

Conductors



Heraeus announces the introduction of several new conductors that extend the capabilities of the company's CT2000 LTCC technology offering. Heraeus manufactures the complete CT2000 LTCC material system, which provides excellent electrical performance and low cost for wireless, automotive and telecommunications systems up to 5 GHz.

The new pastes include TC2303, a co-firing ground plane conductor; TC7301, a co-firing via fill; and TC2304HQ, a co-firing routing conductor. All three are pure silver products with a low resistivity of less than milliohms per square. They feature conductivities in excess of 75% of bulk with improvements in line loss up to 30% when used with either Heratape[®] CT2000 LTCC or other tape systems.

TC2303 is designed for screen printing of large area ground planes and can be used for up to 100% coverage. It offers high conductivity with minimal warpage. TC7301 is optimized to provide excellent printability for stencil printing of vias.

TC2304HQ provides fine line print resolution of 75 μ m printed (60 μ m after co-firing) when printing conductor tracks. It may also be used to print fine line patterns. It joins TC2301P1, a photo-imageable pure silver conductor with a wide processing latitude and fine line print resolution of better than 50 μ m imaged (38 μ m after co-firing) to provide users with a variety of options for producing conductor tracks.

Heraeus manufactures Heratape[®] CT2000 LTCC under license from Motorola. As part of the program, Heraeus is also developing all other elements of the material system, including dielectric tape, capacitor dielectrics and conductors. Heratape[®] CT2000 LTCC has a near-zero temperature coefficient of frequency of resonant structures, ensuring consistent electronic performance across a wide range of environmental conditions. The tape is lead- and cadmium-free and has excellent handling properties. It is dimensionally stable when refired at 850 \pm 176C and offers low cost and flexibility in design.

Current uses for CT2000 technology include handheld telephones, automotive components and other electronic applications. The system is also targeted for "Bluetooth" modules. The Bluetooth standard supports short-range

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wireless communication between devices such as laptops, cell phones, PCs and peripherals at a frequency of 2.4 GHz, eliminating the need for cable connections.

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