TOREX

TOREX SEMICONDUCTOR LTD.

www.torexsemi.com

Powerfully Small!

If an electronic device's CPU is the "brain," then the power supply is the "heart." And when it comes to the power ICs supporting that "heart," analog technology is essential.

Since its inception, Torex has worked toward improving analog technologies, most specifically analog CMOS technology, anxious to answer the call for smaller, lighter, and higher-performance power ICs.

Torex's ultra-small power management ICs with low power consumption have earned high praise in a variety of fields including mobile devices such as smartphones, digital cameras and PCs, automotive equipment such as car navigation systems and electronic toll-collection systems, industrial equipment such as robots, and even wearable devices.
Even though power management ICs contain some very small parts, some no bigger than 1 mm, their impact on the world is infinitely large.

As such, Torex is dedicated to supporting not only the evolution of society but also the future of the global environment through the "Power of Analog."

We are TOREX – a team of dedicated power management IC specialists, working hard to keep the "heart" of electronic devices healthy.

Corporate Philosophy

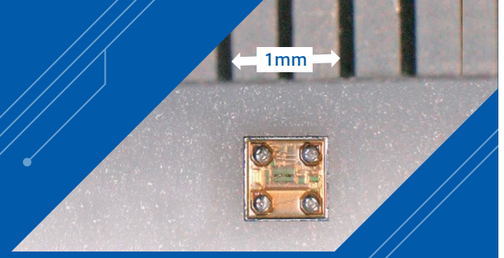
Our Corporate Philosophy is to endeavor to continue to improve on our intellect and to be responsive to market demands by creating highly valuable products. To contribute to the maintenance of our global environment, to the prosperity of our society and at the same time enabling each and everyone involved in our business to prosper.

VISION

Supporting electronics through semiconductor technology for a sustainable and smarter future.
To become a global leader in compact, energy-efficient power supplies.

TOREX

Technology



Torex's 3 technologies for keeping the "heart" of electronic devices beating

1 Circuit Design

Analog power supply ICs exhibit significant variations in characteristics depending on how the circuitry is routed. The many years of experience and know-how of the highly skilled technicians at Torex have made it possible to create power management ICs with extremely small chip sizes and excellent characteristics.

2 Packaging

With the increased demand of wearable and other smaller devices, power ICs have needed to become more compact and lighter. To meet such requirements, Torex is actively engaged in its own technical development of "USP" packaging, which offers ultra-small size together with excellent heat dissipation properties. Torex is committed to finding out just how small a package can be while continuing to meet the required specifications.

3 Processing

Although Torex is a fabless manufacturer, we have been able to increase processing technology by enrolling specialized process engineers in-house. This in addition to a thorough process management system that includes quality assurance, allows Torex to deliver safe and high-quality products around the globe.

Major Awards

Awards and Recognitions >

FY2025

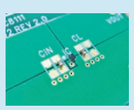
Super Monodzukuri Parts Grand Award
Electrical and Electronic Parts Award

High Voltage 36V/600mA
Compact Size Step-Down DC/DC Converter
XC9704/XC9705 Series

FY2023

Energy Conservation Grand Prize
Special Award from Judging Committee
Best Products and Business Models

Load Switch ICs with Ideal Diode Function
XC8110/XC8111 Series



FY2018

7th Monodzukuri Nippon Grand Award
Excellence Prize, Product & Technology Category

Ultra Low Power Synchronous Step-Down PFM DC/DC Converter
XC9265 Series

FY2017

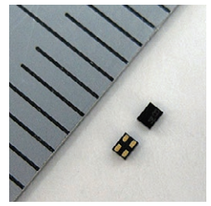
Semiconductor of the Year 2017
Semiconductor Device Category, Award of Excellence

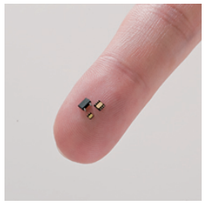
HiSAT-COT Control DC/DC Converter
XC9273 Series

Proprietary Technology

Ultra Small Package

"USP (Ultra Small Package)" products – further advancing ultra-small and improved thermal packaging technology



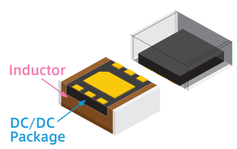
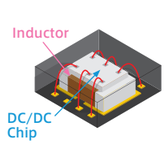
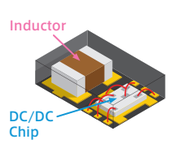
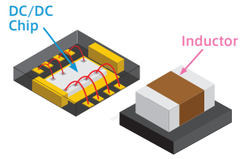


To overcome the deterioration in heat dissipation efficiency caused by extreme miniaturization, Torex developed and patented ultra-small, low profile "USP" packages featuring improved heat dissipation capabilities.
We will continue to pursue further miniaturization and lower profiles.

XCL series

Proprietary Single-Package Technology Integrating the Control IC and Inductor

Space-saving	Minimizes board routing for surrounding components, enabling a compact solution.
Simplified design	Requires only input and output capacitors as main external components, greatly cutting design and evaluation time.
Noise reduction	Suppresses switching noise through an optimized package structure, reducing EMI.
Thermal design	Enables improved heat dissipation through a proprietary package.
High efficiency	Delivers high efficiency even at light loads using ultra-low quiescent current DC/DC converters.
High-performance POL	Offers fast transient response and compact components through HiSAT-COT control, ideal for FPGAs, SoCs, and more.

Pocket type	Stack type	Multiple type	Cool Post type
			
A structure in which a grooved coil and an IC chip are integrated into a package and bonded together. By covering the entire IC with the coil, noise emitted from the IC package can be reduced.	A structure with an IC chip mounted on top of the coil. This structure reduces the footprint required for the IC chip. However, compared with other package types, it provides lower heat dissipation and is therefore limited to low-current applications.	A structure with the IC chip placed next to the coil, allowing heat generated by both the IC chip and the coil to be directly dissipated into the printed circuit board. This structure enables the device to handle relatively high currents.	A structure that uses Cu posts passing through the package to dissipate heat from the coil to the printed circuit board. Since it supports various types of coils, including multilayer and wire-wound coils, it enables higher voltage and higher current operation.

Torex Longevity Program (TLP)

To provide peace of mind for customers who require long product lifecycles, Torex offers the **Torex Longevity Program (TLP)**. Under this program, we **guarantee a minimum supply period of 10 years** for eligible products.

For more information, please scan the QR code.

Products

Incorporating analog technology developed over many years to create **ultra-small, low-consumption, high-quality** products

DC/DC Converters
Step-up, step-down, step-up/down and negative voltage converter ICs for various switching types

Voltage Regulators
Supplying stable voltage to devices through a lineup ranging from low-consumption devices to high-speed LDOs

Voltage Detector/Reset ICs
Reset ICs for high-accuracy monitoring of power supply lines and CLKs

Push Button Controllers
Push-button reboot controller for system freeze protection. Load switch IC that realizes long battery life.

Load Switches
High-speed, high-side switch ICs with various protection circuits and additional functions

Charge Pump ICs
Inverting and step-up DC/DC converter ICs using capacitors

Battery Charger ICs
High-precision linear charge control ICs for single-cell lithium-ion/polymer batteries

Discrete

Schottky Barrier Diodes
Low VF type, low IR type products for small signals to power supply lines are available

Zener Diodes
Small power mold type diode ideal for constant voltage control

Switching Diodes
General-purpose switching diode ideal for small-signal switching applications

Bridge Diodes
Single-phase bridge rectifier

Transient Voltage Suppressors (TVS)
Unidirectional, bidirectional, and array specification transient voltage suppression diodes

Power MOSFETs
Offering low on-resistance, ultra-high speed switching characteristics, and high-density packaging

Torex Power ICs Used Across a Wide Range of Applications

Automotive
- Car navigation systems
- Car audio systems
- Power windows
- Power seats
- In-vehicle ETC systems
- Dashboard cameras
- Rear-view monitor cameras

Consumer Electronics
- LCD TVs
- Consumer game consoles
- Home theaters
- Beauty products
- Home appliances
- LED lighting

Industrial
- Industrial robots
- POS registers
- POS terminals
- Industrial measuring instruments
- Smart meters
- Security equipment

Computers & Communications
- Smartphones
- Digital cameras
- Laptops
- E-readers
- PC peripherals
- IC recorders
- Electronic dictionaries
- Portable game devices

Medical & Healthcare
- Electronic thermometers
- Scales
- Blood pressure monitors
- ECGs
- Blood glucose monitors
- Monitoring equipment

Phenitec Semiconductor

Phenitec Okayama 1st Fab

Business details	Semiconductor wafer manufacturing
Wafer Size	5-inch, 6-inch
Clean Room area	Inspection 836㎡ EPI・BM 1,521㎡ FAB1 1,890㎡ FAB2 873㎡ FAB3 1,337㎡ FAB4 1,465㎡
Capacity	5-inch 29,000 wafers/M 6-inch 27,000 wafers/M Epitaxy 30,000 wafers/M

Phenitec Okayama 2nd Fab

Business details	Primarily engaged in research and development of compound semiconductors (Ga_2O_3, GaAs)

Phenitec Kagoshima Fab

Business details	Semiconductor wafer manufacturing
Wafer Size	6-inch
Clean Room area	No. 5 2,249㎡ No. 1 3,329㎡ No. 3 667㎡
Capacity	6-inch 19,000 wafers/M

Sustainability

We aim to create ultra-low quiescent current, ultra-miniaturized power supply ICs, develop human resources to support growth and promote thorough compliance so that our corporate group can continue to grow in step with all stakeholders.

For more information, please scan the QR code.

Basic Sustainability Policy

At Torex Semiconductor Group, we are committed to promoting sustainability in collaboration with all our stakeholders. Our business management is centered on contributing to the environment and society, guided by a spirit of coexistence and mutual prosperity. These efforts are aligned with our Corporate Philosophy: "Creating highly valuable products, working to contribute to the maintenance of our global environment as well as the prosperity of our society."

Torex Semiconductor Group's Materiality

1 Providing High Value-Added Products to Address Societal Issues

Our semiconductor products are utilized in a wide range of electronic equipment across various industries worldwide. By offering innovative, high value-added solutions, we aim to address societal challenges and drive sustainable business growth.

2 Maintaining an Excellent Working Environment for Diverse and Creative Talent

Our strengths lie in the technical expertise developed over years in the semiconductor industry and our ability to anticipate market needs. We focus on nurturing and retaining talent to build an organization capable of navigating rapid changes. We also strive to foster a work environment where employees can work autonomously, leveraging their creativity and expertise.

3 Promoting Environmental Stewardship

We recognize environmental challenges, including climate change, as critical to achieving a sustainable society. By delivering semiconductor products that reduce environmental impact, we aim to minimize energy and resource consumption and contribute to global environmental preservation.

4 Building a Strong Management Foundation for Stakeholders

We strive to grow alongside our stakeholders, contributing to society while achieving sustainable business growth. By maintaining sound governance and proactive risk management, we aim to enhance our corporate value and ensure long-term prosperity.

Indicators and Targets

As one of our material issues, we have identified "Promoting Initiatives for Global Environmental Conservation". To evaluate progress in reducing risks and creating opportunities related to climate change, we have established targets using greenhouse gas (GHG) emissions (Scope 1 and Scope 2) as indicators.
While GHG emissions targets may, by their nature, be pointed out as potential constraints on business growth, the Torex Group aims to steadily advance reduction initiatives while placing "Providing High Value-Added Products to Help Solve Social Issues" at the core of our business activities. Through this approach, we also seek to contribute to reducing emissions on a society-wide basis.

FY2030 Target	30% reduction in GHG emissions (Scope 1 and Scope 2)*

*Reduction rate compared to the baseline year (FY2023) emissions

History

Mar. 1995	TOREX SEMICONDUCTOR LTD. registered and founded in Okayama Japan Head office established in Tokyo
Nov. 1996	TOREX SEMICONDUCTOR (S) PTE LTD founded in Singapore (81% investment ratio)
Sep. 2000	TOREX USA Corp. founded (100% subsidiary)
Mar. 2001	TOREX SEMICONDUCTOR EUROPE LIMITED founded (100% subsidiary)
May 2002	TOREX SEMICONDUCTOR (S) PTE LTD becomes a wholly owned subsidiary
Oct. 2002	Kansai branch established
Mar. 2003	Obtained ISO 14001 certification
Jun. 2004	TOREX SEMICONDUCTOR DEVICE (Shanghai) CO., LTD. founded (100% subsidiary)
Feb. 2007	TOREX (HONG KONG) LIMITED founded
Apr. 2007	TOREX SEMICONDUCTOR TAIWAN LTD. founded
Aug. 2008	Obtained ISO 9001 certification
Sep. 2008	Tokyo Technology Center established
Dec. 2008	TOREX SEMICONDUCTOR DEVICE (Shanghai) CO., LTD. SHENZHEN BRANCH founded
Apr. 2009	Acquired share capital of VIETNAM SEIBI SEMICONDUCTOR CO., LTD.
Apr. 2014	Listed on the JASDAQ Standard Market
Apr. 2015	VIETNAM SEIBI SEMICONDUCTOR CO., LTD. company name changed to TOREX VIETNAM SEMICONDUCTOR CO., LTD.
Oct. 2015	Listed on the Tokyo Stock Exchange, Second Section
Apr. 2016	Capital Alliance with Phenitec Semiconductor
Apr. 2016	TOREX USA Corp. R&D Center established
May 2016	Kansai Technology Center established
Jun. 2017	Nagoya Sales Office established
Mar. 2018	Listed on the Tokyo Stock Exchange, First Section
Feb. 2019	Phenitec Semiconductor Corp. becomes a wholly owned subsidiary
Sep. 2019	Registered as a remote support department of IATF16949 certified factory Phenitec Semiconductor Corp.
Jun. 2020	Capital Alliance with Novel Crystal Technology, Inc.
Dec. 2020	Registered as a remote support department of IATF16949 (Head Office)
Apr. 2022	Transition to Tokyo Stock New Prime Market
Mar. 2023	TOREX VIETNAM SEMICONDUCTOR CO., LTD certified IATF16949. Sapporo Technical Center is certified and registered as a remote support department.

TOREX EPISODE

Starting in 1992:

Portable Cassette Player

*Photo for informational purposes only.

The XC61AN Series, using a nickel-hydrogen rechargeable battery, was introduced for use with portable cassette players. At the time, the ability to accurately detect the minimum 0.8 V needed to run the player was a highly requested feature, and our being able to meet this requirement made much longer playability possible.

1996

First Overseas Base Established in Singapore

Following Torex's inception, even though battery-powered ultra-compact and low-consumption power ICs had a small market scale and market entrants were few, Torex founded an established base of business in Singapore within one year, ignoring the cautious theory of prematurity. This was the first step toward Torex's global reach today.

1996

Pager (Wireless Telecommunications Device)

*Photo for informational purposes only.

To mitigate noise, Torex proposed an internal oscillation circuit that marked a conceptual reversal by "cutting back on efficiency". This culminated in the XC6373/XC6383 Series of DC/DC converters.

2016

Capital Alliance with Phenitec Semiconductor

Capital and business alliance with Phenitec Semiconductor Corporation has allowed Torex to establish a long-term stable supply structure for high value-added products for industrial equipment and automotive components.

“Second to none”

Torex’s first focus was on power management ICs for portable cassette players. At that time, equipment driven by batteries was still gaining ground, and Torex was the only specialized manufacturer of small power ICs in the world.

Nowadays mobile products that require compact and low-power-consuming power ICs are everywhere and manufacturers all over the world supply compact power supply ICs that take advantage of each manufacturer’s strengths.

“What can we do now?”

In answer, the group of professionals specializing in power management ICs took advantage of their cultivated analog-related skills and began honing their “ultra-small” and “low power consumption” skills even further.

From there, focusing on power ICs in the field of increasingly compact mobile devices, highly functional automotive and industrial equipment, and IoT devices for which demand will expand in the future, Torex set out to become a world-leading manufacturer, the kind of company where customers say,

“No one but Torex can do that.”

At Torex, our future lies with power management ICs, and the future of power management ICs is our top priority.

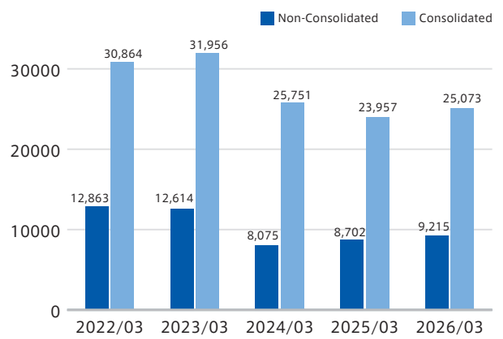
Corporate Data

Company Name	TOREX SEMICONDUCTOR LTD.
Address	5F MEBKS TOYOSU 6-4-34 Toyosu, Koto-Ku, Tokyo 135-0061 Japan
Establishment	March 1995
Representative	Takeshi Kimura, President
Capital	2967.93 million JPY
Business Activities	1. Development, design, and manufacturing of semiconductor devices 2. Sale of semiconductor devices
Fiscal Year-End	End of March

Financial Information

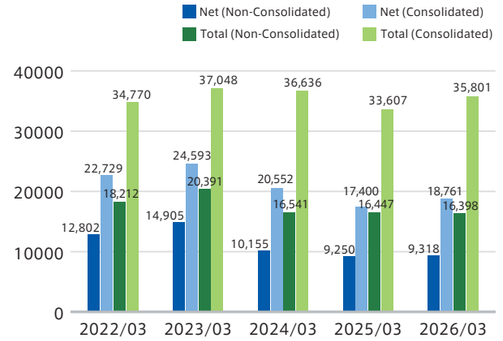
Net Sales

(Unit: million yen)



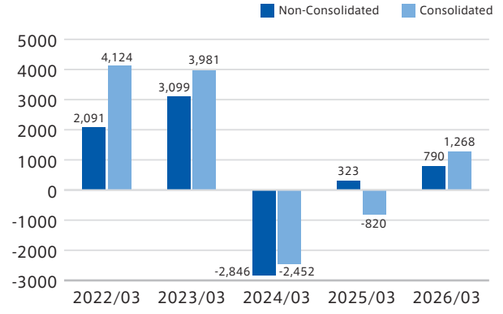
Net Assets/Total Assets

(Unit: million yen)



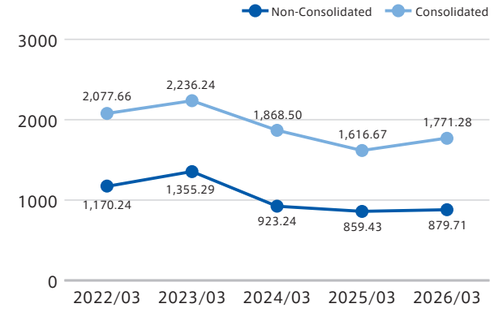
Ordinary Income

(Unit: million yen)



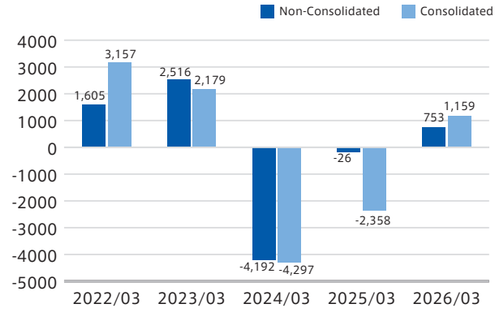
Net Assets per share

(Unit: Yen)



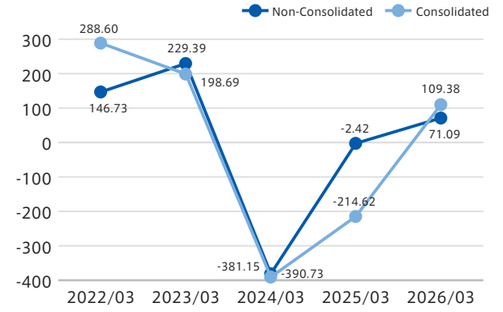
Profit attributable to owners of parent

(Unit: million yen)

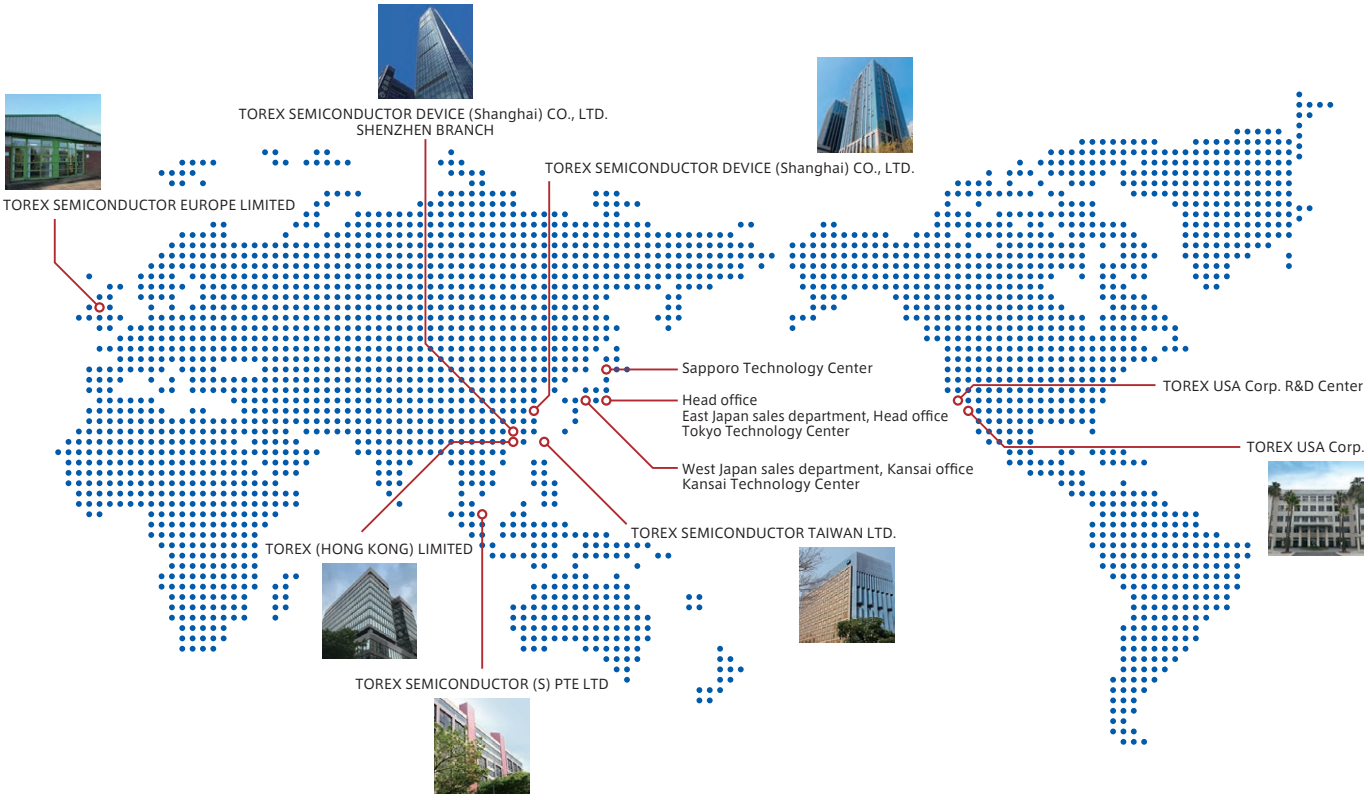


Net Income per share

(Unit: Yen)



TOREX NETWORK



Head Office

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Sales and Development Offices

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West Japan sales department, Kansai office
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Tel:06-7670-1114

Sapporo Technology Center
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Tel:011-763-3110

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Manufacturing Factory

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