

# Power Semiconductors Market to Hit USD 70.14 Billion by 2032, with CAGR of 4.25% | SNS Insider

*The demand for energy-efficient systems is driving the market by enabling advanced power electronics and improved energy management across various industries.*

AUSTIN, TX, UNITED STATES, December 6, 2024 /EINPresswire.com/ -- Market Size & Industry Insights

As Per the SNS Insider, "The [Power Semiconductors Market Size](#) was valued at USD 48.23 billion in 2023 and is expected to reach USD 70.14 billion by 2032, and grow at a CAGR of 4.25% over the forecast period 2024-2032."



### Shaping Market Growth: How Energy-Efficient Solutions and Advanced Power Semiconductors are Driving the Future

The power semiconductors market is driven by increasing demand for energy-efficient solutions across various sectors such as automotive, industrial, and consumer electronics. The rise in the adoption of electric vehicles (EVs) and renewable energy systems, including solar and wind energy, is accelerating the need for advanced power semiconductor technologies. Additionally, the growing focus on reducing carbon emissions and enhancing grid stability further boosts the market growth. As power semiconductors are critical components in improving the efficiency of power management systems, the continued innovations in semiconductor materials, such as Silicon Carbide (SiC) and Gallium Nitride (GaN), are expected to shape the market's future growth trajectory.

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SWOT Analysis of Key Players as follows:

- Fuji Electric
- Toshiba
- Mitsubishi
- Littelfuse
- Infineon
- STMicroelectronics
- International Rectifier
- Vishay
- Semikron
- NXP Semiconductors
- Renesas
- Fairchild

## Power Semiconductors Market Growth

The power semiconductors market is witnessing substantial growth due to advancements in material science and increasing demand for high-performance electronics. Silicon Carbide (SiC) and Gallium Nitride (GaN) are becoming increasingly popular due to their superior efficiency and ability to operate at higher temperatures and voltages compared to traditional silicon-based semiconductors. The continuous evolution in power management applications in electric vehicles, renewable energy systems, and industrial automation is expected to fuel demand, further boosting the market's growth during the forecast period.

Gallium Nitride (GaN) dominates the market for its efficiency, while Silicon Carbide (SiC) is the fastest-growing, with diodes and power switches fueling growth in EVs and renewable energy.

### By Material

Gallium Nitride (GaN) is dominating the market due to its exceptional properties, including high efficiency, low losses, and high power density. GaN's application in fast-switching devices is helping to drive growth in telecommunications, computing, and automotive industries, especially for applications such as data centers, 5G technology, and electric vehicles.

Silicon Carbide (SiC) is the fastest-growing material in the power semiconductors market. Its superior thermal conductivity and efficiency in high-voltage operations make it ideal for use in electric vehicles (EVs) and renewable energy applications. SiC's ability to withstand high temperatures and voltages offers improved performance, lower energy losses, and longer lifespan, which is driving its adoption in power electronics.

### By Component

Diodes, particularly Schottky diodes and fast recovery diodes, dominate the market due to their widespread use in applications such as power supplies, motor drives, and renewable energy

systems. Their essential role in power conversion, including rectification, voltage regulation, and energy protection, makes them indispensable in many industries.

Power switches, especially MOSFETs (Metal-Oxide-Semiconductor Field-Effect Transistors) and IGBTs (Insulated Gate Bipolar Transistors), are experiencing rapid growth due to their pivotal role in energy management applications, such as electric vehicles (EVs), industrial automation, and renewable energy systems. These switches are key to energy-efficient systems and high-performance power conversion, driving their fast adoption.

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#### KEY MARKET SEGMENTS:

##### By Components

Diodes

Switches

Rectifiers

Others

##### By Material

Silicon Carbide

GaN Silicon

##### By Application

Automotive

Consumer Electronics

Military & Aerospace

Regional Power Semiconductor Market Dynamics: U.S., Germany, and China Lead, While the U.K. and India Show Strong Growth Potential

In North America, the United States holds a dominant position in the power semiconductors market and is projected to maintain strong growth, with an expected compound annual growth rate (CAGR) of 3.5% from 2024 to 2031. Key players like ON Semiconductor Corporation and Texas Instruments are driving innovation and developing more efficient, high-performance devices.

In Europe, Germany led the market in terms of revenue in 2023 and is expected to continue its dominance. The United Kingdom, with its robust automotive sector and support for power semiconductor manufacturers, is forecasted to grow at a CAGR of 6.7%.

In the Asia Pacific, China dominates the market, benefiting from a large consumer base and government support, while India is emerging as a significant opportunity in the region.

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## Recent Development

-June 20, 2024 – Infineon Technologies announces the release of its CoolGaN™ 700 V G4 power transistors, offering 20% better performance for improved efficiency in consumer, industrial, and renewable energy applications. These transistors feature fast switching speeds, low power losses, and a wide voltage range, optimizing performance in power systems from 20 W to 25,000 W.

-May 28, 2024 – Elliott Management, the \$65 billion hedge fund, has invested \$2.5 billion in Texas Instruments, urging the company to adopt a more flexible capital expenditure plan to improve free cash flow and enhance shareholder returns.

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