

Preview

This blog post explores innovations in power devices, gate drivers and advanced controllers with Digital Signal Processing (DSP) capabilities to meet Artificial Intelligence (AI) servers' power and efficiency needs. The rise of artificial intelligence (AI) has significantly increased computing. The diagram illustrates both AC-DC conversion and DC-DC power distribution stages utilized in AI data centers. onsemi's integrated approach leverages complementary products including cutting-edge Si, SiC and GaN technologies for power switching. Next-generation. The GPU, which supports 48 V, has changed the output of PSU from 12 V to 48/54 V and has become the mainstream in the market. Lite-on advocate single PSU power levels to rise to 5.5~8 kW in 2025 due to AI server applications. The. The Troubles under the AI Boom--Power Consumption and Heat Dissipation In 2025, generative AI applications represented by ChatGPT and Deepseek have deeply penetrated thousands of industries, driving global computing power to grow at an unprecedented rate.

They are conceived to meet the needs of AI-based data centers as well as EV, solar, and energy storage systems. The devices have zero gate

Explore how innovations in power devices, gate drivers, and DSP-based controllers tackle AI servers' high energy demands, optimizing efficiency in data centers.

Lite-on advocate single PSU power levels to rise to 5.5~8 kW in 2025 due to AI server applications. GaN and SiC devices are the best solutions to boost efficiency.

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Meeting AI Demands With SiC and GaN Power Supplies New architectures and AC-DC distribution configurations are increasing demand for

We'll examine the challenges of meeting increasing power demands in data center server racks, and discuss how hybrid power supply architectures leveraging Silicon, Gallium Nitride (GaN), and Silicon

As AI models become more complex and the number of AI servers grows, the demand for robust, efficient, and scalable power supplies has never

In this paper a complete 8.0 kW AC/DC power supply unit (PSU) for Artificial Intelligence (AI) server and datacenter applications is discussed, addressing design

Discover how AI features like “Hey Siri” rely on powerful data centers. Learn about the technology behind smart factories and the importance

The AI Server PSU market is booming, projected to reach \$15 billion by 2033 with a 15% CAGR. Discover key market trends, leading companies,

The continuous development of the SiC and GaN industry, coupled with the thriving AI ecosystem, will result in more intersections between SiC,

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The rapid development and deployment of massive artificial intelligence (AI) in the cloud - including OpenAI's ChatGPT, Microsoft's Bing with AI, plus Google's Bard and Deep Mind Gemini - is drawing

Hybrid TCM/CCM control strategy offers a comprehensive approach, combining the strengths of both modes to achieve higher efficiency, performance, and reliability in high-power AI server PSUs.

Large language models (LLMs) and other neural networks draw substantial power when processing complex artificial-intelligence (AI) and machine-learning (ML) workloads. Designed for traditional

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