Information to Power Your Designs

Server / Telecom - Si and WBG solutions: Part 2 of 4 Editorial Series Sponsored by Infineon; How to Reap the Benefits of Wide-Bandgap Semiconductors in Server Applications

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SiC and HV/MV GaN technology solutions enabling high power density and high-performance server power supply designs

The emergence of cloud-based internet services, artificial intelligence, and cryptocurrency has initiated a strong growth of processing power in data centers worldwide. Since the data centers have also been facing rising electricity and real estate prices, there is a clear trend towards highly efficient and compact server power supplies to decrease overall costs. These new power supplies can lead to lower power consumption of the server and, at the same time, lower heat dissipation, thus reducing also secondary costs such as cooling.

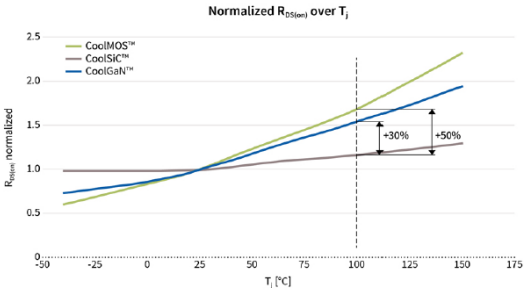

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Figure 1: Comparison of temperature dependency of the on-state resistance for different semiconductor technologies, such as Infineon's CoolMOS™, CoolSiC™, and CoolGaN™

This article comparatively highlights the performance benefits of wide-bandgap semiconductors over silicon (Si) technology and provides an example WBG use-case of a server power supply. The optimization results manifest the design superiority when using WBG-based power devices in terms of efficiency versus power density and the necessary design trade-offs that indicate the appropriate choices.

Click here to read the full article:

How to reap the benefits of Wide-Bandgap semiconductors in Server applications

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