Abstracts

A fully-distributed heterostructure-barrier-varactor nonlinear-transmission-line frequency tripler

Ming Li and R.G. Harrison. "A fully-distributed heterostructure-barrier-varactor nonlinear-transmission-line frequency tripler." 1998 MTT-S International Microwave Symposium Digest 98.3 (1998 Vol. III [MWSYM]): 1639-1642.

The discrete symmetric heterostructure barrier varactor (HBV) was previously developed as an unbiased frequency-tripling device that needed no second-harmonic idler circuit. Other work investigated nonlinear transmission lines (NLTLs) using discrete varactors attached to linear guiding structures. Fully-distributed Schottky-varactor NLTLs were excessively lossy. This paper explores NLTLs based on fully distributed HBV structures. Using both a modified FDTD method and numerical integration, it is shown that such NLTLs can provide efficient tripling over a wider range of input bandwidth than is possible with fixed-tuned triplers.

❑ Return to main document.