Axial Aluminum Electrolytic Capacitors
Line Extension Notification

<table>
<thead>
<tr>
<th>Date:</th>
<th>30th September 2016</th>
<th>ID Number:</th>
<th>LEN-300916-JV</th>
</tr>
</thead>
<tbody>
<tr>
<td>Affected Products</td>
<td>All PEG and PEH series of 18 and 20mm diameter capacitors.</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Change</td>
<td>KEMET has extended its manufacturing capacity by adding new fully automated production lines for Axial Aluminum Electrolytic Capacitors in Gränna, Sweden and Évora, Portugal. The new lines follow the same production processes and materials of the existing lines. Raw materials will continue to be sourced from the same existing suppliers.</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Justification and Benefits</td>
<td>KEMET's primary concern is to ensure the supply of components to its customers and as such KEMET invested in two new identical, fully automated lines. These new lines will work alongside with the existing ones. KEMET is improving lead-times by adding capacity, and improving quality by reducing handling with the higher automation and leaner processes. Extending capacity to Évora site, reduces the supply risk and ensures continuity.</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Effective Date and Identification</td>
<td>The new lines are ready for production and KEMET intends to start shipping on January 1st 2017. Reasonable sample quantities of PEG and PEH series of 18 and 20mm diameter will be available upon request. There will be no change to the part number, traceability will be ensured by batch code.</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Contact</td>
<td>Jorge Vacas, Product Manager KEMET Electronics Corp (<a href="http://www.kemet.com">www.kemet.com</a>) ph: +351 967861630 E-Mail: <a href="mailto:jorgevacas@kemet.com">jorgevacas@kemet.com</a></td>
<td>Paulo Pedra, EMEA Product Manager Director KEMET Electronics Corp (<a href="http://www.kemet.com">www.kemet.com</a>) ph: +351 963308442 E-Mail: <a href="mailto:paulopedra@kemet.com">paulopedra@kemet.com</a></td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Customer</th>
<th>Customer Code:</th>
</tr>
</thead>
<tbody>
<tr>
<td>Customer Contact Name:</td>
<td>Phone:</td>
</tr>
<tr>
<td>Customer Contact Title:</td>
<td>E-Mail Address:</td>
</tr>
</tbody>
</table>

Customer Signature: __________________________ Date: __________________________

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Axial Aluminum Electrolytic Capacitors
Line Extension
Support documentation in conjunction with LEN-300916-JV

Date: September 30th 2016
Axial AI Electrolytic Cap. Line Extension

Topics

• Overview
• Benefits
• Gränna, Sweden and Évora, Portugal sites
• New production lines approval process
• Relevant process steps
  • Comparison Current vs. New Production Line
  • New Production Line Description of relevant Process Steps
• Support
Axial Al Electrolytic Cap. Line Extension
Benefits for customers

• Reduced lead times and faster response times.

• Two locations of manufacture, reducing the supply risk.

• Improved quality by reducing handling with the higher automation and leaner processes.

• Traceability assured via the batch code.
Axial Al Electrolytic Cap. Line Extension Overview

- Business growth as more automotive applications increase number of caps per unit.

- KEMET’s targets:
  - Increase capacity
  - Reduce lead times
  - Ensure continuity of supply with two sites
  - Improve product quality

- Main actions to achieve:
  - Acquisition of two identical fully automated production lines.
  - Add axial aluminium electrolytic capacitors production to the Évora, Portugal manufacturing site.
KEMET Electronics AB is located in Gränna on lake Vättern, south Sweden.
- Founded in 1960 by Ericsson.
- Plant was part of 2007 Evox/Rifa Electrolytics business acquisition.
- This site has been supplying axial electrolytic capacitors for the automotive industry since 1997.
- Certification:
  - ISO 9001
  - ISO 14001
  - ISO TS 16949
- Approximately 100 employees.
KEMET Electronics Portugal, S.A., is located in Évora, south Portugal.

Founded in 1997 by Siemens+Matsushita.

Plant was part of 2006 EPCOS Tantalum business acquisition.

This site supplied automotive industry until June 2014.

Currently producing electrolytic Snap-In and Screw Terminal capacitors for renewables and consumer markets, as well as for the aerospace industry.

Certification:
- ISO 9001:2008
- ISO 14001
- ISO TS 16949 (Letter of conformance in September, 2016)

Approximately 180 employees.
Axial Al Electrolytic Cap. Line Extension
New production lines approval process

- New axial lines went through an extensive approval process.
- Product was qualified by a product family qualification plan and compared to current production line parts.
- Product family test reports are available on request to customers.
- Reasonable samples quantities, will be available upon request to customers for their own tests.
- After customer approval, sourcing can start from both new lines and locations.
Axial Al Electrolytic Cap. Line Extension
Relevant process steps

**Comparison Current vs. New Production Line:**

<table>
<thead>
<tr>
<th>Step</th>
<th>Operation</th>
<th>Identical</th>
<th>Same principle</th>
<th>New principle</th>
<th>Comments</th>
<th>New</th>
<th>Actual</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Winding</td>
<td>X</td>
<td></td>
<td></td>
<td>Identical machine type</td>
<td>Equipment type: AVE392K</td>
<td>Equipment type: AVE392K</td>
</tr>
<tr>
<td>2</td>
<td>Winding-Can Assembly</td>
<td>X</td>
<td></td>
<td></td>
<td>Identical equipment and process parameters / Cold Welding Process</td>
<td></td>
<td></td>
</tr>
<tr>
<td>3</td>
<td>Electrolyte Filling</td>
<td>X</td>
<td></td>
<td>Syringe/plunger type pump system</td>
<td>6 capacitors filled in parallel</td>
<td></td>
<td></td>
</tr>
<tr>
<td>4</td>
<td>Vacuum Treatment</td>
<td>X</td>
<td></td>
<td></td>
<td>Identical process parameters for Main Vacuum Treatment</td>
<td>Separate Pre-vacuum process added before Main Vacuum Treatment</td>
<td>Main Vacuum Treatment</td>
</tr>
<tr>
<td>5</td>
<td>Tab-Lid Welding</td>
<td>X</td>
<td></td>
<td></td>
<td>Identical process, equipment and parameters</td>
<td>Equipment type: Ultrasonic welding from Stapla/Schunk (see ‘Tab Bending &amp; Lid Closing Process’ below)</td>
<td></td>
</tr>
<tr>
<td>6</td>
<td>Tab Bending &amp; Lid Closing</td>
<td>X</td>
<td></td>
<td></td>
<td>Full automatic process</td>
<td>Manual Process</td>
<td></td>
</tr>
<tr>
<td>7</td>
<td>Capacitor Sealing</td>
<td>X</td>
<td></td>
<td></td>
<td>Rotating sealing head, one sealing wheel and one support wheel</td>
<td>Rotating Capacitor Can, one sealing wheel</td>
<td></td>
</tr>
</tbody>
</table>
Axial Al Electrolytic Cap. Line Extension

Relevant process steps

- Tab Bending and Lid Closing

- Tab bending and Lid Closing are done automatically.
Axial Al Electrolytic Cap. Line Extension
Relevant process steps

- Tab Bending & Lid Closing Process
  - The automatic Tab Bending & Lid Closing in the New Production Lines results in a different shape of the anode Aluminum tab bending under the lid as described on the below pictures:

  - This different shape of bending is due to the full process automation on the New Lines, while on the Actual Production Line the Tab Bending & Lid Closing is done manually.
Axial Al Electrolytic Cap. Line Extension
Relevant process steps

- Capacitor Sealing

- During sealing the capacitor is fixed while the sealing and the supporting wheel are rotating. Pictures 1 and 2 show the capacitor before and after sealing, respectively.
Axial Al Electrolytic Cap. Line Extension Support

- For questions related to the Axial Al Electrolytic Capcitors Line Extension, please contact:
  - Jorge Vacas, Product Manager
    - KEMET Electronics Corp (www.kemet.com)
    - ph: +351 967861630
    - E-Mail: jorgevacas@kemet.com
  
  - Paulo Pedra, EMEA Product Manager Director
    - KEMET Electronics Corp (www.kemet.com)
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Thank You!