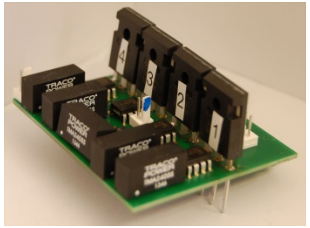
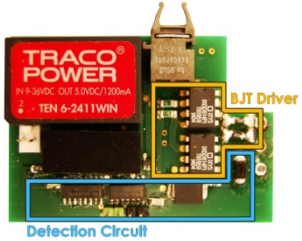
KTH Electrical Engineering

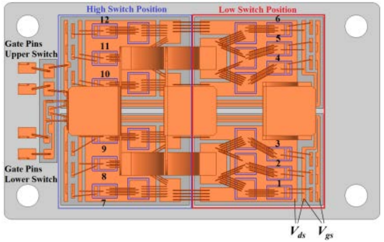
Silicon Carbide (SiC)

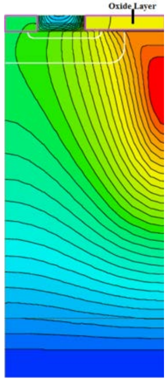
PhD student: Diane-Perle Sadik (dianes@kth.se)

Period: 2012 to 2017









- **SiC devices reliability and protection circuits:**
  - Short-circuit capability of SiC transistors
  - Temperature distribution in SiC devices during a short-circuit
  - Gate-drivers design for SiC transistors including short circuit protection.
  - Evaluation of parallel-connected SiC MOSFETs (discrete).
  - Analysis of the parasitic in a SiC MOSFET module
  - Long term stress tests on SiC MOSFETs (discrete and modules)
    - Threshold Voltage drift
    - Body-diode conducton and Surge
    - Humidity Capability
  - Reliability analysis (theoretical) and life estimation of power converters.

- **Funding, Industry Contacts**
  - Energimyndigheten (SiC Power Center).
  - GE (General Electrics)

- **Main Achievements so far**
  - 2 Journals and 6 Conference Publications as main author