Multilayer ceramic chip capacitors
Soft-termination MLCCs with high flex cracking resistance

- Flex cracking resistance up to a PCB deflection limit of 5 mm
- Solder joints 2.5 times stronger than those of standard types

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TDK Corporation presents a new series of soft-termination MLCCs that are specially designed to withstand flex cracking caused by bending stresses to the PCB. The new series of commercial grade MLCCs with soft terminations is available in case sizes from EIA 0402 (1.0 mm x 0.5 mm) to EIA 3025 (7.5 mm x 6.3 mm) and with a wide range of capacitance values on a par with TDK's other commercial grade MLCCs. With these new types the soft-termination technology already proven in automotive grade components of the CGA series is now available for general-purpose applications as well. Mass production will start in July 2014.

PCBs are exposed to mechanical bending stress during a number of handling processes such as board splitting, insertion of sockets and leaded components, and screw-down, which take place after the MLCCs are mounted on the board. These mechanical stresses can cause flex cracking in the MLCCs. In order to effectively absorb these board stresses, TDK has designed the new types with an elastic conductive resin electrode material and advanced electrode forming technology. The result is a soft termination that is able to withstand a board deflection of up to 5 mm (over a length of 90 mm) – making the joint 2.5 times stronger than that of standard MLCCs – and all but eliminates the risk of flex cracking.

The new series of commercial grade soft-termination MLCCs extends TDK's portfolio of components with outstanding joint reliability. Together with the MEGACAP Type series of capacitors with metal lead frames, TDK offers a broad range of MLCCs that are able to withstand severe environmental conditions.

Glossary

- Flex cracking: After MLCCs have been soldered to a PCB, handling processes such as board splitting, insertion of sockets and leaded components, and screw-down can cause the PCB to bend, and the accompanying tensile stresses can lead to cracks in the MLCC itself.

Main applications

- Electronic circuits, whose PCBs require handling after MLCCs have been soldered, such as smartphones, PCs, TVs, power supplies, game consoles, car multimedia equipment, and base stations.

Main features and benefits

- Prevent flex cracking on PCBs that are subjected to high mechanical stresses
- Withstand a PCB deflection limit 5 mm (over a length of 90 mm), making solder joints 2.5 times stronger than those of standard types

Key data

Soft-termination type	Footprint [mm]	Rated voltage [V]
C1005	1.0 x 0.5 (EIA 0402)	4 to 100
C1608	1.6 x 0.8 (EIA 0603)	4 to 100
C2012	2.0 x 1.25 (EIA 0805)	6.3 to 450
C3216	3.2 x 1.6 (EIA 1206)	6.3 to 2000
C3225	3.2 x 2.5 (EIA 1210)	6.3 to 2000
C4532	4.5 x 3.2 (EIA 1812)	6.3 to 2000
C5750	5.7 x 5.0 (EIA 2220)	6.3 to 2000
C7563	7.5 x 6.3 (EIA 3025)	16 to 50

Available with a wide range of capacitance values on a par with other commercial grade MLCCs

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About TDK Corporation

TDK Corporation is a leading electronics company based in Tokyo, Japan. It was established in 1935 to commercialize ferrite, a key material in electronic and magnetic products. TDK's portfolio includes electronic components, modules and systems* marketed under the product brands TDK and EPCOS, power supplies, magnetic application products as well as energy devices, flash memory application devices, and others. TDK focuses on demanding markets in the areas of information and communication technology and consumer, automotive and industrial electronics. The company has a network of design and manufacturing locations and sales offices in Asia, Europe, and in North and South America. In fiscal 2013, TDK posted total sales of USD 9.1 billion and employed about 80,000 people worldwide.

* The product portfolio includes ceramic, aluminum electrolytic and film capacitors, ferrites, inductors, high-frequency components such as surface acoustic wave (SAW) filter products and modules, piezo and protection components, and sensors.

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