GLOBAL SUPER JUNCTION MOSFET MARKET

By FAB Technology (Multiple-Epitaxy, Deep-Trench); Packaging Technology; Material (Substrate, Transition Layer, Electrode); Application (Power Supply, Display, Lighting, EV/HEV, Industrial); & Geography, 2013-2020
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1 INTRODUCTION

1.1 KEY FINDINGS

- Total revenue of the global SJ-MOSFET market is expected to reach up to $XX billion by 2020
- Impact analysis of the market dynamics with factors currently driving and restraining the growth of the market, along with their impact in the short, medium, and long term landscapes
- Analysis of the global market with special focus on high growth applications in each vertical and fast growing application market segments
- Detailed analysis of the mature and emerging market by application and by geography
- The key trends related to product technology, prices, and the applications that shape and influence market
- Illustrative segmentation, analysis, and forecast of major geographical markets to give an overall view of the global market
- Detailed competitive landscape with identification of key players with respect to each type of market, in-depth market share analysis with individual revenue, market shares, and market share rankings
- Competitive intelligence from company profiles, key player strategies, and game-changing developments such as product launches and acquisitions
- Detailed Porter's analysis to define the current scenario of the SJ-MOSFET industry
- Identification of emerging trends and analysis of the opportunities in the market for the stakeholders by identifying high growth segments of the SJ-MOSFET market.
1.2 MARKETS COVERED

The report analyzes market by technology, characteristics, application and geography.

![MARKET SEGMENTATION, SJ-MOSFET](image)

Source: MarketsandMarkets Analysis

**Market by Technology:** The SJ-MOSFET market by technology is further segmented into: Multiple-Epitaxy and Deep-Trench method and their technological trends.

**Market by Materials:** The SJ-MOSFET market by materials and by packaging methods. SJ-MOSFET by materials discusses, namely, materials in substrate, electrodes, encapsulation layer, oxide layer, and transition layer of SJ-MOSFET.

**Market by Application:** The application market has been covered under the broad segments-power supplies in computer applications, power supplies in industrial applications, EV/HEV applications, lightings, and display applications.
**Market by geography:** The report discusses the global SJ-MOSFET market under four geographical heads namely; N.A., EU, APAC, and ROW. APAC is the largest market by geography while major growth in the market is expected from the Middle East region.

### 1.3 WINNING IMPERATIVES

The companies that provide a range of power options for power supply application will emerge as the game changers, as the customers will get a more efficient and compact device. The major focus for SJ-MOSFET market has to be consumer electronics application. Cost effectiveness would be yet another crucial factor for mass penetration of products in the different application segments. For example, to win the consumer in the SJ-MOSFET market, it is imperative that manufacturers come up with such a SJ-MOSFET device that provides not only an efficient power device, but also offers right pricing and compactness in its design.

### 1.4 GLOBAL SJ-MOSFET MARKET

**FIGURE 2**

GLOBAL SJ-MOSFET MARKET, VALUE ($MILLION) AND VOLUME (MILLION UNITS), 2012-2020

Source: MarketsandMarkets Analysis
The global SJ-MOSFET market revenue generated in 2013 was $ XX million and is expected to grow up to $ XX million, at an estimated CAGR of XX%, from 2013 to 2020. Whereas, the total shipment in 2013 was XX million units and is expected to reach up to XX million units in 2020, at an estimated CAGR of XX%, from 2013 to 2020.
2 SJ-MOSFET MARKET BY TECHNOLOGY

2.1 INTRODUCTION

The figure above shows a bar graph for Multiple-Epitaxy and deep-trench technology market revenue from the year 2012 to 2020. It is observed from the graph that the total market of SJ-MOSFET in 2013 generated was $XX million and is expected to grow up to $XX million in 2020, at an estimated CAGR of XX% from 2013 to 2020. With respect to the technology, Multiple-Epitaxy method covered about XX% of the total market by fabrication technology, whereas, Deep-Trench covered only XX%. But due to the lesser complexities of the fabrication in Deep-trench method, this technology is expected to share about XX% market till 2020, at an estimated CAGR of XX% from 2013 to 2020.
The shipment of Multiple-Epitaxy method technology in 2013 was XX million units and is expected to grow up to XX million units in 2020, at an estimated CAGR of XX%, from 2013 to 2020. With XX% of CAGR calculated from 2013 to 2020, Deep-Trench method will have shipment of XX million units in 2020.

Today, the SJ-MOSFET market shares XX% of the total $ XX billion market of power electronic devices, but it is expected to penetrate with almost XX% in the market by 2020. The drivers behind this growth are: the need of small size power supplies, trend of larger but smaller width TVs and other smart devices, demand of hybrid and electric cars, and need of renewable energy resources for degrading environment standards.
3 SJ-MOSFET MARKET BY APPLICATION

3.1 INTRODUCTION

This section depicts the application market picture of SJ-MOSFET. The applications are mostly dependent on the output power rating and frequency of switching of the SJ-MOSFET. As high frequency of switching is provided by SJ-MOSFET, it is generally used in power supplies. On the contrary, high frequency switching is not required in the industrial applications, so there are very few applications in it. The application market of SJ-MOSFET is segmented into power supplies, lighting, display, EV/HEV supplies, industrial, and other applications.

The figure above shows the segmentation of SJ-MOSFET application market, in which the power supplies segment is subdivided into: desktop supplies, game console supplies, laptop supplies, tablets supplies, and other power supplies. Similarly, the industrial application is subdivided into UPS, SMPS, PV inverters, server power supplies, and others.
4 SJ-MOSFET MARKET BY GEOGRAPHY

4.1 INTRODUCTION

This chapter gives a detail description of SJ-MOSFET market scenario by different geographies, mainly the North America, Europe (EU), Asia-Pacific (APAC) and Rest of the World (ROW). It also talks about the different trends that are driving the SJ-MOSFET market by individual geographies and countries. Moreover, the major markets with respect to the countries and expected growing geographical market is also discussed in this section.

FIGURE 6

SJ-MOSFET MARKET SEGMENTATION BY GEOGRAPHY

[Diagram showing market segmentation by geography]

Source: MarketsandMarkets Analysis
5 COMPETITIVE LANDSCAPE

5.1 COMPETITIVE ANALYSIS

5.1.1 MARKET SHARE ANALYSIS

In 2012, the power semiconductor products market was in a catastrophe due to which the IGBT and FET markets fell by XX% to XX% in revenue generation. In the meantime, SJ-MOSFET grew at XX%, a trend which is expected to continue until 2022, when it tops the $ XX billion limit. In 2012, the shortage situation of 2011 helped the SJ-MOSFET market to grow, as production capacity was too small to handle the high demand of power devices. For manufacturers, this huge demand acted as a buffer. Besides, SJ-MOSFET being a booming market, led to growth in the numbers of players that entered the market. In the last decade, many new players have entered in the ring. The manufacturers in APAC are and will be the biggest threat to the current market leaders. Among them are Magnachip, Vishay, Silan, NCE Power, Semi Power, Renesas, and ON Semiconductor.

![FIGURE 7](image)

**SJ-MOSFET MARKET: MARKET SHARE OF KEY INDUSTRY PLAYERS, 2013**

Source: MarketsandMarkets Analysis
The figure above gives the market share analysis of the SJ-MOSFET market by different manufacturers in 2013. Infineon Technologies and ST Microelectronics together share about XX% of the total SJ-MOSFET market, wherein Infineon Technologies has the highest share of XX%. Other companies that are sharing the market are Fairchild Semiconductor having a share of XX%, Toshiba XX%, Rohm XX%, and Renesas XX% whereas Vishay Inter-technologies shares XX% and other manufacturers share around XX% of the market. The easy availability of the materials and technology are making things easier for these manufacturers. Additionally, the integrators say that they are not worried about the manufacturer’s name or brand. Instead, they focus on the required specifications that are needed in their devices. With the entrants in the market from Japan, China, India, Singapore, and Taiwan, it is expected that the market share is going to shift to these new players. Moreover, there are many other small players in the market that will bag some of the market share, consequently causing the market leader’s share to shrivel.
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