



# Multi-Physics Analysis of a Power Electronic Module

## Description

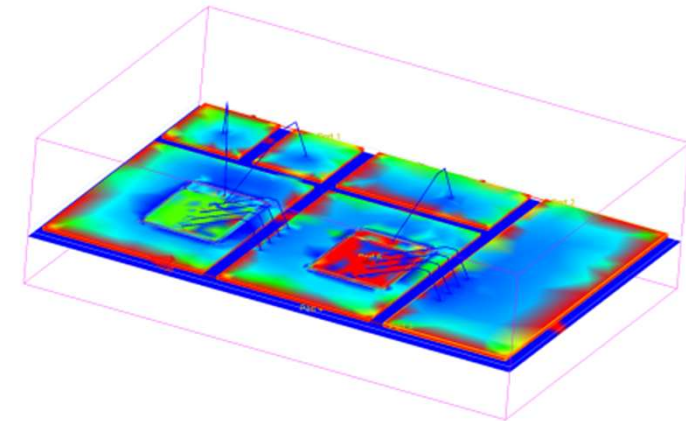
In power electronics multiple physical domains influence the performance of a power electronic device. The simulation of power modules is currently implemented with thermal, electromagnetic and mechanical stand alone finite element simulations, where the coupling of multiple domains is considered manually and in a simplified way. In order to achieve a higher degree of optimization rapid and highly accurate multi-domain simulations are necessary.

## Goals

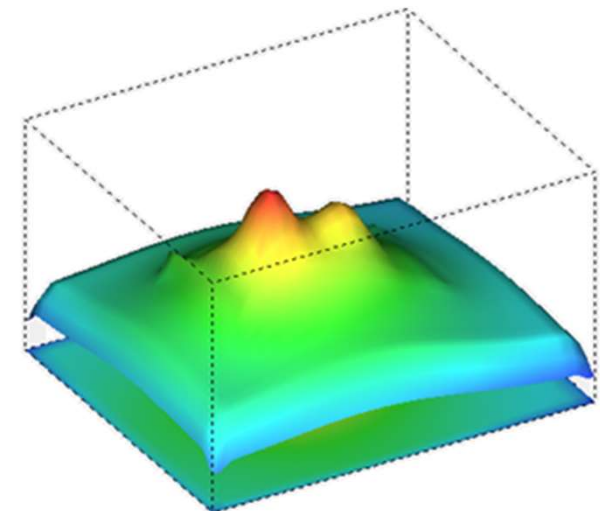
- Design of a electrothermal simulation model for a suitable power electronic module (e.g. PCB/DBC MOSFET half bridge for DC/DC converter application)
- Simulation verification through thermal and electrical measurements
- Quantification of possible benefits of multi-physical simulation approach

## Contact

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Electromagnetic FEM simulation of a DBC power module



Thermal FEM simulation of a DBC power module