

# MODELING A COMMON-SOURCE AMPLIFIER USING A FERROELECTRIC TRANSISTOR

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## ABSTRACT

This paper presents a mathematical model characterizing the behavior of a common-source amplifier using a FeFET. The model is based on empirical data and incorporates several variables that affect the output, including frequency, load resistance, and gate-to-source voltage. Since the common-source amplifier is the most widely used amplifier in MOS technology, understanding and modeling the behavior of the FeFET-based common-source amplifier will help in the integration of FeFETs into many circuits.

**Keywords:** FeFET; FFET; ferroelectric transistor; common-source amplifier

