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Global AI Server Power Management ICs Supply, Demand and Key Producers, 2026-2032

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Abstracts

The global AI Server Power Management ICs market size is expected to reach $ 5631 million by 2032, rising at a market growth of 19.6% CAGR during the forecast period (2026-2032).

AI Server Power Management ICs are specialized integrated circuits used for power conversion, voltage regulation, power distribution, monitoring, sequencing, and protection within AI servers. They provide stable and efficient power for graphics processing units, artificial intelligence accelerators, central processing units, high bandwidth memory, server memory, data processing units, networking devices, storage components, and other critical loads. Typical products include multiphase controllers, smart power stages, integrated direct current converters, point of load regulators, intermediate bus controllers, hot swap controllers, electronic fuses, power monitoring ICs, and power sequencing ICs. These devices are designed to meet requirements for high power density, high conversion efficiency, fast transient response, precise voltage control, digital communication, and long term operational reliability. AI Server Power Management ICs typically cost a few dollars each, with gross margins usually between 50% and 60%.

The upstream supply chain of AI Server Power Management ICs includes silicon wafers and semiconductor materials, wafer fabrication, analog and mixed signal process technologies, power semiconductor processes, packaging substrates, lead frames, electronic design automation software, semiconductor equipment, and testing services. Midstream companies are responsible for power IC architecture design, wafer fabrication, advanced packaging, testing and validation, firmware development, and power module integration. They also develop core power delivery, point of load power, and power path management solutions tailored to the requirements of GPU, dedicated

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AI accelerator, and FPGA platforms. Downstream customers mainly include AI chip companies, server manufacturers, motherboard and accelerator card suppliers, cloud service providers, data center operators, and power system suppliers. The products are ultimately used in AI servers and high performance computing systems built around GPU, ASIC, FPGA, and other accelerator architectures.

The AI Server Power Management ICs market is being continuously driven by the expansion of artificial intelligence computing infrastructure, upgrades in accelerated computing platforms, and the evolution of data center power architectures. As the power consumption of graphics processing units, artificial intelligence accelerators, high bandwidth memory, and high speed interconnect devices continues to increase, AI servers require higher current delivery, greater power density, faster transient response, more precise voltage regulation, and more sophisticated digital power management. These requirements are accelerating the development of multiphase controllers, smart power stages, point of load converters, hot swap controllers, and power monitoring ICs. Future competition will primarily focus on conversion efficiency, current handling capability, control accuracy, thermal performance, packaging integration, system reliability, and joint development capabilities with processor platform and server manufacturers.

Report Scope

This report studies the global AI Server Power Management ICs production, demand, key manufacturers, and key regions.

This report is a detailed and comprehensive analysis of the world market for AI Server Power Management ICs and provides market size (US$ million) and Year-over-Year (YoY) Growth, considering 2025 as the base year. This report explores demand trends and competition, as well as details the characteristics of AI Server Power Management ICs that contribute to its increasing demand across many markets.

Highlights and key features of the study

Global AI Server Power Management ICs total production and demand, 2021-2032, (K Units)
Global AI Server Power Management ICs total production value, 2021-2032, (USD Million)
Global AI Server Power Management ICs production by region & country, production, value, CAGR, 2021-2032, (USD Million) & (K Units), (based on production site)

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Global AI Server Power Management ICs consumption by region & country, CAGR, 2021-2032 & (K Units)
U.S. VS China: AI Server Power Management ICs domestic production, consumption, key domestic manufacturers and share
Global AI Server Power Management ICs production by manufacturer, production, price, value and market share 2021-2026, (USD Million) & (K Units)
Global AI Server Power Management ICs production by Type, production, value, CAGR, 2021-2032, (USD Million) & (K Units)
Global AI Server Power Management ICs production by Application, production, value, CAGR, 2021-2032, (USD Million) & (K Units)

This report profiles key players in the global AI Server Power Management ICs market based on the following parameters - company overview, production, value, price, gross margin, product portfolio, geographical presence, and key developments. Key companies covered as a part of this study include MPS, Infineon Technologies, Texas Instruments, Renesas Electronics, Analog Devices, onsemi, STMicroelectronics, Alpha and Omega Semiconductor, Vishay Intertechnology, Richtek Technology, etc.

This report also provides key insights about market drivers, restraints, opportunities, new product launches or approvals.

Stakeholders would have ease in decision-making through various strategy matrices used in analyzing the World AI Server Power Management ICs market

Detailed Segmentation:

Each section contains quantitative market data including market by value (US$ Millions), volume (production, consumption) & (K Units) and average price (US$/Unit) by manufacturer, by Type, and by Application. Data is given for the years 2021-2032 by year with 2025 as the base year, 2026 as the estimate year, and 2027-2032 as the forecast year.

Global AI Server Power Management ICs Market, By Region:

United States

China

Europe

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Japan

South Korea

ASEAN

India

Rest of World

Global AI Server Power Management ICs Market, Segmentation by Type:

Multiphase Controllers

Integrated Power Stages

Others

Global AI Server Power Management ICs Market, Segmentation by Power Conversion Stage:

Input and Front-End Power Management ICs

Intermediate Bus Power ICs

Point-of-Load Power ICs

Auxiliary Power Management ICs

Global AI Server Power Management ICs Market, Segmentation by Application:

GPU-based AI Servers

ASIC-based AI Servers

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FPGA-based AI Servers

Others

Companies Profiled:

MPS

Infineon Technologies

Texas Instruments

Renesas Electronics

Analog Devices

onsemi

STMicroelectronics

Alpha and Omega Semiconductor

Vishay Intertechnology

Richtek Technology

uPI Semi

Silergy

Shanghai Jingfeng Mingyuan

Key Questions Answered:
1. How big is the global AI Server Power Management ICs market?
2. What is the demand of the global AI Server Power Management ICs market?
3. What is the year over year growth of the global AI Server Power Management ICs market?

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4. What is the production and production value of the global AI Server Power Management ICs market?
5. Who are the key producers in the global AI Server Power Management ICs market?
6. What are the growth factors driving the market demand?

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