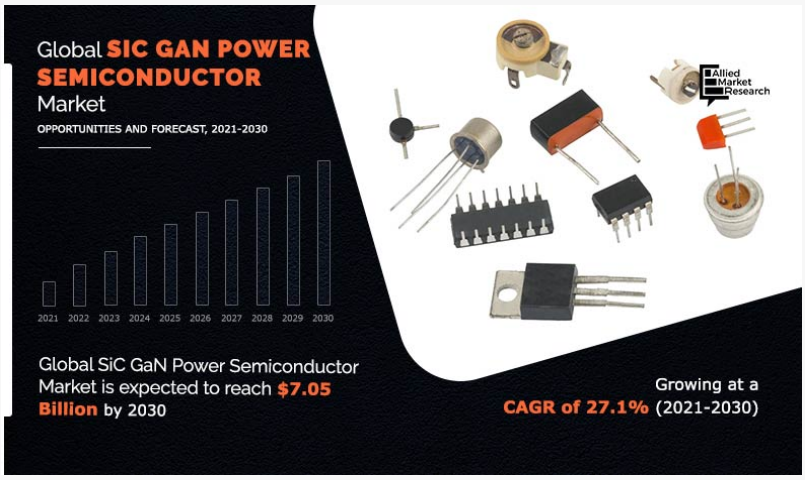
SiC GaN Power Semiconductor Market Estimated to Experience a Hike in Growth By 2030

SiC GaN Power Semiconductor Market Expected to Reach $7.05 Billion by 2030 - Allied Market Research



SiC GaN Power Semiconductor Market

WILMINGTON, DELAWARE, UNITED STATES, June 7, 2024 /EINPresswire.com/ -- Silicon Carbide (SiC) and Gallium Nitride (GaN) are vital sources to power semiconductor devices. One of the major factors accelerating the market growth includes an increase in demand for renewable energy that has resulted in the development of power semiconductors. Besides, the introduction of 5G mobile communication globally is one of the key factors driving the global market for SiC GaN power semiconductors. Allied Market Research, titled, "SiC GaN Power Semiconductor Market by Material, Product, Application, And Industry Vertical: Global Opportunity Analysis and Industry Forecast, 2021–2030," the global SiC GaN power semiconductor market size was valued at $0.79 billion in 2020, and is projected to reach $7.05 billion by 2030, registering a CAGR of 27.1% from 2021 to 2030.

> Rise in demand for connected devices, an increase in disposable income, and several product launches by market players."
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> *Allied Market Research*

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Power semiconductors are components used to convert energy from one form to another at various stages between the points of energy generation and energy consumption. Traditionally, silicon-based devices have been predominantly used for high-voltage applications, however, new materials such as silicon carbide (SiC) and gallium nitrate (GaN) for power applications are gaining popularity to take advantage of superior material properties. Silicon carbide (SiC) and gallium nitride (GaN) have higher band gap energies than

silicon as well as other attributed benefits to power semiconductor devices. The higher band gap energies lead to reduced leakage current and are also favorable for another common power device, the Schottky Barrier Diode. Other advantageous material properties of SiC and GaN over traditional silicon include better heat conduction and lower resistance in bulk structures. These attributes gain in momentum the SiC GaN power semiconductor market.

Significant factors that impact the growth of the SiC GaN power semiconductor market include an increase in demand for power electronics modules across various industry verticals, advantages of compound semiconductors (SiC) over silicon-based technology, rise in installation of solar photovoltaic panels for electricity generation, decrease in prices of GaN semiconductor, rise in demand for GaN power semiconductor for wireless charging, and increase in requirement of GaN devices for commercial RF applications. However, the lack of availability of GaN material, the high wafer cost of SiC semiconductors, and the complexity in the supply chain and designing process of SiC semiconductor technology hampers the SiC GaN power semiconductor market growth. On the contrary, the advent of 5G communication, and government initiatives in HVDC and smart grid are expected to offer lucrative opportunities for the SiC GaN power semiconductor market analysis during the forecast period.

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The SiC GaN Power Semiconductor industry key market players adopt various strategies such as product launch, product development, collaboration, partnership, and agreements to influence the market. It includes details about the key players in the market's strengths, product portfolio, market size and share analysis, operational results, and market positioning.

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Texas Instruments Inc.
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Maxim Integrated Products, Inc.
Renesas Electronics Corporation
ON Semiconductor Corporation
NXP Semiconductors N.V.
Microchip Technology Inc.
STMicroelectronics N.V.

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The ongoing COVID-19 pandemic has abruptly reshaped the global economy. A sudden decline in infrastructure development and installation projects is expected to hamper the SiC GaN power semiconductor market trends for automotive and industrial and energy & power industry verticals. The global economy has experienced a surge in demand for cloud/data center services and cloud infrastructure to support a distributed workforce. Growing adoption of 5G networking by corporate individuals due to growing online presence has been placed as a national priority and is opportunistic for the SiC GaN power semiconductor industry.

Region-wise, Asia-Pacific holds a significant share of the global SiC GaN power semiconductor market. China dominates the market share in this region, owing to the presence of several leading manufacturers in the region. Besides, increasing demand for consumer electronics and a rise in infrastructure development has also contributed to the growth of SiC GaN power semiconductors in the region.

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- In 2020, the SiC segment accounted for maximum revenue and is projected to grow at a notable CAGR of 27.3% during the forecast period.
- The power MOSFET and IGBT segments together accounted for more than 25.0% of the SiC GaN power semiconductor market share in 2020.
- The automotive segment of the SiC GaN power semiconductor market is projected to grow at a CAGR of 30.5% during the forecast period.
- Asia-Pacific contributed a major share in the SiC GaN power semiconductor market, accounting for more than 45.0% share in 2020.

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