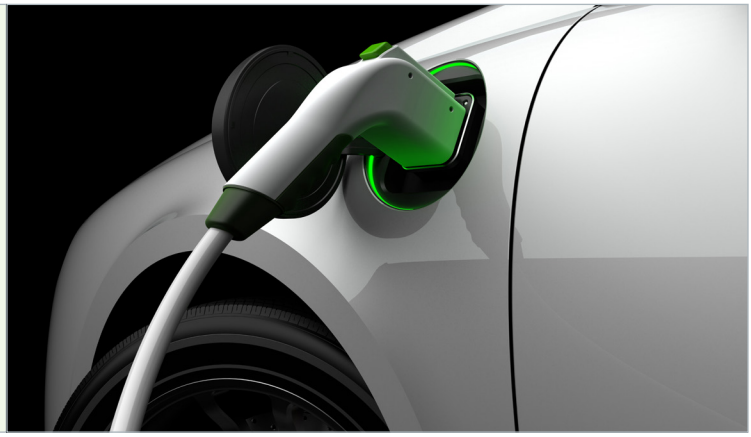
Case Study

Automotive

Why Change

- Extend distance between charges
- More flexibility in installation of charger
- React quickly to market changes



Application Background

The customer needed a DC-DC converter to charge the auxiliary 12V battery from the main traction battery of a new model of electric car. Future models would probably use different battery technology and voltages so flexibility in design was important.

Challenges

Total output power was 1.5 kW, however other model variants might use lower powers, the ability to scale the design to save money was important. Water cooling was available but conduction cooling was preferred for cost reasons.

Why Vicor?

The DCM design chosen resulted in a solution half the size and weight of their previous supply. The power supply could be optimized for different output powers by using one, two or three DCMs. The Vicor Applications team assisted with advice on meeting EMC immunity and conducted noise standards. Variants for other vehicle platforms are planned using the same basic design but with alternative input DCMs.

Link to Whiteboard »

Power Supply Specifications	
Input	200 – 400 VDC
Outputs	13.8V 1500W for battery charging