Products by application

Technologies with applications far beyond the smartphone. So special we call them “magic wand” technologies.

— Murata is prepared for the coming boom in connectivity. —

The smartphone is a gadget that hardly ever leaves one’s hand. It allows us to communicate not only by voice, but by exchanging email, interacting through social media, playing games, sharing pictures and video, and so on. Data transmission speeds and phone storage capacities continue to improve, and as communications services expand, smartphones are bound to become more advanced in terms of performance and functionality.

RF components, with their modular design and compact structure, sensors that improve functionality and operability, and low-loss capacitors and power inductors all help Murata contribute to the evolution and growth of the communications sector.

Communications

Chip multilayer ceramic capacitors

Indispensable to electronic circuits, these components serve to store and adjust flows of electricity. They are key to the advanced functionality of smartphones and other mobile devices, and as they continue to become thinner and more compact are increasingly being incorporated into such information devices.

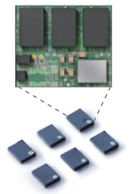
Inductors (coils)

When electricity flows through these inductors, which are also called coils, a magnetic field develops and that current is affected. These inductors are used in radio circuits, power supply circuits, and more.

Microwave coaxial connectors

Microwave coaxial connectors transmit radio frequency signal between circuits. They contribute to the development of high-performance communication equipments, such as smartphones, tablets and wearable devices with smaller and thinner size.

RF modules for cellular phones



These modules support the multiple frequency compatibility of smartphones. They combine a power amplification (PA) function with the conventional function for changing and filtering frequencies. By adding even more functions, they contribute to reducing the thickness and improving the transmission speed of smartphones.

Internal configuration (image)

SAW filters

The filters that extract only the required portion of a radio signal are key devices in high frequency circuits. With its unique miniaturization technology, Murata helps RF circuit downsizing.

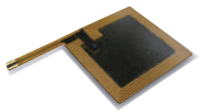
Connectivity modules

Enabling various devices to access the Internet via radio signals, these modules lead the trend towards increasing multifunctionality and IoT in smartphones and in-vehicle equipment.

MetroCirc™

A multilayer bendable resin substrate that combines Murata’s monolithic multilayer production technologies with organic material. It can be used for RF and digital signal transmission wires, antennas, and much more, enabling the development of components of any shape with exceptional RF characteristics.

NFC (near field communication) antennas



Used in equipment that provides electronic payment services—convenient systems for quick cashless payments at the point of sale. The data exchange takes place using an NFC antenna in the consumer’s personal device (mobile phone etc.) and the payment terminal.

Doing what you want, when you want to.

— Murata simplifies things with not-so-simple technologies. —

Thin notebook computers, tablets, and other carryable devices have become essential to people’s lives, from students to working adults. They can even be used for illustrating, gaming, and video editing.

Murata’s ability to make electronic components smaller and thinner, plus our sensing technologies and high-density mounting technologies all contribute to improving the performance and functionality of computers. Our wireless communication modules that enable connectivity with low power consumption, and sensors that improve usability, are examples of how Murata supports next-generation computing.

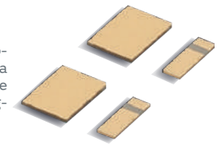
Low ESL chip multilayer ceramic capacitors

Capacitors with low equivalent series inductance (ESL) and superb RF characteristics are ideal for power supply decoupling in high-speed electronic devices.

Shock sensors

These are electronic components that apply piezoelectric ceramics to change acceleration and vibration into an electrical signal. They are used mainly with HDDs as sensors for preventing the writing of data when an impact is received from an external source.

Actuators



Piezoelectric actuators employ piezoelectric ceramics that deform under a voltage, making them ideal for the microscopic positioning of the magnetic head in hard disk drives.

Computers

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Automotive electronics

Vehicles that are eco-friendly and easy to drive rely on advances in electronics.

—— This gives Murata plenty of opportunity for the future. ——

Society is moving toward providing all citizens with safe freedom of movement while protecting the environment. The goal ahead is autonomous vehicle technology. Murata is accelerating the pace of technical innovation to make self-driving cars practical.
Murata's electronic components are used in various automotive systems, including safety equipment, driver assistance, power trains, and telecommunications, evolving together with vehicles to deliver high reliability under extreme conditions.

Combined gyro sensors and accelerometers

Changes in acceleration and in gravity can be handled as changes in capacitance in order to detect acceleration values and the angle of rotation. This sensor is used in areas in connection with the basic performance of automobiles, such as in the Electronic Stability Control (ESC) for the chassis and in the car's Anti-lock Brake Systems (ABS).

Ultrasonic sensors

This sensor can measure distance according to the reflex time of the ultrasonic waves that are generated by oscillating piezoelectric ceramics. It is used especially for the rear sonar in parking assistance systems.

DC-DC converters

This thin, lightweight DC-DC converter uses a Murata-proprietary control circuit and sheet transformer. Using this one DC-DC converter, voltage can be supplied to the circuit unit of each block that requires insulation (the low-voltage battery input circuit unit, high-voltage battery input circuit unit, and AC commercial voltage input circuit unit).

Chip multilayer ceramic capacitors

Maximizing the heat resistance of ceramics, these highly reliable capacitors are able to demonstrate their excellent performance even under harsh usage environments. They are, thus, naturally utilized in applications that require high reliability, such as in ECUs, drive control units and safety devices, as well as being widely used for infotainment like audio and navigation.

Power inductors

Electronic control systems are becoming standard in more vehicles today. Power inductors are used to efficiently produce the various voltages needed by circuits. They are also designed to control the noise generated by electronic devices.

Timing devices

These are component parts that generate the clock signal in combination with the IC. As electronic outfitting of automobiles progresses, communication between ECUs is needed and timing devices that deliver a highly accurate, high quality clock signal are called for.

Ceramic Resonators (CERALOCK®)

Crystal units

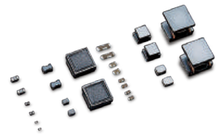
Enhancing your home, Murata is a hidden partner making life better.

—— Smart, economical and stylish. ——

A TV that remembers your favorite shows. Air conditioning that cools only those areas where people are and that emits negative ions into the air. Sensors, ionizer modules, and high conversion efficiency power supply modules support the latest systems to make your home and life "smart" and ecological.

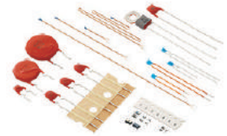
Chip EMI suppression filters (Chip EMIFIL®)

Digitization of audio-visual equipment and home appliances is advancing and the high-speed clock signal that flows inside those devices may sometimes have a negative influence as electromagnetic noise. Chip EMI suppression filters prevent such malfunctions caused by noise and other factors, and simultaneously contribute to the high definition and high-quality sound in audio-visual equipment.



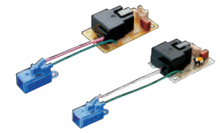
Thermistors

Elements whose resistance changes with temperature fluctuations used in heat sensors, circuit protectors, heaters, and other systems. They are components that protect ICs, power supply circuits, batteries, and the like from excessive current and overheating by maintaining control and proper operation based on temperature.



Ionizers / active oxygen modules (Ozonizers) (Ionissimo®)

This device ionizes air molecules (gives them a plus or minus electric charge). Deodorization, disinfection, anti-mold, antivirus, anti-static, electrification and other effects can be achieved by ionizing the air and adding certain characteristics.



Polymer aluminum electrolytic capacitors

These are high capacity capacitors that are characterized by having a low profile and low ESR. They handle the stabilization of voltage in circuits where serious voltage control is demanded, and contribute to the advanced features in audio-visual equipment.

Connectivity modules

Murata's communication modules are based on proprietary materials technology and processing technology, and meet customer's needs for improved functionality and compactness of set products with high reliability.

Audio and visual / Home appliances

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