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(54) **SYSTEM FOR DETECTING EXTERNAL
REFERENCE RESISTOR IN VOLTAGE
SUPPLY PATH**

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(57) **ABSTRACT**

A system includes an operational amplifier which includes a first amplifier input, a second amplifier input and an amplifier output. The system includes a first switch which includes a first terminal and includes a second terminal coupled to the first amplifier input. The system includes a second switch which includes a first terminal coupled to the first amplifier input and a second terminal coupled to the second amplifier input. The system includes a first bias current source coupled between the first amplifier input and a common potential and includes a second bias current source coupled between the first terminal of the first switch and the common potential. The system includes a feedback path between the amplifier output and the first amplifier input.

