

Device Modeling Report

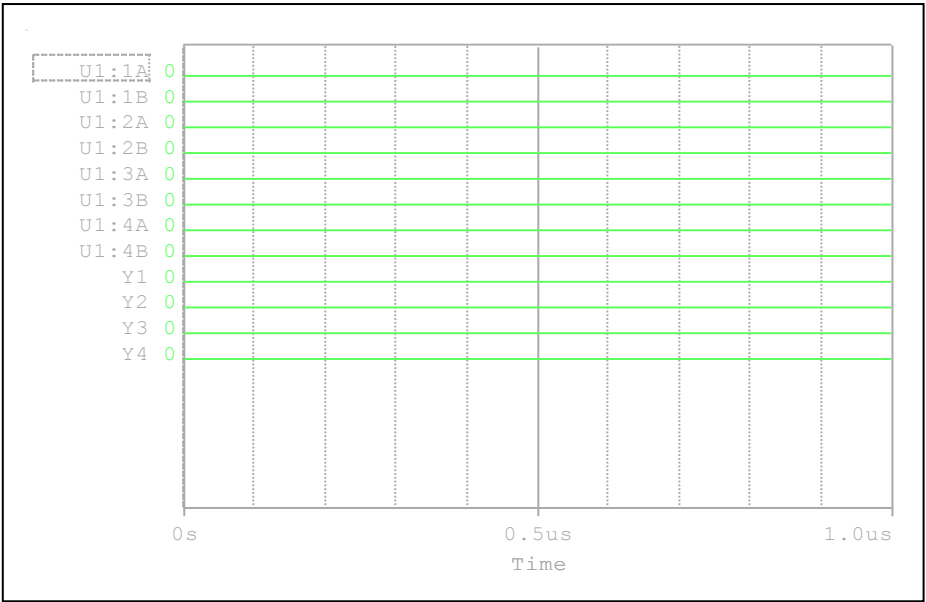
COMPONENTS : CMOS DIGITAL INTEGRATED CIRCUIT
PART NUMBER : TC74VHC08FT
MANUFACTURER : TOSHIBA



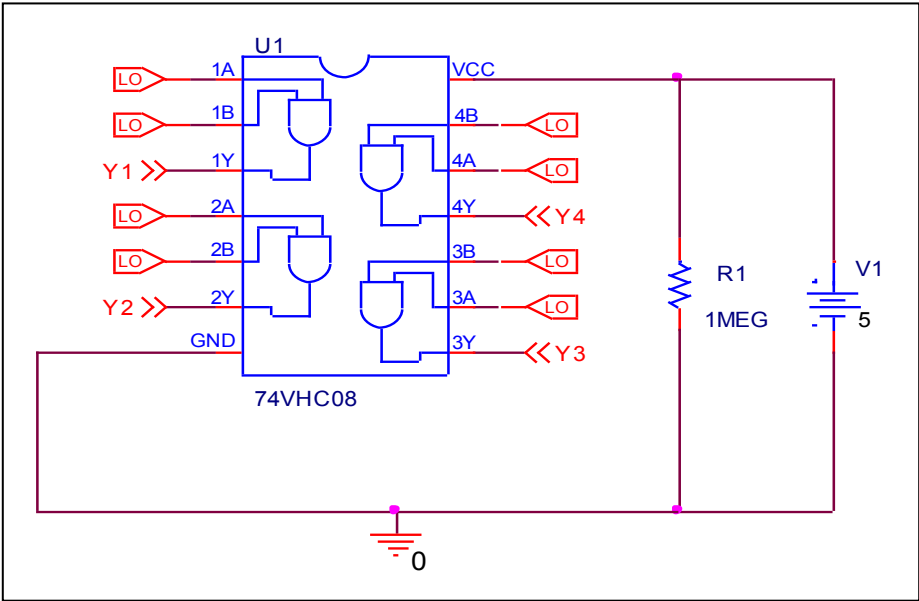
Bee Technologies Inc.

Truth Table

Circuit simulation result



Evaluation circuit

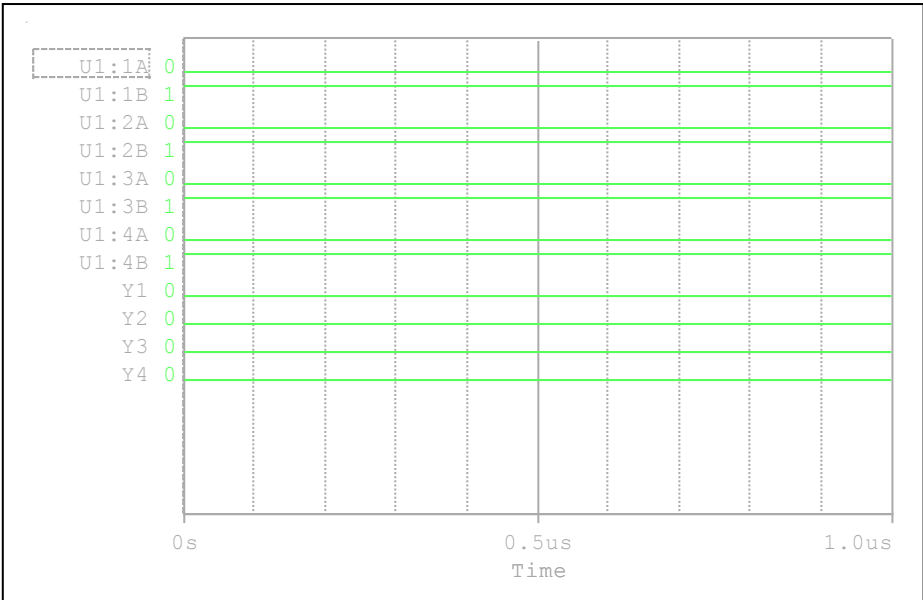


Comparison table

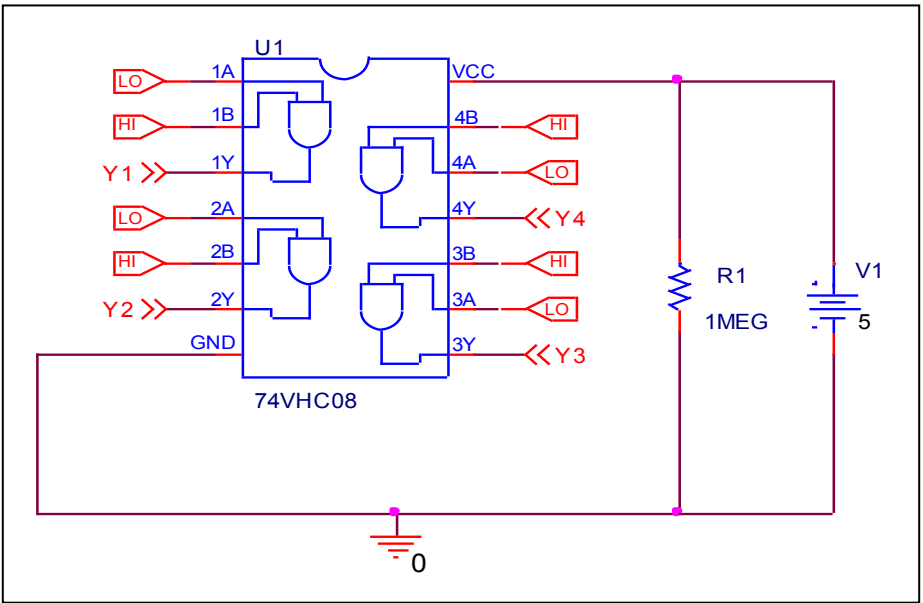
Input		Output		%Error
An	Bn	Yn (Measurement)	Yn (Simulation)	
L	L	L	L	0

Truth Table

Circuit simulation result



Evaluation circuit

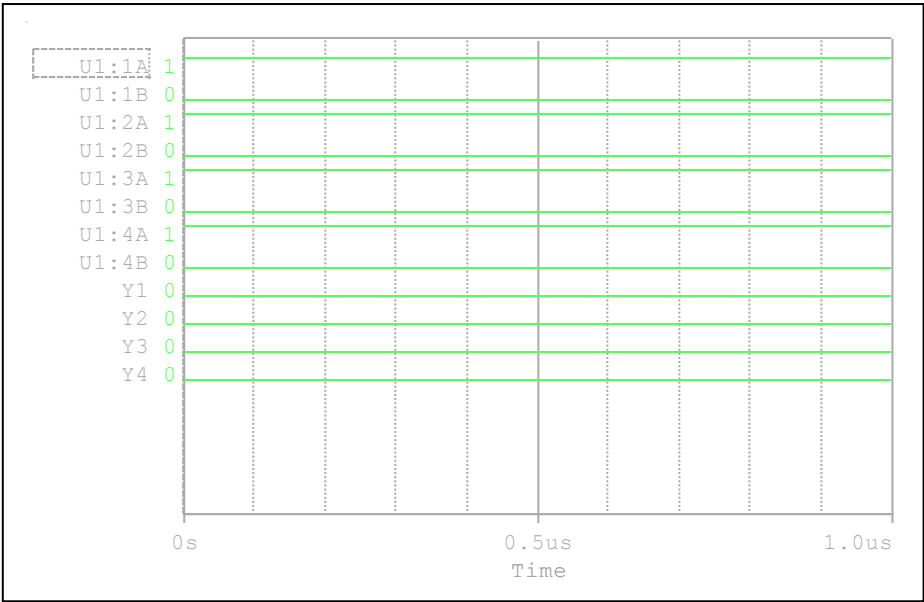


Comparison table

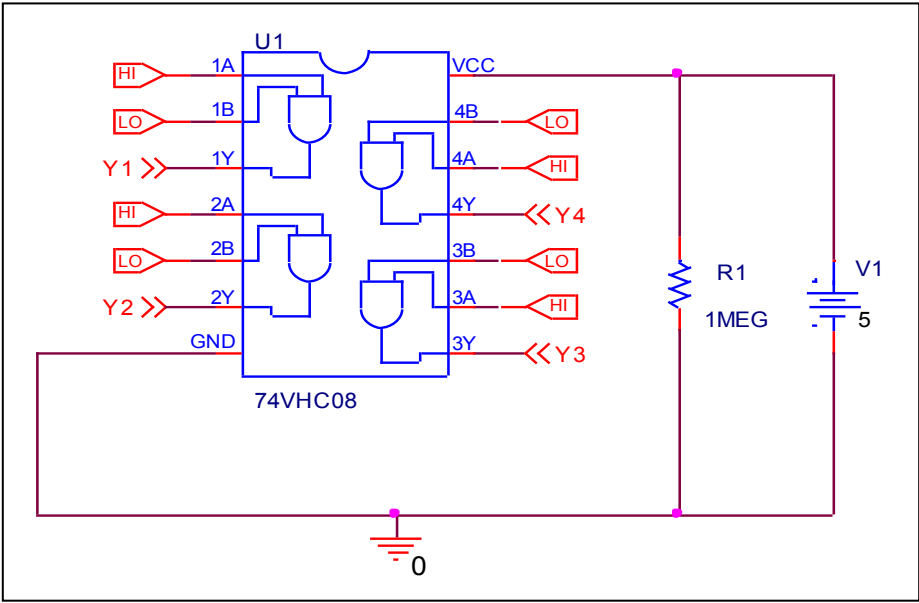
Input		Output		%Error
An	Bn	Yn (Measurement)	Yn (Simulation)	
L	H	L	L	0

Truth Table

Circuit simulation result



Evaluation circuit

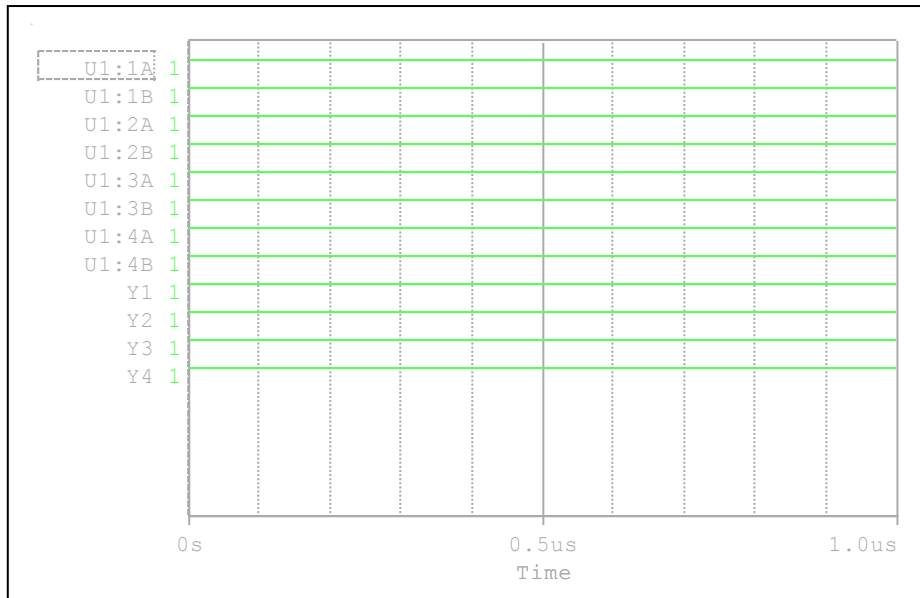


Comparison table

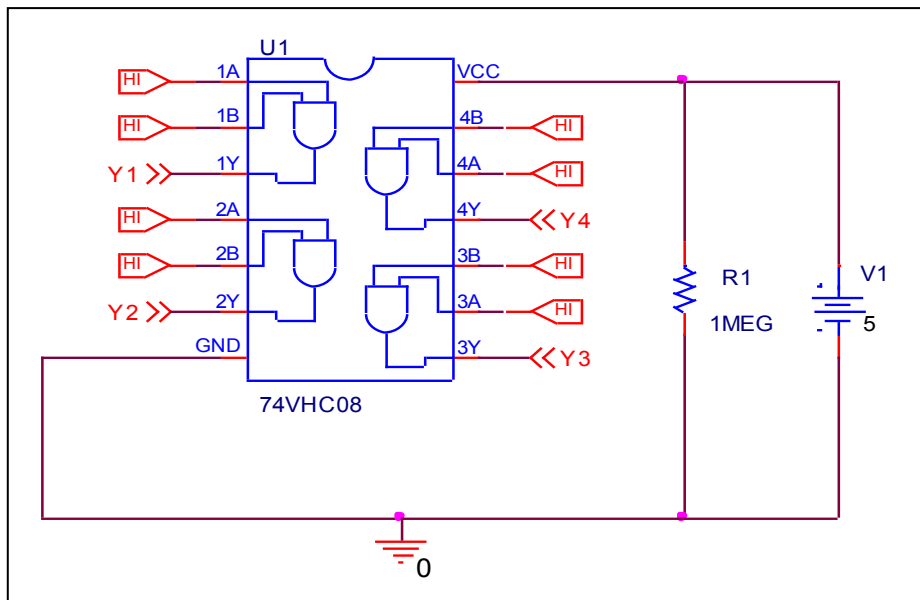
Input		Output		%Error
An	Bn	Yn (Measurement)	Yn (Simulation)	
H	L	L	L	0

Truth Table

Circuit simulation result



Evaluation circuit

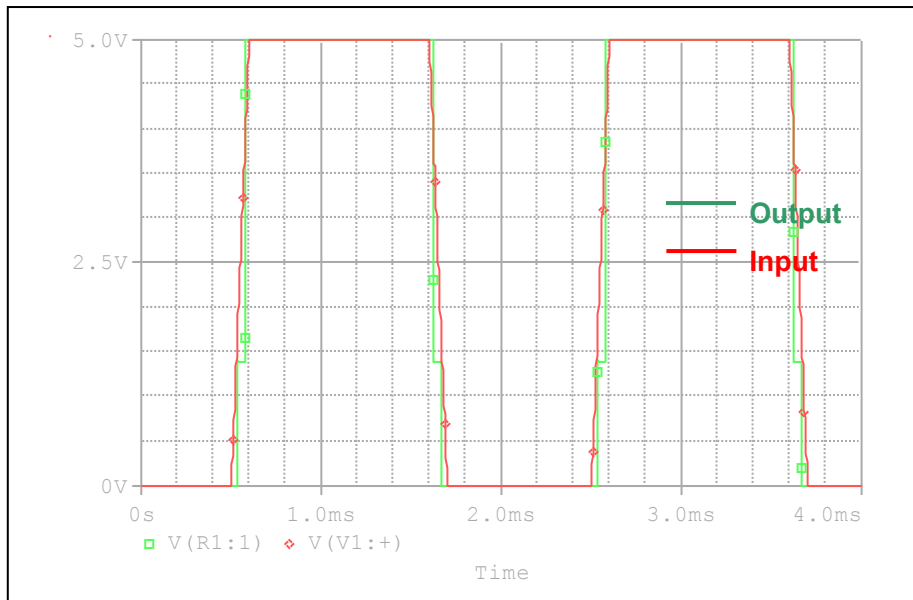


Comparison table

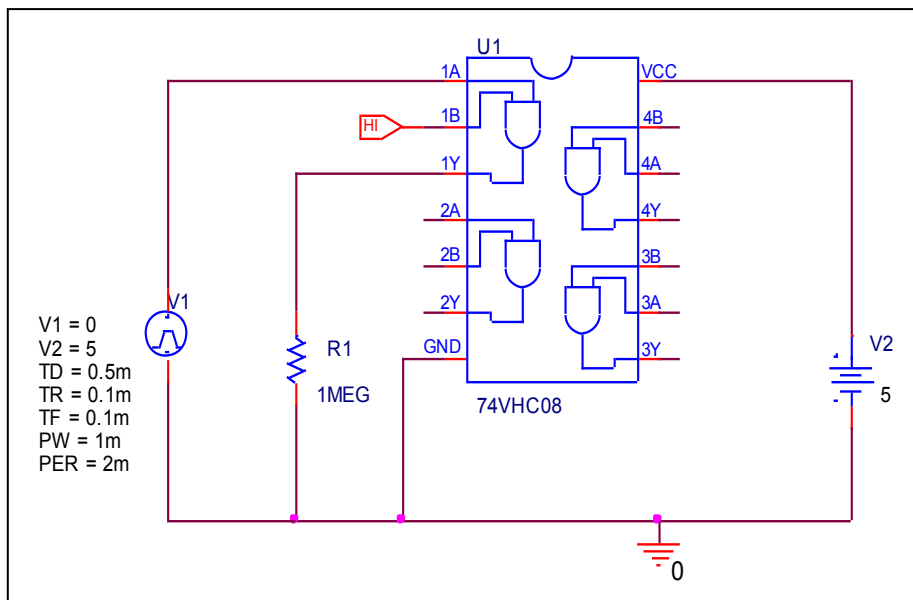
Input		Output		%Error
An	Bn	Yn (Measurement)	Yn (Simulation)	
H	H	H	H	0

High Level and Low Level Input Voltage

Circuit simulation result



Evaluation circuit

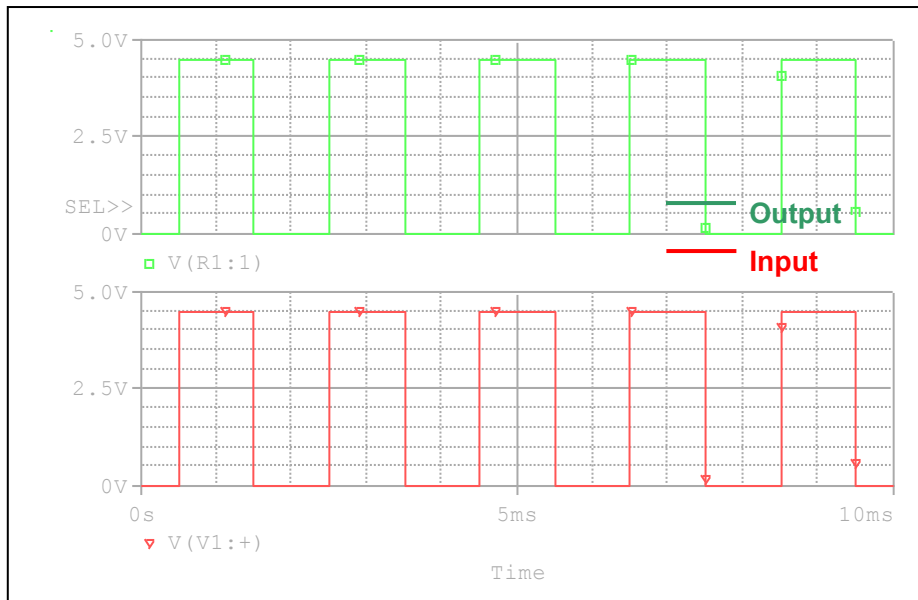


Comparison table

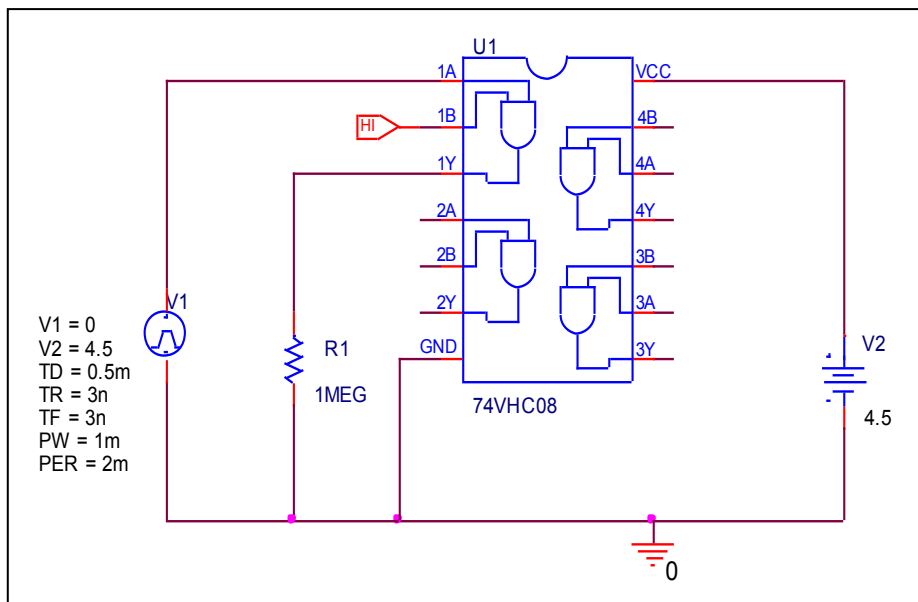
V_{CC} = 5V	Measurement	Simulation	%Error
Min V_{IH} = (V_{CC}*0.7) (V)	3.5	3.6253	3.580
Min V_{IL} = (V_{CC}*0.3) (V)	1.5	1.4951	-0.327

High Level and Low Level Output Voltage

Circuit simulation result



Evaluation circuit

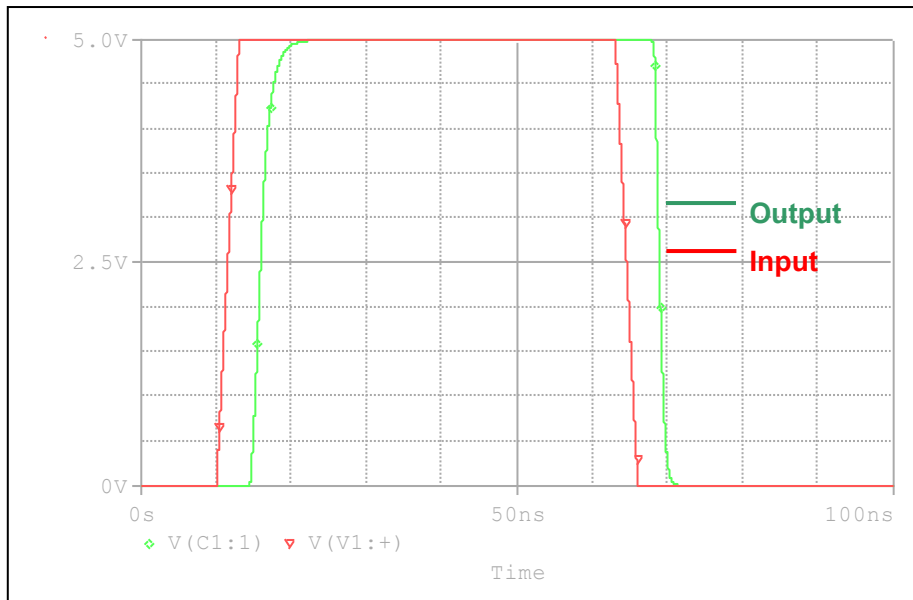


Comparison table

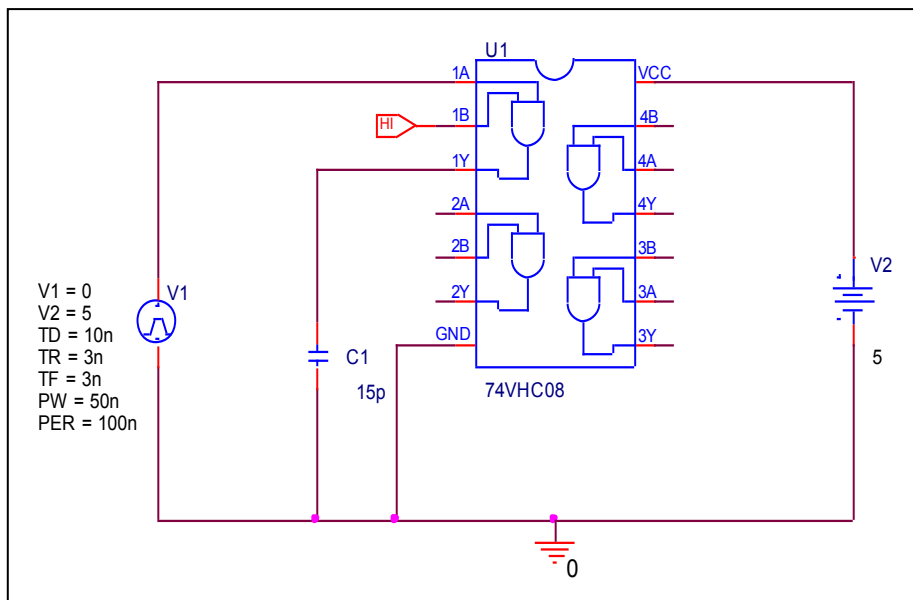
$V_{CC} = 4.5V$	Measurement	Simulation	%Error
$V_{OH} (V)$	4.5	4.4965	-0.078
$V_{OL} (V)$	0	0	0

Propagation Delay Time

Circuit simulation result



Evaluation circuit



Comparison table

C_L=15pF,V_{CC}=5V,T_r=T_f=3ns	Measurement	Simulation	%Error
t_{pLH} (ns)	4.3	4.357	1.326
t_{pHL} (ns)	4.3	4.3668	1.553