Global Industry Leader

Vishay Intertechnology was founded in 1962 by Dr. Felix Zandman, with a loan from his cousin Alfred P. Sloan. The Company was named after Dr. Zandman’s ancestral village in Lithuania, in memory of family members who perished in the Holocaust. The Company’s initial product portfolio consisted of foil resistors and foil resistance strain gages. In 1985, having grown from a start-up into the world’s leading manufacturer of these products, the Company began a series of strategic acquisitions to become a broad-line manufacturer of electronic components. Today, Vishay Intertechnology is one of the world’s largest manufacturers of discrete semiconductors and passive electronic components.

As Vishay Intertechnology grew through innovations and acquisitions, its resistive foil technology products became non-core businesses. In 2010, Vishay Intertechnology spun off these non-core businesses into an independent company listed on the New York Stock Exchange: Vishay Precision Group (NYSE: VPG).

Diverse Markets

Vishay Intertechnology supports customers in virtually every major market sector. Vishay components are used every day in designs around the world, for applications in industrial, communications, transportation, consumer, medical, and defense products. Vishay has manufacturing plants in the Americas, Asia, Europe, and Israel, as well as sales offices worldwide. Its innovations in technology, successful acquisition strategy, superior product quality, and “one-stop shop” service to customers have made the Company a global industry leader.

Solutions for Growth

Vishay is very well positioned to provide components for new macroeconomic growth drivers such as connectivity, mobility, and sustainability. Through its R&D, engineering, quality programs, and sales initiatives, it generates a steady stream of innovative components to enable designers to create new generations of end products.

In tablets, smartphones, and wearables, Vishay components support power management, wireless connectivity, display interface, and touch screen controls, provide protection from the electrostatic discharge (ESD) that can cause component and system failure, and perform other functions. Vishay components are also found in wireless charging devices, mobile payment systems and other near-field communications systems, servers, network devices, base stations, solid-state drives, telematics systems, and other products and systems in our increasingly interconnected world.

In the area of mobility, to take just one example, Vishay components support a wide range of functions in electric power steering, including electromagnetic interference (EMI) filtering, quiescent current switch-off, three-phase motor switching, current sensing, and voltage division. Vishay components also are used in transmission control units, exhaust systems, start-stop systems, climate controls, braking and safety, lighting, infotainment, proximity and gesture recognition, and more. In hybrid vehicles, Vishay components are used in main inverters, high-voltage bus systems, and energy recuperation. Power capacitors, inductors, and high-power resistors are used to move high-speed trains, buses, intralogistic devices, aircraft, ships, and other carriers in modern infrastructure.

In the area of sustainability, Vishay components are used in the main inverters, power filters, and pitch and system controls of wind turbines. Components in wind turbine systems include high-power semiconductor modules, high-voltage MOSFETs, power ICs, diodes and rectifiers, optical isolators, shunt resistors, crowbar resistors, inductors, and power capacitors. Vishay components are used in solar panels and inverters, and for on-panel power conversion. They are used in smart meters and smart grids, power transmission and distribution systems, power grid quality stabilization, oil and gas exploration equipment, energy harvesting, and more.

MARKET AND TECHNOLOGY LEADER

Semiconductors
- Low-voltage power MOSFETs
- Power rectifiers
- Infrared components
- TVS avalanche breakdown diodes

Passive Components
- Thin film SMD resistors
- Power inductors and custom magnetics
- Wirewound and other power resistors
- Wet and conformal-coated tantalum capacitors
- Capacitors for power electronics
- Leaded film resistors

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Semiconductors
Vishay Intertechnology manufactures several kinds of discrete semiconductors. These typically perform a single function, such as switching, amplifying, rectifying, or transmitting electrical signals. Vishay Intertechnology also manufactures selected ICs, which combine the functions of multiple components on a single chip, as well as modules, which include multiple components in a single package.

Vishay Intertechnology’s semiconductors portfolio includes MOSFETs (low-voltage, medium-voltage, and high-voltage), ICs (both power and analog), a wide range of diodes and rectifiers, and many different types of optoelectronic products.

MOSFETs and ICs
Vishay Siliconix MOSFETs and ICs enable more efficient use of power and space, enabling improved designs wherever they are used — in smartphones, cloud computing, automobiles, medical equipment, consumer electronics, and many other applications. The Vishay Siliconix portfolio includes discrete power MOSFETs, power conversion ICs, analog switches, and power management ICs across a large range of voltages and in many different package types. Together they provide customers with the opportunity to optimize their designs with the right mix of integration, performance, and smaller form factors.

In the world of power semiconductors, advances in silicon and packaging technology are highly complementary, and Vishay Siliconix has been synonymous for decades with excellence in both. Since introducing the first TrenchFET® power MOSFET more than 20 years ago, Vishay Siliconix has produced generation after generation of innovative discrete devices, as well as power ICs that integrate multiple power management and control functions. Packaging inventions used in all Vishay Siliconix product lines have enabled ever higher levels of integration, power density, size optimization, and thermal capabilities that play a key role in the creation of more competitive, powerful, and efficient designs.

Optoelectronics
Vishay Intertechnology’s optoelectronics portfolio includes infrared receivers used in consumer electronics for remote control and in industrial applications for long-range sensing of objects; optocouplers and solid-state relays to optically isolate high-voltage sources from low-voltage control circuitry found in industrial applications like motor control loop feedback, control of valves, and solenoids, and to drive high-voltage IGBTs and MOSFETs; and infrared emitters for TV remote controls, automotive adaptive cruise control and heads-up-displays, smoke detectors, and a host of industrial applications. The optoelectronics product portfolio also includes reflective and transmissive optical sensors to determine the presence or proximity of objects and for encoding applications; phototransistors and PIN photodiodes to detect visible and infrared light; LEDs for a variety of automotive and industrial lighting applications; and infrared transceivers for wireless data transfer. Vishay’s growing portfolio of digital output sensors including ambient light sensors and gesture control sensors has been strengthened even further by the acquisition of Capella Microsystems.

Semiconductor Brands
Vishay General Semiconductor
Vishay Semiconductors
Vishay Siliconix

Diodes and Rectifiers
Diodes are used in a wide range of electronic systems to route, switch, and block radio frequency (RF) signals. Vishay Intertechnology diodes include all types of rectifiers; small-signal switching, Zener, and PIN diodes; as well as products for transient voltage suppression (TVS), electrostatic discharge (ESD) protection, and electromagnetic interference (EMI) filtering. Rectifiers convert alternating current (AC) into direct current (DC), a unidirectional current required for operation of many electronic systems. Vishay Intertechnology rectifiers, including patented TMBS® and FRED Pt® devices in low-profile eSMP® packages, save space, reduce power losses, and improve efficiency in automotive, industrial, telecommunications, computing, and other applications. TVS product lines include PAR® devices that offer 185 °C junction temperature performance and are targeted at automotive applications. The Vishay Intertechnology diodes and rectifiers portfolio also includes power modules, which integrate multiple electronic components. Vishay is a market and technology leader in power rectifiers and TVS avalanche breakdown diodes.
Resistors
Resistors are used in all electronic circuits to restrict current flow. Resistive products manufactured by Vishay Intertechnology include single (discrete) resistors based on thin film, thick film, metal electrode leadless face (MELF), metal oxide film, plastic film, carbon film, and wirewound technologies; Power Metal Strip® resistors; battery management shunts; fuses; and pyrotechnic initiators and igniters. Vishay Intertechnology manufactures resistor networks and arrays, in which multiple resistors are combined in a single package. The Company also manufactures non-linear resistors, which suppress voltage increases due to temperature and voltage changes, as well as variable resistors, including potentiometers, trimmers, sensors, and magnetic encoders. Vishay Intertechnology is a market and technology leader in many types of resistors.

Vishay Intertechnology innovations include industry-first Power Metal Strip® resistors for precision current monitoring of sensitive circuits, such as those in electric power meters, industrial systems, and automotive electronic controls for engines, transmissions, and pollution reduction systems. They are ideal for all types of current sensing, voltage division, and pulse applications. The Power Metal Strip family includes very high-power versions.

Other innovative resistive products include high-temperature-chip resistor arrays (with operating temperatures of up to 230 °C), water-cooled power resistors (with power ratings up to 2500 watts), thermal fuses for automotive applications, and miniature thick film resistors for hearing aids and high-frequency probe tips, to name just a few.

Capacitors
Capacitors are used in almost all electronic circuits to store energy and discharge it when needed. Applications include power conversion, DC-linking, frequency conversion, bypass, decoupling, and filtering.

Types of capacitors manufactured by Vishay Intertechnology include tantalum (both solid and wet), ceramic (both multilayer chip and disc), film, power, heavy-current, and aluminum electrolytic. Vishay Intertechnology capacitors range from tiny surface-mount devices for hearing aids and mobile devices to large heavy-current capacitors used in industrial applications. Vishay Intertechnology is a market and technology leader in wet tantalum and conformal-coated tantalum chip capacitors, as well as capacitors for power electronics. It is also one of the largest manufacturers of molded tantalum SMD capacitors.

Vishay Intertechnology innovations include metalized film power capacitors with the highest RMS current rating for their size in the industry, non-magnetic multilayer ceramic chip capacitors (MLCCs) optimized for use in MRI equipment and other end products, MICROTAN® tantalum capacitors with proprietary multi-array packaging (MAP) that provides a significant reduction in DC leakage and better stability, the industry’s first wet tantalum capacitors in true surface-mountable molded packages for mission-critical applications, ultra-stable QUAD HIFREQ MLCCs for RF applications, and more.
**Product Listing**

**SEMICONDUCTORS**

**MOSFETs Segment**
- Low-Voltage TrenchFET® Power MOSFETs
- Medium-Voltage Power MOSFETs
- High-Voltage Planar MOSFETs
- High-Voltage Super Junction MOSFETs
- Automotive-Grade MOSFETs

**ICs**
- Power Management and Power Control ICs
- Smart Load Switches
- Analog Switches and Multiplexers

**Diodes Segment**
- Schottky Rectifiers
- Ultrafast Recovery Rectifiers
- Standard and Fast Recovery Rectifiers
- High-Power Rectifiers/Diodes
- Bridge Rectifiers
- Small-Signal Diodes
- Schottky and Switching Diodes
- Zener Diodes
- Tuner/Capacitance Diodes
- Bandswitching Diodes
- RF PIN Diodes

**Protection Diodes**
- TVS Diodes or TRANSZORB® (unidirectional, bidirectional)
- ESD Protection Diodes (including arrays)

**Thyristors/SCRs**
- Phase-Control Thyristors
- Fast Thyristors

**Power Modules**
- Input Modules (diodes and thyristors)
- Output and Switching Modules (contain MOSFETs, IGBTs, and diodes)
- Custom Modules

**Optoelectronic Components Segment**
- Infrared Emitter and Detectors
- Optical Sensors
- Infrared Receivers
- Optocouplers
  - Phototransistor, Photodarlington
  - Linear
  - Phototriac
  - High-Speed
  - IGBT and MOSFET Driver
- Solid-State Relays
- LEDs and 7-Segment Displays
- Infrared Data Transceiver Modules
- Custom Products

**PASSIVE COMPONENTS**

**Resistors and Inductors Segment**
- Film Resistors
  - Metal Film Resistors
  - Thin Film Resistors
  - Thick Film Resistors
  - Power Thick Film Resistors
  - Metal Oxide Film Resistors
  - Carbon Film Resistors
  - Wirewound Resistors
  - Vitreous, Cemented, and Housed Resistors
  - Braking and Neutral Grounding Resistors
  - Custom Load Banks
  - Crowbar and Steel Blade Resistors
  - Power Metal Strip® Resistors
  - Battery Management Shunts
  - Thermo Fuses
  - Chip Fuses
  - Pyrotechnic Initiators/Igniters
- Variable Resistors
  - Cermet Variable Resistors
  - Wirewound Variable Resistors
  - Conductive Plastic Variable Resistors
  - Contactless Potentiometers
  - Hall Effect Position Sensors
  - Precision Magnetic Encoders
- Networks/Arrays
  - Non-Linear Resistors
  - NTC Thermistors
  - PTC Thermistors
  - Varistors
- Magnetics
  - Inductors
  - Wireless Charging Coils
  - Transformers
  - Connectors

**Capacitors Segment**
- Tantalum Capacitors
  - Molded Chip Tantalum Capacitors
  - Coated Chip Tantalum Capacitors
  - Solid Through-Hole Tantalum Capacitors
  - Wet Tantalum Capacitors
- Ceramic Capacitors
  - Multilayer Chip Capacitors
  - Disc Capacitors
- Film Capacitors
- Power Capacitors
- Heavy-Current Capacitors
- Aluminum Capacitors

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