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A CMOS SUB-BANDGAP VOLTAGE REFERENCE WITHOUT RESISTORS

BY

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Abstract. A new method to obtain reference voltages in CMOS circuits without resistors is proposed. The reference voltage generated by the circuit described in this paper is 1.018 V in the typical technological corner, with ± 325 μV maximum variation from –40°C to +120°C. No tuning or trimming operations are used. The circuit was implemented in a standard 0.13 μm CMOS technology, can operate correctly with a voltage supply in the range 2.4…3.6 V, consumes a maximum supply current of 9 μA and has good noise and power-supply rejection characteristics.

Key words: bandgap; voltage reference; technological corner; power-supply rejection rate.