



Project Title: **Phase Leg Power Modules with MIDSJT Devices** SAND2014-17620PE

Program Manager: **Dr. Ranbir Singh**

Principal Investigator: **Dr. Siddarth Sundaresan**

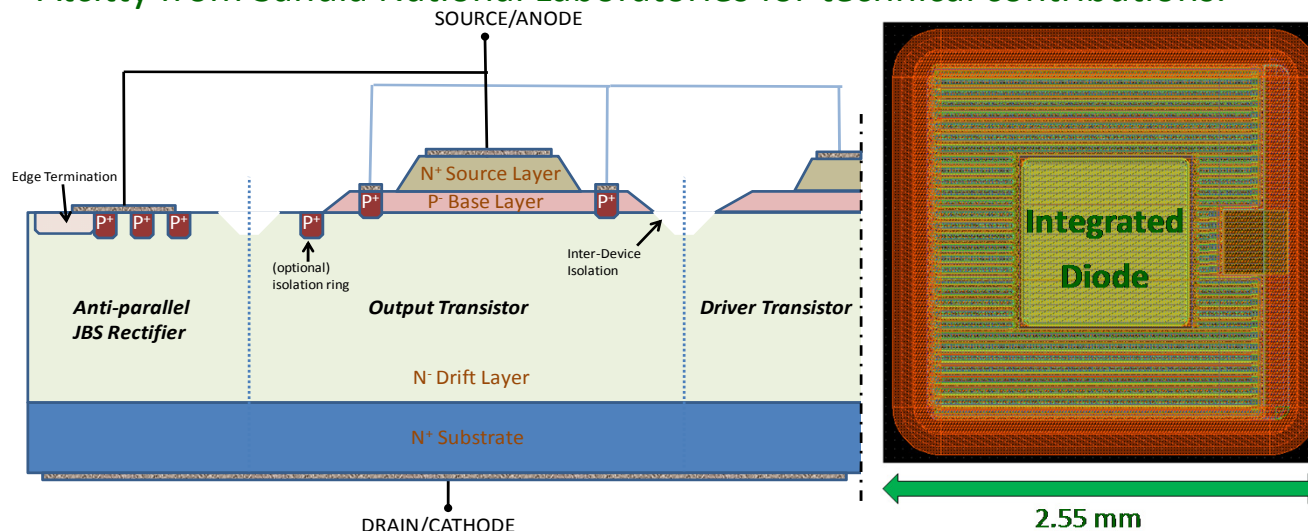
Grantee Firm: **GeneSiC Semiconductor, Inc.**

Overall Program Goal

Develop the device designs and process technology for constructing 15 kV/10 A integrated SiC Junction Transistor-Rectifier devices targeted for insertion into medium voltage power electronics.

Acknowledgement

The authors thank Dr. Imre Gyuk from DOE Energy Storage Program for funding this work and Dr. Stan Atcitty from Sandia National Laboratories for technical contributions.



- If achieved it will be the first time a high voltage integrated circuit is demonstrated in SiC
- Universal applicability towards all grid-connected power electronics

Current Status

- Conducting 2-D Simulations
- Designing mask layouts
- Performing unit process development

Future Steps

- Mask Plate Production
- Prototype Fabrication
- On-wafer characterization

Sandia National Laboratories is a multi-program laboratory managed and operated by Sandia Corporation, a wholly owned subsidiary of Lockheed Martin Corporation, for the U.S. Department of Energy's National Nuclear Security Administration under contract DE-AC04-94AL8500