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Reliability Issues of Electrolytic Capacitors

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Abstract
There are few electronic components which – carrying out the same function – can differ so much from the constitutive materials point of view as the capacitor. However, there are some families that are representative for this electronic component. In the following, the reliability of two families of electrolytic capacitors (aluminum and tantalum capacitors, respectively) is analyzed. First, for each family of electrolytic capacitors, after a short description of the design and characteristics, the main applications are described. Then, the typical failure mechanisms are detailed, the main factors that influence the reliability are identified, and some methods for diminishing their action are proposed.

Keywords: Reliability, Electronic components, Electrolytic capacitors, Failure mechanisms.

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