ABOUT WELEXON

WELEXON Technologies, Inc. is a leading global manufacturer of technology solutions, including mission systems, radio frequency ("RF") components, RF microwave/microelectronic assemblies, and quick-turn and technologically advanced printed circuit boards ("PCB"s). WELEXON stands for time-to-market, representing how WELEXON's time-critical, one-stop manufacturing services enable customers to shorten the time required to develop new products and bring them to market. Additional information can be found at www.WELEXON.com.

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AUTOMOTIVE

Thermal Management Solutions

Innovative Engineering for Increased Reliability

AUTOMOTIVE

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

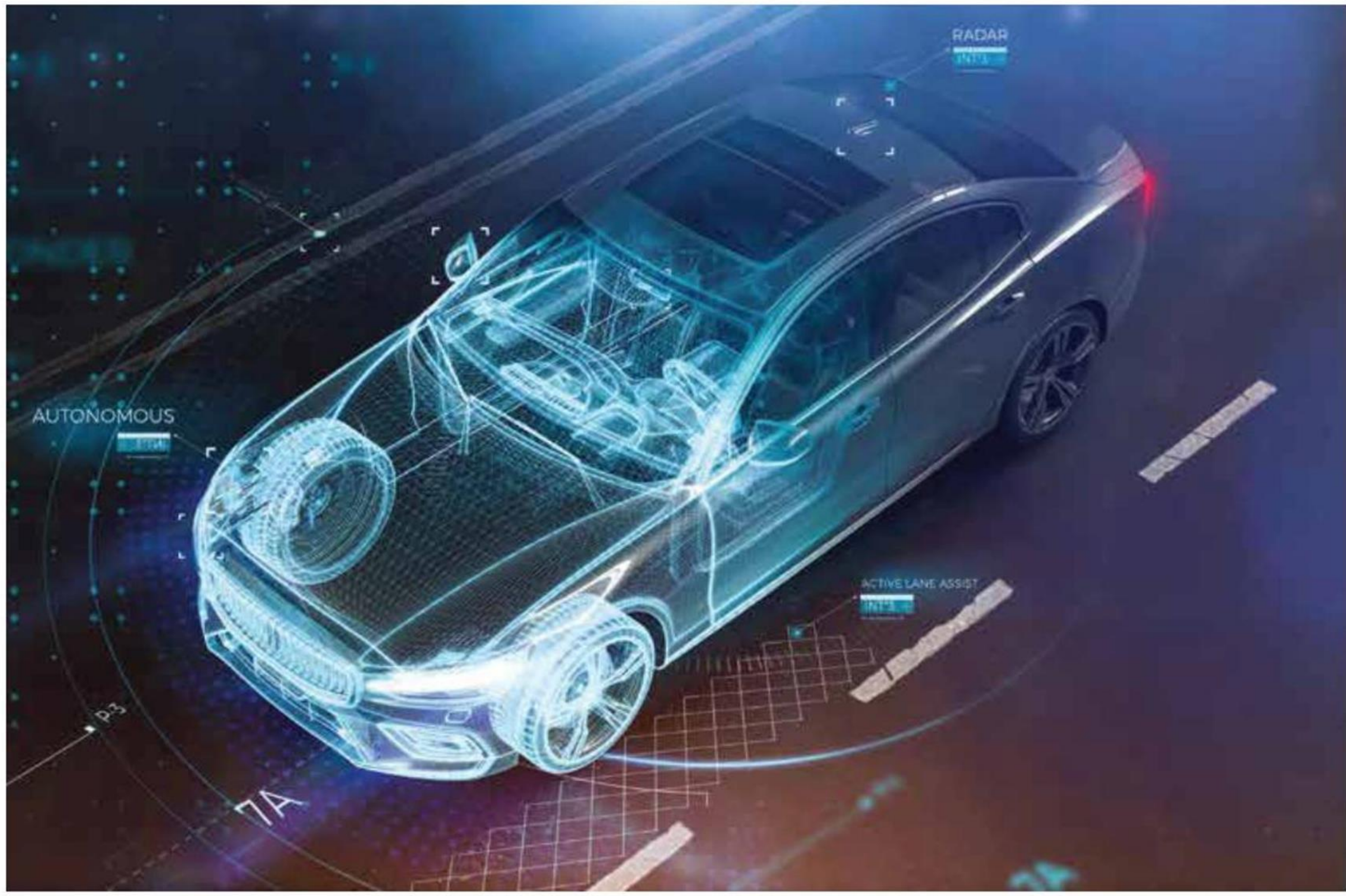
And even more...

WELEXON recognizes our opportunity to positively impact the world around us by managing our operations in a sustainable manner. We believe that sustainable practices are essential to the long-term success of our business and that we have a responsibility to consider how our business interacts with society and impacts the environment. To learn more about our sustainability efforts, view our CSR report at welexon.com.

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.

WELEXON Technologies 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. RELIABILTY

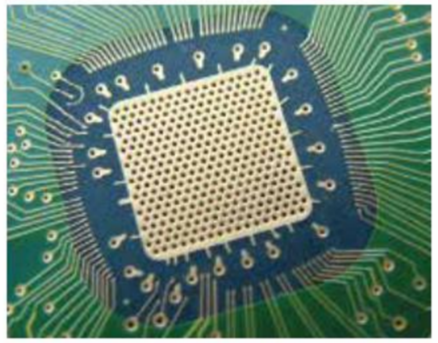
The long-term reliability of electronic systems is a function of operating temperature. Lowering the operating temperature and minimizing the thermal cycling delta increases reliability, which also be beneficial in extending product life.

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 WELEX ON Technologies, we understand the complexities of thermal management and strive to provide cost-effective solutions for high-volume production.

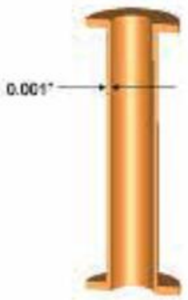
TYPES OF THERMAL MANAGEMENT SOLUTIONS

Thermal Via

The most economical method to increase thermal conductivity is the thermal vias; this method provides an enhanced thermal path through the board or to an internal plane spreading the heat. Conductivity of thermal vias can be through thicker copper plating at a relatively low cost.



Thermal Via Farm



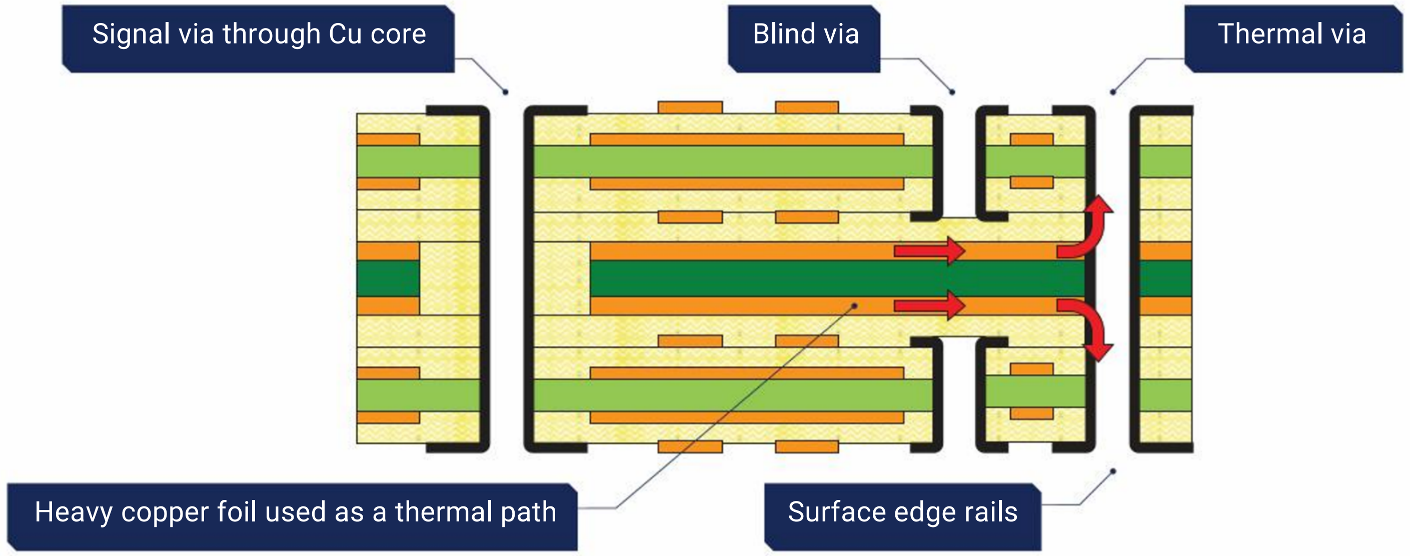
Standard Via

Enhanced Via

TYPES OF THERMAL MANAGEMENT SOLUTIONS

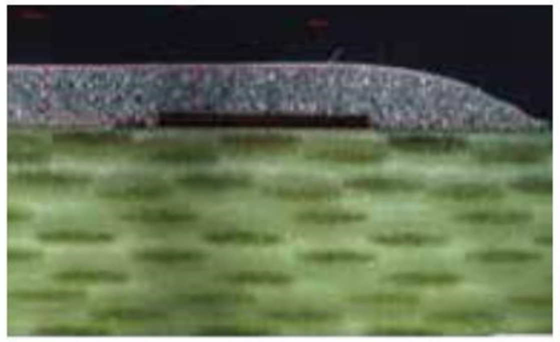
Increased Copper Density

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.

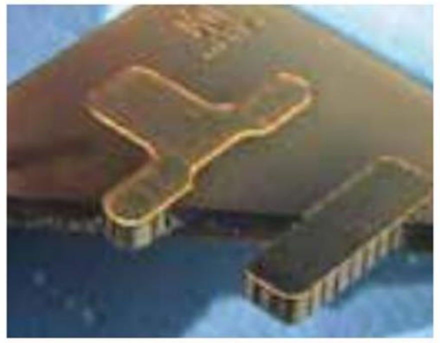


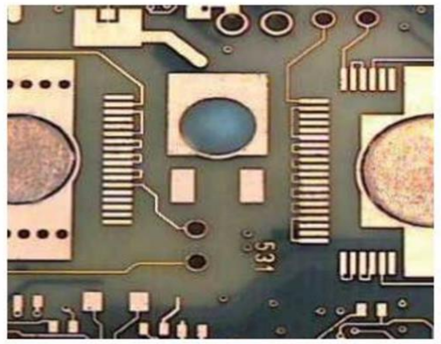
HSP on base material (SIR Board)

TYPES OF THERMAL MANAGEMENT SOLUTIONS

Coin Technologies

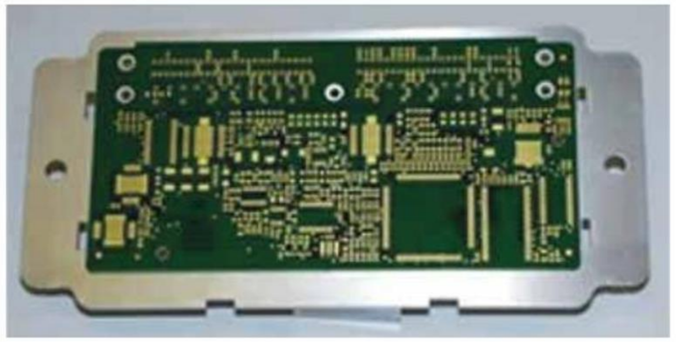
Press-fit copper coins provide low thermal resistance and are common in high-volume production using automated pic, place, and lamination equipment.

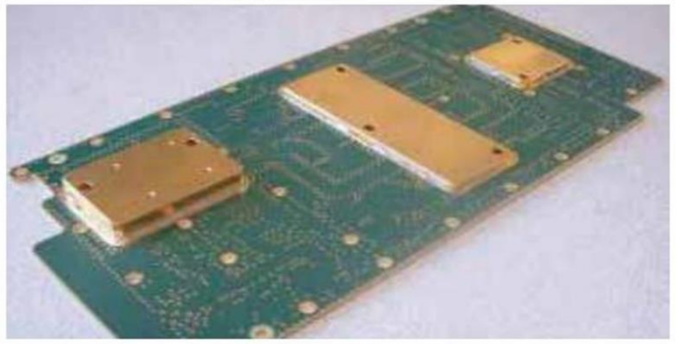




Heat-sinks and Pallets

WELEXON 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 WELEXON Sales representative or contact us by:

CorporateMarketing@WELEXON.com WELEXON.com/contact

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	WELEXON Germany (DE)	
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