



**Global Silicon on Insulator (200 mm & less than 200 mm, 300 mm) Markets, 2022-2027: Opportunities Emerge with the Surging Adoption of FD-SOI in IoT De – December 19, 2022**

# **Global Silicon on Insulator (200 mm & less than 200 mm, 300 mm) Markets, 2022-2027: Opportunities Emerge with the Surging Adoption of FD-SOI in IoT De**

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DUBLIN--(BUSINESS WIRE)--The "[Global Silicon on Insulator \(SOI\) Market by Wafer Size \(200 mm & less than 200 mm, 300 mm\), Wafer Type \(RF-SOI, FD-SOI, Power-SOI, Emerging-SOI\), Technology \(Smart Cut\), Product \(MEMS Devices, RF FEM Products\), Application and Region - Forecast to 2027](#)" report has been added to **ResearchAndMarkets.com's** offering.



The global SOI market is estimated to be USD 1.4 billion in 2022 and is projected to reach USD 2.9 billion by 2027, at a CAGR of 15% during the forecast period. The market has a promising growth potential due to several factors, such as silicon waste prevention in thin-wafer manufacturing and establishment of facilities to enhance SOI production.

Silicon-on-insulator (SOI) is a fabrication technique for manufacturing SOI wafers, where semiconductor silicon is layered on top of an insulator, silicon dioxide. This technology uses silicon-insulator-silicon substrates in place of conventional silicon substrates to manufacture semiconductor wafers.

Since the top semiconductor layer can be very thin, it becomes possible to implement doped diffusion regions that extend to the insulator underneath. SOI technology improves the performance of semiconductor devices owing to high processing speed, reduced junction capacitance, and low power consumption, ensuring minimal current leakage and high compatibility with conventional silicon processing.

### ***RF FEM: The largest product segment of the SOI market***

In 2021, the RF FEM products segment held the largest share of the SOI market.

The growth of the RF FEM products segment can be attributed to the rising demand for front-end modules in 5G technology and consumer electronic devices. A GSM Association report (The Mobile Economy) stated that 5G connection adoption had reached 8% of the total mobile connections in 2021. It is expected to reach ~25% by 2025, indicating strong growth potential.

### ***Smart cut technology: The largest segment of the SOI market, by technology***

In 2021, the smart cut technology segment held the largest share of the SOI market.

The segment is also expected to record the highest CAGR during the forecast period. The rising demand for smart cut technology in manufacturing SOI wafers of/less than 200 mm and 300 mm is also driving the growth of this segment. Smart cut technology enables on-wafer thickness uniformity of 1 nm with overall distribution on all wafers. The technology is protected by more than 3,000 Soitec-owned or controlled patents.

### **Competitive Landscape Analysis**

The SOI market is dominated by a few globally established players such as Soitec (France), Shin-Etsu Chemical (Japan), GlobalWafers (Taiwan), SUMCO Corporation (Japan), Shanghai Simgui Technology (China), GlobalFoundries (US), STMicroelectronics (Switzerland), Tower Semiconductor (Israel), NXP Semiconductors (Netherlands), and Murata Manufacturing (Japan)

### **Premium Insights**

- Growing Demand for SOI Wafers in Consumer Electronics to Fuel Growth
- 300 mm SOI Wafers to Dominate SOI Market from 2022 to 2027
- FD-SOI Wafers to Hold Largest Share of SOI Market in 2027
- MEMS Devices and Smart Cut Technology to Hold Largest Shares of SOI Market in 2027
- Asia-Pacific to Hold Largest Share of SOI Market in 2027
- China, UK, and US to Register Highest Growth Rates

### **Market Dynamics**

#### **Drivers**

- Rising Demand for 5G in Mobile Communications
- Increasing Demand for SOI Wafer-based Energy-Efficient Smart Devices
- Silicon Wastage Prevention in Thin-Wafer Manufacturing
- Establishment of Facilities to Enhance SOI Production

#### **Restraints**

- Disadvantages of SOI Wafers

#### Opportunities

- Surging Adoption of FD-SOI in IoT Devices and ML Applications

#### Challenges

- Process Control in SOI Wafers and Circuit Design Complexity

#### Supply Chain Analysis

- Ecosystem Analysis
- Average Selling Price Analysis
- Average Selling Price
- Average Selling Price Trends
- Revenue Shift and New Revenue Pockets for Market Players

### **Technology Trends**

#### Complimentary Technologies

- SiC
- GaN

#### Adjacent Technologies

- FINFET
- POI

#### Case Studies

- Aim to Accelerate Development of 5G by Establishing Cross-Industry Ecosystem
- Aim to Meet Current and Future Industrial Demands in Consumer, IoT, and Automotive Applications
- Aim to Gain Insights into Technological Advancements in Semiconductor Ecosystem and Applications Across High-Growth Markets
- VTT Uses Okmetic's E-SOI Wafers for Its Photonics Technology

#### Tariff Analysis

- MFN Tariffs for HS Code 854239-Compliant Products Exported by China
- MFN Tariffs for HS Code 854690-Compliant Products Exported by France

#### Standards and Regulatory Landscape

- Regulatory Standards
- Government Regulations
- US
- Europe
- India

### **Company Profiles**

#### Key Companies

- Soitec
- Shin-Etsu Chemical
- GlobalWafers
- Sumco Corporation
- Shanghai Simgui Technology
- GlobalFoundries
- STMicroelectronics
- Tower Semiconductor
- NXP Semiconductors
- Murata Manufacturing Company

#### Other Key Players

- Skyworks Solutions
- Qorvo
- Sony Group
- Magnachip Semiconductor Corp.
- United Microelectronics Corporation
- Taiwan Semiconductor Manufacturing
- Vanguard International Semiconductor Corporation
- Silicon Valley Microelectronics
- EV Group
- Ultrasil
- Waferpro
- Nova Electronic Materials
- Rogue Valley Microdevices
- Sil'tronix Silicon Technologies
- Okmetic

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