내장형 capacitor를 위한 LCP와 $BaTiO_3$-$SrTiO_3$ 복합재의 유전특성

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Dielectric Properties of LCP and $BaTiO_3$-$SrTiO_3$ Composites for Embedded Matching Capacitors

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Abstracts : We manufactured Liquid Crystal Polymer (LCP) and (1-x)$BaTiO_3$-x$SrTiO_3$(BST) ceramic composites and investigated dielectric properties to use as embedded capacitor in printed circuit boards and replace LTCC substrates. The dielectric properties of these composites are varied with volume fraction of BST and ratios of BT/ST. Dielectric constants are in the range of 3~28. In addition, we could get low TCC and High Q value that could not achieve in other ceramic-polymer composites. Especially, in composite with x=0.4 and 50vol% BST, the dieletric constant and Q-value are 27 and 300, respectively. And more TCC is -116~145ppm/℃ in the temperature range of -55~125℃. We think that this composites can be used high-Q substrate material like LTCC and embedded temperature compensation capacitor in printed circuit boards.