Abstracts

A new lumped-elements power-combining amplifier based on an extended resonance technique

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A technique for combining power FETs in the output stage of a power amplifier is presented. The active devices are combined with simple inductor/capacitor networks and can be laid out across a single die while still allowing each device to be independently accessed for biasing. The inductors can range from fully integrated spirals to simple wire bonds, making this technique applicable over a broad range of frequencies. For linear RF power applications this is an effective technique for spreading more heat, while at high frequencies the junction parasitics are easily absorbed into this type of design. DC losses are minimized since each device can be biased individually, furthermore, it is possible to adjust the bias separately for each device to account for device nonuniformity across the die.

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