

Silicon Carbide Power Semiconductor Market - Forecasts from 2017 to 2022

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Abstracts

The global silicon carbide power semiconductor market is projected to witness the growth at a CAGR of 24.36% during the forecast period to reach a total market size of US\$906.43 million by 2022, increasing from US\$304.79 million in 2017. The silicon carbide power semiconductors market is expected to witness robust growth during the forecast period, owing to advantages such as low conductance loss at high temperature and low input and switching losses as compared to conventional silicon power semiconductor. Silicon carbide-based semiconductors are applicable in areas where high temperature, high voltage, and high power density are required. The silicon carbide power semiconductors market is driven by the increasing demand for advanced integrated chips operating at high temperature and voltage, and the booming electronics industry. One of the major restraints associated with this market is the huge initial capital investment required for the setup of manufacturing facilities. However, increasing demand of silicon carbide-based photovoltaic cells in developing and emerging economies is expected to create numerous opportunities for growth. In addition, rise in government investment and increase in application of solar power in various fields is expected to propel the market growth further.

By Industrial Vertical

Steel and energy is the fastest growing application segment for the silicon carbide market. The high temperature of sublimation makes silicon carbide useful for bearings and furnace parts; while properties such as hardness, high thermal resistance, and high-temperature strength are extremely useful in grinding wheels and in abrasive paper and cloth products. Silicon carbide devices are replacing pure silicon devices as they operate at higher temperatures and voltages and provide high power density and higher current density. The silicon carbide devices also reduce electricity losses due to

conduction and switching thereby offering higher efficiency in electronic systems. Automotive applications include high-performance ceramic brake discs and in addition used as an oil additive to reduce friction, harmonics, and emissions.

By Geography

Asia Pacific is projected to grow at the highest rate as compared to other regions. The power sector in Asia Pacific is expected to create a huge demand for silicon carbide semiconductor devices. The expected initiation of many power projects in China, India, and Thailand coupled with the implementation of solar projects in this region is creating huge demands for silicon carbide power semiconductor. The initiative taken by the Government of Japan in relation to solar power project, there is a huge requirement of solar power panel. These panels along with solar inverter require silicon carbide material. Thus, Asia Pacific and other emerging regions are expected to be high-growth markets, driven by growing industrialization and infrastructure spending. Silicon carbide power semiconductor market demand in North America and Europe is expected to grow in-line with end-user industries.

Competitive Landscape

The global silicon carbide power semiconductor market is competitive owing to the presence of well diversified international, regional and local players. However, some big international players dominate the market share owing to their brand image and market reach. The high market growth and favorable government policies are further attracting more players in the market while enhancing the competitive rivalry. The competitive landscape details strategies, products, and investments being done by key players in different technologies and companies to boost their market presence.

Some of the major players discussed in the report are Infineon Technologies AG, Microsemi Corporation, Toshiba Corporation, Renesas Electronics Corporation, Fairchild Semiconductor International Inc., Norstel AB, STMicroelectronics.

Segmentation

Thirdly, the global silicon carbide power semiconductor market has been segmented by Product, Industry Vertical and geography

By Product

Power Products

Discrete Products
By Industry Vertical
Steel and Energy
Automotive
Aerospace and Aviation
Military and Defence
Healthcare
Electronics
IT and Telecommunication
By Geography
North America
Europe
Middle East and Africa
Asia Pacific
South America

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