

How to Develop a Qualification Test Plan for RoHS Products

½ Day Course

ABSTRACT

Like the rest of the electronics industry, your products will transition to Restriction of Hazardous Substances (RoHS) compliance. This will include the transition to lead-free solder, which at this time has significant reliability uncertainties. Even if a product does not need to be compliant, the materials and processes that make up your product are changing.

During this time of rapid transition, there is a significant new body of knowledge to understand to determine the areas of greatest risk to the reliability of a product. Once you understand the risks, you can then incorporate this new knowledge into the redesign of the product. With RoHS assessment and training, you can form a good RoHS Transition program including a new Qualification Test Plan to remain cost effective and efficient while narrowing down the issues that present a significant change in reliability risk.

OUTLINE

- Introduction to RoHS & Compliance
 - SnPb and Transition to Pb-Free
- Pb-Free Risks
 - Adequate Qualification of Components
 - Reviewing Detailed Vendor Data
- Qualification Requirements
 - 1st Level
 - Lower perceived risk of failure
 - Relatively simple products with passives, through-hole and/or coarse pitch surface mount leaded packages
 - Materials Used
 - Process Information Assessment
 - Component Information
 - Heat Resistance
 - Moisture Sensitivity
 - Solderability and Joint Durability
 - Lead Plating Material and Tin Whiskers
 - 2nd Level
 - Moderate perceived risk of failure
 - More complex products with plastic leadless packages, fine pitch QFPs, plastic BGAs, or chip scale packages
 - In addition to Qualification Level 1
 - Testing
 - Precondition / Assembly Conditions
 - Vibration and Shock
 - Thermal Cycling
 - Highly Accelerated Life Testing (HALT)
- Conclusion