Pursuing technology to benefit the world, with the goal of enhancing social value and achieving a sustainable society

TDK was founded in 1935 to commercialize ferrite, a magnetic material. The innovation of TDK’s founder created great value to the world that had not existed before. He believed strongly in the potential of ferrite and built a venture business with origins at the Tokyo Institute of Technology even though the new material’s wide-ranging uses were yet to be discovered.

TDK has continued to create products with originality and a high level of value through manufacturing excellence —Monozukuri— making use of the five core technologies of materials technology starting with ferrite; process technology to maximize all of a material’s properties; evaluation and simulation technology; production engineering technology; and product design technology. Today, TDK offers its excellence in manufacturing across a range of product groups, including capacitors, inductors, transformers, sensors, actuators, magnetic heads, magnets, power supplies, batteries, and many types of electronic components and electronic devices.

Thanks to two historic changes —Digital transformation (DX), utilizing IoT, AI and other technologies; and Energy transformation (EX), including through the expanded use of renewable energy— the importance of electronic components and devices is reaching unprecedented heights. TDK will accelerate its efforts in DX and EX, keeping our sights not only on our customers but on the end consumer as we strive to offer technology that can contribute to a better future.

TDK has over 250 sites in more than 30 countries and regions around the world, with about 130,000 employees. Of these, about 90% are employed at sites outside of Japan. TDK’s use of a highly diverse global workforce is a major strength, and a driver of our growth.

Today, achieving a sustainable society is an issue deeply integral to a company’s reason for being. To realize the TDK Group’s sustainability vision of “Technology for well-being of all people,” TDK will continue to contribute to society by creating technology and offering products of value.

President & CEO
Shigenao Ishiguro
General Outline of TDK

Corporate Name: TDK Corporation
Corporate Headquarters: 2-5-1 Nihonbashi, Chuo-ku, Tokyo, Japan
Date of Establishment: December 7, 1935
Securities Traded: Tokyo Stock Exchange (6762)
Consolidated Net Sales: 1,479.0 billion yen
Consolidated Net Income: 79.3 billion yen
Consolidated Number of Employees: 129,284

Sales by Product

- Energy Application Products: 50.0% ¥740.2 billion
- Magnetic Application Products: 13.5% ¥199.3 billion
- Sensor Application Products: 5.5% ¥81.3 billion
- Passive Components: 27.5% ¥407.1 billion
- Others: 3.5% ¥51.1 billion

As of March 31, 2021

Main Businesses and Group Companies

Passive Components
- TDK
- TDK-Lambda
- Headway Technologies
- Magnecomp Precision Technology
- Acrathion Precision Technologies
- Hutchinson Technology
- SAE Magnetics

Sensor Application Products
- TDK Electronics
- TDK-Micronas
- ICsense
- InvenSense
- Chip Microsystems
- TDK-Lambda
- AmpereX Technology (ATL)

Magnetic Application Products

Energy Application Products

Corporate Motto
Contribute to Culture and Industry Through Creativity

Corporate Principles

VISION
Always take a new step forward with a vision in mind. Creation and construction are not born without vision.

COURAGE
Always perform with courage. Performing power is born by confronting contradiction and overcoming it.

TRUST
Always try to build trust. Trust is born from a spirit of honesty and service.
**Constant Value Creation**

Continuing to supply valuable products and grow in changing markets

Constantly searching for new frontiers, the world of electronics has achieved dramatic evolution through the ages. In response to the changing times, TDK has consistently promoted technological innovation so as to supply products that meet the needs of society, applying and developing proprietary core technologies centered on ferrite-based materials technology and process technology. In addition, through proactive mergers and acquisitions, TDK has positively tackled the transformation of our main business portfolio and made efforts to expand new technologies in anticipation of future social demands. Such unique business development has been the driving force behind TDK’s continued supply of valuable products and continued growth in changing markets for more than 85 years.

* The graph above shows a representation of the transition of major applications in society and changes in TDK’s business and sales.
As a part of Medium-Term Plan, TDK has reset the TDK Group’s materiality. For more details, please refer to P13 & 14.

**Medium-Term Plan:**

**Value Creation Cycle**

- **Value**
  - **Asset Value**
    - Executive growth strategy
    - Sales: 2,000.0 billion yen
  - **Commercial Value**
    - Improve asset efficiency
    - OP margin: over 12%
    - ROE: over 14%
    - Capex: 3 years: 750.0 billion yen
  - **Social Value**
    - Enhance enterprise value
    - Contribute to the solution of social issues
- **Social Value**
  - Become a valuable presence by contributing to the solution of two major social issues
    - Digital transformation (DX)
    - Energy transformation (EX)
- **Establish internal management systems with focus on speed**
  - Eco-TDK
  - Digi-TDK
- **Become a highly regarded presence in the world**
  - Customer satisfaction
  - Sustainable growth
  - Sound governance

**Corporate Strategy**

Targets until FY 2024 (ending March 31, 2024)

- **Value Creation 2023**
  - Accelerate DX and EX to realize 2CX* and create value for a sustainable society
  - Asset Value
    - Improve asset efficiency
    - OP margin: over 12%
    - ROE: over 14%
    - Capex: 3 years: 750.0 billion yen
  - Social Value
    - Enhance enterprise value
    - Contribute to the solution of social issues

**Management Target in Medium Term**

- **Net Sales (Yen billions)**
  - FY March 2021 Result: 1,479.0
  - FY March 2024 Target: 2,000.0
  - CAGR: 11%

- **Segment / CAGR**
  - Passive Components: 7%
  - Magnetic Application Products: 12%
  - Sensor Application Products: 25%
  - Energy Application Products: 11%

**Digital Solutions for DX**
- Electronic components supporting digital transformation
  - Data storage: HDD heads, industrial storage
  - Transducers: Temperature sensors, pressure sensors, Hall ICs, TMR magnetic sensors, MEMS sensors, MEMS microphones, piezo actuators
  - Electronic components: 5G high-frequency components, RF inductors, noise-suppression components, anti-heat components, anechoic chambers and EMC measurement systems

**Energy Solutions for EX**
- Electronic components supporting the effective use of energy
  - Energy storages: Small and medium-sized rechargeable batteries
  - Power supplies: Bi-directional power supplies, programmable power supplies, high-quality medical and industrial power supplies, EV power supplies (DC-DC, onboard chargers)
  - Motors and generators: Magnets for EVs and wind power generators
  - Electronic components: Automotive MLCCs, high capacitance MLCCs, power inductors, transformers

**Resetting of the TDK’s Materiality**

As a part of Medium-Term Plan, TDK has reset the TDK Group’s materiality. For more details, please refer to P13 & 14.
**Passive Components**

**Ceramic capacitors**

Used for noise suppression and signal processing in a wide range of electronic devices indispensable for daily life. More than 3,000 multilayer ceramic chip capacitors, the most commonly used type of ceramic capacitors, can be found in a single automobile, and use is expected to increase even further in the future.

**Inductive devices**

The lineup includes inductors of different types including wire-wound, multilayer, and thin-film, as well as transformers and noise countermeasure components. These contribute significantly to fuel economy in cars, higher efficiency in communication systems, as well as higher sensitivity and longer battery life in smartphones.

**High-frequency components**

TDK supplies high-frequency components and modules based on advanced technologies such as LTCC technology, thin-film technology, ferrite material technology and SESUB technology. Ongoing development of new products in this area contributes to the world’s most advanced mobile devices.

**Aluminum electrolytic capacitors and film capacitors**

Aluminum electrolytic capacitors feature high capacitance and come in various types, such as large products for industrial equipment, higher liability axial lead types for automotive applications, etc. Film capacitors have high voltage and low loss characteristics and are used in many different applications.

**Piezoelectric material products, circuit protection devices**

Piezoelectric material application products such as the small piezo actuators are available for high-precision drives. Other key items in this area are circuit protection devices such as varistors and arrestors.

**Magnetic Application Products**

**HDD magnetic heads and suspensions**

TDK’s high-performance magnetic heads have continuously supported increases in HDD recording capacity for many years. TDK will continue contributing to even higher recording capacities by new magnetic head technologies that incorporate energy assist recording methods.

**Magnets**

In addition to ferrite magnets and neodymium magnets, TDK also offers heavy rare earth free magnets. These contribute to energy and resource conservation and higher efficiency in the automotive sector as well as infrastructure and industrial equipment.

**Energy Application Products**

**Energy devices**

TDK contributes to the energy storage in many instances, ranging from low-profile lithium ion batteries in tiny devices such as smartphones to the massive high-capacity lithium ion batteries of solar power generation systems.

**Power supplies**

Designed mainly for industrial equipment, the lineup includes AC-DC switching power supplies, programmable power supplies, DC-DC converters, and power supplies for charging storage batteries. Automotive DC-DC converters and on-board chargers for xEV are also available.

**Flash memory applied devices**

TDK supplies solid state drives (SSDs) and CFast cards and SD memory cards with proprietary memory control chips for industrial use. For example, these can be found in communication base stations and traffic control systems, providing support for the age of Big Data.

**Anechoic chambers**

Anechoic chambers from TDK have gained an excellent reputation around the world as top-level tools for measurement accuracy, efficiency, and reliability. TDK also offers EMC solutions comprising highly accurate EMC measurement services to support effective noise countermeasures.

**Factory automation equipment**

TDK’s expertise in mechatronics gained in the production of outstanding electronic components is available in the form of production equipment. We provide Load Ports for various wafer sizes and Flip Chip Bonding Systems as well as a range of other advanced factory automation equipment.

**Sensor Application Products**

**Sensors**

TDK’s versatile product lineup logomarks indicate product brands

The lineup includes temperature sensors, pressure sensors, TMR angle sensors and Hall sensors, current sensors and various other sensors that are essential for realizing multifunction capability in electronic devices, improving the functionality of automotive electronics, and driving progress in factory automation and office automation. Furthermore, TDK offers a variety of motion sensors including acceleration and gyro sensors, along with ultrasonic Time-of-Flight, atmospheric pressure sensors and similar, providing added value to ICT and industrial applications.

**For details, please visit the Product Center on the TDK website**

**TDK**
Five core competences for creating cutting-edge electronic components

Materials Technology
The culmination of over 85 years of experience and know-how
Advanced materials technology pursues the characteristics of the source material from the atom level on up, to meet highly sophisticated needs. Control of main raw material composition as well as microadditives is an effective approach for achieving specific targeted properties. In over 85 years of operation, TDK has accumulated an enormous wealth of experience and knowledge that leaves competitors far behind.

Process Technology
realizes control on the nanometer level.
Process technology is the science of getting the best out of the characteristics of the material. Thin-film technology and spintronics are just two examples where manipulation on the order of nanometers is employed to create state-of-the-art electronic components. For example, thin-film technology is applied for the formation of electrodes, coils, and head elements on wafers to produce HDD heads, sensors, actuators, and similar products.

Evaluation & Simulation Technology
is applied to accurately measure and analyze ultra-fine structure and noises by electronic devices.
Even the most advanced materials and process technology would not lead to successful product development without accurate and trustworthy analysis and simulation techniques. Starting from material analysis, TDK evaluation and simulation technology is widely applied to assess structural and thermal aspects, analyze electromagnetic field properties, and perform noise measurement and design noise countermeasures using an anechoic chamber.

Production Engineering Technology
Outstanding facilities developed and manufactured in-house
Excellent products can only come from excellent manufacturing facilities. TDK not only develops innovative manufacturing techniques but realizes these by building much of the required equipment in-house. This comprehensive approach is the key to superior Monozukuri craftsmanship. We supply services meeting market needs by better quality, lower cost, shorter lead times and promoting integrated production from materials to finished products.

Product Design Technology
combines expertise with innovation to create new ideas.
Product design uses insight into how our products are used, integrating materials and electronic components from our many product lines, to create electronic devices and modules with safe, optimal configurations. It also encompasses software design that harnesses the full features of those devices and modules. Additionally, TDK supplies energy devices which combine power conversion, storage, and energy control functions. These integrated solutions have quickly become crucial for life in a sustainable society.

Four Great World-Class Innovations by TDK

Innovation 01
Ferrite

Innovation 02
Music cassette tapes

Innovation 03
Fine multilayering technology

Innovation 04
Thin-film head technology
Aiming to promote both a sustainable society and corporate growth

TDK Group's sustainability vision

Various issues exist in the society surrounding the TDK Group, including environmental problems, such as climate change, energy, exhaustion of resources, and social problems, such as aging and the digital divide. TDK seeks to contribute to the solution of these problems and the building of a sustainable society for future generations. As well as our fundamental stance of aiming to solve social issues through our business on the basis of our corporate philosophy, we have formulated the TDK Group’s Sustainability Vision, which proclaims that by fully utilizing TDK’s proprietary core technologies and solutions, we will "advance the development of a sustainable society and champion well-being for all people." We are sharing this vision throughout the Group, putting it into practice in our business, and considering and implementing specific measures toward the realization of a happy society.

The TDK Group’s Materiality

TDK identifies the TDK Group’s materiality, spotlighting key issues that should receive priority investment of the organization’s management resources and be tackled in order to achieve the Medium-Term Plan and realize both the sustainability of society and sustained corporate growth. By rotating the PDCA cycle for this materiality, we will tackle the solution of social problems raised in the Sustainable Development Goals (SDGs), thereby creating value for society and strengthening the foundations for value creation.

“Technology for well-being of all people”

TDK Group strives to restore and protect the global environment while promoting respect for human rights. Through its innovative core technologies and solutions, TDK Group advances the development of a sustainable society and champions well-being for all people.

For detailed information, please see:

For detailed information, please see:
More than 85 years of history

1935
- Tokyo Denki Kogyo K.K. (TDK) established for commercial production of ferrite cores

1937
- Mass production of ferrite cores begins

1951
- Mass production of ceramic capacitors begins

1959
- First TDK office outside Japan opens in Los Angeles

1960
- TDK subsidiary established in Duesseldorf

1966
- TDK Synchro Cassette Tapes introduced

1968
- The world’s first cassette tape designed by TDK specifically for music and revolutionizing entertainment

1970
- TDK shares listed on the Tokyo Stock Exchange

1972
- TDK subsidiary established in Duesseldorf

1978
- TDK Super Avilyn Video Cassette VHS format introduced

1980
- TDK Technical Center completed in Chiba prefecture, Japan

1982
- TDK shares listed on the New York Stock Exchange

1983
- Company name changes to TDK Corporation

1986
- SAE Magnetics, a Chinese magnetic head manufacturer, joins the TDK Group

1987
- Thin-film magnetic heads from TDK enable amazingly high recording density

1990
- High-density recording magneto-resistive (MR) heads introduced

1994
- High-density recording magneto-resistive (MR) heads introduced

1990
- TDK’s recording media business transferred to Imation, a US-based digital media products manufacturer

1994
- TDK’s recording media business transferred to Imation, a US-based digital media products manufacturer

1996
- TDK becomes a public company

1998
- TDK’s recording media business transferred to Imation, a US-based digital media products manufacturer

2000
- Headway Technologies, a US-based magnetic head manufacturer, joins the TDK Group

2003
- Innovato Technologies, a US-based developer of power supplies for use in communications devices, joins the TDK Group

2005
- Amperex Technology, a Chinese manufacturer of lithium-ion batteries, joins the TDK Group

2007
- TDK’s recording media business transferred to Imation, a US-based digital media products manufacturer

2008
- EPCOS, one of the biggest electronic components manufacturers, joins the TDK Group

2009
- “TDK’s Development of Ferrite Materials and Their Applications” recognized as IEEE Milestone (Institute of Electrical and Electronics Engineers)

2010
- Microns, a manufacturer of magnetic sensors, joins the TDK Group

2016
- Hutchinson Technology, a US-based manufacturer of HDD suspension assemblies, joins the TDK Group

2017
- InvenSense, a US-based manufacturer of inertial sensors, joins the TDK Group

2018
- Chirp Microsystems, a Time-of-Flight MEMS sensor specialist company, joins the TDK Group

2019
- Foraday Semi, a developer of 3D embedded power solutions, joins the TDK Group

2020
- TDK Ventures established as a corporate venture company
The global network of the worldwide leader in electronics

EMEA
- ICsense NV (Belgium)
- reylon plasma GmbH (Germany)
- TDK-CROATIA d.o.o (Croatia)
- TDK Electronics AG (Germany)
- TDK Electronics Components, S.A.U. (Spain)
- TDK Electronics GmbH & Co KG (Austria)
- TDK Electronics s.r.o. (Czech)
- TDK Foil Iceland ehf (Iceland)
- TDK Foil Italy S.p.A. (Italy)
- TDK Hungary Components Kft. (Hungary)
- TDK-Lambda Ltd. (Israel)
- TDK-Lambda UK Ltd. (UK)
- TDK-Micronex GmbH (Germany)
- TDK Sensors AG & Co. KG (Germany)
- Tronics Microsystem SA (France)

Greater China & Other Asia
- Chirp Microsystems, Inc. (U.S.A.)
- Faraday Semi, Inc. (U.S.A.)
- Headway Technologies, Inc. (U.S.A.)
- Hutchinson Technology Inc. (U.S.A.)
- InventSense, Inc. (U.S.A.)
- TDK Components U.S.A., Inc. (U.S.A.)
- TDK-Lambda Americas Inc. (U.S.A.)
- TDK RF Solutions Inc. (U.S.A.)
- TDK U.S.A Corporation (U.S.A.)
- Tronics MEMS, Inc. (U.S.A.)

Japan
- TDK Corporation
- TDK-Lambda Corporation
- TDK Akita Corporation
- TDK Shonai Corporation
- TDK Kofu Corporation
- TDK Precision Tool Corporation
- SolidGear Corporation

Net Sales by Region (%)
- Asia excluding Japan: 75.5%
- Japan: 7.9%
- Europe: 10.1%
- Americas: 6.5%

Employees by Region (%)
- Asia excluding Japan: 82.6%
- Japan: 8.0%
- Europe: 6.2%
- Americas: 3.2%

The locations on this list include HDs, major production and R&D bases as of June 1, 2021.
Attracting Tomorrow

TDK’s communication message “Attracting Tomorrow” implies an attitude of making deliberate efforts ourselves to attract the future, rather than just waiting for the future to arrive. Turning this stance into inspiration aimed at the realization of a harmonious society, TDK has been pursuing global branding activities in seven applications by developing and introducing innovative technologies and products. Each of these in turn will be instrumental in achieving Sustainable Development Goals (SDGs).

Motion sensors together with dedicated software can provide the acceleration and direction data that are needed to guide a car to a given destination. They also support autonomous driving technologies that can safely divert cars to the side of the road in the rare event of a failure or emergency. This holds substantial potential for the creation of a safe society with no traffic congestion or accidents.

We created a compact biomagnetic sensor by integrating MR* element process know-how gained in the magnetic head sector with magnetic circuit design technologies. Such sensors are ideal for devices that are more compact than existing products, making it feasible to perform diagnostic tasks with minimal stress for patients.

Motion and pressure sensors are also used in drones that carry out social missions such as transporting medical supplies to remote locations or islands. The sensors contribute to stable flight performance and provide accurate position information, thereby enabling drones to perform critical tasks in various places around the world.

Attractive Mobility

Motion sensors together with dedicated software can provide the acceleration and direction data that are needed to guide a car to a given destination. They also support autonomous driving technologies that can safely divert cars to the side of the road in the rare event of a failure or emergency. This holds substantial potential for the creation of a safe society with no traffic congestion or accidents.

7-Axis MEMS Motion and Pressure Sensors
The world’s smallest 7-axis sensor, which combines a 6-axis inertial sensor with a pressure sensor, incorporates reliable sensing technologies that are not adversely affected even under harsh environmental conditions. This makes it possible to control drones effectively to ensure stable flight.

MEMS Motion Sensors
We have realized the industry’s smallest 7-axis sensor module that combines gyroscope, accelerometer, and temperature sensing components on a single substrate. Highly accurate acceleration and direction measurement data are key to ensuring that a car will safely reach its destination.

Biomagnetic Field Sensors
Compact sensors that can measure extremely weak biomagnetic fields enables the realization of biomagnetic field measurements without the insertion of a device into the body, something that was not possible in the past. This allows non-intrusive assessment of internal physiological activity in three dimensions.

Investigational Device. Not currently available for sale in the U.S. or elsewhere.

Attractive IoT

Motion and pressure sensors are also used in drones that carry out social missions such as transporting medical supplies to remote locations or islands. The sensors contribute to stable flight performance and provide accurate position information, thereby enabling drones to perform critical tasks in various places around the world.

7-Axis MEMS Motion and Pressure Sensors
The world’s smallest 7-axis sensor, which combines a 6-axis inertial sensor with a pressure sensor, incorporates reliable sensing technologies that are not adversely affected even under harsh environmental conditions. This makes it possible to control drones effectively to ensure stable flight.

Attractive Wellness

We created a compact biomagnetic sensor by integrating MR* element process knowledge gained in the magnetic head sector with magnetic circuit design technologies. Such sensors are ideal for devices that are more compact than existing products, making it feasible to perform diagnostic tasks with minimal stress for patients.

*MR = Magneto-resistive
Robots equipped with MEMS microphones can detect voices and other sounds at relatively large distances, and the use of multiple microphones also enables the robot to identify the direction where the sound is coming from. Such applications will help hearing-impaired individuals and make it easier for persons with limited mobility to obtain help during an emergency.

VR and AR applications have enriched experiences in education and brought about significant progress and quality enhancement in learning by children.

TDK’s ultrasonic sensors can detect a device’s orientation, rotation, position, and other information with high precision and determine accurately the movement of a hand in a virtual space.

With 5G, musicians can enjoy live music while playing with each other in real time, despite being in different locations. TDK has integrated filtering functionality in antennas that receive and transmit radio waves. Minimizing losses and ensuring high efficiency in this area significantly contributes to high-volume data communication.

Capacitors used in lightweight, compact, and high-reliability devices for power electronics facilitate high-efficiency generation and transmission of renewable energy and improve people’s quality of life. TDK is looking to contribute to the creation of a sustainable society through clean energy.

Robots equipped with MEMS microphones can detect voices and other sounds at relatively large distances, and the use of multiple microphones also enables the robot to identify the direction where the sound is coming from. Such applications will help hearing-impaired individuals and make it easier for persons with limited mobility to obtain help during an emergency.