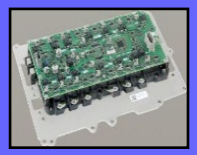
Fuji Electric
Innovating Energy Technology

Electronic Devices Business Strategies

May 29, 2015
Fuji Electric Co., Ltd.
Electronic Devices Business Group

Electronic Devices Segment

Fuji Electric
Innovating Energy Technology

Subsegments	Major products	Application	Production bases
Semi-conductors	Power semiconductors  	Inverters UPS PCS Air conditioners Automobiles Power supplies	**【Front-end processes】** ▪ Fuji Electric Matsumoto Factory ▪ Fuji Electric Yamanashi Factory ▪ Fuji Electric Tsugaru Semiconductor Co., Ltd. ▪ Fuji Electric (Malaysia) Sdn. Bhd. **【Back-end processes】** ▪ Fuji Electric Power Semiconductor Co., Ltd. ▪ Fuji Electric (Shenzhen) Co .,Ltd. ▪ Fuji Electric Philippines, Inc. ▪ Fuji Electric (Malaysia) Sdn. Bhd.
	Photoconductors 	Copiers Printers	▪ Fuji Electric (Shenzhen) Co .,Ltd.
Magnetic disks	Aluminum substrate magnetic disks Glass substrate magnetic disks 	HDD	▪ Fuji Electric (Malaysia) Sdn. Bhd.

UPS : Uninterruptible power system　　PCS : Power conditioner

◆**Operate business emphasizing profits in a manner that is not affected by market changes, and expand business**

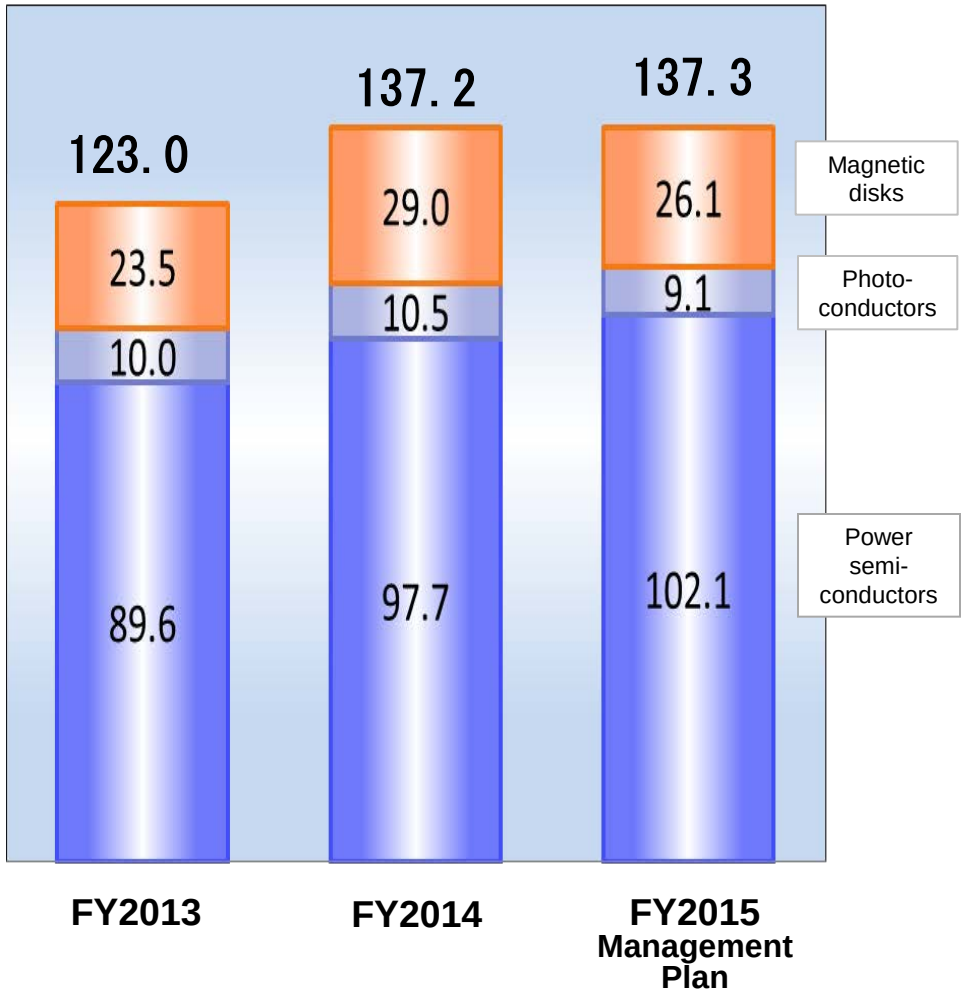
→ **Strengthen business risk management**
(Improve capital investment and R&D expenditure efficiency)

◆**Contribute to expansion of customers' businesses and our own business by providing new products boasting world's top technologies and performance and thereby improve position in industry**

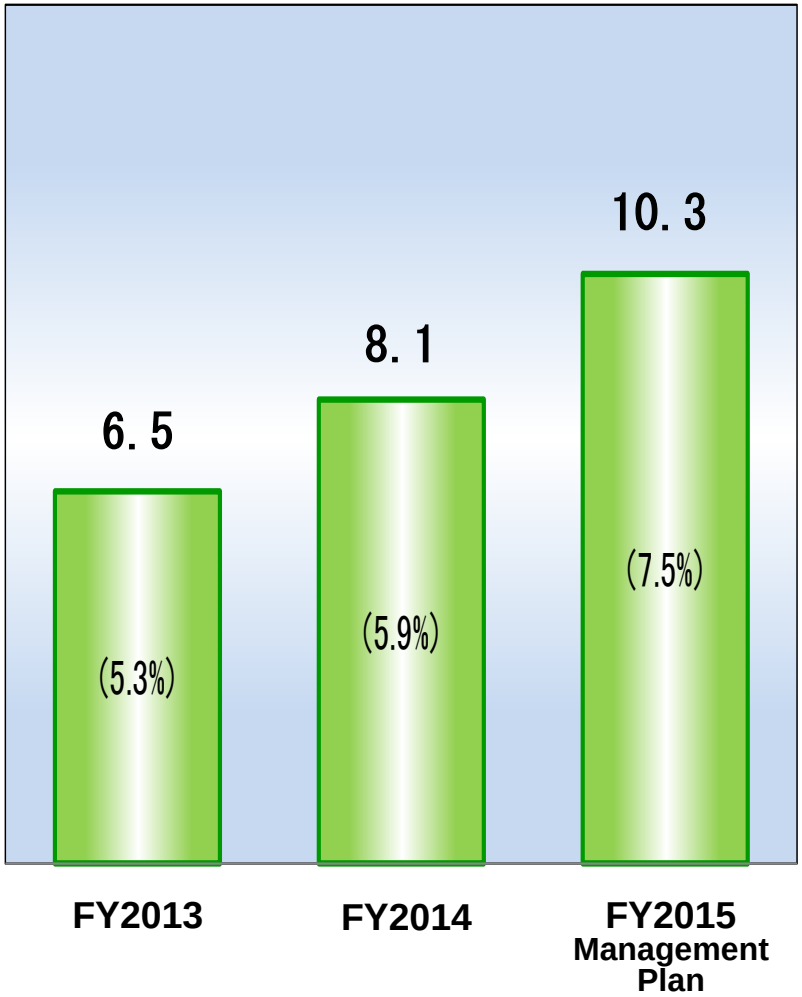
Electronic Devices Business Targets

Fuji Electric
Innovating Energy Technology

Net Sales (Billion yen)



Operating Income / Operating Income Margin (Billion yen)



Contents

Fuji Electric
Innovating Energy Technology

Power Semiconductors

Business Overview

Power Semiconductors Business Overview

Fuji Electric
Innovating Energy Technology

(FY2013 → FY2014)

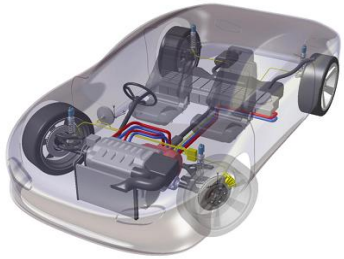
Industrial field (% of total sales: 47% → 53%)

Automotive field (% of total sales: 35% → 29%)

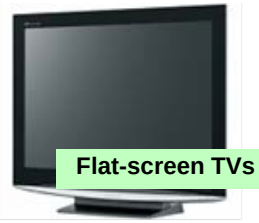
Power supply field (% of total sales: 18% → 18%)

Application

Inverters, NC machine tools, elevators, UPS, PCS (wind/solar power generation), air conditioners, etc.



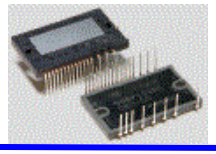
Engine controls, transmission controls, brake controls, steering controls, HEV motor controls, etc.



Industrial equipment, communication equipment, servers, PCs, flat-screen TVs, video game consoles , copiers, printers, etc.

Products

IGBT modules



SiC modules

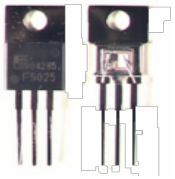
Automotive IGBT IPMs

RB-IGBT modules

Discrete products

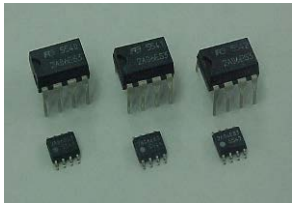
Pressure sensors

Igniters



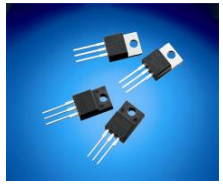
Power ICs

Discrete products

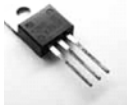


Power supply control ICs

Diodes



MOSFETs



Features

Unique devices that greatly improve power conversion efficiency (**SiC, RB-IGBT**) and packaging technologies that realize high reliability

Small, light-weight, and reliable devices critical for driving, turning, and stopping created by utilizing unique technologies (**direct water cooling technology, single chip power IC technology**)

High-voltage, low-loss **power supply IC and SJ-MOS* technologies** that respond to ever stricter energy saving standards for power supplies

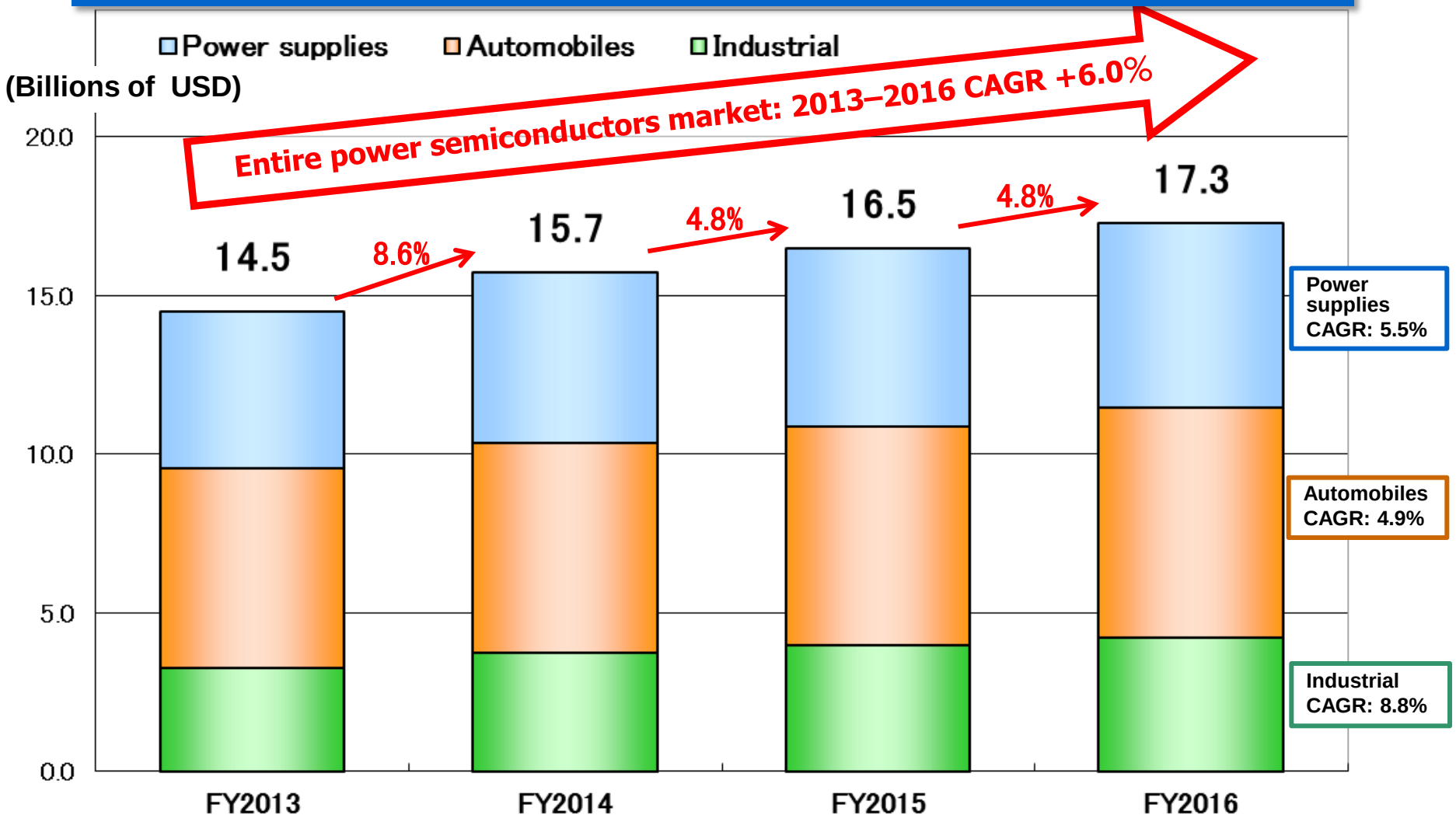
*SJ-MOS: Superjunction MOSFET

Market Trends

Power Semiconductors Market Trends

Fuji Electric
Innovating Energy Technology

■ Market growth driven by industrial field (industrial equipment, renewable energy) in Japan and overseas



* Company's estimation based on market data released by IHS, etc.

Business Targets

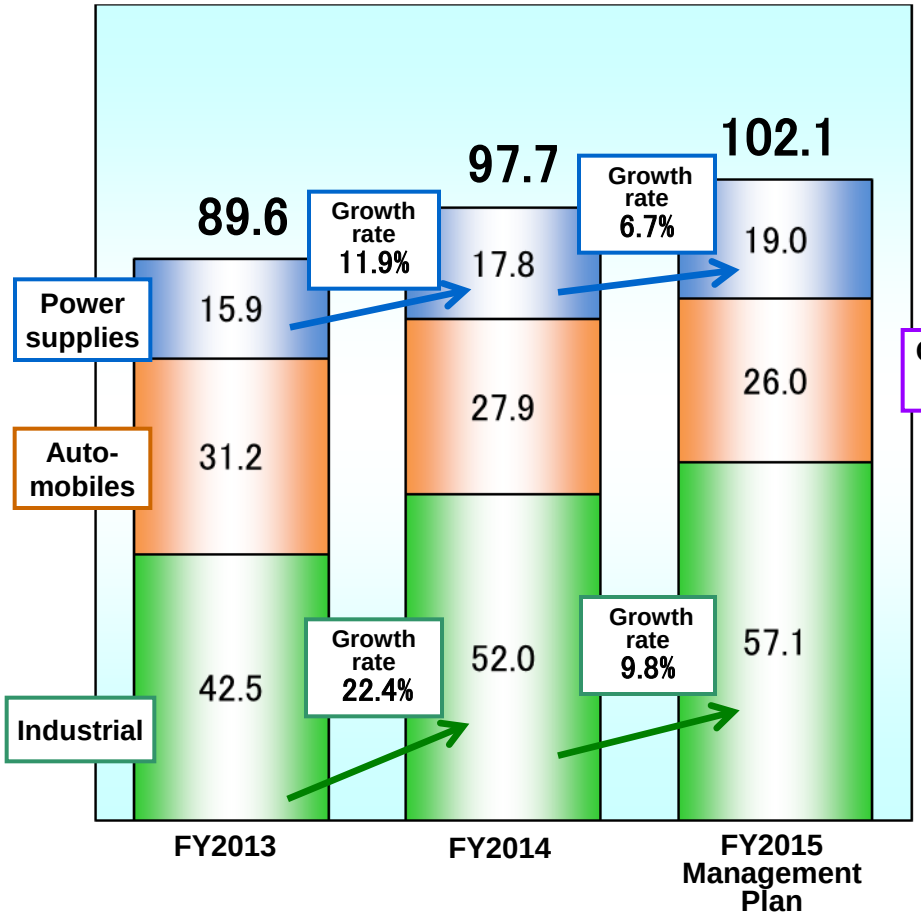
Power Semiconductors Business Targets

Fuji Electric
Innovating Energy Technology

- Higher sales in industrial and power supply fields compensate for lower automobile sales
- Sales outside of Japan to account for more than 50% of total net sales in FY2015

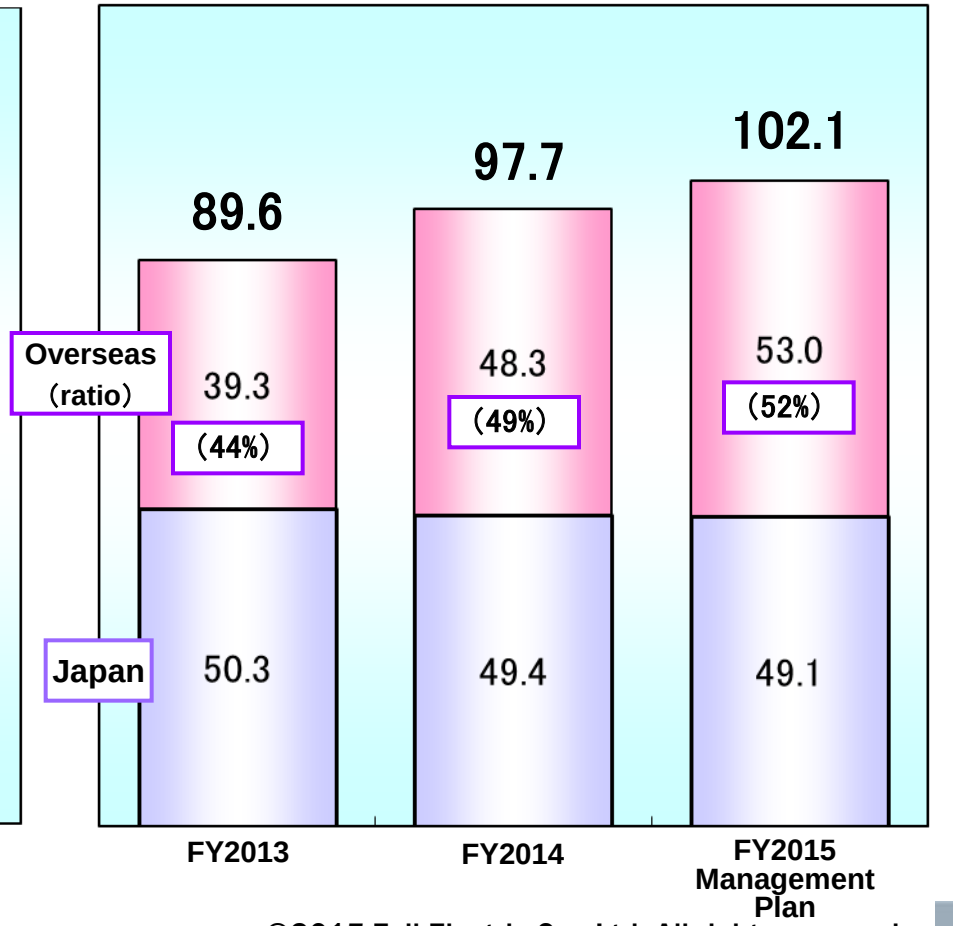
Net Sales by Business Fields

(Billion yen)



Net Sales in Japan / Overseas

(Billion yen)



Priority Measures

●Expand sales to an extent that exceeds market growth rate

- Increase sales and expand market share by launching new products
- Strengthen local design capabilities at overseas design centers

●Create world's top technologies and products and improve design quality

- Develop and launch 7th generation industrial IGBT modules
- Accelerate development of SiC modules for power electronics

●Construct optimal global production system

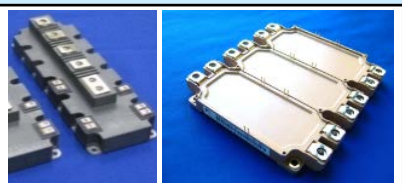
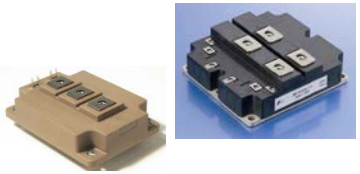
- Promote local production and consumption to heighten profitability

(Ratio of back-end production processes conducted overseas: 48% → 51%)

Industrial Field Overview of New Products

Fuji Electric
Innovating Energy Technology

Create new products that achieve high levels of power conversion efficiency
- Utilize state-of-the-art chips to realize low conversion loss
- Enable easy application in compact and high-radiation packages

Target	New products	Features	Mass production schedule
Solar PCS UPS	AT-NPC modules (new 3-level) (RB-IGBT) 	Simple external wiring Low surge voltage Low loss	Series expansion from Jan. 2016
Solar PCS UPS Motor drives in general	SiC hybrid modules (V-Series＋SiC-SBD) 	Substantially reduced switching losses through use of SiC-SBDs (e.g. 35% reduction)	Series expansion from 3Q 2015
General-purpose inverters General-purpose servos Air conditioners Motor drives in general	MiniSKiiP ®(V-Series)  Small IPM (2nd generation)  7th generation IGBT modules(X-Series) 	Compact and lightweight package Solderless mounting available Ultra-compact package Includes drive IC and protection function Compact and low loss Guaranteed max. temp. of 175℃ for continuous operation	From Oct. 2015 From Dec. 2015 From Apr. 2016

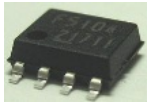
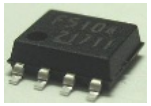
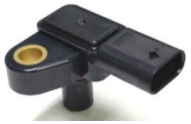
※MiniSKiiP® is a registered trademark of Semikron Elektronik GmbH & Co. KG

Automotive Field Overview of New Products

Fuji Electric
Innovating Energy Technology

Continue launching new products
that achieve small size, lightweight, and high reliability

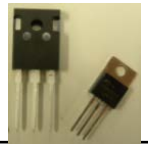
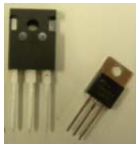
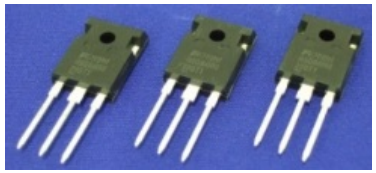
- Achieve lower on resistance using next generation trench IPS technology
- Develop series of low-pressure sensors and extend our business to various application
- Develop high-pressure external package for Oil and Fuel pressure sensing

Target	New products	Features	Mass production schedule
Load control for 1A power supplies (Relays, solenoids, lamps, etc.)	High-side IPS SOP8 (new) 	Low on resistance, low quiescent current Auto-protection function installed Internal status output terminals equipped	Series expansion from Jun. 2015
Linear control for 1A power supplies	Linear control IPS (High-side switch + operational amplifier) SOP8 (new) 	Low on resistance High-precision amp detection Auto-protection function installed	From Aug. 2015
Intake pressure/overpressure sensors	Intake pressure sensor Overpressure sensor Intake pressure / overpressure 	Compact and lightweight Ice clogging countermeasures for pressure input socket	Series expansion from Oct. 2015
Fuel tank pressure sensors	Fuel leak detection sensor Miniature relative pressure cell 	High-sensitivity specifications Wide measurable range (±6.7 kPA from atmospheric pressure)	Series expansion from Oct. 2015
Oil pressure sensors Fuel pressure sensors	High-pressure external sensor High-pressure external sensor (Screw-in type) 	Lightweight (45% lighter than competitor's products)	From Jul. 2017

Power Supply Field Overview of New Products

Fuji Electric
Innovating Energy Technology

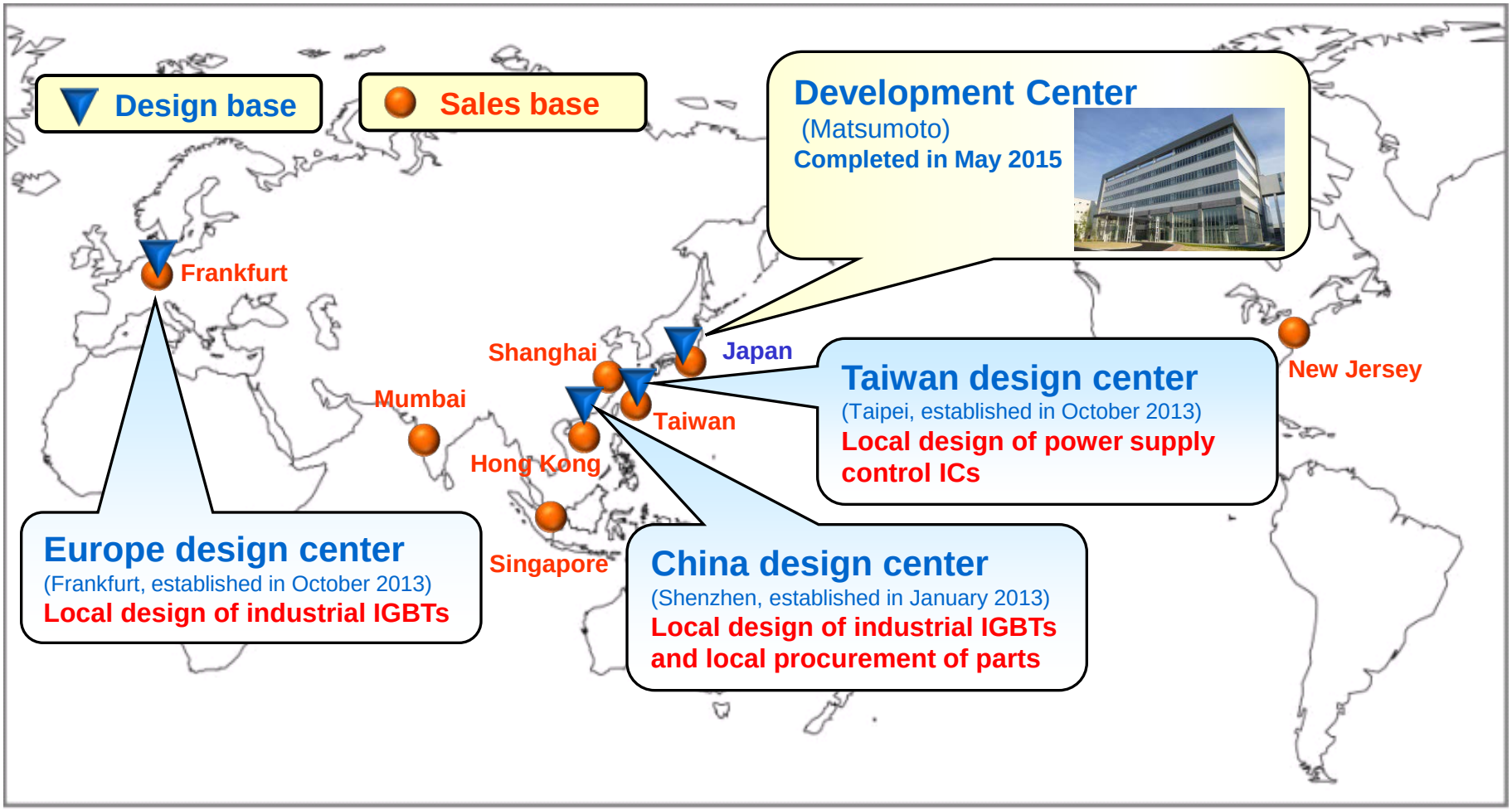
Continue launching new products that achieve energy savings
- Pursue easy-to-use with utilization of state-of-the-art chip
- Develop product lineup capable of responding to diverse customer designs

Target	New products	Features	Mass production schedule
LCD TVs  Printers  PC power supplies  LED lighting  Servers  Standard power supplies 	PWM control ICs 80 Series 	Designed for emerging nations with unstable commercial power supplies Contributes to compact power supplies	Series expansion from 3Q 2015
	00 Series 	High tolerance against excessive load, easy to use Low standby power	Series expansion from 4Q 2015
	SJ-MOSFETs (2nd generation) 	Easy to use Low loss, low noise	From Oct. 2015
	SiC SBDs (2nd generation) 	Easy to use High-speed switching Low loss	From Jan. 2016
	Discrete IGBTs 	High-speed switching Low loss	Series expansion from Oct. 2015

Boost Sales through Localization (Overseas Design Centers)

Fuji Electric
Innovating Energy Technology

Completed the Development Center in Matsumoto, our global mother R&D base (May 2015)
Accelerate development of products that meet local needs at overseas design centers (China, Taiwan, Europe)



Development Center (Completed in May 2015)

Fuji Electric
Innovating Energy Technology

Consolidate technology and development divisions dispersed in different buildings into this new building to accelerate development of innovative, next-generation products and technologies

[Overview of Development Center]

Structure: Steel frame, seismically isolated structure, 6 floors above ground

Building area: approx 2,700 m^2 (40 m × 67 m)

Site area: 12,500 m^2

Maximum capacity: 900 people

Total investment: ¥4.8 billion

Plans for Production Bases

Fuji Electric
Innovating Energy Technology

Front-end processes

Increase ratio of large-diameter wafer fabrication and improve productivity

Japan (Matsumoto)

- Global mother base for front-end processes
- Shift to larger diameters
- Move to full-fledged mass production as SiC device production base

Japan (Yamanashi)

- Expand range of 8-inch IGBT series manufactured
- Produce 7th generation IGBTs

Japan (Tsugaru)

- Expand range of power semiconductor series manufactured

Malaysia

- Expand range of IGBT series manufactured

Back-end processes

Increase ratio of overseas production

Japan (3 bases)

- Global mother base for back-end processes
- Manufacture products for domestic market

Philippines

- Manufacture power supply products and automotive pressure sensors
- Expand production of IPMs for air conditioners

China (Shenzhen)

- Expand range of industrial IGBT series manufactured for the Chinese market
- Augment production capacity

Malaysia

- Expand range of industrial IGBT series manufactured

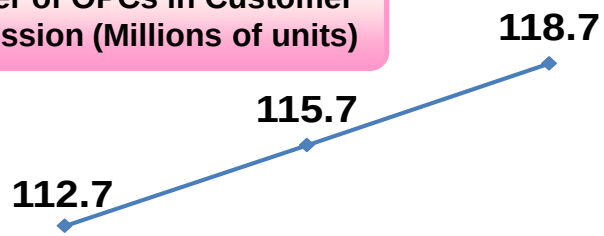
Photoconductors

Photoconductors (OPCs) Market Trends

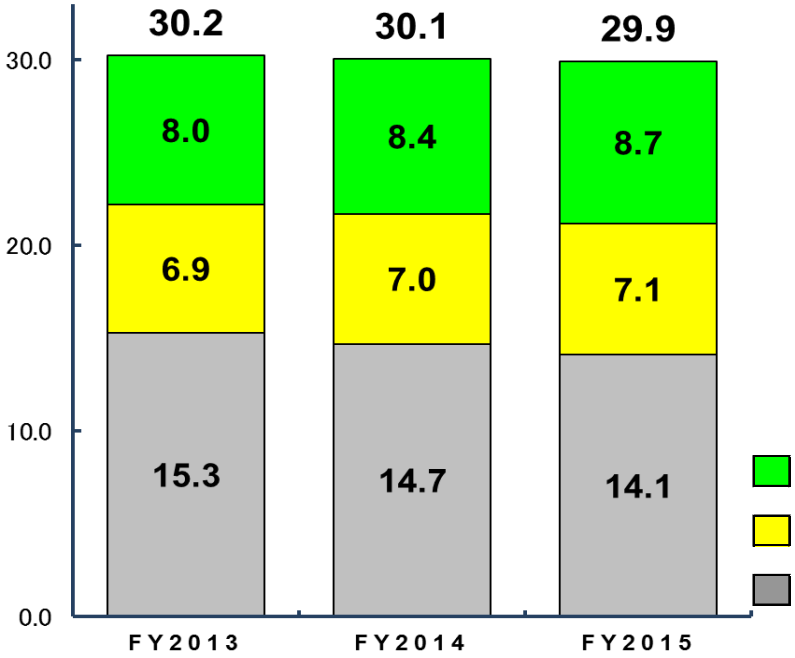
Fuji Electric
Innovating Energy Technology

- Market growth driven by demand for multifunctional color printers and copier machines
- Number of OPCs in customer possession rising, but market scale expected to remain around ¥30.0 billion going forward

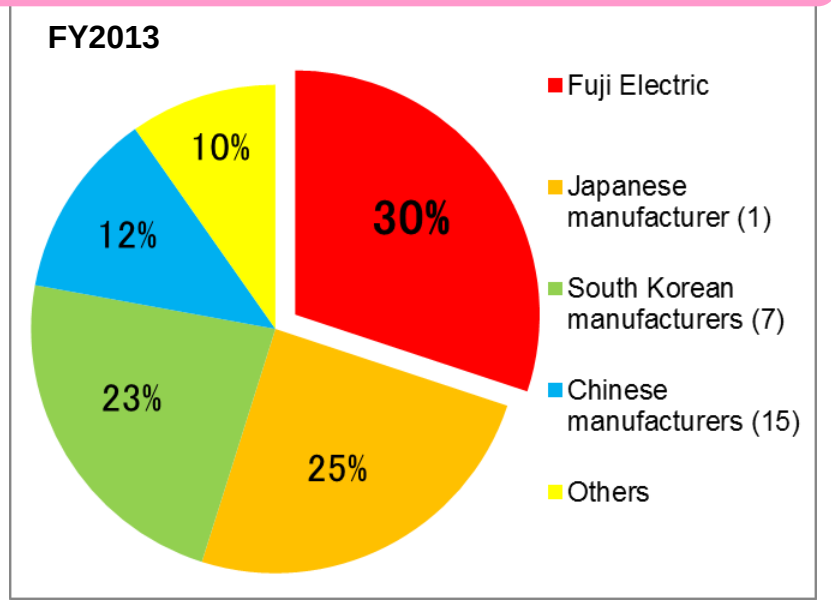
Number of OPCs in Customer Possession (Millions of units)



Market Scale (Billion yen)



Global Market Shares of OPC Manufacturers and Dealers (Share of External Sales)



* Company's estimation based on market data released by Data Supply Inc., Inter Watch Corporation, etc.

Fuji Electric
Innovating Energy Technology

●Operate business with an emphasis on boosting profits through world's top technological and cost-limiting capabilities

- Develop multi layer positive-charged OPCs for use in color printers with sensitivity1.5 times greater than standard OPCs (world first)

- Develop negative-charged OPCs for copier machines (high-speed, long-life) with durability twice as high as standard OPCs (industry's highest level)

●Maintain top share in highly challenging fields

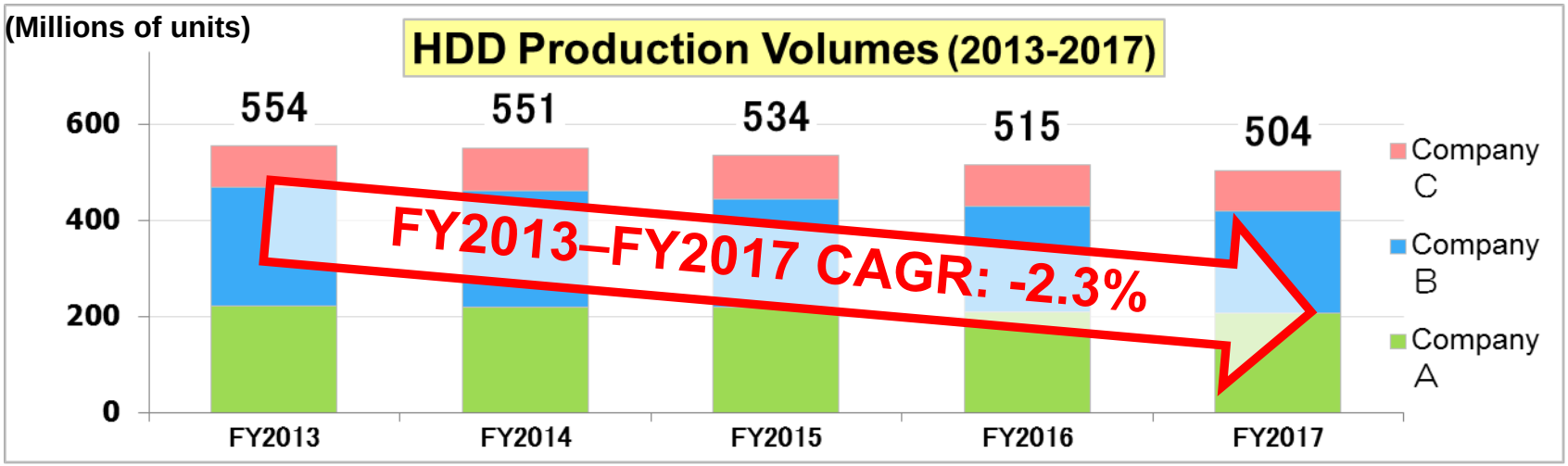
- Promote sales of high-value-added products (color printers, multifunction printers)
  (% of total net sales: 47% in FY2014 → 52% in FY2015)

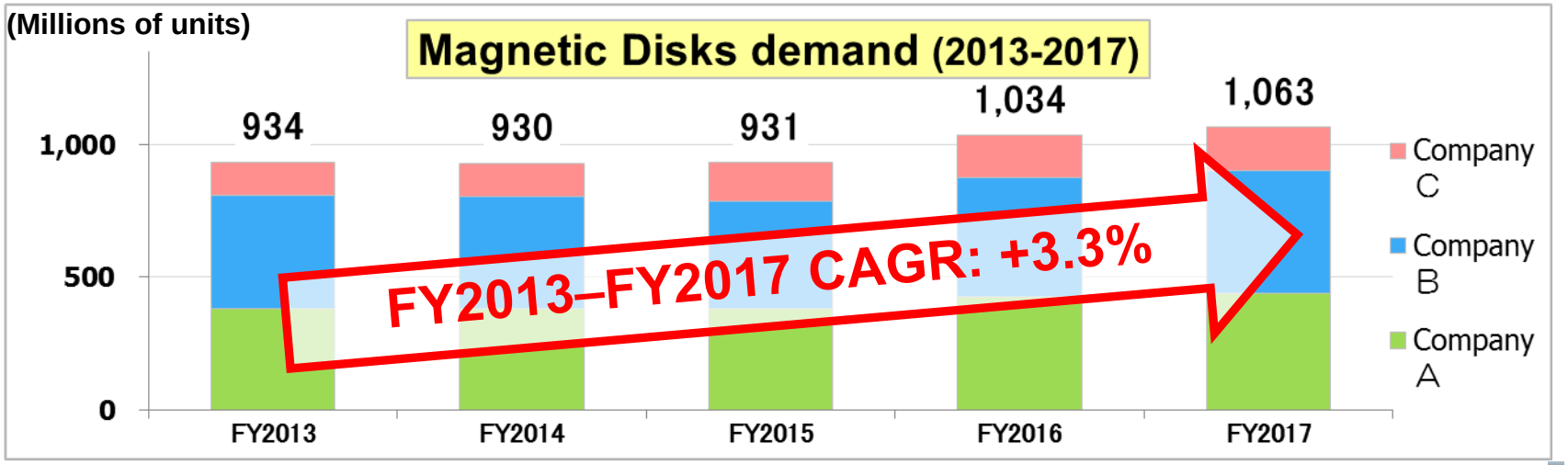
Magnetic Disks

Magnetic Disks Market Trends

Fuji Electric
Innovating Energy Technology

Despite HDD production volume decrease, customer's Magnetic Disk demand is expected to rise owing to increase of media loading quantity per HDD





*Company's estimation based on market data released by TrendFocus, etc.

Magnetic Disks Priority Measures

- **Increase joint-development of next-generation magnetic disk products with customers**
  - **Securing the Industry's top level technology and cost structures**
  - **Meeting customer's advancing quality expectations**
  - **Expanding the new model series**
    (FY2014 : 1 new product → FY2015 : 7 new products)

- **Strengthen earning structures through integration of magnetic disk and semiconductor subsidiaries in Malaysia**

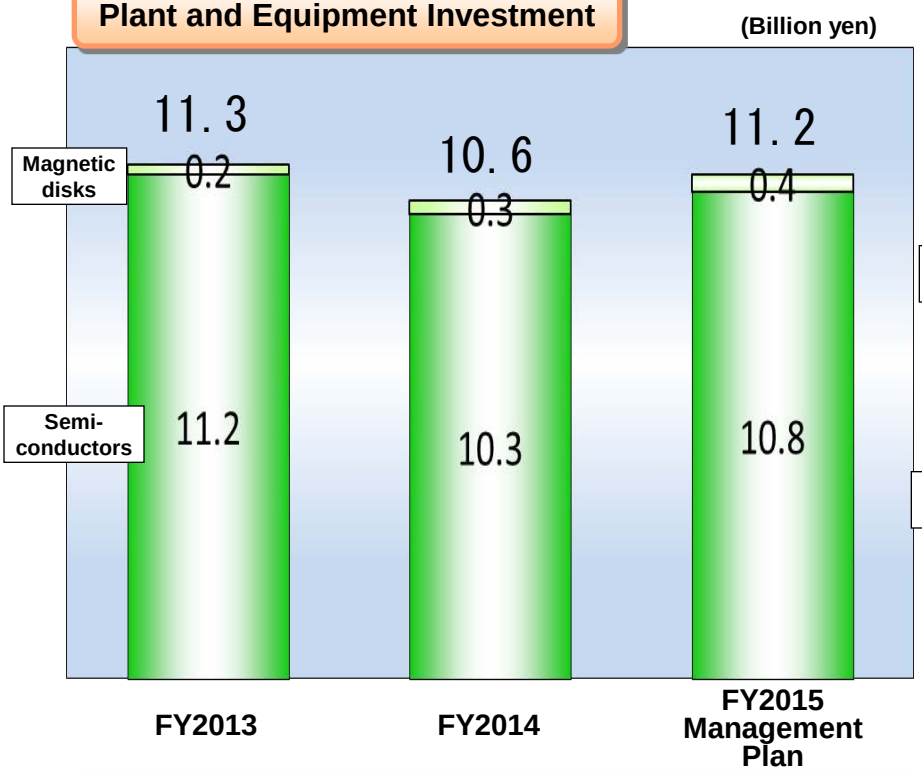
Plant and Equipment Investment R&D

Electronic Devices Plant and Equipment Investment / R&D

Fuji Electric
Innovating Energy Technology

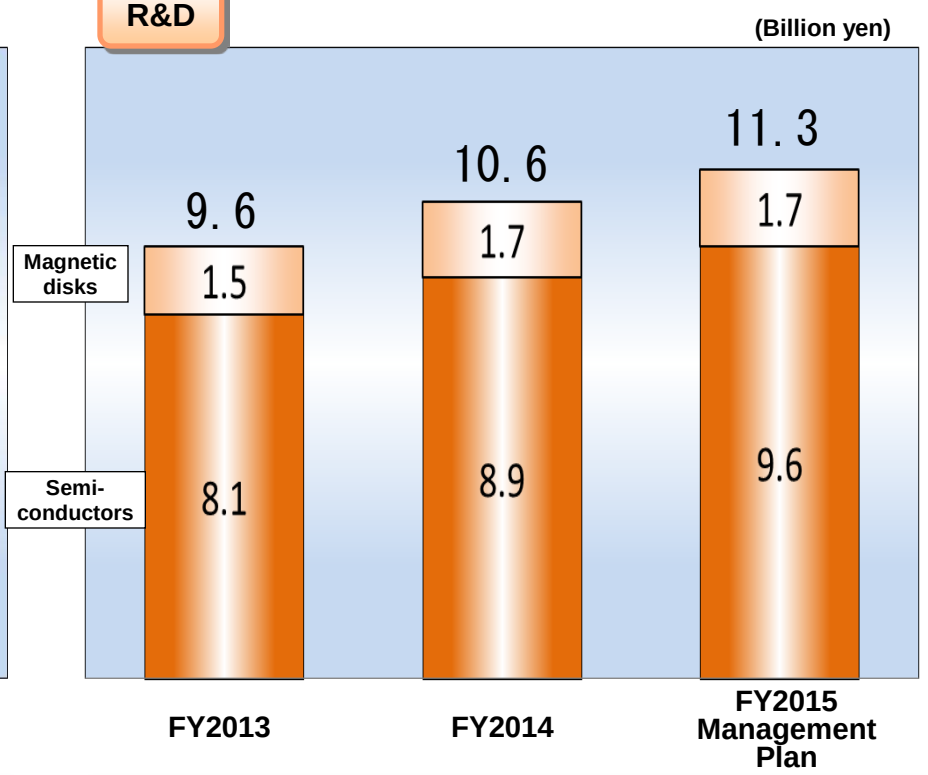
- Plant and Equipment Investment: Shift focus from capacity expansion to R&D investment for new products and next-generation products
- R&D: Accelerate development of next-generation products (SiC / 7th generation IGBTs) and new products

Plant and Equipment Investment



Major themes in FY2015:
- Construction of semiconductor development center (Matsumoto)
- Installation of facilities for developing next-generation semiconductors
- Introduction of facilities for increasing production of automotive pressure sensors

R&D



Major themes in FY2015:
- Development of 7th generation IGBT modules
- Development of SiC modules for power electronics
- Joint-development of next-generation magnetic disk products with customers

* R&D expenditures are attributed to segments based on theme. Accordingly, figures above differ from these described in Consolidated Financial Report for the fiscal year ended March 31, 2015.
* The R&D expenditure figure for FY2013 has been restated to reflect business division changes conducted in FY2014.

Disclaimer

Fuji Electric
Innovating Energy Technology

1. Statements made in this documents or in the presentation to which they pertain regarding estimates or projections are forward-looking statements based on the company's judgments and assumptions in light of information currently available. Actual results may differ materially from those projected as a result of uncertainties inherent in such judgments and assumptions, as well as changes in business operations or other internal or external conditions. Accordingly, the company gives no guarantee regarding the reliability of any information contained in these forward-looking statements.

2. These documents are for information purpose only, and do not constitute an inducement by the company to make investments.

3. Unauthorized reproduction of these documents, in part or in whole, is prohibited.