Silicon Carbide Market by Device (SiC Discrete Device, SiC Module), Wafer Size (Up to 150mm, >150mm), End-use Application (Automotive, Energy & Power, Industrial, Transportation), Material, Crystal Structure and Region - Global Forecast to 2029

Market Report | 2024-03-21 | 233 pages | MarketsandMarkets

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Report description:

The silicon carbide market is projected to reach USD 17.2 billion by 2029 from USD 4.2 billion in 2024, at a CAGR of 32.6% from 2024 to 2029. The major factors driving the growth of silicon carbide market includes the increasing demand for power electronics, surging demand for renewable energy systems and growing number of initiatives and investments to encourage the adoption of SiC devices which is expected to provide several growth opportunities for market players in the silicon carbide market.

>150 mm segment is expected to witness the highest CAGR in the silicon carbide market during the forecast period
The >150 mm wafer size market is poised to exhibit the highest CAGR during the forecast period. These wafers are used across a spectrum of devices such as SiC MOSFETs and SiC modules, due to their 50% thinner profile as compared to standard silicon wafers. As these SiC wafers are engineered for high-volume production and applications that require elevated temperatures, they boast remarkable attributes such as high thermal conductivity, superior carrier mobility, and exceptional chemical stability. Therefore, >150 mm segment is expected to witness the highest CAGR during the forecast period.
Asia Pacific is expected to register the highest CAGR in the silicon carbide market during the forecast period
The presence of regional expanding scope of high-power applications presents significant revenue opportunities for power semiconductor devices in Asia Pacific, attracting numerous companies to commercialize silicon carbide semiconductor devices for various power applications. This expansion boosts the revenues of regional market players. Leading companies in the silicon carbide sector, such as ROHM Co., Ltd., Fuji Electric Co., Ltd., Renesas Electronics Corporation, Toshiba Corporation, and TanKeBlue Semiconductor Co. Ltd., are headquartered in Asia Pacific. Therefore, Asia Pacific is expected to register the highest CAGR in the silicon carbide market during the forecast period.

The break-up of profile of primary participants in the silicon carbide market-
-□By Company Type: Tier 1 - 35%, Tier 2 - 45%, Tier 3 - 20%
-□By Designation Type: C Level - 40%, Director Level - 30%, Others - 30%
-□By Region Type: North America - 30%, Europe - 20%, Asia Pacific - 40%, Rest of the World (RoW) - 10%

The major players of silicon carbide market are STMicroelectronics N.V. (Switzerland), Infineon Technologies AG (Germany), Semiconductor Components Industries, LLC (US), WOLFSPEED, INC. (US), and ROHM Co., Ltd. (Japan) among others.

Research Coverage
The report segments the silicon carbide market and forecasts its size based on device, wafer size, end-use application and region. The report also provides a comprehensive review of drivers, restraints, opportunities, and challenges influencing market growth. The report also covers qualitative aspects in addition to the quantitative aspects of the market.

Reasons to buy the report:
The report will help the market leaders/new entrants in this market with information on the closest approximate revenues for the overall silicon carbide market and related segments. This report will help stakeholders understand the competitive landscape and gain more insights to strengthen their position in the market and plan suitable go-to-market strategies. The report also helps stakeholders understand the pulse of the market and provides them with information on key market drivers, restraints, opportunities, and challenges.

The report provides insights on the following pointers:
-□Analysis of key drivers (increasing demand for power electronics, surging demand for renewable energy systems, growing number of initiatives and investments to encourage the adoption of SiC devices), restraints (high efficacy of alternative technologies for power electronics), opportunities (ongoing advancements towards the quality of SiC substrate and epitaxy), and challenges (material defects and designing and packaging issues in SiC devices) influencing the growth of the silicon carbide market.
-□Product Development/Innovation: Detailed insights on upcoming technologies, research & development activities, and new product launches in the silicon carbide market.
-□Market Development: Comprehensive information about lucrative markets - the report analyses the silicon carbide market across varied regions.
-□Market Diversification: Exhaustive information about new products, untapped geographies, recent developments, and investments in the silicon carbide market
-□Competitive Assessment: In-depth assessment of market shares, growth strategies and product offerings of leading players like STMicroelectronics N.V. (Switzerland), Infineon Technologies AG (Germany), Semiconductor Components Industries, LLC (US), WOLFSPEED, INC. (US), and ROHM Co., Ltd. (Japan)

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