



## U74AHCT34

CMOS IC

### HEX BUFFER

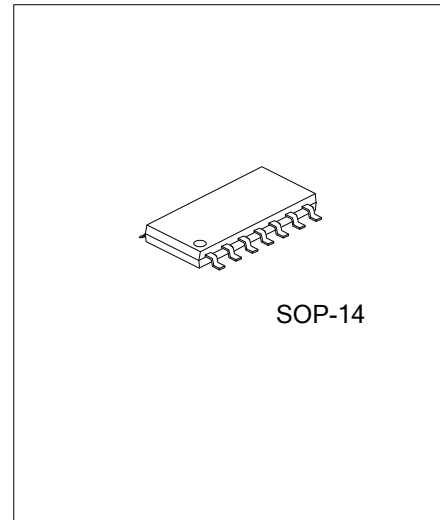
#### DESCRIPTION

The **U74AHCT34** devices contain six independent buffer and they perform function Y=A.

The **U74AHCT34** is characterized for operation from -40°C to 85°C.

#### FEATURES

- \* Enhanced-Performance Implanted CMOS Process
- \* Inputs are TTL-Voltage compatible
- \* Package Options Include Plastic

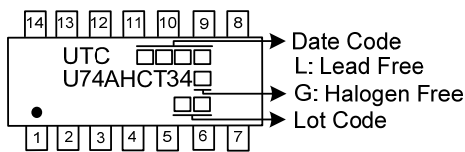


#### ORDERING INFORMATION

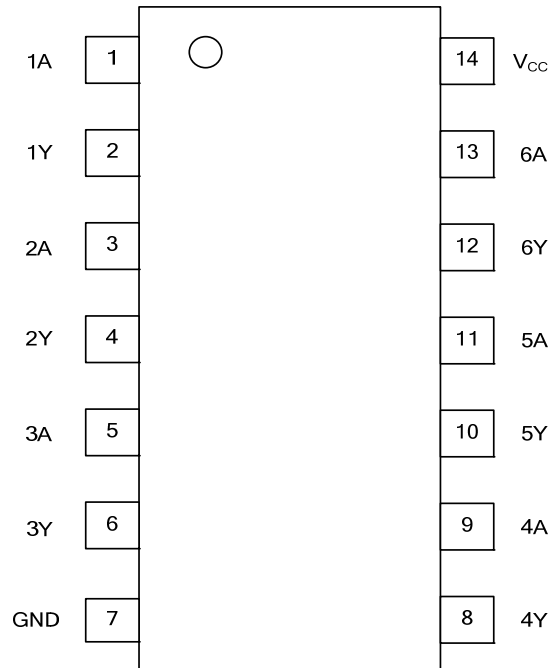
Ordering Number		Package	Packing
Lead Free	Halogen Free		
U74AHCT34L-S14-R	U74AHCT34G-S14-R	SOP-14	Tape Reel

<p>U74AHCT34G-S14-R</p> <p>(1) Packing Type (2) Package Type (3) Green Package</p>	<p>(1) R: Tape Reel (2) S14: SOP-14 (3) G: Halogen Free and Lead Free, L: Lead Free</p>
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#### MARKING



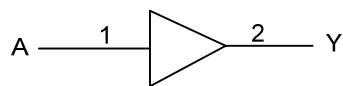
■ PIN CONFIGURATION



■ FUNCTION TABLE (each gate)

INPUT	OUTPUT
A	Y
L	L
H	H

■ LOGIC DIAGRAM (positive logic)



IEC logic symbol

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■ ABSOLUTE MAXIMUM RATING (T<sub>A</sub>=25°C, unless otherwise specified)(Note 1)

PARAMETER	SYMBOL	RATINGS	UNIT
Supply Voltage	V <sub>CC</sub>	-0.5~7	V
Input Voltage	V <sub>IN</sub>	-0.5~7	V
Output Voltage(active mode)	V <sub>OUT</sub>	-0.5~V <sub>CC</sub> +0.5	V
Input Clamp Current(V <sub>I</sub> <0)	I <sub>IK</sub>	-20	mA
Output Clamp Current(V <sub>O</sub> <0)	I <sub>OK</sub>	±20	mA
Output Current	I <sub>OUT</sub>	±25	mA
V <sub>CC</sub> or GND Current	I <sub>CC</sub>	±50	mA
Storage Temperature	T <sub>STG</sub>	-65 ~ +150	°C

Note 1. The input and output voltage ratings may be exceeded if the input and output current ratings are observed.

2. Absolute maximum ratings are those values beyond which the device could be permanently damaged.

Absolute maximum ratings are stress ratings only and functional device operation is not implied.

■ RECOMMENDED OPERATING COMDITIONS

PARAMETER	SYMBOL	CONDITIONS	MIN	TYP	MAX	UNIT
Supply Voltage	V <sub>CC</sub>	Operating	4.5		5.5	V
Input Voltage	V <sub>IN</sub>		0		5.5	V
Output Voltage	V <sub>OUT</sub>		0		V <sub>CC</sub>	V
High-level Output Current	I <sub>OH</sub>	V <sub>CC</sub> =4.5V			-8	mA
Low-level Output Current	I <sub>OL</sub>	V <sub>CC</sub> =4.5V			8	mA
Operating Temperature	T <sub>A</sub>		-40		+85	°C

■ STATIC CHARACTERISTICS

PARAMETER	SYMBOL	TEST CONDITIONS	MIN	TYP	MAX	UNIT
Positive-Going Input Threshold Voltage	V <sub>IH</sub>	V <sub>CC</sub> = 4.5V	2			V
		V <sub>CC</sub> = 5.5V	2			
Negative-Going Input Threshold Voltage	V <sub>IL</sub>	V <sub>CC</sub> = 4.5V			0.8	V
		V <sub>CC</sub> = 5.5V			0.8	
High-Level Output Voltage	V <sub>OH</sub>	V <sub>CC</sub> = 4.5V, I <sub>OH</sub> = -50µA	4.4			V
		V <sub>CC</sub> = 4.5V, I <sub>OH</sub> = -8mA	3.94			
Low-Level Output Voltage	V <sub>OL</sub>	V <sub>CC</sub> = 4.5V, I <sub>OL</sub> = 50µA			0.1	V
		V <sub>CC</sub> = 4.5V, I <sub>OL</sub> = 8mA			0.36	
Input Leakage Current	I <sub>I</sub>	V <sub>CC</sub> = 0V ~ 5.5V, V <sub>I</sub> = V <sub>CC</sub> or GND			±0.1	µA
Quiescent Supply Current	I <sub>CC</sub>	V <sub>CC</sub> = 5.5V, V <sub>I</sub> = 5.5V or GND, I <sub>O</sub> = 0			2	µA
Additional Quiescent Supply Current	ΔI <sub>CC</sub>	V <sub>CC</sub> = 5.5V, One input at 3.4V, other inputs at V <sub>CC</sub> or GND			1.35	mA
Input Capacitance	C <sub>I</sub>	V <sub>CC</sub> = 3.3V, V <sub>I</sub> = V <sub>CC</sub> or GND		4	10	pF

■ DYNAMIC CHARACTERISTICS (Input: t<sub>r</sub>, t<sub>f</sub> ≤ 3ns; PRR ≤ 1MHz)

See Fig. 1 and Fig. 2 for test circuit and waveforms.

PARAMETER	SYMBOL	TEST CONDITIONS	MIN	TYP	MAX	UNIT
Propagation delay from input (A) to output(Y)	t <sub>PLH</sub> /t <sub>PHL</sub>	V <sub>CC</sub> = 5V ± 0.5V, C <sub>L</sub> = 15pF		4.7	6.7	ns
		V <sub>CC</sub> = 5V ± 0.5V, C <sub>L</sub> = 50pF		5.5	7.7	

■ OPERATING CHARACTERISTICS

PARAMETER	SYMBOL	TEST CONDITIONS	MIN	TYP	MAX	UNIT
Power Dissipation Capacitance	C <sub>pd</sub>	No load, f = 1MHz, V <sub>CC</sub> = 5V		14		pF

■ TEST CIRCUIT AND WAVEFORMS

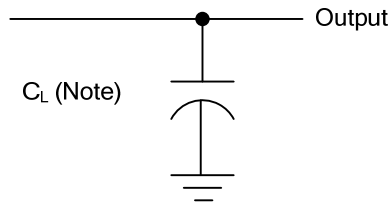


Fig. 1 Load circuitry for switching times.

Note:  $C_L$  includes probe and jig capacitance.

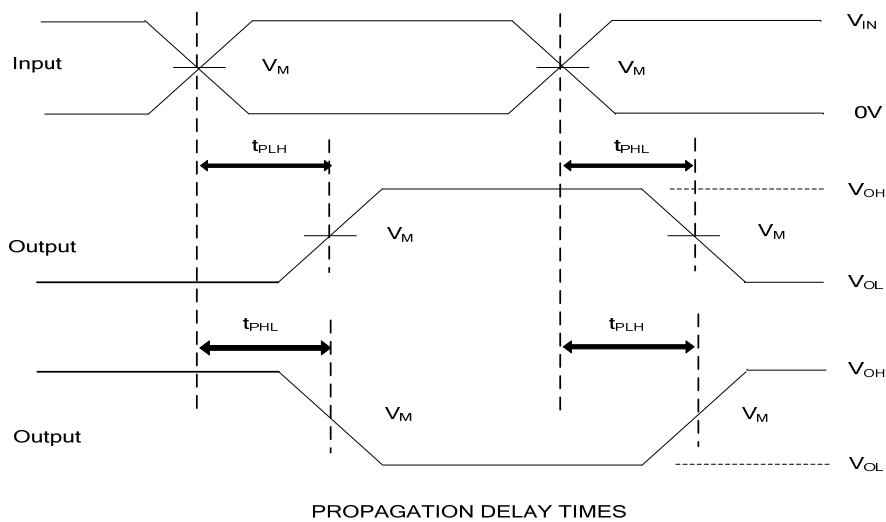


Fig. 2 Propagation delay from input(A) to output(Y) and Output transition time.

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