# Abstracts

## A 15/60 GHz One-Stage MMIC Frequency Quadrupler

*K. Shirakawa, Y. Kawasaki, Y. Ohashi and N. Okubo. "A 15/60 GHz One-Stage MMIC Frequency Quadrupler." 1996 Microwave and Millimeter-Wave Monolithic Circuits Symposium Digest 98. (1996 [MCS]): 35-38.*

We have developed a 15/60 GHz one-stage MMIC frequency quadruple using a 0.25-µm AlGaAs/GaAs HEMT. The HEMT was characterized by our empirical large-signal model, in which charge conservation and dispersion are taken into consideration. We included this model in a commercially-available harmonic balance circuit simulator, and designed the one-stage quadruple. The fabricated MMIC quadruple has a conversion gain of -5 dBm with -5 dBm of output power for a 0 dBm input signal.

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