



KOHOKU KOGYO CO.,LTD.

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About Us

Global Reputation for The Products with Kohoku Pride

Kohoku Kogyo is a leading company of lead terminals for aluminum electrolytic capacitors, which are required in various electronic devices, and optical components and devices, which support the information communication society.

We keep creating products that are favored throughout the world with our strong individuality and proprietary technology.

Global Niche Top.

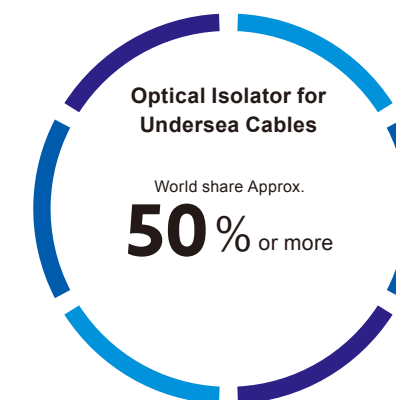
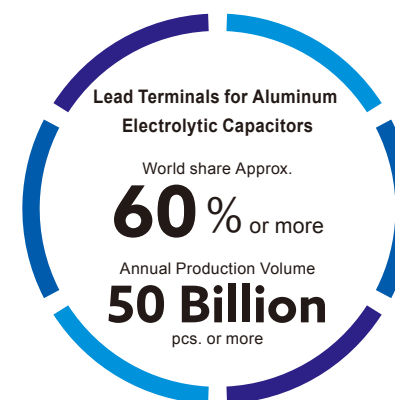
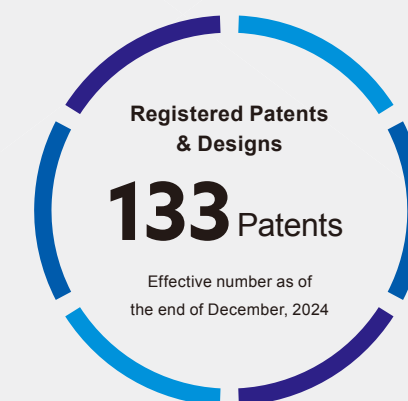
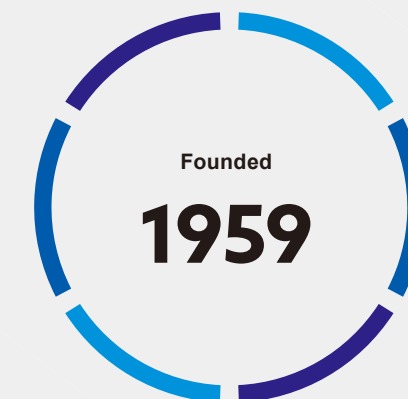
We are proudly expanding global operations for the contribution to the world.

Since the foundation in 1959, Kohoku Kogyo has manufactured and marketed lead terminals for aluminum electrolytic capacitors that are indispensable to all kinds of electronics products. Also, we expanded our business to the optical communication field by utilizing precision machining technology cultivated in our main business to endeavor the development of higher value-added products. Our corporate philosophy is focusing on "through the creation of new value and aim to become an Only One Corporation." We will continue further efforts to develop the electronics and communication industry and contribute to the future society through practice management principle where all member participate by making use of each employee's rich originality.

President and CEO
Futoshi Ishii



Keywords for understanding Kohoku Kogyo



What Kohoku Kogyo is capable of

Manufacturing and marketing of lead terminals for aluminum electrolytic capacitors

The lead terminals for aluminum electrolytic capacitors Kohoku Kogyo manufactures are used in a variety of electronic devices all over the world. By responding to various demands with our own designed production equipment and longtime accumulated know-how, we now take pride in having the top global share for the production volume.

Manufacturing and marketing of optical components and devices for optical fiber communication network

Information communication, which has now become indispensable as a social infrastructure, is supported by the optical fiber communication network installed all over the world. Our optical components and devices are used in this optical fiber communication network. They are utilized even in undersea cables that require highest reliability.

KOHOKU'S KEYWORD

Business

Lead terminals for aluminum electrolytic capacitors

Superior manufacturing technology supports various types of devices with the global share of 60% or more

Lead terminals for aluminum electrolytic capacitors we manufacture are being more widely utilized in diverse fields such as automobiles in which more and more electric devices are used (CASE), communication (5G), industrial equipment (robotization), energy creation (photovoltaic power generation, wind power generation, etc.), household appliances and so on.

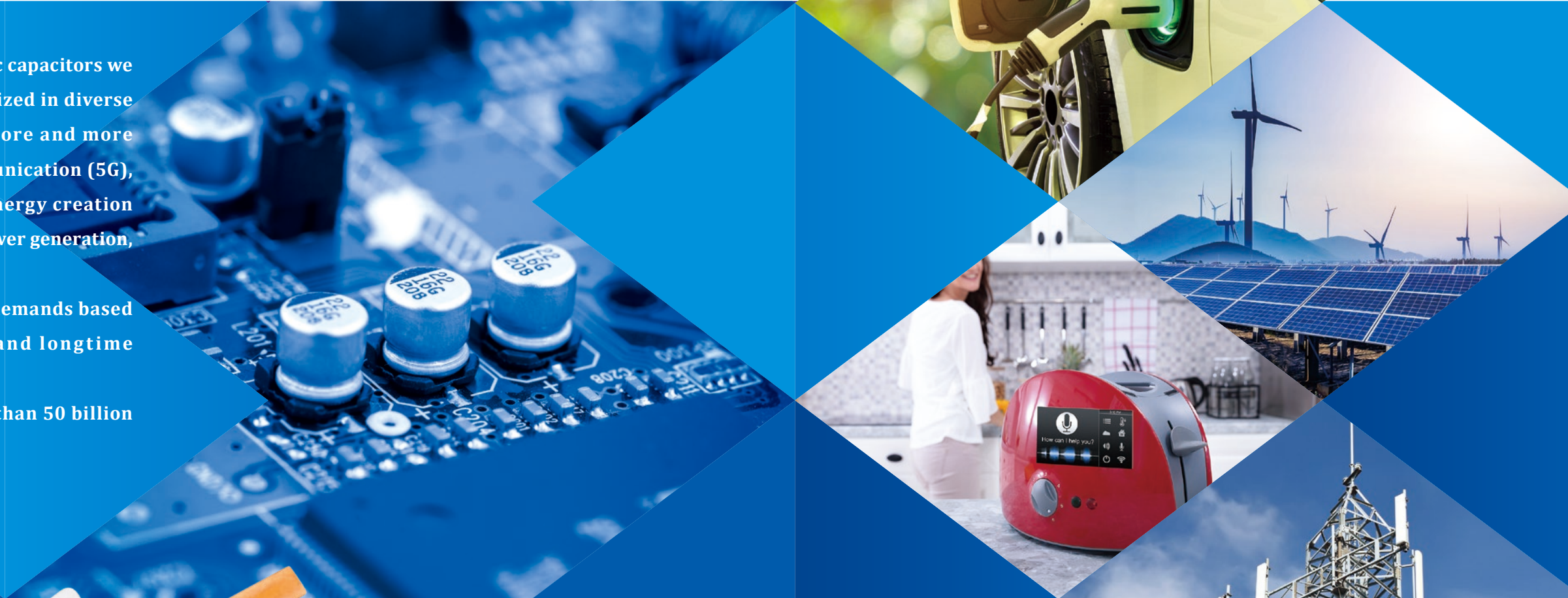
We will continue to respond to various demands based on our own production equipment and longtime accumulated know-how.

The annual production volume is more than 50 billion pieces, which is the world's top share.

Core technologies for lead terminals for aluminum electrolytic capacitors

Since our foundation, we have continued to refine the technologies required in the manufacture of lead terminals for aluminum electrolytic capacitors.

- High-speed welding of dissimilar metals
- Development of proprietary machines and equipment for welding, press, washing and forming processes



Business

Lead terminals for aluminum electrolytic capacitors

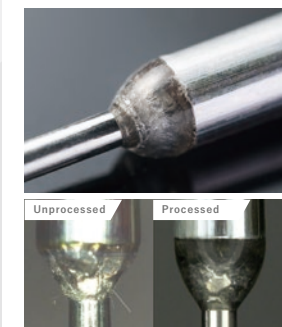
Overwhelming manufacturing strength by capturing details with precision to achieve stable supply

Examples of products with technological development

We have developed 100% of our production equipment on our own since the foundation, and delivered the products which satisfy the needs of our customers to the market in a timely manner.

We also quickly started working on the development and manufacture of lead terminals for low-height chip capacitors, high-performance hybrid capacitors, electric double layer capacitors and lithium ion capacitors and so forth to address high-density packaging of electronic components. Our attitude for product development backed up by our high technological capability has been highly evaluated by our customers.

Resin Coating on the Welded Part



Patent No.5329674

A whisker-like crystal with a length of a few millimeters called the whisker may be generated from the tinning of the lead terminal. Whiskers grow larger in time, and short-circuit the electronic circuit or wiring, causing the device to malfunction. We established a unique method for applying UV resin coating to the welded part of the lead terminal and achieved complete elimination of whisker generation.

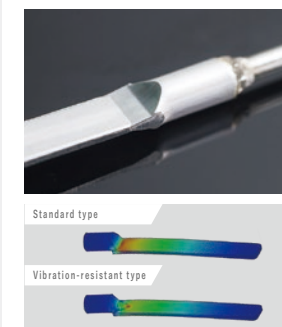
Rounding Processing



Patent No.4362317

In the assembly process for aluminum electrolytic capacitors, there are some cases where the tip of the lead terminal accidentally contacts the aluminum case and results in a damage, and it has become more and more difficult to insert it into the small opening on the sealing rubber. We contribute to reduction in the risk of damage or breakage during the assembly process by applying rounding processing to the tip of the lead terminal.

Vibration-resistant Type



Patent No.6550521

Lead terminals that are used in an environment with violent vibration such as automobiles can fracture due to vibration stress. We analyzed the start mechanism of fracture, and devised the shape for optimizing stress distribution of lead terminals. Compared with the unprocessed item (top), it is shown that the stress applied during vibration (red area) is reduced for the vibration-resistant type (bottom).

Anodic Oxidation Processing



By applying oxide film treatment on the surface of lead terminal in a similar fashion to the aluminum foil component of the aluminum electrolytic capacitor, the lead terminal also plays a function as a dielectric and contributes to the capacity expansion of aluminum electrolytic capacitors. Thanks to the high forming characteristics and high precision in area of oxide film, it also contributes to the yield improvement for aluminum electrolytic capacitors.

Manufacture processes

Lead terminals are products manufactured by welding/pressing a high-purity aluminum wire or oxygen-free copper wire with a lead wire. With regular technical instructions, all of our group factories address the high technological capacity and the efficient production system, which were created at the headquarters' factory. Welding/pressing, washing and forming production lines are established at each base to implement production under strict quality control.



Product specifications discussion meeting

We hold product specifications discussion meetings based on the specification drawings we receive from our customers.



Production planning

The production base is determined and mass production instructed based on the global production plan.



Welding and pressing

While conducting high-speed welding/pressing of 250 times or more per minute on dissimilar metal wire materials (Al and Fe, Al and Cu, etc.) with our proprietary production equipment, we can ensure speed and accurate traceability with the automatic process recording and image inspection equipment.



Washing

The lead terminals after welding/pressing are washed in our originally developed equipment. Not only degreasing of the machining oil and so forth but also the surface treatment on aluminum parts are executed during the washing process.



Forming

Oxide film (Al_2O_3) is formed on the surfaces of aluminum parts in lead terminals. Oxide film of a thickness appropriate for the voltage is formed with voltage application from 160 to 700 V.



Inspection

Final quality check is implemented in shipment inspection.



Product delivery

The products are stored in temperature-controlled product warehouse before they are shipped to our customers.

Business

Optical components and devices

Kohoku manufacture optical components and devices and also support IoT connecting the whole world

As various information devices such as smartphones and IoT devices have spread, demands for information communication have also been increasing explosively.

What supports the increasing information communication is the optical fiber communication network throughout the world, which has become indispensable as social infrastructure. Our optical components and devices are used in this optical fiber communication network. They are utilized even in undersea cables that require highest reliability, supporting people all over the world.

Our efforts in manufacturing

- We have entered the fields such as undersea cables and data centers at an early stage and achieved the trust of our customers with many records.
- We have established high-quality products and reliability with integrated manufacture from element production to device assembly.



Core technologies for optical components and devices



We manufacture and distribute optical components such as optical fiber terminals and optical devices such as optical isolator based on the following core technologies:

- High-purity silica glass manufacture technology (slurry casting method, since 2001)
- Magneto-optical crystal manufacture technology (liquid-phase thin film growth method, since 1986)



Business

Optical components and devices


Cultivate original know-how for future development

We develop optical components and devices with our proprietary material forming technology and precision assembly technology, and provide products globally which support the information communication society.

Product examples

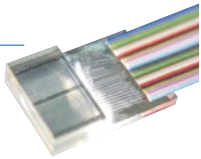
Optical Isolator

An optical device in which light passes only in one direction, and it utilizes the magneto-optical crystal, a core technology of our company. It is used in optical amplifiers and so forth.




Optical Fiber Array

An optical component in which multicore optical fibers are arranged, and it utilizes the precision assembly technology of our company. It is used in high-speed optical modules and so forth.



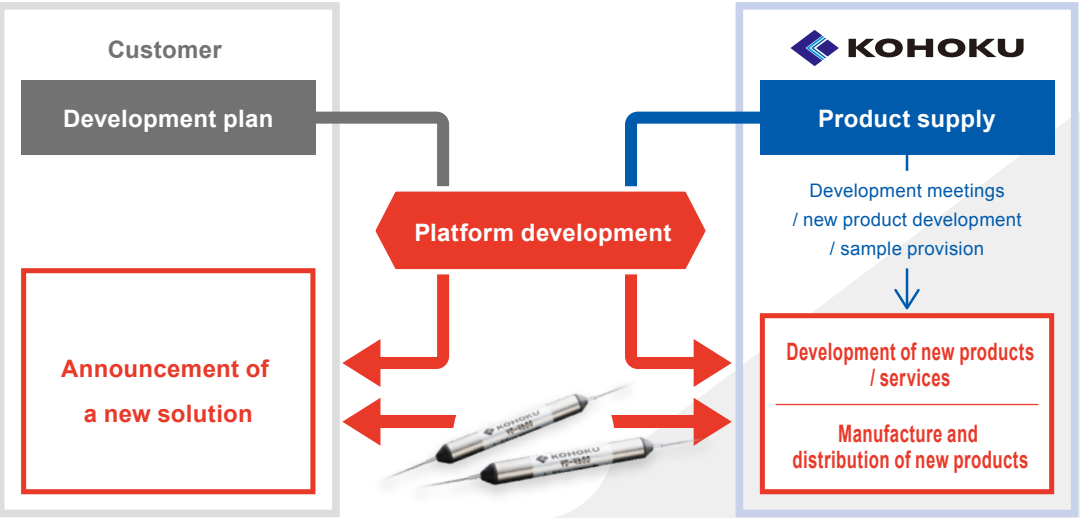
High-purity Quartz Glass Preform

High-purity silica glass of unique shapes which is manufacture technology using the slurry casting method, a core technology of our company. It is used in special optical fibers and so forth.



Development of new products

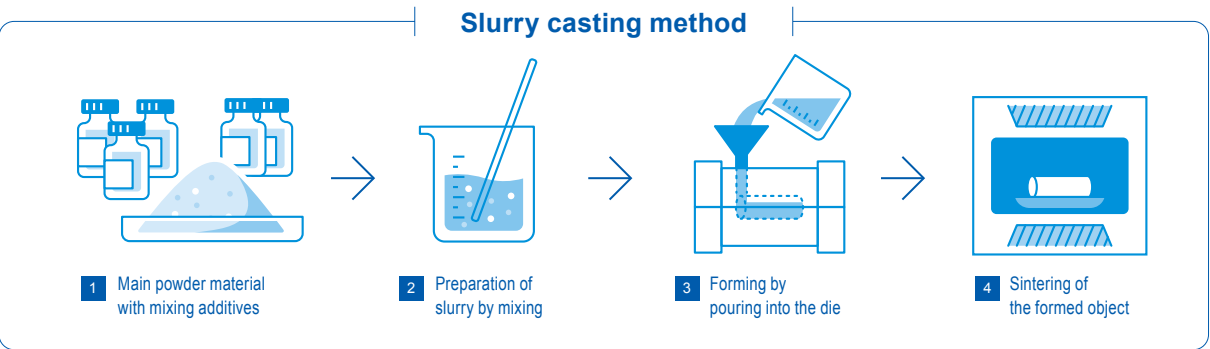
We become deeply involved in our customers' attempt to create new platforms with our core technologies, manufacturing capability and high quality, and develop and provide new products and services that will be key to their products. We hope to contribute to various different fields including not only optical fiber communication but also industrial and medical devices with this development of new products and services.



Research and development

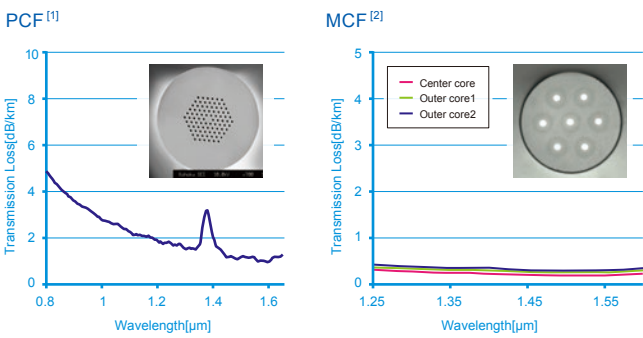
We develop our proprietary technologies through cooperation with research institutes such as universities. "Slurry casting method" created through joint research.

We conduct research and development on our proprietary technologies through cooperation with various research institutes including universities. "Slurry casting method," a core technology of our company, is one of them. It is a unique method to address high-purity quartz glass of various shapes by hardening the slurry made from quartz powder as the starting material under room temperature and pressure and sintering the formed object.



We continue innovations of our own to step up to the next stage.

We are working on further technological innovations. We are involved in the development of leading-edge technologies for superhigh-speed, large-capacity communication with photonic crystal fiber (PCF), multicore fiber (MCF) and so forth through advancement in the slurry casting method.

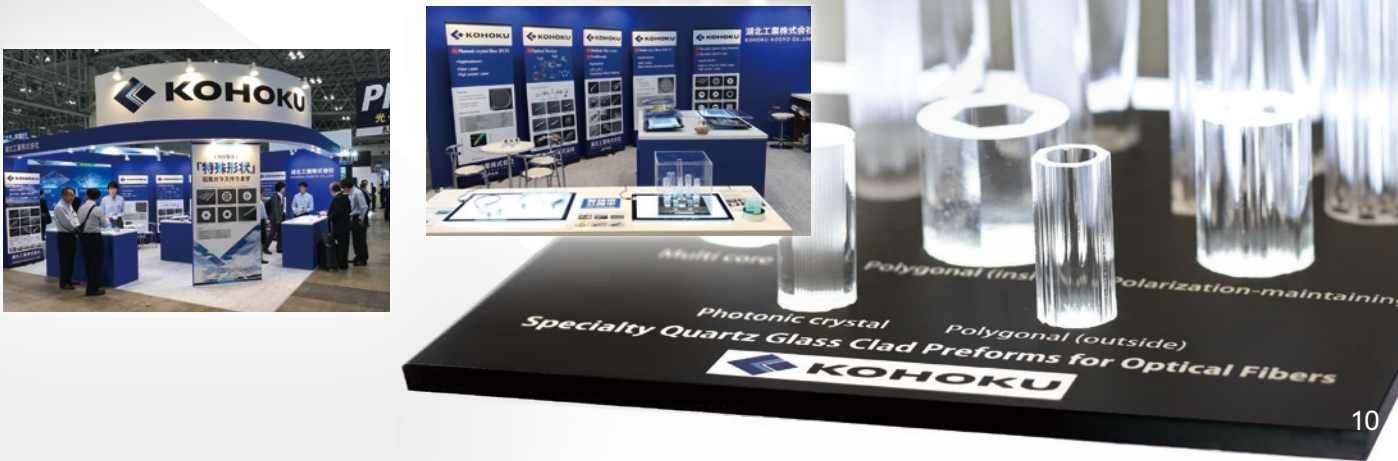


[1] T. Yajima, J. Yamamoto, F. Ishii, T. Hirooka, M. Yoshida, and M. Nakazawa, "Low-loss photonic crystal fiber fabricated by a slurry casting method," Opt. Express, vol. 21, no. 25, pp. 30500-30506, December (2013).

[2] J. Yamamoto, T. Yajima, Y. Kinoshita, F. Ishii, M. Yoshida, T. Hirooka, and M. Nakazawa, "Fabrication of Multicore fiber by Using Slurry Casting Method," OFC2017, Th1H.5.

Entering new fields with active participation in domestic and international exhibitions and academic society conferences.

We do not limit our research and development activities to product developments or within the company, but keep transmitting our technologies to the world.



Global Network

Network that recognize MADE IN JAPAN quality and delicate response

We establish of a quality control system with focus on prevention of defects from the product development stages. We maintain the product values with introduction of the latest facilities in each field and systemization of technical training for the local staff of our oversea bases in a similar fashion to our domestic bases.

We also supply high-quality products with stability by maximizing the use of our network organization and the features of each base.

JAPAN**KOHOKU KOGYO CO.,LTD.**

Manufacturing and marketing of lead terminals for aluminum electrolytic capacitors
Manufacturing, marketing and R&D of optical components and devices

Certification ISO9001:2015 ISO14001:2015 IATF16949:2016

1623, Takatsuki, Takatsuki-cho, Nagahama-shi, Shiga, 529-0241, Japan

Malaysia**KOHOKU ELECTRONICS (M) SDN.BHD.**

Manufacturing and marketing of lead terminals for aluminum electrolytic capacitors

Certification ISO9001:2015 ISO14001:2015

Lot2 Jalan Waja 15, Kawasan Perindustrian C(PKNS), Telok Panglima Garang, Kuala Langat, 42500 Selangor Darul Ehsan, Malaysia

CHINA / Dongguan**DONGGUAN KOHOKU ELECTRONICS CO.,LTD.**

Manufacturing and marketing of lead terminals for aluminum electrolytic capacitors

Certification ISO9001:2015 ISO14001:2015 IATF16949:2016

No.1, Xialingbei Duan, Liaocheng Zhonglu, Liaobu, Dongguan, Guangdong, 523411, China

Sri Lanka**KOHOKU LANKA (PVT).LTD.**

Manufacturing of optical components and devices

Certification ISO9001:2015 ISO14001:2015

Ring Road 3, Phase II, E.P.Z., Katunayake 11450, Sri Lanka

CHINA / Suzhou**SUZHOU KOHOKU OPTO-ELECTRONICS CO.,LTD.**

Manufacturing and marketing of lead terminals for aluminum electrolytic capacitors
Manufacturing and marketing of optical components and devices

Certification ISO9001:2015 ISO14001:2015 IATF16949:2016

1F, 2F, Building 1, No.128 Taishan Road, Suzhou New District, Suzhou, Jiangsu, 215129, China

Singapore**KOHOKU ELECTRONICS (S) PTE.LTD.**

Marketing of lead terminals for aluminum electrolytic capacitors
Marketing of optical components and devices

101 Cecil Street #19-09, Tong Eng Building, Singapore 069533

JAPAN / Kanagawa**EpiPhotonics CO., LTD.**

Research and development, manufacturing and sales, and contract development of ultra-high speed optical switches, wavelength selective switches, optical modulators, etc.

5F, KAWAZ Bldg, 2-1-16, Yamatominami, Yamato-shi, Kanagawa, 242-0016, Japan

USA / San Jose**EpiPhotonics USA, Inc.**

Design, manufacture and marketing of PLZT photonics components and subsystems for the Telecommunications, Data communications, and Fiber optic sensing markets

832 Jury Court, Unit 3, San Jose, CA 95112, USA



Office

Corporate Philosophy

Respect individual diversity and practice management principle where all member participate, through the creation of new value and aim to become an “Only One Corporation”

Respect individual diversity

Aim to achieve management goals by fostering human resources which make full use of the individual employees' talent, enhance their role awareness and create a workplace where each individuality can be demonstrated.

Practice management principle where all member can participate

Create a free and open discussions, work as a team and cooperate with one another to strive to achieve the goal. Empower and give authority to the right person and create an efficient business operation system.

Through the creation of new value

Anticipate changes in society, conduct speedy research and development and always provide a unique product. Utilize knowledge and skills to actively participate in improvement activity and improvement proposal.

Aim to become an “Only One Corporation”

Aim to be the world's leading company in the niche field and realize a high value added company.

About our corporate mark

Our corporate mark shapes the philosophy of our company and represents our will and spirits. The diamond shape succeeds the “parallel crosses” which came from the old company emblem, and also imitates the letter “K” of the company initial. It succeeds the entire philosophy from company foundation, which is to find a point of agreement for the trinity of “customer needs,” “benefits to the employees” and “benefits to the company.”



Blue 1,” which is the main color and which symbolizes “reliability,” bright blue named as “KOHOKU Blue 2,” which is reminiscent of the place of foundation, Lake Biwa, and “KOHOKU Blue 3,” which represents the fresh sky. “Ultra-marine blue” is used as “KOHOKU Blue 1,” which is specially rare among blue colors that represent “honesty” and “reliance” in terms of color psychology. This color represents the corporate philosophy to “create unique values,” as it is a blue with a deep tone unlike any other.

Company Profile

Name	KOHOKU KOGYO CO.,LTD.
Foundation	August 8, 1959
Representative	Futoshi Ishii
Capital	350 million yen
Location of the Headquarters	1623, Takatsuki, Takatsuki-cho, Nagahama-shi, Shiga, 529-0241, Japan
Business	Manufacturing and marketing of lead terminals for aluminum electrolytic capacitors Manufacturing and marketing of optical components and devices for optical communication
Group companies	KOHOKU ELECTRONICS (S) PTE.LTD. KOHOKU ELECTRONICS (M) SDN.BHD. DONGGUAN KOHOKU ELECTRONICS CO.,LTD. SUZHOU KOHOKU OPTO-ELECTRONICS CO.,LTD. KOHOKU LANKA (PVT) LTD. EpiPhotonics CO.,LTD. EpiPhotonics USA, Inc.

Company History

August, 1959	Founded at 8 Takatsuki-cho, Nagahama-City.
May, 1961	Relocated a new facility at the current place.
August, 1974	Extended a new manufacturing facility for lead terminals.
March, 1982	Developed the full automatic lead terminal forming equipment.
April, 1982	Developed the full automatic lead terminal washing equipment.
September, 1987	Developed lead terminal manufacturing machine NTWM.
December, 1987	Established a subsidiary KOHOKU ELECTRONICS (S) PTE. LTD. in Singapore.
December, 1988	Awarded the Excellent Energy Conservation Business from the Osaka Regional Bureaus of international Trade and Industry.
July, 1991	Completed new building for administrative office and R&D at the Headquarters.
September, 1994	Established a subsidiary KOHOKU ELECTRONICS (M) SDN. BHD. in Malaysia.
November, 1997	ISO 9001 certification.
May, 1998	Completed the extension at the Headquarters' facility.
September, 2000	Started Optical Business Division.
December, 2000	Established a contract manufacturing factory, Kohoku Electronics (CD) (current DONGGANG KOHOKU ELECTRONICS CO., LTD.) in Dongguan, China.
June, 2002	Established a subsidiary SUZHOU KOHOKU OPTO-ELECTRONICS CO., LTD. in Suzhou, China.
June, 2005	ISO 14001 certification.
March, 2006	Awarded from the Ministry of Economy, Trade and Industry as one of the 1st 300 strongest small-medium sized enterprises.
October, 2012	Reorganized Kohoku Electronics (CD) into an independent corporation, leads to a subsidiary company DONGGUAN KOHOKU ELECTRONICS CO., LTD.
April, 2013	Awarded from the Prize of Small and Medium Enterprise Agency's Director for "The 25th Awards for Excellent New Technologies and Products by Small and Medium Enterprises" by Nikkan Kogyo Shimbun, Ltd.
February, 2015	Received assignment of the optical component business of FDK Corporation and its subsidiary company FDK LANKA (PVT) LTD. (current KOHOKU LANKA (PVT) LTD.).
June, 2015	Increased capital to 350 million yen.
November, 2015	ISO/TS16949 (current IATF 16949) certification.
March, 2016	Awarded for the award in the low-carbon business category of the Award for low-carbon society creation in Shiga Prefecture.
December, 2017	Awarded from the Ministry of Economy, Trade and Industry, being selected as "The Driving Company for the regional future."
June, 2020	Award for the award from the Ministry of Economy, Trade and Industry, being selected as "100 Top Global Niche Companies".
December, 2021	Listed on the Second Section of the Tokyo Stock Exchange. (Standard market from April 2022.)
April, 2024	Acquired EpiPhotonics CO., LTD., which has PLZT technology, as a subsidiary.

