Fabrication and Characterization of Multilayer Capacitors Buried in a Low Temperature Co-Fired Ceramic Substrate

http://www.firstlight.cn 1997-11-03

Multilayer ceramic capacitors designed to be embedded in a low temperature co-fired ceramic substrate have been successfully fabricated. Low and high value capacitors were respectively embedded in the low K multilayer substrate and high K dielectric layer. The buried capacitor has a capacitance density range (1 kHz) from about 220 pF/cm2 to 30 nF/cm2. The design took material compatibility and shrinkage characteristics specifically into account. The effects of heating rate and peak temperature holding time on the densification of the laminate were studied. The scanning electron micrograph revealed no evident cracking in the fired components. The electrical properties of the buried capacitors such as dissipation factor, insulation resistance and breakdown voltage were studied and found to be good for device application. The temperature dependence of the dissipation factor and coefficient of capacitance for the buried capacitor was also studied.

存档文本