

# **An On-Chip High-Efficiency DC-DC Converter with a Compact Timing Edge Control Circuit**

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We developed an on-chip DC-DC converter with a compact timing edge control circuit operating at high clock frequency. High efficiency can be achieved due to nearly exact timing edge control with the aid of a high frequency clock by eliminating the conventional dead time control circuit.

The DC-DC converter is fabricated in 0.25 $\mu$ m CMOS process with single polysilicon and triple metal. The converter has maximum efficiency of 93.3% with 29mV ripple at 37mA load current .