanical, and environmental requirements and specifications for HQ1 series polymer case Hybrid® 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. 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
   ii. Manufacturer’s part identification number
   iii. Capacitance
   iv. Working voltage
   v. Date/lot code
   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

<table>
<thead>
<tr>
<th>V (VDC)</th>
<th>Capacitance</th>
<th>Part Number</th>
<th>DCL (max)</th>
<th>ESR (max)</th>
</tr>
</thead>
<tbody>
<tr>
<td>10 V</td>
<td>50 000 µF</td>
<td>HQ1010503</td>
<td>150 µA</td>
<td>0.050 Ω</td>
</tr>
<tr>
<td>16 V</td>
<td>36 000 µF</td>
<td>HQ1016363</td>
<td>150 µA</td>
<td>0.050 Ω</td>
</tr>
<tr>
<td>25 V</td>
<td>23 000 µF</td>
<td>HQ1025233</td>
<td>150 µA</td>
<td>0.050 Ω</td>
</tr>
<tr>
<td>35 V</td>
<td>12 000 µF</td>
<td>HQ1035123</td>
<td>150 µA</td>
<td>0.050 Ω</td>
</tr>
<tr>
<td>50 V</td>
<td>8000 µF</td>
<td>HQ1050802</td>
<td>170 µA</td>
<td>0.060 Ω</td>
</tr>
<tr>
<td>63 V</td>
<td>4000 µF</td>
<td>HQ1063402</td>
<td>170 µA</td>
<td>0.100 Ω</td>
</tr>
<tr>
<td>80 V</td>
<td>2800 µF</td>
<td>HQ1080282</td>
<td>200 µA</td>
<td>0.100 Ω</td>
</tr>
<tr>
<td>100 V</td>
<td>1900 µF</td>
<td>HQ1100192</td>
<td>200 µA</td>
<td>0.125 Ω</td>
</tr>
<tr>
<td>110 V</td>
<td>1500 µF</td>
<td>HQ1110152</td>
<td>200 µA</td>
<td>0.200 Ω</td>
</tr>
<tr>
<td>125 V</td>
<td>1100 µF</td>
<td>HQ1125112</td>
<td>200 µA</td>
<td>0.200 Ω</td>
</tr>
</tbody>
</table>
Figure 1. Part Sketch.