

Project Title: Wide Bandgap based Low-Voltage / High-Current DC/DC Converter for Electrified Transit Buses.

Objectives: (1) Demonstrate SiC's advantages in high-current isolated dc/dc converter; develop a 500 A transformer for isolated dc/dc converters.

Task No. BP5-4.41

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Vanner Inc: Hybrid Beltless Alternator (HBA)

WBG Technology Impact

1. SiC increases power density of HBA while maintaining same form factor.
2. Application: hybrid electric transit buses
3. Existing product operates at 9 kW and a peak efficiency of 93% at full power. The new (estimated) capabilities are 15 kW with a minimum efficiency of 94 % at full power. This product will fulfill the requirements of Vanner's customers.

Accomplishments/Outcomes

1st Quarter:

- Preliminary analysis undertaken.
- Hardware acquired from Vanner Inc. and United Silicon Carbide, Inc.
- High-current, high-frequency transformer constructed.