Abstracts

Sandwich-type ferromagnetic RF integrated inductor (Dec. 2001 [T-MTT])

M. Yamaguchi, M. Baba and K.-I. Arai. "Sandwich-type ferromagnetic RF integrated inductor (Dec. 2001 [T-MTT])." 2001 Transactions on Microwave Theory and Techniques 49.12 (Dec. 2001 [T-MTT] (Special Issue on 2001 International Microwave Symposium)): 2331-2335.

The first demonstration of a sandwich-type ferromagnetic RF integrated spiral inductor for the 2-GHz range is reported. Two ferromagnetic CoNbZr films were set to sandwich the spiral in order to enhance the amount of magnetic flux linkage across the coil current. The stresses given from the insulator to the ferromagnetic film were studied. The inductance L of 7.9 nH and the qualify factor Q of 12.7 were obtained for a 200 /spl mu/m/spl times/400 /spl mu/m size four-turn rectangular spiral at f=2 GHz. The inductance was better than that of an air core of the same coil size by 19%, and the Q was better by 23%. Comparison with the on-top magnetic film type was also discussed.

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