

# Product Change Notification



Product Group: Tantalum Capacitors/Mar-2012/PCN-TC-009-2012 Rev 0

## **Halogen Free Encapsulation material approval.** **Molded Chip Series for Automotive grade products.**

**DESCRIPTION OF CHANGE:** Introduction of Halogen Free encapsulation material.

**CLASSIFICATION OF CHANGE:** Encapsulation Material change.

### **REASON FOR CHANGE:**

Due to increased worldwide environmental concerns, the need for halogen free solutions in electronic components and systems is getting close increasing attention within the electronics industry. Vishay Tantalum Division is fully supportive of the various industry efforts throughout the world to phase out the use of halogen and other undesirable elements from electronic equipment materials and manufacturing processes.

The concept of Halogen Free/Green Design is derived from the IEC62368 standard, which is currently being discussed as a global standard within the electronics industry.

Various industrial standards set max limits for halogens. For example:

- 1) JPCA-ES-01-2003, IEC 614249-2-21 and IPC 4101B set limits for assembly halogen content at 900 ppm for each, chlorine and bromine.
- 2) Joint JEDEC/ECA Standard, JS709 which provides terms and definitions for "low-halogen" electronic product.

In order to assure continuous supply chain, Vishay has qualified halogen free encapsulation material where its chemical formulation is similar to approved material with the exception of few minor ingredients which were removed (see Bill of Material attached for comparison). Form, Fit and Function is identical to the currently used encapsulation material and it will be introduced to production on a case-by-case basis pending customer approval.

### **EXPECTED INFLUENCE ON QUALITY/RELIABILITY/PERFORMANCE:**

There will be no effect on product quality, reliability or performance. The statement is based on reliability performance achieved per AEC-Q200 rev D requirements for an encapsulation material change. All published performance specifications remain unchanged.

**PRODUCT CATEGORY:** Molded chip Tantalum Capacitors, surface mounted

**PART NUMBERS/SERIES/FAMILIES AFFECTED:** MOLDED CHIP CAPACITORS  
TANTAMOUNT@AUTOMOTIVE (SERIES 293D/593D/TR3 with detail spec/TP3/TH3/TH4).

**VISHAY BRAND(s):** VISHAY SPRAGUE.

### **TIME SCHEDULE:**

Start Shipment Date: July-2013

Last Time Buy Date: Sep-2012 (or upon special agreement)

Last Time Shipment Date: June-2013

**SAMPLE AVAILABILITY:** Available upon request.

**PRODUCT IDENTIFICATION:** Special identification on Vishay label, The example is attached.

**QUALIFICATION DATA:** A qualification summary is attached. Full data is available upon request.

**This PCN is considered approved, without further notification, unless we receive specific customer concerns before 1-Jul-2013 or as specified by contract.**

**ISSUED BY:** Sahar Eitan                      [Eitan.Sahar@vishay.com](mailto:Eitan.Sahar@vishay.com)

**For further information, please contact your regional Vishay office.**

**CONTACT INFORMATION:**

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## List of attachments:

1. Halogen free material data package:
  - a. BoM of Halogen Free material (Example is TP3 100-6 B case)
  - b. BoM of Non-Halogen Free material (Example is TP3 100-6 B case)
  - c. Example of “Halogen Free” reel label
  - d. Green Mold Qualification testing summary per AECQ-200.
  - e. Halogen Free material Flammability test results (performed by supplier)
2. JPCA-ES-01–2003, IEC 614249–2–21 standard
3. IPC 4101B Standard
4. Joint JEDEC/ECA standard
5. List of customers along with their materials