

## Hex buffer/line driver; 3-state

## 74HC/HCT365

## FEATURES

- Non-inverting outputs
- Output capability: bus driver
- I<sub>CC</sub> category: MSI

## GENERAL DESCRIPTION

The 74HC/HCT365 are high-speed Si-gate CMOS devices and are pin compatible with low power Schottky TTL (LSTTL). They are specified in compliance with JEDEC standard no. 7A.

The 74HC/HCT365 are hex non-inverting buffer/line drivers with 3-state outputs. The 3-state outputs (nY) are controlled by the output enable inputs ( $\overline{OE}_1, \overline{OE}_2$ ).

A HIGH on  $\overline{OE}_n$  causes the outputs to assume a high impedance OFF-state.

The "365" is identical to the "366" but has non-inverting outputs.

## QUICK REFERENCE DATA

GND = 0 V; T<sub>amb</sub> = 25 °C; t<sub>r</sub> = t<sub>f</sub> = 6 ns

SYMBOL	PARAMETER	CONDITIONS	TYPICAL		UNIT
			HC	HCT	
t <sub>PHL</sub> / t <sub>PLH</sub>	propagation delay nA to nY	C <sub>L</sub> = 15 pF; V <sub>CC</sub> = 5 V	9	11	ns
C <sub>I</sub>	input capacitance		3,5	3,5	pF
C <sub>PD</sub>	power dissipation capacitance per buffer	notes 1 and 2	40	40	pF

## Notes

1. C<sub>PD</sub> is used to determine the dynamic power dissipation (P<sub>D</sub> in μW):

$$P_D = C_{PD} \times V_{CC}^2 \times f_i + \sum (C_L \times V_{CC}^2 \times f_o) \text{ where:}$$

f<sub>i</sub> = input frequency in MHz

f<sub>o</sub> = output frequency in MHz

∑ (C<sub>L</sub> × V<sub>CC</sub><sup>2</sup> × f<sub>o</sub>) = sum of outputs

C<sub>L</sub> = output load capacitance in pF

V<sub>CC</sub> = supply voltage in V

2. For HC the condition is V<sub>I</sub> = GND to V<sub>CC</sub>

For HCT the condition is V<sub>I</sub> = GND to V<sub>CC</sub> – 1.5 V

## ORDERING INFORMATION

See "74HC/HCT/HCU/HCMOS Logic Package Information".

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**DC CHARACTERISTICS FOR 74HCT**

For the DC characteristics see *"74HC/HCT/HCU/HCMOS Logic Family Specifications"*.

Output capability: bus driver

I<sub>CC</sub> category: MSI

**Note to HCT types**

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

INPUT	UNIT LOAD COEFFICIENT
$\overline{OE}_1$	1.00
$\overline{OE}_2$	0.90
nA	1.00

**AC CHARACTERISTICS FOR 74HCT**

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

SYMBOL	PARAMETER	T <sub>amb</sub> (°C)						UNIT	TEST CONDITIONS		
		74HCT							V <sub>CC</sub> (V)	WAVEFORMS	
		+25			-40 to+85		-40 to+125				
		min.	typ.	max.	min.	max.	min.				max.
t <sub>PHL</sub> / t <sub>PLH</sub>	propagation delay nA to nY		14	25		31		38	ns	4.5	Fig.6
t <sub>PZH</sub> / t <sub>PZL</sub>	3-state output enable time $\overline{OE}_n$ to nY		18	35		44		53	ns	4.5	Fig.7
t <sub>PHZ</sub> / t <sub>PLZ</sub>	3-state output disable time $\overline{OE}_n$ to nY		23	35		44		53	ns	4.5	Fig.7
t <sub>THL</sub> / t <sub>TLH</sub>	output transition time		5	12		15		18	ns	4.5	Fig.6