**FEATURES AND BENEFITS**
- High performance product with low ESR
- Exceptional shock and vibration resistance
- Long lifetimes with up to 500,000 duty cycles*
- Compliant with UL, RoHS, and REACH requirements

**TYPICAL APPLICATIONS**
- Wind Turbine Pitch Control
- UPS System
- Actuators
- Emergency Lighting
- Telematics

**PRODUCT SPECIFICATIONS**

<table>
<thead>
<tr>
<th>ELECTRICAL</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Rated Voltage, (V_R)</td>
<td>2.7 VDC</td>
</tr>
<tr>
<td>Surge Voltage(^1)</td>
<td>2.85 VDC</td>
</tr>
<tr>
<td>Rated Capacitance, (C^3)</td>
<td>360 F</td>
</tr>
<tr>
<td>Min. / Max. Capacitance, Initial</td>
<td>360 F / 432 F</td>
</tr>
<tr>
<td>Typical Capacitance, Initial(^2,3)</td>
<td>375 F</td>
</tr>
<tr>
<td>Rated (Max.) ESR(_{dc}, ) Initial(^3)</td>
<td>3.2 mΩ</td>
</tr>
<tr>
<td>Typical ESR(_{dc}, ) Initial(^2,3)</td>
<td>2.9 mΩ</td>
</tr>
<tr>
<td>Typical ESR(_{dc}, ) Initial, 5 sec(^2,3)</td>
<td>3.4 mΩ</td>
</tr>
<tr>
<td>Maximum Leakage Current(^4)</td>
<td>0.75 mA</td>
</tr>
<tr>
<td>Maximum Peak Current, Non-repetitive(^6)</td>
<td>220 A</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>PHYSICAL</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Nominal Mass</td>
<td>71.4 g</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>POWER &amp; ENERGY</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Operating Temp. Range</td>
<td>Standard (-40°C to 65°C) at 2.7V</td>
</tr>
<tr>
<td>Maximum Stored Energy, (E_{max}^6,9)</td>
<td>0.36 Wh</td>
</tr>
<tr>
<td>Gravimetric Specific Energy(^6)</td>
<td>5.1 Wh/kg</td>
</tr>
<tr>
<td>Usable Specific Power(^6)</td>
<td>3.8 kW/kg</td>
</tr>
<tr>
<td>Impedance Match Specific Power(^6)</td>
<td>7.9 kW/kg</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>SAFETY</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Certifications</td>
<td>RoHS, REACH, UL 810A</td>
</tr>
</tbody>
</table>

**TYPICAL CHARACTERISTICS**

<table>
<thead>
<tr>
<th>THERMAL CHARACTERISTICS</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Typical Thermal Resistance ((R_{in}, ) Housing)(^8)</td>
<td>8.8°C/W</td>
</tr>
<tr>
<td>Typical Thermal Capacitance ((C_{in}))</td>
<td>75.6 J/°C</td>
</tr>
<tr>
<td>Usable Continuous Current (BOL) ((\Delta T = 15 °C))^(8,10)</td>
<td>23 A</td>
</tr>
<tr>
<td>Usable Continuous Current (BOL) ((\Delta T = 40 °C))^(8,10)</td>
<td>38 A</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>LIFE*</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Projected DC Life at Room Temperature</td>
<td>10 years</td>
</tr>
<tr>
<td>Temperature ((At \text{ rated voltage and } 25°C, \text{ EOL}^{10}))</td>
<td></td>
</tr>
<tr>
<td>DC Life at Standard High Temperature</td>
<td>1,500 hours</td>
</tr>
<tr>
<td>Temperature ((At \text{ rated voltage and } 65°C, \text{ EOL}^{10}))</td>
<td></td>
</tr>
<tr>
<td>DC Life at De-Rated Voltage &amp; Higher Temperature</td>
<td>1,000 hours</td>
</tr>
<tr>
<td>Temperature ((At 2.3V \text{ and } 85°C, \text{ EOL}^{10}))</td>
<td></td>
</tr>
<tr>
<td>Projected Cycle Life at Room Temperature ((\text{Constant current charge-discharge from } V_R \text{ to } 1/2V_R \text{ at } 25°C, \text{ EOL}^{10}))</td>
<td>500,000 cycles</td>
</tr>
<tr>
<td>Shelf Life ((\text{Stored uncharged at } 25°C, \leq 50% \text{ RH}))</td>
<td>4 years</td>
</tr>
</tbody>
</table>

*Results may vary. Additional terms and conditions, including the limited warranty, apply at the time of purchase. See the warranty details for applicable operating and use requirements.
BCAP0360 P270 S18

**WARNING:**
The blank terminals are provided for mechanical support only. The corresponding PCB patterns must be isolated from positive and negative terminals. Failure to isolate the blank terminals may result in malfunction of the product.

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**Datasheet: 2.7V 360F ULTRACAPACITOR CELL**

1. **Surge Voltage**
   - Absolute maximum voltage, non-repetitive. Duration not to exceed 1 second.

2. **“Typical” values represent mean values of production sample.**

3. **Rated Capacitance & ESR<sub>th</sub> (measure method)**
   - Capacitance: Constant current charge (10 mA/F) to V<sub>r</sub>, 5 min hold at V<sub>r</sub>, constant current discharge 10 mA/F to 0.1 V.
   - ESR<sub>th</sub>: Constant current charge (10 mA/F) to V<sub>r</sub>, 5 min hold at V<sub>r</sub>, constant current discharge (40 * C * V<sub>[max] (mA)) to 0.1 V.

4. **Maximum Leakage Current**
   - Current measured after 72 hrs at rated voltage and 25°C. Initial leakage current can be higher.
   - If applicable, module leakage current is the sum of cell and balancing circuit leakage currents.

5. **Maximum Peak Current**
   - Current needed to discharge cell/module from rated voltage to half-rated voltage in 1 second.

6. **Energy & Power (Based on IEC 62391-2)**
   - Maximum Stored Energy, E<sub>max</sub> (Wh) = \(\frac{1}{2}CV^2\) (Wh).
   - Gravimetric Specific Energy, W/kg = \(\frac{E_{\text{max}}}{\text{mass}}\) (W/kg).
   - Usable Specific Power, W/kg = \(\frac{I_{\text{peak}}}{\text{mass}}\) (W/kg).
   - Impedance Match Specific Power, W/kg = \(\frac{0.25I_{\text{peak}}}{\text{mass}}\) (W/kg).

7. **Cycle Life Test Profile**
   - Cycle life varies depending upon application-specific characteristics. Actual results will vary.

8. **Temperature Rise at Constant Current**
   - ΔT=R<sub>th</sub> x ESR<sub>th</sub> x R<sub>h</sub>

9. Per United Nations material classification UN3499, all Maxwell ultracapacitors have less than 10 Wh capacity to meet the requirements of Special Provisions 361. Both individual ultracapacitors and modules composed of those ultracapacitors shipped by Maxwell can be transported without being treated as dangerous goods (hazardous materials) under transportation regulations.

10. **BOL: Beginning of Life, rated initial product performance**
    - EOL: End of Life criteria.
    - Capacitance: 80% of min. BOL rating
    - ESR<sub>th</sub>: 2x max. BOL rating

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**APPLICATION INFORMATION**

**BCAP0360 P270 S18**

- **Dimensions (mm):**
  - L: 63.0 (±1.0)
  - D: 35.0 (±1.0)
  - I: 1.50 (±0.05)
  - H: 5.6 (±0.1)
  - A: 22.5 (±0.1)
  - B: 19.5 (±0.1)
  - C: 5.6 (±0.1)

**Part Description**

**Part Number:**
- BCAP0360 P270 S18

**Dimensions:**
- L: 63.0 mm (±1.0)
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- H: 5.6 mm (±0.1)
- A: 22.5 mm (±0.1)
- B: 19.5 mm (±0.1)
- C: 5.6 mm (±0.1)

**When ordering, please reference the Maxwell Model Number below.**

- **Maxwell Model Number:**
  - BCAP0360 P270 S18
- **Maxwell Part Number:**
  - 133524
- **Alternate Model Number:**
  - ESHSR-0360C0-002R7A1

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