

# **Power Semiconductor Market Report by Component (Discrete, Module, Power Integrated Circuits), Material (Silicon/Germanium, Silicon Carbide (SiC), Gallium Nitride (GaN)), End Use Industry (Automotive, Consumer Electronics, Industrial, Power and Energy, IT and Telecommunication, Military and Aerospace, and Others), and Region 2024-2032**

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## **Abstracts**

The global power semiconductor market size reached US\$ 43.1 Billion in 2023. Looking forward, IMARC Group expects the market to reach US\$ 58.7 Billion by 2032, exhibiting a growth rate (CAGR) of 3.4% during 2024-2032.

Power semiconductors are fundamental components of modern power electronic circuitry machines that convert energy from one form to another at various stages. They are manufactured using silicon carbide (SiC), germanium and gallium nitride (GaN). These devices are widely being used for wireless communication, motion control, computer systems, advanced control of electric drives, antennas, broadband wireless techniques and satellite systems. Power semiconductors form an indispensable part of electrical appliances, machines, and systems and are majorly used in applications requiring conversion of large voltages and currents without damages. As compared to electro-mechanical converter systems, power semiconductors offer a faster dynamic response, lower installation cost and reduced thermal dissipation. Consequently, they are widely used across various industries, such as automotive, military, aerospace, consumer electronics, information technology and telecommunications.

Power Semiconductor Market Trends:

Rapid expansion in the automotive industry across the globe is one of the key factors

creating a positive outlook for the market growth. Power semiconductors are widely fitted with electronic components and integrated chips in automobile parts, such as steering systems, braking, fuel delivery and safety systems. In line with this, the widespread product adoption in electric vehicles, plug-in electric vehicles, and hybrid electric vehicles (EVs/HEVs) for providing higher efficiency in converters and enhancing battery management systems and power electronic switches are favoring the market growth. Moreover, various technological advancements, such as the utilization of x-by-wire or drive-by-wire technologies that assist in decreasing the weight of the vehicle, enhancing fuel efficiency and reducing emission, are providing an impetus to the market growth. Additionally, the widespread product utilization in lightweight, small and portable consumer electronics, such as smartphones, tablets, smartwatches, fitness bands and communication devices, is positively impacting the market growth. Other factors, including increasing demand for renewable energy sources and the implementation of various government initiatives to promote power-efficient devices, are anticipated to drive the market further.

#### Key Market Segmentation:

IMARC Group provides an analysis of the key trends in each sub-segment of the global power semiconductor market report, along with forecasts at the global, regional and country level from 2024-2032. Our report has categorized the market based on component, material and end use industry.

#### Breakup by Component:

- Discrete
- Module
- Power Integrated Circuits

#### Breakup by Material:

- Silicon/Germanium
- Silicon Carbide (SiC)
- Gallium Nitride (GaN)

#### Breakup by End Use Industry:

- Automotive
- Consumer Electronics
- Industrial

Power and Energy  
IT and Telecommunication  
Military and Aerospace  
Others

#### Breakup by Region:

North America  
United States  
Canada  
Asia-Pacific  
China  
Japan  
India  
South Korea  
Australia  
Indonesia  
Others  
Europe  
Germany  
France  
United Kingdom  
Italy  
Spain  
Russia  
Others  
Latin America  
Brazil  
Mexico  
Others  
Middle East and Africa

#### Competitive Landscape:

The competitive landscape of the industry has also been examined along with the profiles of the key players being ABB Ltd., Broadcom Inc., Fuji Electric Co. Ltd., Hitachi Ltd., Infineon Technologies AG, Microchip Technology Inc., Mitsubishi Electric Corporation, NXP Semiconductor Inc., Onsemi, Renesas Electronics Corporation, ROHM Co. Ltd., STMicroelectronics, Texas Instruments Incorporated, Toshiba Corporation and Vishay Intertechnology Inc.

#### Key Questions Answered in This Report:

How has the global power semiconductor market performed so far and how will it perform in the coming years?

What has been the impact of COVID-19 on the global power semiconductor market?

What are the key regional markets?

What is the breakup of the market based on the component?

What is the breakup of the market based on the material?

What is the breakup of the market based on the end use industry?

What are the various stages in the value chain of the industry?

What are the key driving factors and challenges in the industry?

What is the structure of the global power semiconductor market and who are the key players?

What is the degree of competition in the industry?

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