

Project Summary:

Component Specification Study for Aluminum Liquid Electrolytic Capacitors

DfR Solutions was able to help a major personal computer manufacturer to assess component specifications for an aluminum liquid electrolytic capacitor used in their PCs. DfR was able to distinguish key areas of supplier specification that the PC manufacturer should look for when purchasing outsourced capacitors. Recommended required specifications included a standardized definition of lot code, electrolyte standardization, purity in aluminum foil, high voltage accelerated life testing and storage life testing, confirmation of supplier's rating, solderability assurance, absence of tin whiskers, and minimization of rework sensitivity.

Keywords: aluminum liquid electrolytic capacitors, component specification, personal computer, lot qualification, test-to-failure, tracking of critical to quality parameters, CTQ, derating, evaporation of electrolyte, dielectric breakdown, dielectric dissolution, overheating, week and year of production, product identifier, ESR, leakage current, capacitance, boiling point, electrolyte formulation, gas generation, galvanic couples, dissipation factor, applied voltage, applied ripple current, sampling frequency, step stress test, preconditioning, microprocessor socket