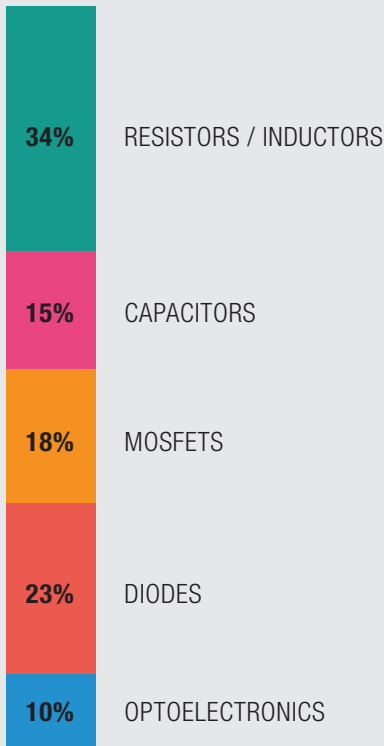


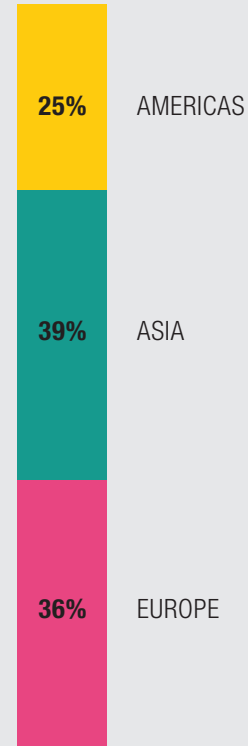


# 2018 SALES

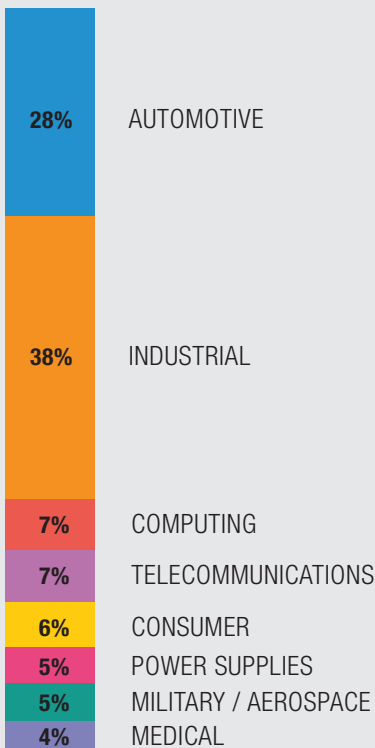
## SALES BY SEGMENT



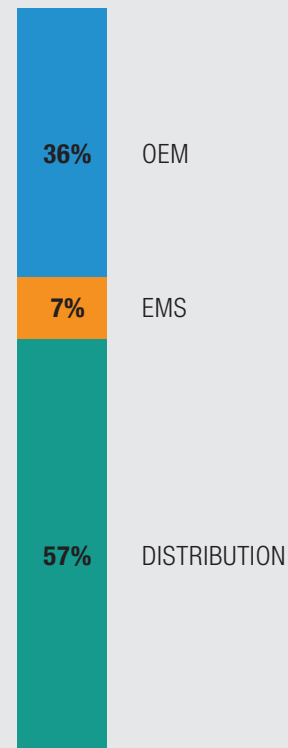
## SALES BY REGION



## SALES BY END MARKET



## SALES BY CHANNEL



# FROM THE EXECUTIVES



Executive Chairman of the Board  
**MARC ZANDMAN**

I am pleased to say that 2018 was a very good year for Vishay. Vishay continues to be a financially successful, solid, and predictable Company that is well positioned for continued long-term growth. Our proven ability to sell innovative products to growing and demand-driven market segments drives our strong cash flow generation and strong balance sheet.

In May 2018 Vishay increased its quarterly dividend by 26% compared to the previous quarter's dividend. This significant increase proved once again that the Company is committed to returning capital to our stockholders and showed confidence in the strength of our ongoing cash flows.

Vishay continues to grow through organic growth as well as acquisitions. We often target high-margin niche businesses that meet our criteria such as our 2018 acquisition, UltraSource. We continue to explore opportunistic acquisitions that fit the Company's business model and support our Growth Plan.

In November 2018 Vishay announced the appointment of Michael J. Cody to its Board of Directors. Mr. Cody had a distinguished career at Raytheon Company, where he served as Vice President of Corporate Development from 2009 to 2017. Michael brings to the Board extensive knowledge and experience in technology and defense businesses, as well as mergers and acquisitions. We are committed to a deliberate refreshment of the Board.

I remain very optimistic about Vishay, which has successfully navigated the sometimes calm and sometimes turbulent waters of the electronics industry since the Company's founding in 1962. As I take stock of all that the Company has achieved and will achieve, I look forward to continued success for Vishay.

I am grateful to all members of the Vishay family for their hard work and dedication and to our customers, vendors, strategic business partners, and shareholders for their unflinching support.



Chief Executive Officer  
**DR. GERALD PAUL**

I am happy to report that 2018 was a record year for Vishay in terms of revenue and the second highest ever in terms of profitability. As in the previous year, very high demand—in some cases extremely high demand—in all regions and in virtually all of our market segments drove this performance. Driven by increased sales volume, Vishay demonstrated the ability to leverage its business model. During 2018 we continued to be an excellent generator of “free cash” (the amount of cash generated from operations in excess of capital expenditures and net proceeds from the sale of assets). We generated \$84 million in “free cash” during 2018 despite having paid cash taxes of \$157 million related to the cash repatriation of \$724 million after taxes.

The year 2018 proved that Vishay's strategy of focusing on the automotive and industrial end markets, while not neglecting our other end markets, clearly has paid off. By keeping our fixed cost controls in place while further improving efficiencies, we were able to benefit from strong market conditions to the fullest extent possible. During 2018 Vishay again offset the negative impact of inflation on the contributive margin through cost reduction and innovation. Having substantially increased manufacturing capacities for our critical product lines, we feel prepared to face future challenges associated with our demand-driven and growing market segments.

In 2018 we reacted quickly to the opportunities created by U.S. tax reform. In the course of the year, we repatriated cash to the U.S. and further simplified Vishay's balance sheet by refinancing some of our debt. We reduced the principal amount of outstanding convertible debentures due 2040, 2041, and 2042 from \$575 million to \$37 million. Because of U.S. tax reform, these debt instruments had become less tax-efficient. Benefits included a lower effective tax rate for 2018, the avoidance of future effective tax rate increases due to the repurchased converts, and reduced equity dilution risks.

Regardless of how long the unusually strong market conditions that we enjoyed during 2018 last, we strongly believe in the long-term growth of our business. We are well positioned to benefit from growth in virtually all of our market segments.

I thank all of Vishay's employees, customers, vendors, strategic business partners, and stockholders for their continued faith in Vishay.

# THE COMPANY



## OUR HISTORY

Dr. Felix Zandman, with a loan from his cousin Alfred P. Slaner, founded Vishay in 1962 to develop and manufacture Bulk Metal® foil resistors. The Company was named after Dr. Zandman's ancestral village in Lithuania, in memory of family members who perished in the Holocaust. When Dr. Zandman passed away in 2011, he left a lasting legacy. His high standards, ethics, and values are embedded in Vishay's culture. They positively influence the business practices implemented by Vishay personnel across the globe every day.

During the 1960s and 1970s, Vishay became known as the world's leading manufacturer of foil resistors, PhotoStress® products, and strain gages. These products later became part of Vishay Precision Group (NYSE: VPG), which was spun off as an independent, publicly traded company in 2010.

## A GLOBAL INDUSTRY LEADER

Vishay passive components and semiconductors are used by virtually all major manufacturers of electronic products worldwide, in the industrial, power supply, automotive, military, aerospace, medical, computing, telecommunications, and consumer markets. They are found inside products and systems used every day, from automobiles to airplanes to power grids to phones to pacemakers. In addition, Vishay has demonstrated an ability to customize components to meet specific customer needs.

The world in which we live is built around innovative electronic technology. Macroeconomic growth drivers such as connectivity, mobility, and sustainability generate the need for components manufactured by Vishay.

Vishay's international footprint includes manufacturing plants in the Americas, Asia, Europe, and Israel, as well as sales offices worldwide. Vishay's technology innovations, acquisition strategy, focus on cost control, "one-stop shop" service to customers, and custom design capabilities have made it a global industry leader.

## ACQUISITIONS

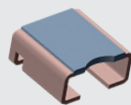
Vishay has made a number of strategic acquisitions over the years. These include Dale® Electronics, Draloric® Electronic, Sfernice, Sprague® Electric, Roederstein®, Vitramon®, BCcomponents® (including Beyschlag®), the Semiconductor Business Group of TEMIC® (Telefunken and Siliconix®), the infrared component business of Infineon Technologies, General Semiconductor®, selected product lines from International Rectifier®, Huntington Electric, HiRel Systems, MCB Industrie, Holy Stone Polytech, Capella Microsystems, and UltraSource®. Vishay continues to explore opportunities for targeted acquisitions that fit its business model.



# PASSIVE COMPONENTS

Passive components do not require an energy source to perform or control their intended functions and are not themselves sources of energy. They are used to store or dissipate electrical energy, limit or resist electrical current, and help in filtering, attenuating, energy storage, surge suppression, measurement, sensing, timing, and tuning applications. Passive components are the main building blocks of electronic circuits.

## RESISTORS



Resistors limit or regulate the flow of electrical current. They are used in almost all electronic equipment. Vishay manufactures a wide variety of resistive products, including single (discrete) resistors based on film, wirewound, Power Metal Strip®, and other technologies, as well as resistor networks and arrays, in which multiple resistors are combined in a single package. Vishay also manufactures battery management shunts, chip fuses, pyrotechnic initiators / igniters, variable resistors (including potentiometers), and non-linear resistors (including thermistors, which are used for current protection and temperature sensing). Vishay's resistor portfolio includes components with ultra high precision, very high stability, and high power.

## CAPACITORS



Capacitors store potential energy in an electric field and discharge it when needed. They are used in many electronic circuits to block direct current (DC) and allow alternating current (AC) to pass. Applications include power conversion, DC linking, frequency conversion, bypass, decoupling, and filtering, and serving as backup energy sources. Types of capacitors manufactured by Vishay include tantalum (solid, wet, and polymer), ceramic (both multilayer chip and disc), film, power, heavy current, and aluminum electrolytic capacitors, as well as hybrid energy storage capacitors and supercapacitors.

## INDUCTORS AND TRANSFORMERS



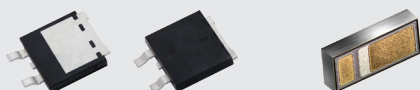
Inductors store energy in a magnetic field. They can be used to change AC phase, resist AC current, filter out unwanted electrical signals, and perform other functions. In AC electronic equipment, they are used to block AC and allow DC to pass. Vishay innovations include IHLP® power inductors, which outperform competing devices.

Transformers are made up of at least two inductors on a common core of magnetic material. They increase or decrease AC voltage or AC currents. Transformers are essential components in AC electrical energy transmission and distribution.

# SEMICONDUCTORS

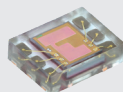
Semiconductors use silicon, germanium, gallium arsenide, gallium nitride, silicon carbide, and other semiconductor materials to perform functions including switching, amplifying, rectifying, and transmitting electrical signals. They can be either discrete components, sensors, or integrated circuits with up to several billion devices on a single chip. Semiconductors are sometimes referred to as active components because they require power to function, can control electron flow, and are able to inject power into a circuit.

## DIODES AND RECTIFIERS



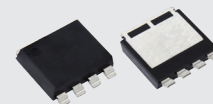
Diodes, used in electronics with a unidirectional flow of current, are employed in a wide range of electronic systems to route, regulate, and block radio frequency (RF), analog, and power signals and also to protect systems from surges or electrostatic discharge (ESD) damage, as well as provide electromagnetic interference (EMI) filtering. Rectifiers, which are composed of one or more diodes, are used to convert AC to DC, a unidirectional current required for operation of many power electronic systems. They are often found in DC power supplies and high-voltage power transmission systems. Everyday uses include changing the AC voltage from a wall outlet to a specific DC voltage for phone chargers.

## OPTOELECTRONICS



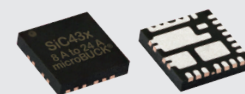
Optoelectronic components emit light, detect light, or do both. They can convert light into electricity or electrical signals, convert electricity or electrical signals into light, and perform other functions. Vishay is one of the world's largest manufacturers of infrared (IR) components. Its optoelectronics portfolio includes IR emitters; IR receivers; photo detectors; optical sensors; IR data transceiver modules for wireless, two-way data transfer; optocouplers and solid-state relays for circuit isolation; light emitting diodes (LEDs) for light sources; liquid crystal displays (LCDs); plasma displays; 7-segment displays; IR touch panels; and custom products.

## MOSFETs



Metal-oxide-semiconductor field-effect transistors (MOSFETs), frequently used to amplify or switch electronic signals by varying current, function as solid-state switches to control power. Unlike bipolar transistors, they need almost no input current to control load current. MOSFETs enable power conversion into levels required by other components. They are used as load switches to turn off specific functions or power supplies in devices such as smartphones when they are not in use, thereby extending battery life. Vishay offers low voltage TrenchFET® power MOSFETs, medium voltage power MOSFETs, high voltage planar MOSFETs, high voltage superjunction MOSFETs, and automotive grade MOSFETs.

## INTEGRATED CIRCUITS (ICs)



Integrated circuits (ICs) combine the functions of multiple semiconductors and passive components on a single chip. With their small size and low cost, they are used in most electronic devices and equipment. IC products from Vishay are focused on analog signal switching and routing, power conversion, power management, and integrated smart power solutions. They are used in end products such as tablets, notebooks, and desktop computers; game consoles; smartphones; industrial testing equipment; fixed telecommunications systems; automotive electronics; and other products and systems.

# DIVERSE MARKETS

## AUTOMOTIVE

Components manufactured by Vishay are used in a broad range of automotive systems including engine control and injector systems; fuel pump control; exhaust emission control; steering, braking, and active safety control; transmission; stop / start; lighting; airbag control; heating / ventilation / air conditioning; infotainment; C2X connected car communications; autonomous and advanced driver assistance systems; navigation; and battery management. Vishay components are used in systems in electric and hybrid electric vehicles such as traction inverters, integrated electrical machines, DC/DC converters for 48 volt power subsystems (boardnets), battery management, on-board and off-board battery charging, and energy recuperation. Vishay manufactures many components that can withstand high temperatures and peak transients and are ideal for use in under the hood applications and higher voltage environments.



## INDUSTRIAL

Vishay components help manage, store, and convert power; support power backup and energy harvesting solutions; drive and control motors; sense temperature; provide current measurement; and perform other tasks in factory automation, high power furnaces, machine to machine communications, electric power grid and power distribution systems, wind and solar power systems, and smart meters. Components from Vishay are also used in oil and gas exploration equipment; trains; escalators and elevators; heating and air conditioning systems; test and measurement equipment; lighting ballasts; smoke detectors; power tools; welding equipment; 3D printers; manufacturing, collaborative, and logistics robotic systems; and other industrial equipment and systems. Vishay components are well suited for the Industry 4.0 transition and the Internet of Things (IoT), which provides vital links in a wide range of applications.



Vishay, with its broad and competitive product and technology portfolio, supports customers in virtually every major market sector. Types of components manufactured by Vishay are found inside the electronic products and systems used every day, around the world.

## MILITARY AND AEROSPACE

Vishay manufactures one of the industry's broadest lines of military-qualified resistors and capacitors, as well as a number of other components that meet the stringent needs of military and aerospace customers for high reliability performance. Components manufactured by Vishay are used in applications

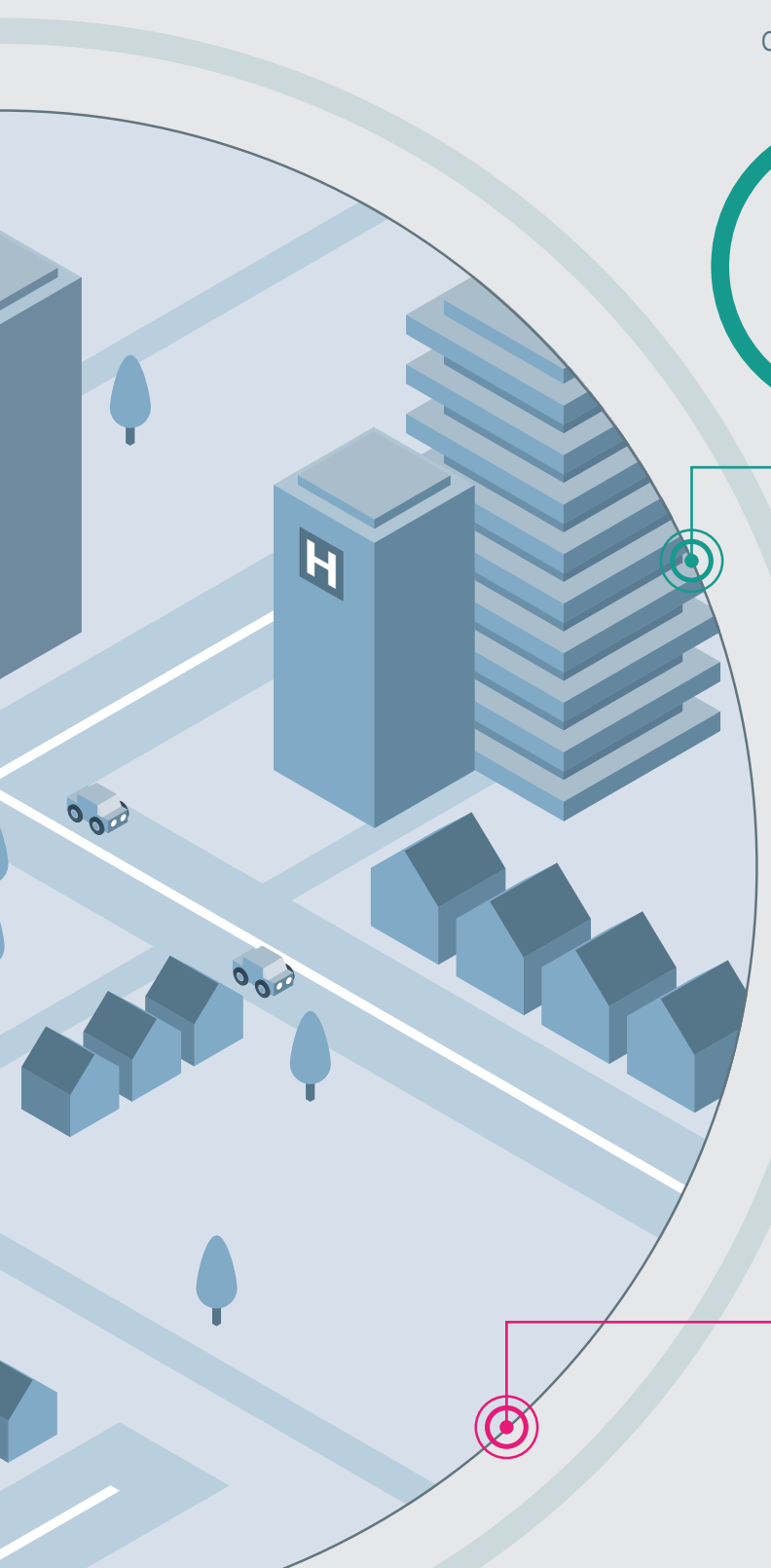
in flight, cockpit, and cabin equipment in aircraft; unmanned aerial systems; drones; navigation and weather satellites; radar and sonar units; radio and satellite communications; guidance systems; deep space exploration; and more. For example, Vishay resistors, ceramic and tantalum capacitors, inductors, displays, MOSFETs, and rectifiers are used in cockpit panels.



## POWER SUPPLIES

Adapters, converters, battery chargers, and uninterruptible power supplies (UPS) handle electric current from main power grids and batteries and adjust and control it for use by a wide variety of devices — from small, portable products to large industrial equipment. Power supplies must meet various power quality, efficiency, energy saving, and safety regulations. Their capabilities range from very low (milliwatts) to very high (kilowatts).

Vishay components are used in rectification; power factor correction; galvanic insulation; temperature sensing, storage, and transformation; EMI suppression; inrush protection; and other applications in power supplies.



# TELECOMMUNICATIONS

Vishay passive components and semiconductors are used in portable devices and telecommunications infrastructure. Vishay components for handheld telecommunications devices and wearables support a number of functions including radio frequency modulation, power amplification, transmission, receiving, charge control, DC/DC conversion, load control, sensing, audio signal conditioning, and peripheral connectivity. For example, Vishay components improve efficiency and increase battery life in smartphones. In 4G and 5G systems, high frequency resistors and capacitors are used for signal filtering and impedance matching. Vishay components also are used for EMI filtering, lightning and surge line card protection, and other applications in transmission systems, base stations, and access infrastructure.



# COMPUTING

Vishay components are found in notebooks, tablets, desktop computers, embedded systems, solid-state discs, switches and routers, and network servers. They manage power, filter out unwanted electrical signals, provide ESD protection, enable power backup, and perform other important circuit functions. In portable computing devices, they convert power; monitor power usage; extend battery life; enable short range, two-way, wireless connectivity; and support other functions. They also are found in peripherals including printers, photocopiers, and wireless chargers. Vishay advantages include high surge current capabilities, high power ratings, power efficiency, and long life.



# DIVERSE MARKETS





# CONSUMER



Types of components manufactured by Vishay are used in lighting and in home appliances and systems including air conditioners, washing machines and dryers, refrigerators and freezers, robotic vacuum cleaners, and lawn mowers. They are used in smart home and home automation systems to control lights, switch appliances, support surveillance and access systems, and monitor and regulate heating and air conditioning equipment. In addition, they are found in entertainment and lifestyle products including TVs, e-book readers, smart speakers and voice-activated assistance systems, game consoles, virtual reality / augmented reality (VR / AR) devices, set-top boxes, smart watches, fitness bands, and more. For example, Vishay components are used in LCD TVs for power conversion, EMI filtering, rectification, power factor correction, analog / digital signal switching, audio amplification, interface protection, infrared receiving, and gesture recognition.

# MEDICAL

High tech medical electronics play an important role in people's lives. From large equipment such as X-ray machines and MRI systems to smaller devices such as hearing aids and finger pulse



rate monitors, medical products and systems use types of components manufactured by Vishay. They are found in nerve stimulators, pacemakers, defibrillators, patient monitoring systems, instrumentation

equipment, communications equipment, blood pressure cuffs, blood glucose meters, and more. Vishay is a leading manufacturer of telemetry coils for pacemakers and defibrillators and transformers for defibrillators, as well as capacitors for implantable devices and hearing aids.

# VISHAY'S BLUE CHIP CUSTOMERS AND DISTRIBUTORS

ABB®	Continental®	Hella®	Plexus®	United Technologies®
Apple®	Delphi®	Honeywell®	Quanta®	Valeo®
Arrow®	Delta®	Huawei™	Rutronik®	Weikeng
Asus®	Denso®	Jabil®	Samsung®	Wistron®
Avnet®	Digi-Key®	Keboda®	Sanmina®	WPG®
BAE Systems®	Ericsson®	LG Electronics®	Schneider™	ZF® Group
Bosch®	Flex®	Lite-On®	Seagate®	...and others
Boston Scientific®	Foxconn®	Magneti Marelli®	Siemens®	
BYD®	Future®	Medtronic®	Sony®	
Celestica®	General Electric®	Nexty	Tesla®	
Cisco®	Harman®	Philips®	TTI®	

## RECENT INDUSTRY AWARDS

Continental 2017 Supplier of the Year Award  
Delphi Automotive Pinnacle Awards for Supplier Excellence  
Siemens 2017 SEWC Best Cooperation Supplier Award  
FLEX 2017 Preferred Supplier Award  
TTI Supplier Excellence Awards: The Americas, Europe, and Asia  
Aspencore 2018 China World Electronics Achievement Award  
2018 Top 10 Power Product Award  
ECN IMPACT Award  
2017 ACE (Annual Creativity in Electronics) Award  
SPDEI (French Association of Distributors of Electronic Components) Top Supplier Award  
EDN Hot 100 Product Award  
Electronic Products Product of the Year Award  
Selezione di Elettronica Innovation Award  
Electronic Products China Top-10 Power Product Award  
Electronic Design Top 101 Components

## DRIVING STOCKHOLDER VALUE

Vishay is firmly committed to driving stockholder value. It accomplishes this through organic growth that is supplemented by targeted acquisitions, a regular cash dividend program, and opportunistic stock buybacks, while at the same time maintaining a prudent capital structure. Vishay continues to be a reliable generator of “free cash” (the amount of cash generated from operations in excess of capital expenditures and net of proceeds from the sale of assets). Vishay has consistently generated in excess of \$200 million in cash from operations in each of the past seventeen years.

# CORPORATE INFORMATION

## BOARD OF DIRECTORS

### MARC ZANDMAN

Executive Chairman of the Board  
Chief Business Development Officer  
Vishay Intertechnology, Inc.

### MICHAEL J. CODY

Retired Vice President of  
Corporate Development  
Raytheon Company

### DR. ABRAHAM LUDOMIRSKI

Founder and Managing Director of Vitalife  
Fund, a venture capital company specializing  
in high tech electronic medical devices

### FRANK D. MAIER

Retired Managing Director  
TEMIC GmbH

### DR. GERALD PAUL

President  
Chief Executive Officer  
Vishay Intertechnology, Inc.

### RONALD M. RUZIC

Retired Group President  
BorgWarner Automotive, Inc.

### ZIV SHOSHANI

President  
Chief Executive Officer  
Vishay Precision Group, Inc.

### TIMOTHY V. TALBERT

Retired Senior Vice President  
Credit and Originations Lease  
Corporation of America ("LCA")

Retired President

LCA Bank Corporation

### THOMAS C. WERTHEIMER

Accounting Consultant, previously partner  
of PricewaterhouseCoopers LLP

### RUTA ZANDMAN

Private Stockholder  
Vishay Intertechnology, Inc.

### RAANAN ZILBERMAN

Former President and  
Chief Executive Officer  
Caesarstone Ltd.

## HONORARY EXECUTIVE CHAIRMAN OF THE BOARD

Dr. Felix Zandman  
(Deceased June 4, 2011)

## EXECUTIVE OFFICERS

### MARC ZANDMAN

Executive Chairman of the Board  
Chief Business Development Officer

### DR. GERALD PAUL

President  
Chief Executive Officer

### JOHAN VANDOORN

Executive Vice President  
Chief Technical Officer  
Deputy to the CEO

### LORI LIPCAMAN

Executive Vice President  
Chief Financial Officer

### DAVID VALLETTA

Executive Vice President  
Worldwide Sales

### CLARENCE TSE

Executive Vice President  
Business Head Semiconductors

### JOEL SMEJKAL

Executive Vice President  
Business Head Passive Components

### WERNER GEBHARDT

Executive Vice President  
Human Resources

## CORPORATE OFFICE

Vishay Intertechnology, Inc.  
63 Lancaster Avenue  
Malvern, PA 19355-2120  
Phone: 610.644.1300  
Fax: 610.296.0657  
www.vishay.com

## ANNUAL MEETING

May 14, 2019 at 9:30 a.m.  
Vishay Intertechnology, Inc.  
Auditorium  
63 Lancaster Avenue  
Malvern, PA 19355-2120

## STOCKHOLDER ASSISTANCE

For information about stock transfers,  
dividend payments, address changes,  
account consolidation, registration changes,  
lost stock certificates, and Form 1099,  
please contact the Company's Transfer  
Agent and Registrar.

### TRANSFER AGENT AND REGISTRAR

American Stock Transfer & Trust Company  
59 Maiden Lane  
New York, NY 10038  
Phone: 800.937.5449  
Fax: 718.921.8331  
Email: [info@amstock.com](mailto:info@amstock.com)  
For other information or questions,  
please contact Investor Relations  
at 610.644.1300.

### COMMON STOCK

Ticker symbol: VSH  
The common stock is listed and principally  
traded on the New York Stock Exchange.

### DUPLICATE MAILINGS

If you receive more than one Annual Report  
and Proxy Statement and wish to help us  
reduce costs by discontinuing multiple  
mailings, please contact our Transfer Agent  
American Stock Transfer & Trust Company.

### ELECTRONIC PROXY MATERIALS

You can receive Vishay Intertechnology's  
Annual Report and proxy materials  
electronically, which will give you immediate  
access to these materials, and will save  
the Company printing and mailing costs.  
If you are a registered holder (you own the  
stock in your name), and wish to receive  
your proxy materials electronically, please  
go to [www.icsdelivery.com/vsh](http://www.icsdelivery.com/vsh). If you are a  
street holder (you own this stock through a  
bank or broker), please contact your broker  
and ask for electronic delivery of Vishay  
Intertechnology's proxy materials.

A large, light blue isometric illustration of a cityscape is centered on the page, enclosed within a circular frame. The city features various buildings of different heights and styles, streets with small cars, and trees. The overall aesthetic is clean and modern.

## CORPORATE HEADQUARTERS

**VISHAY INTERTECHNOLOGY, INC.**

63 Lancaster Avenue  
Malvern, PA 19355-2120  
United States  
610.644.1300

[www.vishay.com](http://www.vishay.com)

**A WORLD OF  
SOLUTIONS™**