Surface-Mount Multilayer Ceramic Capacitors

Taiyo Yuden announces its new CF Series of surface-mount Multilayer Ceramic Capacitors (MLCC). Designed for high-frequency filtering applications, CF Series MLCCs provide a smaller, lower cost, more reliable alternative to SMD plastic film capacitors for designers of consumer audio equipment, and PLL mobile phone circuits. The CF Series' extremely low Equivalent Series Resistance (ESR) also makes them ideal for high-speed microprocessor applications.
In most examples, low-distortion CF Series caps provide a smaller case size than equivalent capacitance SMD plastic film types. Currently available in 0603 (1, 1.5, 2.2, 3.3 nF), 0805 (4.7, 6.8, 10, 22 nF) and 1206 (47, 100 nF) case sizes at 25 V, CF Series MLCCs offer superior component reliability when compared to SMD plastic film caps due to their stronger thermal shock and mechanical stress withstand capabilities. In addition, CF Series capacitors provide superior DC bias characteristics and improved reliability through higher insulation resistance. Breakdown voltage for the series is almost an order of magnitude higher than for SMD plastic film capacitors (780 V vs. 80 V). Additional capacitance values are now under development and will be available in the second half of 2001.
Taiyo Yuden's high-precision multi-layering techniques, combined with a new composition dieletric material, have resulted in a number of performance advantages. The CF Series dielectric material is composed of a cubic ($CaZrO_3$) molecular structure that achieves higher capacitance values than typical Class 1 temperature compensating capacitors, while offering superior temperature stability and lower ESR than tetragonal ($BaTiO_3$) based chemistries used in Taiyo Yuden's series of high capacitance capacitors. Cost reduction and reliability are enhanced by use of base metal (Nickel) throughout, for both the internal and external electrodes.

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