Fast Facts

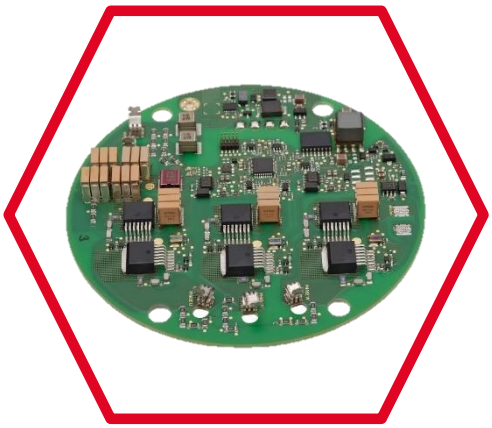
Air Blower 11 kW

Power Electronics for a Hydrogen Fuel Cell Air Blower

Highly integrated power electronics for an air blower of a hydrogen fuel cell stack, mounted to the backside of the blower motor.

Special Features

- Supply voltage: 200-500 VDC
- Power / current: up to 13.5 kW peak (40 A RMS / 55 A peak)
- Sensor-less FOC control up to 111,000 rpm (for a single pole-pair motor)
- Response time: < 100 ms
- Fast startup: < 2 s (0 to max. rpm)
- Fault handling and protection
- CAN / LIN / PWM communication



Key Technologies

- SiC / IGBT discrete SMD switches
- Fully SMD – no THT components (ultra-low profile)
- Standard FR4 Substrate
- In-house sensor-less FOC Software performed on a small ARM M4F MCU
- In-house RTOS
- AUTOSAR like software structure

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