

Automotive vs. Hi-Rel and De-rating in Solid Tantalum Capacitors

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The presentation describes the differences in qualification and testing requirements for commercial (automotive) vs. Hi-reliability grades of Tantalum (Ta) capacitors. Particularly, manufacturing of the automotive grade capacitors doesn't include established reliability test on the production batches, which opens door to changes in materials and processes aiming the cost reduction. These changes can be made without the requalification or the customer notification. The presentation also discusses effects of de-rating on the reliability and volumetric/weight efficiency of different grades of Ta capacitors. Comparison of the reliability of the MnO₂ and Polymer Solid Ta capacitors with conventional and advanced manufacturing and screening techniques will be presented as well as a possibility of reducing the total cost of the end electronic solutions by using the most reliable and efficient Ta capacitors.