Abstracts

Energy Storage Effect in MSSW Metal-Finger Reflectors

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Experimental results are presented on the magnetostatic-surface wave (MSSW) scattering properties of a grating of metal fingers placed at a variable height above the YIG film and compared with theory. The agreement with theory is excellent if one takes into account energy storage at the metal-finger edges and if the width of the metal fingers is larger than the YIG-film thickness. It is concluded that, for smaller finger widths, the interaction between the edges of a metal finger must additionally be incorporated into the theory. The present results are significantly different from those for the scattering of magnetostatic forward volume waves (MSFVW's) by a grating of metal fingers. In the latter case, the scattered modes are propagating MSFVW's so that the problem of interaction between the edges of metal fingers is not present, i.e., the theory is valid for all widths of the metal fingers.

❑ Return to main document.