Cree Fayetteville, Inc.

Project Title: Industry-Driven Medium Voltage SiC Power Module Manufacturing

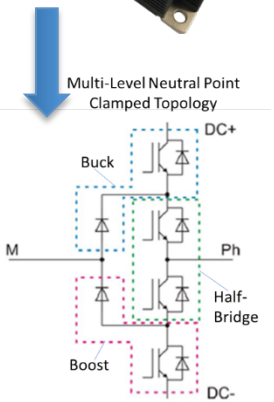
Objectives: Optimize SiC packages in industry standard footprints for 6.5 kV medium voltage markets with initial qualification data and educational resources to support wide-spread adoption.

Major Milestones:

- Diodes Inserted into Proposed Buck / Boost / Rectifier Modules
- Qualification Tests Start for Proposed Modules
- 6.5kV Eval Kit Complete
- Common Mode Mitigation Completed with App Note & Publication

Significant Equipment Acquisition: None

Deliverables: Release of module and evaluation kits datasheets, with available information on qualification test results and educational reference design material for education on EMI Mitigation strategies. Modules can be made available for Module Bank & Volume Pricing available.



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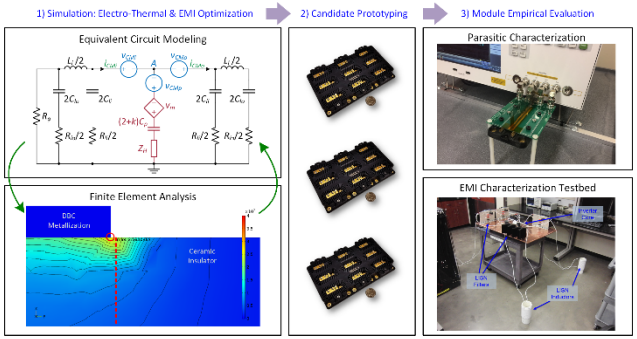

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WBG Technology Impact

1. Increase in efficiency, increase in volumetric / gravimetric density, with a reduction in losses in MV power electronic systems – using new industry standard footprints
2. Market segments impacted: Rail, High-speed MV drives, grid-tied distributed generation and energy storage, FACTS controllers applied to sub-transmission & transmission systems
3. Module Commercial Sampling Starting ~Month 6
4. Packaging designed to replace Si IGBT modules to enable an increase in end-system performance and available topologies, while mitigating potential sole source issues through the use of an industry standard footprint.

Additional Impacts

1. WBG MFG Cost is Reduced as device & module volumes start to approach economy of scale.
2. Job creation for highly technical R&D / MFG / Process Control personnel, as well as for highly skilled technicians to support design & production.
3. Proposed Publications, App Notes, & Reference Designs are focused on WBG module/system design education for WBG industry development of all levels; supplemented through development of supporting module circuit simulation models.
4. Supports Supply Chain Development for the ONLY vertically-integrated WBG supplier.