

Hot PCBs - Cool It with ANSYS Icepak

Introduction

Many electronics boards have metal layers which can carry a relatively large current, thus increasing the local maximum temperature in the board and damaging it. For a successful design, it is important to ensure that the maximum temperature due to Joule heating is within the allowable range. Thermal analysis of electronics boards provide the insights of the temperature distribution needed to prevent any damage due to overheating.

Using SIwave-ANSYS Icepak connectivity, you have the ability to accurately calculate the DC electric current density in the metal traces of PCBs and Joule heat power dissipation. A detailed Joule heat power map can be transferred from ANSYS SIwave to ANSYS Icepak. Similarly, a detailed temperature map can be transferred from ANSYS Icepak to SIwave that updates the temperature dependent electrical conductivity. The ANSYS Icepak-SIwave two-way coupling allows identification of failure due to overheating and enables you to develop a design with the correct electrical biasing of the PCBs and components.

Objectives

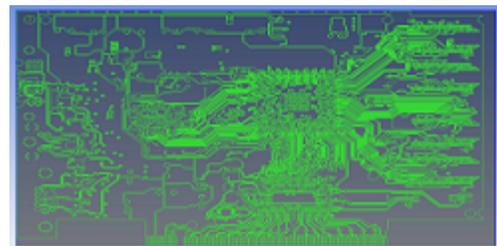
This workshop sets to show high fidelity thermal management simulation by incorporating joule heating simulation. We will present different methods in simulating joule heating in ANSYS Icepak, including with traces, without traces and two-way connectivity between Icepak and SI wave. Attendees will also get to work on sample models for better understanding of the concept and workflow.

Benefits

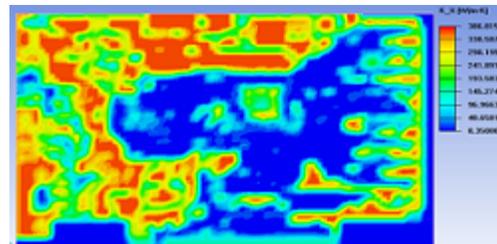
Taking advantage of ANSYS' unique two way coupling of Icepak and SIwave, you are able to:-

- Validate thermal designs before building physical prototypes thus reducing developments costs and time.
- Learn how engineering simulation brings new designs to market substantially earlier compared to traditional test and build methods.

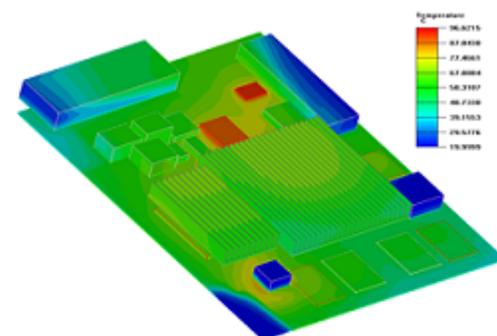
Who Should Attend



Trace import into ANSYS Icepak



Effective in plane thermal conductivity of PCB



Temperature distribution of PCB simulated using ANSYS Icepak

Engineers, Managers involved in thermal management of electronic products.

What customers say about our solutions

"All our customers want answers to their questions really fast. And it's implicit that they want accurate answers. There are plenty of tools around that give you an answer very quickly, but it's more difficult to find a tool that is **both accurate and quick at the same time**. That's ANSYS."

Jonas Persson, Technical Manager, ST-Ericsson

"Icepak provides a **quick, accurate and reliable** tool for the thermal management design and analysis of our products."

Dr Matteo Fabbri, Scientist, Corporate Research ABB Switzerland Ltd

"ANSYS is a virtual laboratory for us. It provides quite a return of investment: We drastically **reduce the number of prototypes**. And if you know the price of a whole test bench, you know that when we are optimizing or versioning designs, we cannot afford to do a lot of prototypes."

Pierre Solomalala, Power Electronics R&D engineer, Alstom Transport

Presenter Profile



Dr Lee Yong Jiun is a Technical Applications Engineer with CAD-IT. Graduating from National University of Singapore with a PhD in Mechanical Engineering, his Research Focus was on Thermal management in Electronics, primarily using ANSYS solutions. Yong Jiun was with the Institute of Microelectronics and served as Project Leader to design, fabricate and characterize package level thermal management solution. He has also worked for INTEL Technology as Assembly Technology Development Engineer, where his primary responsibility of the job was to develop a robust flip chip assembly process for Intel next generation chipsets.

Event Information

Date : 8th May 2015 (Friday)
Time : 2:00 pm - 5:00 pm
Venue : CAD-IT Consultants (Asia) Pte Ltd
159 Sin Ming Road, #03-05 Amtech Building, Singapore 575625 ([view map](#))

Register NOW

- Register online for this event.
- CAD-IT Consultants reserves the right to cancel or postpone the event due to unforeseen circumstances.

For enquiries, please call 6508-7575 or email at caditevents@cadit.com.sg

About CAD-IT Consultants

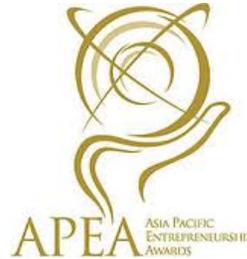
Founded in 1991, CAD-IT is a leading global ISO 9001:2008 certified Product Life Cycle Management (PLM), manufacturing and education provider. CAD-IT's mission is to provide world-class solutions and services that enable companies and their supply chains to achieve greater product innovation, quality and productivity with drastically reduced time-to-market and costs.

CAD-IT is honored to have received over 80 international and national awards since its inception for marketing and service excellence. Among its most recent accolades are the Singapore Enterprise 50 Award (2014, 2013, 2012), Singapore SME 1000 (2014, 2013, 2012, 2011), Asia Pacific Entrepreneur Award (APEA) - Outstanding Entrepreneur Award (2012, 2010, 2009), the Singapore Prestige Brand Award SPBA - Established Brand Award (2012, 2011, 2010, 2009), SPBA - Regional Brand Award 2012

and SPBA - Hall of Fame 2012.

CAD-IT Consultants' suite of PLM solutions include ANSYS (System-level, Multiphysics Simulation), Goldfire Innovator (Innovation Process Management), Moldflow (Plastics CAE), Stampack (Sheet Metal Forming), Deform (Bulk Metal Forming CAE), SpaceClaim (3D Direct Modeler), Mentor Graphics Valor DFM (Design For Manufacturing), Valor MSS (Complete Manufacturing Execution Suite) and Cortona3D (3D Technical Documentation).

Since February 2010, CAD-IT has partnered the Singapore Workforce Development Agency (WDA) to offer Advanced Certificate courses in PLM and Engineering Simulation, under the Workforce Skills Qualifications (WSQ) framework, with the charter to upgrade the technological capabilities of organizations in Singapore so as to enable them to undertake high value-add design, engineering, manufacturing and R&D activities.



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