

Global Power Semiconductor Market Size study, by Product (Silicon Carbide (SiC), Gallium Nitride (GaN), Others), by Component (Discrete, Module, Power Integrated Circuits), by Application (IT and Telecommunication, Consumer Electronics, Automotive, Aerospace and Defense, Transportation, Medical, Energy and Power, Others), and Regional Forecasts 2022-2032

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Abstracts

Global Power Semiconductor Market is valued approximately at USD 51.30 billion in 2023 and is anticipated to grow with a healthy growth rate of more than 4.9% over the forecast period 2024-2032. Power semiconductors are critical components in power electronics, essential for controlling and converting electric power in various applications. Comprising devices such as diodes, transistors, and thyristors, these semiconductors are pivotal in ensuring efficient energy conversion and management. Made from materials like silicon and silicon carbide, power semiconductors are integral in handling high voltages and currents with minimal power loss. They find extensive use in sectors ranging from automotive to consumer electronics, driven by the need for efficient energy management and conversion. The increasing adoption of renewable energy sources like solar photovoltaic panels is significantly driving the market. As more industries and governments shift towards sustainable energy solutions, the demand for efficient power semiconductors is rising.

The market growth is further propelled by advancements in power electronics and the surge in demand across various industry verticals, including IT, telecommunication, and automotive. The transition towards electric vehicles (EVs) and hybrid electric vehicles

(HEVs) is a major driver, as these vehicles rely heavily on power semiconductors for their battery management systems and powertrain components. According to the International Energy Agency (IEA), the global electric car stock reached 10 million in 2020, with a 43% increase from 2019. However, the complexity in the production network and high costs associated with the development of silicon carbide (SiC) semiconductor technology pose significant challenges to market growth. Despite these challenges, government initiatives focusing on high-voltage direct current (HVDC) systems and smart grids present lucrative opportunities for market expansion. The integration of power semiconductors in these advanced power distribution systems is expected to enhance grid reliability and efficiency, driving future growth.

The key regions considered for the global Power Semiconductor Market study include Asia Pacific, North America, Europe, Latin America, and Rest of the World. North America is a dominating region in the Power Semiconductor Market in terms of revenue. The market growth in the region is being attributed to factors including strong automotive industry, increasing demand for power semiconductors in various applications, and government support for technological advancements. Whereas, the market in Asia Pacific is anticipated to grow at the fastest rate over the forecast period fueled by large market size and growing popularity of power semiconductors in consumer electronics and IT and telecommunications.

Major market player included in this report are:

ON Semiconductor Corporation

Texas Instruments Incorporated

Infineon Technologies AG

STMicroelectronics

Mitsubishi Electric Corporation

Fuji Electric Co., Ltd.

Toshiba Corporation

ROHM Co., Ltd.

Vishay Intertechnology, Inc.

Renesas Electronics Corporation

ABB Ltd.

Microchip Technology Inc.

NXP Semiconductors N.V.

Analog Devices, Inc.

Cree, Inc.

The detailed segments and sub-segment of the market are explained below:

By Product:

Silicon Carbide (SiC)

Gallium Nitride (GaN)

Others

By Component:

Discrete

Module

Power Integrated Circuits

By Application:

IT and Telecommunication

Consumer Electronics

Automotive

Aerospace and Defense

Transportation

Medical

Energy and Power

Others

By Region:

North America

U.S.

Canada

Europe

UK

Germany

France

Spain

Italy

ROE

Asia Pacific

China

India

Japan

Australia

South Korea

RoAPAC

Latin America

Brazil

Mexico

RoLA

Middle East & Africa

Saudi Arabia

South Africa

RoMEA

Years considered for the study are as follows:

Historical year – 2022

Base year – 2023

Forecast period – 2024 to 2032

Key Takeaways:

Market Estimates & Forecast for 10 years from 2022 to 2032.

Annualized revenues and regional level analysis for each market segment.

Detailed analysis of geographical landscape with Country level analysis of major regions.

Competitive landscape with information on major players in the market.

Analysis of key business strategies and recommendations on future market approach.

Analysis of competitive structure of the market.

Demand side and supply side analysis of the market.

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