

# **Silicon Carbide (SiC) In Semiconductor Market by Technology, Product, and Application (Automotive, Defense, Computers, Consumer Electronics, ICT, Industrial, Medical, Power, Railways, And Solar), by Geography - Forecast and Analysis to 2013 - 2020**

<https://marketpublishers.com/r/SC80058A3F2EN.html>

Date: July 2014

Pages: 272

Price: US\$ 5,650.00 (Single User License)

ID: SC80058A3F2EN

## **Abstracts**

A semiconductor device, is expected to operate in any harsh environment an industry can offer; however, this is not possible with a silicon based semiconductor device. A Silicon based semiconductor device is capable to operates at a temperature of 300°C, whereas the industry requires semiconductor devices, which can operate at much higher temperature, voltage, and frequencies. Such enhancement in the semiconductor device mainly depends on the properties required by devices. At this juncture, silicon based semiconductor has its own limitations, which can be overcome by using compound material for the development of semiconductor devices. Silicon carbide is a compound which can help to drastically improve these properties, which includes high temperature, voltage, and frequency, of the semiconductor devices. The SiC based semiconductor market is expected to grow by 2020, at an estimated CAGR of 42.03% from 2014 to 2020. APAC has been estimated to account for the highest CAGR of 43.53% from 2014 to 2020 amongst all the geographic regions. It accounted for the largest market share of 36.41% for silicon carbide based semiconductor devices in terms of value in 2013. This is mainly due to the fact that there is huge development related to silicon carbide in China. It has been estimated that China accounts majority share of silicon carbide materials in terms of volume.

The silicon carbide based semiconductor device market report classifies the market based on technologies, products, applications, and regions. Within the technology segment, the market report includes 3C, 4H, and 6H semiconductor market, and the product segment includes power semiconductor, opto-semiconductor, and high-

temperature semiconductor market. Silicon carbide based semiconductor device finds many applications in the industry such as automotive, consumer electronics, industrial, power, solar and wind sector, computers, ICT, healthcare, and defense. Geographically, the SiC based semiconductor market is mainly covered by North America (U.S. and others), Europe, APAC (China, India, and others), and Rest of the World (Latin America, Middle East and others); the geographic segment accounts the Japan market separately.

The report describes the value chain and supply chain for the silicon carbide based semiconductor market by considering all the major stakeholders in the market and their role in the analysis. The report also provides a detailed study of the Porter's five forces analysis of the market. The players involved in the development of SiC based semiconductor market includes CREE Incorporated (U.S.), Fairchild Semiconductor International Inc. (U.S.), Genesic Semiconductor Inc. (U.S.), Infineon Technologies AG (Germany), Microsemi Corporation (U.S.), Norstel AB (U.S.), Renesas Electronics Corporation (Japan), ROHM Co. Ltd. (Japan), STMicroelectronics N.V (Switzerland), and Toshiba Corporation (Japan).

### **Key Takeaways:**

The total revenue of the silicon carbide based semiconductor market is expected to grow at an estimated CAGR of 42.03% from 2014 to 2020

Analysis of the silicon carbide based semiconductor market with special focus on high growth application segment

Statistics by technology, products, application, and geography with detailed classification splits by revenue

Porter's five forces explained in detail along with the value and supply chain analysis for the silicon carbide based semiconductor market

Major market trends, drivers, restraints, and opportunities for the silicon carbide based semiconductor market

Illustrative segmentation, analysis, and forecast of the major geographical markets to give an overall view of the silicon carbide based semiconductor market

Detailed competitive landscape which includes key players, in-depth market share analysis, individual revenue, and market shares.

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FIGURE 64 TOSHIBA CORPORATION: PRODUCT PORTFOLIO

FIGURE 65 TOSHIBA CORPORATION: SWOT ANALYSIS



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