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(54) **PROGRAMMABLE LOW-DROPOUT REGULATOR AND METHODS THEREFOR**

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See application file for complete search history.

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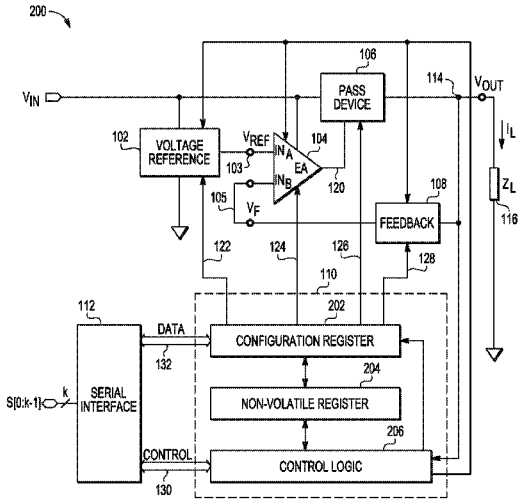
(57) **ABSTRACT**

A low-dropout (LDO) regulator includes a voltage reference circuit to provide a reference voltage, a pass device including an input terminal coupled to a voltage input, an output terminal to provide an output voltage and a control terminal, and an error amplifier including a first amplifier input for receiving the reference voltage, a second amplifier input, an amplifier output coupled to the control terminal of the pass device. Additionally, the LDO regulator includes a feedback circuit including a feedback input coupled to the output terminal of the pass device and a feedback output coupled to the second amplifier input to provide a feedback signal. The LDO regulator further includes a control circuit including a non-volatile memory to store configuration data to control operation of the voltage reference circuit, the pass device, the error amplifier, and the feedback circuit to produce the output voltage.

22 Claims, 9 Drawing Sheets