Abstracts

A New Model for the Apparent Characteristic Impedance of Finned Waveguide and Finlines

P. Pramanick and P. Bhartia. "A New Model for the Apparent Characteristic Impedance of Finned Waveguide and Finlines." 1986 Transactions on Microwave Theory and Techniques 34.12 (Dec. 1986 [T-MTT] (1986 Symposium Issue)): 1437-1441.

This paper presents a new model for the apparent characteristic impedance of finned waveguide and finlines from the standpoint of per-unit-length capacitance of the fins, obtained by conformal mapping, and of the waveguide, obtained from cutoff wavelengths, without going into the controversy of definition. The model strongly supports the power-voltage definition. Closed-form synthesis equations have also been derived which are within 1.5 percent of the analysis equations. The model will be useful in computer-aided design of millimeter-wave finned waveguide and finlines.

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