

Going from Gold to Copper Wirebonding in Your Car

The transition from gold to copper for wirebonding in semiconductor packages, being driven by the ever increasing cost of gold, has now attracted the interest of the automotive industry. Cu wire bonds are technically more challenging than gold to produce.

Read the article, **Ensuring Suitability of Cu Wire Bonded ICs for Automotive Applications**, published in the October issue of Chip Scale Review magazine. For more information please contact **Jim McLeish** or **Randy Schueller**.

Failure Modes in Conductive Adhesives

Conductive adhesives have been used in the electronics industry for a long time. Silver-filled Isotropic Conductive Adhesives (ICA) were first used for die bonding in hybrid circuits. Anisotropic Conductive Adhesives (ACA) were developed for attaching driver circuits to Liquid Crystal Displays (LCDs) for calculators. In order to utilize the full potential of conductive adhesive in an application, it is very important to understand the limitations of the technology, especially the potential failure modes that may occur. This **white paper** provides insight into this issue. For more information please contact **Greg Caswell**.



To Kill a Circuit Board: Perils in Manual Soldering and Cleaning Processes

Manual soldering and cleaning processes are among the least controlled processes in printed circuit board assembly. As a result, they create special challenges to both quality and long term reliability. This paper describes some of those key challenges and provides ways to address them in assembly to minimize problems. Through awareness of the issues, proper design and appropriate material selection and process control, companies can successfully use manual soldering and cleaning processes in high reliability products. **Read this paper here** as presented at SMTAI by **Cheryl Tulkoff**.

Temperature Cycling and Fatigue in Electronics



Services Spotlight

Design for Reliability

Every month we will feature a DfR Solutions Product or Service in greater detail.

For more information or questions, please contact **Ed Dodd**.

Try Sherlock Free

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Sherlock Automated Design Analysis™ software

Upcoming Webinars

Mark Your Calendars! The Reliability of Wearable Electronics Thursday, October 23, 2014

Presented by Greg Caswell
11am Session **Register Now**
2pm Session **Register Now**

In the News

Sherlock Automated Design Analysis™ Version 3.2 Introduces Hi-Fidelity PCB Modeling and Other Advances

New features enhance accuracy, speed, and reliability of complex board designs

Sherlock Automated Design Analysis™ Adds IPC Footprint Patterns

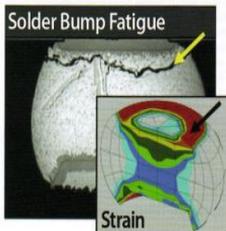
Increases speed and accuracy of user data import

We'll Meet You There!

Oct 21-22: SAE Convergence, Detroit, MI

Oct 28-30: Automotive Testing Expo, Novi, MI
2015

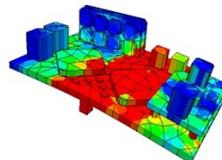
The majority of electronic failures occur due to thermally induced stresses and strains caused by excessive differences in coefficients of thermal expansion (CTE) across materials. CTE mismatches occur in both 1st and 2nd level interconnects in electronics assemblies. 1st level interconnects connect the die to a substrate. This substrate can be underfilled so there are both global and local CTE mismatches to consider. 2nd level interconnects connect the substrate, or package, to the printed circuit board (PCB). This would be considered a "board level" CTE mismatch. **This paper** identifies several stress and strain mitigation techniques including the use of conformal coating. For more information please contact **Nathan Blattau**.



Jan 26-29: RAMS, Palm Harbor, FL
Feb 22-26: IPC APEX, San Diego, CA

SHERLOCK in 3D!

Click the image below to view a short video about **Sherlock's New 3D Capabilities.**



[View short video](#)

SHERLOCK Demo



Sherlock User Forum

To better accommodate the users of Sherlock Automated Design Analysis™ software, DfR Solutions has established a User Forum which will provide insight in FAQs, discussions on Sherlock releases, Feature requests, Tips and Tricks, and also where you, the user, can input your experiences. Please go to **Sherlock User Forum**. Once you enter your information you will need to wait for DfR confirmation.

Reach Your Colleagues

Learn how your business can reach more than 12,000 electronics professionals.
Contact Us.

Top 5 Reasons Why Companies Use Sherlock

Sherlock Automated Design Analysis™ Software is the go-to electronics reliability tool used by designers and engineers across every major industry. Learn how Sherlock can help you design better, more reliable products faster and more efficiently than ever before.

- Get closer to real world modeling in electronics design**
- Integrate ECAD and CAE analysis**
- Incorporate Physics of Failure**
- Save time and predict failure earlier in process**
- Try it free!**

Other Interesting Items

Think Twice About that Low Tg Underfill

Read this article written by **Craig Hillman** in the October issue of Global SMT & Packaging Magazine.

Failure Modes of Wearable Electronics

Read this insightful article, written by **Greg Caswell** and recently published by EDN, and learn about the environments and issues that can impact the reliability of wearable electronics.

SMTA Award

Cheryl Tulkoff received the SMTA's Technical Distinction Award on September 30th at their annual meeting. They made a nice poster of her for the conference. Watch for an upcoming article entitled **3-D ICs: Progress Updates, Reliability Concerns, and Failure Mechanisms** in a future issue of EDFA magazine. This article was jointly written by Jan Vardaman of Techsearch International and Greg Caswell and Craig Hillman. For more information please contact **Greg Caswell**.

On Location

At DfR Solutions we still believe that personal relationships are best. Our Senior Staff spend a lot of time visiting clients in order to personally ensure that their projects are going well and discussing their overall reliability needs.

If you would like a personal visit from DfR Solutions, please

Contact Us.