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(54) **ADAPTIVE DEAD-TIME CONTROL FOR SWITCHING CIRCUITRY OF A DC CONVERTER**

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(57) **ABSTRACT**

Embodiments of a switch converter are disclosed. The switch converter includes switching circuitry with a primary and a secondary switch, an output filter, a high-pass filter, switch control circuitry, and a trigger circuit. The output filter is connected to the switching circuitry. The switch control circuitry controls operation of the primary switch and the secondary switch so that the output filter generates a DC voltage and an enabling signal. The high-pass filter receives a feedback signal and detects a switching event of the switching circuitry with the feedback signal that is generated during a dead time of both the primary switch and the secondary switch are open simultaneously. The transient detector circuit generates a trigger signal in response to the switching event and an enabling signal being in an enabling state. The switching circuitry closes the secondary switch in response to the trigger signal.