

DATA SHEET

For a complete data sheet, please also download:

- The IC06 74HC/HCT/HCU/HCMOS Logic Family Specifications
- The IC06 74HC/HCT/HCU/HCMOS Logic Package Information
- The IC06 74HC/HCT/HCU/HCMOS Logic Package Outlines

74HC/HCT126

Quad buffer/line driver; 3-state

Product specification
File under Integrated Circuits, IC06

December 1990

Quad buffer/line driver; 3-state

74HC/HCT126

FEATURES

- Output capability: bus driver
- I_{CC} category: MSI

GENERAL DESCRIPTION

The 74HC/HCT126 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 HC/HCT126 are four non-inverting buffer/line drivers with 3-state outputs. The 3-state outputs (nY) are controlled by the output enable input (nOE). A LOW at nOE causes the outputs to assume a HIGH impedance OFF-state.

The "126" is identical to the "125" but has active HIGH enable inputs.

QUICK REFERENCE DATA

GND = 0 V; $T_{amb} = 25\text{ }^{\circ}\text{C}$; $t_r = t_f = 6\text{ ns}$

SYMBOL	PARAMETER	CONDITIONS	TYPICAL		UNIT
			HC	HCT	
t_{PHL}/t_{PLH}	propagation delay nA to nY	$C_L = 15\text{ pF}$; $V_{CC} = 5\text{ V}$	9	11	ns
C_I	input capacitance		3.5	3.5	pF
C_{PD}	power dissipation capacitance per buffer	notes 1 and 2	23	24	pF

Notes

1. C_{PD} is used to determine the dynamic power dissipation (P_D 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_i = input frequency in MHz

f_o = output frequency in MHz

C_L = output load capacitance in pF

V_{CC} = supply voltage in V

$\sum (C_L \times V_{CC}^2 \times f_o)$ = sum of outputs

2. For HC the condition is $V_I = \text{GND to } V_{CC}$
For HCT the condition is $V_I = \text{GND to } V_{CC} - 1.5\text{ V}$

ORDERING INFORMATION

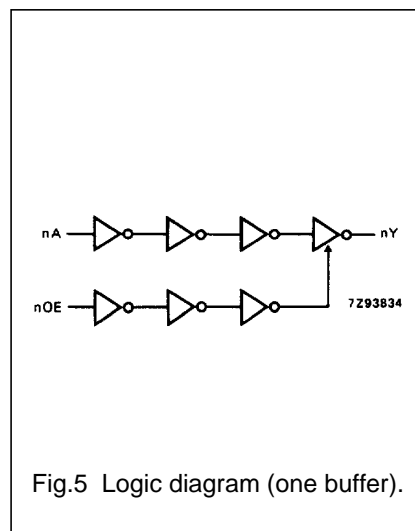
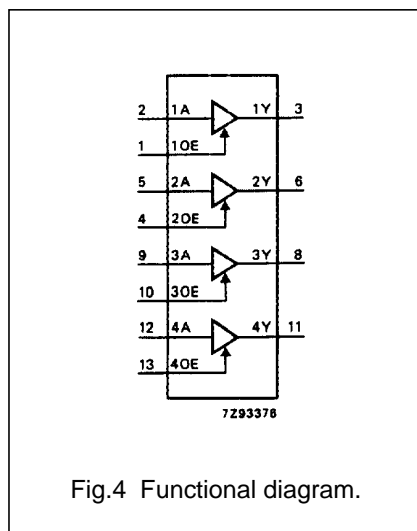
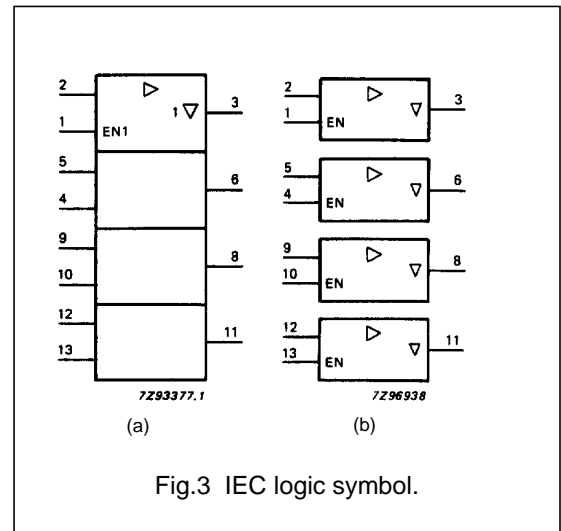
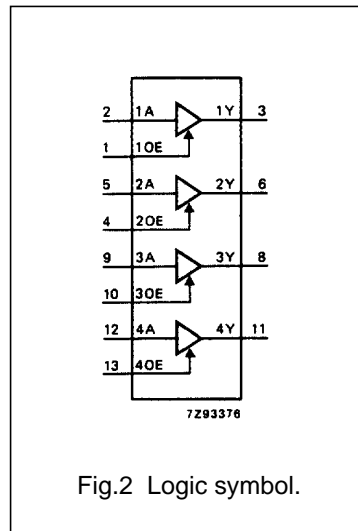
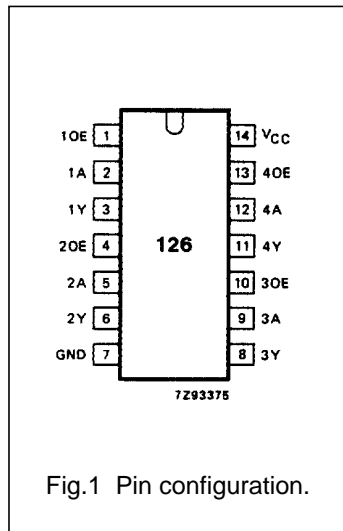
See "74HC/HCT/HCU/HCMOS Logic Package Information".

Quad buffer/line driver; 3-state

74HC/HCT126

PIN DESCRIPTION

PIN NO.	SYMBOL	NAME AND FUNCTION
1, 4, 10, 13	1OE to 4OE	output enable inputs (active HIGH)
2, 5, 9, 12	1A to 4A	data inputs
3, 6, 8, 11	1Y to 4Y	data outputs
7	GND	ground (0 V)
14	V _{CC}	positive supply voltage



FUNCTION TABLE

INPUTS		OUTPUT
nOE	nA	nY
H	L	L
H	H	H
L	X	Z

Note

1. H = HIGH voltage level
L = LOW voltage level
X = don't care
Z = high impedance OFF-state

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DC CHARACTERISTICS FOR 74HC

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

Output capability: bus driver

I_{CC} category: MSI

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 to nY		30 11 9	100 20 17		125 25 21		150 30 26	ns	2.0 4.5 6.0	Fig.6
t _{PZH} / t _{PZL}	3-state output enable time nOE to nY		41 15 12	125 25 21		155 31 26		190 38 32	ns	2.0 4.5 6.0	Fig.7
t _{PHZ} / t _{PLZ}	3-state output disable time nOE to nY		41 15 12	125 25 21		155 31 26		190 38 32	ns	2.0 4.5 6.0	Fig.7
t _{THL} / t _{TLH}	output transition time		14 5 4	60 12 10		75 15 13		90 18 15	ns	2.0 4.5 6.0	Fig.6

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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_{CC} category: MSI

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 unit, multiply this value by the unit load coefficient shown in the table below.

INPUT	UNIT LOAD COEFFICIENT
nA, nOE	1.00

AC CHARACTERISTICS FOR 74HCT

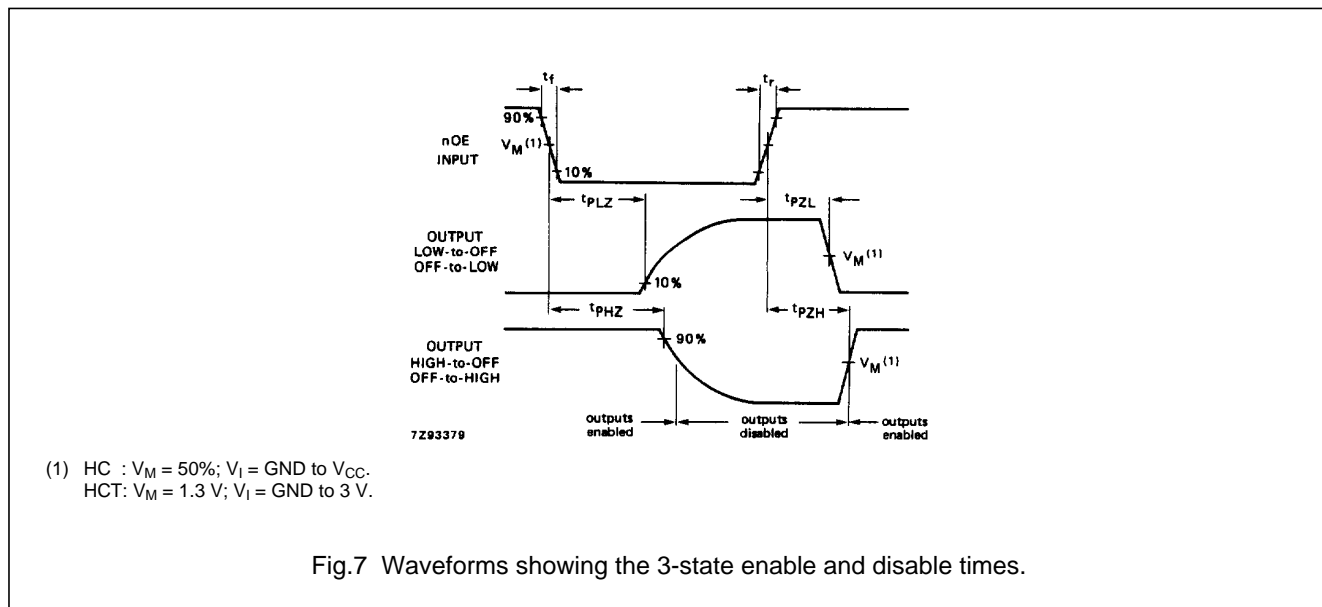
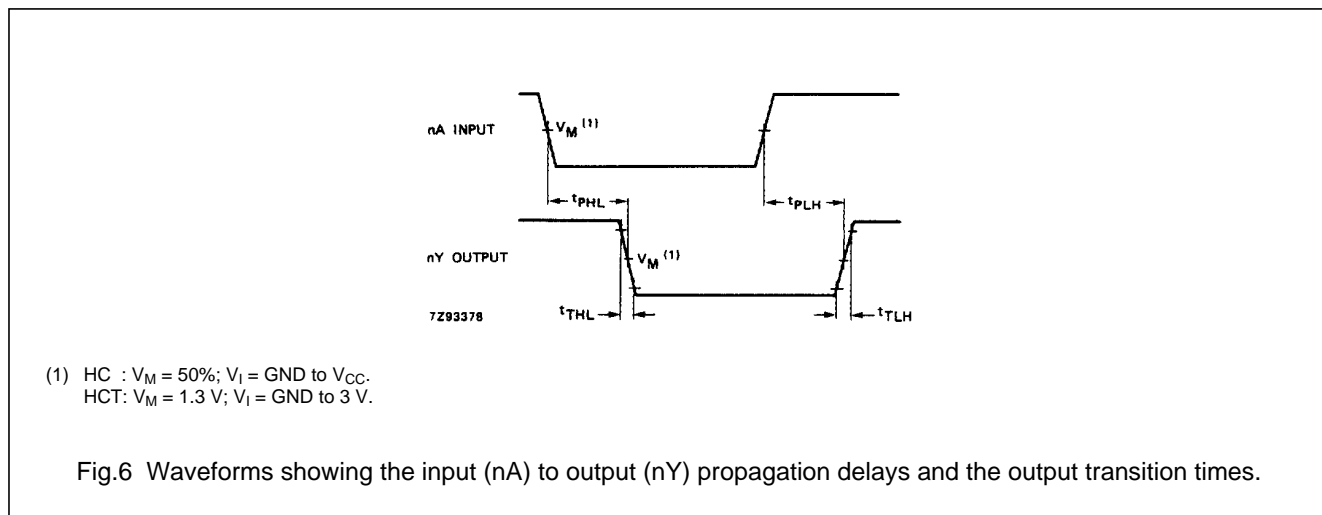
GND = 0 V; t_r = t_f = 6 ns; C_L = 50 pF

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.	max.			
t _{PHL} / t _{PLH}	propagation delay nA to nY		14	24		30		36	ns	4.5	Fig.6
t _{PZH} / t _{PZL}	3-state output enable time nOE to nY		13	25		31		38	ns	4.5	Fig.7
t _{PHZ} / t _{PLZ}	3-state output disable time nOE to nY		18	28		35		42	ns	4.5	Fig.7
t _{THL} / t _{TLH}	output transition time		5	12		15		18	ns	4.5	Fig.6

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AC WAVEFORMS



PACKAGE OUTLINES

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

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Information as of 2003-04-22

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General description	Features	Applications	Datasheet
Block diagram	Buy online	Support & tools	Email/translate
Products & packages	Parametrics	Similar products	

General description

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They are specified in compliance with JEDEC standard no. 7A.

The HC/HCT126 are four non-inverting buffer/line drivers with 3-state outputs. The 3-state outputs (nY) are controlled by the output enable input (nOE). A LOW at nOE causes the outputs to assume a HIGH impedance OFF-state.

The '126' is identical to the '125' but has active HIGH enable inputs.

Features

- Output capability: bus driver
- I_{CC} category: MSI

Datasheet

<u>Type number</u>	<u>Title</u>	<u>Publication release date</u>	<u>Datasheet status</u>	<u>Page count</u>	<u>File size (kB)</u>	<u>Datasheet</u>
74HC/HCT126	Quad buffer/line driver; 3-state	12/1/1990	Product specification	6	40	Download

Additional datasheet info

To complete the device datasheet with package and family information, also download the following PDF files. The "Logic Package Information" document is required to determine in which package(s) this device is available.

Document	Description
1 HCT_FAMILY_SPECIFICATIONS	HC/T Family Specifications, The IC06 74HC/HCT/HCMOS Logic Family Specifications
2 HCT_PACKAGE_INFO	HC/T Package Info, The IC06 74HC/HCT/HCMOS Logic Package Information

□ Parametrics

Type number	Package	Description	Propagation Delay(ns)	Voltage	No. of Pins	Power Dissipation Considerations	Logic Switching Levels	Output Drive Capability
74HC126D	SOT108-1 (SO14)	Quad Buffer/Line Driver with Active HIGH Output Enable (3-State)	15	5 Volts +	14	Low Power or Battery Applications	CMOS	Low
74HC126DB	SOT337-1 (SSOP14)	Quad Buffer/Line Driver with Active HIGH Output Enable (3-State)	15	5 Volts +	14	Low Power or Battery Applications	CMOS	Low
74HC126N	SOT27-1 (DIP14)	Quad Buffer/Line Driver with Active HIGH Output Enable (3-State)	15	5 Volts +	14	Low Power or Battery Applications	CMOS	Low
74HC126PW	SOT402-1 (TSSOP14)	Quad Buffer/Line Driver with Active HIGH Output Enable (3-State)	15	5 Volts +	14	Low Power or Battery Applications	CMOS	Low
74HCT126D	SOT108-1 (SO14)	Quad Buffer/Line Driver with Active HIGH Output Enable; TTL Enabled (3-State)	15	5 Volts +	14	Low Power or Battery Applications	TTL	Low

74HCT126DB	SOT337-1 (SSOP14)	Quad Buffer/Line Driver with Active HIGH Output Enable; TTL Enabled (3-State)	15	5 Volts +	14	Low Power or Battery Applications	TTL	Low
74HCT126N	SOT27-1 (DIP14)	Quad Buffer/Line Driver with Active HIGH Output Enable; TTL Enabled (3-State)	15	5 Volts +	14	Low Power or Battery Applications	TTL	Low
74HCT126PW	SOT402-1 (TSSOP14)	Quad Buffer/Line Driver with Active HIGH Output Enable; TTL Enabled (3-State)	15	5 Volts +	14	Low Power or Battery Applications	TTL	Low

□ Products, packages, availability and ordering

<u>Type number</u>	<u>North American type number</u>	<u>Ordering code (12NC)</u>	<u>Marking/Packing info</u> Discretes packing info	<u>Package</u>	<u>Device status</u>	<u>Buy online</u>
74HC126D	74HC126D	9337 570 30652	Standard Marking * Bulk Pack, CECC	SOT108-1 (SO14)	Full production	order this <input type="checkbox"/>
	74HC126D-T	9337 570 30653	Standard Marking * Reel Pack, SMD, 13", CECC	SOT108-1 (SO14)	Full production	order this <input type="checkbox"/>
74HC126DB	74HC126DB	9351 714 30112	Standard Marking * Bulk Pack	SOT337-1 (SSOP14)	Full production	order this <input type="checkbox"/>
	74HC126DB-T	9351 714 30118	Standard Marking * Reel Pack, SMD, 13"	SOT337-1 (SSOP14)	Full production	order this <input type="checkbox"/>
74HC126N	74HC126N	9337 570 20652	Standard Marking * Bulk Pack, CECC	SOT27-1 (DIP14)	Full production	order this <input type="checkbox"/>
74HC126PW	74HC126PW	9351 835 60112	Standard Marking * Bulk Pack	SOT402-1 (TSSOP14)	Full production	order this <input type="checkbox"/>
	74HC126PW-T	9351 835 60118	Standard Marking * Reel Pack, SMD, 13"	SOT402-1 (TSSOP14)	Full production	order this <input type="checkbox"/>

74HCT126D	74HCT126D	9337 570 50652	Standard Marking * Bulk Pack, CECC	SOT108-1 (SO14)	Full production	<input type="text" value="order this"/> <input type="text" value="-"/>
	74HCT126D-T	9337 570 50653	Standard Marking * Reel Pack, SMD, 13", CECC	SOT108-1 (SO14)	Full production	<input type="text" value="order this"/> <input type="text" value="-"/>
74HCT126DB	74HCT126DB	9351 835 90112	Standard Marking * Bulk Pack	SOT337-1 (SSOP14)	Full production	<input type="text" value="order this"/> <input type="text" value="-"/>
	74HCT126DB-T	9351 835 90118	Standard Marking * Reel Pack, SMD, 13"	SOT337-1 (SSOP14)	Full production	<input type="text" value="order this"/> <input type="text" value="-"/>
74HCT126N	74HCT126N	9337 570 40652	Standard Marking * Bulk Pack, CECC	SOT27-1 (DIP14)	Full production	<input type="text" value="order this"/> <input type="text" value="-"/>
74HCT126PW	74HCT126PW	9351 835 50112	Standard Marking * Bulk Pack	SOT402-1 (TSSOP14)	Full production	<input type="text" value="order this"/> <input type="text" value="-"/>
	74HCT126PW-T	9351 835 50118	Standard Marking * Reel Pack, SMD, 13"	SOT402-1 (TSSOP14)	Full production	<input type="text" value="order this"/> <input type="text" value="-"/>

Products in the above table are all in production. Some variants are discontinued; [click here](#) for information on these variants.

Similar products

[Product 74HC/HCT126](#) links to the similar products page containing an overview of products that are similar in function or related to the type number(s) as listed on this page. The similar products page includes products from the same catalog tree(s), relevant selection guides and products from the same functional category.

Support & tools

[Product HC/T Family Specifications, The IC06 74HC/HCT/HCMOS Logic Family Specifications](#)(date 01-Mar-98)

[Product HC/T User Guide](#)(date 01-Nov-97)

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