Study and Fabrication of Miniaturized Ceramic Bandpass Filter Using Perovskite Ceramics

何軒安、許崇宜

E-mail: 9707281@mail.dyu.edu.tw

ABSTRACT

The microwave properties of (1-x)CaTiO3－(x)Sm(Co1/2Ti1/2)O3(x=0.2,0.4,0.6,0.8) dielectric ceramic materials have been discussed in the manuscript. By appropriately adjusting the x value in the (1-x)CaTiO3－(x)Sm(Co1/2Ti1/2)O3[(1-x)CT-xSCT] ceramic system, near zero τf value can be achieved. The experiment results show that the dielectric properties of 0.6SCT-0.4CT (Q×f~1748, εr=27.3, τf~6ppm/oC).have Finally, a band-pass filter has been designed and fabricated by using step-impedance hairpin resonators and IDT hairpin resonators with 2GHz center frequency on Al2O3 and (1-x)CaTiO3－(x)Sm(Co1/2Ti1/2)O3 ceramic substrate, respectively

Keywords : Microwave ceramic material;Cross-coupling filter

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