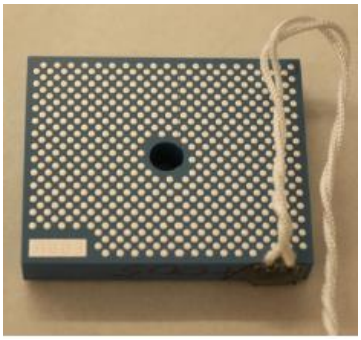
FUSION FOR ENERGY

TECHNOLOGY OFFER

Low Temperature Co-fired Ceramics for highly integrated electronic devices

VIA ELECTRONIC has developed a strong manufacturing know-how in low-temperature co-fired ceramics for highly integrated electronic devices. Its high permeability and permittivity and the good dielectric characteristics of ceramic, make this know-how suitable for controller electronics, RF designs, microsystems and sensors.



The technology

The core of this “Low Temperature Co-fired Ceramic (LTCC)“. technology are the unsintered flexible ceramic foils. These unsintered foils are shaped, track-printed using thickfilm technology, laminated and then sintered at 850 to 900°C. Due to the opportunity to shape it in its unsintered state many interconnections and packaging solutions are conceivable. The result is a highly integrated, 3-dimensional ceramic multilayer board. For example, innovative inductive magnetic sensors have been developed in collaboration with F4E to measure local magnetic fields in various frequency ranges.

Robust and compact with a high integration and interconnection

This technology allows to co-fire ceramic with highly conductive materials (silver, gold and copper) and to develop compact and robust electronic devices. LTCC features the ability to embed passive elements, such as resistors, capacitors and inductors into the ceramic package, minimising the size of the completed module. Complex form outside shapes as well as 3-dimension channels and chambers can be achieved. It also offers the possibility to combine many individual layers with different functionalities and achieve a single multilayer laminated package with a high integration and interconnection level.

Multi-layer packaging in the electronics and sensors industry

Using the advantages of LTCC technology, sophisticated and manifold solutions for scientific or industrial applications like medical, defense, aerospace, telecommunications or automotive are possible. Due to material properties such as advanced dielectric characteristics or non magnetic materials, LTCC is ideally suited for use cases in harsh environment, low or high temperature, vacuum or magnetic sensors.

Collaboration opportunities

Based on this technology, VIA Electronic offers feasibility check and consultancy services to evaluate the requirements as well as product development activities (layout, prototyping, engineering) and full scale production.

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