

Members' Profiles

Kyocera Corporation

Established in 1959, Kyocera is a manufacturer specializing in fine ceramics. Over the years, the company has expanded its applications of fine ceramics into a wide range of industries and has developed diverse enterprises, from the production of fine ceramic materials and ceramic components, such as industrial machinery parts, electronic components, and semiconductor packages, to solar power generating systems, cutting tools, jewelry, medical products, mobile phones, and document imaging equipment, as well as network systems and other services.

Kyocera began with twenty-eight employees nearly half a century ago. Today, the company has expanded its operations into more than thirty countries worldwide, with more than 180 affiliate companies. The Kyocera Group has grown into a global corporation with some 68,000 employees and a trillion yen in annual sales.

Kyocera has espoused the managerial philosophy of enabling each employee to pursue material and spiritual happiness, by which we hope to contribute to the advancement of society and humankind. Our goal is to grow continually as a creative-based company, honing a competitive edge in each business division. To accomplish this, we practice our own management system, called Amoeba Management, based on our corporate philosophy, and continuously strive to develop new technologies and new quality high-performance products for our customers.

Kyocera also aggressively engages in environmental activities. Recognizing that our business activities can impact the global environment and human life, we have adopted a clear vision for environmental preservation, promoting "green management" aimed at finding a balance between eco-friendly practices and economic development to assure sustainable growth within the company. As a leader of green management, it is our social responsibility as a manufacturer to reduce the impact our activities have on the environment. Even during the early years, the company has rigorously practiced environmental management, establishing stricter internal standards than public regulations.

Kyocera adheres to the tenet that the customer comes first, with the aim of supplying products and services at a price and quality that our customers have come to expect, while continuously delivering new value to the global market.

Electronic Components and Devices

Kyocera produces a wide variety of electronic components using fine ceramic technologies, including multilayer ceramic capacitors and EMI filters formed of dielectric ceramic materials. The smallest of the multilayer ceramic capacitors is currently a mere 0.4x0.2 mm, and the trend toward miniaturization is expected to continue. To manufacture such miniature components, innovative micromachining techniques are required in material formation, printing, laminating, and other steps of the process. EMI filters designed for reducing noise are another component produced by laminating sheets of dielectric material. Reducing electromagnetic noise is a

major issue in today's electronic devices, and the demand for noise reduction components is likely to increase.

AVX Corporation, which is part of the Kyocera Group, is one of the largest manufacturers of capacitors in the world, particularly tantalum capacitors. AVX also produces ceramic capacitors, electric double-layer capacitors, film capacitors, and numerous others for diverse applications.

The production of RF modules is also an essential business today, and Kyocera specializes in modules formed of multilayer substrates fired at low temperatures. We supply miniature low-profile Bluetooth modules and RF modules for mobile telephones. The modules have filters and other functions built into the multilayer substrates.

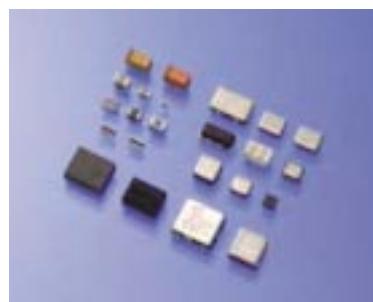
The piezoelectric property of fine ceramics is also applied to a product lineup including oscillators, shock sensors, and piezo buzzers. Piezoelectric ceramics convert electric signals into mechanical vibrations, or vice versa. This property has been applied to acoustic components, actuators, and power generating elements, with more applications anticipated. SAW (surface acoustic wave) devices also employ this piezoelectric property. SAW filters, commonly used in mobile devices, have comb electrodes formed on the surface of a monocrystalline material that convert mechanical vibrations propagating across the surface of the crystal into electric signals.

Kyocera Elco supplies numerous connectors for electronic equipment to meet the demands for higher circuit density, lower profiles, smaller footprints, and greater functionality.

Our product lineup includes numerous other high-performance electronic devices, such as thermal print heads produced with thin film technology, LCDs for industrial use, and amorphous silicon photoreceptor drums.

Kyocera Kinseki produces various timing devices and other crystal products that utilize the piezoelectric property of crystals, such as crystal units and oscillators. As mobile phones and other electronic products become increasingly smaller in size, there is continuous demand to reduce the size of components. For example, temperature compensated crystal oscillators (TCXO), which are considered the heart of mobile phones, are now 1/150th the size of those produced fifteen years ago. To produce such compact oscillators, the ceramic packages and crystal units had to be greatly reduced in size. We are now

exploring ultraprecision micromachining based on MEMS technology in order to achieve even greater miniaturization and manufacturing precision, particularly with crystal units.



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