December 2013 Newsletter

Merry Christmas and a Happy New Year

From all of us to all of you!!! We wish you a very Merry Christmas, Happy Hanukkah, Feliz Navidad, Joyeux Noel, Froehliche Weihnachten, and Hauskaa joulua ja onnellista uutta vuotta, wherever you are in the world and a Special New Year.

Message from the CEO

As 2013 draws to a close, I want to thank all of our colleagues and customers for an amazing year. DfR continues to grow rapidly and we believe our consistent success comes from a high number of returning customers, who recognize the quality and value of our services, and our continued expansion into new and exciting opportunities, including our unrivaled Automated Design Analysis software, Sherlock, which recently won its 2nd Global Technology Award for Innovation. We have been especially pleased at the recognition we are receiving in high growth markets such as solar power, LED lighting, power electronics and electric vehicles. Products can’t be green unless they’re safe and reliable! Please enjoy this holiday season with your friends and family.

DfR Open House

DfR will be having our 2014 Open House on March 17th. There will be presentations from DfR Senior Staff members on Manufacturing, Medical, Automotive, Electronics Packaging, Avionics Reliability, Power Electronics, IC Wearout and Sherlock at the event. Please put this event on your calendar and join us for a day of interesting presentations, lunch, and networking. For more information please contact Greg Caswell.

Thar’s Gold in Them There Solder Joints!

Gold embrittlement in SnPb solder is a well-known failure mechanism in electronic assembly. To avoid this issue,
prior studies have indicated a maximum gold content of three weight percent. This paper attempts to provide similar guidance for Pb-free (SAC305) solder. For more information please contact Craig Hillman.

Getting an Audit? But not from the IRS!!!

A key recommendation from the paper concerned the need for an onsite audit of PCB suppliers. This recommendation arises due to the fact that there is no industry standard methodology for qualifying PCB suppliers. An audit encompasses all levels and types of PCB fabrication, from generic, multilayer rigid boards to complex rigid-flex configurations. This paper walks you through this complex process. For more information please contact Greg Caswell.

Plated Through Via Design

Preventing circumferential cracking of plated through vias (PTV) requires a deep understanding of industry capability, the physics of low cycle fatigue, and the influence of manufacturing processes on defect creation. This paper focuses on plated through via (PTV) barrel fatigue. For more information please contact Cheryl Tulkoff.

Other Interesting Items

Automotive Avionics????

DfR has been involved with many of the automotive manufacturers around the world as well as many avionics companies. So, a company that brings both market segments together is of interest. Take a look at Terrafugia to see the next generation in flying car technology. Any questions, please contact DfR’s automotive expert, Jim McLeish.

LEDs Light the National Christmas Tree

Even the National Christmas Tree is going “green.” But you say – the tree has been green forever. You’d be right, but the tree this year will be populated with Light Emitting Diodes (LEDs) for the first time, reducing electricity consumption by 90% and improving reliability. DfR has worked with several of the LED manufacturer’s to provide enhanced reliability. If you have an LED application and want to improve your product’s reliability please contact Greg Caswell.

Notable Quotes

“In reliability and quality engineering, physics always trumps mathematics.” Andre Klyner, PhD, Global Reliability Engineering Leader, Delphi. From the Words to Work By article in the November 2013 issue of QP Magazine. Read the full article.

Physics of Failure and Phoenix, Arizona?

In the December issue of Global SMT & Packaging, Craig Hillman discusses, defines, and explains why Physics of Failure should be a
critical approach used in every electronics design, across every industry. 
And what’s so interesting about Phoenix, Arizona? Read the article.

Everyone Should be Thinking About Cleaning and Contamination issues!!
DfR's Cheryl Tulkoff is quoted in this interesting article entitled “Avoiding Contamination Can Clean Up Many Problems” written by Terry Costlow, IPC online Editor. If you would like more information, please contact Cheryl Tulkoff.

Does Reliability Have a Place In EMS?
The potential is there for broad adoption of physics of failure analysis tools,” said Cheryl Tulkoff, Senior Member of the Technical Staff at DfR Solutions. “The overhead and expertise needed to do it is low. A working model can be set up in as little as two hours. Read on.

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