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Global 750V Ultra-Thin SiC Power Transistor Supply, Demand and Key Producers, 2026-2032

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Abstracts

The global 750V Ultra-Thin SiC Power Transistor market size is expected to reach $ 175 million by 2032, rising at a market growth of 10.4% CAGR during the forecast period (2026-2032).

The 750V ultra-thin silicon carbide power transistor is a high-performance discrete power device made from silicon carbide semiconductor material, primarily used in power electronics conversion and motor drive systems. The device is mainly offered in TOLL ultra-thin surface-mount packages, with a typical thickness of approximately 2.3 millimeters, ranging from 2.2 to 2.5 millimeters. It is rated for 750 volts and has an on-resistance spanning from 13 milliohms to 65 milliohms, providing high-speed switching capability and low conduction loss. The manufacturing process involves high-quality silicon carbide epitaxial wafer fabrication, precision photolithography and ion implantation, as well as advanced gate structure design and low-thermal-resistance packaging techniques. Its key functions include efficient power switching and energy conversion control, suitable for industrial power inverters, electric vehicle traction inverters, photovoltaic inverters, and medium-to-low power DC-DC converters. In 2025, the global average gross margin for this type of device is approximately 38%, with an average unit price of 37 USD per piece.

The 750V ultra-thin silicon carbide power transistor is a high-performance wide-bandgap semiconductor discrete power device, relying on upstream high-purity SiC epitaxial wafer production, midstream advanced device processing, and thin TOLL package technology, with downstream applications in industrial power inverters, electric vehicle traction inverters, and photovoltaic inverters forming a complete supply chain. In 2025, only one company globally achieved formal mass production of this product, resulting in highly concentrated core production capacity and relatively limited supply.

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As upstream material capacity expands and midstream processes mature, the supply side continues to improve, supporting broader adoption in downstream applications.

Demand is driven by high-efficiency, high-frequency power conversion and compact inverter designs, with core applications including electric vehicle traction inverters, industrial motor drives, and photovoltaic inverters. Market growth is primarily fueled by rising penetration of electric vehicles and increasing investment in renewable energy generation, while medium-to-low power DC-DC converters steadily increase demand for thin-package devices. In 2025, leading companies collaborated on process optimization and technical coordination around thin TOLL packaging, promoting high standardization. Policy measures in major economies, including energy efficiency regulations and carbon reduction targets, further accelerate the adoption of SiC devices in power electronics applications.

The industry is expected to maintain high concentration and technological barriers, with thin TOLL packaging becoming the mainstream design. Product performance will continue to evolve toward lower on-resistance, lower thermal resistance, and higher switching frequency. Supply chain collaboration, regional manufacturing adjustments, and expanded production capacity will support steady market growth, while technological iteration and the development of alternative materials represent long-term considerations. Overall, ultra-thin SiC power transistors are expected to continue expanding their applications in efficient power conversion, with the industry maintaining a robust growth trajectory.

This report studies the global 750V Ultra-Thin SiC Power Transistor production, demand, key manufacturers, and key regions.

This report is a detailed and comprehensive analysis of the world market for 750V Ultra-Thin SiC Power Transistor and provides market size (US$ million) and Year-over-Year (YoY) Growth, considering 2025 as the base year. This report explores demand trends and competition, as well as details the characteristics of 750V Ultra-Thin SiC Power Transistor that contribute to its increasing demand across many markets.

Highlights and key features of the study
Global 750V Ultra-Thin SiC Power Transistor total production and demand, 2021-2032, (Pcs)
Global 750V Ultra-Thin SiC Power Transistor total production value, 2021-2032, (USD Million)

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Global 750V Ultra-Thin SiC Power Transistor production by region & country, production, value, CAGR, 2021-2032, (USD Million) & (Pcs), (based on production site)
Global 750V Ultra-Thin SiC Power Transistor consumption by region & country, CAGR, 2021-2032 & (Pcs)
U.S. VS China: 750V Ultra-Thin SiC Power Transistor domestic production, consumption, key domestic manufacturers and share
Global 750V Ultra-Thin SiC Power Transistor production by manufacturer, production, price, value and market share 2021-2026, (USD Million) & (Pcs)
Global 750V Ultra-Thin SiC Power Transistor production by Type, production, value, CAGR, 2021-2032, (USD Million) & (Pcs)
Global 750V Ultra-Thin SiC Power Transistor production by Application, production, value, CAGR, 2021-2032, (USD Million) & (Pcs)

This report profiles key players in the global 750V Ultra-Thin SiC Power Transistor market based on the following parameters - company overview, production, value, price, gross margin, product portfolio, geographical presence, and key developments. Key companies covered as a part of this study include ROHM Co., Ltd., etc.

This report also provides key insights about market drivers, restraints, opportunities, new product launches or approvals.

Stakeholders would have ease in decision-making through various strategy matrices used in analyzing the World 750V Ultra-Thin SiC Power Transistor market

Detailed Segmentation:

Each section contains quantitative market data including market by value (US$ Millions), volume (production, consumption) & (Pcs) and average price (US$/Pcs) by manufacturer, by Type, and by Application. Data is given for the years 2021-2032 by year with 2025 as the base year, 2026 as the estimate year, and 2027-2032 as the forecast year.

Global 750V Ultra-Thin SiC Power Transistor Market, By Region:

United States

China

Europe

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Japan

South Korea

ASEAN

India

Rest of World

Global 750V Ultra-Thin SiC Power Transistor Market, Segmentation by Type:

High Current Type (13m? - 26m?)

Medium Current Type (36m? - 45m?)

Low Current Type (65m?)

Global 750V Ultra-Thin SiC Power Transistor Market, Segmentation by Thermal Management Feature:

Enhanced Thermal Performance (R?JC ?0.5°C/W)

Standard Thermal Performance (R?JC 0.5-1.0°C/W)

High Thermal Dissipation (>1.0°C/W)

Global 750V Ultra-Thin SiC Power Transistor Market, Segmentation by On Resistance Range:

Ultra Low Rds(on) (4m? - 13m?)

Low Rds(on) (14m? - 30m?)

Medium Rds(on) (31m? - 60m?)

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High Rds(on) (61m? - 120m?)

Global 750V Ultra-Thin SiC Power Transistor Market, Segmentation by Application:

AI Server Power Supply

On Board Charger (OBC)

DC DC Converter

Photovoltaic Inverter

Energy Storage System (ESS)

Industrial Power Supply

Other Applications

Companies Profiled:

ROHM Co., Ltd.

Key Questions Answered:
1. How big is the global 750V Ultra-Thin SiC Power Transistor market?
2. What is the demand of the global 750V Ultra-Thin SiC Power Transistor market?
3. What is the year over year growth of the global 750V Ultra-Thin SiC Power Transistor market?
4. What is the production and production value of the global 750V Ultra-Thin SiC Power Transistor market?
5. Who are the key producers in the global 750V Ultra-Thin SiC Power Transistor market?
6. What are the growth factors driving the market demand?

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