

# **Power Transistor Market- Global Industry Size, Share, Trends, Opportunities, and Forecast 2018-2028F Segmented By Type (Bipolar Junction Transistors, Metal Oxide Semiconductor Field-Effect Transistor, Static Induction Transistor, Insulated Gate Bipolar Transistor), By Application (Switch-Mode Power Supplies, Relays, Converters, Power Amplifiers, DC To AC Converters, Power Supply, Power Control Circuits, Inverters), By End-Use (Consumer Electronics, Communication and Technology, Automotive, Manufacturing, Energy and Power and Others), By Region, Competition**

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## **Abstracts**

Power Transistor market is expected to grow during the forecast period, owing to the following factors such as rise in the implementation of the Internet of Things (IoT), increase in the awareness regarding the beneficial features of the power transistor and rising demand for power transistors in the communication and connected electronic devices.

Power transistors are three terminal devices which are comprised of semiconductor materials. They include emitter, base, and collector terminals. Moreover, the primary function of a transistor is to augment the weak signals and regulate them accordingly. Furthermore, these transistors might be either of NPN (Negative Positive Negative) or PNP (Positive Negative Positive) polarity and are available in different types with power

and switching speed ratings.

### Increasing Demand for Consumer Electronics

In consumer electronics, power transistors are a vital component because they play an important role in amplifying electronics signals and are used to improve the functionality and performance of consumer electronics. Therefore, the developed and developing economies proliferate the growth of consumer electronics through government support, technological advancements, initiatives, and investments, etc. For instance, in India, the government is expecting an investment of USD 4183 million under the PLI scheme for large scale electronic manufacturing, mainly mobile phones and electronics components, by 2025. Moreover, schemes such as the Make in India programme, the National Policy on Electronics, the Production Linked Incentive Scheme for the electronics sector, the Modified Special Incentives Scheme, the Electronics Manufacturing Clusters (EMC) Scheme, and several other measures are intended to provide incentives for domestic manufacturing, localization of electronics manufacturing, attracting foreign direct investment, and increasing exports. Hence, due to such investments and initiatives, the global power transistor market is expected to augment during the forecast period.

### Technological Advancements in Power Transistors

Power transistors are used in almost every electrical appliance around us, including personal computers, smartphones, and televisions, and have a significant impact on their performances. Therefore, transistor technologies are being enhanced every day to attain higher performance such as greater operating speed, lower power consumption, smaller size, etc. Transistors were initially designed using germanium (Ge), but silicon (Si) was subsequently used to improve performance of circuits. Moreover, traditional power converters use fast-switching transistors to convert the electrical energy. These transistors add cost, reduce efficiency, negatively impacting the reliability of the converter. In the standard converter, power/speed demand, loss, and failure are mostly related to the fast-switching transistor. Later on, elimination of the fast-switching transistors allows for advanced, high-performance power converters that can operate with improved power densities, and efficiency, while reducing the costs associated with installation, repair, and replacement of traditional converters. Therefore, with the growing adoption of technological advancements in power transistors, the global power transistor is likely to grow with a rapid pace in the next coming years.

### Rising 5G Technology Drives the Market's Growth

5G technology has led to the introduction of a significant number of new RF (Radio Frequency) features that need to be implemented in mobile networks while considering stringent constraints in board space and power consumption. To meet these increasingly challenging requirements, RF designers have turned to the use of alternative materials, such as wide-bandgap (WBG) semiconductors, capable of offering significant improvements in terms of both power density and efficiency, compared with traditional silicon-based RF power ICs. Therefore, increasing 5G technology is likely to impact the demand for power transistors globally.

## Market Segments

Global Power Transistor Market is segmented by type, by application, by end-use and by region. Based on type, the market is segmented into bipolar junction transistors, metal oxide semiconductor field-effect transistor, static induction transistor, insulated gate bipolar transistor. Based on application, the market is segmented into switch-mode power supplies, relays, converters, power amplifiers, DC to AC converters, power supply, power control circuits, inverters. Based on end-use, the market is segmented into consumer electronics, communication and technology, automotive, manufacturing, energy and power, and others.

## Market Players

Major market players in the Global Power Transistor Market are Infineon Technologies AG, Texas Instruments Incorporated, Semiconductor Components Industries, LLC, Fuji Electric Co., Ltd., STMicroelectronics International N.V., Mitsubishi Electric Corporation, Semikron Danfoss, Toshiba Electronic Devices & Storage Corporation, TE Connectivity Ltd., NXP Semiconductors N.V., Analog Devices, Inc., Torex Semiconductor Ltd., Qorvo, Inc, Vishay Intertechnology, Inc., ABB Semiconductors

## Report Scope:

In this report, Global Power Transistor Market has been segmented into following categories, in addition to the industry trends which have also been detailed below:

### Power Transistor Market, By Type:

#### Bipolar Junction Transistors

Metal Oxide Semiconductor Field-Effect Transistor

Static Induction Transistor

Insulated Gate Bipolar Transistor

Power Transistor Market, By Application:

Switch-Mode Power Supplies

Relays

Converters

Power Amplifiers

DC To AC Converters

Power Supply

Power Control Circuits

Inverters

Power Transistor Market, By End-Use:

Consumer Electronics

Communication And Technology

Automotive

Manufacturing

Energy And Power

Others

Power Transistor Market, By Region:

North America

United States

Canada

Mexico

Asia pacific

China

India

Japan

South Korea

Australia

Europe

Germany

Italy

UK

France

Spain

Middle East & Africa

UAE

Saudi Arabia

South Africa

South America

Brazil

Argentina

Chile

Competitive Landscape

Company Profiles: Detailed analysis of the major companies present in Global Power Transistor Market.

Available Customizations:

Global Power Transistor Market with the given market data, Tech Sci Research offers customizations according to a company's specific needs. The following customization options are available for the report:

Company Information

Detailed analysis and profiling of additional market players (up to five).

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