

Accepted Manuscript



Regular paper

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PII: S1434-8411(18)30891-4

DOI: <https://doi.org/10.1016/j.aeue.2018.05.001>

Reference: AEUE 52322

To appear in: *International Journal of Electronics and Communications*

Received Date: 6 April 2018

Accepted Date: 2 May 2018

Please cite this article as: H. Xu, Y. Zhang, X. Yan, J. Wang, C. Lu, G. Li, A Novel 0.84 ppm/oC CMOS Curvature-Compensated Bandgap With 1.2 V Supply Voltage, *International Journal of Electronics and Communications* (2018), doi: <https://doi.org/10.1016/j.aeue.2018.05.001>

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A Novel 0.84 ppm/°C CMOS Curvature-Compensated Bandgap With 1.2 V Supply Voltage

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Abstract: This paper proposes a novel CMOS curvature-compensated bandgap reference (BGR) by using a new full compensation technique. The theory behind the proposed full compensation technique is analyzed. The proposed BGR is designed and implemented using 0.15 μm standard CMOS process. Simulation results show that the proposed BGR achieves a temperature coefficient (TC) of 0.84 ppm/°C over the temperature range from -40 °C to 120 °C with a 1.2 V supply voltage. The current consumption of proposed BGR is 51 μA at 27 °C. The line regulation of proposed BGR is 0.023 %/V over the supply voltage range from 1.2 V to 1.8 V at 27 °C. In addition, the

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