

# HD74HC125/HD74HC126

Quad. Bus Buffer Gates (with 3-state outputs)

# HITACHI

勝特力材料 886-3-5753170  
勝特力电子(上海) 86-21-54151736  
勝特力电子(深圳) 86-755-83298787  
[Http://www.100y.com.tw](http://www.100y.com.tw)

## Description

The HD74HC125, HD74HC126 require the 3-state control input C to be taken high to put the output into the high impedance condition, whereas the HD74HC125, HD74HC126 requires the control input to be low to put the output into high impedance.

## Features

- High Speed Operation:  $t_{pd} = 8 \text{ ns typ}$  ( $C_L = 50 \text{ pF}$ )
- High Output Current: Fanout of 15 LSTTL Loads
- Wide Operating Voltage:  $V_{CC} = 2 \text{ to } 6 \text{ V}$
- Low Input Current:  $1 \mu\text{A max}$
- Low Quiescent Supply Current:  $I_{CC}(\text{static}) = 4 \mu\text{A max}$  ( $T_a = 25^\circ\text{C}$ )

## Function Table

### Inputs

C			Output Y	
HC125	HC126	A	HC125	HC126
H	L	X	Z	Z
L	H	L	L	L
L	H	H	H	H

X : Irrelevant

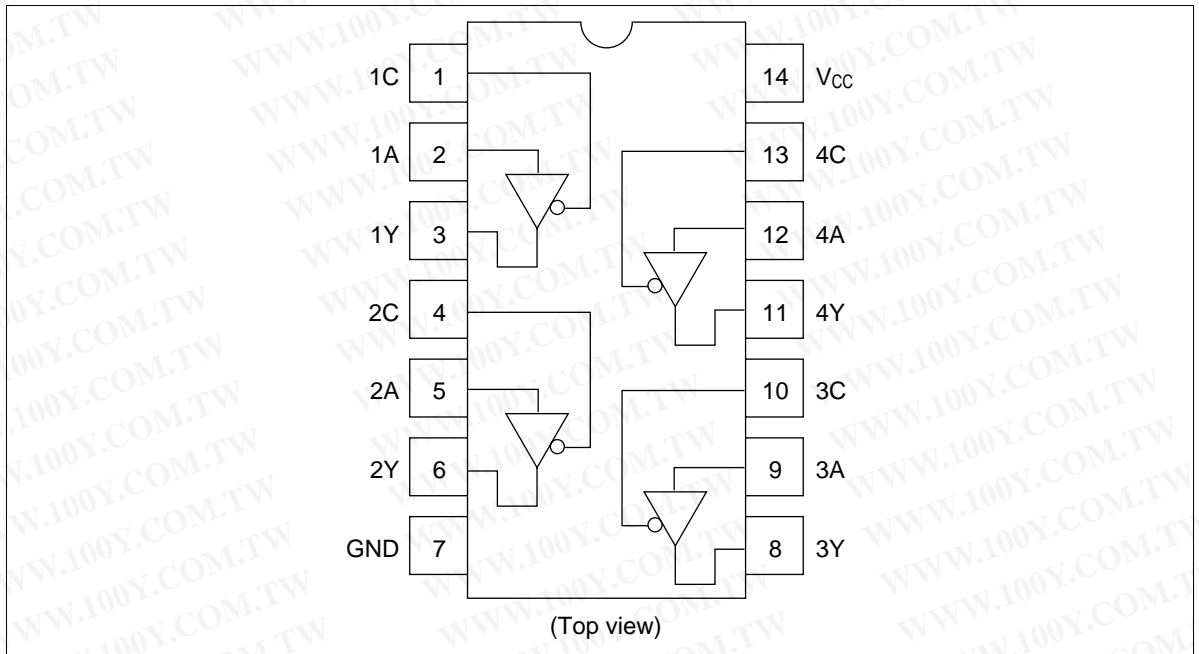
Z : Off (high-impedance) state of a 3-state output.

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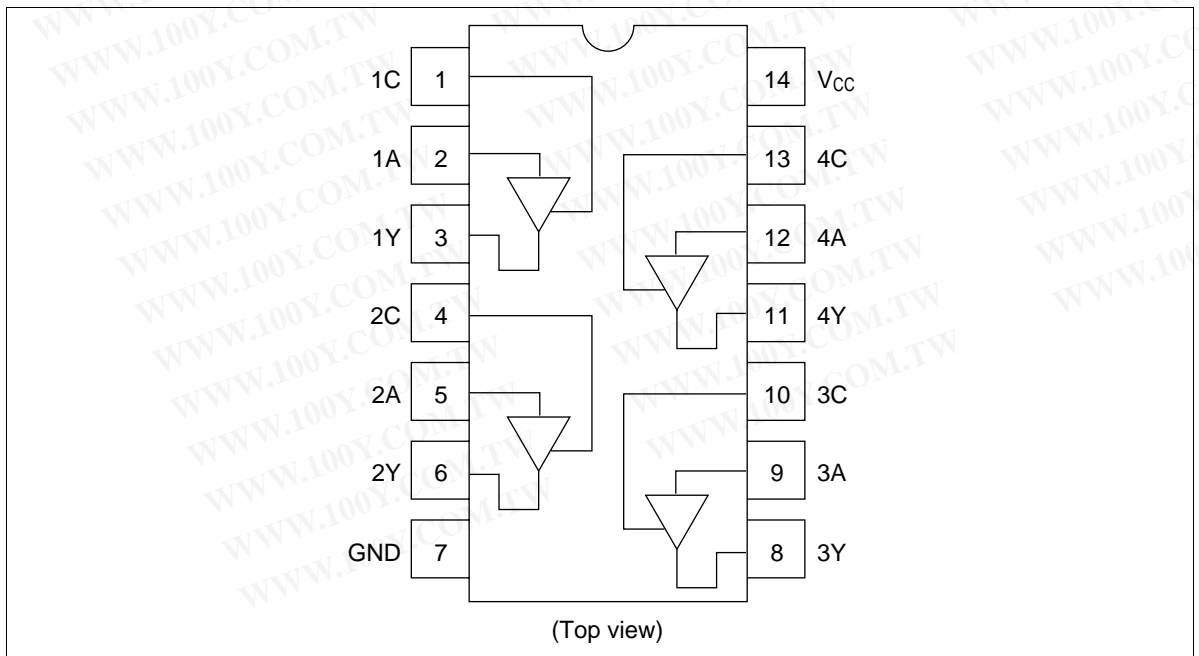
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## Pin Arrangement

### HD74HC125



### HD74HC126



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**Absolute Maximum Ratings**

Item	Symbol	Rating	Unit
Supply voltage range	$V_{CC}$	-0.5 to +7.0	V
Input voltage	$V_{IN}$	-0.5 to $V_{CC} + 0.5$	V
Output voltage	$V_{OUT}$	-0.5 to $V_{CC} + 0.5$	V
Output current	$I_{OUT}$	±35	mA
DC current drain per $V_{CC}$ , GND	$I_{CC}$ , $I_{GND}$	±75	mA
DC input diode current	$I_{IK}$	±20	mA
DC output diode current	$I_{OK}$	±20	mA
Power dissipation per package	$P_T$	500	mW
Storage temperature	Tstg	-65 to +150	°C

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## DC Characteristics

Item	Symbol	V <sub>CC</sub> (V)	Ta = 25°C			Ta = -40 to +85°C		Unit	Test Conditions	
			Min	Typ	Max	Min	Max			
Input voltage	V <sub>IH</sub>	2.0	1.5	—	—	1.5	—	V		
		4.5	3.15	—	—	3.15	—			
		6.0	4.2	—	—	4.2	—			
	V <sub>IL</sub>	2.0	—	—	0.5	—	0.5			V
		4.5	—	—	1.35	—	1.35			
		6.0	—	—	1.8	—	1.8			
Output voltage	V <sub>OH</sub>	2.0	1.9	2.0	—	1.9	—	V	Vin = V <sub>IH</sub> or V <sub>IL</sub> I <sub>OH</sub> = -20 μA	
		4.5	4.4	4.5	—	4.4	—			
		6.0	5.9	6.0	—	5.9	—			
		4.5	4.18	—	—	4.13	—			I <sub>OH</sub> = -6 mA
		6.0	5.68	—	—	5.63	—			I <sub>OH</sub> = -7.8 mA
		6.0	5.68	—	—	5.63	—			I <sub>OH</sub> = -7.8 mA
	V <sub>OL</sub>	2.0	—	0.0	0.1	—	0.1	V	Vin = V <sub>IH</sub> or V <sub>IL</sub> I <sub>OL</sub> = 20 μA	
		4.5	—	0.0	0.1	—	0.1			
		6.0	—	0.0	0.1	—	0.1			
		4.5	—	—	0.26	—	0.33			I <sub>OL</sub> = 6 mA
		6.0	—	—	0.26	—	0.33			I <sub>OL</sub> = 7.8 mA
		6.0	—	—	0.26	—	0.33			I <sub>OL</sub> = 7.8 mA
Off-state output current	I <sub>oz</sub>	6.0	—	—	±0.5	—	±5.0	μA	Vin = V <sub>IH</sub> or V <sub>IL</sub> , Vout = V <sub>CC</sub> or GND	
Input current	I <sub>in</sub>	6.0	—	—	±0.1	—	±1.0	μA	Vin = V <sub>CC</sub> or GND	
Quiescent supply current	I <sub>cc</sub>	6.0	—	—	4.0	—	40	μA	Vin = V <sub>CC</sub> or GND, Iout = 0 μA	

## AC Characteristics ( $C_L = 50 \text{ pF}$ , Input $t_r = t_f = 6 \text{ ns}$ )

Item	Symbol	$V_{CC}$ (V)	$T_a = 25^\circ\text{C}$			$T_a = -40 \text{ to } +85^\circ\text{C}$		Unit	Test Conditions
			Min	Typ	Max	Min	Max		
Propagation delay time	$t_{PLH}$	2.0	—	—	100	—	125	ns	勝特力材料 886-3-5753170 勝特力电子(上海) 86-21-54151736 勝特力电子(深圳) 86-755-83298787 <a href="http://www.100y.com.tw">Http://www.100y.com.tw</a>
	$t_{PHL}$	4.5	—	8	20	—	25		
		6.0	—	—	17	—	21		
Output enable time	$t_{ZH}$	2.0	—	—	150	—	190	ns	
	$t_{ZL}$	4.5	—	9	30	—	38		
		6.0	—	—	26	—	33		
Output disable time	$t_{HZ}$	2.0	—	—	150	—	190	ns	
	$t_{LZ}$	4.5	—	14	30	—	38		
		6.0	—	—	26	—	33		
Output rise/fall time	$t_{TLH}$	2.0	—	—	60	—	75	ns	
	$t_{THL}$	4.5	—	4	12	—	15		
		6.0	—	—	10	—	13		
Input capacitance	$C_{in}$	—	—	5	10	—	10	pF	

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## Cautions

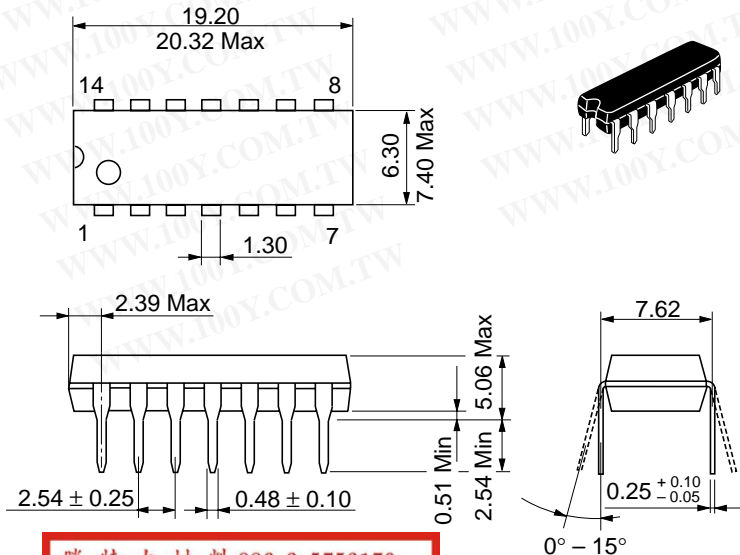
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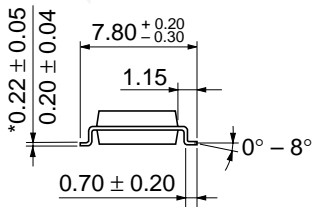
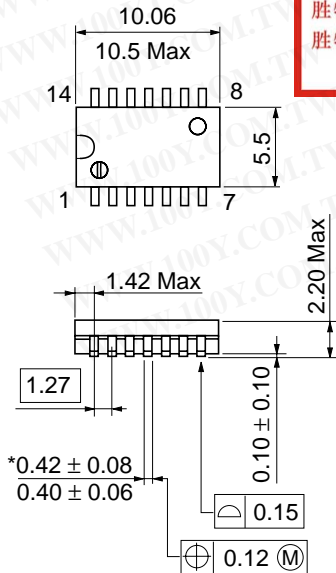
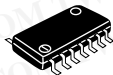
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Hitachi Code	DP-14
JEDEC	Conforms
EIAJ	Conforms
Weight (reference value)	0.97 g



Unit: mm

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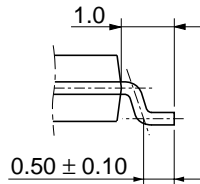
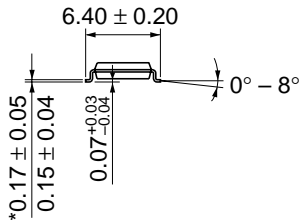
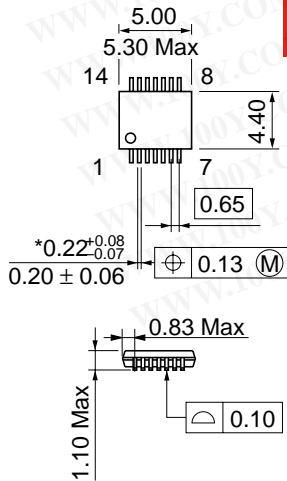
\*Dimension including the plating thickness  
 Base material dimension

Hitachi Code	FP-14DA
JEDEC	—
EIAJ	Conforms
Weight (reference value)	0.23 g





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\*Dimension including the plating thickness  
 Base material dimension

Hitachi Code	TTP-14D
JEDEC	—
EIAJ	—
Weight (reference value)	0.05 g