Abstracts

Designing high-performance finline tapers with vector-based optimization (Dec. 1999 [T-MTT])

C.A.W. Vale and P. Meyer. "Designing high-performance finline tapers with vector-based optimization (Dec. 1999 [T-MTT])." 1999 Transactions on Microwave Theory and Techniques 47.12 (Dec. 1999 [T-MTT] (Special Issue on 1999 International Microwave Symposium)): 2467-2472.

In this paper, a novel two-step optimization algorithm is presented for the design of high-performance finline tapers. The first step utilizes a focusing approach, where the optimization is performed with an increasing number of variables, while the second step exploits the vector representation of the integral form of the reflection coefficient of smoothly varying tapers. A few high-performance X-band tapers are designed and measured, including one measuring only 0.47/spl lambda//sub 0/ (17.5 mm) at 8 GHz with a 25-dB reflection bandwidth of 7.4-11.3 GHz, and one designed to work without a quarter-wave notch transformer, with a 30-dB reflection bandwidth of 8.1-10.9 GHz.

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