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(54) **GATE DRIVER HAVING A FLOATING SUPPLY NODE WITH SELECTIVE POWER RECEPTION FOR USE IN SWITCHING CONVERTERS**

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ABSTRACT

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Techniques and apparatus for driving a transistor gate of a switched-mode power supply (SMPS) circuit. One example gate driver for a switching transistor of an SMPS circuit generally includes a first power supply rail; a reference rail; an output node for coupling to a control input of the switching transistor; a floating supply node; a pulldown transistor having a drain coupled to the output node of the gate driver and having a source coupled to the reference rail; and a pulldown logic buffer having a first power supply input coupled to the floating supply node, having a second power supply input coupled to the reference rail, and having an output coupled to a gate of the pulldown transistor. The floating supply node is configured to selectively receive power from the first power supply rail and the output node of the gate driver.

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