

Silicon Carbide Market to Reach USD 13.26 Billion by 2035 at 9.9% CAGR

NEW YORK, NY, UNITED STATES, August 27, 2026 /EINPresswire.com/ -- The global [silicon carbide market](#) is experiencing a transformative surge, driven by its superior properties as a semiconductor and advanced ceramic material. Valued at an estimated USD 5.14 billion in 2025, the market is projected to more than double, reaching USD 13.26 billion by 2035, at a robust compound annual growth rate (CAGR) of 9.9% . This exceptional growth is fueled by the global transition to electric vehicles, the expansion of renewable energy, and the relentless demand for more efficient power electronics.



Key Drivers of Market Expansion

Several powerful factors are propelling the silicon carbide market's strong growth trajectory.

1. The Electric Vehicle Revolution and 800-Volt Architectures

The single most significant driver is the accelerating adoption of 800-volt electrical systems in electric vehicles. Silicon carbide-based traction inverters offer 50% lower switching losses compared to conventional silicon IGBTs, directly translating to extended driving range—a critical advantage for automakers. As major manufacturers like Hyundai, Porsche, and Chinese OEMs integrate silicon carbide into their platforms, demand for silicon carbide wafers is set to skyrocket, with projections of over 18 million silicon carbide-equipped EVs produced annually by 2030.

2. The 8-Inch Wafer Transition

A fundamental industry shift from 150mm to 200mm (8-inch) wafers is dramatically improving the economics of silicon carbide devices. This larger geometry reduces the cost per die by approximately 1.8x, making silicon carbide more cost-competitive with silicon for a wider range of power-conversion applications. Major investments, such as Wolfspeed's Siler City facility and

STMicroelectronics' Catania expansion, are accelerating this transition, unlocking new design wins in solar inverters and industrial motor drives.

3. Soaring Demand for Renewable Energy and AI Infrastructure

The global push for renewable energy and the explosive growth of power-hungry AI datacenters are creating unprecedented demand for high-efficiency power conversion. SiC-based power modules are becoming essential components in solar and wind inverters, grid-scale energy storage, and the power supplies of hyperscale datacenter clusters. This dual demand source provides a stable and growing foundation for the market.

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Market Segmentation and Key Trends

The market is diverse, with clear trends across product types and applications.

By Product Type: Black silicon carbide remains dominant (45.6% share in 2025), primarily used in steel manufacturing and abrasives. However, Green silicon carbide is the fastest-growing segment (14.8% CAGR), driven by its critical role in polishing and lapping semiconductor wafers and its use in high-purity electronics applications.

By Application: The electronics and semiconductors sector is the largest application (37.8% share), reflecting SiC's role as a next-generation semiconductor material. The automotive sector is the fastest-growing application (11.6% CAGR), fueled by the EV revolution and the need for high-temperature semiconductors in traction inverters and onboard chargers.

Regional Dynamics: Asia-Pacific dominates the market (48.9% share) and is the fastest-growing region, driven by China's massive substrate production and Japan's precision manufacturing. North America is a strong second, with growth accelerated by the U.S. CHIPS Act, while Europe is driven by its powerful automotive and renewable energy sectors.

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Key Players and Future Outlook

The market is moderately concentrated, with key players like Wolfspeed, STMicroelectronics, and Infineon Technologies leading the charge. These companies are heavily investing in expanding capacity, transitioning to 200mm wafers, and securing long-term supply agreements with automotive and industrial giants.

The future outlook for the silicon carbide market is exceptionally bright, with several key trends set to shape the industry:

Electrification Supercycle: The global transition to EVs will continue to be the primary growth engine, with SiC content per vehicle projected to rise significantly.

AI-Driven Manufacturing: Machine learning is poised to dramatically improve SiC crystal growth yields, reducing costs and accelerating production .

Grid Modernization: SiC modules are becoming critical for next-generation grid infrastructure, including solid-state transformers and energy storage systems.

Circular Economy: Developing closed-loop recycling systems for silicon carbide from industrial waste and end-of-life products will reduce feedstock costs and meet tightening environmental mandates.

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Market Research Future

Market Research Future

+1 855-661-4441

[email us here](#)

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