

Air Cooled Traction Drive Inverter

Disclosure Number

201002501

Technology Summary

In this invention two different inverter thermal packages, incorporating new concepts of thermal packaging, were designed and their thermal performance was evaluated. Full three-dimensional turbulent-thermal-fluid models were developed. Further, device power dissipation at the individual-chip level as function of junction temperature, voltage, current and switching frequency is included in the models. These effects are included for steady-state and transient models of the final designs. From the results presented and discussed, the operating temperatures of the various components are within design criteria.

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