



# Company Overview

**Power Electronics for  
Next "E" Stage**



June -12

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**SanKen Electric Co. Ltd.**



## Overview

**Sanken Electric Co. Ltd.**, a Japanese company who's business focus is on development, manufacture and sale of power electronic products.

Sanken operates in 4 strategic areas "**Automotive**", "**Motion Control**", "**AC/DC**" and "**DC/DC**". Sanken's business strategy is to focus on the "**eco-friendly / energy-saving**" and the "**green energy**" markets.

Sanken's business plan is to effectively utilize its technological expertise in power devices and power systems in order to offer its customers high-quality solutions that meet their diverse needs within all sectors that include **automotive, white goods, industrial equipment, IT/mobile, LED lighting, data centers** among others.

## Facts

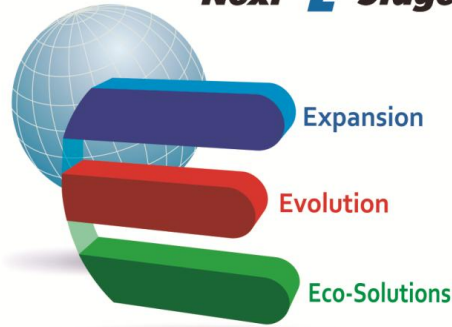
|                           |                               |
|---------------------------|-------------------------------|
| <b>Net Sales :</b>        | €1,209m                       |
| <b>Net Income :</b>       | €4.0m                         |
| <b>Capital :</b>          | €192m                         |
| <b>Employees :</b>        | 9,788                         |
| <b>Domestic Offices :</b> | 9                             |
| <b>Group Company :</b>    | 29                            |
| <b>Headquarters :</b>     | Niiza-shi, Saitama-ken, Japan |
| <b>President :</b>        | Sadatoshi Iijima              |

year to March 2012, 109 JPY/€

## History

|             |   |
|-------------|---|
| <b>1946</b> | Established on September 5, 1946.   |
| <b>1961</b> | Listed on the Tokyo Stock Exchange.   |
| <b>1973</b> | First overseas production started at Korea Sanken Electric.                                   |
| <b>1988</b> | First overseas sales and marketing subsidiary set up in Hong Kong.                            |
| <b>1989</b> | Sales rose above 100 billion yen.   |
| <b>1990</b> | Allegro MicroSystems, Inc. established in U.S.A.  |
| <b>2005</b> | Polar Semiconductor, Inc. established in U.S.A.<br>Sanken Optoproducts Co., Ltd. established. |

## Power Electronics for Next "E" Stage



## Company Profile

Sanken Electric Co., Ltd. began operations as a spin off from a research institute in 1946 conducting R&D activities in semiconductors. Technology gained through these activities was used to manufacture a growing line of power supply products and power semiconductor devices.

Having grown in tandem with the electronics industry Sanken Electric has forged a commanding presence as a manufacturer in the field of power electronics. This reputation enables Sanken to provide society with original and creative products as a power electronics innovator within the semiconductor and power management sectors.

## Company Operations

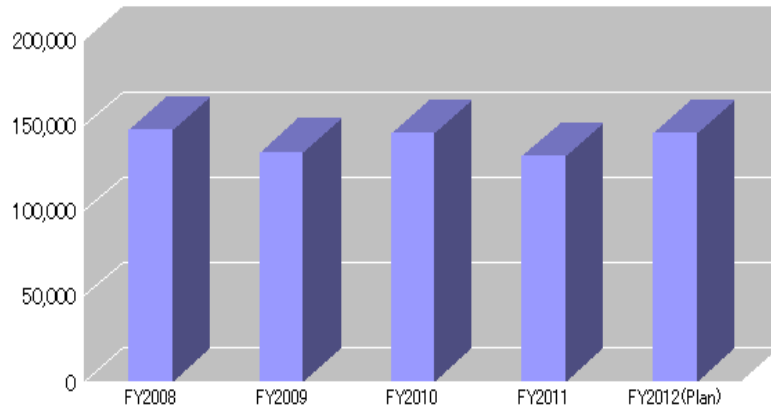
**Semiconductors** devices are our core business, with main products such as power IC's, transistors, diodes, and hall-effect sensors. Our Semiconductor devices are used in the power electronics circuitry of products for the Automotive, Home appliance, Audio-Visual, Office equipment and industrial markets. From establishing a three-way collaborative framework consisting of Sanken Electric, Allegro Microsystems and Polar Semiconductor and ramping up the pace of development, Sanken can offer clients products that better suit their specific needs.

**Power Modules** bring together our superior semiconductor and power supply technologies. This covers a wide range of products from switching mode power supplies found in computers and OA/FA equipment, power supplies for FPD-TV such as PDPs, AC adaptors for PC's to small uninterruptible power supplies (UPS). The consumer electronics market remains as our main focus even though the market has experienced a decline, Sanken is still advancing in development of ultra thin power supplies for FPD-TV to provide thin, small, lightweight and high efficiency products.

| <p><b>Semiconductor</b></p>                        |   |   |  |  |                  |            |               |     |              |     |               |     |      |    |
|--|---|---|--|--|------------------|------------|---------------|-----|--------------|-----|---------------|-----|------|----|
|  | <p><b>ICs</b><br/>TVs, home electric appliances,<br/>Automotive</p>   | <p><b>Diodes</b><br/>TVs, Automotive</p>            | <p><b>Transistors</b><br/>Home Appliances, Audio</p> | <p><b>Power LED</b><br/>Large Displays</p> |                  |            |               |     |              |     |               |     |      |    |
| <p><b>CCFL</b></p>                                 | <div style="display: flex; justify-content: space-between; align-items: center;"> <div data-bbox="436 458 710 639"> </div> <div data-bbox="1039 496 1769 539"> <p><b>Sales Composition</b> (As of March 31, 2012)</p> </div> </div> <div data-bbox="1122 586 1746 1196"> <table border="1"> <caption>Sales Composition Data</caption> <thead> <tr> <th>Product Category</th> <th>Percentage</th> </tr> </thead> <tbody> <tr> <td>Semiconductor</td> <td>72%</td> </tr> <tr> <td>Power Module</td> <td>14%</td> </tr> <tr> <td>Power Systems</td> <td>13%</td> </tr> <tr> <td>CCFL</td> <td>1%</td> </tr> </tbody> </table> </div> |   |  |  | Product Category | Percentage | Semiconductor | 72% | Power Module | 14% | Power Systems | 13% | CCFL | 1% |
| Product Category                                   | Percentage  |   |  |  |                  |            |               |     |              |     |               |     |      |    |
| Semiconductor                                      | 72%   |   |  |  |                  |            |               |     |              |     |               |     |      |    |
| Power Module                                       | 14%   |   |  |  |                  |            |               |     |              |     |               |     |      |    |
| Power Systems                                      | 13%   |   |  |  |                  |            |               |     |              |     |               |     |      |    |
| CCFL   | 1%  |   |  |  |                  |            |               |     |              |     |               |     |      |    |
| <p><b>Switching Mode Power Supplies (SMPS)</b></p> |   |   |  |  |                  |            |               |     |              |     |               |     |      |    |
|  | <p><b>SMPS</b><br/>PDPTVs, Office Equipments</p>  | <p><b>AC Adapters</b><br/>PCs</p>                   |  |  |                  |            |               |     |              |     |               |     |      |    |
| <p><b>Power Supply Equipment</b></p>               |   |   |  |  |                  |            |               |     |              |     |               |     |      |    |
|  | <p><b>UPSs</b><br/>Social Infrastructure</p>  | <p><b>VVVF Inverters</b><br/>Factory Equipments</p> |  |  |                  |            |               |     |              |     |               |     |      |    |

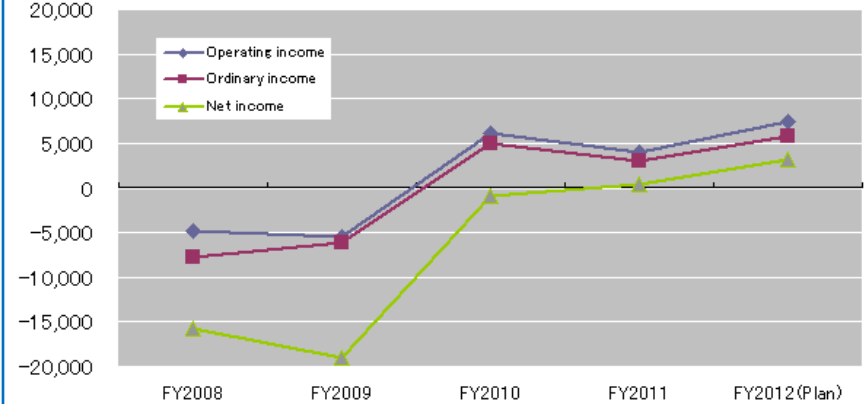
## Net sales

Unit: ¥million



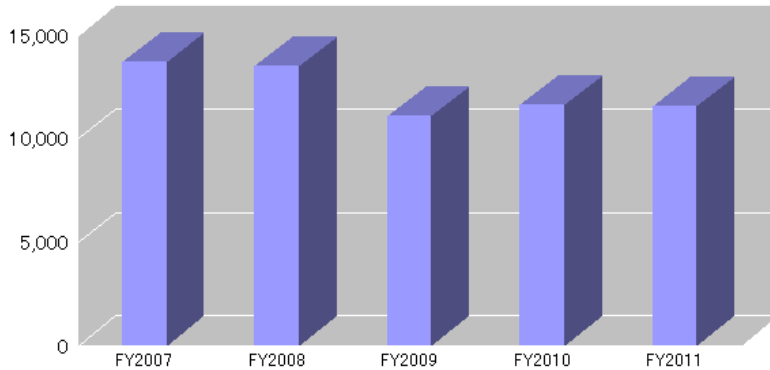
## Operating / Ordinary / Net income

Unit: ¥million



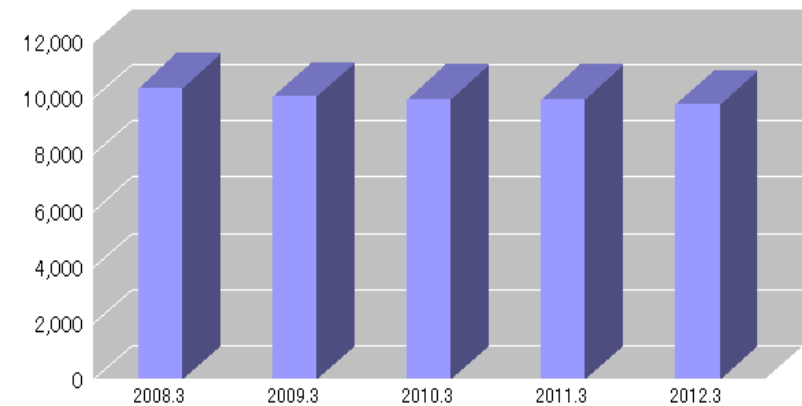
## Research and development expenses

Unit: ¥million



## Sanken Group associates

Associates







Total Employees: 9,788

## Automotive



## White Goods



## TV



## Office Automation



## Gaming



**BOSCH**  
Invented for life

**Panasonic**  
ideas for life

**Panasonic**  
ideas for life

**EPSON**



**DENSO**

**dyson**

**PHILIPS**  
sense and simplicity



**Valeo**

**powerbox**

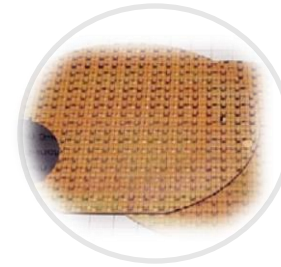
**SONY**

**SHARP**





Sanken is making full use of its core technologies, to develop “**next generation technologies**” and “**next generation products**” suitable for Green Market requirements. **Eco-Friendly** and **Energy-Saving** will be central to all development of next generation technology.



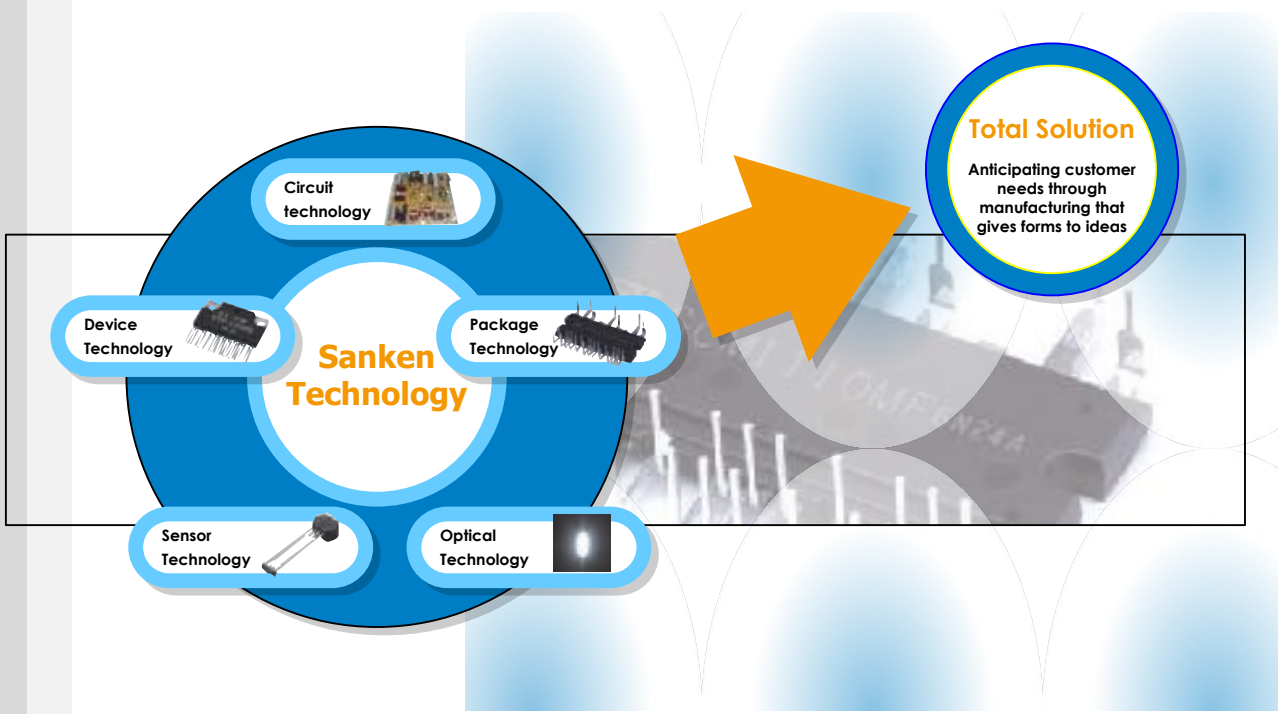
**GaN FET**  
With a Unique development of Silicon-substrate “normally off” – model gallium nitride. Low cost high voltage applications

**LED Power**  
SanKen's LED development utilises three core technologies - device, circuit and optics which are resulting in unique and practical total solutions.



**Solar Power**  
SanKen has been conducting R&D for Solar Energy and has already achieved results for large current bypass diodes and solar power generator systems.

**Wind Power**  
SanKen expects further expansion in other green energy fields such as wind power generation in the future and the SanKen Group intends to promote R&D from an increasing broader perspective.



## 1 Technological Capability

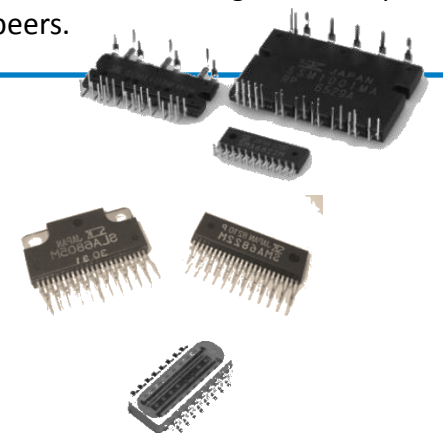
Our current business partners consist almost entirely of leading names from a spectrum of industries, including the home electronics, automotive, office equipment and telecoms sectors.

Companies that lead their industries obviously have extremely rigorous demands when it comes to quality, cost and delivery schedules. At Sanken, we take these requirements seriously, continuously striving to offer solutions to each of these issues and conducting R+D to deliver the products that our clients need.



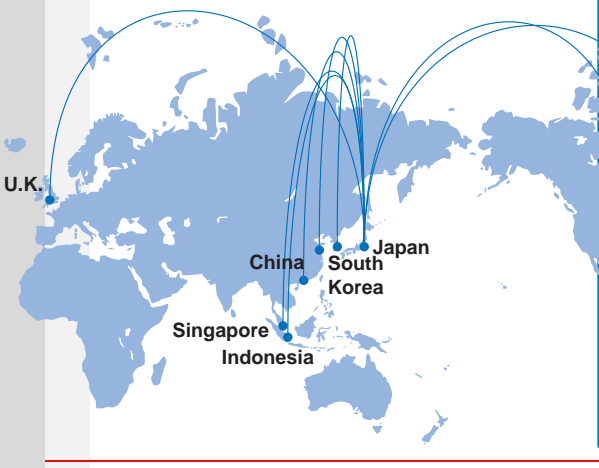
## 3 Modularization and assembly technology

Possessing advantages in terms of modularization and assembly technologies means the ability to provide comprehensive solutions in the truest sense. From the customers standpoint, this means they only have to consider input and output to the module and this is an enormous benefit to our customers. Our modular technology overcomes challenges inherent to power products i.e. large electric currents and high temperatures, which offers unquestionable value setting Sanken apart from its industry peers.



## 2 Global Diversity of R&D

Sanken is proud of its youthful and globally diverse R+D Team. Our engineers cover a large spectrum of areas and have the vitality to transform the impossible into reality. This is achieved by obtaining engineers with scientific curiosity from a variety of cultural backgrounds. Having R+D locations across the globe enables Sanken to gather and incorporate information on the latest technology trends on a broad, group-wide basis to offer Power Supply and Power Module solutions attuned to the specific needs of customers anywhere in the world.





# Sanken Power Systems (UK) Ltd.

**Power Electronics for  
Next "E" Stage**



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**Sanken Electric Co. Ltd.**

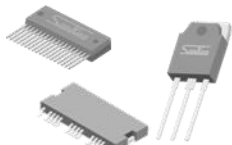
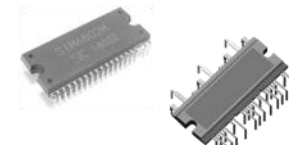
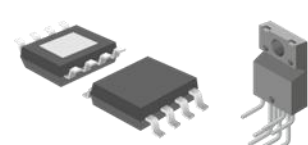

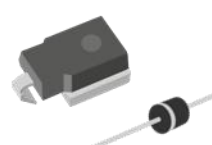
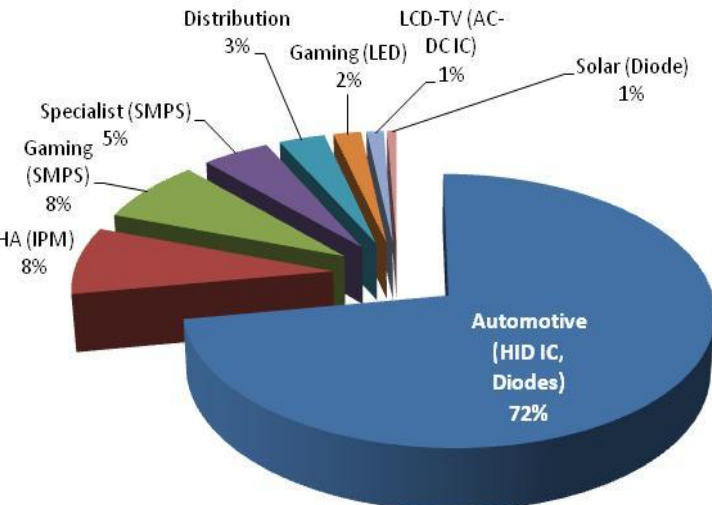






## Sanken European Technology Centre

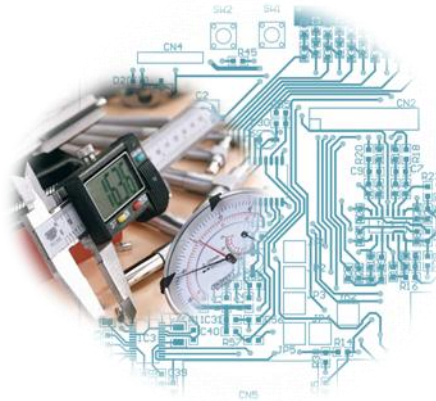
SPS is Sanken's European sales and technology centre, where SPS provides Sanken's latest products and technical support from its team of dedicated professionals.



### HISTORY :

- Oct '89** Established in Wales as joint venture company for power supply manufacturing
- Aug '92** Became 100% Sanken subsidiary.
- Jun '93** Moved to purpose-built manufacturing facility in Abercynon.
- Nov '95** Company name changed to Sanken Power Systems (UK) Ltd.
- Mar '05** Established Sanken European Technology Centre (SETeC).
- Apr '06** Obtained additional Sanken semiconductor sales resp from Allegro network, added FAE function.
- Jan '07** Moved to purpose built sales & technology facility in Pencoed.

|                           |  |  |  |  |
|---------------------------|--|--|--|--|
| Semiconductor             | <br><b>Automotive</b><br>Lighting & Ignition Systems      | <br><b>Motor Control</b><br>White Goods, & Ventilation | <br><b>Power Management</b><br>White Goods, & Ventilation |  |
|                           | <br><b>Lighting</b><br>Strips for Gaming and retail       | <br><b>Solar</b><br>Solar Bi-Pass Diodes               |   |  |
| Standard Power Supplies   | <br><b>HWB &amp; SWD</b><br>Medical, Marine & Motor Surge | <br><b>C Series</b><br>Flexible DC Modular Cells       |  |  |
| Specialist Power Supplies | <br><b>Gaming</b><br>Power Supplies & Converters        | <br><b>Server</b><br>Platinum & Titanium Efficiency  | <br><b>General</b><br>3 Stage Charger & 100W PSU's      | <br><b>Lighting Solutions</b><br>Backlighting & Decorative |



## Sales & Marketing

- Account Management
- Global Logistics
- European Sales Representatives
- Semiconductors
- Standard Power Supplies
- Custom Development's
- Lighting Solutions

## Technical Support

- Field Application Engineers
- Global Technical Support
- Electrical & Mechanical
- EMC & Safety
- Thermal & Optical Testing

## Design & Evaluation

- Field Application Engineers
- Power & Optical Specialists
- Mechanical & PCB Solutions
- Fast Prototype Design
- Benchmarking

## Manufacture Support

- High Speed Introduction
- Advanced Quality Planning
- Engineering Support
- Local Subcontractor Services
- Global High Volume Facilities
- Supply Chain Management

## Quality Management



### Certificate of Registration

QUALITY MANAGEMENT SYSTEM - ISO 9001:2008

This is to certify that:

**Sanken Power Systems (UK) Ltd**  
**Sanken European Technology Centre**  
 Pencoed Technology Park  
 Bridgend  
 CF35 5HY  
 United Kingdom

Holds Certificate No: **FM 25841**  
 and operates a Quality Management System which complies with the requirements of ISO 9001:2008 for the following scope:

The sales, logistics, manufacturing control and technical support for Sanken power modules and semi-conductor products.

For and on behalf of BSI:

Managing Director, BSI EMEA

Originally registered: **06/10/1993**

Latest Issue: **10/02/2010**

Expiry Date: **20/01/2013**



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## ISO 9001:2008 + ISO 14001:2004

Power Electronics for Next "E" Stage

## Environmental Management



### Certificate of Registration

ENVIRONMENTAL MANAGEMENT SYSTEM - ISO 14001:2004

This is to certify that:

**Sanken Power Systems (UK) Ltd**  
**Sanken European Technology Centre**  
 Pencoed Technology Park  
 Bridgend  
 CF35 5HY  
 United Kingdom

Holds Certificate No: **EMS 51517**  
 and operates an Environmental Management System which complies with the requirements of ISO 14001:2004 for the following scope:

The sales, logistics, manufacturing control and technical support for Sanken power modules and semi-conductor products.

For and on behalf of BSI:

Managing Director, BSI EMEA

Originally registered: **17/07/1999**

Latest Issue: **05/08/2010**

Expiry Date: **17/09/2013**



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## ISO 9001:2008 + ISO 14001:2004

Expansion / Evolution / Eco-Solutions