

RF and Power Magnetics Designed to Support Today's GaN and SiC Semiconductors

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- Brief overview of Advantages of GaN and SiC
 - Smaller package sizes/smaller overall footprint
 - Higher voltages/frequency = smaller parts (not always true)
- Discussion of Design Considerations for Magnetics
 - Parasitic Management
 - How to control leakage inductance and capacitance
 - Choosing the right winding technique will impact both leakage and capacitance
 - Selecting the right core based on switching frequency, voltage and power
 - Core Materials
 - Core Materials over frequency and temperature
 - Calculating core loss
 - Impact of Wire Selection
 - Wire types/impacts/winding techniques
 - Losses of wire over frequency and voltage
 - Temperature Impacts
 - Temp rise due to power
 - Temp rise due to junction temp of semiconductors and proximity
 - Proper selection of adhesives/coatings/potting materials/etc to support reliable higher operating temps
 - Case study/examples
 - Short summary and wrapup