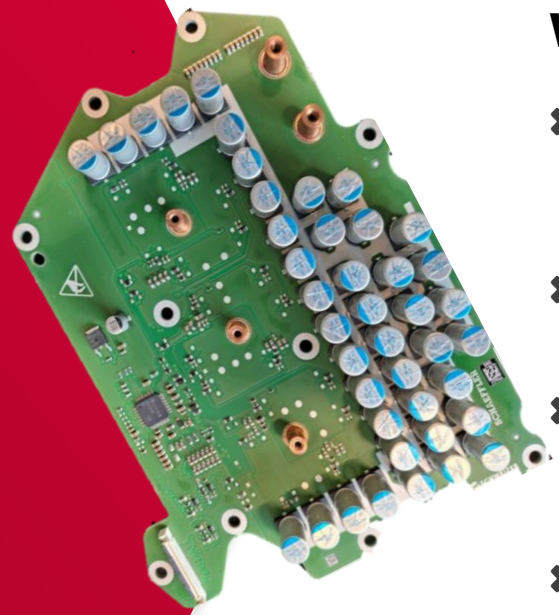
FEV Signature Solutions
Embedded power electronics for EDUs

Our unique capabilities enable you to design your own power electronics module integrated into power boards, saving costs and optimized for your application



FEV offers

- Use of FEV's extensive knowledge, best practices and tools to design your customized product in short time with innovative technologies
- Power board and specific switch design for
  - increased efficiency
  - electromagnetic compatibility optimization
  - cost and volume reduction
- Product service for whole lifetime

WHY FEV

- Over 10 years of design experience in various industries such as aerospace and automotive
- Several turnkey projects successfully implemented up to series launch
- Pioneering role with bare printed circuit board and semiconductor manufacturers in eMobility
- Full service as design and performance validation of inverters and product service for hole inverter lifetime

Selected reference projects

EMBEDDED POWER ELECTRONICS FOR EDUS

48V DC inverter power board with embedded cell MOSFETS

Technical highlights

- 3 cells in parallel in inverter switches
- 30 kW (peak 40 kW < 60 sec)
- Over 650 ARMS
- Efficiency > 98%
- Today C- Samples Low Voltage Power-Up/Down

FEV responsibility

- Benchmarking, Design and Manufacturing A and B PWRB Samples
- Series Design C- PWRB
- Testing against AQG324-2021

400V DC inverter power board with embedded cell SiC Gen 2 into Power PCB

Technical highlights

- 4 cells in parallel in each inverter switches
- 50 kW continuous at 400 V DC
- Over 120 ARMS
- Efficiency > 98%
- Today Advanced development

FEV responsibility

- Die and cell selection for design
- Thermal and electrical characterization including all parasitic by Simulation

800V DC inverter power board with embedded cell SiC Gen 2 into Power PCB

Technical highlights

- 2 cells in parallel in each inverter switches
- 120 kW continuous at 800 V DC
- Over 120 ARMS
- Efficiency > 98%
- Today Advanced development

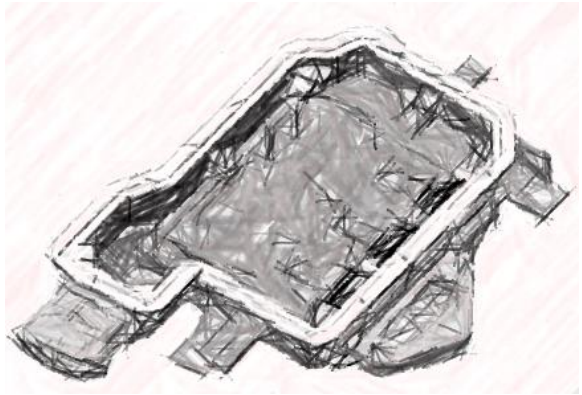
FEV responsibility

- Cell and die selection
- Thermal and electrical characterization including all parasitic by Simulation

Selected reference projects

POWER ELECTRONICS MANUFACTURING PARTNER

SI Inverter 48V&650A
(A, B Type: aftertreatment)



SI Inverter 48V&650A
(A, B Type: Hybrid drive)

- Heavy Duty
- Automotive

FEV offers you the full service for developing your customized solution

COST SAVINGS AND TECHNICAL ADVANTAGES

Benchmarking

- Concept phase
- Embedded power switches
- Discreet power solutions

Development

- Cost reduction
- Volume reduction
- Faster switching with less losses

Test validation

- Design and performance validation of inverters

Experience	FEV has many years of experience in embedded technology related to thermal, electromechanical (magnetic, E-filed) and reliability
Benchmarking & analysis	Multi-physics analysis for PCB (Printed Circuit Board) embedded type inverter including thermal, electromagnetic, mechanical, reliability, and lifetime analysis
Design	Design/analysis of passive component sizing and integration
Test validation	Inverter system-level design, optimization and test
Innovation	Working closely with Schweizer and Infineon for embedded and s-cell design

Get in touch with us for further information

www.fev.com/en/signature-solutions