



Global and China Automotive Semiconductor Industry Report, 2014-2015

Sep. 2015

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 Company Reports, and National Bureau of Statistics of China etc.

Abstract

Global and China Automotive Semiconductor Industry Report, 2014-2015 mainly focuses on the following:

1. Global automotive market and industry;
2. China's automotive market and industry;
3. Automotive semiconductor industry and market;
4. Fifteen major automotive semiconductor companies

In 2014, the global automotive semiconductor market size approximated USD28 billion, up 7.3% from 2013. It is predicted that in 2015 the market size will amount to USD29.6 billion, up 5.7% from a year earlier, and that by 2016 the growth rate will continue to decline, to only 3.7%. That was mainly attributed to the following two factors: first, remarkable deflation globally, which resulted in a substantial depreciation of the Japanese yen and the euro against the dollar; second, China, the world's largest auto market, is very likely to go into decline. In 2015, China's auto market is expected to edge up merely 1%, but may slide by 2% in 2016.

Automotive semiconductor falls into five categories: power semiconductor, sensor semiconductor, processor (main for MCU) semiconductor, ASSP (principally Connectivity and Amplifier) semiconductor, and logic semiconductor. In the field of traditional automobiles, the semiconductor costs for each unit approximate USD320, of which power occupies 26% and sensor 16%. In HEV, however, this figure is USD690, of which power represents as much as 75%. In EV, the semiconductor costs come to USD700, of which power accounts for 55%. But due to ongoing depressed oil prices, the market space of HEV/EV has been considerably squeezed. If the oil price returns back more than USD100, then the automotive semiconductor market will increase significantly.

Ranking of TOP20 Global Automotive Semiconductor Companies by Revenue, 2012-2015

(Unit: USD mln)	2012	2013	2014	2015
Renesas	3,355	3,176	2,902	2,810
Infineon	2,191	2,310	2,608	3,130
STMicroelectronics	1,890	2,022	1,806	1,727
Freescale	1,668	1,835	2,020	2,180
NXP	1,402	1,576	1,860	1,980
TI	1,318	1,502	1,696	1,792
Bosch	1,241	1,415	1,518	1,620
Sensata	1,020	1,180	1,390	1,660
Denso	1,182	1,081	1,190	1,260
ON Semiconductor	752	758	980	1,180
Rohm	701	682	871	906
Panasonic	650	690	760	900
Sanken	600	620	660	680
Analog Devices	290	320	360	420
Fuji Electric	330	390	360	390
Nvidia	60	100	180	290
Micronas	180	190	185	160
Melexis	280	303	365	453
Vishay	260	280	310	280
Toshiba	360	330	310	320
Toyota	190	140	170	150

In 2015, the market size of automotive sensors would reach about USD4.7 billion. Automotive sensors consist of CMOS Image Sensor, Pressure, Acceleration, Speed and Position, Magnetic (Hall effect), and Angle, among which CMOS Image Sensor mainly involves ON Semiconductor and OVT. The largest pressure sensor player is Sensata, which is also the biggest auto sensor maker worldwide. Moreover, Sensata is adept at Speed and Position. As the world's second largest auto sensor company, Bosch specializes in Acceleration and Angle. ON Semiconductor is the world's third largest sensor company. Infineon, the fourth largest sensor player in the world, mainly operates Magnetic (Hall effect) and Acceleration. Allegro, the world's fifth sensor player under Sanken, is good at Magnetic (Hall effect) and Acceleration. In addition, other large auto sensor companies include Analog Devices, Melexis, Micronas, NXP, and STMicroelectronics. In 2015, the market size of automotive processors, including MCU, DSP, and GPU, totaled some USD7 billion. In MCU market, Renesas takes absolutely the first place, with a market share of 40%, in contrast to 22% for Freescale. In the 32-Bit MCU market, Freescale accounts for the largest portion, Infineon and TI follows with 13% and 8% share, respectively. Other large players include STMicroelectronics and Spansion (Cypress).

Automotive power semiconductor mainly involves Power Management ICs, MOSFET, IGBT, and Diodes (Fast Recovery, Schottky, and High Voltage). HEV/EV needs a large quantity of IGBT, whose price is very high, thus leading to a sharp increase in costs of power semiconductor. Low-power circuit typically uses MOSFET while high-power and high-current circuit needs IGBT. SiC MOSFET is the most efficient, with high temperature resistance, far lower price than that of GaN, and more mature technology. So, it has good prospects in the future.

Automotive power semiconductor market has a low concentration, which provides a living space to some small companies. It is worth noting that to develop hybrid electric vehicle, Toyota ventured into the field of power semiconductor, so that its strength in IGBT is not inferior to specialized IGBT companies. Besides, Toyota is also not dwarfed by specialized automotive power semiconductor players in SiC MOSFET field.

Infineon, the largest automotive power semiconductor vendor, acquired IR, a move that helped bridge the gap in LV MOSFET, with the market share rising to 24%. STMicroelectronics, which specializes in Power Management, ranks second. What comes next is Renesas, Fuji Electric, and Bosch.

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