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MOSFET Matrix-Switch for Pulsed Operation of Plasma Optical Radiation Sources

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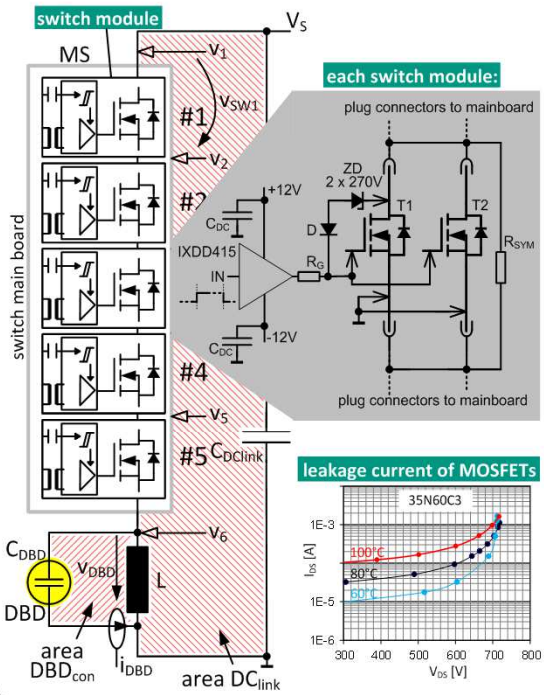
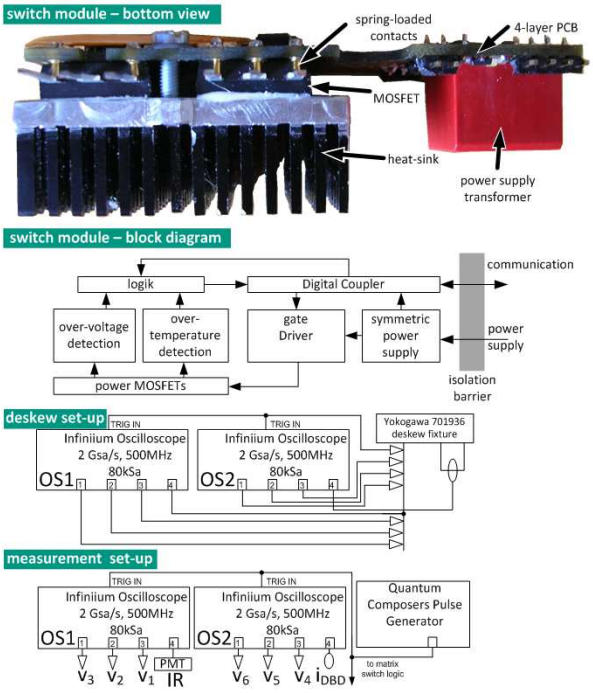
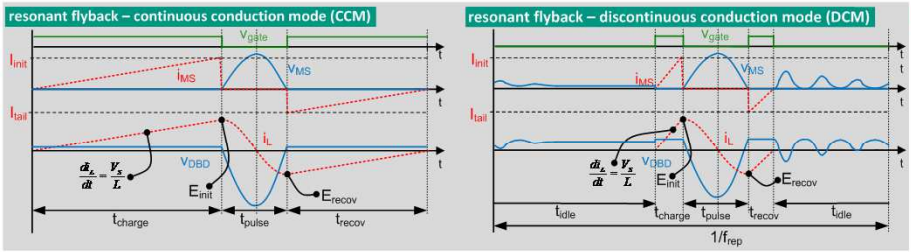
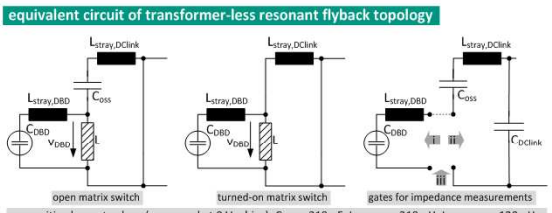
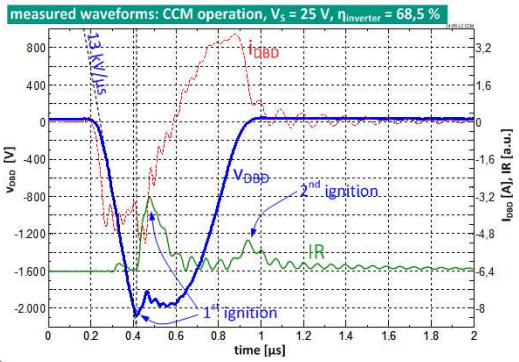
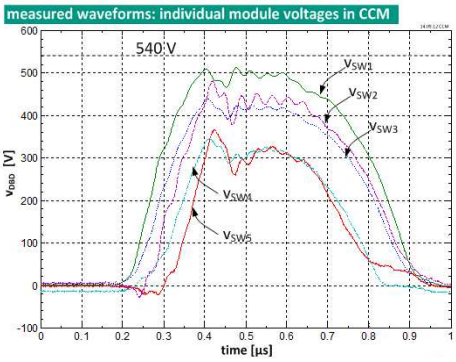
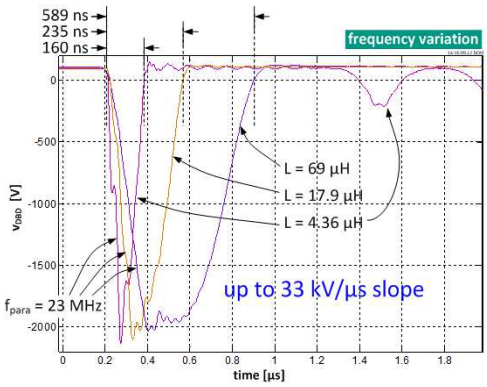
2.7 kV 70A$_{pk}$ 2x5 Modular Matrix Switch – Schematic, Set-up and Measurement Strategy



- 2x5 matrix switch made of 5 individual modules, each containing 2x 650 V 35 A Coolmos™ switches
- modules base on 4-layer PCB and include galvanic isolation of power supply (100 kHz transformer) and gate signal (digital coupler IC)
- dynamic OVP of each module is achieved by tuned signal delay and Zener-diode feedback-loop
- electrical measurements performed with two skew-compensated Infiniium oscilloscopes
- 8-channel simultaneous signal aquisition allowed for calculation of the individual module voltage
- matrix switch implemented in transformer-less resonant fly-back topology
- operation in CCM and DCM with Dielectric Barrier Discharge lamp yielded up to 86.5 % converter efficiency



Matrix Switch in Transformer-less Resonant Flyback Topology – Measurement Results