

SEMICONDUCTOR 2008

Fab Directory

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First Edition Published: August 2005
Second Edition Published: September 2006
Third Edition Published: September 2007
Fourth Edition Published: September 2008

ISBN: 1 905429 134

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Reed Electronics Research
Harvard House
Grove Technology Park
Wantage, Oxon OX12 9FF
United Kingdom

Tel: +44 (0) 1235 227310
Fax: +44 (0) 1235 227322
Website: www.rer.co.uk

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1 INTRODUCTION

The global semiconductor market was valued at around US\$256 billion in 2007 and accounted for around 16% of the overall electronics market. Although uncertainty exists following the fall out from the current turmoil in the global financial markets and the impact of high energy and raw material prices, the market is forecast to reach US\$308 billion by 2010 according to the latest figures from the World Semiconductor Trade Statistics (WSTS) organisation. There has also been a major shift in the market to the Asia Pacific as electronics production migrates to the region. By 2010 it is estimated that the Asia Pacific will account for 50% of the market, up from around 40% in 2004.

On the supply side investment in both new capacity and technology is being concentrated in fewer companies. The role of the foundry and subcontractor is becoming more important with an increasing number of companies moving towards the fabless business model.

This report has been compiled through a combination of desk and telephone research and provides a comprehensive and up to date listing of the major companies involved in the semiconductor industry. The report provides information on integrated device manufacturers, foundries, back-end subcontractors and the major fabless semiconductor companies. Companies have been listed alphabetically by head office with information on other locations included under the main heading.

ABOUT REED ELECTRONICS RESEARCH

Reed Electronics Research (RER), a part of the Reed Electronics Group, specialises in providing international business information research focusing on global electronics markets and designed to assist senior management, marketing and business development personnel, industry watchers and analysts in keeping abreast of changes, developments and other factors affecting their business.

RER information sources are designed for direct input to your business analysis, development and forecasting projects - whether ongoing or one-off - delivering the key data and focus for successful planning: market size and forecasts, production, industry structure, the key players, analysis of technologies and products.

RER's team of analysts and researchers have been involved in the electronics industry for over 25 years, founding in 1973 the respected industry benchmark to global electronics market and production statistics, the Yearbooks of World Electronics Data. Research is also carried out on specific sectors of the electronics industry with recent studies being published on optoelectronics, automotive electronics, passive components, contract assembly and mobile phones.

For further information please visit www.rer.co.uk

2 SURVEY OF SEMICONDUCTOR PRODUCTION FACILITIES

Company: **3S Photonics SA**

Address: Route de Villejust, F 91625 Nozay Cedex, France
Tel: +33 169 80 57 50
Fax: +33 169 80 58 83
Website: www.3sphotronics.com
President & CEO: A Krivine
COO & Vice President of Research & Development and Operations: D Sauvage
Vice President of Marketing: Y Bailly
Vice President Sales: M Privat
Area of Business: Custom Epitaxy foundry
Process Technology: GaAs; InP
Employees: 130+ (2008)

Company: **ACTEL CORPORATION**

Address: 2061 Stierlin Court, Mountain View, CA 94043 USA
Tel: +1 650 318 4200
Website: www.actel.com
President & CEO: J East
Senior Vice President: F Mubarak
Senior Vice President of Worldwide Sales: J Legenhausen
Senior Vice President Technology & Operations: Esmat Hamdy
Vice President Marketing and Business Development: R Kapusta
Vice President & General Manager Design Services: T Farinaro
Area of Business: Fabless semiconductor company
Principal Products: Field programmable gate arrays and associated design and development software and programming hardware
Manufacturing Agreements with CSM, Infineon, Matsushita, UMC and Winbond
Employees: 584 (2008)
Company Sales: US\$197 million (2007)

Company: **ADVANCED MICRO DEVICES**

Address: One AMD Place, PO Box 3453, Sunnyvale, CA 94088-3453, USA
Tel: +1 408 749 4000
Website: www.amd.com
Chairman & Chief Executive Officer: H de J Ruiz Ph.D
President and COO: D Meyer
Senior Vice President & Chief Marketing Officer: N Dessau
Area of Business: Component manufacturer - free market
Capabilities: Design, Wafer fab, Assembly, Test
Principal Products: Processors; Graphics; Chipset products
Group Employees: 16,420 (2007)
Group Sales: US\$6.0 billion (2007)

Wafer Fabs

AMD Saxony (Fab 38)

Address: Dresden, Germany
Sized Wafer Processed: 12-inch
Production Technology: 45 nm
Cleanroom Area: 263,000 sq ft
Capacity: 20,000 wpm
Note: Formerly Fab 30.

Fab 36

Dresden, Germany
Size of Wafer Processed: 12-inch
Production Technology: 65nm
Cleanroom: 150,000 sq ft

AMD Markham

Address: 1 Commerce Valley Drive East, Markham, Ontario L3T 7X6, Canada
Tel: +1 905 882 2600

Products: Graphic & Chipsets

Plant Area: 240,000 sq ft office & R&D plus a further 265,000 sq ft (5 facilities) including 65,000 sq ft manufacturing (prototypes) and warehousing. For chipset products the company has foundry agreements with TSMC, UMC and CSM. Assembly, test and packaging partners include ASE, Amkor, King Yuan Electronics, Silconware Precision and STATS ChipPAC. Board level products are outsourced to third parties including Celestica, Fairway and PC Partners.

Note: Formerly ATI Technologies which was acquired in October 2006

Principal Products: GaAs microwave products, Fibre optic products & lightwaves, wireless communication systems

Manufacturing Location

Yamanashi Plant

Address: 1000 Kamisukiawara, showa-cho, Nakakoma-gun, Yamanashi 409-3883, Japan

Tel: +81 55 275 4411

Fax: +81 55 275 9461

Eudyna Devices USA Inc (Sales)

Address: 2355 Zanker Rd, San Jose, CA 95131-1138, USA

Tel: +1 408 232 9500; Fax: +1 408 428 9111

Singapore Design Center

Address: 10 Toh Guan Road #05-01A T.T. International TradePark, Singapore

Tel: +65 6898-4312

Fax: +65 6898 4316

Area of Business: Design Centre

Parent Company: Fujitsu (50%)/Sumitomo Electric Industries (50%)

Note: Formerly Fujitsu Compound Semiconductor

Company: **EXAR CORPORATION**

Address: 48720 Kato Road, Fremont. CA 94538, USA

Tel: +1 510 668 7000

Website: www.exar.com

President & CEO: R Gregorian

CTO: G Apostol

Senior Vice President Operations: S Michael

Executive Vice President Business Development: T Melendrez

Vice President Worldwide Sales: B Long

Area of Business: Fabless semiconductor company

Capabilities: Design & Test

Process Technology: CMOS, bipolar, BiCMOS

Principal Products: High performance, high bandwidth physical interface, access control and clock solutions for the global communications infrastructure market

Plant Area: 151,000 sq ft

Net Sales: US\$89.7 million (March 2008)

Employees: 404 (March 2008)

Note: The company outsource all fabrication and assembly and the majority of its testing operations. In August 2007 Excar acquired Sipex Corporation and in February 2008 the intellectual property relating to digital predictive algorithms from Fyrestorm Inc

Company: **EXCELIGHT COMMUNICATIONS**

Address: 4021 Stirrup Creek Drive, Suite 200, Durham, NC 27703, USA

Tel: +1 919 361 1600

Fax: +1 919 361 1619

Website: www.excelight.com

President & CEO: Dr M Nishiguchi

Area of Business: Component manufacturer

Principal Products: Transceivers, Transmitters, Receivers, Lasers, Photodiodes, Passive components

Parent Company: Sumitomo Electric Industries Ltd, Japan

Company: **FAIRCHILD SEMICONDUCTOR CORP**

Address: 82 Running Hill Road, South Portland, ME 04106, USA

Tel: +1 207 775 8100

Website: www.fairchildsemi.com

President & CEO: Dr M Thomson

Executive Vice President of Worldwide Sales & Marketing: A Lam

Senior Vice President & General Manager Power Conversion, Industrial and Automotive Products Group: J Chiang

Senior Vice President & General Manger Standard Products Group: A Chu

Executive Vice President Global Operations: L Schmidt

Area of Business: Component manufacturer - Free market

Process Technology: CMOS, BiCMOS, BCDMOS, DMOS

Principal Products: Power semiconductors (analog power ICs, power transistors), Optoelectronics

Manufacturing Locations:

South Portland

Address: 333 Western Avenue, South Portland, ME 04106, USA

Tel: +1 207 775 8100

Fax: +1 207 761 6139

Size of Wafer Processed: 6-inch(0.35-0.5 micron) 8-inch (0.35micron)

Principal Products: DRAMs

Employees: 1,200

Micron Technology Puerto Rico Inc

Address: Camacey Industrial Park, Road #107 km. 0.6 Lot #5, Aguadilla, Puerto Rico 00603

Tel: +787 658 0300

Fax: +787 658 0400

Area of Business: Assembly of memory modules & test

Micron Semiconductor (Xi'an) Co Ltd

Address: Zone B, Shaanxi Xi'an Export Processing Zone, Xinxu Avenue, 710119 Xi'an, China

Tel: +86 29 6891 6666

Fax: +86 29 8888 0280

Area of Business: Semiconductor assembly and test

Principal Products: DRAM, NAND Flash memory, CMOS image sensors

Employees: 2,000

Note: Micron has a joint manufacturing joint venture Tech Semiconductor Singapore Pte Ltd (see entry) and in 2006 formed a joint venture with Photonics Inc – MP Mask Technology Centre to produce photomasks for next generation semiconductors. In June 2006 the Micron acquired Lexar Media Inc a designer and manufacturer of flash memory products and in December 2006 the company acquired the image sensor business of Avago Technologies

The company have a test facility in Nampa, Idaho, USA

Aptina Imaging

Address: 3080 North 1st Street, San Jose, CA 95134, USA

Tel: +1 408 660 2699

Website: www.aptna.com

CEO: N Braithwaite

Vice President Operations: J Mendiola

Vice President Sales: V Klein

Vice President Marketing: S Barna

Principal Products: CMOS Image Sensors, Image Processors/SOC

Note: Previously Micron's Image Sensor division. Now a wholly-owned subsidiary

Company: **MICRONAS SEMICONDUCTOR HOLDING AG**

Address: Technopark Technoparkstrasse 1, CH-8005 Zurich, Switzerland

Tel: +41 44 445 3960

Fax: +41 44 445 3961

Website: www.micronas.com

Group CEO: Dr W Kalsbach

Vice President Operations: N-V Kaeppler

Vice President Marketing: T Vehling

Manufacturing Locations:

Micronas GmbH

Address: Hans Bunte Str 19, D-79108 Freiburg, Germany

Tel: +49 761 517 0

Fax: +49 761 517 2174

Micronas Ltd

Address: 2, Sterling Rd, Southfield Industrial Estate, Glenrothes, Fife KY6 2ST Scotland

Process Technology: CMOS

Principal Products: ICs & sensors for consumer and automotive electronics

Sales: CHF 712.7 million (2007)

Employees: 2,100 (2007)

Company: **MICROPAC INDUSTRIES INC**

Address: 905 East Walnut, Garland, TX 75040, USA

Tel: +1 972 272 3571

Fax: +1 972 494 2281

Website: www.micropac.com

President & CEO: M King

International Sales: B Meier

Opto Division Manager: R Spitzer

Area of Business: Component manufacturer - Free market

Capabilities: Fully integrated facility

Size of Wafers Processed: 4-inch

Principal Products Manufactured: Optoelectronic devices, LEDs, Optocouplers, Voltage regulators, Solid state relays, DC-DC Converters, Custom hybrid microcircuits

Plant Area: 38,000 sq ft

Other Manufacturing Locations

Juarez, Mexico

Area of Business: Assembly & Test

Plant Manager: G Chavira

Plant Area: 33,000 sq m
Capabilities: 181 testers

Facility 4

Address: Changhua, Taiwan

Plant Area: 58,000 sq m

Capabilities: 803 wire bonders

Facility 5

Address: Suzhou, China

Plant Area: 74,000 sq m

Capabilities: 427 wire bonders, 22 testers

Sales: NT\$66.2 billion (2007)

Employees: 15,000 (2008)

Company: **SILTERRA MALAYSIA SDN BHD**

Address: Lot 8, Phase II, Kulim Hi-Tech Park, 0900 Kulim, Kedah Darul, Aman, Malaysia

Tel: +604 403 3888

Fax: +604 403 1675

Website: www.silterra.com

CEO: Eg Kah Yee

President & COO: Dr Tzu Yin Chiu

Vice President Worldwide Sales & Marketing: Lai Yit Loong

Area of Business: Wafer foundry

Technology: Advanced CMOS – logic, mixed signal, RF CMOS, High voltage modules

Size of Wafer Processed: 8-inch (40,000 per month)

Process Technology: 0.22 micron to 90 nm

Employees: Approx 600

Company: **SKYWORK SOLUTIONS INC**

Address: 20 Sylvan Road, Woburn, MA 01801, USA

Tel: +1 781 376 3000; Fax: +1 781 376 3100

Website: www.skyworksinc.com

President & CEO: D Aldrich

Vice President Worldwide Operations: B Freyman

Senior Vice President Sales & Marketing: L Griffin

Vice President Corporate Development: T Schiller

Area of Business: Component manufacturer - Free & captive market

Capabilities: Fully integrated facility

Size of Wafer Processed: 4-inch

Process Technology: GaAs (MESFET/PHEMT); 4-inch silicon (discretes) for switches, control devices, amplifiers

Principal Products: High performance analog and mixed signal for mobile communications applications.

Plant Area: 158,000 sq ft

Company Sales: US\$742 million (Sep 2007)

Employees: 3,400 approx (Sep 2007)

Manufacturing Facilities:

Address: 2427 Hillcrest Drive, Newbury Park, CA 91320, USA

Tel: + 1 805 480 4600

Capabilities: Fully integrated facility

Plant Area: 220,000 sq ft

Size of Wafer Processed: 4-inch GaAs (AlGaAs and InGap HBT) technologies

Skyworks Solutions SA de CV

Address: c/o A. F. Romero & Co, 1749 Stergios Rd, Calexico, CA 92231, USA

Tel: +1 949 231 3550

Capabilities: Assembly & Test

Plant Area: 330,000 sq ft

Principal Products: Modules, lead frame packages, BGA and Test

Company: **SOLITRON DEVICES INC**

Address: 3301 Electronics Way, West Palm Beach, FL 33407, USA

Tel: +1 561 848 4311; Fax: +1 561 863 5946

Website: www.solitrondevices.com

Area of Business: Discrete component manufacturer, design

Capabilities: Fully integrated facility

Process Technology: Discretes

Principal Products: Power transistors, Power rectifiers, Small signal FETs, Power MOSFETs, Power hybrids

Manufacturing Plant Area: 47,000 sq ft

Cleanroom Area: 30,000 sq ft

Sales: US\$7.76 million (Feb 2007)

Employees: 90

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