In Analog circuit design field, current reference circuit is mostly used for constant current supply to the circuits, so that their function runs properly. This work gives a circuit that operates with minimum operating voltage and current, CMOS current generator circuit and presents its performance with circuit simulation in 180-nm UMC CMOS technology. The designed circuit has four sub parts start-up, Bias-voltage, current-source sub-circuits, voltage generator circuit, with most of the MOSFETs operating in sub-threshold region. Simulation results shows that the circuit gives a constant reference current of 4-nA at supply voltage 1 V with line variation of 0.203%.

References


Index Terms

Computer Science
Circuits and Systems

Keywords

CMOS, PTAT, sub-threshold region, temperature coefficient, low voltage, ultra power.