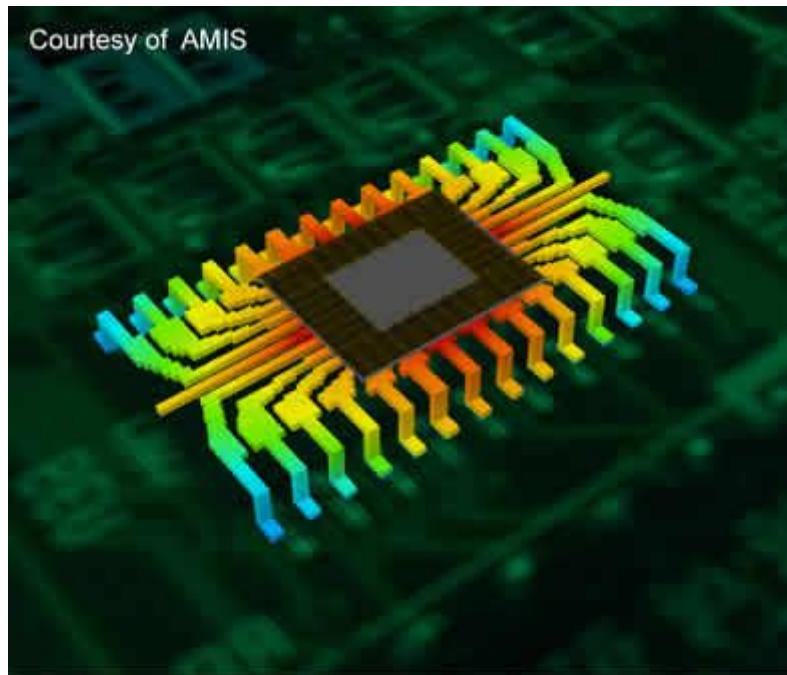


AMI Semiconductor Uses FLOTHERM and FLOPACK to Predict Maximum Junction Temperatures and Thermal Performance in the Design and Development of ASICs



AMI Semiconductor (AMIS) is using Flotherm and Flopack in the design and development of ASICs for automotive, medical, industrial, communications and consumer applications. This example shows a detailed thermal analysis including the silicon die, die flag and leadframe of a 28-lead Small Outline Integrated Circuit (SOIC) package.

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AMI Semiconductor (AMIS) is using Flotherm's Flotherm thermal analysis software and Flopack Web-based thermal model generator in the design and development of ASICs for automotive, medical, industrial, communications and consumer applications. Operating temperature is a critical aspect in lifetime prediction of electronic components, and AMIS is using Flotherm and Flopack, to accurately predict that its new designs will not exceed maximum junction temperatures and to simulate the thermal performance of new products in both a standardised test environment and the customer's environment.

According to Eddy Blansaer, Senior Packaging Engineer at AMIS, the ability to model each component in detail plays a crucial role in helping the company find the most cost-effective package solution for a new silicon design.

Commenting on the particular ASIC illustrated above, developed for an automotive application, Eddy Blansaer said, "In order to improve the thermal resistance of leadframe packages, we sometimes modify the leadframe structure and connect four centre leads to the die flag, thus creating a better thermal pad between the die flag and the application board. In order to simulate this, an extremely detailed model must be created in Flotherm. In combination with a certain power dissipation and ambient conditions the model allowed us to predict that the new design would not exceed the maximum junction temperature.

"But the benefits do not stop there", he continued. "Once created, the Flotherm models and data are used by our marketing and sales teams during the pre-study phase of new projects to demonstrate to clients how AMI Semiconductor devices will perform in the client's application."

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