AUTOMOTIVE

Thermal Management Solutions

Innovative Engineering for Increased Reliability
The Hybrid & Electric Vehicle Revolution in now

Electric vehicles are becoming mainstream, along with increasingly complex electronic systems, including:

- Engine Control Units
- Electric Powertrain
- Braking
- Battery management
- Charging Stations
- Radar

And even more...

Common to all these systems is the need for innovative thermal management solutions.

Thermal management is essential to maintaining the component temperature within designed values by removing excess generated heat.

TTM Technologies ("TTM") has a proven track record for developing heat management solutions for high-reliability applications. Our global team of dedicated engineers has broad experience with diverse applications; they offer design for manufacture guidance and stack-up reviews to find opportunities to improve reliability, manufacturability and save our customers' time.
TEMPERATURE VS. RELIABILITY

The long-term reliability of electronic systems is a function of operating temperature. Lowering the operating temperature and minimizing the thermal cycling delta increases reliability, which also be beneficial in extending product life.

A circuit board's primary function is to provide connectivity and a mechanical foundation for all circuit components. As circuit densities increase due to miniaturization, circuit boards have become an integral part of the thermal management system, transferring heat away from components to a region where the heat can be dissipated. At TTM Technologies, we understand the complexities of thermal management and strive to provide cost-effective solutions for high-volume production.

TYPES OF THERMAL MANAGEMENT SOLUTIONS

Increased Copper Density

Increasing in-plane conductivity can be achieved using thicker copper within the board; depending on the design, planes ranging from 2 to 10 oz can be integrated with thermal vias, providing an enhanced thermal path.

Screened Heat-sink Paste ("HSP")

When designs require both increased thermal conductivity as well as dielectric isolation, screened heat sink paste may be the preferred option.
TYPES OF THERMAL MANAGEMENT SOLUTIONS

Coin Technologies
Press-fit copper coins provide low thermal resistance and are common in high-volume production using automated pick, place, and lamination equipment.

Heat-sinks and Pallets
TTM provides production viable external heat sinks and soldered pallets to enhance thermal conductivity when applications require an improved thermal path.

For more information on Thermal Management Solutions, please speak with your TTM Sales representative or contact us by:

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