Abstracts

A Note on the Calculation of the Current Distribution in Lossy Microstrip Structures

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The equations that govern the current distribution in the finite-thickness conductor of a microstrip structure are developed in a rigorous manner. It is shown that the cross-sectional variation of the current density is independent of the field variation along the axis of the microstrip line only for the case when the displacement current in the conductor is negligible compared to the conduction current, a condition easily fulfilled for most practical applications, and the line is operated in the quasi-TEM mode. The validity of various methods proposed recently for conductor loss calculations is discussed on the basis of this analysis.

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