

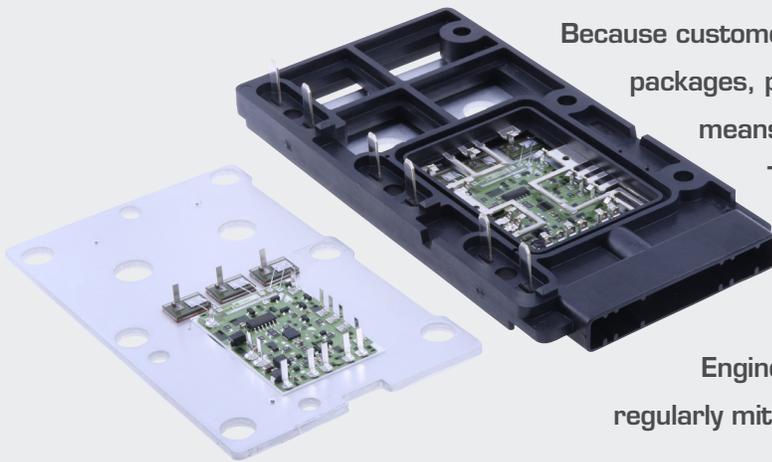
# WELLS<sup>®</sup>

ENGINEERED PRODUCTS

## POWER ELECTRONICS

### POWERING ENGINES AND VEHICLES

From accessories to active suspension and sophisticated climate control systems, modern engines and heavy-duty, off-road, commercial and agricultural vehicles rely on power electronics. Vehicle electrification is bringing 48Vdc architectures, higher current demands on alternators, and of course, motor drives for hybrid, EV and E-turbo applications.



Because customers want more power out of smaller packages, power density is increased, which means high currents and lots of heat.

Temperatures rise, components expand, some stretch, others are compressed, and melting points become an issue. At Wells

Engineered Products we understand and regularly mitigate these challenges.

### PROVEN EXPERTISE

Heat is an inevitable byproduct of power electronics. Unless addressed during design it will lead to premature failure, with all the associated implications and costs. Our thermal management expertise ensures the longevity and durability of the assemblies we manufacture.

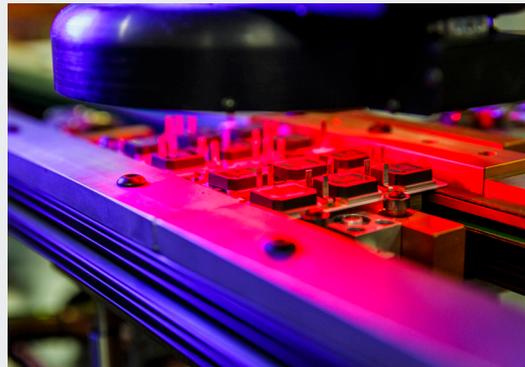
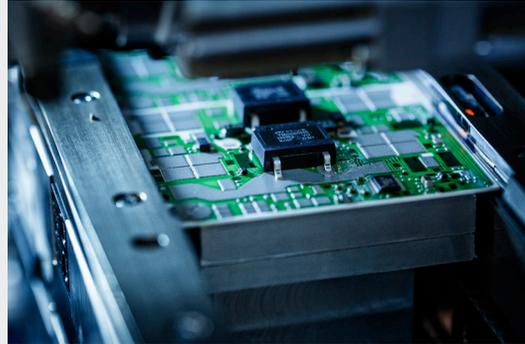
Our team of engineers delivers cost-effective solutions to the challenges caused by high-power, high-voltage and high-temperature applications. This includes:

- High-power circuit design
- High-voltage circuit design
- Heatsink design
- Thermal modeling using Computation Fluid Dynamics (CFD)
- Ceramic and Al substrate-based circuits
- Discrete power device packaging
- Direct die-attach and wire bonding

# DESIGN AND MANUFACTURING PROWESS

To reduce development time and cost while improving quality and timing, we use computer modeling and simulation in the initial stage of power electronics development. Deploying this technology allows our engineering team to determine optimal performance before the first prototype is built.

Product reliability is critical to vehicle OEMs. Our highly automated manufacturing lines and proven processes, supported by extensive testing and validation efforts, deliver consistent quality and dependable performance. From hybrid thick film circuits that withstand an engine or vehicle lifetime of vibration to dimensional control for perfect fit every time, our manufacturing capabilities deliver exceptional results, consistently.



## YOUR POWER ELECTRONICS PARTNER

Modern vehicles have more electronic content than ever before and power electronics has never mattered more. Our expertise in thermal management, heat dissipation, bonding and manufacturing results in high-quality power electronics assemblies engineered to withstand the extremes of temperature and vibration.

**WELLS**  
ENGINEERED PRODUCTS

Every application is different: that's why it's critical your power electronics provider can deliver the customized products you need. Ask what we can do for you.

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