

Abstracts

Novel millimeter wave active MMIC triplers

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A novel millimeter wave MMIC active balanced tripler with input driver amplifier has been developed using GaAs PHEMT 0.25 micron technology. Frequency conversion is realized using the high third harmonic currents of an overdriven class A amplifier with output short circuits at the fundamental and higher order harmonics with optimum load conductance at the third harmonic. Q- and W-band MMIC triplers were developed and exhibited +12 and +5 dBm peak output powers respectively. A MMIC W-band receiver was fabricated using the Q-band active multiplier to drive a subharmonic mixer with 5-dB overall conversion gain.

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