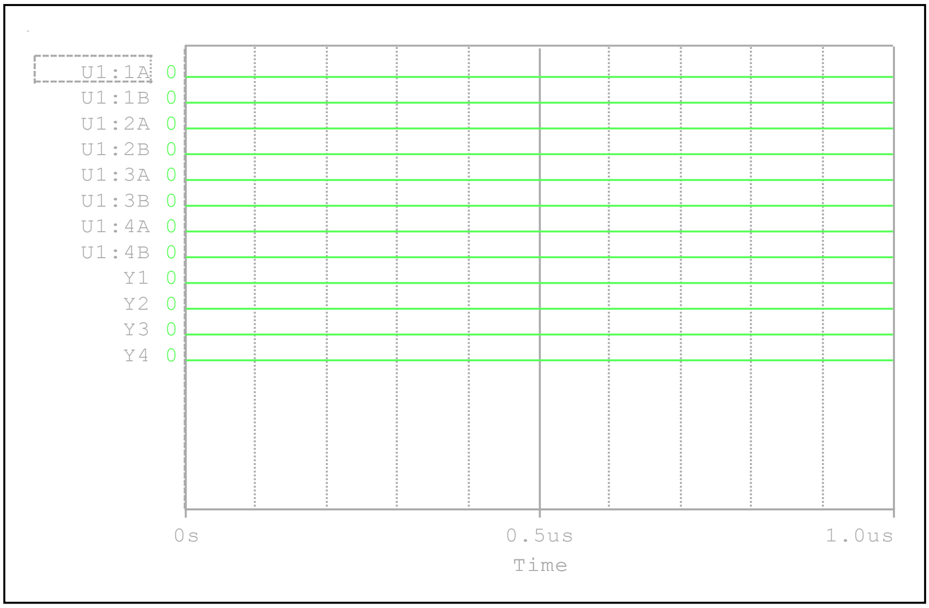
Device Modeling Report

COMPONENTS : CMOS DIGITAL INTEGRATED CIRCUIT
PART NUMBER : TC74AC08FT
MANUFACTURER : TOSHIBA

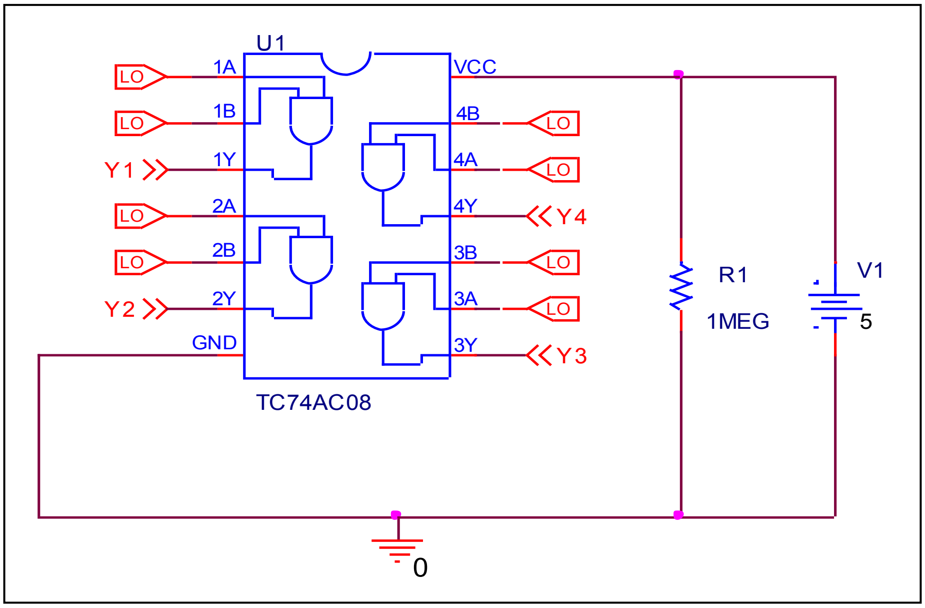
Bee Technologies Inc.

Truth Table

Circuit simulation result



Evaluation circuit

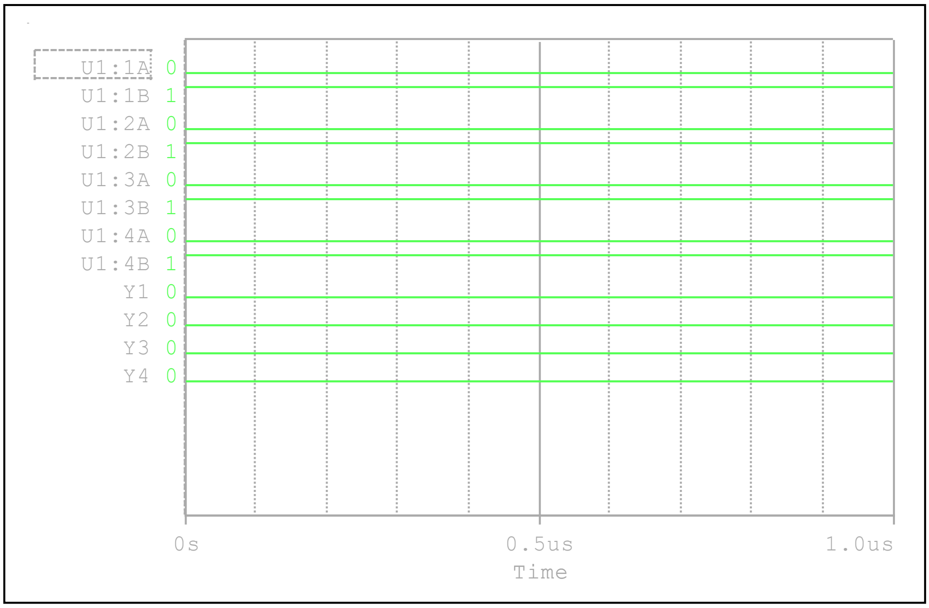


Comparison table

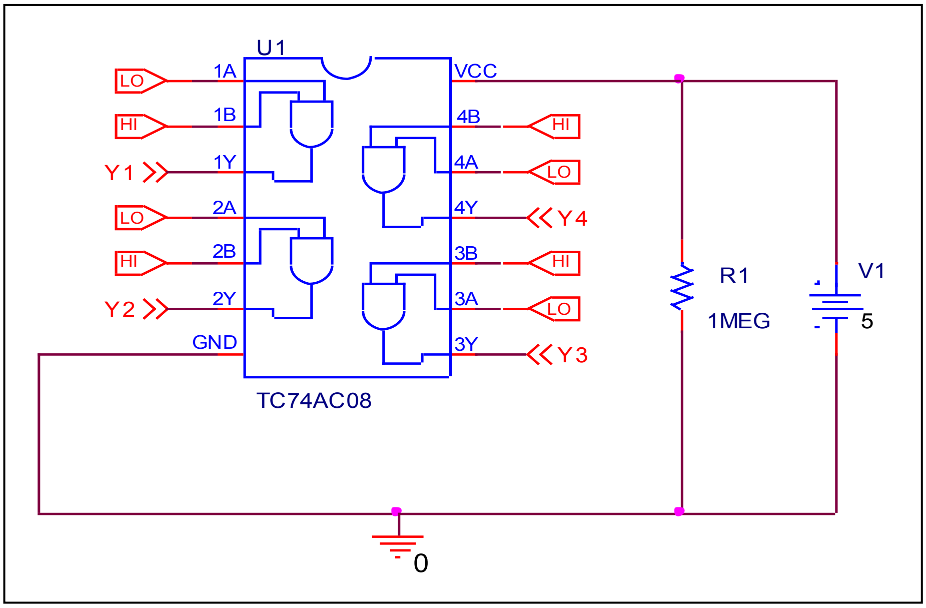
Input		Output		%Error
An	**Bn**	**Yn (Measurement)**	**Yn (Simulation)**	
L	**L**	L	L	0

Truth Table

Circuit simulation result



Evaluation circuit

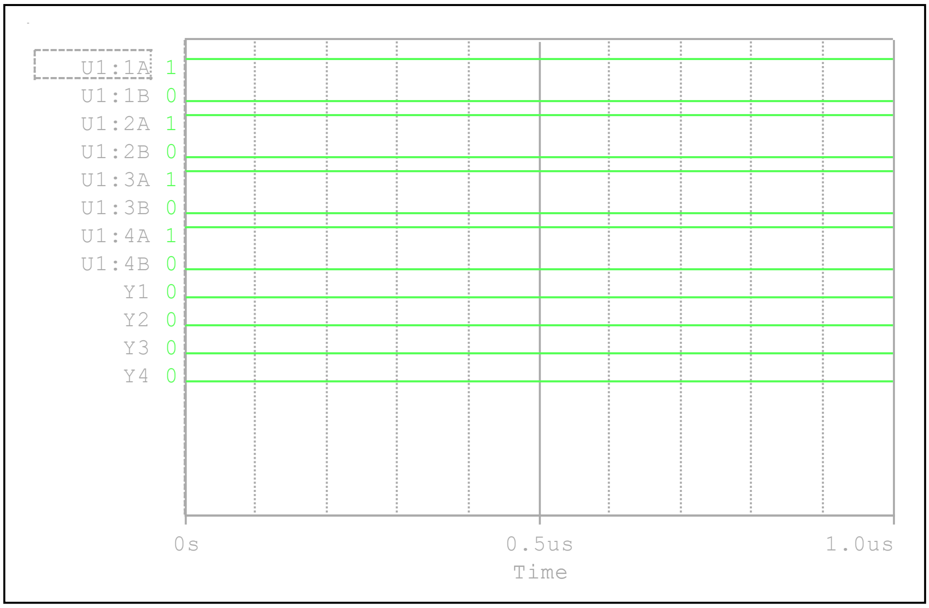


Comparison table

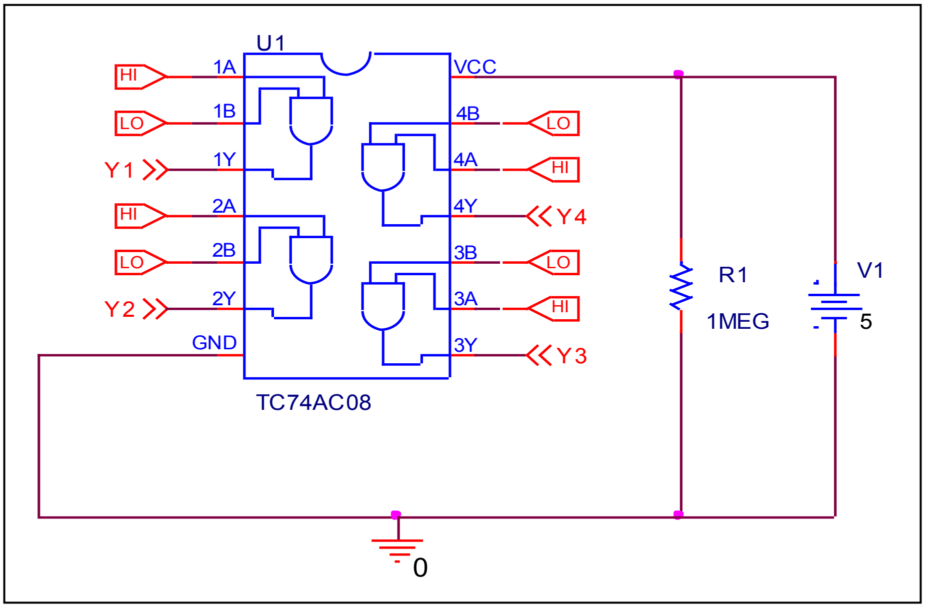
Input		Output		%Error
An	**Bn**	**Yn (Measurement)**	**Yn (Simulation)**	
L	**H**	L	L	0

Truth Table

Circuit simulation result



Evaluation circuit

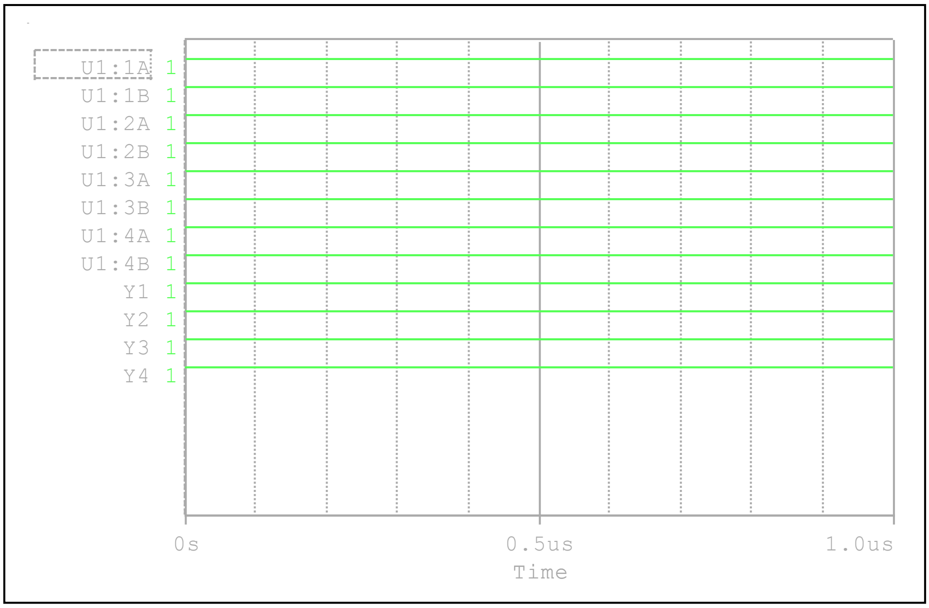


Comparison table

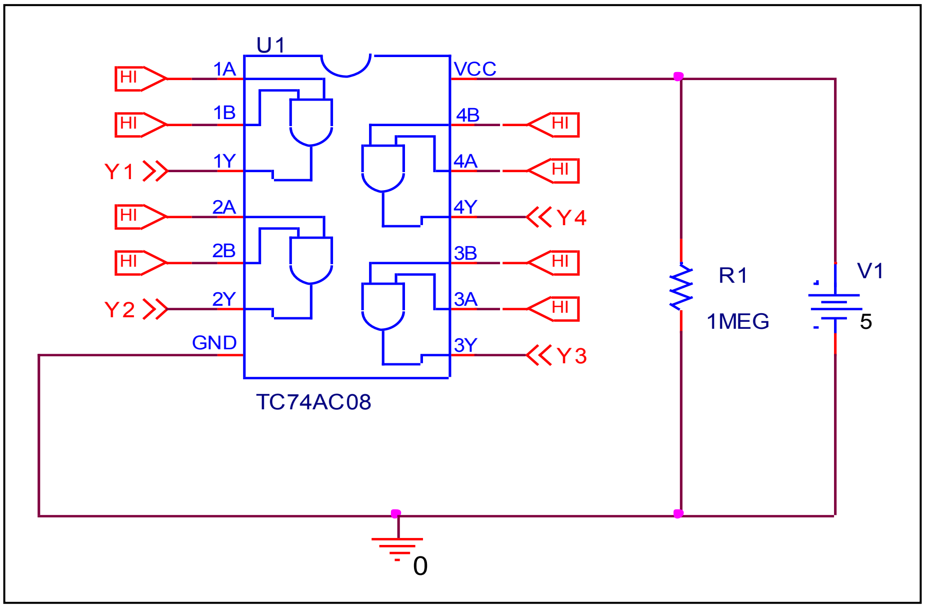
Input		Output		%Error
An	**Bn**	**Yn (Measurement)**	**Yn (Simulation)**	
H	**L**	L	L	0

Truth Table

Circuit simulation result



Evaluation circuit

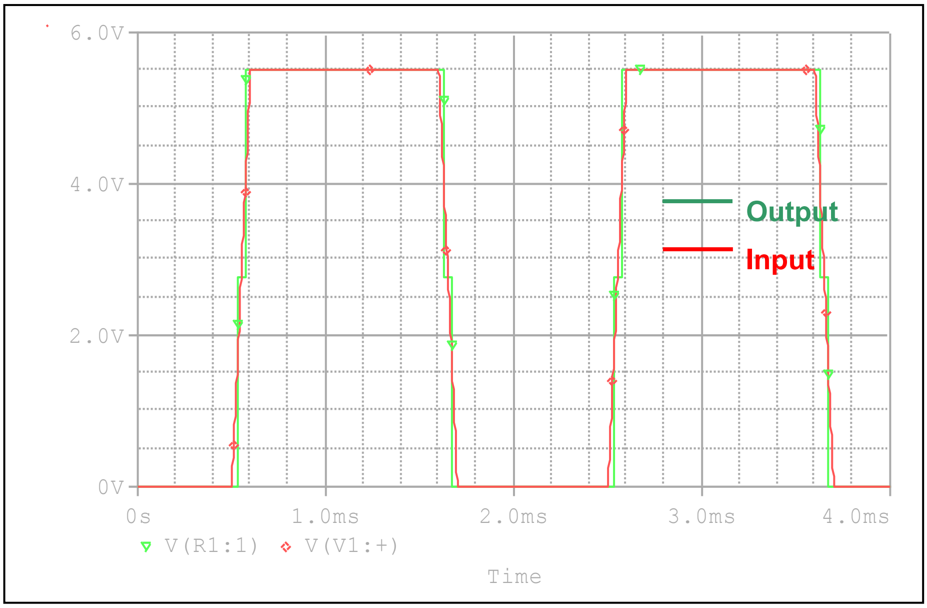


Comparison table

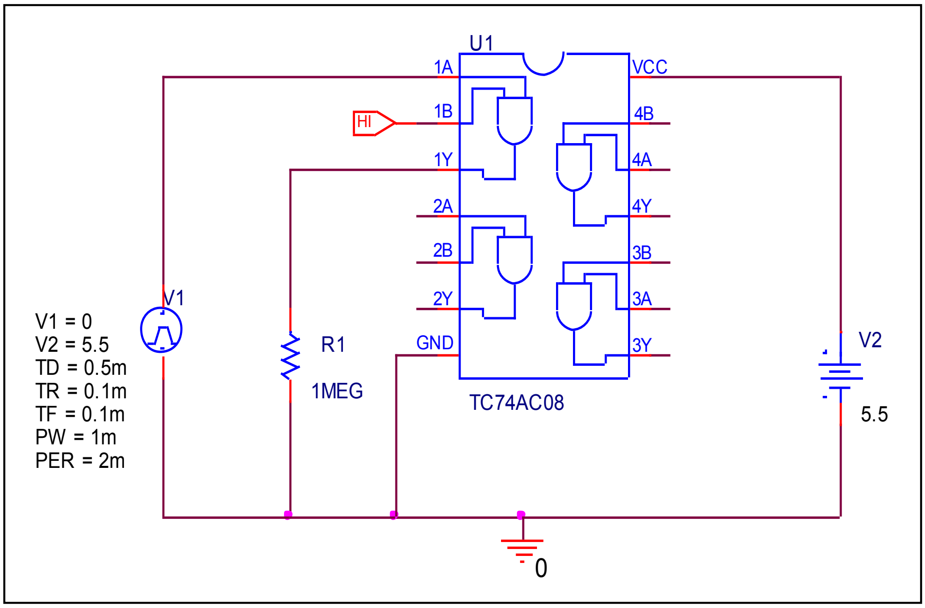
Input		Output		%Error
An	**Bn**	**Yn (Measurement)**	**Yn (Simulation)**	
H	**H**	H	H	0

High Level and Low Level Input Voltage

Circuit simulation result



Evaluation circuit



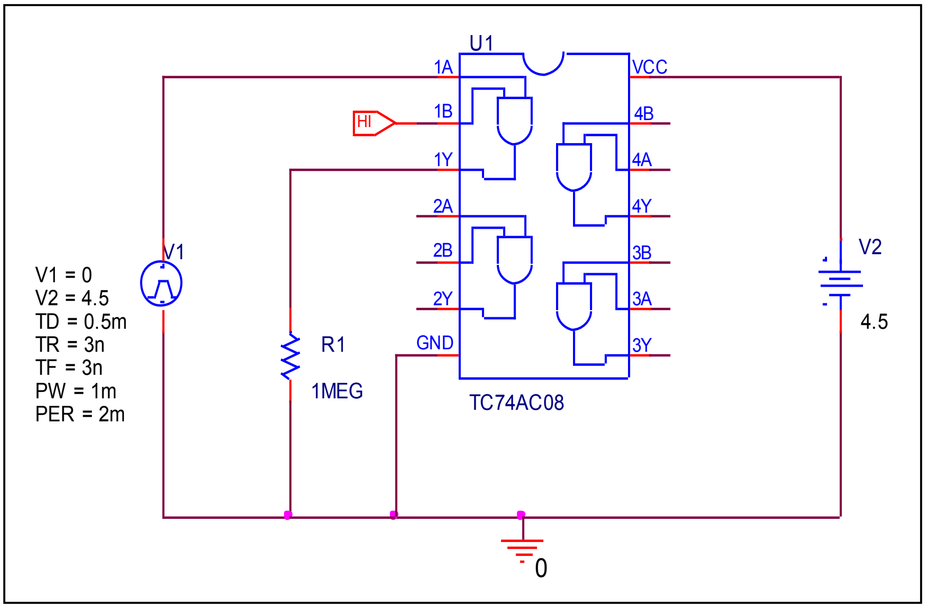
Comparison table

V_{CC} = 5.5V	Measurement	Simulation	%Error
V_{IH} (V)	3.85	3.9328	2.151
V_{IL} (V)	1.65	1.6445	-0.333

High Level and Low Level Output Voltage

Circuit simulation result

Evaluation circuit

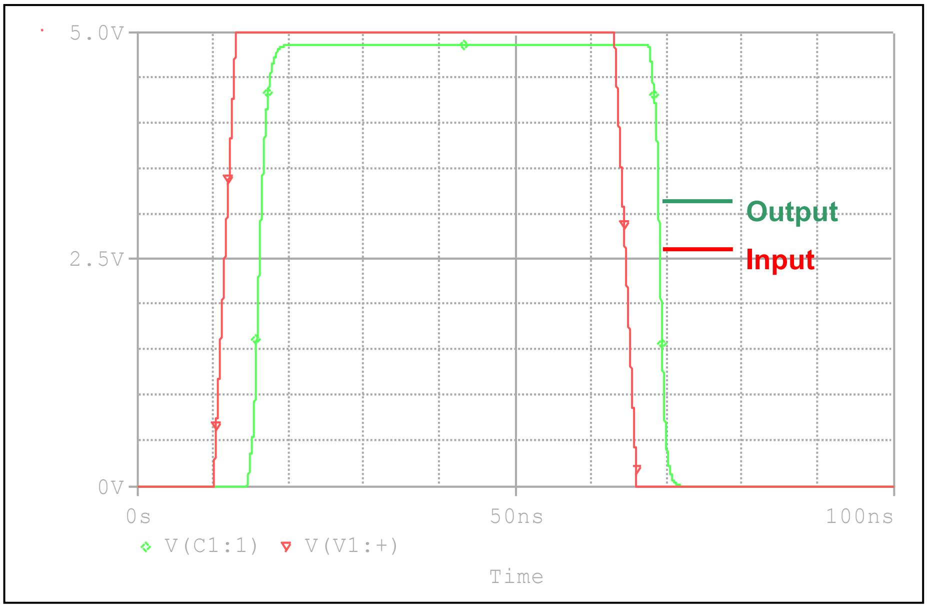


Comparison table

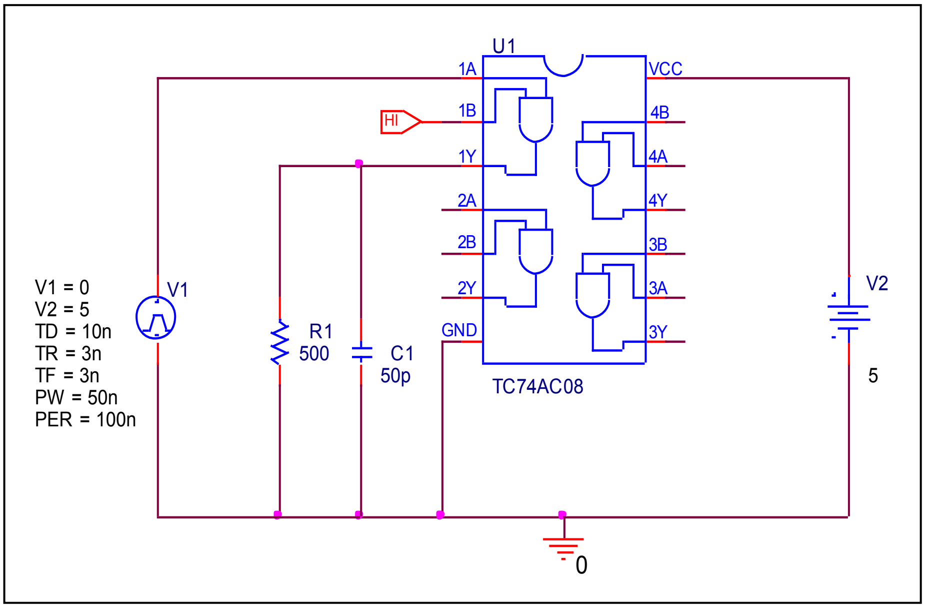
V_{CC} = 4.5V	Measurement	Simulation	%Error
V_{OH} (V)	4.5	4.4994	-0.013
V_{OL} (V)	0	0	0

Propagation Delay Time

Circuit simulation result



Evaluation circuit



Comparison table

C_L=50pF,R_L=500Ω,T_r=T_f=3ns	Measurement	Simulation	%Error
t_{pLH} (ns)	4.5	4.5592	1.316
t_{pHL} (ns)	4.5	4.5633	1.407