

Automotive Power Electronics Market By Device (Power IC, Module/Discrete), By Application (Chassis and Powertrain, Safety and Security System, Infotainment and Telematics, Body Electronics, Others), By Drive Type (ICE Vehicle, Electric Vehicle): Global Opportunity Analysis and Industry Forecast, 2023-2032

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Report description:

This report incorporated the study of the automotive power electronics market. Power electronics is concerned with the design, control, and conversion of electrical power utilizing semiconductor device. Power electronics technology is used to convert electrical power from one form to another and to control the flow of electrical power. Some of the important device used in power electronics include power diodes, thyristors, power transistors, and insulated-gate bipolar transistors (IGBTs). These devices are used to control and switch electrical power in various applications. Power electronics is essential in the running of automobiles as they help to regulate and control the flow of electrical power among the battery, motor, and other vehicle components.

At present, countries across the globe are focusing on shifting to greener and sustainable alternatives to conventional means of transportation. Electric vehicles fulfil all the requirements as they produce zero tailpipe emissions, which helps to improve air quality and reduce greenhouse gas emissions, which results in a cleaner and healthier environment. In addition, electric vehicles have lower operating costs than conventional internal combustion engine powered vehicles as electricity is less expensive than gasoline, and electric motors are more efficient than internal combustion engines.

These benefits make them an attractive option for consumers, businesses, and governments looking to reduce emissions and save on money. According to the findings of the International Energy Agency (IEA) from the Global EV Outlook, 2022, the sales of electric cars doubled in 2021 to a new record of 6.6 million. Such factors are expected to create ample demands for power electronics for use across automotive applications.

Moreover, the rise in trend of electrification across the automotive industry is expected to result in increased demands for automotive power electronics. In addition, rise in demand for high efficiency electronic components and rise in advancements in autonomous driving technologies are expected to open new market opportunities for the major players in the industry.

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However, the manufacturing process of power electronics necessitates high infrastructure costs. This is due to the requirement of specialized equipment, materials, and production methods for the manufacturing of power electronics components. In addition, there is requirement of cleanroom facilities for manufacturing of power electronics. Such facilities are costly to build and maintain, and they often take up a lot of floor space. In addition, power electronics must undergo extensive testing and quality control to ensure that they work properly and dependably during operation. Specialized equipment and qualified specialists are necessary to carry out the testing and quality control activities. Such factors are expected to hinder the growth of the automotive power electronics market.

The automotive power electronics market is segmented into device, application, drive type, and region. By device, the market is bifurcated into power IC and module/discrete. By application, the market is classified into chassis & powertrain, safety & security system, infotainment & telematics, body electronics, and others. By drive type, the market is divided into ICE vehicle and electric vehicle. By region, it is analyzed across North America, Europe, Asia-Pacific, and LAMEA. The leading players that have been studied across the automotive power electronics market include BorgWarner Inc., Continental AG, Danfoss A/S, Denso Corporation, Infineon Technologies AG, Mitsubishi Electric Corporation, NXP Semiconductors, ON Semiconductors, Renesas Electronics Corporation and Robert Bosch. These companies hold a prominent share in the global automotive power electronics market due to their wider range of products for use across the automotive industry.

Key Benefits For Stakeholders

- This report provides a quantitative analysis of the market segments, current trends, estimations, and dynamics of the automotive power electronics market analysis from 2022 to 2032 to identify the prevailing automotive power electronics market opportunities.
- The market research is offered along with information related to key drivers, restraints, and opportunities.
- Porter's five forces analysis highlights the potency of buyers and suppliers to enable stakeholders make profit-oriented business decisions and strengthen their supplier-buyer network.
- In-depth analysis of the automotive power electronics market segmentation assists to determine the prevailing market opportunities.
- Major countries in each region are mapped according to their revenue contribution to the global market.
- Market player positioning facilitates benchmarking and provides a clear understanding of the present position of the market players.
- The report includes the analysis of the regional as well as global automotive power electronics market trends, key players, market segments, application areas, and market growth strategies.

Key Market Segments

By Device

- Power IC
- Module/Discrete

By Application

- Chassis and Powertrain
- Safety and Security System
- Infotainment and Telematics
- Body Electronics
- Others

By Drive Type

- ICE Vehicle
- Electric Vehicle

By Region

- North America
- U.S.
- Canada
- Mexico

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- Europe
- UK
- Germany
- France
- Italy
- Rest of Europe
- Asia-Pacific
- China
- Japan
- India
- South Korea
- Rest of Asia-Pacific
- LAMEA
- Latin America
- Middle East
- Africa
- Key Market Players
- BorgWarner Inc.
- Continental Aktiengesellschaft.
- Danfoss A/S
- Denso Corporation
- Infineon Technologies AG.
- Mitsubishi Electric Corporation
- NXP Semiconductors
- Renesas Electronics Corporation
- Robert Bosch GmbH
- Semiconductor Components Industries, LLC.

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