Abstracts

GHz bandstop microstrip filter using patterned Ni/sub 78/Fe/sub 22/ ferromagnetic film

Y. Zhuang, B. Rejaei, E. Boellaard, A. Vroubel and J.N. Burghartz. "GHz bandstop microstrip filter using patterned Ni/sub 78/Fe/sub 22/ ferromagnetic film." 2002 Microwave and Wireless Components Letters 12.12 (Dec. 2002 [MWCL]): 473-475.

A series of microstrips with patterned Ni/sub 78/Fe/sub 22/ ferromagnetic cores have been investigated for RF applications. The devices have been integrated onto a silicon substrate by using a fully IC-compatible process. The Ni/sub 78/Fe/sub 22/ films were deposited by electroplating onto Si at room temperature and were structured into rectangular prisms with large aspect ratios, i.e., 10:1 and 40:1. Measurements have been performed using a network analyzer. Voltage attenuation of 19 dB/cm has been obtained at 3.9 GHz on a 2-mm-long strip line. The propagating wavelength is reduced by 60% compared to a control device without ferromagnetic core.

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