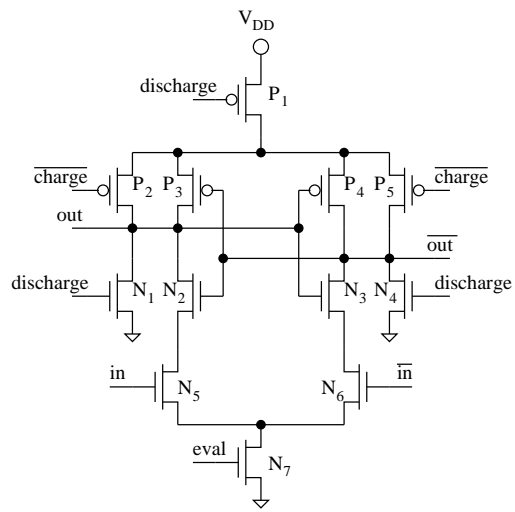


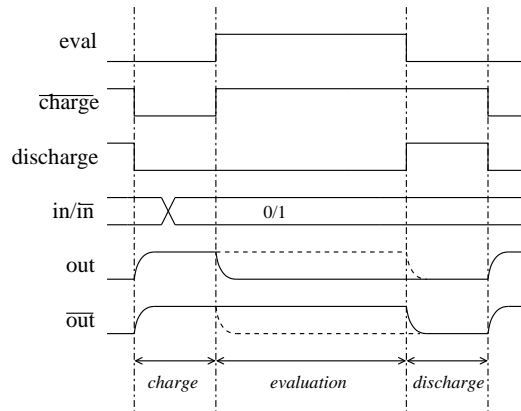
* + * +
* +

V_{SS} V_{DD}
 V_{SS} V_{DD} V_{SS}
 V_{SS} V_{DD}

N_1 N_4 P_1



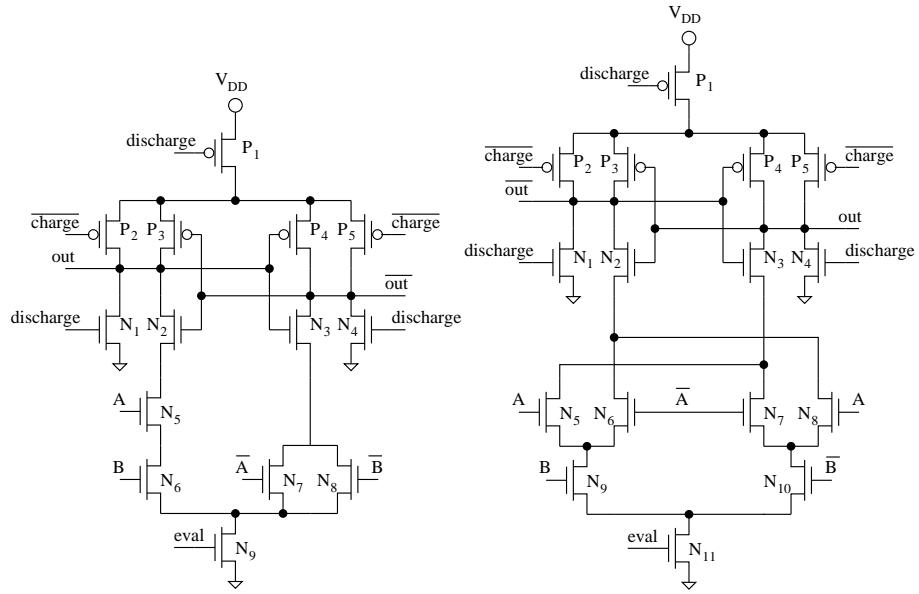
$\overline{\text{charge}}$ *discharge* V_{DD}
eval N_7 *in* $\overline{\text{in}}$
discharge N_1 N_4



$1.5V$ $0.12\mu m$
 $200MHz$
 $W = 0.68\mu m$
 $L = 0.12\mu m$

	V_{DD}	V_{SS}
out	$C_{out}^{V_{DD}} = 8fF$	$C_{out}^{V_{SS}} = 4fF$
$\overline{\text{out}}$	$C_{out}^{V_{DD}} = 1fF$	$C_{out}^{V_{SS}} = 3fF$

V_{DD} $C_{out}^{V_{DD}}$



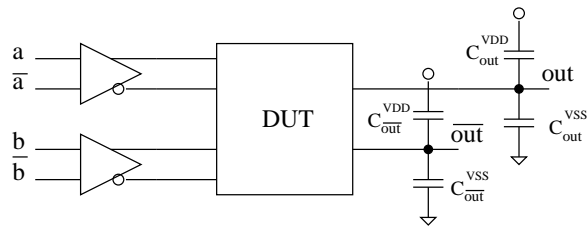
$$C_{out}^{VDD}$$

V_{SS}

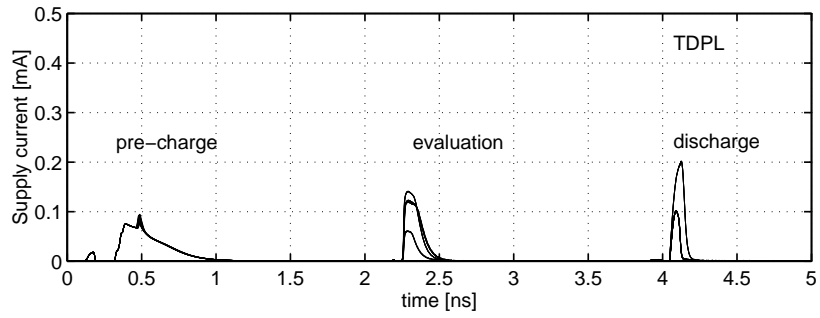
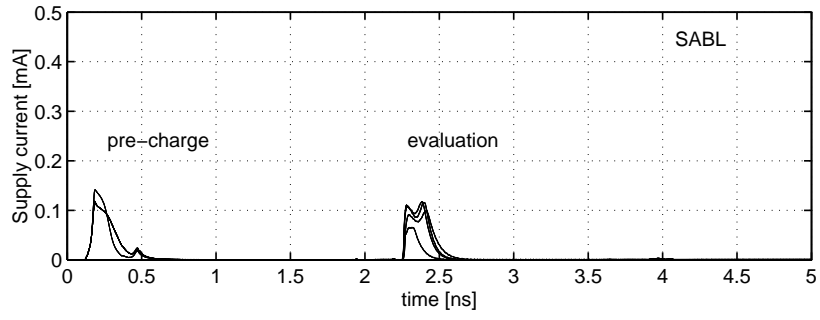
$$C_{out}^{VSS}$$

$$C_{out}^{VSS}$$

out $\overline{\text{out}}$



$I_{DD}(t)$



$$E = V_{DD} \cdot \int_0^T I_{DD}(t) dt$$

$$\frac{(\max(E) - \min(E)) / \max(E)}{\sigma_E / \bar{E}} > 30 \quad > 15$$

< 3 < 1

$\max(E)$	52.3	65.6	56.3	68.3	58.4	69.5
$\min(E)$	31.1	65.3	35.2	66.4	39.4	68.0
	40.4	0.4	37.5	2.7	32.6	2.1
\bar{E}	41.7	65.5	50.5	67.3	48.9	68.7
σ_E	10.9	0.1	8.0	0.6	8.5	0.4
	26.1	0.2	15.9	0.9	17.4	0.6

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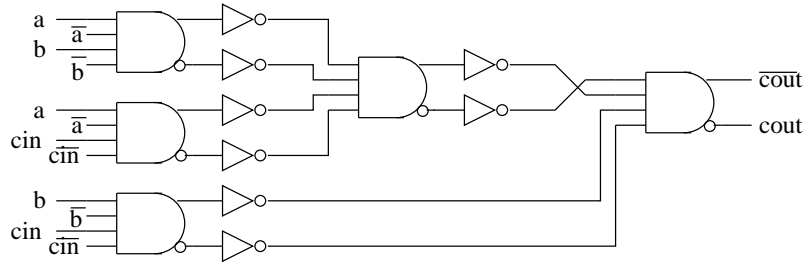
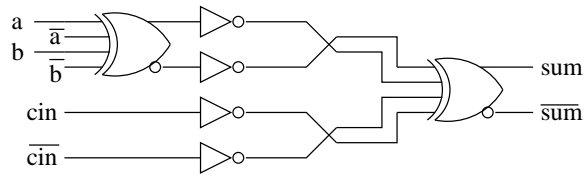
discharge

$I_{DD}(t)$

64

3

$\{A, B, C_{in}\}$



$\max(E)$	447.0	609.6
$\min(E)$	360.1	604.1
	19.4	0.9
\bar{E}	405.6	606.8
σ_E	22.1	1.3
	5.4	0.2

