2019 DESIGN FOR RELIABILITY CONFERENCE AGENDA

Location: Hyatt Regency Baltimore Inner Harbor

Date: March 25 – 27, 2019

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DfR Solutions
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Monday, March 25, 2019

Time	Title	Presenters
8:00-9:00 am	Registration/Breakfast	
9:00-9:30 am	Welcome	Dr. Craig Hillman, DfR Solutions
9:30-10:15 am	Case Study: How Continental Automotive is Integrating Sherlock into their Design Process	Continental Automotive
10:15-10:20 am	Break	
10:20-11:05 am	What's New with Sherlock?	Dr. Natalie Hernandez, DfR Solutions
11:05-11:50 pm	Predicting the Failure Rate of Next Generation Integrated Circuits using Reliability Physics	Ashok Alagappan, DfR Solutions
11:50-1:00 pm	Lunch	
1:00-1:45 pm	Communicating Quality and Reliability Expectations Up and Down the Supply Chain	Keith Newman, AMD
1:45-1:50 pm	Break	
1:50-2:35 pm	Understanding and Mitigating Chip-Package-Board Interactions (CPBI)	Dr. Gil Sharon, DfR Solutions
2:35-2:40 pm	Break	
2:40-3:25 pm	Best Practices in Reliability Management of Consumer Electronics	Ed Tinsley, Dell
3:25-3:30 pm	Break	
3:30-4:15 pm	Warranty-Reliability-Durability: How Optimal+/Sherlock Allow for Comprehensive Prediction Throughout the Product Lifecycle	Dan Sebban, Optimal Plus
4:15-5:00 pm	Risks of Wide Band Gap (WBG) Semiconductors in Power Supply Applications	Dr. Craig Hillman, DfR Solutions
5:00–7:00 pm	Welcome Reception	

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Tuesday, March 26, 2019

Time	Title	Presenters
8:00-9:00 am	Breakfast	
9:00-9:45 am	How to Implement a Proactive Approach to Identifying Reliability Risks	John Coates, ZF
9:45-9:50 am	Break	
9:50-10:35 am	Using Simulation to Optimize Microvia Placement and Materials to Avoid Failures During Reflow	Tyler Ferris, DfR Solutions
10:35-10:40 am	Break	
10:40-11:25 pm	A Corporate-Level Process Flow to Ensure Quality and Reliability	Marty Novak, Arris
11:25-12:10 pm	How to Pick the Right BGA/QFN	Dr. Nathan Blattau, DfR Solutions
12:10-1:05 pm	Lunch	
1:05-1:50 pm	How to Use Sherlock to Perform a Pre-HALT	Joe Powell, Lennox
1:50-2:00 pm	Break	
2:00–2:45 pm	Accurately Capturing System-Level Failures of Solder Joints (Underfill, Mirroring, Housing)	Maxim Serebreni, DfR Solutions
2:45–2:50 pm	Break	
2:50–3:35 pm	How Hot is Too Hot? A LIDAR Case Study on Flotherm-Sherlock Integration	Mentor
3:35–3:40 pm	Break	
3:40-4:25 pm	Design for Reliability for Connectors: A Review of Failure Modes and Mitigations	Josh Akman, DfR Solutions

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Wednesday, March 27, 2019

Track 1

Sherlock Automated Design Analysis™ Software Technical Training

Time	Title	Presenter
8:00-9:00 am	Breakfast	
9:00 – 10:00 am	Sherlock Training	Multiple Technical staff
10:00 – 10:15am	Break	
10:15-11:45 am	Starting a Sherlock project: Defining Lifecycles, Critical Components, and Mechanical Loading.	Multiple Technical staff
11:45-12:45 pm	Lunch	
12:45-1:45 pm	Solving Thermal Mechanical and ICT problems, one Sherlock project at a time	Multiple Technical staff
1:45-2:45 pm	Live Demo: Your Sherlock projects, reviewed live!	Multiple Technical staff
2:45–3:00 pm	Break	
3:00–4:30 pm	Q&A Ask Us Anything	Multiple Technical staff

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Wednesday, March 27, 2019

Track 2

How to Qualify Your Batteries to Prevent Failures & Thermal Events

Time	Title	Presenter
8:00-9:00 am	Breakfast	
9:00–12:00 am	Battery Workshop	Dr. Vidyu Challa, DfR Solutions

The rising demand for Internet of things (IoT) and machine-to-machine (M2M) applications makes battery power an absolute necessity. However, reports about lithium-ion batteries exploding and catching fire continue to draw the public's attention. How do you balance the need for power, size, cost, and time-to-market, while still avoiding being the lead story on the evening news?

Is it enough to qualify a cell manufacturer according to industry standards? The answer is that the majority of compliance-based testing is related to abuse tolerance. However, the vast majority of field failures do not occur under abuse scenarios, but happen under normal operating conditions due to manufacturing flaws or design and system tolerance issues that cause internal shorts. Internal shorts are unfortunately not mitigated by safety electronics.

In this battery workshop, you:

- Gain an understanding of lithium-ion battery failure mechanisms and the pathway to thermal runaway events
- Learn about the top causes of battery field failures, and the major areas where you need to have mitigation strategies
- Learn how cell design plays a critical role in battery safety and reliability, and what you can do from a design perspective to prevent these failures
- Learn the basic steps in a lithium-ion cell manufacturing process, and the process controls required to ensure cell safety and reliability
- Learn about the battery management system and its role in system safety
- Come away with a checklist of things you should do to qualify your cell manufacturer – pass down requirements, trust but verify (design, manufacturing, compliance-based testing, system-level tolerances, application-specific battery testing, battery management system, cell CT scans and teardowns and lastly user education)