

Global Bipolar Power Transistor - Market Share Analysis, Industry Trends & Statistics, Growth Forecasts (2025 - 2030)

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Report description:

The Global Bipolar Power Transistor Market is expected to register a CAGR of 4.5% during the forecast period.

In addition, features such as high thermal power dissipation capacity, high-temperature applications, and high energy efficiency boost the automotive market and security, power management, load switching, linear mode voltage regulator, and backlighting applications in industrial parts are likely to drive the market studied. Bipolar power transistors are used in high voltage applications.

According to the IEA, worldwide sales of electric automobiles had reached 6.6 million in 2021. Electric vehicles accounted for 9% of all vehicle sales worldwide. In Electric cars, bipolar power transistors are used in car headlights with high power light emitting diodes. An increase in automotive industries is a driving factor for the bipolar power transistor market.

The growing requirement to control power across circuits and miniaturization drives the bipolar power transistor market. NXP semiconductors, for instance, reduced the packing size of their transistors by 55% while maintaining the same power performance.

COVID-19 has also impacted the global supply chain of major electronic brands. China is one of the largest producers and exporters of various electronics input supplies such as bipolar power transistors, capacitors, diodes, rectifiers, amplifiers etc. Due to the continuous production standstill in China, several electronic manufacturers in the United States and Europe have been compelled to halt production manufacturing of finished electronic applications resulting in a demand-supply gap in electronic products.

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Bipolar Power Transistor Market Trends

The Automotive Segment is Expected to Drive the Market Growth

The bipolar power transistor market is being influenced by the automobile industry's rising technical improvements. In Electric cars, bipolar power transistors are used in car headlights with high power light emitting diodes.

With the increased adoption of Electric vehicles and Hybrid vehicles, automotive is one of the rising segments of the bipolar power transistor market. It is expected to have a significant share. Innovations like autonomous car technology, high voltage applications have raised the demand for bipolar power transistors.

Additionally, government rules requiring advanced driver assistance systems (ADAS) have supported the segment's growth. Electronic components in the automobile sector are vital for safety and are exposed to high voltages and extreme Conditions. Manufacturers have responded by creating a new range of bipolar power transistors for automotive applications.

For Instance, In march 2022, Renesas Electronics Corporation, a producer of advanced semiconductor technologies, announced the extension of its advanced driver-assistance system (ADAS) collaboration with Honda.

In September 2021, GaN Systems, a gallium nitride power semiconductor manufacturer, signed a comprehensive capacity agreement with BMW for the company's GaN power transistors, which are designed to increase the efficiency and power density of critical applications in EVs.

According to The National Institute of Statistics and Geography, in January 2022, 237 battery electric vehicles were sold in Mexico. The number of registered electric and hybrid vehicles in Latin America has increased significantly in Colombia and Brazil, where the market has remained relatively stable. Hybrids have become relatively popular for users looking for a petrol-saving alternative to the traditional automobile as Mexico develops its charging infrastructure for plug-in electric vehicles.

North America is Expected to Register the Major Growth

North America is one of the significant markets for bipolar power transistors because of the region's automotive and other sectors. The semiconductor industry and bipolar power transistor manufacturing rely heavily on the United States for production, design, and research. The region's significance fuels demand for electronic equipment exports as well as increasing end-user sectors that utilize large amounts of bipolar power transistor market, such as high voltage required consumer electronics and automobiles.

The current COVID-19 pandemic has resulted in factory closures. For both factories, closures have resulted from the recent outbreak of COVID-19. The United States government is contributing to electric car research and development through annual appropriations to the Office of Energy Efficiency and Renewable Energy (EERE).

The rise in electronic equipment manufacturing across the region to cater to the rising demand for electric vehicles, consumer electronics, and energy & power is expected to foster growth in the bipolar power transistor market.

Furthermore, plant closures or underutilization of production facilities may result in order reductions and, as a result, fewer or delayed sales. Overall, powerful electronics and semiconductor firms like TT Electronics and NXP Semiconductors drive the bipolar power transistor industry in the area, with end-consumers from numerous sectors such as consumer electronics and automotive parts. Demand is fueled by high voltage application consumer electronics demand throughout the region.

Bipolar Power Transistor Industry Overview

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The bipolar power transistor market is highly competitive, with various global key market players. For instance, STMicroelectronics, TT Electronics, Nexperia, Sanken Electric Co., Ltd., and Semiconductor Components Industries, LLC provide Bipolar power transistors. The companies are also launching new products that specifically deal with bipolar power transistors to boost the market's share. STMicroelectronics, TT Electronics, Sanken Electric Co., Ltd., and others are key players. Key developments are -

June 2021 - Nexperia launched MJD2873 NPN 50V 2A High Power Bipolar Transistors are packaged in a TO-252 (SOT428C) surface-mounted device (SMD) plastic packaging. Because they generate less heat, these devices have a high thermal power dissipation capability and a high energy efficiency. The Nexperia MJD2873 features a low collector-emitter saturation voltage and switches quickly. Power management, load switching, linear mode voltage regulation, constant current drive backlighting, motor drives, and relay replacement are all common uses for these devices.

Additional Benefits:

- The market estimate (ME) sheet in Excel format
- 3 months of analyst support

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