

Device Modeling Report

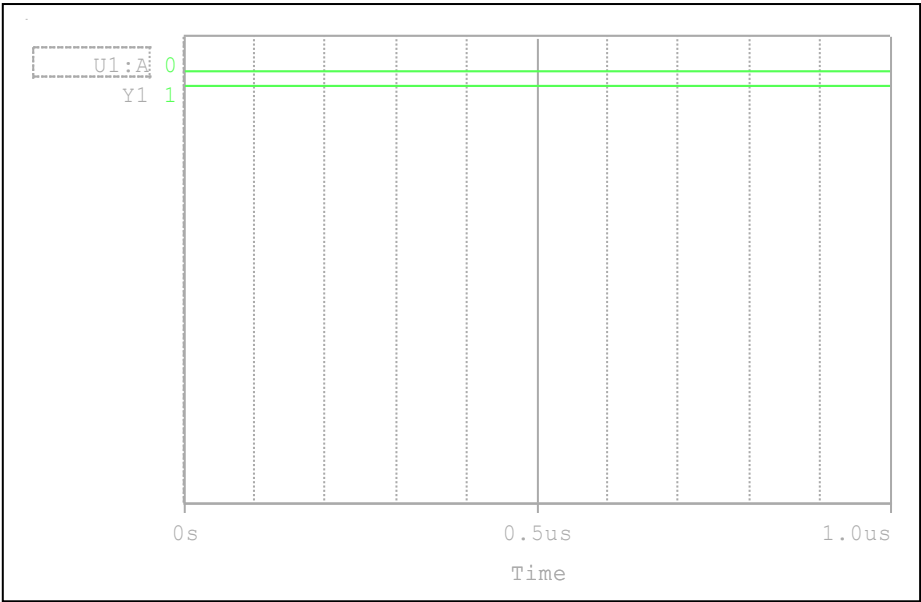
COMPONENTS : CMOS DIGITAL INTEGRATED CIRCUIT
PART NUMBER : TC7SET04FU
MANUFACTURER : TOSHIBA



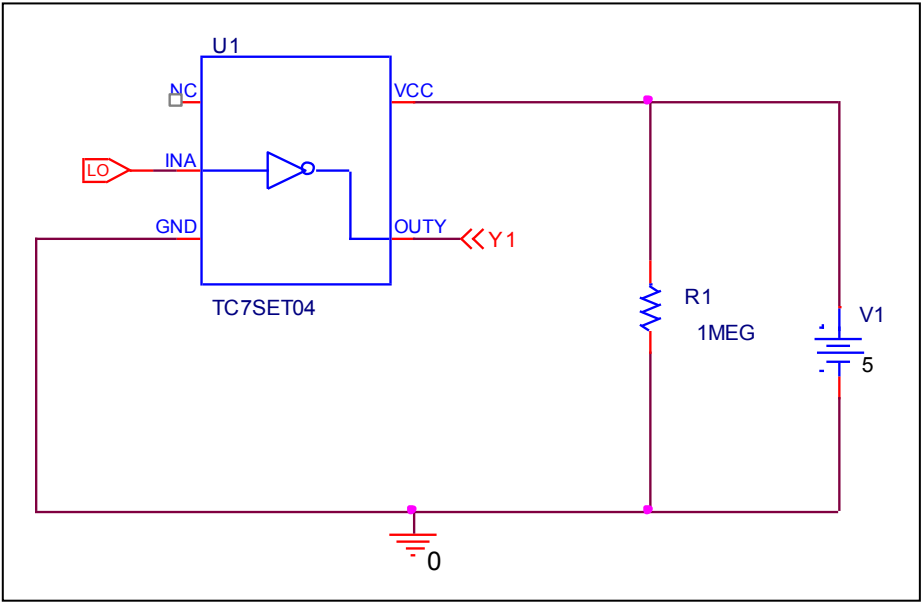
Bee Technologies Inc.

Truth Table

Circuit simulation result



Evaluation circuit

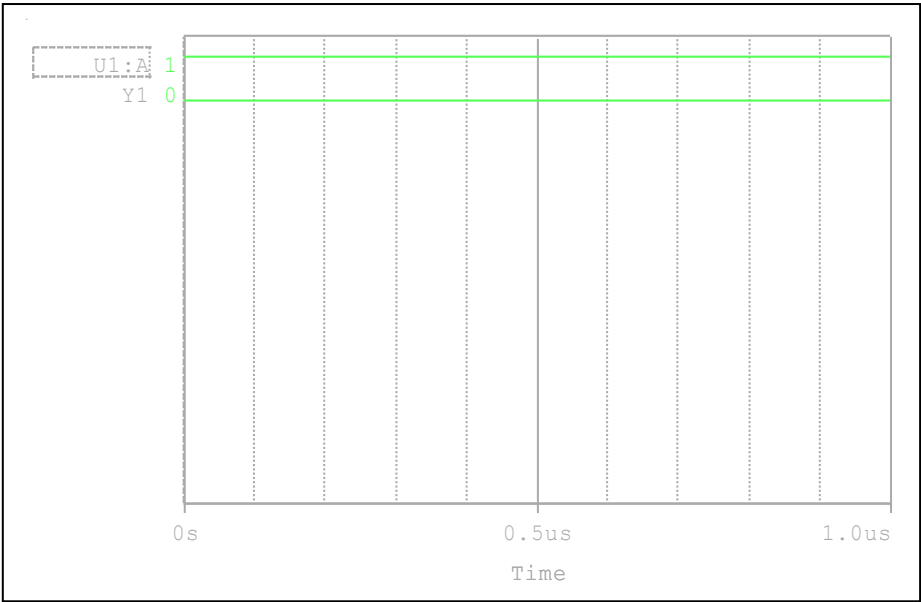


Comparison table

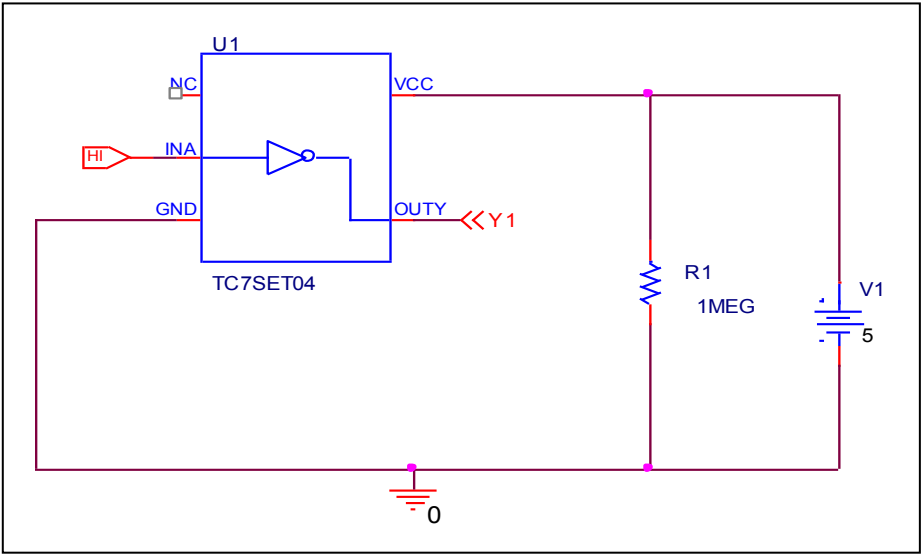
Input	Output		%Error
	Yn (Measurement)	Yn (Simulation)	
An			
L	H	H	0

Truth Table

Circuit simulation result



Evaluation circuit

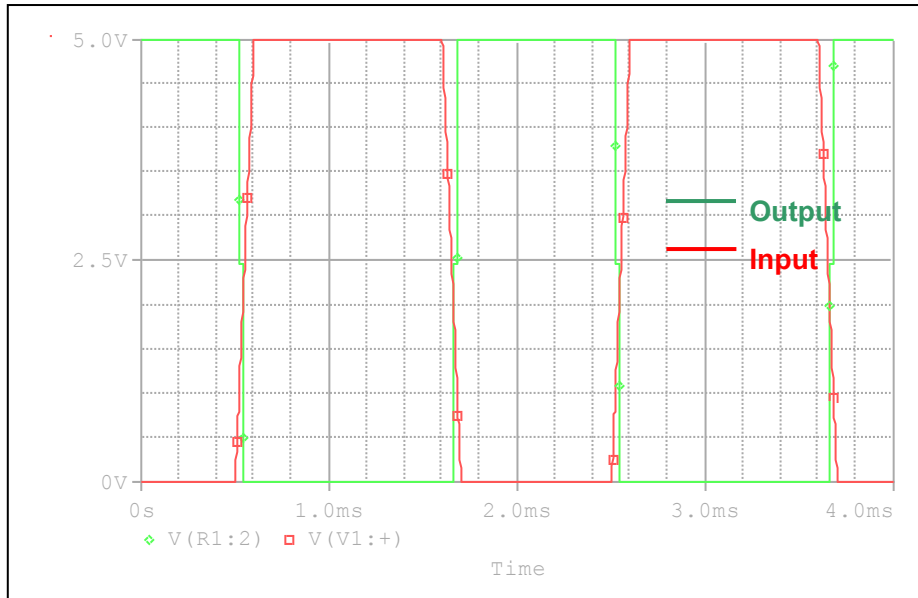


Comparison table

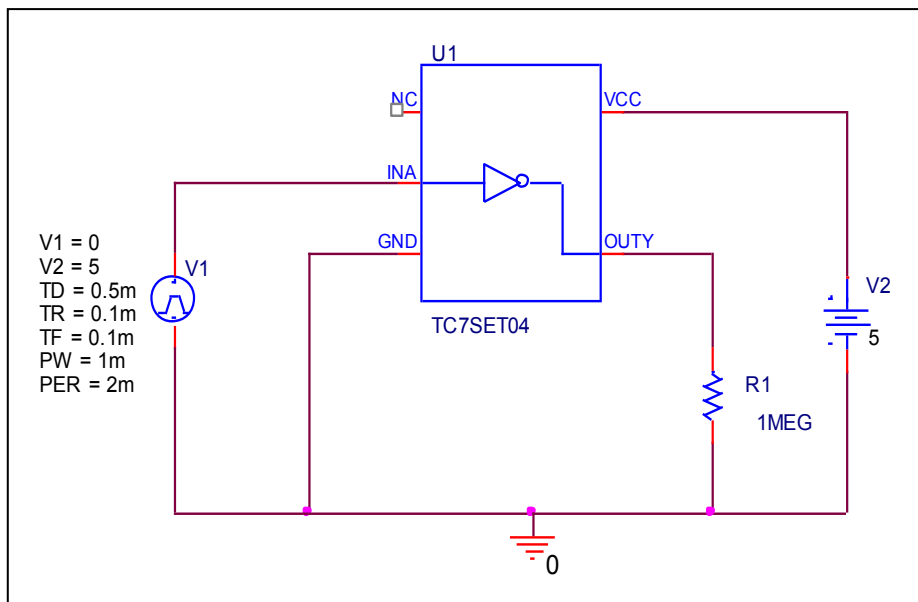
Input	Output		%Error
	Yn (Measurement)	Yn (Simulation)	
H	L	L	0

High Level and Low Level Input Voltage

Circuit simulation result



Evaluation circuit

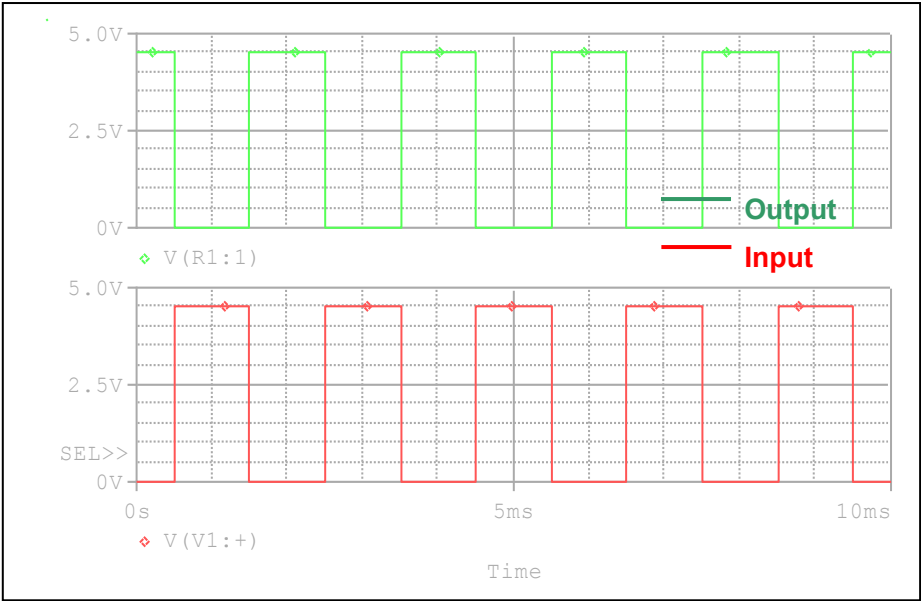


Comparison table

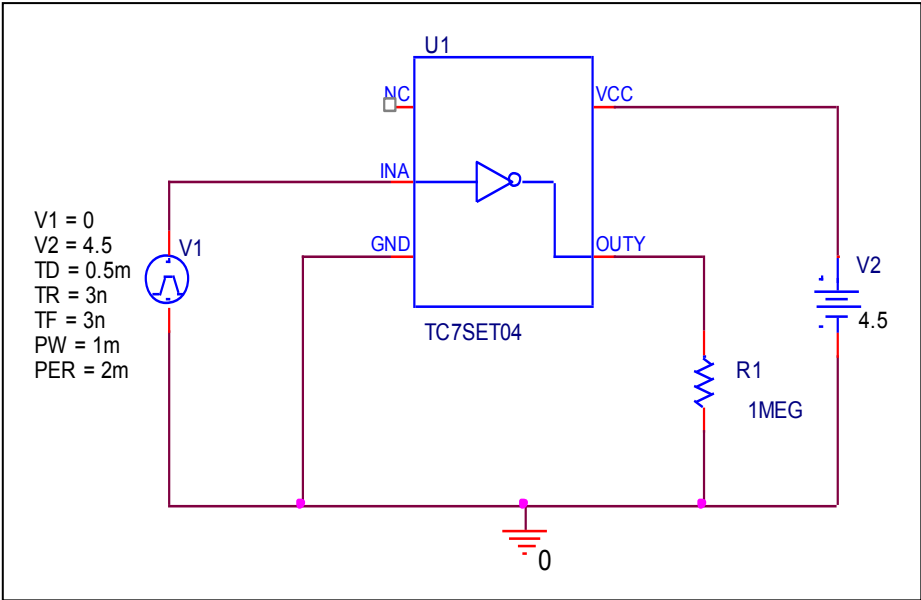
V _{CC} = 5V	Measurement	Simulation	%Error
V _{IH} (V)	2	2	0
V _{IL} (V)	0.8	0.799250	-0.094

High Level and Low Level Output Voltage

Circuit simulation result



Evaluation circuit

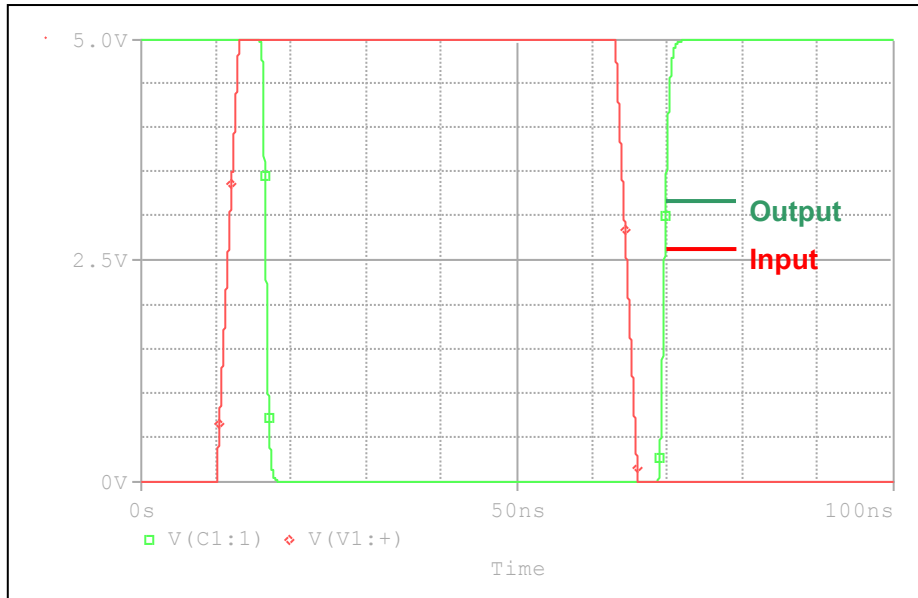


Comparison table

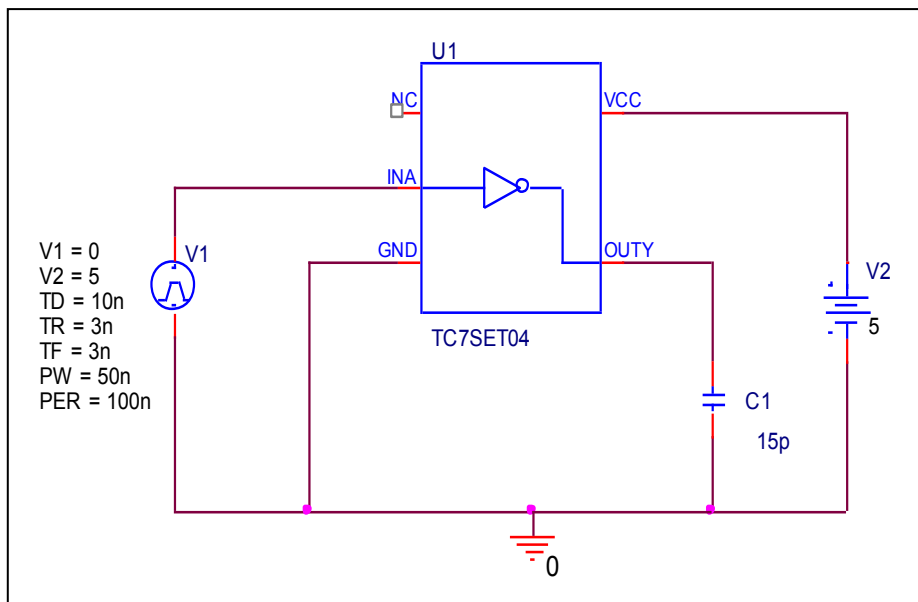
V _{CC} = 4.5V	Measurement	Simulation	%Error
V _{OH} (V)	4.5	4.4988	-0.027
V _{OL} (V)	0	0	0

Propagation Delay Time

Circuit simulation result



Evaluation circuit



Comparison table

$C_L=15\text{ pF}, V_{CC}=5\text{ V}, T_r=T_f=3\text{ ns}$	Measurement	Simulation	%Error
$t_{pLH}\text{ (ns)}$	5	5.0416	0.832
$t_{pHL}\text{ (ns)}$	5	5.0743	1.486