Abstracts

A Laminar Subsidiary-Resonance Limiter (Correspondence)

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An investigation of the limiting threshold in a subsidiary-resonance limiter was conducted. Particular attention was given to the effects of the demagnetizing factors on the limiting threshold. Demagnetization factors of 1/2 for N/sub x/ and N/sub y/, and 0 for N/sub z/ made it possible to achieve thresholds an order of magnitude lower than had been obtained previously. The above demagnetizing factors correspond to a long thin rod magnetized along the axis of symmetry. A limiter, utilizing alternate polycrystalline YIG rods and dielectric rods of the same dimensions for dynamic range, and alternate single-crystal YIG and dielectric rods for reduced threshold, was developed. The dielectric rods provided magnetic insulation for the ferrite material such that each ferrite rod was biased independently in order to maintain the proper demagnetizing factors. The final limiter had a threshold of 2.8 watts peak power and a dynamic range of 30 dB.

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