

Power MOSFET Market by Type (Depletion Mode Power MOSFET and Enhancement Mode Power MOSFET), Power Rate (High Power, Medium Power, and Low Power), and Application (Energy & Power, Consumer Electronics, Inverter & UPS, Industrial System, and Others) - Global Opportunity Analysis and Industry Forecast, 2017-2023

<https://marketpublishers.com/r/P3721889A45EN.html>

Date: August 2017

Pages: 170

Price: US\$ 4,296.00 (Single User License)

ID: P3721889A45EN

Abstracts

The global power MOSFET market was valued at \$3,730 million in 2016, and is expected to reach \$6,340 million in 2023, growing at a CAGR of 7.4% from 2017 to 2023. A power metal–oxide–semiconductor field-effect transistor (MOSFET) is a type of metal-oxide semiconductor field-effect transistor designed to handle significant power levels with optimum power loss.

MOSFET is a type of insulated gate bipolar transistor with high switching speed and enhanced efficiency at low-voltage operations. It utilizes vertical structures with source and drain terminals at opposite sides of the chip. In addition, power MOSFETS are widely used in three modes: n-channel enhancement-mode, p-channel enhancement-mode, or n-channel depletion mode. Moreover, various technologies, such as vertical diffused MOS (VDMOS), double diffused MOS, trench MOS, UMOS, VMOS, and others, are used for the structuring of the MOSFET.

MOSFET has gained popularity among various applications such as electronic switches in power management, auto intensity controllers, invertors, generators, and others; power supplies such as DC to DC convertors; and low-voltage motor controllers to regulate the flow of current. The factors that drive the market growth are reduction in the on resistance (RON) of the power MOSFET structures and enhancement of breakdown voltage, which enhance the efficiency and durability of the power device. However, performance issues, such as current leakage at high-voltage operations, and power

breakdown hamper the market growth. Furthermore, irrespective of these challenges, government initiatives to establish high-voltage direct current (HVDC) & smart grid, and increase in demand for consumer electronic are expected to provide several opportunities for the market in the near future.

The global power MOSFET market is segmented on the basis of type, power rate, application, and geography. The type segment is bifurcated into depletion mode power MOSFET and enhancement mode power MOSFET. The power rate segment is divided into high power, medium power, and low power. Based on application, the market is classified into energy & power, consumer electronics, inverter & UPS, industrial system, and others (medical devices & traction). By geography, it is analyzed across North America (U.S., Mexico, and Canada), Europe (UK, Germany, France, and rest of Europe), Asia-Pacific (China, India, Japan, Australia, and rest of Asia-Pacific), and LAMEA (Latin America, Middle East, and Africa).

The major companies profiled in the report include Infineon Technologies AG, Fairchild Semiconductors, Renesas Electronics Corporation, Digi-key Electronics, Toshiba Corp., IXYS Corporation, Power Integration, STMicroelectronics, NXP Semiconductors, and Texas Instruments.

KEY BENEFITS FOR STAKEHOLDERS

Comprehensive analysis of the current trends and future estimations of the global power MOSFET market is provided.

The report provides a competitive scenario of the market and growth trends, structure, driving factors, scope, opportunities, and challenges.

The report includes a detailed analysis of the key segments to provide insights on the market dynamics.

Porter's Five Forces analysis highlights the potential of buyers and suppliers and provides insights on the competitive structure of the market to devise effective growth strategies and facilitate better decision-making.

KEY MARKET SEGMENTS

BY TYPE

Depletion Mode Power MOSFET

Enhancement Mode Power MOSFET

BY POWER RATE

High Power

Medium PowerLow Power

BY APPLICATION

Energy & Power
Consumer Electronics
Inverter & UPS
Industrial System
Others (Medical Devices & Traction)

BY GEOGRAPHY

North America

U.S.

Mexico

Canada

Europe

UK

Germany

France

Rest of Europe

Asia-Pacific

China

Japan

India

South Korea

Rest of Asia-Pacific

LAMEA

Latin America

Middle East

Africa

KEY PLAYERS

Infineon Technologies AG

Fairchild Semiconductor

Renesas Electronics Corporation

Digi-Key Electronics

Toshiba Corporation

IXYS Corporation

Power Integration

STMicroelectronics

NXP Semiconductors

Texas Instruments

The other players in the value chain include (profiles not included in the report):

FUJI Electric Co, LTD.

Microsemi Corporation

Semikron International GmbH
ABB Ltd.

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