ECE 5/4/18  MEMORY CIRCUIT

Lecture 16  3/24/10

Design

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VDD 2VDD - VTHN

2VDD - VTHN

VDD - 2VDD - VTHN

VDD - VTHN

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Filter cap

C

Rload

Est. ripple

Vripple = \frac{V_{out} \cdot T_{ck}}{R_{load} \cdot C \cdot T_{ck}}
Charge pump (Voltage Generator)

2) $2V_{DD} - V_{THN} - V_x = \frac{\Delta V_x \cdot C_1}{T_{clock}} = \frac{C_l \cdot \Delta V_{sat}}{T_{clock}}$
Higher Voltages (Dickson OP)

Pin 0ff

3VDD - 2.4 V

1.5VDD

VDD

OSC

Z (VDD - Vt)

3(VDD - Vt)

Out
Fig. 3

\( \phi_2 \) and \( \phi_4 \) are non-overlapping.