

Failure Analysis Using Time Domain Reflectometry (TDR) Measurements.
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Time Domain Reflectometry (TDR) measurement methodology is increasing in importance as a non-destructive method for fault location in electronic packages. The visual nature of TDR makes it a very natural technology that can assist with fault location in BGA packages, which typically have complex interweaving layouts that make standard failure analysis techniques, such as acoustic imaging and X-ray, less effective and more difficult to utilize. This paper will focus on the use of TDR for package failure analysis work. We will analyze in detail the TDR impedance deconvolution algorithm as applicable to electronic packaging fault location work, focusing on the opportunities that impedance deconvolution and the resulting true impedance profile opens up for such work. We will present different techniques for package failure analysis based on the true impedance profile. We will attempt to focus on specific examples and ensure that the attendees will leave with improved understanding of the use of TDR for package failure analysis.