

2kW ZVS Phase Shift Full Bridge Demo Board

Ordering Code: EVAL_CFD2_2kW_ZVS_FB

VIH 15.7.2015

IFAT PMM ACDC AE

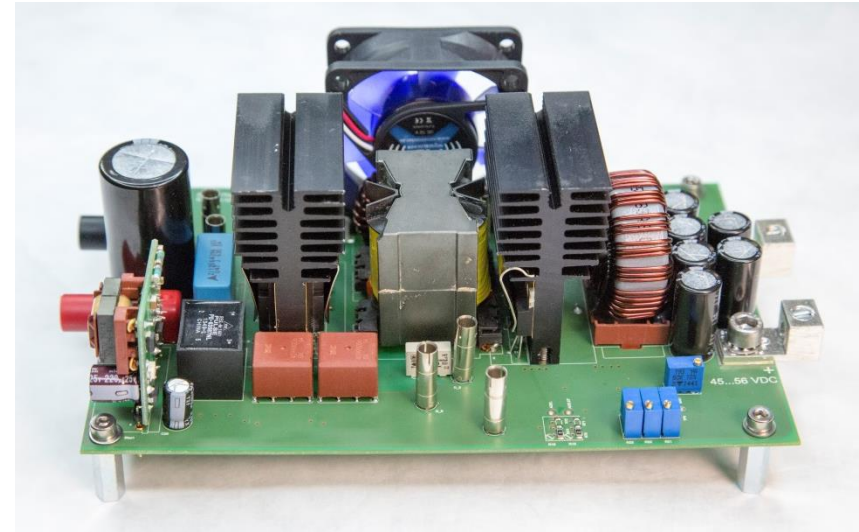
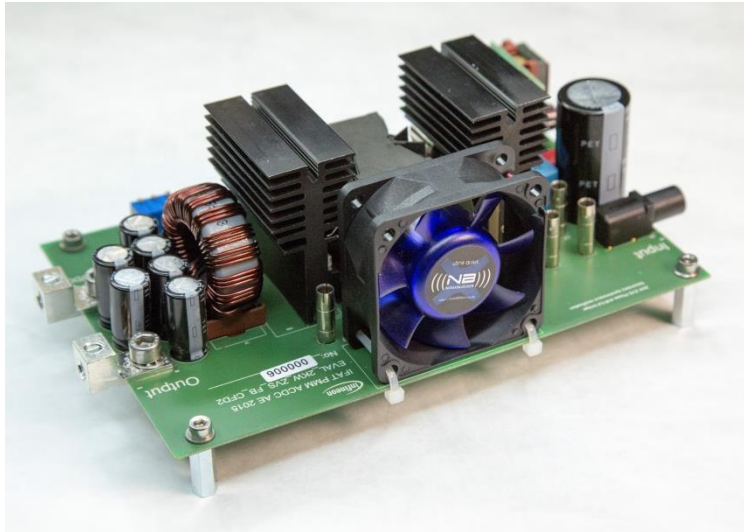
René Mente

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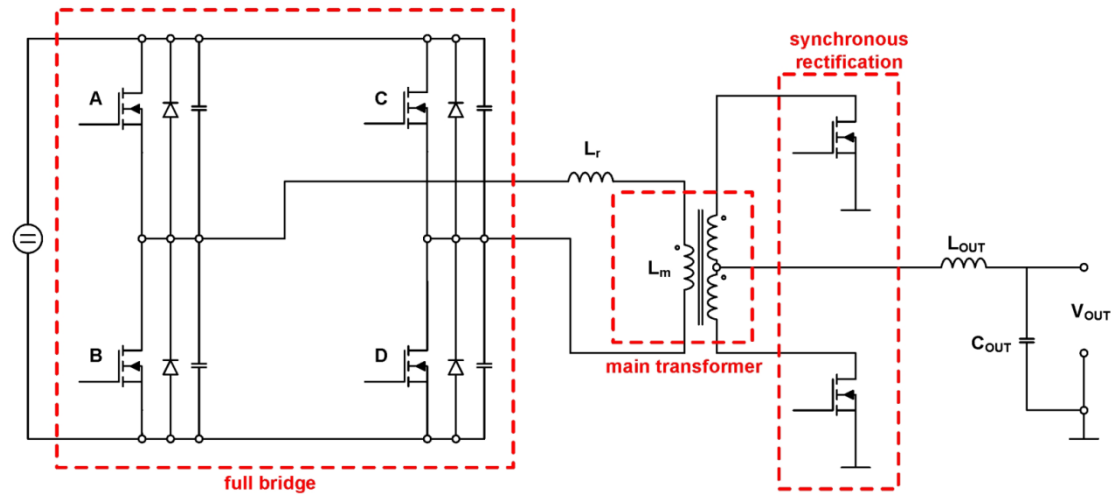
2kW ZVS Phase Shift Full Bridge



■ board description

- ❑ DC/DC converter with 300V-420V input
- ❑ 45V-56V output voltage
- ❑ 100kHz switching frequency on primary and 200kHz on secondary side
- ❑ up to 2000W output power

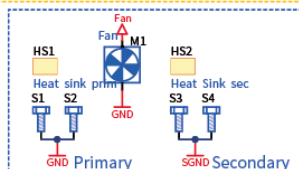
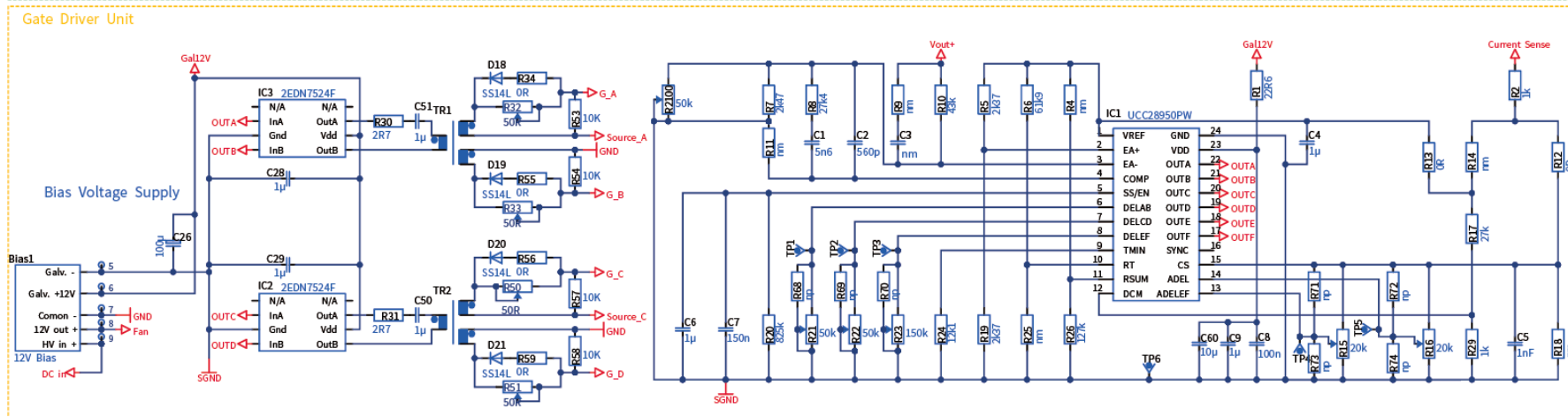
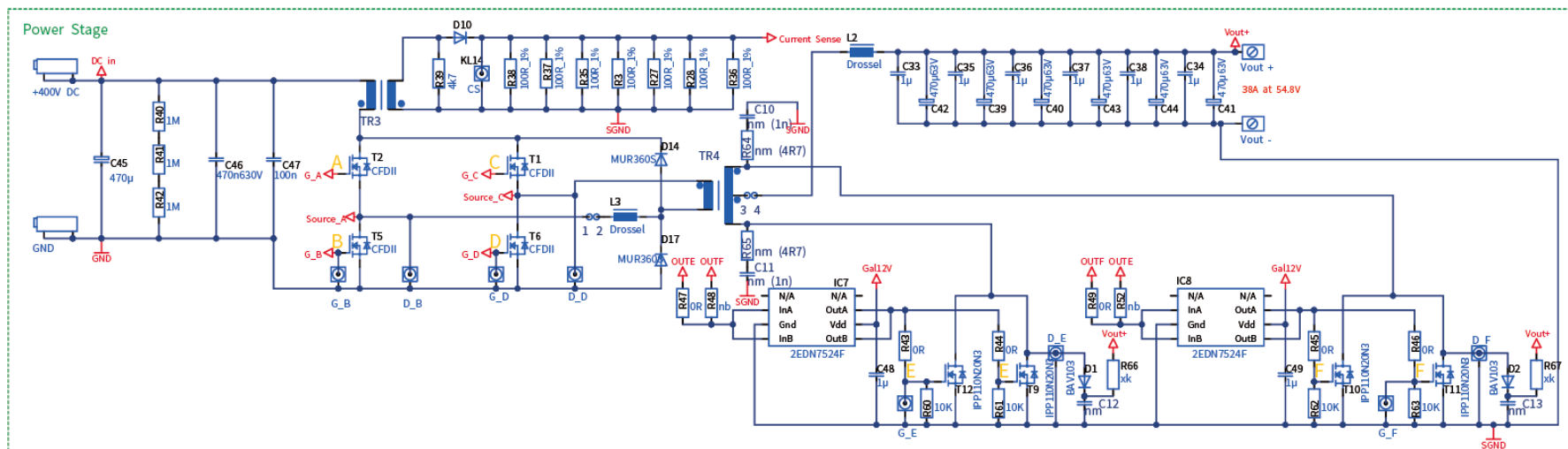
ZVS Phase Shifted Full Bridge simplified schematic



■ main components

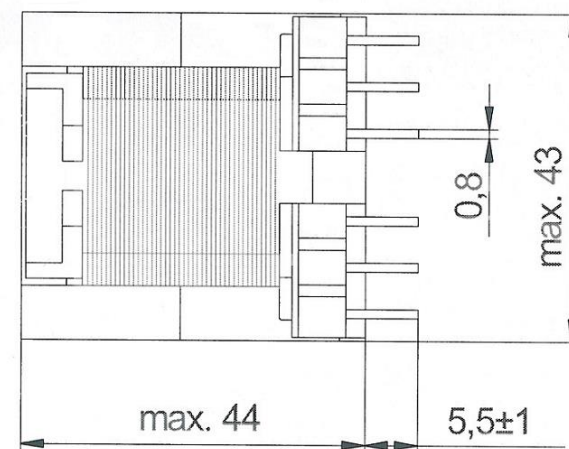
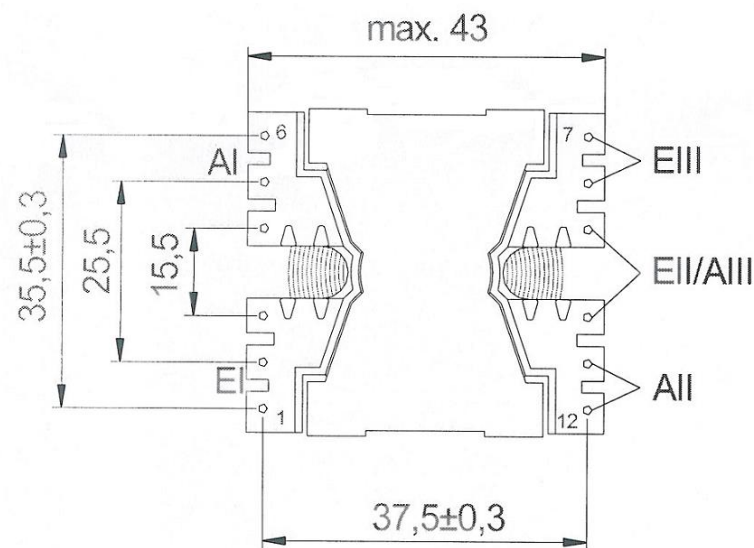
- ❑ full bridge MOSFETs: Infineon CoolMOS™ IPW65R080CFD2
- ❑ synchronous rectification MOSFETs: Infineon OptiMOS™ IPP110N20N3
- ❑ auxiliary converter: Infineon CoolSET®-F3R ICE3RBR4765JZ
- ❑ controller: Texas Instruments UCC28950
- ❑ gate driver: Infineon EiceDRIVER™ 2EDN7524F
- ❑ main transformer: Kaschke Components GmbH, SP-PQ 40/40 ferrite core (center tapped)
- ❑ resonant choke: Kaschke Components GmbH, SDR 9,0-0,03 Kool-M μ
- ❑ output choke: Kaschke Components GmbH, SDR-37-0,012 Molypermalloy

Schematic Mainboard



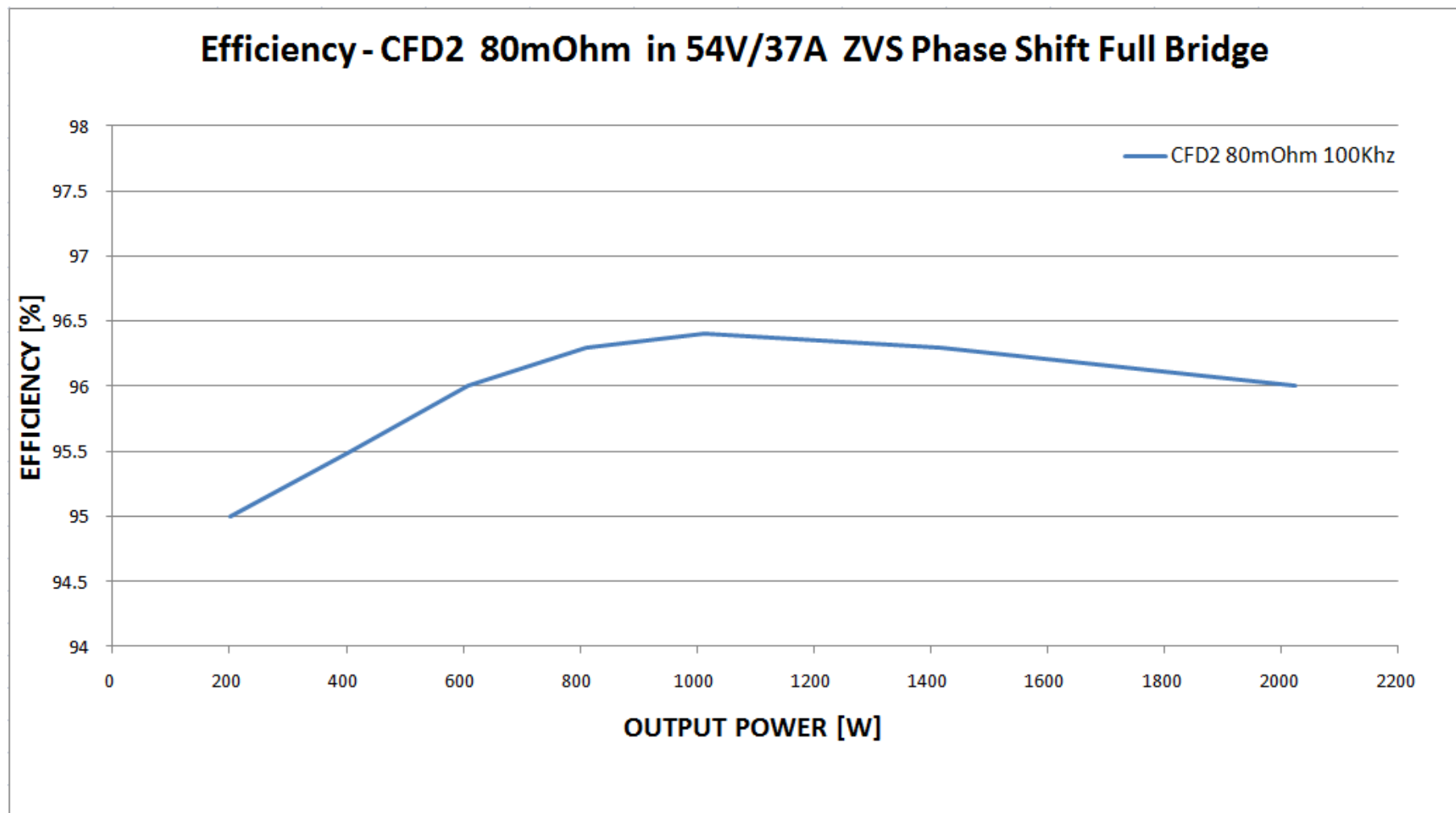
Kaschke main transformer

- core type: PQ40/40
- core material: 3C96
- nominal inductance: 1mH $\pm 15\%$
- ratio of turns: 20 : 4 : 4
- dielectric strength (50Hz/1s): 3kV
- operating temperature: -25°C till +125°C
- storage temperature: -25°C till +85°C

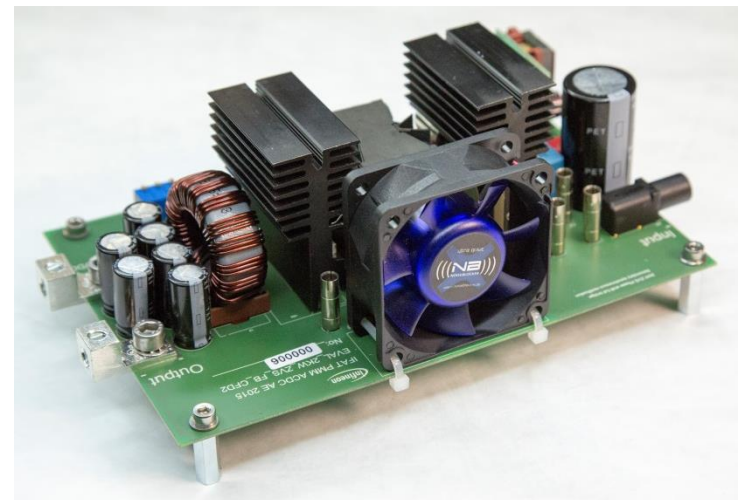
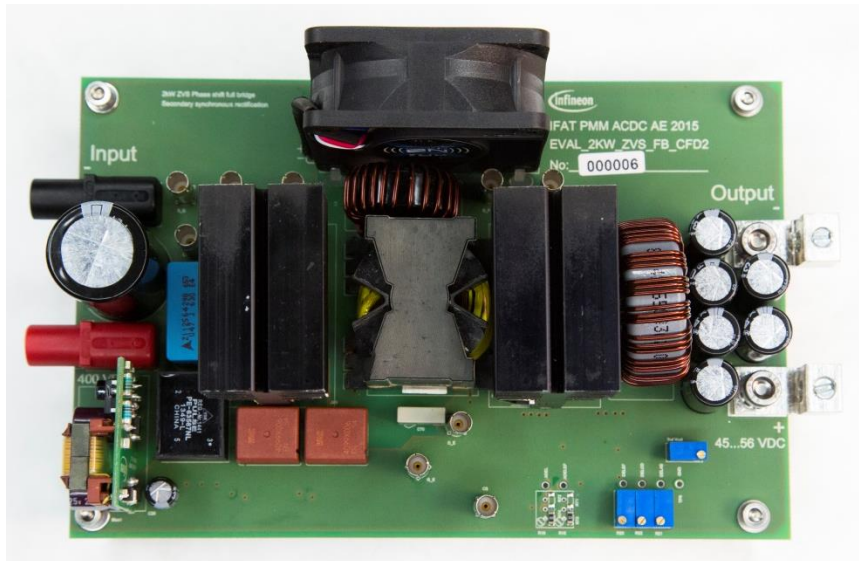
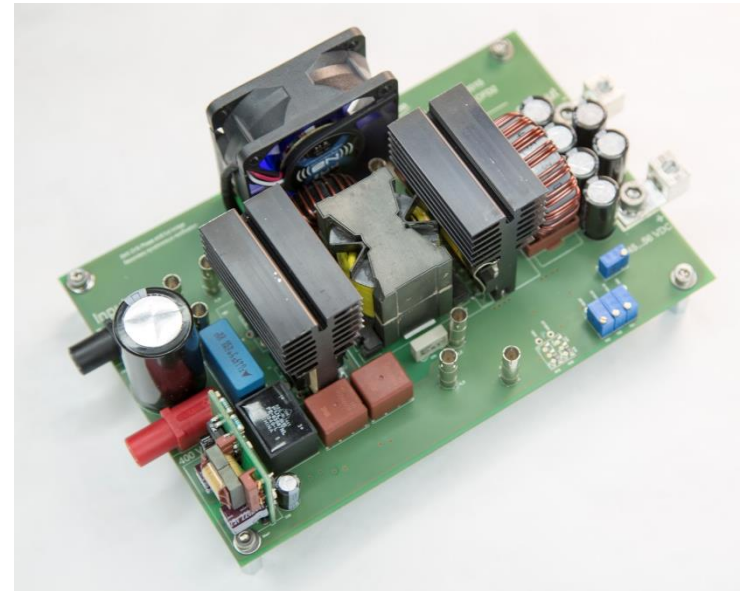
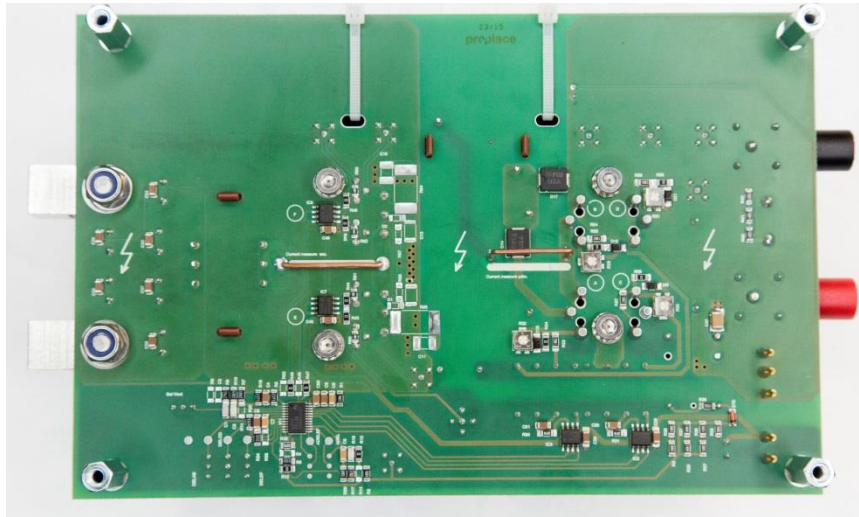


dimensions in [mm]

CFD2 in ZVS board - efficiency



Final Release in ISAR





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