ECPE Joint Research Programme (II)
Ultra-low Inductance Module & Fast Switching Inv. (FhG IZM, 2013+)

ECPE Project: Very Fast Switching Inverter w. Embedded Module on DCB

- Overall concept and innovations
- Semiconductor packaging
- Operation scheme
- Inductor design
- Filter design

fs: 16 kHz → 48 kHz → 250 kHz

Development of Grid feeding inverters @ IZM

Generation 1 (2012)
SiC JFETs, 48 kHz pulse frequency
18l - 18,4 kg (15kW)
conventional packaging

Generation 2 (2015)
SiC MOSFETs, 250 kHz pulse frequency
2,4l - 4 kg (15kW)
embedded power modules

3D-integration 0.57nH*
... full converter cell

E. Hoene, FhG-IZM Berlin, CIPS ’14
* plus 0.3nH for the current sensor