Ansys Simulation Boosts the Thermal Reliability of uPI's Power Management Products by 100%

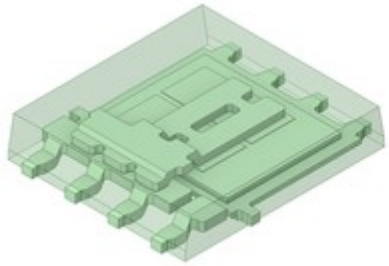
July 18, 2023

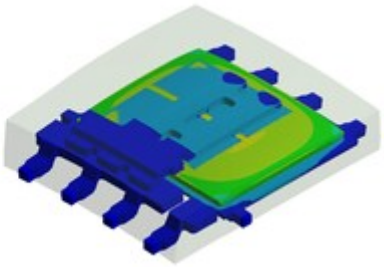
uPI leverages Ansys' multiphysics simulation tools to enhance the design, development, and verification of its chip package designs

/ Key Highlights

- uPI achieves a 2X improvement in thermal cycle endurance for their semiconductor product packages with Ansys' multiphysics simulation solutions
- Ansys' predictive simulation insights enable uPI to accelerate R&D and improve electrical performance, while decreasing the risk of late-stage design changes

PITTSBURGH, July 18, 2023 /PRNewswire/ -- uPI Semiconductor Corp. (uPI) applies Ansys' (NASDAQ: ANSS) simulation solutions to speed up design for its product packaging solutions and improve thermal reliability by 2X. uPI is a leading supplier of semiconductor power management chips for high-performance computing (HPC) applications, communications hardware, battery management, industrial equipment, and consumer products.





By leveraging Ansys simulation, uPI can predict the electrical, mechanical, and thermal characteristics of its high-performance chip package designs quickly and with predictive accuracy. This leads to improved product performance, streamlined design, and reduced risk of late-stage design changes. Using Ansys to analyze heat flow and thermomechanical stresses, uPI optimizes their package designs and doubles thermal reliability. Products that initially failed after 500 thermal test cycles were optimized with Ansys solutions to endure more than 1,000 cycles.

"Ansys' multiphysics simulation solutions enable uPI to optimize our chip package designs and dramatically improve product reliability," said Mr. Zhuang, packaging R&D manager at uPI. "With critical insights from Ansys' simulation tools into electrical, thermal, and structural characteristics, our teams have accelerated development and verification while significantly improving efficiency, reducing design errors, and enhancing product quality."

Ansys simulation tools also predict the electrical characteristics of packages across a range of signal frequencies, which helps uPI engineers identify optimal design solutions and improve product performance.

"Chip package design involves complex, multidimensional engineering that is nonlinear and can behave unexpectedly, even for small changes," said John Lee, vice president and general manager of the electronics, semiconductor, and optics business unit at Ansys. "Ansys' simulation tools provide end-to-end multiphysics analyses that enable teams to gain insight quickly into multiple areas of chip packaging with predictive accuracy. With Ansys, uPI is able to maximize their R&D and reliability testing processes to achieve high-quality products."

/ About Ansys

When visionary companies need to know how their world-changing ideas will perform, they close the gap between design and reality with Ansys simulation. For more than 50 years, Ansys software has enabled innovators across industries to push boundaries by using the predictive power of simulation. From sustainable transportation to advanced semiconductors, from satellite systems to life-saving medical devices, the next great leaps in human advancement will be powered by Ansys.

Take a leap of certainty … with Ansys.

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