Conductive Polymer Solid capacitor OS-CON
An ideal replacement for Aluminum Electrolytic capacitors

<table>
<thead>
<tr>
<th></th>
<th>E-CAP</th>
<th>OS-CON</th>
<th>EXAMPLE</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Structure</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Electrolyte</td>
<td>Liquid</td>
<td>Polymer</td>
<td></td>
</tr>
<tr>
<td>Size (mm)</td>
<td>Dia. 4–18 x 5.5–42</td>
<td>Dia. 4–10 x 4.5–13</td>
<td></td>
</tr>
<tr>
<td>Capacitance (µF)</td>
<td>Up to 22,000</td>
<td>Up to 2,700</td>
<td></td>
</tr>
<tr>
<td>Voltage (V)</td>
<td>4–450</td>
<td>2.5–100</td>
<td></td>
</tr>
<tr>
<td>Ripple Current</td>
<td>Low</td>
<td>Very High</td>
<td></td>
</tr>
<tr>
<td>ESR (20°C 100kHz)</td>
<td>Ok</td>
<td>Very Low</td>
<td></td>
</tr>
<tr>
<td>Low temperature /</td>
<td>Bad</td>
<td>Good</td>
<td></td>
</tr>
<tr>
<td>High-frequency</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>characteristics</td>
<td></td>
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</tbody>
</table>

**EXAMPLE**

**E-CAP**
6.3V / 220µF / 105°C / 2,000h / 6.3x5.8mm / ESR 360mΩ / ripple 0.240Arms

**OS-CON**
6.3V / 220µF / 105°C / 2,000h / 6.3x6mm / ESR 27mΩ / ripple 2.32Arms

**EXAMPLE COMPARISON**

<table>
<thead>
<tr>
<th></th>
<th>E-CAP</th>
<th>OS-CON</th>
<th>Benefit</th>
</tr>
</thead>
<tbody>
<tr>
<td>Lifetime (hours)</td>
<td>2,000</td>
<td>2,000</td>
<td>Better endurance due to different lifetime formula*</td>
</tr>
<tr>
<td>Ripple Current (A r.m.s)</td>
<td>0.24</td>
<td>2.32</td>
<td>10 times better Ripple Current</td>
</tr>
<tr>
<td>ESR (mΩ)</td>
<td>360</td>
<td>27</td>
<td>More than 13 times less ESR</td>
</tr>
</tbody>
</table>

*OS-CON is an optimal replacement for electrolytic capacitors since they have longer lifespan

**Lifetime comparison of E-CAP 2,000 hours vs. OS-CON 2,000 hours**

\[
L_x = L_o \times 10^{\frac{To-T_x}{20}}
\]

Lx: Capacitor’s expected lifetime at Tx(H)
Lo: Guaranteed lifetime(H)
To: Guaranteed temperature(°C)
Tx: Capacitor’s temperature in actual use (°C)

**OS-CON**
20°C down ➡️ x10 lifetime
Practical equation

**E-CAP**
10°C down ➡️ x2 lifetime
Arrhenius equation

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**Diagram:**
- **OS-CON** and **E-CAP** graphs showing lifetime comparison at different temperatures.
- **Table:** Comparison of E-CAP and OS-CON in terms of lifetime, ripple current, and ESR.
- **Equation:** Practical and Arrhenius equations for lifetime calculation.
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WHERE DO WE OFFER ALTERNATIVES:

- Voltage up to 100V
- Capacitance up to 2,700µF
- Maintenance-free due to long life
- Supports high ripple current
- Stable Temperature Characteristic
- Non-Automotive Application

TARGET APPLICATIONS:

- Oil/Water pump
- Smart Metering
- Base station
- Security Camera
- Power Supply
- Home Appliances
- Industrial Lighting
- Solar Inverter
- Industrial Automation
- Embedded system

CONTACT

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