

Murata technologies

Shaping the future of electronics

Murata has built an integrated system of production from raw materials to finished products, and we are continuously developing and accruing our fundamental technology base, such as materials technology, front-end process technology, product design technology, back-end process technology and analytical technology. We also aim at creating new markets and innovations by actively collaborating with outside partners and by developing core technologies and products that anticipate the future.



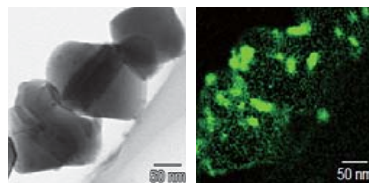
Where innovation begins

Perfected techniques

Materials technology

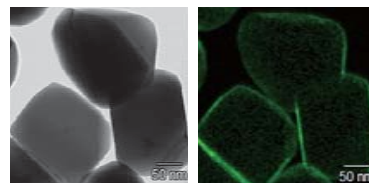
"New electronic devices begin with new electronic components; new electronic components begin with new materials..." Based on that concept, Murata has created functional ceramic materials with outstanding characteristics. And we continuously further advance our technology through the development of new materials with even better characteristics.

2004 - Conventional process



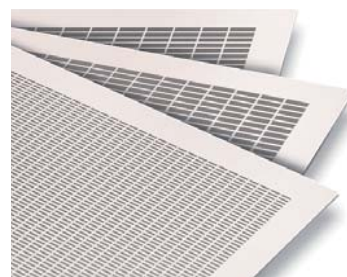
Materials processing

2014 - New process

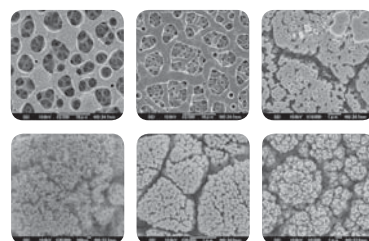


Front-end process technology

Front-end process technologies enable us to produce designed functions in the best possible way, and it plays an important role in the miniaturization, slimming down, and high functionality of electronic components.



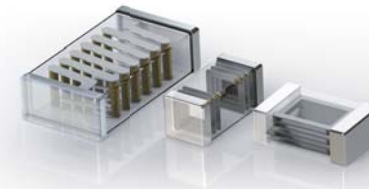
Printing



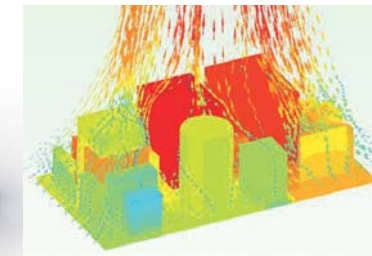
Surface finishing

Product design technology

From single-function components to modules and on to total solution proposals, the value that Murata has provided over the years continues to evolve. We are involved in development of the technologies and products that can promptly respond to customer needs with an eye on the future.



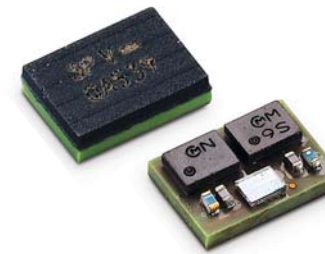
Inductor element structure



Simulation

Back-end process technology

Thanks to our own production facilities and strong manufacturing ("monozukuri") expertise, we possess numerous technologies and know-how to mass-produce products stably and efficiently.



Packaging



Measurement

Analytical technology

Efficient use of scientific analytical methods to confirm physical and electrical properties, composition and structure of materials, together with Murata's advanced failure analysis systems, provide peace of mind to our customers.

Layer structure

Internal electrode
Dielectric ceramic
1µm

TEM* image of dielectric ceramics

2nm
*transmission electron microscope

Corresponding cations in the image

Ba
Ti

External electrode Dielectric ceramics
Internal electrode

Micro and nano structures in a MLCC (monolithic ceramic capacitor)

Shaping the future

Making innovation happen

Attending to detail