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ONER et al.

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(54) **VALLEY CURRENT MODE CONTROL FOR A VOLTAGE CONVERTER**

(52) **U.S. Cl.**
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(71) Applicant: **Texas Instruments Incorporated**,
Dallas, TX (US)

(57) **ABSTRACT**

(72) Inventors: **Hakan ONER**, San Jose, CA (US);
Tawen MEI, Sunnyvale, CA (US)

A switching regulator includes a first transistor having a control input and the first transistor is coupled to an input voltage terminal. The regulator includes a second transistor having a control input. The second transistor is coupled to the first transistor at a switch terminal and to a ground terminal. The regulator also includes a controller coupled to the control inputs of the first and second transistor. The controller configured is configured to cause both the first and second transistors to be off concurrently during each of multiple switching cycles for an adaptive high impedance state. The length of time of the adaptive high impedance state is inversely related to current output by the switching regulator.

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