Abstracts

Characteristic Impedance of Microstrip Lines

J.R. Brews. "Characteristic Impedance of Microstrip Lines." 1987 Transactions on Microwave Theory and Techniques 35.1 (Jan. 1987 [T-MTT]): 30-34.

It is shown that it is feasible to force the complex power P of microstrip line to be given by the usual circuit definition: P = I* V/2 where I and V are the current and voltage of the equivalent transmission line and * denotes complex conjugation. If this requirement is made, then the three common definitions of characteristic impedance (namely, the voltage-current, power-voltage, and power-current definitions) all become equivalent. The remaining arbitrariness in microstrip characteristic impedance 20 stems not from the choice of definition, as sometimes argued, but from the ability to choose one of the magnitudes |I|, |V|, and |Z/sub 0/| for convenience, and also to choose the phase of either I or V (but not their relative phase). This clarification should make it easier to simplify equivalent circuits for drivers, loads, and discontinuities.

❑ Return to main document.