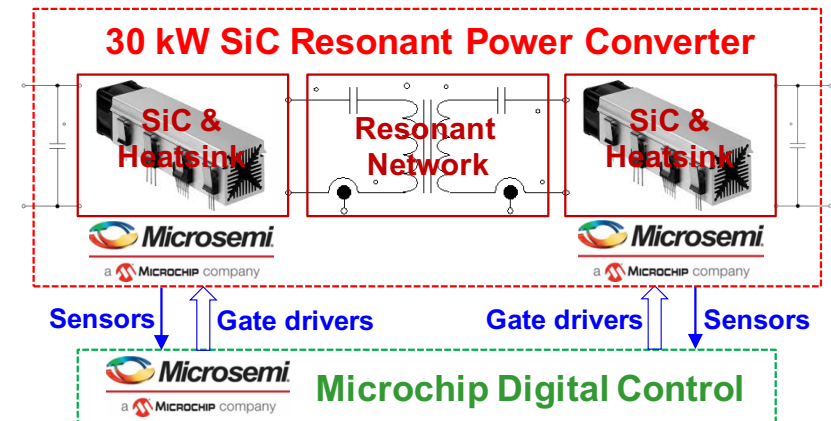


Project Title: Development of SiC-Based Resonant Converter for EV Charger Using Microsemi's 3.3 kV & 700 V SiC MOSFETs

Objectives: To develop a TRL 5 resonant hardware and firmware with both unidirectional and bidirectional 30 kW power for EV charger

Major Milestones: Demonstration with verified results of topology evaluation and digital control

Deliverable: Two sets of 30 kW TRL 5 SiC resonant converters delivered to Microsemi



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WBG Technology Impact

- High power and high frequency digital SiC power converter with 5-10 times higher switching frequency and control bandwidth over Silicon approaches
- Market segments: industrial SiC high power rapid prototyping at EV industry
- 30 kW resonant converter for EV charging that can operate in ranging from 700 V to 3.3 kV in both uni- and bi-directional modes

Additional Impacts

- Establish the starting point of commercialization of a new product line for 3.3 kV and 700 V SiC power devices applications
- Accelerate the skilled workforce development
- Shorten the development cycle for SiC power semiconductor industry and EV industry