

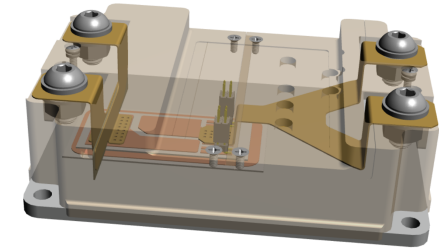
Project Title: Design of a High Performance HV Module

Objectives: Provide a scalable low inductance module platform for next generation high voltage power modules.

Task No. BP5-3.18 Open Innovation Fund(OIF)
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Baseline structure from GE's 3.3kV 1/2 Bridge Module



Concept for 6.5kV scalable Power Module Platform

WBG Technology Impact

1. Low inductance packaging will enable higher power density than standard silicon packaging technologies.
2. Application: EV Fast Charger, Variable Frequency Drives for MW applications, Central PV inverters, UPS, Data Center, etc)
3. Timeframe for commercialization: 1 – 3 years
4. Grid connected power conversion elements today include 50/60hz Transformers which weight tonnes and are very large. HV SiC modules enable high frequency solid state Transformers and Distribution devices achieving >50% power density improvement and 10X lower weight.

Accomplishments/Outcomes

6.5kV SiC MOSFET – Source of Supply secured – Device Bank
 Module package selected – Industry Standard 100mm x 140mm
 Internal packaging concepts evaluated / down-selected