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(54) THRESHOLD VOLTAGE SENSOR AND A CHIP USING THE THRESHOLD VOLTAGE **SENSOR**

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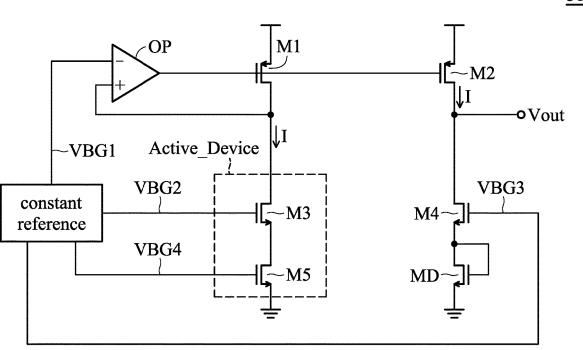
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(57)**ABSTRACT**

A low-cost and high-accuracy threshold voltage (Vth) sensor is shown. In addition to a current mirror implemented by an operational amplifier and two metal-oxide-semiconductor field-effect transistors (MOSFETs), the Vth sensor uses an active device and a diode-connected MOSFET. The active device is provided to determine a constant current that is mirrored from the first MOSFET to the second MOSFET of the current mirror. The diode-connected MOSFET is coupled between the drain terminal of the second MOSFET and the ground terminal. The constant current flows through the diode-connected MOSFET to generate an output voltage that contains information about a threshold voltage (Vth) of a MOSFET.



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