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(54) **CHARGING INTEGRATED CIRCUIT INCLUDING BIDIRECTIONAL SWITCHING CONVERTER, AND ELECTRONIC DEVICE INCLUDING THE SAME**

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(57) **ABSTRACT**

A charging integrated circuit (IC) includes a bidirectional switching converter and a controller. The bidirectional switching converter is configured to generate a first output voltage by bucking a first input voltage based on a first switching operation in a buck mode, generate a second output voltage by boosting a second input voltage based on a second switching operation in a boost mode, and generate the first output voltage or the second output voltage based on a third switching operation in a buck-boost mode. The controller is configured to control the second switching operation according to a valley current mode control (VCMC) in a continuous current section and control the second switching operation according to a voltage mode control (VMC) based on a fixed switching frequency in a discontinuous current section, in the boost mode.

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