Abstracts

Temperature-compensated thermoplastic high dielectric-constant microwave laminates

L.M. Walpita, M.R. Ahern, P. Chen, H. Goldberg, S. Hanley, W.M. Pleban, S. Weinberg, C. Zipp, G. Adams and Y.H. Wong. "Temperature-compensated thermoplastic high dielectric-constant microwave laminates." 1999 Transactions on Microwave Theory and Techniques 47.8 (Aug. 1999 [T-MTT] (Mini-Special Issue on Low-Power/Low-Noise Technologies for Mobile Wireless Communications)): 1577-1584.

High dielectric-constant materials are increasingly needed in microwave circuit miniaturization for outdoor and indoor wireless applications. In this paper, we introduce temperature-stable high dielectric-constant thermoplastic polymer compositions and copper-laminated sheets made out of them for microwave circuits. The compositions are made by mixing suitable ceramics and polymers. The design, fabrication, and properties of these compositions are discussed. The effect of temperature on the resonance frequency of a patch antenna made out of the copper-laminated high dielectric-constant composite sheets is also discussed.

❑ Return to main document.