

# Key Trend Revolutionizing The Silicon Carbide Metal-Oxide-Semiconductor Field-Effect Transistor Market In 2025

*TBRC's Silicon Carbide (SiC) Metal-Oxide-Semiconductor Field-Effect Transistor (MOSFET Global Market Report 2025 – Market Size, Trends, And Forecast 2025-2034*

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/EINPresswire.com/ -- What Does The Future Hold For The SiC MOSFET Market?

The upswing in the [silicon carbide SiC market](#) can be traced back to electric vehicle adoption, renewable energy integration, demand for high-power density electronics, increased use in aerospace and defense, and rising demand for fast-charging solutions. This market has grown exponentially, from \$1.75 billion in 2024 to an impressive \$2.20 billion in 2025, registering a compound annual growth rate CAGR of 26.0%.



The Business Research Company's Silicon Carbide (SiC) Metal-Oxide-Semiconductor Field-Effect Transistor (MOSFET Global Market Report 2025 – Market Size, Trends, And Forecast 2025-2034"

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What Is The Projected Size Of SiC MOSFET Market In The Next Few Years?

The future looks bright for SiC MOSFETs as market predictions foresee it growing to \$5.49 billion in 2029 at a healthy CAGR of 25.6%. Fueling this growth are trends such as the integration of artificial intelligence in power electronics, rising adoption of smart grids, the proliferation of high-speed rail electrification, and burgeoning investments in electric aviation.

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What's Driving Of SiC MOSFET Market Growth?

The main factor propelling this impressive growth is the ever-increasing demand and adoption of

electric vehicles EVs. Due to environmental concerns and technological advances in batteries, EVs have emerged as a preferable alternative to traditional vehicles. They offer lower emissions, better energy efficiency, and benefit from several government incentives. In addition, SiC MOSFETs provide EVs with improved power management and higher energy efficiency, making them particularly suitable for modern EV designs. As per the International Energy Agency, sales of electric vehicles increased by 3.5 million in 2023 from the previous year, a rise of around 35% annually.

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What Are The Latest Innovations in the SiC MOSFET Market by the Key Industry Players?

The report also highlights the key industry players in the SiC MOSFET market. These include Mitsubishi Electric Corporation, Toshiba Corporation, Texas Instruments Incorporated, STMicroelectronics N.V., Infineon Technologies AG, ON Semiconductor Corporation, Fuji Electric Co. Ltd., Microchip Technology Inc., Qorvo Inc., ROHM Co. Ltd., Vishay Intertechnology Inc., Littelfuse Inc., Dongguan Merry Electronics Co. Ltd., Alpha and Omega Semiconductor, Wolfspeed Inc., and others.

Companies in the SiC MOSFET market are channeling their efforts on developing innovative next-generation products to enhance efficiency and reduce power losses. One such novel product is the advanced power semiconductor devices, specially designed to reduce conduction losses, improve energy efficiency, and improve thermal performance. They offer faster switching speeds, superior reliability, and higher power density. For instance, STMicroelectronics N.V., a leading semiconductor company based in Switzerland, announced its fourth-generation STPOWER silicon carbide SiC MOSFET technology in September 2024. These new devices, available in 750V and 1200V classes, offer reduced on-resistance, enhanced switching speeds, and improved robustness. This progress supports the broader EV adoption by improving charging speed and reducing vehicle weight.

How Is The [SiC MOSFET Market Segmented?](#)

The SiC MOSFET market can be dissected into several segments and subsegments such as:  
Segments:

- By Type: Silicon Carbide SiC MOSFET Modules, Silicon Carbide SiC MOSFET Discretes
- By Breakdown Voltage: 650 - 900 Volts, 900 - 1200 Volts, 1200 - 1700 Volts, Above 1700 Volts
- By Technology: 200 Millimeter mm Wafer Technology, 150 Millimeter mm Wafer Technology
- By Application: Power Supplies, Electric Vehicles EVs, Renewable Energy Systems, Motor Drives, Industrial Equipment
- By End-Use Industry: Automotive, Industrial, Consumer Electronics, Telecommunications, and Other End Use Industries

Subsegments:

- By Silicon Carbide SiC MOSFET Modules: Half-Bridge Modules, Full-Bridge Modules, Six-Pack Modules, Buck Or Boost Converter Modules, Power Integrated Modules, Intelligent Power Modules, Custom Power Modules
- By Silicon Carbide SiC MOSFET Discretes: N-Channel MOSFETs, P-Channel MOSFETs, Enhancement-Mode MOSFETs, Depletion-Mode MOSFETs, Low Drain-To-Source On-Resistance MOSFETs, High-Voltage MOSFETs, Automotive-Grade MOSFETs

How Is The Global SiC MOSFET Market Spread Geographically?

In terms of geography, Asia-Pacific stood as the largest contributor to the SiC MOSFET market in 2024 and is expected to maintain this position in the near future. Besides Asia-Pacific, other regions like Western Europe, Eastern Europe, North America, South America, the Middle East, and Africa are also significant contributors to the global market.

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