Abstracts

Efficient transient compression using an all-silicon nonlinear transmission line

M. Birk, H. Kibbel, C. Warns, A. Trasser and H. Schumacher. "Efficient transient compression using an all-silicon nonlinear transmission line." 1998 Microwave and Guided Wave Letters 8.5 (May 1998 [MGWL]): 196-198.

Nonlinear transmission lines (NLTLs) have so far only been fabricated on GaAs. Here, an NLTL was monolithically integrated on a 2000-/spl Omega//spl middot/cm silicon substrate, demonstrating the applicability of the NLTL concept to silicon millimeter-wave integrated circuits (SIMMWICs). The fall time of 74 ps of a 4-GHz sinewave was compressed to 32 ps at the output of the NLTL, in accordance with theory. This is the first working NLTL on silicon to our knowledge.

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