



# 2016/3 1H Presentation

Note: This document is a translation of the 2016/3 1H Presentation written in Japanese. In the event of any discrepancies in words, accounts, figures, or the like between this report and the original, the original Japanese version shall govern.



# AGENDA

## ■ Financial Results of 2016/3 1H

Financial Results of 2016/3 1H  
Factors for Sales Change in the 1H  
YOY Comparison of OP in the 1H

## ■ Plan of 2016/3

Revised Plan of 2016/3  
Factors for Sales Change in 2016/3  
Expectations for 2016/3  
YOY Comparison of OP in 2016/3

## ■ ROHM's Strategy

## ■ CAPEX Plan

## ■ Return to Shareholders

## ■ ICs Business Strategy

## ■ Discrete Semiconductor Devices • Modules Business Strategy



# Financial Results of 2016/3 1H (YOY)

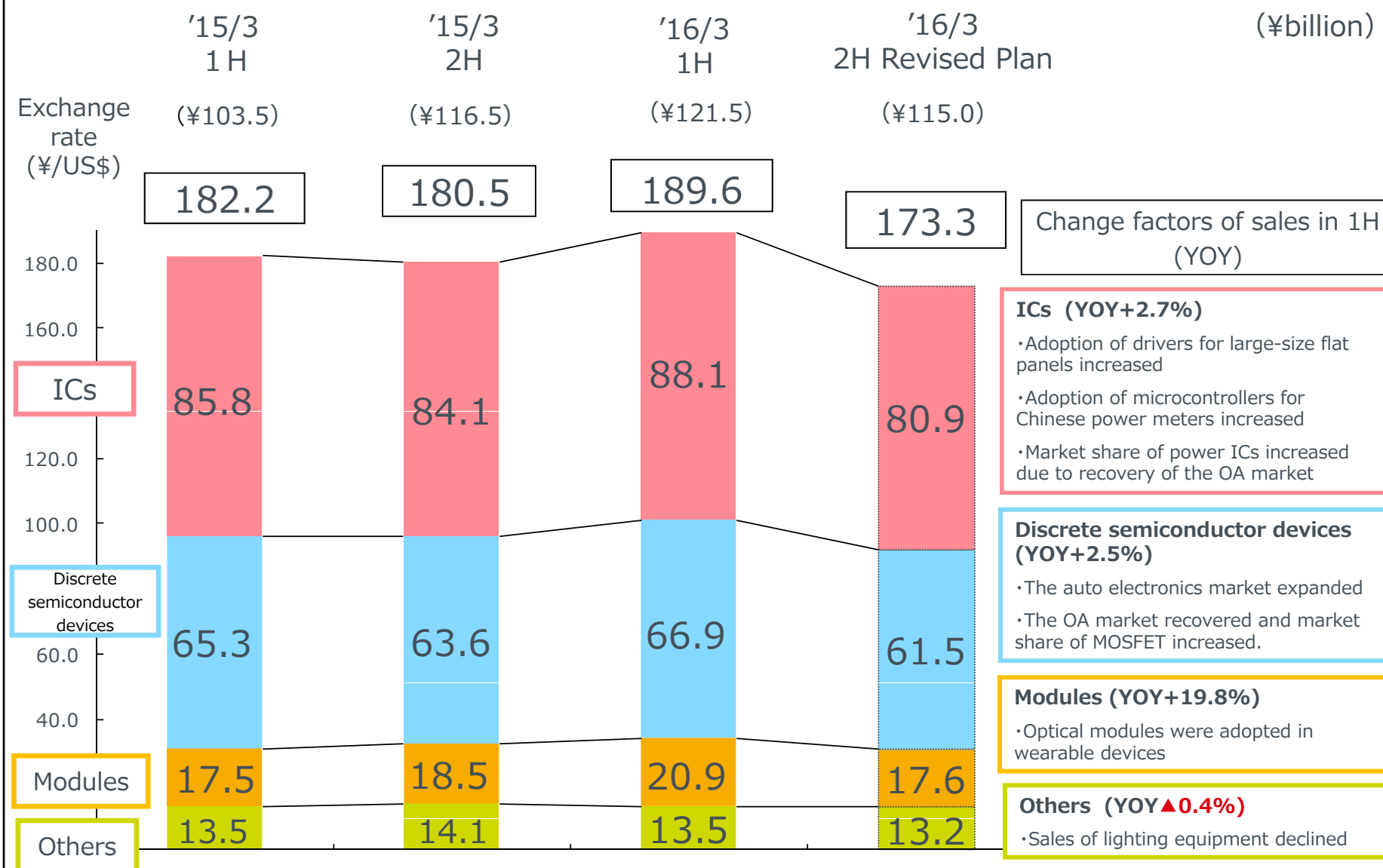
( ¥ billion)

	'16/3 1H	'15/3 1H	Change from the previous year	
			Amount	Percentage
<b>Net Sales</b>	<b>189.6</b>	<b>182.2</b>	<b>+7.4</b>	<b>+4.0%</b>
<b>Operating income</b>	<b>23.4</b>	<b>21.2</b>	<b>+2.2</b>	<b>+10.3%</b>
(Ratio)	(12.4%)	(11.7%)	—	—
<b>Ordinary income</b>	<b>32.6</b>	<b>28.4</b>	<b>+4.1</b>	<b>+14.7%</b>
(Ratio)	(17.2%)	(15.6%)	—	—
<b>Net income(※)</b>	<b>26.1</b>	<b>21.5</b>	<b>+4.6</b>	<b>+21.7%</b>
(Ratio)	(13.8%)	(11.8%)	—	—
<b>EBITDA</b>	<b>41.5</b>	<b>36.0</b>	<b>+5.5</b>	<b>+15.5%</b>
(Ratio)	(21.9%)	(19.8%)	—	—

Average rate (¥/US\$) (121.5) (103.5)

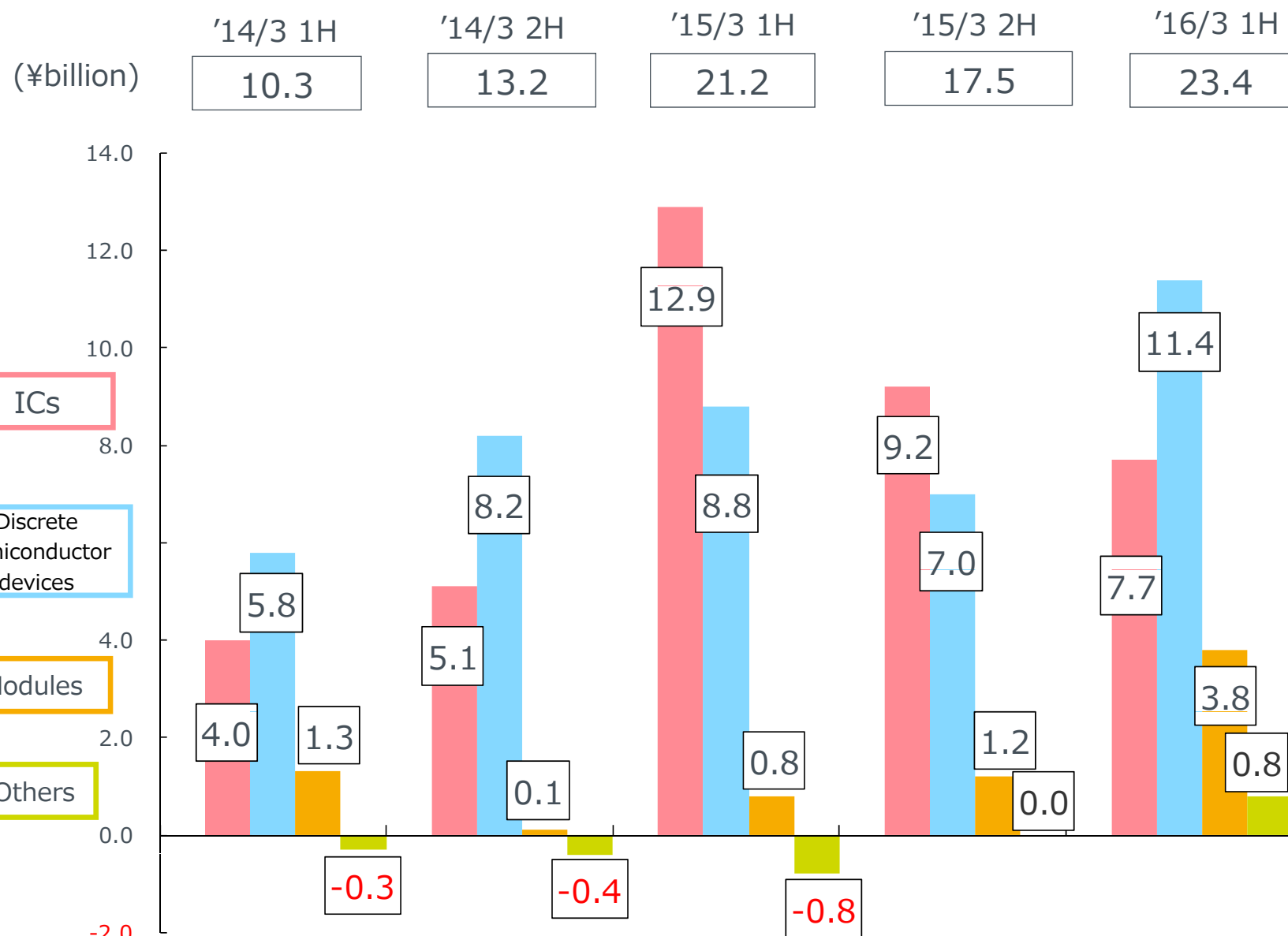


# Sales by Segments (HOH)





# Trend of Profits by Segments





# Revised Plan of 2016/3 (YOY)

( ¥ billion)

	'16/3 Revised plan	'15/3	Change from the previous year	
			Amount	Percentage
<b>Net Sales</b>	<b>363.0</b>	<b>362.7</b>	<b>+0.2</b>	<b>+0.1%</b>
<b>Operating income</b>	<b>34.0</b>	<b>38.8</b>	<b>▲4.8</b>	<b>▲12.4%</b>
(Ratio)	(9.4%)	(10.7%)	—	—
<b>Ordinary income</b>	<b>40.0</b>	<b>59.2</b>	<b>▲19.2</b>	<b>▲32.5%</b>
(Ratio)	(11.0%)	(16.3%)	—	—
<b>Net income(※)</b>	<b>31.0</b>	<b>45.2</b>	<b>▲14.2</b>	<b>▲31.6%</b>
(Ratio)	(8.5%)	(12.5%)	—	—
<b>EBITDA</b>	<b>74.8</b>	<b>73.2</b>	<b>+1.5</b>	<b>+2.1%</b>
(Ratio)	(20.6%)	(20.2%)	—	—

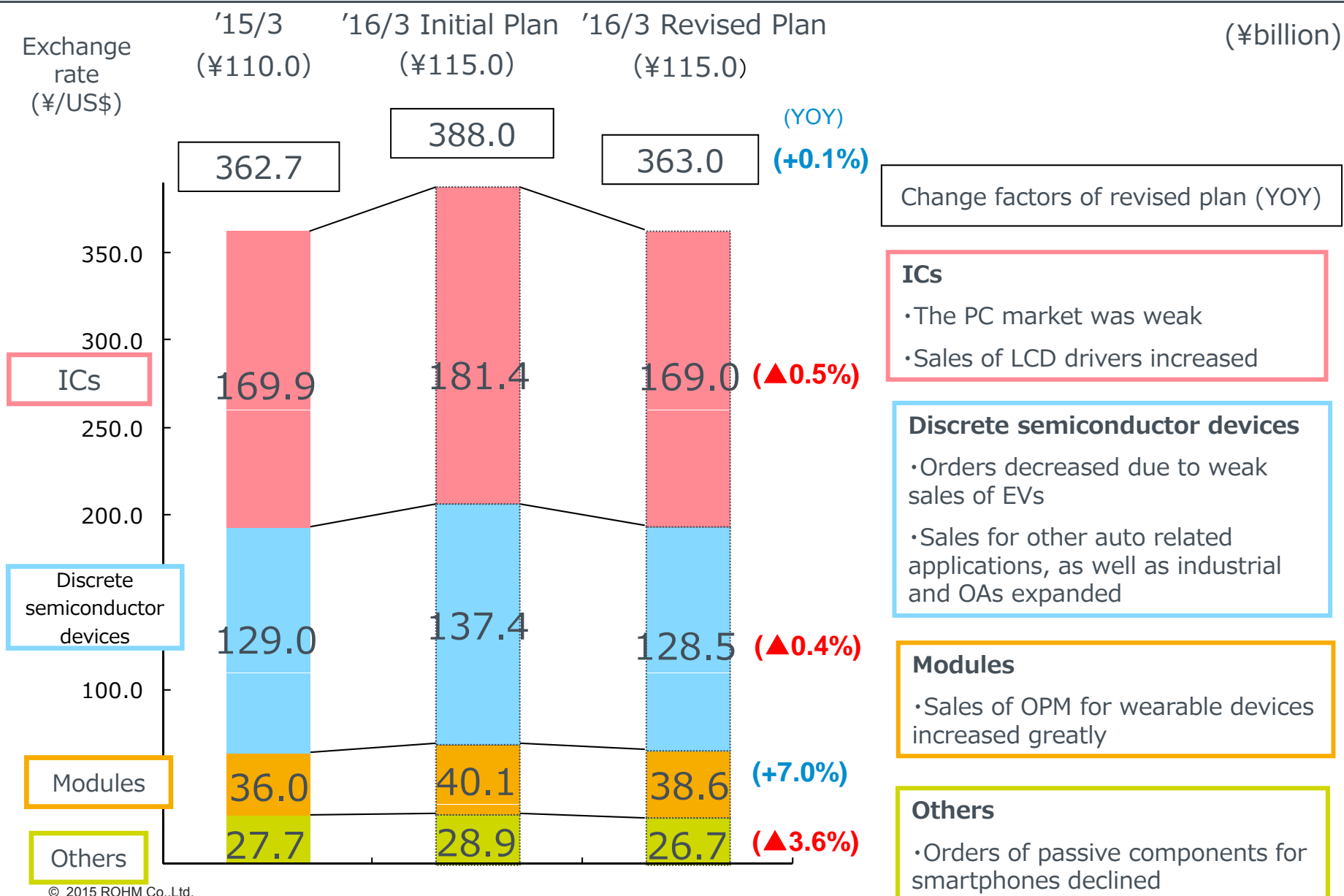
Average rate (¥/US\$)

2H: 115.0

(110.0)



# Plan of Sales by Segments





# ROHM's Strategy

## 1. Market Reform

- Focusing on the auto market
- Cultivating the industrial market
- Increasing sales ratio of overseas customers

## 2. Product Reform

- Aiming to be the world's No.1 in analog power
- Focusing on the 4 growth engines
- Becoming a significant player in the IT field by microminiature devices

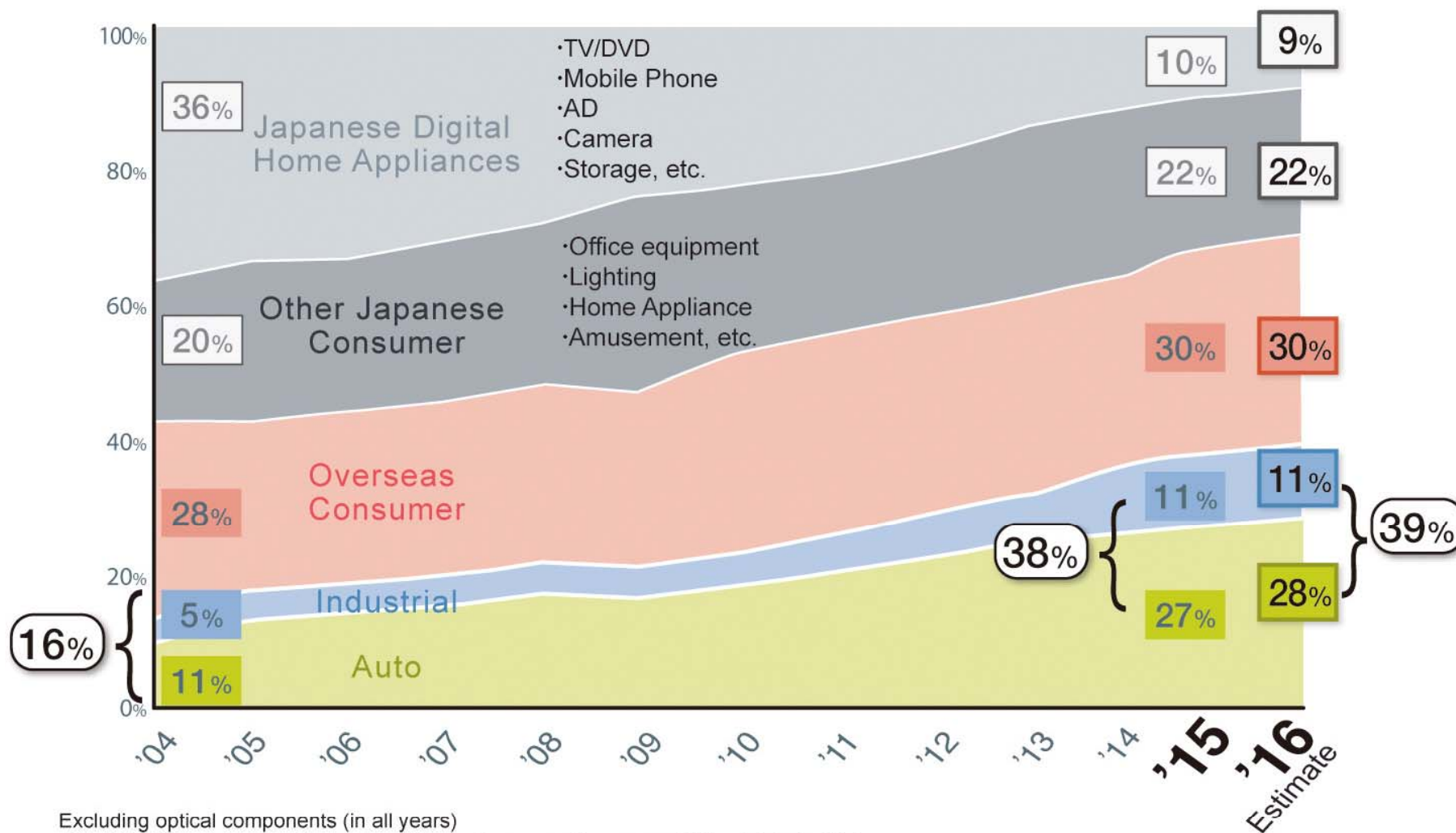
## 3. Production Reform

- Aiming for World's No.1 Manufacturing Plant
  - Thoroughly enhancing RPS(Rohm Production System)
  - Investing to strengthen our mass production system for a larger supply



# ROHM's Strategy

## Trend of Sales Ratio by Market (2016/3 Estimate)



Excluding optical components (in all years)

AGLED: Other Japanese Consumer Kionix: Overseas Consumer SiCrystal: Industrial



# ROHM's Strategy Focusing on the Auto Market



## 1. Steady progress of development and adoption to applications for the near future

### Informatics

Connected car



### Power Device

IGBT

MOS

SiC

### Environment

HEV/EV



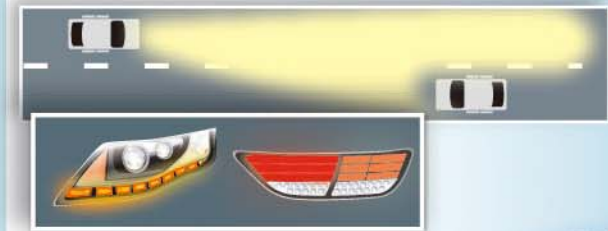
### Analog Power IC

Multiple driver IC

PMIC

### Safety

ADAS automatic operation



### Communication technology

LIN

CXPI



# ROHM's Strategy Cultivating the Industrial Market



## 1. Enhancing product lineup and establishing distribution channels

### Enhancing lineup for the FA market

Design-wins in industrial equipments are increasing



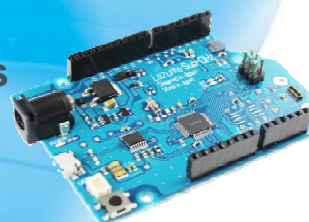
### Establishing distribution channels

Strengthening our online support and relationship with technology distributors



### Support to manufacturers

General purpose microcontroller board  
Lazulite series



### Focusing on IoT

Deploying sensors and wireless technology



**IoT**  
Sensor +  
Communication

Joining to establish global standards



CPS

IIC

Industry  
4.0

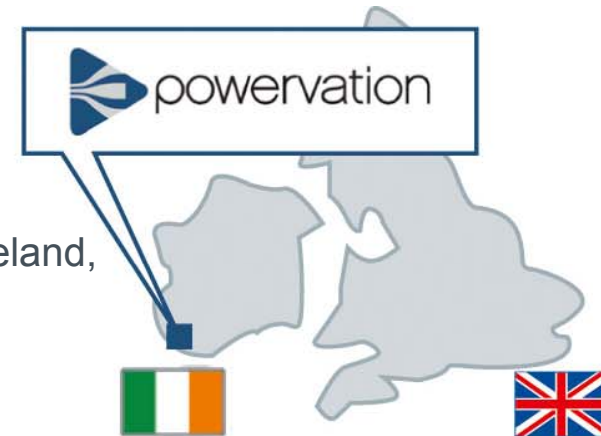


## 2. Adding new key technology (Digital power technology)

### ROHM POWERVATION Ltd.

(Acquired in Jul. 22th, 2015)

Fabless semiconductor company headquartered in Coak, Ireland, with facility in San Jose, U.S.A. (37 employees)



#### Technology of Powervation

##### Digital Power

Capable to monitor power operations on a real-time basis by software, and consistently maintain precise power outflow.

##### Target

Data centers  
Base stations

▶ Will expand in the industrial market

#### Expected Synergies with ROHM's Capability

- Continuous advancement of analog technology
- Utilization of the high-voltage BCD MOS process
- Establishing worldwide sales and technology support network
- Securing high quality and stable supply

**Providing optimal solution  
for our customers  
in the auto and industrial markets**



# ROHM's Strategy Increasing Overseas Customers



## 2. Ensuring larger supply with our newest cutting-edge plants

### ROHM Shiga

(Acquired Renesas Shiga plant)

Total floor area **15,886m<sup>2</sup>**

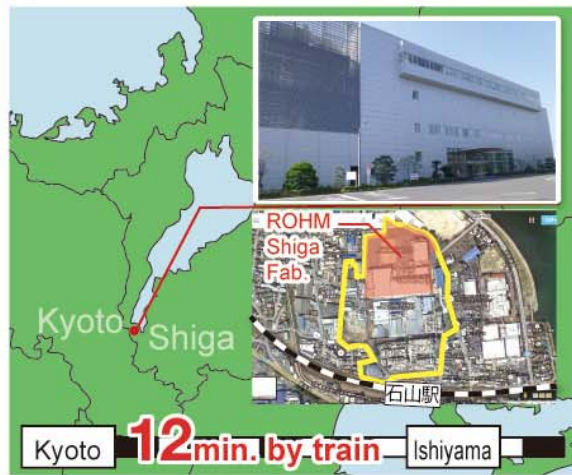
Wafer plant

Starting operation from

**Feb., 2016**

Power semiconductor  
IGBT/MOSFET

Piezoelectric MEMS



### RIST(Thailand)

Total floor area **28,800m<sup>2</sup>**

Assembly plant

Starting operation from

**Mar., 2016**

ICs × 1.4 times



### RWEM(Malaysia)

Total floor area **38,250m<sup>2</sup>**

Assembly plant

Starting operation from

**Autumn, 2016**

Diodes × 2 times





# CAPEX Plan

## Continuing to invest in new products and technology (Partly postponed capacity increase of current manufacturing lines)

### Wafer process

#### <Launch of ROHM Shiga>

- To become a major fab of IGBT
- To start production of piezoelectric MEMS

### Assembly process

- Building new plants in Thailand (ICs) and Malaysia (discrete semiconductor devices) and expanding capacity
- Renewing old equipment

#### ■ '16/3 CAPEX Plan

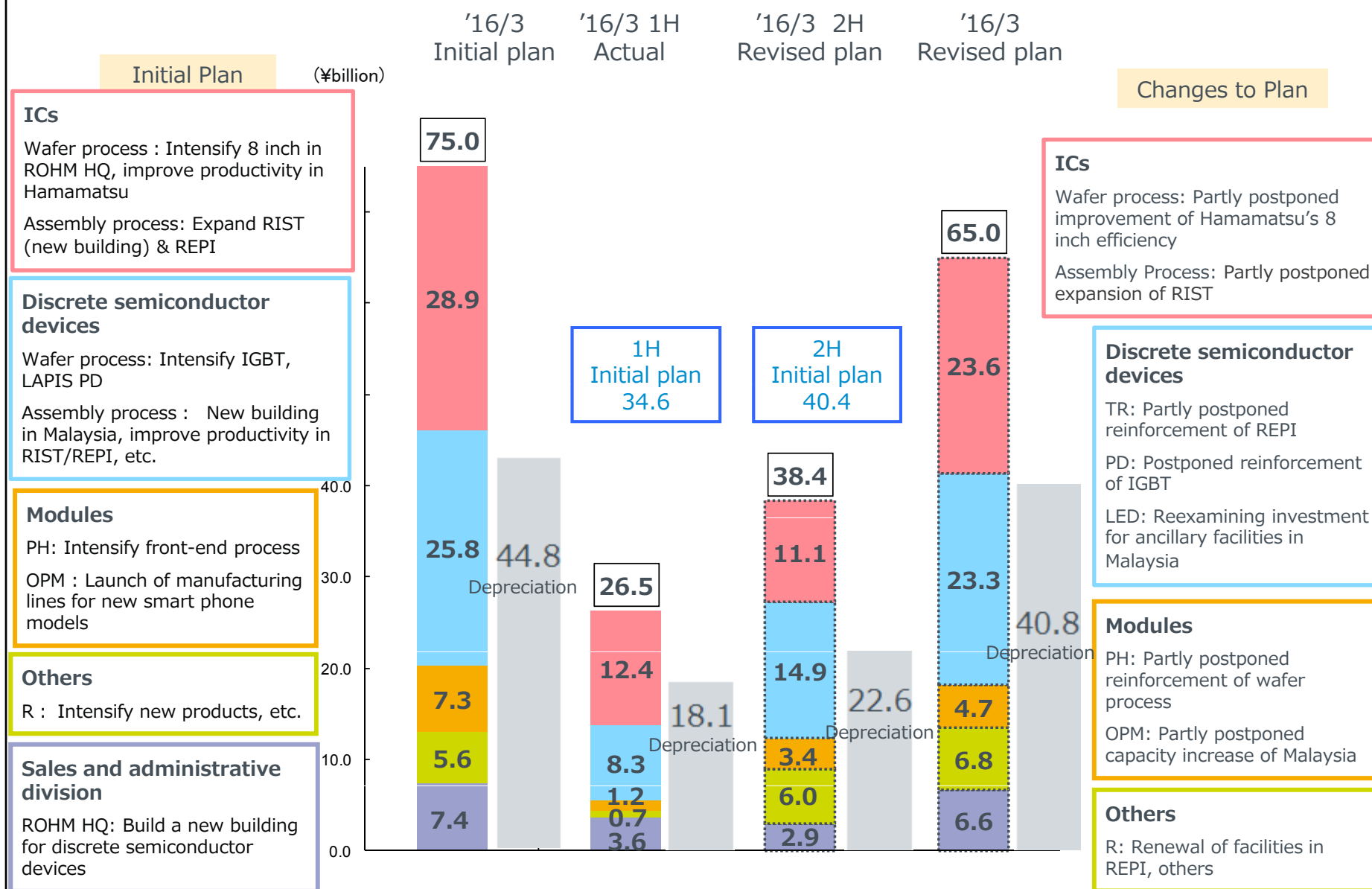
(¥billion)

	Total	Capacity increase	Land-building	New products	Quality	Others
Initial plan	<b>75.0</b>	33.3	16.0	11.4	7.9	6.4
Ratio	<b>100%</b>	44%	21%	15%	11%	9%
Revised plan	<b>65.0</b>	27.0	14.5	10.6	7.0	5.9
Ratio	<b>100%</b>	42%	22%	16%	11%	9%

Japan/ Overseas ratio	'15/3	'16/3 Initial plan	'16/3 Revised plan
Japan	25.4(52%)	43.5(58%)	37.0(57%)
Overseas	23.3(48%)	31.5(42%)	28.0(43%)
<b>Total</b>	<b>48.7(100%)</b>	<b>75.0(100%)</b>	<b>65.0(100%)</b>



# CAPEX

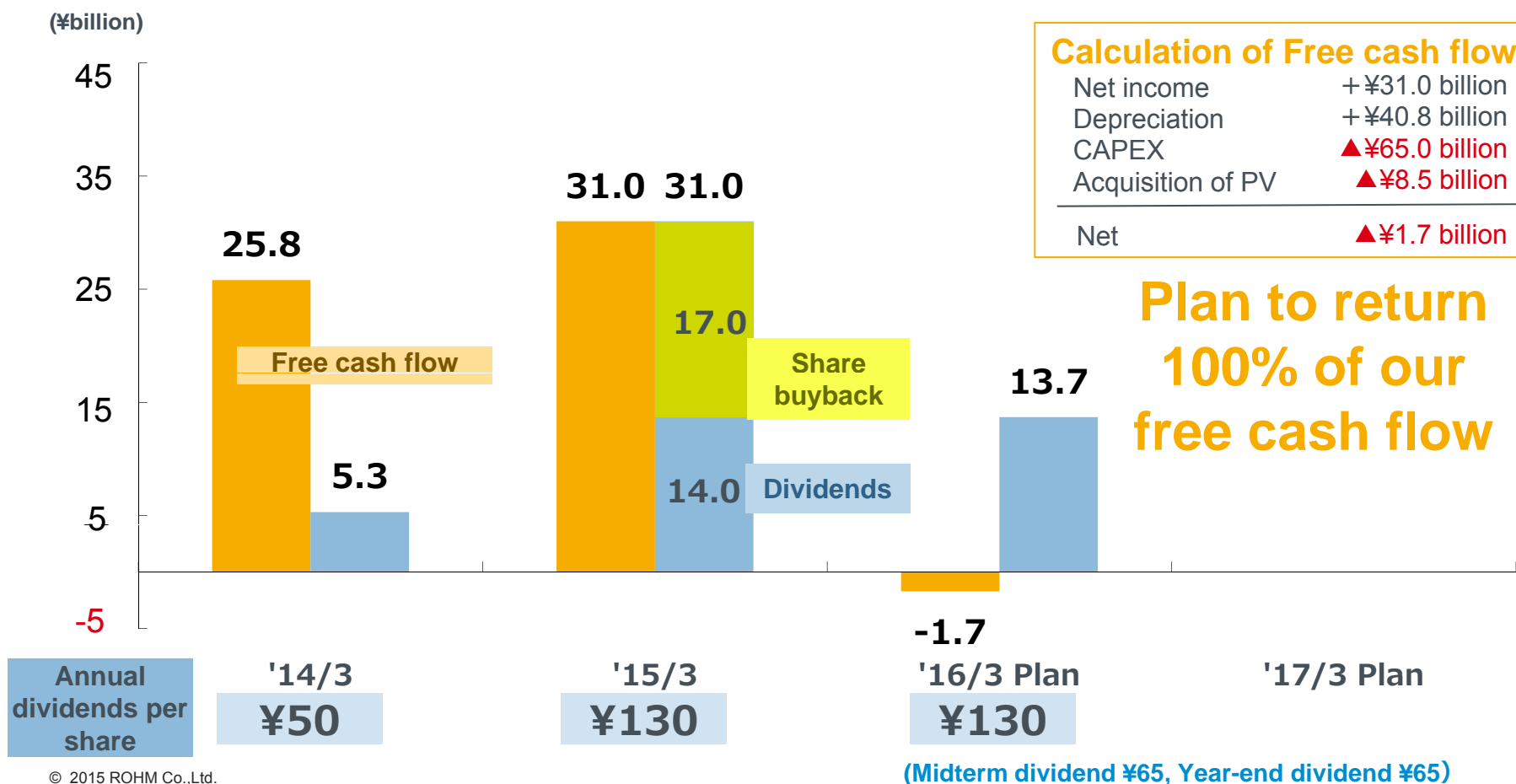




# Return to Shareholders

- ① Share buy-back (¥17 billion) completed. (Jul., 2015)
- ② 2016/3 annual dividend of ¥130/share planned.
- ③ We will strive to put an emphasis on shareholder returns by continuing to improve our performance.

Thus, we will return 100% of our free cash flow and maintain payout ratio of 30% or more.





# ICs Business Strategy

## ① Our major R&D themes

### Auto

Expanding our product lineup and supplying to power train and safety device by gaining customer's trust in the global market.

### Reference business

Enhancing product lineup and entering the auto and industrial market.

### Home appliance

Expanding market share of high-voltage motor drivers and power ICs in emerging countries.

### IoT

Entering the market with sensors and communication devices enabled by ROHM Group's synergy.

## ② Started mass production of BiCDMOS process 0.13μm analog ICs and large current IPD process.

IPD: 9 customers secured.

Ensuring high quality and performance of our products enabled by vertical integration to achieve competitive edge in the auto and industrial markets.

## ③ Aggressive investment and innovation in manufacturing lines for long term stable supply and higher quality.

= Reestablishing RPS for cost reduction and upgrading our products to match auto quality. =



# Progress of ICs Business for Auto

## Under development for mainly 2018 models

### Infotainment/Telematics

Acquired stable share in Japan and overseas

Power supply•LED driver for clusters  
Car audio•navigation system  
In-car network (Driver power supply for LIN)  
Back monitor camera system  
Direction•state control sensor  
Beamforming directional microphone  
Communication IC for panels  
Power IC for panels  
**Capacitive touch swift**  
Resistance touch switch



### Car Body

Adopted by Japanese and a few overseas manufacturers

HVAC (Air conditioners)  
Door•window control  
Keyless entry  
LED lamp control  
LED driver for headlamp  
Multiple interface IC

**Communication IC (LIN)**

**Communication IC (CXPI)**

Dot matrix driver  
Seat fan motor driver  
LED headlight cooling fan



### Power Train

Begun to be adopted by Japanese manufacturers

Engine control•control sensor  
Transmission  
Throttle control

**Communication IC (CAN)**

**HEV, EV, FCV**

Secondary battery control technology  
Motor•inverter technology  
Multiple interface IC  
Isolated gate driver

**Smart switch**

Temperature monitor



### Safety Device

Under mass production for Japanese manufacturers

Electric power steering (EPS)  
Suspension control  
Antiskid brake (Accelerometer•gyro sensor)  
ABS (Revolution control)  
Anti-slip control (Accelerometer)  
Tire pressure (Pressure sensor)  
Environment surveillance  
**Ultrasonic detecting sensor**  
Auto camera power supply





# ICs Business for Industrial

FA inverter・power conditioner・AC servo	Overall electric power tool and equipment for battery use	HEMS・Power meter	Infrastructure・control system, etc.	Medical devices
<div>Power</div> <p>Isolated gate driver</p> <p>Low Side IPD</p> <p>Fast response DCDC power supply</p> <p>MOS embedded ACDC</p> <p>Intensified isolated gate driver</p> <p><b>SiC drive ACDC controller</b></p> <p>Photocoupler-less isolated power supply</p> <p>High Side IPD</p> <p>Large current DCDC module</p> <div>Motor</div> <p>Shutoff valve motor driver</p> <p>H bridge motor driver</p> <div>Communication</div> <p>WiLAN module</p> <div>Others</div> <p>Resistance touch</p> <p>Clock-less link</p> 	<div>Power</div> <p>EDLC cell balance IC</p> <p>Li-Ion battery monitor</p> <p>High-voltage power supply</p> <p><b>80V resistant DCDC power supply</b></p> <p>MOS embedded ACDC</p> <p>Photocoupler-less isolated power supply</p> 	<div>Power</div> <p>Depressor DCDC power supply</p> <div>Communication</div> <p>HD-PLC Inside</p> <p>920 MHz wireless communication [LAPIS]</p> <p>WiSUN module</p> <div>Others</div> <p>Controller microcontroller [LAPIS]</p> <p>LCD segment driver</p> <p><b>Gas flow meter IC</b></p> 	<div>Power</div> <p>Atom E3800 PMIC</p> <p>FSL i.MX-6SL PMIC</p> <p><b>FSL i.MX 7D/L PMIC</b></p> <p><b>80V resistant DCDC power supply</b></p> <div>ROHM Powervation digital power supply</div> <div>Others</div> <p>Clock-less link</p> <p>LCD driver</p> <p>LCD timing controller</p> <p>Sensor control microcontroller</p> <p>Sensor control board</p> 	<div>Power</div> <p>AD converter</p> <p>Photocoupler-less isolated power supply</p> <div>Communication</div> <p>BT healthcare module</p> 



# Manufacturing Plant of the Next Generation Using IoT Technology



**Establishing a plant that will only produce non-defective products!**

## Under action

### ■ Automation of abnormal detection

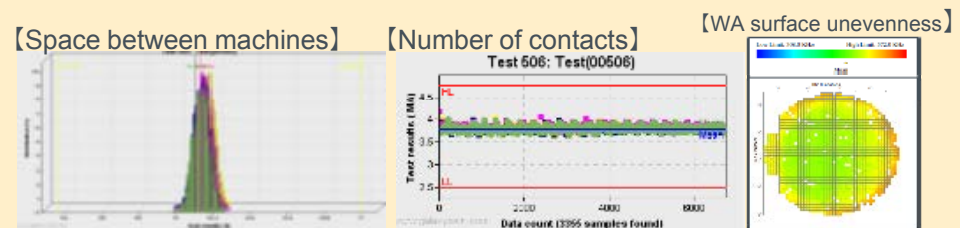
- Monitoring operation progress by online equipment
- Managing 4M※ and traceability by using IT tools such as tablet PCs
- Full guarantee of external appearance quality due to automatic detection equipment



## NEXT STEP

### ■ Preventive action by change-point detection

- Eradication of human errors by using automatic sensing technology
- Change-point detection by automatic monitoring SPC (ResQ) system
- Dispersion detection by automatic analyzing system of mass production observed data
- Managing Highly-efficient production and equipment operation by installing scheduler



**Installing in all manufacturing plants**



# Discrete Semiconductor Devices・Modules Business Strategy



## Market Reform

## Product Reform

Expanding sales by providing various product lineup matching market demand and ensuring stable supply for the auto, smartphone・wearable device markets.

### ①Auto Industrial

Enhancing development of power device products

- Cutting-edge SiC power device products
- R&D of SiC applications for the future

### ②Smartphone Wearable

Leading the world by ultra-small and high performance devices

- Enhancing product lineup of ROHM's world's smallest devices "RASMID" series
- Development of world's smallest and high performance devices

### ③IoT

Developing and deploying "Wi-SUN" small-size communication modules

## Production Reform

- Continuing to invest for stable supply and production efficiency
- Promoting RPS to thoroughly eliminate "wastes"



# Development of High-Performance Micro Devices

**Developed using innovative, breakthrough technologies aiming for "world's smallest and thinnest"**

ROHM's ultra-small components for mobile phones and wearable devices

## RASMID Series

**World's smallest\*  
chip resistors**

SMR0201

0.25×0.125mm  
t=0.08mm



**TVS diodes**

SMD0402

0.4×0.2mm  
t=0.12mm



## World's leading micro devices

**World's smallest\*  
transistors**

VML0604

0.6×0.4mm  
t=0.36mm



**Ultra-compact low  
profile chip LEDs  
(PICOLED Series)**



1.0×0.6mm  
t=0.2mm



**HMD package  
Multiple diode chips  
embedded in 1 chip**

HMD8  
(4 chips embedded)



1.6×0.8mm  
t=0.3mm



**World's smallest  
conductive polymer  
tantalum capacitors**

TCTO(U case)



1.0×0.5mm  
t=0.65mm



**World's smallest  
tantalum capacitors  
TCT(U case)**



1.0×0.5mm  
t=0.6mm



**World's smallest class  
image stabilization hall device**

RHS-0122 Series



1.2×0.5mm  
t=0.3mm



**Infrared LED embedded  
proximity•ambient light sensor**

RPR-0521 Series



3.94×2.36mm  
t=1.35mm



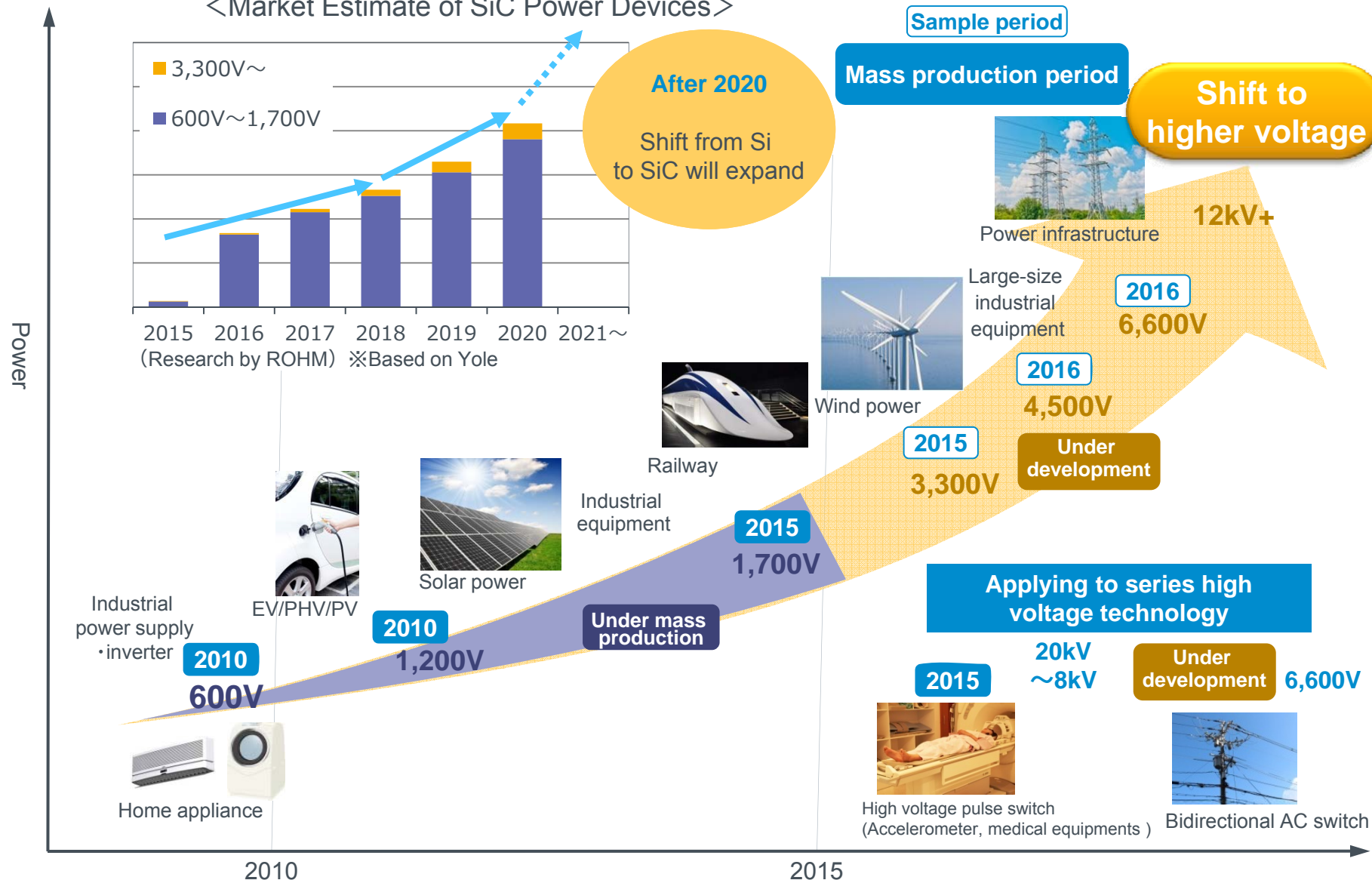
\* August 2015 ROHM Survey

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# Development of SiC Power Devices and Market

<Market Estimate of SiC Power Devices>





## Note Regarding Future Forecasts

The forecast statements in this report are based on information currently available and deemed by ROHM Group as reasonable, and therefore, are not intended to guarantee to be achieved by ROHM Group, and actual results may differ materially by various factors.

ROHM Group does not bear responsibility to update and disclose any future forecasts in this report.

Also, since the purpose of this report is to provide an outline of business performance, many figures are shown in unit of a billion yen, therefore, totals and differences of figures may appear inaccurate. Please refer to our Financial Report for detailed figures.



