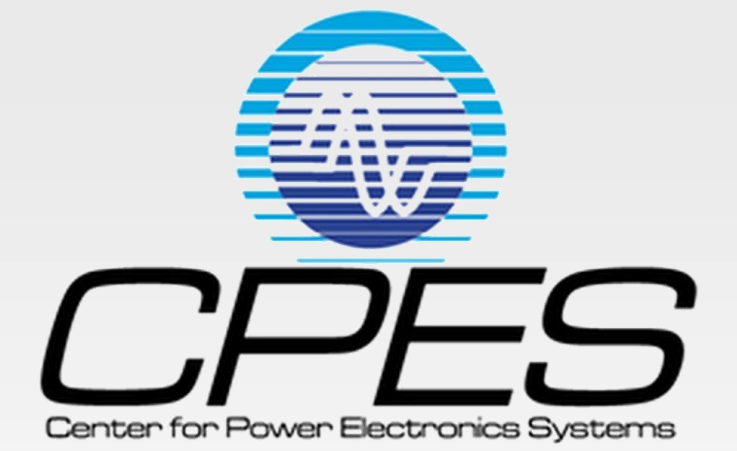


High-Frequency Transformer Design with High-Voltage Insulation for Modular Power Conversion from Medium-Voltage AC to 400-V DC



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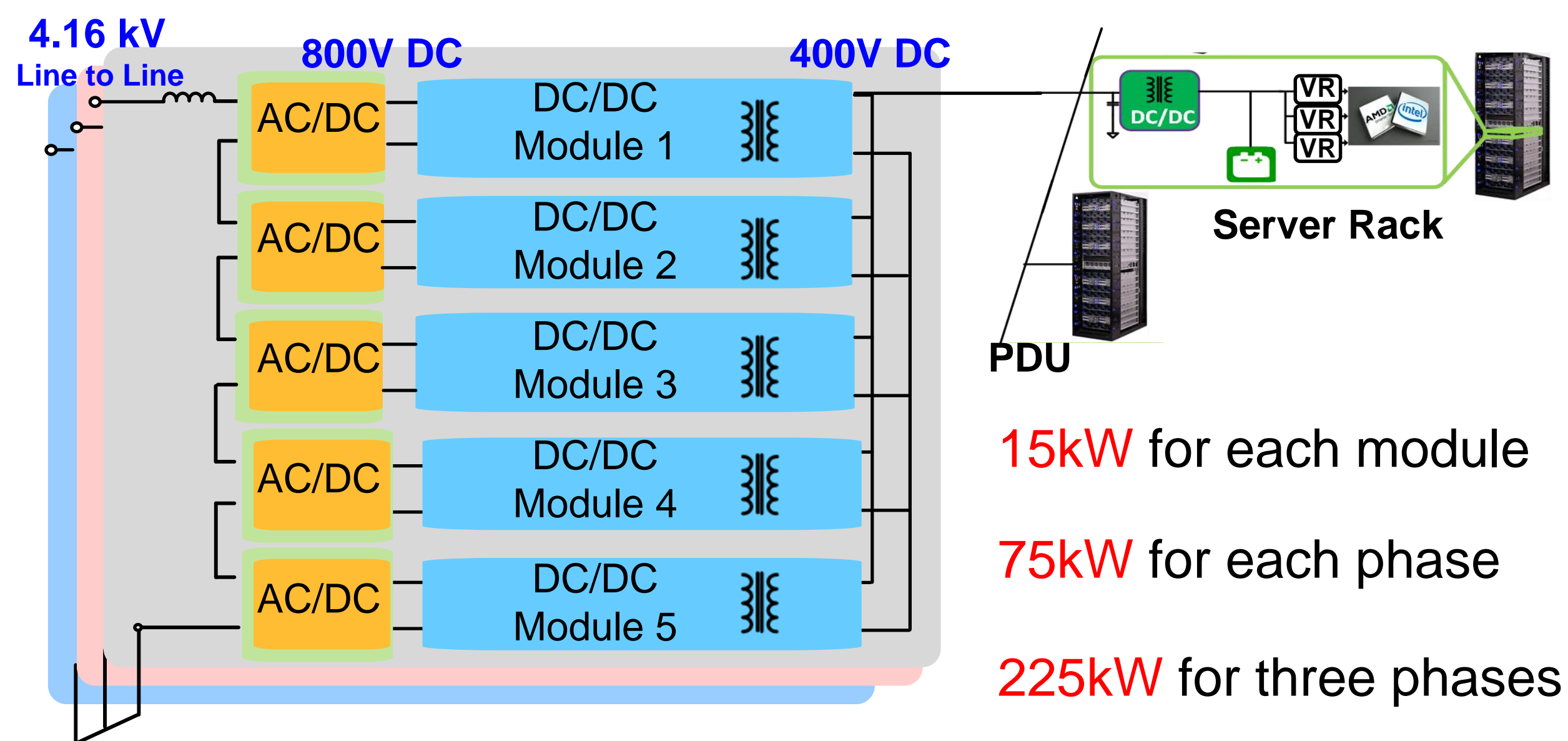


Introduction

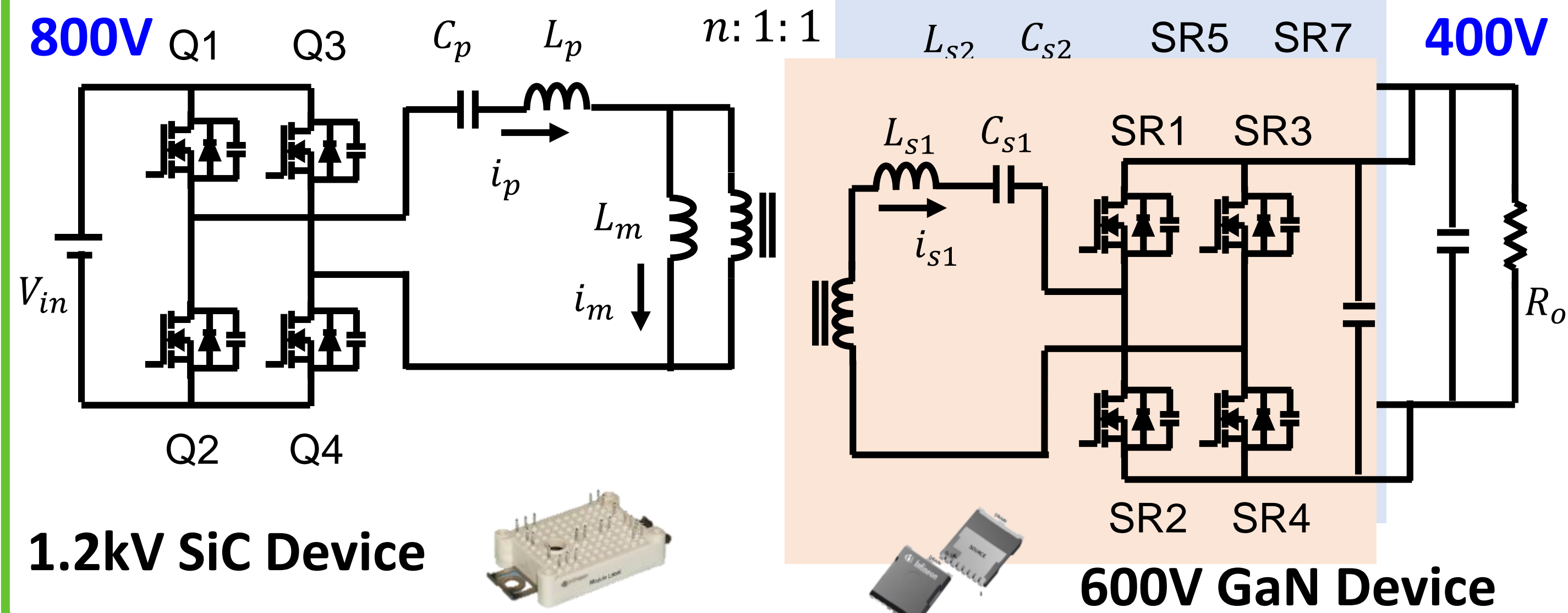
MVAC High Frequency Power Distribution in Data Center



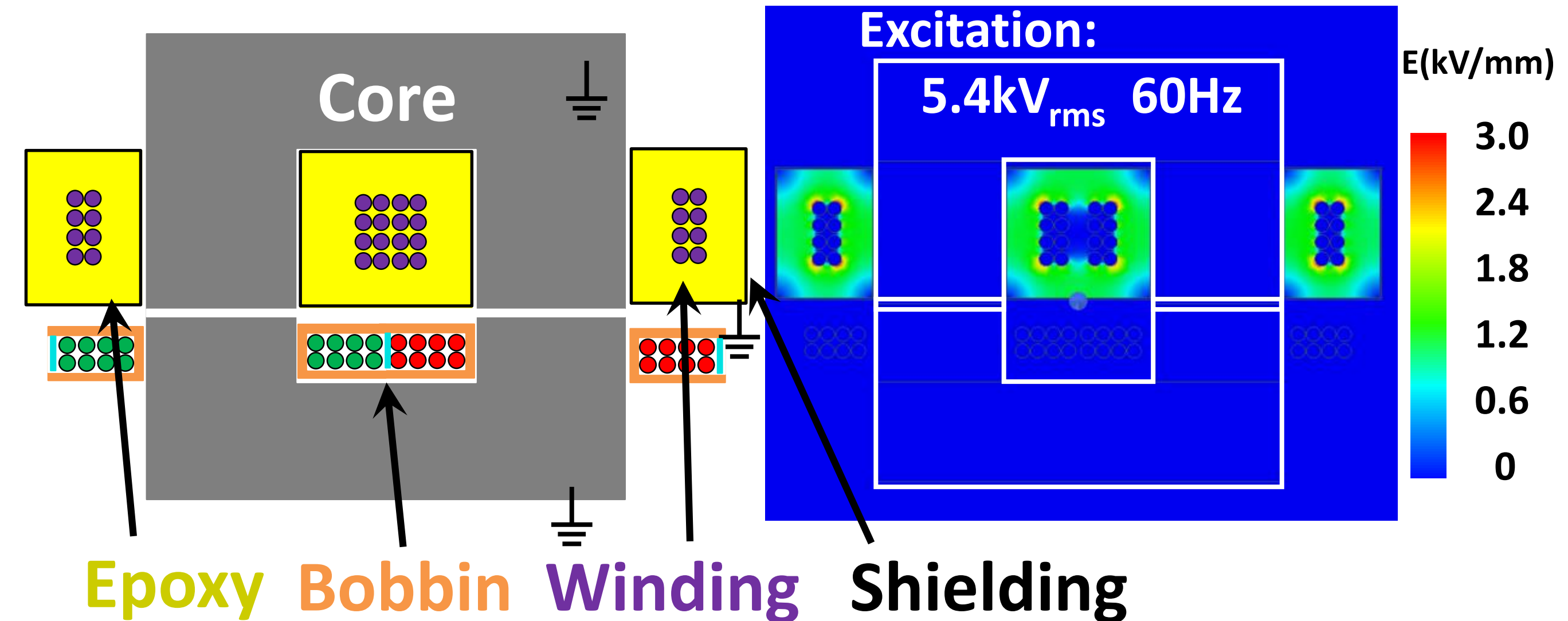
Power Conversion with 4160VAC Directly Down to 400VDC



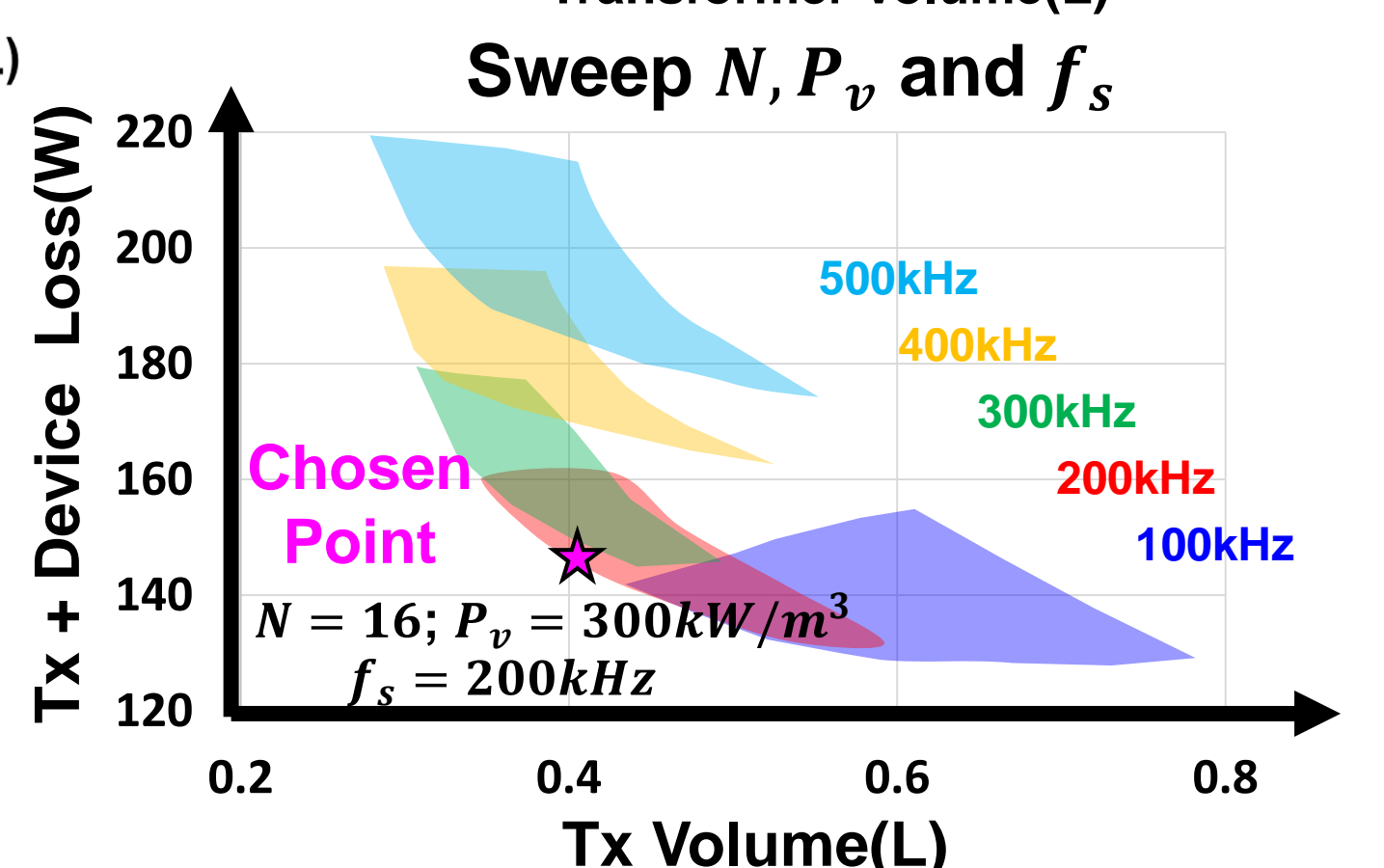
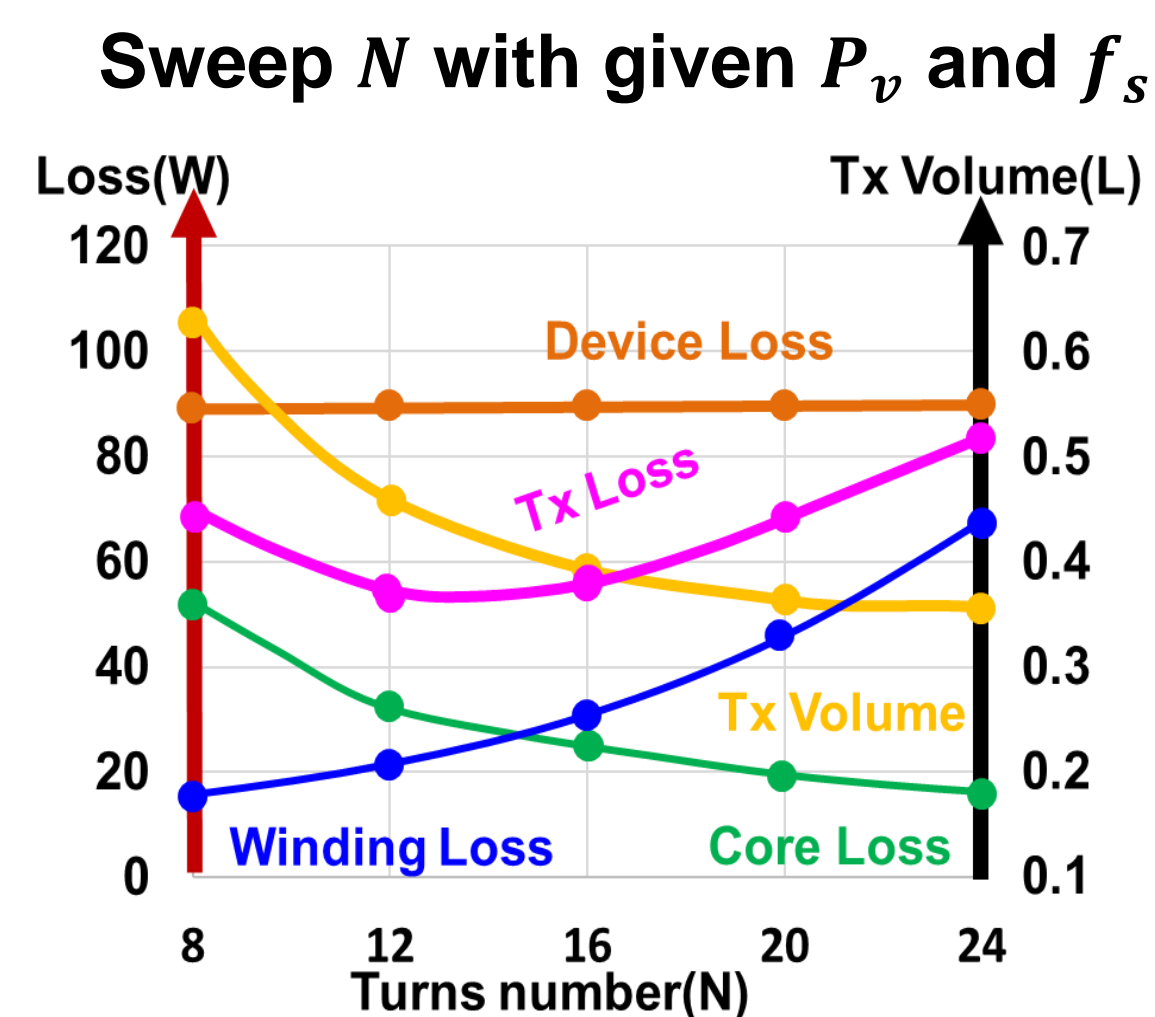
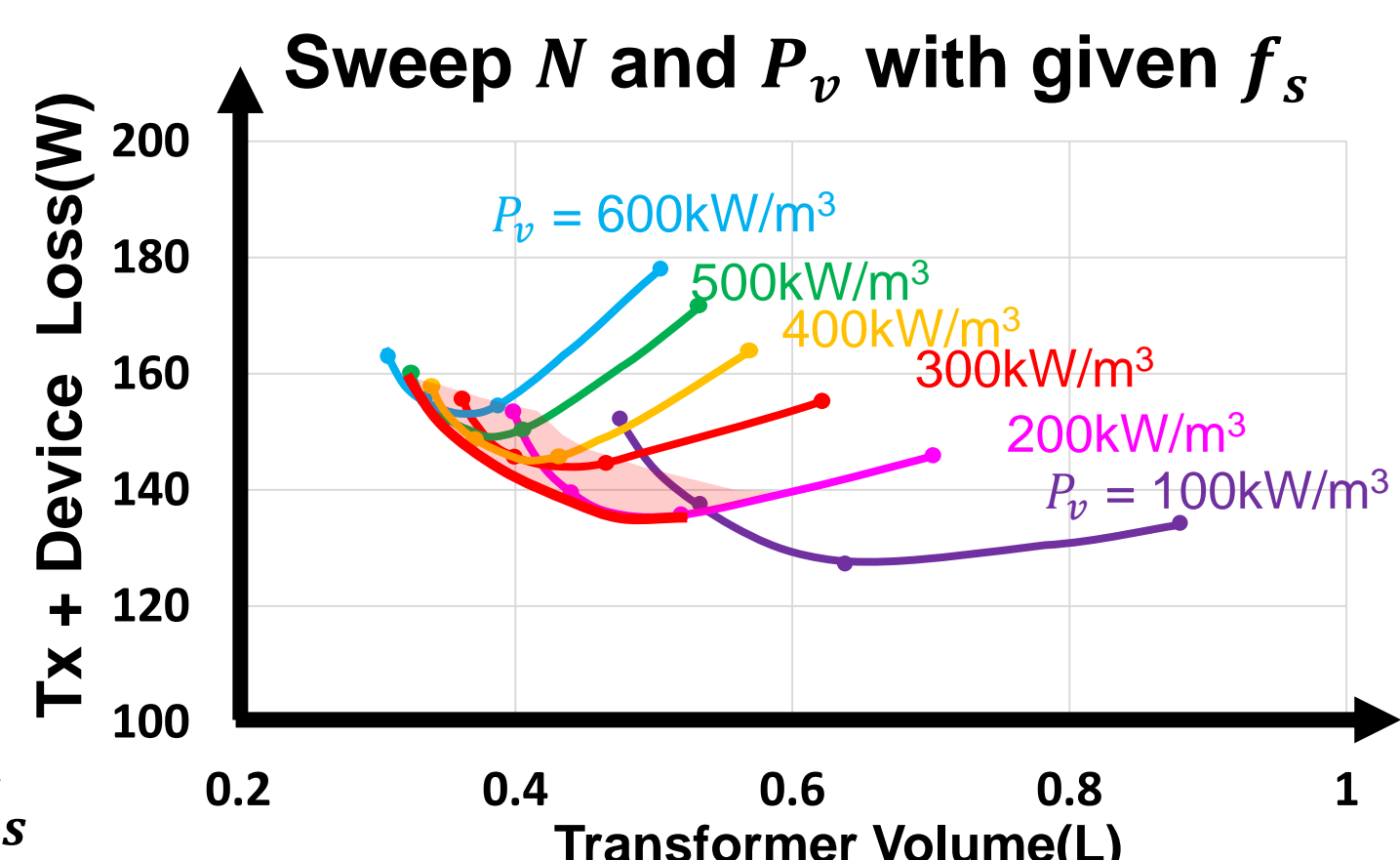
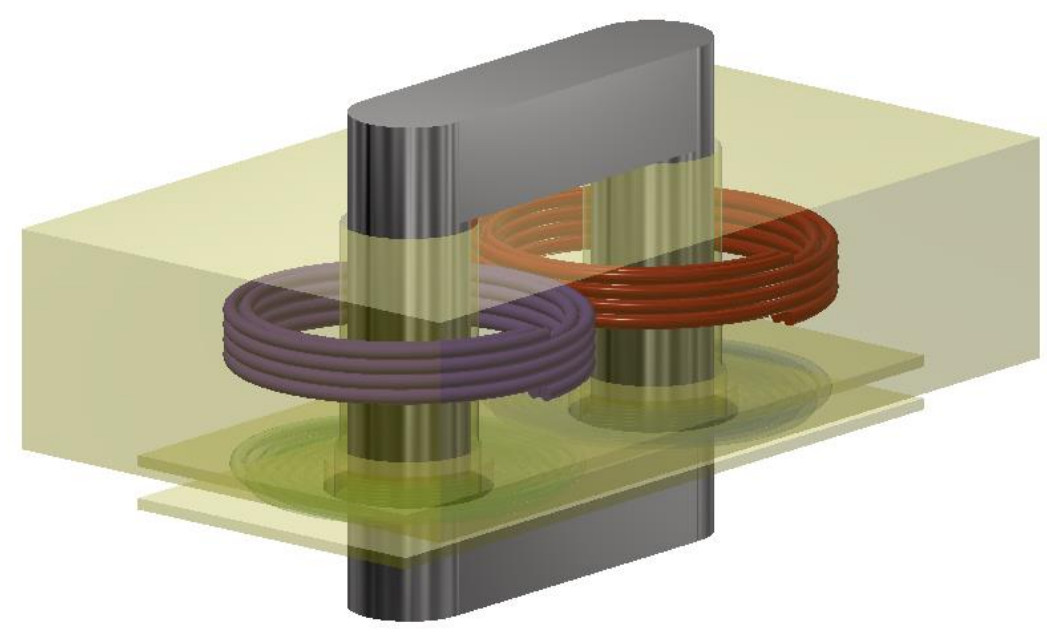
CLLC Resonant Converter Topology



Transformer MV Insulation Design

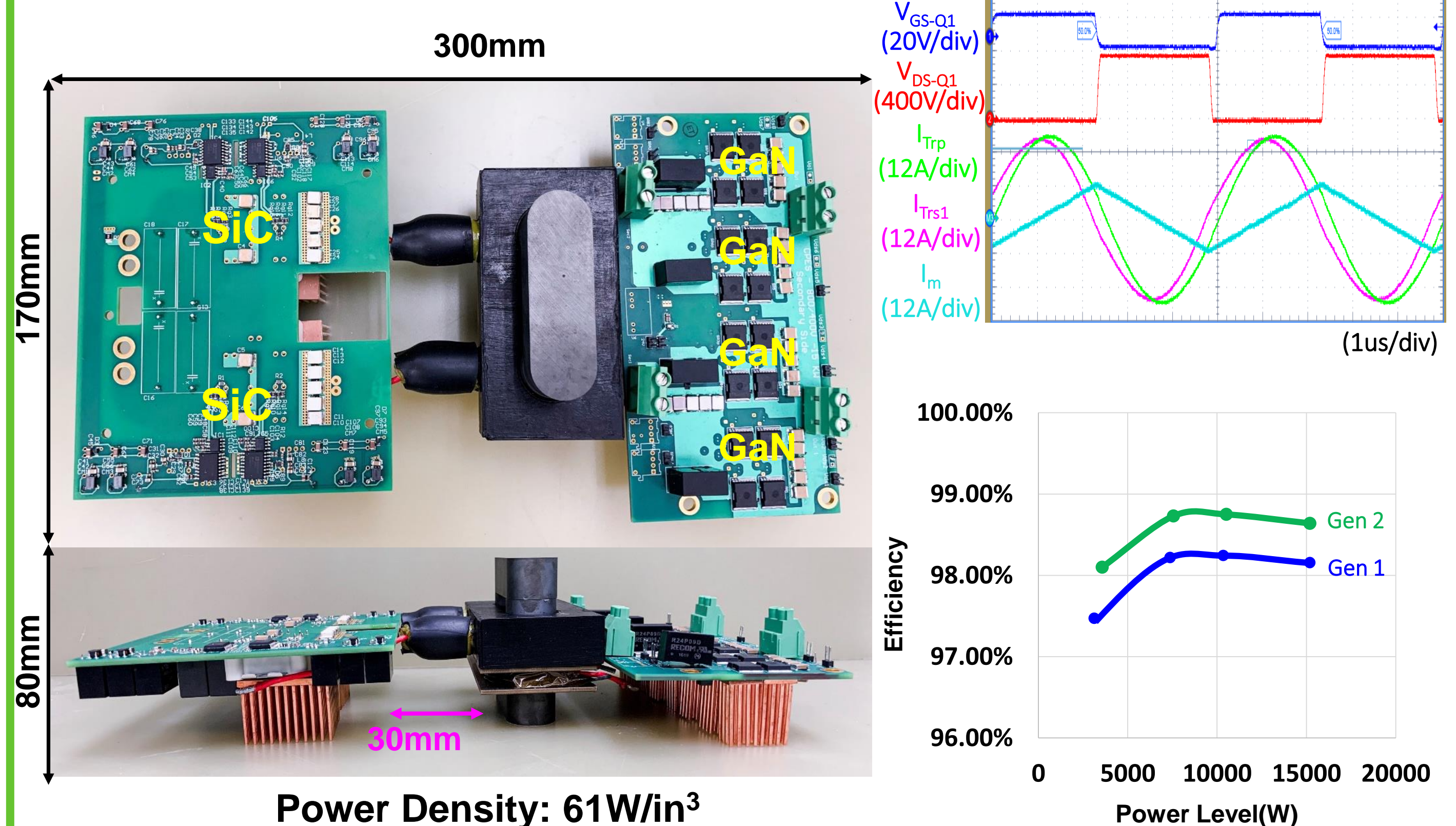


High Frequency Transformer Design



Hardware Implementation and Experiment Results

$V_{in}=800V$ $V_o=400V$ $P_o=15kW$ $f_s=200kHz$



Power Density: 61W/in³

MV Isolated Transformer has passed 30kV BIL Test, 12kV Applied Voltage Test, and 5.4kV Partial Discharge Test



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