Field Effect General Purpose Transistors - Market Share Analysis, Industry Trends & Statistics, Growth Forecasts (2025 - 2030)

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Report description:

The Field Effect General Purpose Transistors Market is expected to register a CAGR of 4.87% during the forecast period.

Key Highlights
- The growing use of electronic devices such as Television, Mobile devices, and Electric Vehicles favorably boosts market development. FETs are extensively used in Integrated Circuits (ICs) due to their compact size. Other factors, such as rising electronic component downsizing and adopting different government efforts on modern power distribution and generating infrastructure, are projected to drive the market forward.
- General Purpose Transistors are the most common type of transistor in digital circuits, with the potential to be integrated into a memory chip or microprocessor. These transistors are also commonly used in voltage-controlled circuit switches and have a high switching speed and a switching time in order of nanoseconds. It also has applications in low-power high-frequency converters. In addition, it can be used in amplifying circuits and chopper circuits. Moreover, it can be used as an inverter in electronic circuits.
- Advance medical devices are the key to modernizing the quality of care for patients. With the increase of the health care market, super-specialty hospitals are using ultra-modern reliable equipment in their treatment process. Non-intrusive imaging of the body empowers the specialist to perform operations while minimizing harm to neighboring tissue and organs. Field Effect General Purpose Transistors have been utilized in CT and MRI scanners to control the gantry on which the patient is leaning. They are also used in the power supply for X-ray and ultrasound machines.
- In January 2022, Magnachip Semiconductor Corporation announced that the company had launched 11 new generations of general-purpose high-voltage 600V Super Junction Metal Oxide Semiconductor Field Effect Transistors (SJ MOSFETs). The company has already released product samples and plans to begin mass production of them in March 2022.
- Further, in May 2022, Efficient Power Conversion Corp (EPC) of El Segundo, CA, USA - which makes enhancement-mode gallium nitride on silicon (eGaN) power field-effect general purpose transistors and integrated circuits for power management applications

has expanded its selection of low-voltage, off-the-shelf gallium nitride transistors with the introduction of the EPC2066 (0.8m? typical, 40V) GaN FET.

Field Effect General Purpose Transistors Market Trends

Rising Demand for High-energy and Power-efficient Devices in the Automotive Industry

- As the automobile industry has increasingly used electronic components and systems in recent years to make cars that are lighter in weight and achieve fuel efficiency, the use of electronic control units (ECUs) has advanced. The transition from power steering systems that use conventional oil pressure control to DC motors that use ECU and similarly in transitioning halogen bulbs to discharge bulbs that now use electronic ballast devices are also making the MOSFETs market grow because MOSFETs are used as the switching device in ECUs. Additionally, the trend of hybrid, electric, and fuel-cell vehicles indirectly makes the field-effect general-purpose transistor market grow.
- In May 2022, Magnachip Semiconductor Corporation (Magnachip) announced that the company had released a new 40V general-purpose Metal-Oxide-Semiconductor Field-Effect Transistor (MOSFET) to control Brushless Direct Current (BLDC) motor for automotive applications.
- With the increased adoption of Electric vehicles and Hybrid vehicles, automotive is one of the rising segments of the Field Effect General Purpose Transistor industry. It is expected to have a significant share in the market. Innovations like autonomous car technology, regenerative braking, and the integration of various sensors have raised the demand for Field-Effect General Purpose 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 Field Effect General Purpose Transistors for automotive applications.
- Further, in May 2022, in Mexico, BMW planned to add electric vehicles. BMW is investing one billion USD in Mexico, and the assembly factory could become the automaker's next exclusive electric car manufacturing facility. The increase in the manufacturing of electric cars boosts the studied market.

Asia-Pacific is Expected to Account for a Significant Market Share

- Asia-pacific is one of the important markets for field-effect general-purpose transistors because of the region's developing economy. China, Japan, South Korea, and India are the major stakeholders in this growing market. An increase in demand for consumer electronics, electric vehicles, smart devices, and wearables in the region is driving the growth of the studied market.
- In addition, the Make in India program has attracted many global electronics companies to set up manufacturing plants in India. The Indian government confirmed it had received proposals from five companies to establish electronic chip and display manufacturing plants with an investment of INR 1.53 trillion. This will make India a global producer of transistors-embedded electronic chips. By this, the transistor market will grow in the APAC region.
- In December 2021, the ROHM group announced a new production facility at its manufacturing subsidiary in Malaysia called RWEM to increase the production capacity of analog LSIs and transistors due to growing demands. The construction of the new building will increase the overall production capacity of RWEM by approximately 1.5 times.
- Further, in December 2020, MagnaChip Semiconductor Corporation announced eight new 700V and 800V series high-voltage general-purpose Super Junction Metal Oxide Semiconductor Field Effect Transistors (SJ MOSFETs), featuring high performance and efficiency and optimized for TV, LED lighting, and fast charger applications.
- Moreover, in April 2022, the central government of India has allocated Rs 14,000 crore for the next 3-4 years amid an expected

healthy electric vehicle (EV) penetration in the country. Further, the government has proactively amended guidelines for charging infrastructure development. This will create a positive impact on the studied market to grow because of the need for electronic devices in the infrastructural development for EV service stations.

Field Effect General Purpose Transistors Industry Overview

The Field Effect General Purpose Transistor market is highly fragmented, with numerous Field Effect General Purpose Transistor manufacturers providing the product. The companies continuously invest in the product and technology to promote sustainable environmental growth and prevent environmental hazards. Key players in this market are introducing new innovative products and forming partnerships and collaborations to gain competitive advantages.

- February 2022 - Graphenea has launched graphene-based field-effect general-purpose transistors GFET S30, aimed at lowering barriers to the adoption of graphene, especially on the market for sensors.
- August 2021 - STMicroelectronics has expanded the STPOWER family of LDMOS transistors portfolio, which comprises three different product series optimized for RF power amplifiers (PAs) in various commercial and industrial applications.

Additional Benefits:

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

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