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Silicon Carbide (SiC) for Wireless EV Charging Market Opportunity, Growth Drivers, Industry Trend Analysis, and Forecast 2025 - 2034

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Abstracts

The Global Silicon Carbide (SiC) For Wireless EV Charging Market was valued at USD 4.2 million in 2024 and is estimated to grow at a CAGR of 15.1% to reach USD 17 million by 2034.

The surge in electric vehicle adoption worldwide is driving demand for SiC in wireless EV charging systems, as consumers and commercial fleets increasingly prefer faster, more efficient, and convenient charging solutions. SiC components provide higher power conversion efficiency and lower energy losses than conventional silicon devices, making them highly suitable for high-frequency wireless charging applications. Their ability to function at elevated voltages and temperatures also allows for compact and lightweight charger designs, positioning SiC as a critical enabler of next-generation EV charging infrastructure. Advancements in SiC semiconductor materials and manufacturing such as higher wafer quality, improved production yield, and refined device architecture have enhanced efficiency, thermal stability, and reliability. Innovations in SiC MOSFETs and diodes further reduce energy losses and support smaller, integrated charging solutions with higher power density and switching frequency.

The SiC power MOSFETs segment held a 39.4% share in 2024, driven by their superior efficiency, lower switching losses, and higher power density. These features enable faster, more compact, and thermally efficient wireless EV chargers. Manufacturers are focusing on improving device reliability, gate oxide stability, and packaging to meet high-frequency operational demands.

The 651V to 1200V class segment generated USD 1.7 million in 2024, owing to its

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suitability for mid- to high-power wireless EV charging. These components offer exceptional efficiency and thermal performance, and producers are investing in device robustness, gate reliability, and automotive-grade packaging integration, while collaborating with EV OEMs on inverter design and thermal modeling to enhance product positioning.

North America Silicon Carbide (SiC) for Wireless EV Charging Market held a 34.5% share in 2024, driven by rising EV adoption, supportive government initiatives, and investments in advanced charging infrastructure. Environmental awareness and clean energy incentives are increasing demand for high-efficiency SiC technology. Manufacturers have opportunities to expand wireless EV charging networks in both urban and suburban areas, with strategic partnerships with utilities and investments in scalable SiC infrastructure helping to capture growing residential, commercial, and public transit charging demand.

Leading players in the Global Silicon Carbide (SiC) for Wireless EV Charging Market include Infineon Technologies, Mitsubishi Electric, Microchip Technology, STMicroelectronics, GeneSiC Semiconductor (Qorvo), onsemi (ON Semiconductor), UnitedSiC (Qorvo), Fuji Electric, Toshiba, ROHM Semiconductor, WiTricity Corporation, HEVO Inc., Littelfuse (IXYS), General Electric (GE), Electreon Wireless Ltd., Plugless Power Inc. (Evatran), Qualcomm Technologies (Halo), InductEV Inc., ABB Ltd., Robert Bosch GmbH, Toyota Motor Corporation, Siemens AG, and Continental AG. Companies in the Silicon Carbide (SiC) for Wireless EV Charging Market are strengthening their presence through strategies such as continuous product innovation, focusing on high-efficiency, thermally robust SiC MOSFETs and diodes. Many are forming strategic partnerships with EV OEMs and utility providers to integrate SiC solutions into wireless charging networks. Investments in scalable manufacturing processes, wafer quality improvements, and packaging optimization enhance reliability and reduce energy losses. Firms also focus on expanding regional presence, participating in collaborative research, and demonstrating high-performance applications to gain a competitive edge. Marketing efforts highlight the energy efficiency and compact design advantages of SiC-based solutions to attract both residential and commercial clients, solidifying their foothold in the growing EV ecosystem.

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