

“High Efficiency and Latch-Up Free
Switched Capacitor Up Converter on FD-SOI technology”

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We have developed a latch-up free Switched Capacitor (SC) type voltage up converter on 0.35 μ m FD-SOI technology. In this paper, we propose approximate theoretic expressions of the power efficiency and the output voltage. A test chip confirms the validity of these theoretic expressions. As a result, we can optimize the performances for various load current of the up converter. The up converter achieved a power conversion efficiency of 93.5% including self-power consumption at 1mA DC load current, where switching frequency is 100kHz, input voltage is 0.8V, V_{out} is 1.55V, and Capacitance is 10 μ F.