

SiC-on-Insulator (SiCOI) Film Market by Substrate Material (Si, Polycrystalline SiC, Others), Wafer Size (100 mm, 150 mm, 200 mm), Technology Route (Smart Cut Technology, Grinding/Polishing/Bonding Technology) and Region - Global Forecast to 2029

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Abstracts

The SiC-on-insulator (SiCOI) film market is projected to reach USD 1,134 million by 2029 from USD 37 million in 2024, at a CAGR of 98.1% from 2024 to 2029. The major factors driving the growth of SiC-on-insulator (SiCOI) film market are increasing demand for high-power electronics across various industries, the growing emphasis on energy efficiency and sustainability, and expanding telecommunication and data communication networks. Moreover, advancements in power electronics and the need for high-power substrates in quantum photonics and sensing technologies are expected to carve out new growth opportunities for market players.

"Polycrystalline SiC to register the highest CAGR during the forecast period."

Polycrystalline SiC is expected to register highest CAGR of the SiC-on-Insulator (SiC) film market due the the increasing demand for efficient and high-performance power electronics, particularly in the rapidly expanding electric vehicle (EV) and renewable energy sectors. The superior properties of SiC, such as high breakdown voltage, thermal conductivity, and low power losses, make it an attractive material for power devices like MOSFETs and diodes used in EVs and renewable energy systems. Additionally, the adoption of SiC-based electronics in high-temperature and harsh environment applications across industries like aerospace, defense, and industrial sectors is driving the demand for high-quality poly-SiC substrates. Technological advancements, cost reductions, and the development of a robust supply chain and ecosystem are further fueling the growth of this market segment.



"150 mm films to register the second largest share during the forecast period."

150 mm films are poised to secure the largest share of the SiC-on-Insulator (SiC) film market. These films, crucial for power electronics and high-frequency applications in sectors like electric vehicles and aerospace, are produced using both the Smart Cut technology, prominently by SOITEC, and the grinding/polishing/bonding technology. SOITEC, as a leading manufacturer, employs its proprietary Smart Cut process to create these 150 mm SiCOI films, catering to the surging demand. With such innovative manufacturing techniques, the SiC-on-Insulator (SiCOI) film market is expected to grow considerably, with investments ramping up in production and supply chain capabilities to fulfill the increasing industry needs.

"Asia Pacific region to register the highest CAGR during the forecast period."

The Asia Pacific region is witnessing significant growth in the SiC-on-Insulator (SICOI) film market, driven by government investments in advanced semiconductors, the presence of leading SICOI manufacturers, and strong demand from electronics sectors. Governments are heavily investing in SiC and SICOI technologies, while key players like iSABers Materials and SIOXS CORPORATION are expanding production. Robust demand from automotive, consumer electronics, and renewable energy industries is further fueling the SICOI film market's expansion in the Asia Pacific.

The break-up of the profile of primary participants in the SiC-on-Insulator (SiCOI) film market

By Company Type: Tier 1 – 30%, Tier 2 – 50%, Tier 3 – 20%

By Designation Type: C Level – 25%, Director Level – 35%, Others – 40%

By Region Type: North America – 30%, Europe – 35%, Asia Pacific – 25%, Rest of the World – 10%

The major players in the SiC-on-Insulator (SICOI) film market include SOITEC (France), SICOXS CORPORATION (Japan), NGK INSULATORS, LTD. (Japan), iSABers Materials (China), and MTI Corporation (US).

Research Coverage

SiC-on-Insulator (SiCOI) Film Market by Substrate Material (Si, Polycrystalline SiC, Others), Wafer Size (100...



The report segments the SiC-on-Insulator (SICOI) film market and forecasts its size by substrate material, wafer size, technology route 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 SiC-on-Insulator (SICOI) film 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 high-power electronics across various industries, the growing emphasis on energy efficiency and sustainability, and expanding telecommunication and data communication networks), restraints (the complexity and cost associated with the manufacturing process and the limited maturity of SiCOI film technology), opportunities (advancements in power electronics and the need for high-power substrates in quantum photonics and sensing technologies), and challenges (scalability availability and competition from established technologies)

Product Development/Innovation: Detailed insights on upcoming technologies, research & development activities, and new product launches in the SiC-on-Insulator (SICOI) film market

Market Development: Comprehensive information about lucrative markets – the report analyses the SiC-on-Insulator (SICOI) film market across varied regions.

Market Diversification: Exhaustive information about new products, untapped geographies, recent developments, and investments in the SiC-on-Insulator (SICOI) film market



Competitive Assessment: In-depth assessment of market shares, growth strategies and product offerings of leading players like SOITEC (France), SICOXS CORPORATION (Japan), NGK INSULATORS, LTD. (Japan), iSABers Materials (China), and MTI Corporation (US).





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