Abstracts

Reduction of common-source inductance in FET/HEMT structures utilizing wave-propagation effects

S. Sriram and T.J. Smith, Jr.. "Reduction of common-source inductance in FET/HEMT structures utilizing wave-propagation effects." 2000 Transactions on Microwave Theory and Techniques 48.3 (Mar. 2000 [T-MTT]): 406-411.

In this paper, a novel high-frequency/high-power field-effect-transistor structure is presented to reduce gain degradation caused by common-source inductance. In this structure, the reduction in common-source inductance is achieved without the need for using very thin substrates or very complicated fabrication technology, such as vias under each source finger. Using detailed transmission-line modeling, it is shown that a significant reduction in common-source inductance and improvement in RF performance can be achieved even for moderately high values of source grounding via inductance. The new structure allows simpler fabrication technology and is expected to be particularly useful to reduce the cost and improve the performance of high-power microwave and millimeter-wave devices and circuits.

❑ Return to main document.