



China IGBT Industry Report, 2011-2012

Jul. 2012

STUDY GOAL AND OBJECTIVES

This report provides the industry executives with strategically significant competitor information, analysis, insight and projection on the competitive pattern and key companies in the industry, crucial to the development and implementation of effective business, marketing and R&D programs.

REPORT OBJECTIVES

- ◆ To establish a comprehensive, factual, annually updated and cost-effective information base on market size, competition patterns, market segments, goals and strategies of the leading players in the market, reviews and forecasts.
- ◆ To assist potential market entrants in evaluating prospective acquisition and joint venture candidates.
- ◆ To complement the organizations' internal competitor information gathering efforts with strategic analysis, data interpretation and insight.
- ◆ To suggest for concerned investors in line with the current development of this industry as well as the development tendency.
- ◆ To help company to succeed in a competitive market, and

METHODOLOGY

Both primary and secondary research methodologies were used in preparing this study. Initially, a comprehensive and exhaustive search of the literature on this industry was conducted. These sources included related books and journals, trade literature, marketing literature, other product/promotional literature, annual reports, security analyst reports, and other publications. Subsequently, telephone interviews or email correspondence was conducted with marketing executives etc. Other sources included related magazines, academics, and consulting companies.

INFORMATION SOURCES

The primary information sources include China Customs, State Economic Information Center and National Bureau of Statistics of China etc.

Abstract

With the development of energy-efficient appliances, smart grid, high speed rails, new-energy vehicles and photovoltaic power generation etc., China is seeing rapidly grown demand for 5-inch & 6-inch thyristors, IGCTs and IGBTs. Among them, business circles pay high attention to IGBT due to its wide application and seldom local production.

China's IGBT market size approximated USD870 million in 2011; and the sale is expected to rise to USD1.49 billion at home in 2015, presenting a CAGR of 14%.

Owing to the state-of-the-art technologies of foreign corporations such as Infineon, Fuji Electric, Mitsubishi Electric, and so forth, Chinese IGBT market is almost dominated by producers from Europe, the United States and Japan at present. Global leading players have started to develop the 7th generation technology, while local counterparts still rest on the 4th-generation technology. Local manufacturers didn't begin IGBT production until recent years, and their technological levels remain backward.

Yet, they enjoy advantages in customizing products and lowering cost although their overall strengths lag far behind foreign firms; and local enterprises can be found in all links of IGBT production chain.

Considering chip design, local enterprises comprise Keda Semiconductor and Wuxi Phoenix Semiconductor, which have realized small-scale production of low-power (600V) and medium power (1,200V) IGBTs; with their products mainly applied in electromagnetic ovens. Xi'an Power Electronics Research Institute and Shanghai CNR Yongdian Electronics Co., Ltd. have made breakthroughs in the design of medium- and high-power IGBTs which currently remain at the stage of experimental application.

As far as chip manufacturing is concerned, among local enterprises, power semiconductor producers like Tianjin Zhonghuan Semiconductor, Advanced Semiconductor Manufacturing Corp., Sino MicroElectronics, CSMC Technologies Corporation and Hua Hong NEC etc. have realized mass-production of 1,200V IGBTs. China's enterprises also have made breakthroughs in the development of 1,700V & 3,300V IGBT samples.

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In 2011, CSR Times Electric started IGBT industrialization project which will annually produce 120,000 8-inch IGBT chips and 1 million IGBT modules. The Project is expected to start production in 2014, with product grades varying from 600V to 6,500V.

In terms of module packaging, around 11 local enterprises including Jiaxing Starpower Semiconductor, Jiangsu Macmic Science & Technology Co., Ltd., Nanjing Silvermicro Electronics and Shenzhen BYD Microelectronics etc. have accomplished mass-production or small-scale production. Local enterprises purchase chips produced by INFINEON and SEMIKRON etc. for module packaging; and their products are mainly used in electric welders, electromagnetic ovens, UPS and control of motors.

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