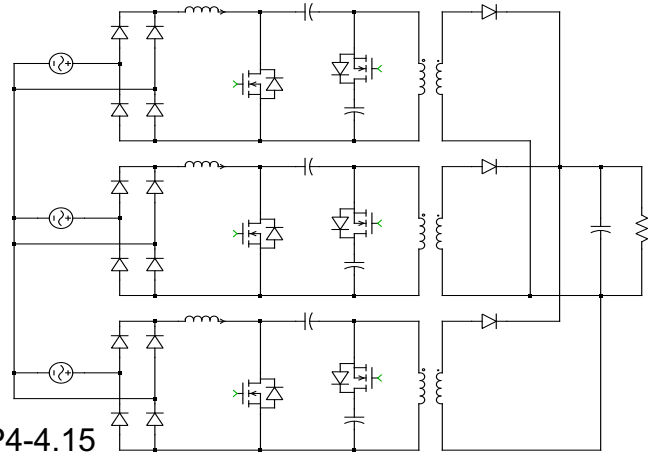
Arizona State University

Project Title: Isolated, soft switching SEPIC with Active Clamp for 480 V AC to 400 V DC Rectifier for Data Centers

Objectives: Develop a high performance 10 kW modular 480 V AC to 400 V DC rectifier using innovative topologies

Major Milestones: Magnetics design with ANSYS and two generations of prototypes

Deliverables: 10 kW rectifier with isolation, 98% efficiency, and about 150 W/inch^3



SOPO Task No.: BP4-4.15
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WBG Technology Impact

1. High switching frequency, high efficiency, single stage power conversion enabled by WBG devices
2. Market segments impacted - Application Spaces: Data centers, power supplies for information technology, electric transportation, appliances
3. Timeframe for commercialization: 2 years
4. Improvement in power density by about 3X-5X enabling compact system designs, efficiency by 2% compared to Si devices

More WBG Impact and Additional impacts

1. System level cost improvement compared to Si with reduced cooling and smaller EMI filters with switching frequency 100-200 kHz, soft switching

2. Workforce Development and Education: Impacts more than 150 students through enhanced course material; short videos on high frequency power conversion

3. TRL level At project start: 4, Expected at project completion: 5