

Device Modeling Report

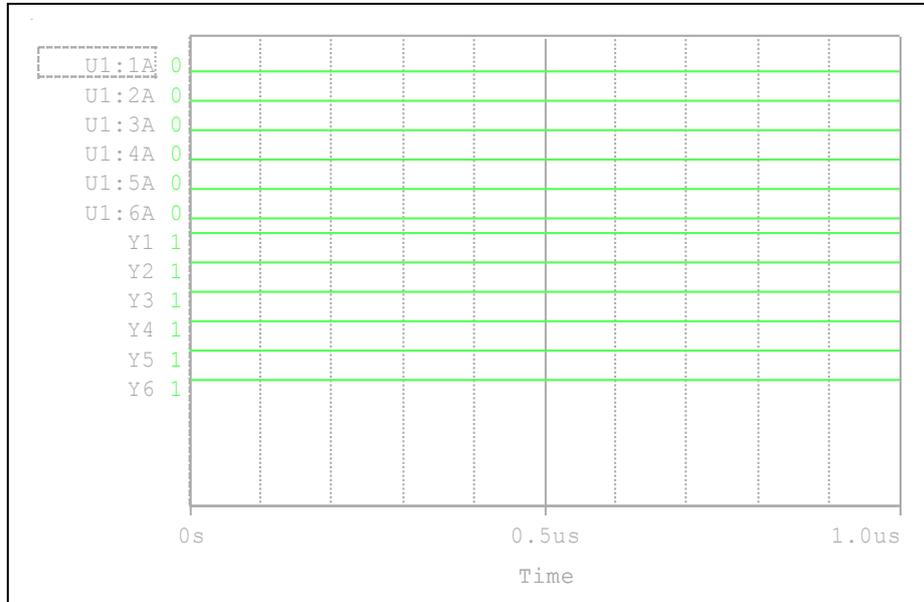
COMPONENTS : CMOS DIGITAL INTEGRATED CIRCUIT
PART NUMBER : TC74HCT04AFN
MANUFACTURER : TOSHIBA



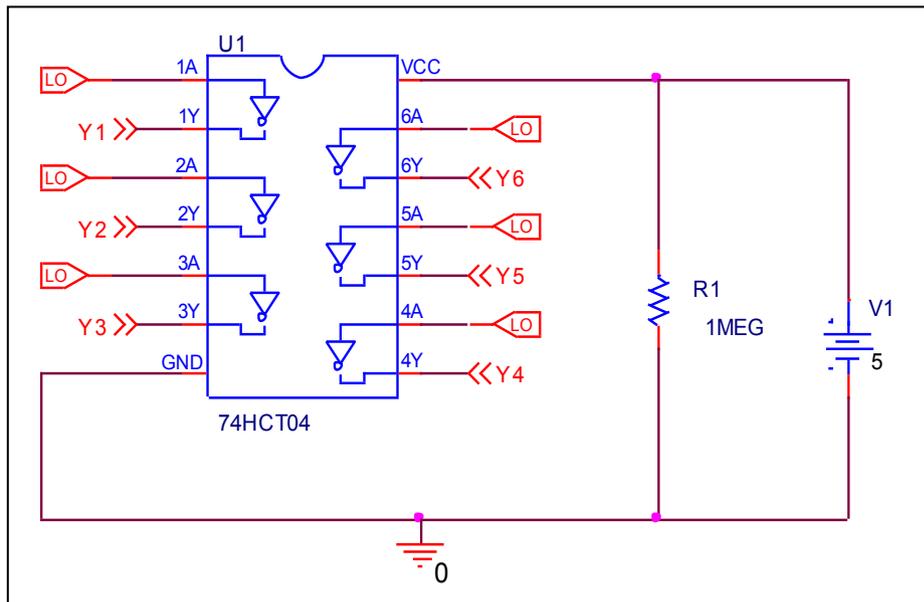
Bee Technologies Inc.

Truth Table

Circuit simulation result



Evaluation circuit

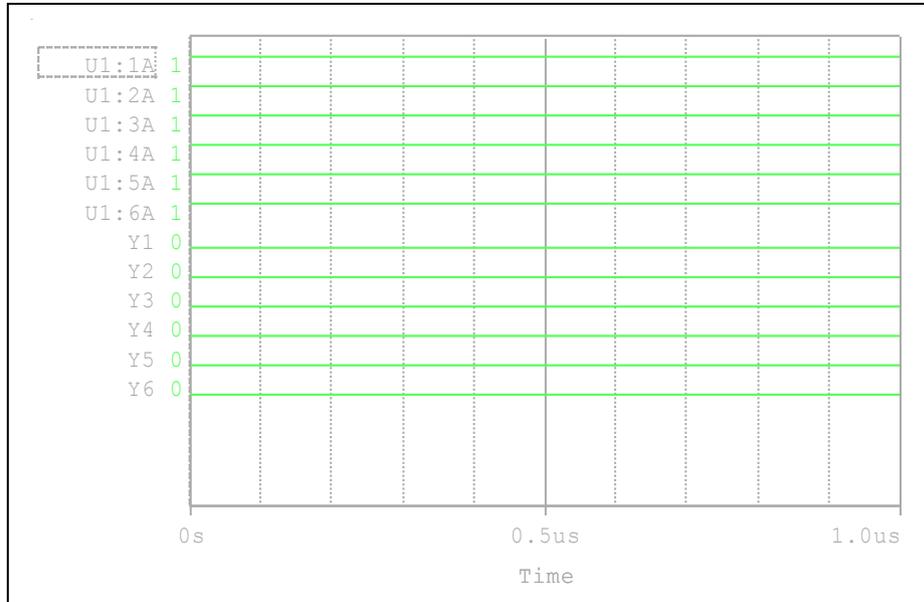


Comparison table

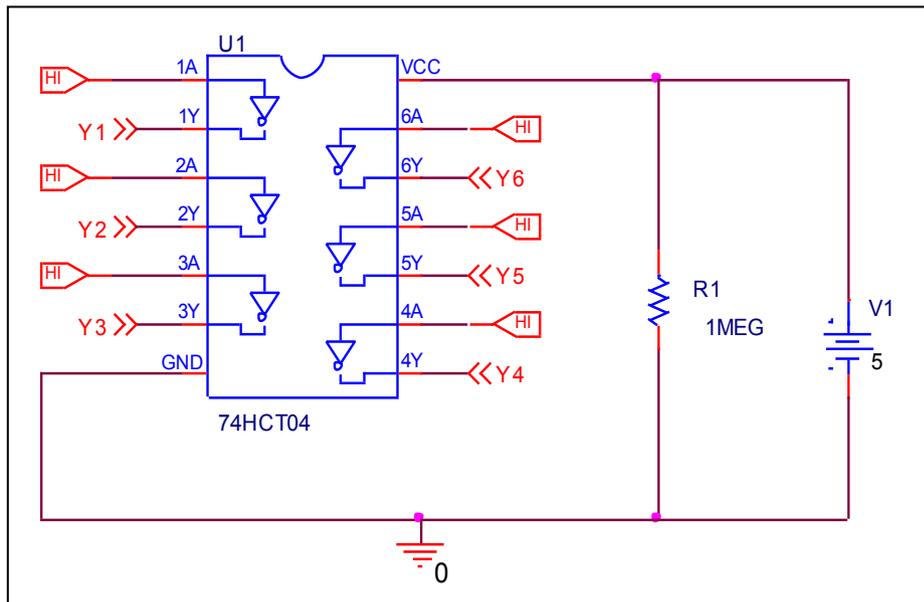
Input	Output		%Error
	Yn (Measurement)	Yn (Simulation)	
L	H	H	0

Truth Table

Circuit simulation result



Evaluation circuit

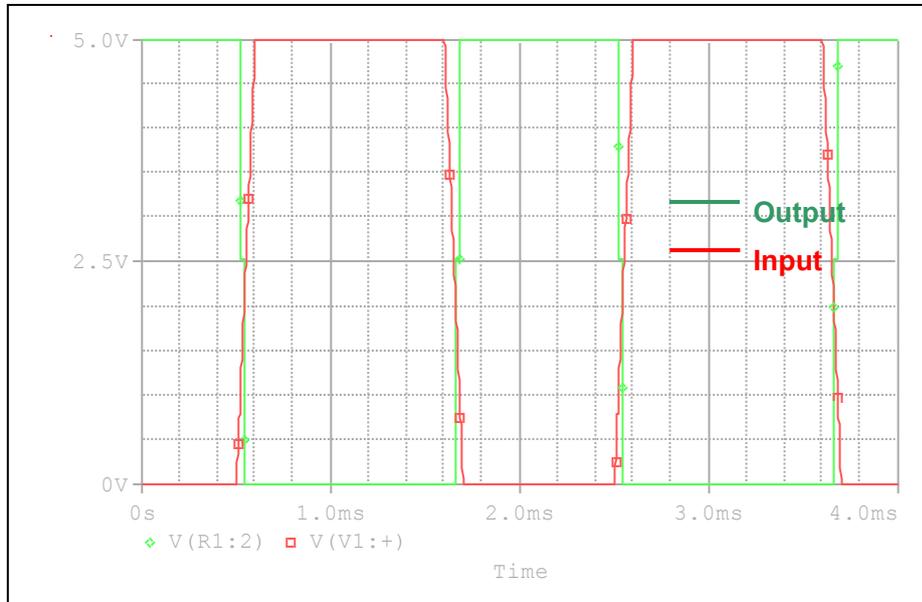


Comparison table

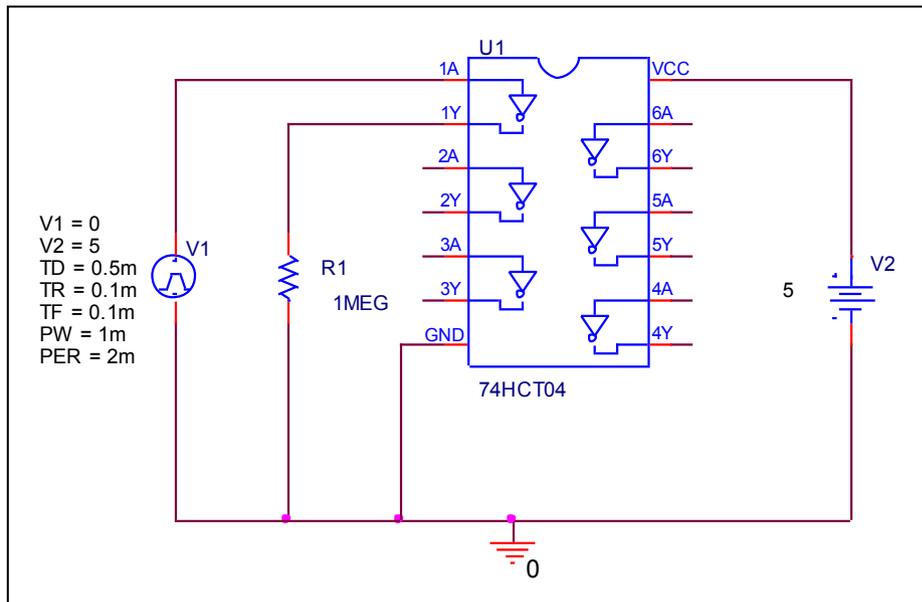
Input	Output		%Error
	Yn (Measurement)	Yn (Simulation)	
H	L	L	0

High Level and Low Level Input Voltage

Circuit simulation result



Evaluation circuit

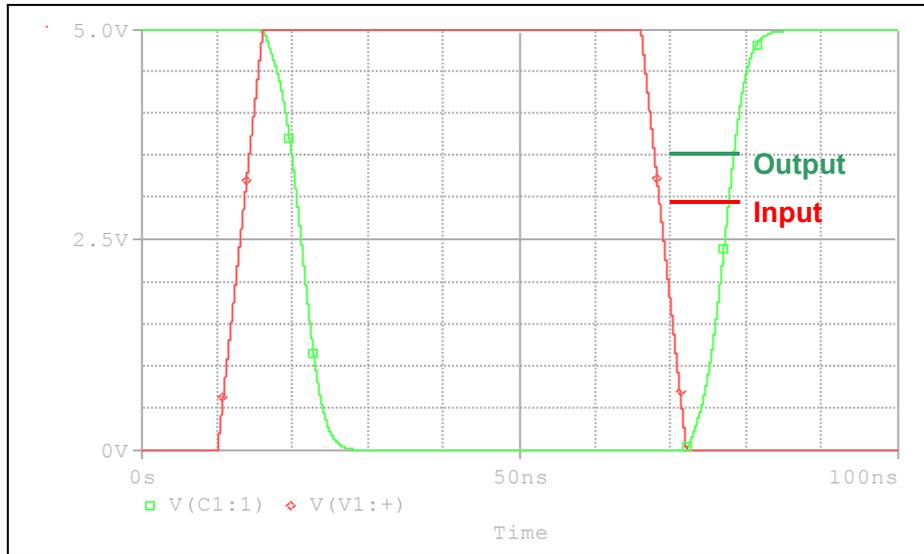


Comparison table

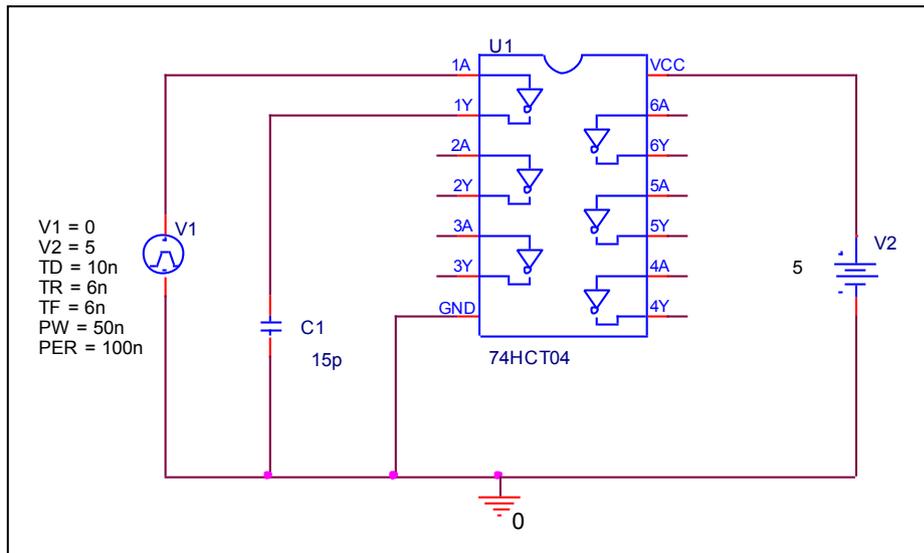
V _{CC} = 5V	Measurement	Simulation	%Error
V _{IH} (V)	2	2.0015	0.075
V _{IL} (V)	0.8	0.799205	-0.099

Propagation Delay Time

Circuit simulation result



Evaluation circuit



Comparison table

$C_L=15\text{pF}, V_{CC} = 5\text{V}, t_r=t_f=6\text{ns}$	Measurement	Simulation	%Error
t_{TLH} (ns)	6	6.0264	0.440
t_{THL} (ns)	6	6.0130	0.217
T_{pLH} (ns)	8	8.0715	0.894
T_{pHL} (ns)	8	8.0700	0.875