Abstracts

Finite DC feed inductor in class E power amplifiers-a simplified approach

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This report describes a method for using a finite DC feed inductor in place of an (infinite inductance) RF choke. In addition to providing the DC feed connection, the finite feed inductor can be used to perform two other functions needed in the class E power amplifier topology, namely, transformation of the 50 ohm load and reactive tuning. Since no assumptions are made about the shunt output capacitor, this result is independent of the capacitor's voltage dependence. The analysis results in simple, elegant, and easy to use design equations that, in the limit where the feed inductor approaches infinity, reverts to the case with the RF choke. The concept was demonstrated using a silicon LDMOS FET operating at 200 MHz.

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