

Integrated Direct Output Current Control Switching Converter using Symmetrically-Matched Self-Biased Current Sensor

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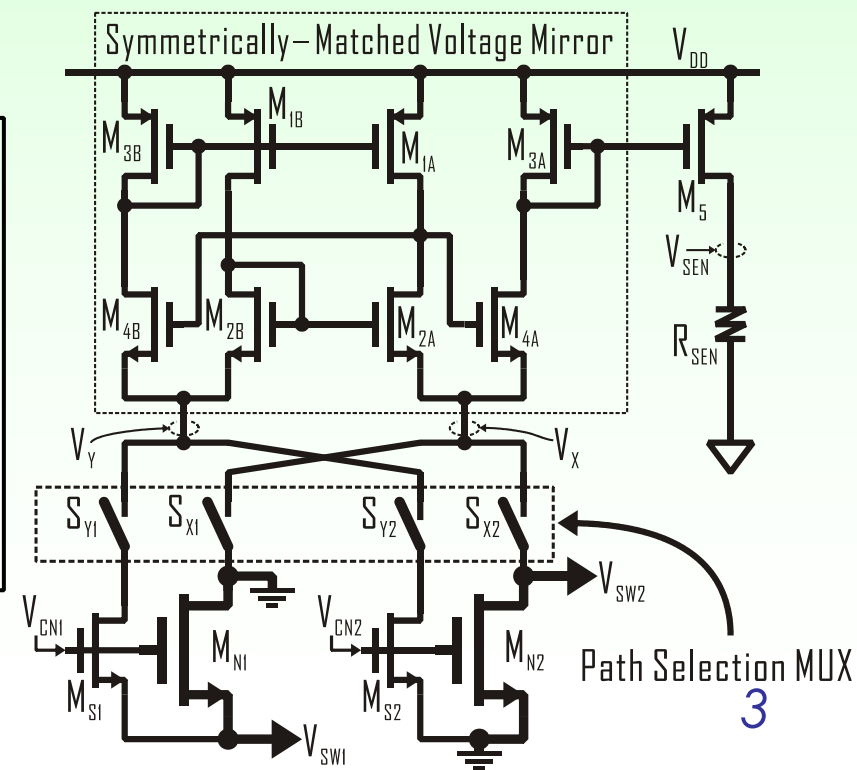
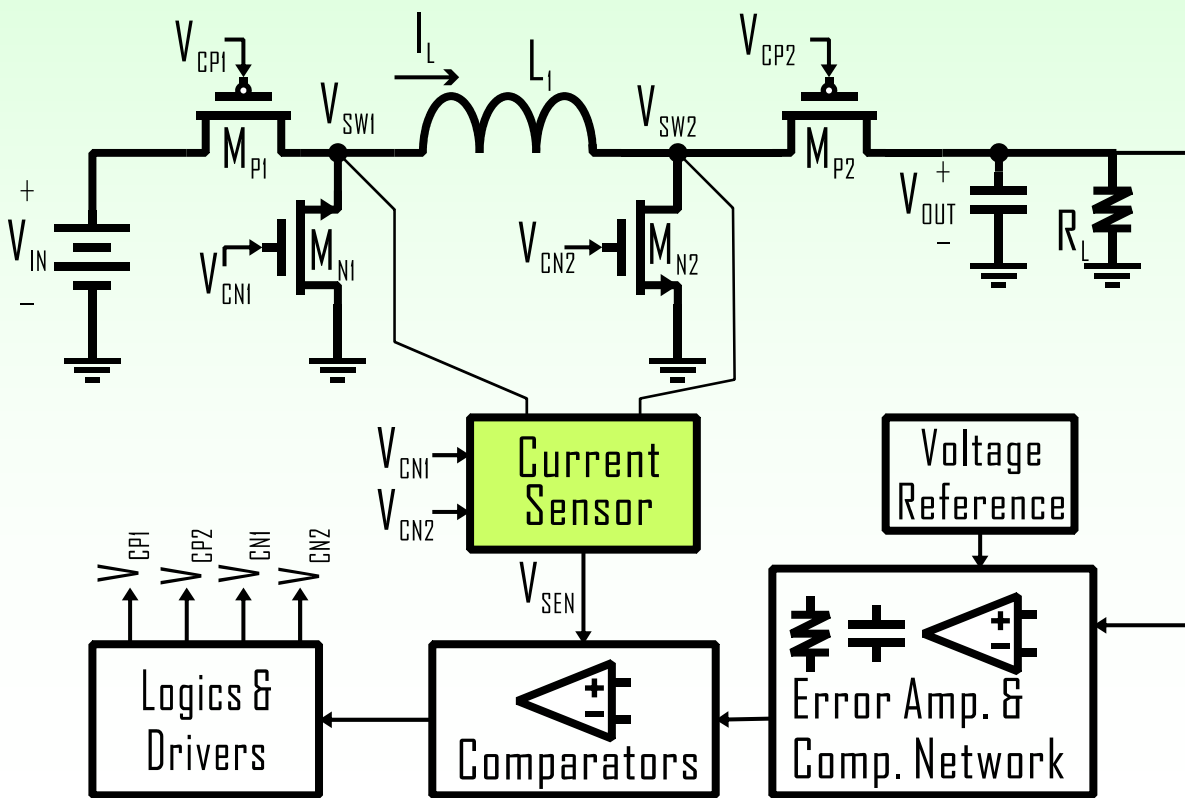
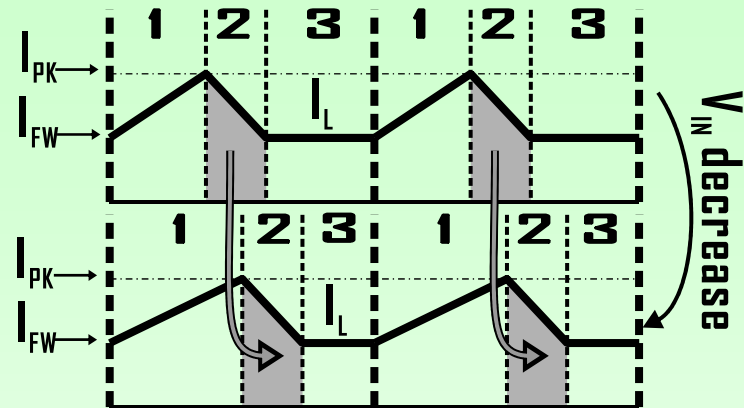
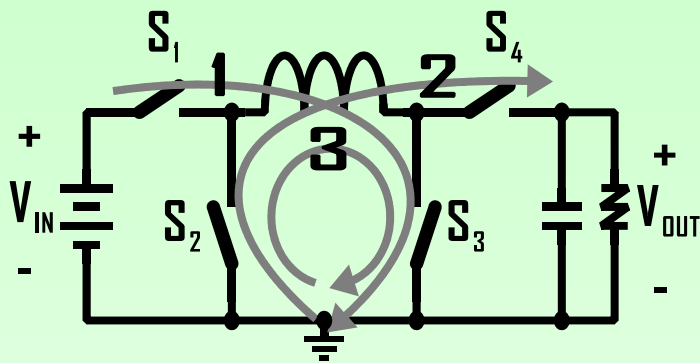
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****Currently with National Semiconductor Corporation, Hong Kong***

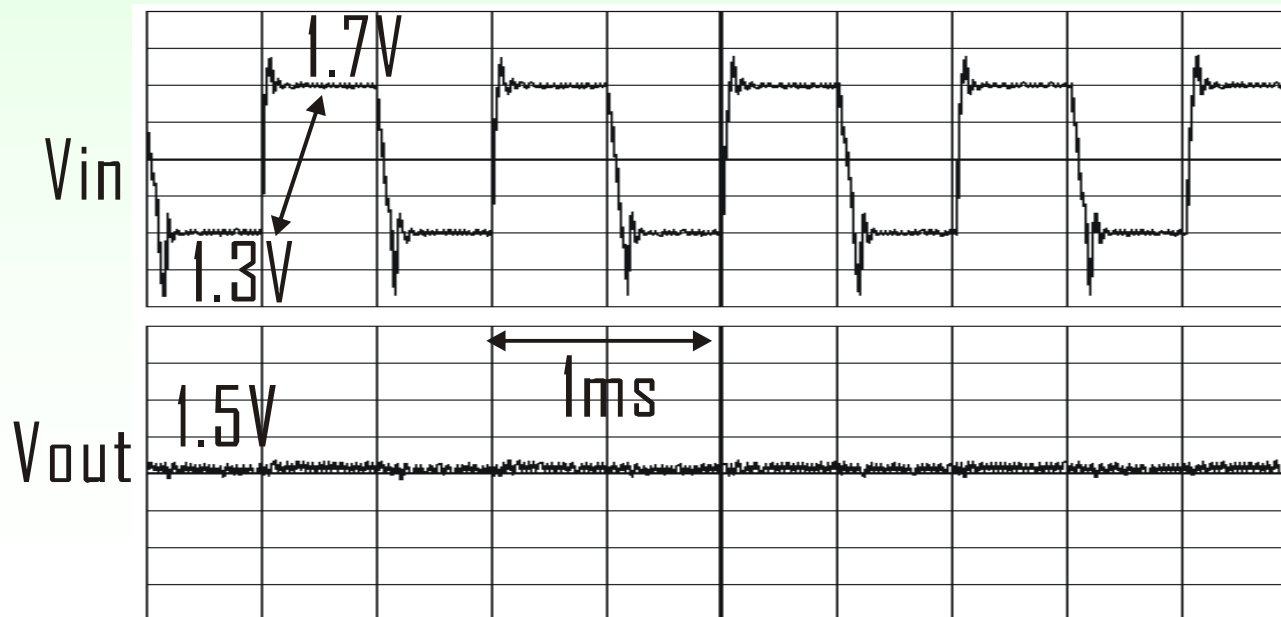
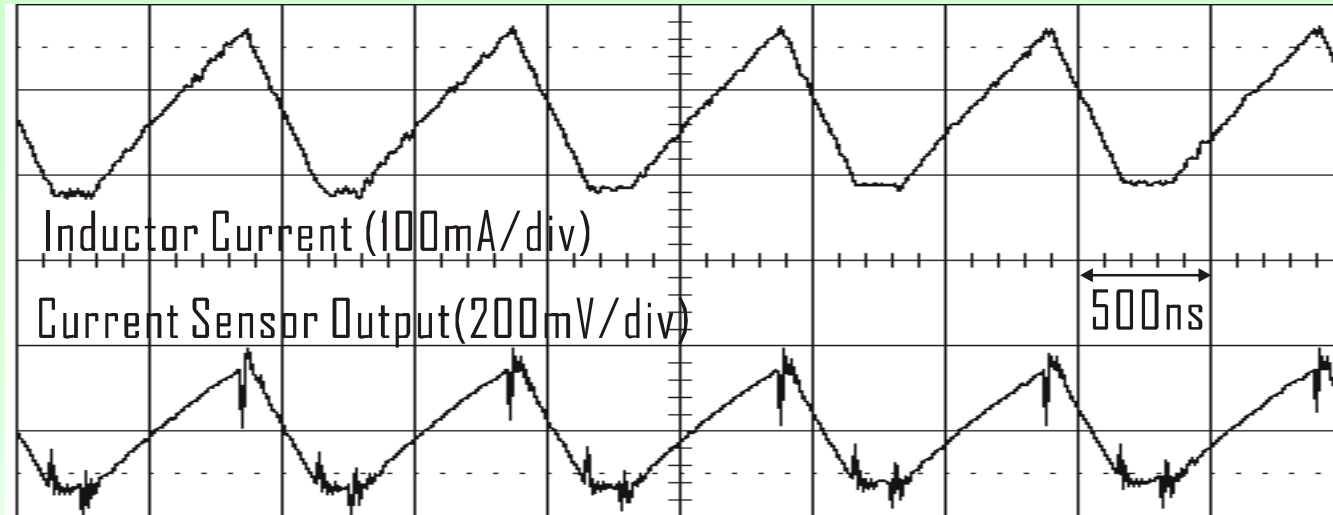
Features

- **Non-inverting flyback converter**
 - $V_{IN}=1.2V-2V$, $V_{OUT}=1.5V$, $MAX I_{OUT}=250mA$
- **Fully integrated current sensor**
 - No external sensing resistor is needed
 - Time-multiplexing scheme for core re-use
- **No subharmonic oscillation**
 - PCCM scheme reset inductor current every switching cycle
- **Excellent line transient response**
 - Output current is controlled directly, independent of input voltage

Implementation

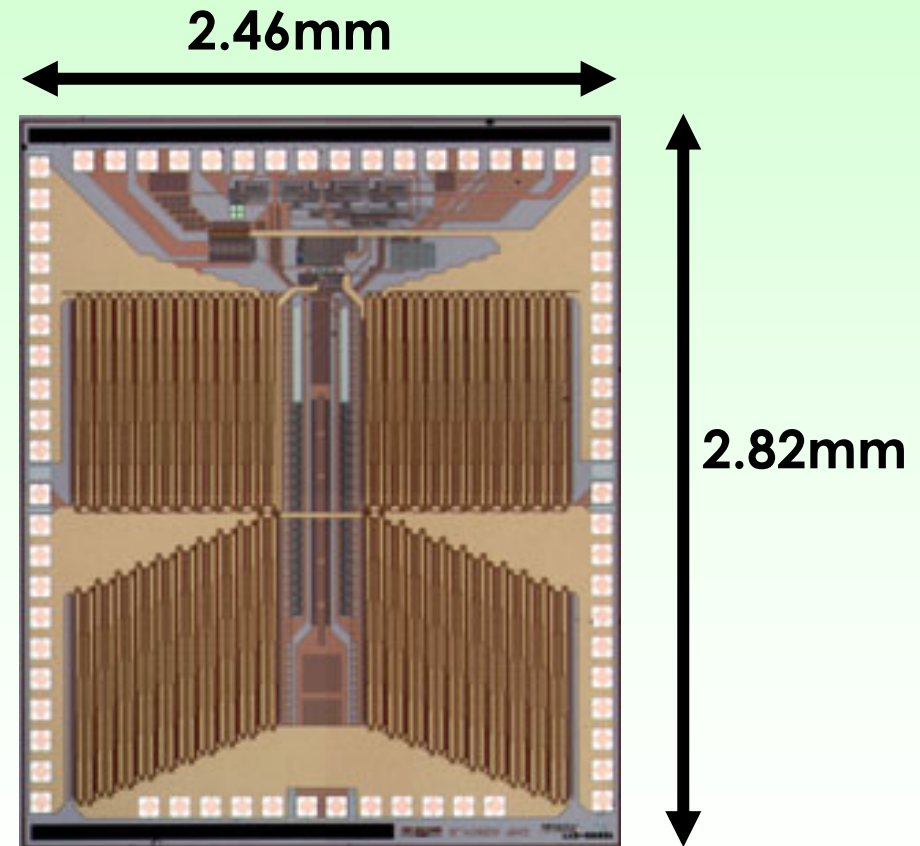
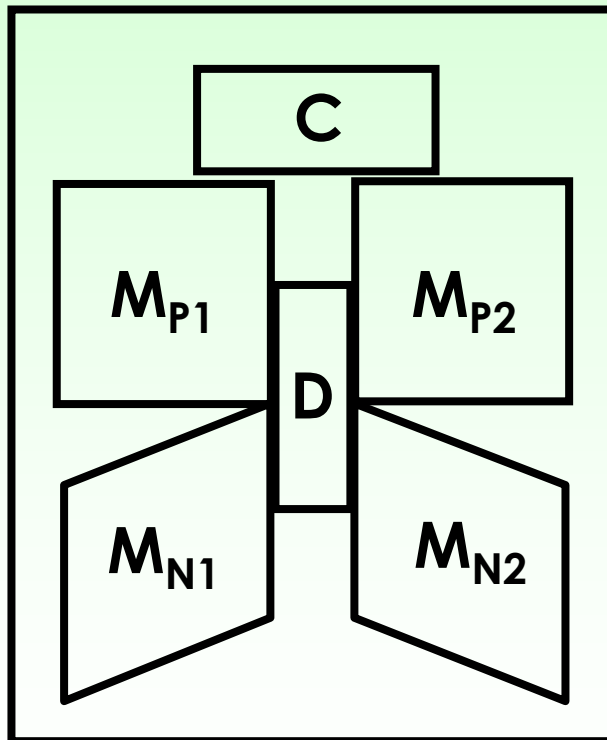


Measurement results



Chip Micrograph

- C – Analog controller and integrated current sensor
- D – MOS Drivers



Total chip area = 6.94mm^2