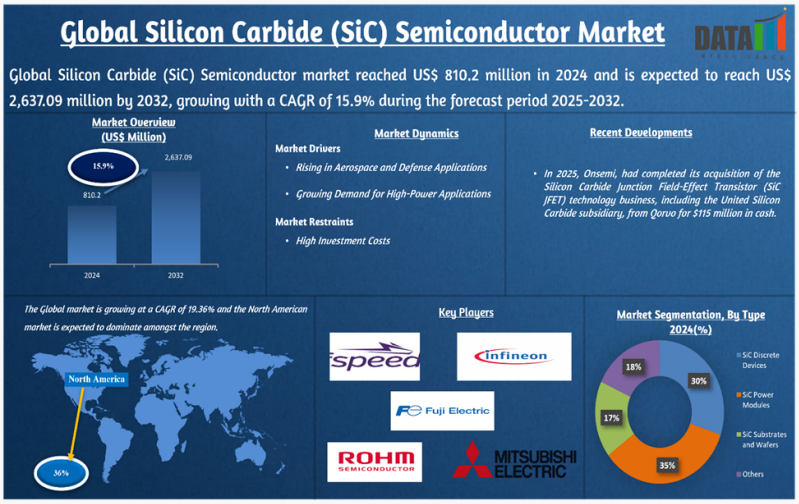
Silicon Carbide Semiconductor Market Growth Fueled by EV, Energy and Industrial Innovations | DataM Intelligence

Explore how the Silicon Carbide Semiconductor Market is revolutionizing EVs, energy systems, and industrial automation with rapid growth through 2032



Silicon Carbide (SiC) Semiconductor Market

NEW YORK, NY, UNITED STATES, June 25, 2025 /EINPresswire.com/ -- Market Overview :

The Silicon Carbide (SiC) Semiconductor Market is emerging as a vital enabler of next-generation electronics, especially in applications demanding high efficiency, thermal conductivity, and voltage capabilities. As industries such as electric vehicles (EVs), power grids, and industrial automation rapidly evolve, SiC semiconductors are gaining widespread acceptance for their superior performance over traditional silicon-based systems. As of 2024, the market stood at US$ 810.2 million and is projected to witness strong growth, reaching approximately US$ 2,637.09 million by 2032, with a compound annual growth rate (CAGR) of 15.9% from 2025 to 2032.

> SiC semiconductors are not just improving power efficiency they're transforming the way we build sustainable, high-performance electronic systems across industries."
>
> *DataM Intelligence*

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Market Drivers are :

Rising demand for electric vehicles (EVs): SiC semiconductors improve power efficiency and range in EVs, making them a key component in electric drivetrain systems.

Increased focus on renewable energy integration: SiC's high-temperature tolerance and energy efficiency make it ideal for solar inverters and wind power applications.

Growth in industrial motor drives and power supplies: Industries seek reliable, high-efficiency components for automation and smart manufacturing.

Advancements in 5G and power infrastructure: SiC enables faster and more efficient communication systems, essential for the growing demand in telecom.

Supportive government policies for green technologies: Incentives and mandates globally are accelerating the transition toward energy-efficient technologies that favor SiC over silicon.

Cost reduction through mass production: Advancements in wafer production and yield optimization are reducing SiC costs, broadening adoption.

Key Players in the Market are :

The competitive landscape of the SiC semiconductor market is defined by strategic innovation and capacity expansion. Prominent companies include:

Infineon Technologies
Littelfuse
ON Semiconductor
Wolfspeed Inc
Fuji Electric
X-FAB
GeneSiC Semiconductor
Mitsubishi Electric
STMicroelectronics
ROHM Semiconductor

These players are increasingly investing in R&D, establishing long-term supply partnerships, and scaling production capabilities to meet surging global demand.

Market Segmentation
The Silicon Carbide Semiconductor Market is segmented by:

Device Type: SiC Power Modules, Discrete Devices (MOSFETs, Diodes), Bare Die Devices

Wafer Size: 2-Inch, 4-Inch, 6-Inch, 8-Inch and above

Application: EVs/HEVs, Industrial Power Electronics, Aerospace, Telecommunications, Renewable Energy, and Others

End-User Industry: Automotive, Energy & Power, Consumer Electronics, Aerospace & Defense, and Industrial

Each segment brings a unique growth perspective, with automotive and energy sectors witnessing the highest adoption.

Latest News – USA

In early 2024, Wolfspeed announced the expansion of its 200mm SiC wafer production facility in North Carolina, expected to triple the output by 2025. The move aligns with the U.S. government's push for domestic semiconductor manufacturing under the CHIPS and Science Act. Additionally, ON Semiconductor entered into a long-term supply agreement with a major EV manufacturer to deliver SiC devices, reinforcing its position as a critical supplier in the American automotive landscape.

Latest News – Japan

Japan remains a pioneer in SiC R&D. In Q1 2024, ROHM Semiconductor partnered with Mitsubishi Electric to co-develop advanced SiC modules optimized for electric rail and automotive systems. Meanwhile, Fuji Electric announced the successful development of a high-efficiency SiC inverter for industrial robots, strengthening Japan's leadership in automation and green tech innovation. The Japanese government has also earmarked increased funding for SiC materials research through 2030 as part of its broader digital infrastructure plan.

Recent Key Developments are :

Infineon Technologies launched its latest generation of CoolSiC™ MOSFETs designed for high-frequency switching in EV inverters.

STMicroelectronics announced the opening of a new SiC substrate manufacturing plant in Catania, Italy, with plans for vertically integrated production.

X-FAB enhanced its SiC foundry capabilities, aiming to shorten prototyping cycles for design engineers in automotive and industrial sectors.

GeneSiC Semiconductor unveiled its ultra-low loss SiC Schottky diodes targeted at renewable power systems.

Littelfuse introduced a new series of SiC MOSFETs focused on industrial power applications with enhanced thermal performance.

These moves signify a shift from development to mass deployment, highlighting 2024 as a

transition year for SiC maturity.

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Conclusion :

The Silicon Carbide Semiconductor Market is no longer a niche innovation it is a mainstream component of the future's electrified, efficient, and smart world. From mobility and energy to automation and defense, SiC technology is redefining system performance and sustainability. As material science advances and cost barriers fall, the pathway for accelerated adoption is clear. Strategic partnerships, ongoing research and development, and supportive government initiatives are expected to play a crucial role in driving this evolving market forward in the years ahead.

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