# Abstracts

## A Novel Compact Monolithic Active Regulated Self-biased InP HEMT Amplifier

*K.W. Kobayashi, R. Lai, G.I. Ng, K.L. Tan, R. Esfandiari, D.C. Streit and J.B. Berenz. "A Novel Compact Monolithic Active Regulated Self-biased InP HEMT Amplifier." 1994 Microwave and Guided Wave Letters 4.7 (Jul. 1994 [MGWL]): 238-240.*

This letter reports on the first results of a monolithic active regulated self-biased HEMT amplifier fabricated in InP technology. The self-bias scheme incorporates an op-amp-based HEMT regulator topology that regulates the bias current to within 6% over a threshold variation of ±0.2 V. The dc yield based on this performance criteria was 75% across a wafer. The InP HEMT amplifier achieves an rf gain of 10-dB and a 3-dB bandwidth of 1-14 GHz. Across a wafer with a total threshold variation of 0.4 V, the gain variation was maintained to less than ±1 dB. The compact integrated HEMT regulated amplifier circuit was realized using area-efficient analog design techniques that consumed less than 1.3 x 1.1 $mm^2$. This demonstration has far-reaching implications to the producibility and reliability of InP HEMT MMIC's.

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