Abstracts

Monolithic coplanar transmission lines loaded by heterostructure barrier varactors for a 60 GHz tripler

M. Fernandez, E. Delos, X. Melique, S. Arscott and D. Lippens. "Monolithic coplanar transmission lines loaded by heterostructure barrier varactors for a 60 GHz tripler." 2001 Microwave and Wireless Components Letters 11.12 (Dec. 2001 [MWCL]): 498-500.

Nonlinear transmission lines (NLTLs) loaded by InP-based heterostructure barrier varactors (HBVs) have been fabricated in a monolithic coplanar technology for the first time. The devices were designed for a tripler with a 60 GHz; output frequency. The single HBV diodes, fabricated in a dual barrier scheme, exhibit a capacitance ratio of 6:1, a normalized capacitance of 1.4 fF//spl mu/m/sup 2/ and a voltage breakdown in excess of 10 V. Under moderate pumping (20 dBm), a tripling operation with 30% bandwidth was demonstrated with unsaturated conversion efficiency (1%) for a eight-HBV prototype.

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