

Fig. 4 Functional diagram.

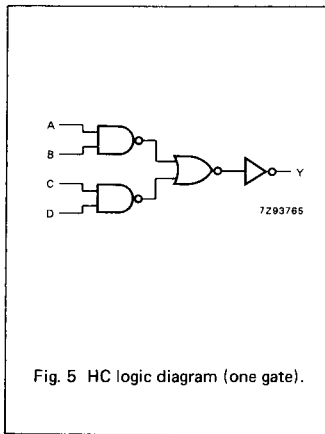


Fig. 5 HC logic diagram (one gate).

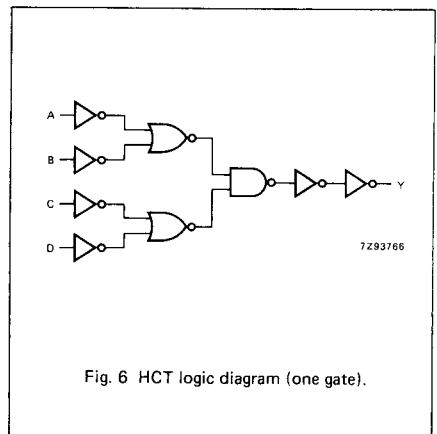


Fig. 6 HCT logic diagram (one gate).

FUNCTION TABLE

INPUTS				OUTPUT
nA	nB	nC	nD	nY
L	X	X	X	H
X	L	X	X	H
X	X	L	X	H
X	X	X	L	H
H	H	H	H	L

H = HIGH voltage level
L = LOW voltage level
X = don't care

DC CHARACTERISTICS FOR 74HC

For the DC characteristics see chapter "HCMOS family characteristics", section "Family specifications".

Output capability: standard
I_{CC} category: SSI

AC CHARACTERISTICS FOR 74HC

GND = 0 V; t_r = t_f = 6 ns; C_L = 50 pF

SYMBOL	PARAMETER	T _{amb} (°C)						UNIT	TEST CONDITIONS			
		74HC							V _{CC} V	WAVEFORMS		
		+25			-40 to +85		-40 to +125					
		min.	typ.	max.	min.	max.	min.		max.			
t _{PHL} / t _{PLH}	propagation delay nA, nB, nC, nD to nY	28	10	90	18	115	23	135	27	ns	2.0 4.5 6.0	Fig. 7
t _{THL} / t _{TLH}	output transition time	19	7	75	15	95	19	110	22	ns	2.0 4.5 6.0	Fig. 7

DC CHARACTERISTICS FOR 74HCT

For the DC characteristics see chapter "HCMOS family characteristics", section "Family specifications".

Output capability: standard
I_{CC} category: SSI

Note to HCT types

The value of additional quiescent supply current (ΔI_{CC}) for a unit load of 1 is given in the family specifications. To determine ΔI_{CC} per input, multiply this value by the unit load coefficient shown in the table below.

INPUT	UNIT LOAD COEFFICIENT
nA, nB, nC, nD	0.3

AC CHARACTERISTICS FOR 74HCT

GND = 0 V; t_r = t_f = 6 ns; C_L = 50 pF

SYMBOL	PARAMETER	T _{amb} (°C)						UNIT	TEST CONDITIONS		
		74HCT							V _{CC} V	WAVEFORMS	
		+25			-40 to +85						-40 to +125
		min.	typ.	max.	min.	max.	min.				
t _{PHL} / t _{PLH}	propagation delay nA, nB, nC, nD to nY		16	28		35		42	ns	4.5	Fig. 7
t _{THL} / t _{TLH}	output transition time		7	15		19		22	ns	4.5	Fig. 7

AC WAVEFORMS

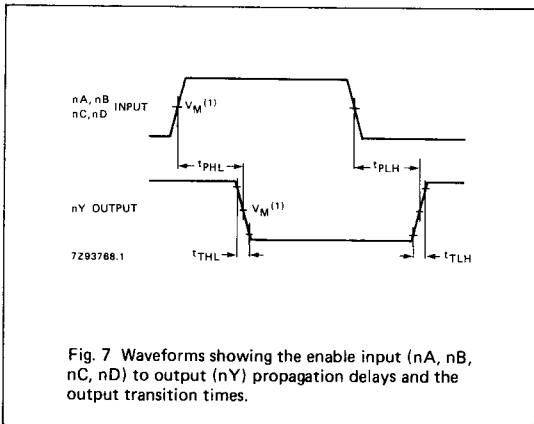


Fig. 7 Waveforms showing the enable input (nA, nB, nC, nD) to output (nY) propagation delays and the output transition times.

Note to AC waveforms

(1) HC : V_M = 50%; V_I = GND to V_{CC}.
HCT: V_M = 1.3 V; V_I = GND to 3 V.