Abstracts

The interdigital coplanar waveguide: a new low-impedance micromachinable planar structure

D.A. Thompson and R.L. Rogers. "The interdigital coplanar waveguide: a new low-impedance micromachinable planar structure." 1998 Microwave and Guided Wave Letters 8.7 (Jul. 1998 [MGWL]): 257-259.

The authors describe a new type of coplanar waveguide (CPW) which we call interdigital coplanar waveguide (ICPW). ICPW has three advantages over CPW. First, ICPW can have a lower characteristic impedance for the same minimum feature size and overall line width. Second, at low impedances it can obtain reduced high-frequency resistive loss. Finally, thickening the conductor reduces the ohmic losses more rapidly in the ICPW than in the CPW. The authors present an analysis comparing CPW and ICPW, assuming a TEM mode of propagation. Calculations are performed using finite-element analysis, and volume filament and surface ribbon methods.

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