

Semikron



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This article **relies too much on references to primary sources**. (*August 2013*)

This article **contains content that is written like an advertisement**. (*August 2013*)

Semikron International GmbH

Type	GmbH
Founded	1951
Headquarters	Nuremberg, Germany <ul style="list-style-type: none">• Bernd Enser• Karl-Heinz Gaubatz
Key people	<ul style="list-style-type: none">• Matthias Greiner• Peter Sontheimer^[1]
Products	Semiconductor
Revenue	€478,000,000 ^[2] (2017)
Number of employees	3,200 ^[2] (2019)
Website	www.semikron.com

Semikron is a German-based independent manufacturer of [power semiconductor](#) components. The company was founded by in 1951 Dr. Friedrich Josef Martin in Nuremberg. In 2019, the company has a staff of more than 3,200 people in 25 subsidiaries (world-wide) with production sites in Germany, Brazil, China, France, India, Italy, Korea, Slovakia and the USA.

Semikron is a provider of [integrated circuits](#), discrete semiconductors, [transistor](#), [diode](#) and [thyristor](#) power modules, power assemblies and systems for markets such as industrial drives, wind and solar, hybrid and electric vehicles, the rail industry and power supplies. According to a survey carried out by BTM Consult ApS, the total wind power capacity installed until 2009 was 122 Gigawatt. Out of this, 57 Gigawatt comprises power semiconductors from Semikron.

In the field of diode/thyristor modules, Semikron is the market leader with a 30% share of the worldwide market.^[3]



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Products

Semikron's product range consists of 11,600 different power semiconductors from 1 kW to 10 MW, including chips, discrete diodes/thyristors, power modules ([IGBT](#) / [MOSFET](#) / diode / thyristor/CIB/IPM), driver and protection components and integrated subsystems.

Amongst other developments Semikron invented the world's first isolated power module, the Semipack, of which 56 million are presently in use.



SEMIKRON Elektronik GmbH Sigmundstraße 200 Nürnberg

Important innovations of the organization:

- 2010 SKAI 3 phase converter system up to 250 kVA

- 2009 SKiiP4 intelligent power module with 3600 A; for use in wind and traction applications
- 2008 MiniSKiiP IPM first intelligent power module for solder-free assembly
- 2008 SKYPER with fully digital signal processing
- 2007 SKiM 100% solder-free IGBT modules for hybrid vehicles
- 2007 Sinter Technology - reliable sintering replaces solder process
- 2006 SEMiSTART for soft-start devices
- 2005 SEMiX rectifiers with solder-free spring contacts for electrical connections
- 2004 SKYPER IGBT driver family
- 2003 SEMiX first flat IGBT half-bridge family from 250 to 900 A with solder-free spring contacts for electrical connections
- 2002 MiniSKiiP II 2nd generation of Converter-Inverter-Brake modules up to 30 kW
- 2001 Integrated converters for hybrid electric drives
- 2000 Low-power rectifiers: standard, fast and super-fast axial diodes, Schottky diodes, Zener diodes, press-fit diodes, low-level rectifier bridges and SMDs
- 1999 SKiM 6-Pack IGBT modules with driver electronics
- 1998 SEMITOP rectifier circuits with solder pins for [PCB](#) assembly
- 1996 MiniSKiiP first integrated IGBT rectifier circuits in solder-free spring contact technology
- 1996 Spring Technology - spring contacts allow for solder-free electrical connections
- 1995 ASICs optimise the electronic assemblies used to control MOSFET and IGBT modules
- 1992 Fast, soft freewheeling diode with best properties in the world (CAL-Diode)
- 1992 SKiiP, the first IPMs (Intelligent Power Modules) with integrated driver and SKiiP pressure contact technology 100-1200 A / 600-1200 V for high-power applications
- 1992 SKiiP Technology - pressure contact technology, no soldered copper base plate, fewer solder layers, extended service life
- 1987 SEMITRANS MOSFET modules for electric vehicles, high-frequency generators, inductive heating and lasers
- 1984 Bi-polar Darlington transistor modules SEMITRANS
- 1981 SEMIPACK modules with fast thyristors and diodes. Introduction of glass passivation and square chips
- 1976 Disc-type thyristors for DC drives and AC converters
- 1974 SEMIPACK, the world's first isolated thyristor/diode module, now an industrial standard in its 6th generation. Today, SEMIKRON is global market leader for diode/thyristor modules
- 1967 The first thyristors for variable-speed DC drives, 3-phase soft-start devices and 3-phase AC power controllers
- 1964 The world's first 1A plastic diode for direct PCB assembly for use in radios and TV sets
- 1963 The first encapsulated bridge rectifier, a revolutionary plastic bridge that established itself across the entire electronics industry
- 1961 Development of the first avalanche rectifier diode in the world
- 1959 First silicon diode made of silicon wafers. At this time, the power range of 2.5 - 300 A was an astonishingly high value

- 1954 Start of SEMIKRON semiconductor manufacturing: [selenium rectifier](#) plates and selenium surge voltage protective devices

Applications

Today^{[[when?](#)]}, 57 gigawatt wind capacity is powered by Semikron technology. 122 gigawatt (Source: BTM Consult ApS, 03/2008) is the total installed wind capacity since 1993. "Semikron inside" has become a trademark for new markets such as renewable energy sources and hybrid vehicles as well as industrial applications such as [electric drives](#), [welding machines](#), [lifts](#), power supplies, pumps, conveyor belts, [trains](#) and [trams](#).

Literature

- [Application Manual Power Semiconductors](#)^[4]

Sources

1.

- ["Legal notice"](#). Semikron. Retrieved 17 February 2019.
- ["SEMIKRON at a glance"](#). Semikron. Retrieved 17 February 2019.
- IMS Research "The global power semiconductor market 2010".

4. • Wintrich, Arendt; Nicolai, Ulrich; Tursky, Werner; Reimann, Tobias (2015). Semikron (ed.). [Application Manual Power Semiconductors](#) (2nd Revised ed.). ISLE Verlag. [ISBN 978-3-938843-83-3](#). Retrieved 17 February 2019.

External links

- www.semikron.com