

Super Junction MOSFET Market: Global Industry Trends, Share, Size, Growth, Opportunity and Forecast 2023-2028

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Abstracts

Market Overview:

The global super junction MOSFET market size reached US\$ 2.9 Billion in 2022. Looking forward, IMARC Group expects the market to reach US\$ 6.0 Billion by 2028, exhibiting a growth rate (CAGR) of 13% during 2023-2028.

Super junction metal-oxide semiconductor field-effect transistors (MOSFETs) refer to various power semiconductor components and a new technology for high-voltage and high-frequency applications. They are manufactured using the multi-epitaxial growth and deep trench technologies and are widely used in the production of electronics that require high power density and system reliability and efficiency. These electronics include servers, computing devices, industrial power supply components, solar inverters, lighting and consumer electronics. In comparison to the traditionally used planar silicon MOSFETs, the super junction MOSFETs have significantly lower conduction and switching losses. They are also utilized in the development of green power management systems in residential and commercial complexes to curb power losses.

The rising demand for electrical systems with high energy efficiencies is one of the key factors driving the growth of the market. Furthermore, widespread product adoption for manufacturing automobile electronic components is also providing a boost to the market growth. Automobile batteries are mounted with super junction MOSFET to improve fuel efficiency, create more cabin space and enhance the comfort of passengers. In line with this, the miniaturization of power adaptors and power supplies is also positively impacting the product demand. In addition to this, various technological advancements,

such as the development of second-generation super junction MOSFETs with minimal conduction loss, suppressed watt loss under light loads and improved reverse recovery, are also creating a positive outlook for the market. Other factors, including the increasing utilization of renewable energy resource-based power supplies, along with extensive research and development (R&D) activities, are projected to drive the market further.

Key Market Segmentation:

IMARC Group provides an analysis of the key trends in each sub-segment of the global super junction MOSFET market report, along with forecasts at the global, regional and country level from 2023-2028. Our report has categorized the market based on type, technology, material and application.

Breakup by Type:

High Voltage Super Junction MOSFET

Low Voltage Super Junction MOSFET

Breakup by Technology:

Conventional Power MOSFET

Multiple Epitaxy Technology

Deep Trench Technology

Breakup by Material:

Substrate Material

Transition/Oxide Layer

Electrode Material

Others

Breakup by Application:

Lighting Supply

Power Supply

Display Devices

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 report has also analysed the competitive landscape of the market with some of the key players being Alpha and Omega Semiconductor, Fuji Electric Co. Ltd., IceMOS Technology Ltd., Infineon Technologies AG, NXP Semiconductors, On Semiconductor Corporation, Rohm Co Ltd., STMicroelectronics, Toshiba Corporation, Vishay Intertechnology Inc., etc.

Key Questions Answered in This Report:

How has the global super junction MOSFET market performed so far and how will it perform in the coming years?

What are the key regional markets?

What has been the impact of COVID-19 on the global super junction MOSFET market?

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

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

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

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

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 super junction MOSFET market and who are the key players?

What is the degree of competition in the industry?

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