Abstracts

Impact of Dielectric Loss Tangent on the Performance of Millimeter Wave Ferrite Circulators

G.R. Harrison, S.B. Thompson and J.T. Vaughn. "Impact of Dielectric Loss Tangent on the Performance of Millimeter Wave Ferrite Circulators." 1987 MTT-S International Microwave Symposium Digest 87.2 (1987 Vol. II [MWSYM]): 989-991.

A ferrite circulator can be modeled as a dielectric resonator whose unloaded Q is a function of dielectric loss. This model predicts that when loss tangents of ferrite materials are increased from 0.0002 to 0.002, circulator insertion loss increases by about 0.14 dB. Experimental measurements confirm that loss tangents significantly less than 0.001 are required to achieve low insertion loss, high performance, millimeter wave circulators.

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