

## A Sub-1V 32nA Process, Voltage and Temperature Invariant Voltage Reference Circuit

### **Abstract:**

The proposed invention is an improved process, voltage and temperature (PVT) invariant voltage reference generator using sub-threshold MOSFETS. Sub-1V band gap reference also used to generate similar accuracy levels with process variations. The proposed circuit has been designed and optimized in 180nm mixed-mode CMOS technology. The output voltage of the proposed voltage reference generator varies by only  $\pm 0.85\%$  across process corners and temperature range of  $0^{\circ}\text{C}$  to  $100^{\circ}\text{C}$ . The proposed circuit consumes only 19nW DC power and operates at supply voltages as low 600mV.

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