



Case Study

Automotive component manufacturer requires heat dissipation for EV/hybrid vehicle DC/DC converter

THE CHALLENGE

As the demand increases for electric vehicles (EVs) and hybrid electric vehicles (HEV)s worldwide, manufacturers must also cope with the increase in 12V or 24V accessories that traditionally have been powered by an alternator. In EVs and HEVs, this alternator is replaced with a DC/DC converter which can transfer the energy between the power source and on board accessories.

DESIGN REQUIREMENTS

The DC/DC power converter structure has to be reliable and lightweight, with high efficiency, low electromagnetic interference and low current/voltage ripple. Heat that is generated from the converter must be adequately dissipated through the housing.

THE SOLUTION

The recommended solution for this automotive component manufacturer was to dispense Parker Chomerics THERM-A-GAP® GEL 30 in various patterns onto the heatsink.

A 300cc cartridge solution was implemented and will eventually convert to high volume manufacturing using a 1 gallon pump unit (1GPU) and valve dispensing system. This gave the customer a lower deflection force, excellent thermal performance, all in a solution that was easier to dispense with an overall competitive total value to thermal pads or thermal grease.

KEY CUSTOMER REQUIREMENTS

- Easy to dispense
- Lower deflection force
- Small assembly gap
- Good heat transfer from components to heat sink
- Verified performance of vertical gap slump application
- Good dielectric strength to avoid breakdowns

CONCLUSION

Parker Chomerics THERM-A-GAP® GEL 30 fit the needs and the specifications of the automotive component manufacturer's requirements. High volume dispensed thermal interface materials are ideal for automotive applications where cost, time, and efficiency are of the utmost importance.

