Taiyo Yuden (USA), Inc.

Creating the Future Through Materials and Electronics

Taiyo Yuden produces surface-mount and leaded passive electronic components as well as functional modules that incorporate active components. Product lines include capacitors, inductors, ferrite beads, EMI filters, surge absorbers, resistors, thermistors, piezo products, ferrite cores and magnets, resonators and LC filters, and functional modules. In addition, Xentek Power Systems is now a Taiyo Yuden company. The Xentek business unit produces switching, linear, and specialty power supplies as well as isolation transformers, power conditioners, DC-DC converters, and LCD backlight drivers.

Components for Wireless Products
Taiyo Yuden specializes in components that are used in applications where small size and optimum performance are mandatory. The company's components are positioned with the performance, quality, and price to contribute to the business success of manufacturers producing wireless systems and hand-held and mobile wireless products.
High-Frequency Multilayer Chip Inductors. Very popular with manufacturers of wireless communication products, components in Taiyo Yuden's HK series of surface-mount multilayer chip inductors are widely used for noise suppression in high-frequency circuits operating in the upper MHz and GHz ranges. Some part numbers in the HK series have a minimum self-resonant frequency of 10 GHz. Most part numbers have a minimum self-resonant frequency above 800 MHz.
Multilayer Ferrite Chip Beads. Many manufacturers of wireless communication products are using Taiyo Yuden's BK series of surface-mount multilayer ferrite chip bead components to help assure compliance with FCC rules for radiated noise and to eliminate interference between circuits in computers, peripherals and cellular phones. These components are available in a wide range of frequency characteristics and impedance values.
High Capacitance Multilayer Ceramic Capacitors. Widely used by manufacturers of wireless communication products, high-capacitance multilayer ceramic capacitors in Taiyo Yuden's surface-mount CE series of components allow designers to replace larger tantalum and aluminum electrolytic capacitors with a smaller-size component for noise filtering.
EMI Filters. Surface-mount EMI suppression filters manufactured by Taiyo Yuden incorporate multilayer capacitor and inductor T sections to provide good attenuation characteristics while maintaining the waveform quality of digital signals. These EMI suppression filters are widely used in digital signal processing circuits in communications equipment and computers.
Surge Arrestors. TaiyoYuden's MFC capacitive varistor components combine the characteristics of a varistor and a capacitor. Above the varistor voltage, sharp pulses or surges are clipped without operational delay. Under the varistor voltage,

high-frequency noise is absorbed by the capacitance. These components are used to protect electronic equipment from high-energy surges and to raise the noise margin.

Functional Modules. Taiyo Yuden supplies a number of high-frequency power amplifier modules that are used in cellular phone products. Ultra low power and low power RF modules are available too, and have been used in applications like wireless remote controllers, keyless-entry systems, and telemetry systems. Custom design support is available at Taiyo Yuden.

Materials and Manufacturing Capabilities

Advanced materials technology, innovative product designs, and clever manufacturing processes are forces driving Taiyo Yuden's continuing development of versatile and useful products on the cutting edge of electronic component technology.

Ceramics and Metals Fabrication. State-of-the-art ceramic material technology and high-precision multilayer component fabrication technology make it possible for Taiyo Yuden to produce multilayer ceramic capacitors with some of the world's highest capacitance values relative to the case sizes. Moreover, Taiyo Yuden was one of the first capacitor manufacturers to use nickel as the electrode material.

Taiyo Yuden's use of advanced ceramic technology for manufacturing high-capacitance multilayer ceramic capacitors results in the ability to form a large number of dielectric layers within a given component case size. In turn, this enables the number of capacitor plates to be increased with smaller spacing, thus providing the high capacitance of these small parts. Use of nickel-based metal for electrodes decreases the component's equivalent series resistance, dramatically decreases impedance at the operating frequency, and reduces power dissipation and heat generation.

Compared to tantalum and aluminum electrolytic capacitors, the nickel-electrode, high-capacitance multilayer ceramic capacitors offer benefits that include lower equivalent series resistance and smaller case sizes and lower profiles than electrolytics with similar capacitance and rated voltage. With their smaller size and lower power dissipation, the CE series of high-capacitance multilayer ceramic capacitors are expected to provide benefits in current and future cellular phone technologies, such as systems designed around the emerging Bluetooth specification.

Low Resistance Vias. The HK series of high-frequency multilayer chip inductors have low-loss, high-Q characteristics that are achieved by Taiyo Yuden's use of an advanced manufacturing process to form vias for connections between a component's layers. Low-resistivity silver is used for internal conductors to reduce loss.

Printed Metal Shield. In the BK series of multilayer ferrite chip bead components, an internal silver printed layer creates a closed circuit that acts as a magnetic shield. This feature minimizes crosstalk between closely spaced internal circuits.

Thick-Film Technology. Taiyo Yuden also provides design assistance for producing custom functional modules fabricated using thick-film technology.

About Taiyo Yuden

Taiyo Yuden Co., Ltd. is headquartered in Tokyo. The company has offices and factories worldwide.

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