

# KEMET Electronics Corp.

## Product Status for Pb-Free, RoHS, and Pb-Free Processing (260°C)

The deadline for environmental compliance is near and the big question is “Are we ready?” The answer is “Yes!” Our commercial surface-mount tantalum and ceramic products are fully compliant with the legislation, and more importantly, they are capable of withstanding the proposed reflow process at 260°C.

We maintain a segment in our website that is an evergreen report on the status of our compliance, with a product matrix selection grouping and updated documents available to the public. The product matrix allows the users to review a detailed report of each product type and all product series to verify if the part is Pb-free through its part-numbering scheme. As we migrated from a Pb-bearing termination as the *standard* offering in many products to the Pb-free as the present and future *standard* offerings, details are highlighted in the part-numbering schemes. Remember that we must still maintain a Pb-bearing termination for many customers, especially military based designs where tin whisker growth is a real fear. In some instances, we maintain a gold surface coating for conductive adhesive applications. Details as to how these devices are identified are also shown in these matrix reports.

The matrix reports also spell out the solder temperature capabilities, MSL ratings, content of specific restricted materials, and the reel label “KEMET EZ ID” identification for RoHS compliance. It spells out when each product series was RoHS compliant as a standard offering.

In addition to the product matrix reports, more literature is visible by scrolling down in the “Green Roadmap” screen. Included in the “Documents” group are papers on the EU directives and product compliance, a quick reference guide for the KEMET part numbering schemes, and a report on the environmental “EZ ID” labeling. There are also reports on the Pb-Free conversion schedule and the “First to Market” report for the Pb-Free leaded devices.

Following the “Documents” group are groups of reports labeled “Product Eco-Compliance Management”, “Process Change Notices (PCNs)”, “Technical Information”, and “Environmental Certificates.” Within the “Technical Information” grouping are reports on the recommended reflow and wave-soldering profiles, flex strength, solder joint formation, and moisture sensitivity. The “Environmental Certificates” grouping contains the certificates of compliance (C of C’s) for all of the RoHS compliant product types.

“Actually making the components compliant has been one of the easier tasks associated with the directive. Many capacitors were already available in RoHS-compliant material sets. Some minor challenges were found in converting the through-hole devices, but even those were overcome early on. Higher temperature capability required by lead-free processing brought about other material changes and enhancements that were outside the scope of the original legislation. For the most part, much of this work is done and behind us.” (“Race to the RoHS Directive,” Mary Carter-Berrios)

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The screenshot shows the KEMET website's "Green Product Roadmap" page. At the top is the KEMET logo with the tagline "CHARGED." Below the logo is a navigation menu with links for HOME, PRODUCTS, NEWS, myKEMET, CUSTOMER SERVICE, ABOUT US, and HELP. The main content area features a large image of a winding road through a forest, with the text "GREEN PRODUCT ROADMAP" overlaid. To the right of the image, there is a section titled "RoHS Compliance and Lead-Free Status" and "Our Philosophy:" followed by a statement: "KEMET will conduct its business in a manner designed to protect the health and safety of our employees, our customers, the public, and the environment." Below this, there is a section for "Green Product Roadmap" which includes the "CapacitorEdge" logo and a link to access RoHS and Pb-Free status for parts. A "Product Matrix" section lists various product types with bullet points: Surface Mount Aluminum, Surface Mount Tantalum, Surface Mount K.O. Conductive Polymer, Surface Mount Ceramic, Surface Mount Ceramic Array, Through Hole Tantalum, and Through Hole Ceramic. At the bottom, there is a "Documents" section.