

Project Summary:

Failure Analysis of Motor Controller in Washing Machine

A major consumer electronics manufacturer asked DfR Solutions to determine the root-cause of failure in three washing machine controller boards that were returned. When the solder sides of the boards were examined, a clear progression of failure was identified. The morphology strongly suggested an overcurrent event. DfR Solutions identified three possible failure mechanisms that caused the short circuit.

Keywords: carbonization, charring, solder mask over trace, short, TRIAC, visual inspection, potting material, pin connection, anode, cathode, gate, overcurrent, potting-to-board adhesion, thermal damage, vaporized copper, charred edges, solder reflow, exposed copper, short circuit current path