



U74AHC34

CMOS IC

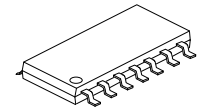
NON-INVERT BUFFER

DESCRIPTION

The **U74AHC34** is six independent non-invert buffers. Each buffer provides the function $Y=A$.

FEATURES

- * Operate from 2V to 5.5V
- * High noise immunity
- * Low power dissipation
- * Balanced propagation delays



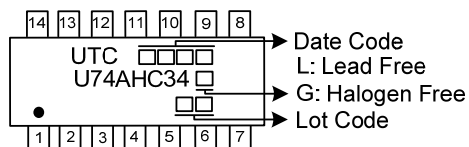
SOP-14

ORDERING INFORMATION

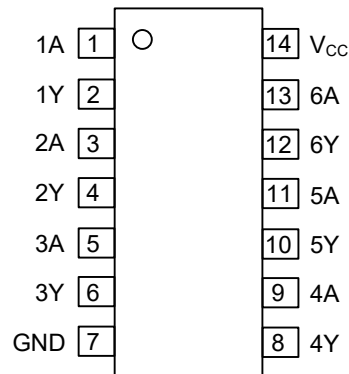
Ordering Number		Package	Packing
Lead Free	Halogen Free		
U74AHC34L-S14-R	U74AHC34G-S14-R	SOP-14	Tape Reel

U74AHC34G-S14-R (1) Packing Type (2) Package Type (3) Green Package	(1) R: Tape Reel (2) S14: SOP-14 (3) G: Halogen Free and Lead Free, L: Lead Free
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MARKING



■ PIN CONFIGURATION

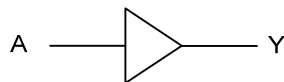


■ FUNCTION TABLE (each gate)

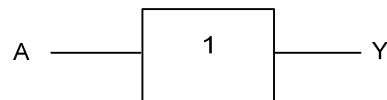
INPUT A	OUTPUT Y
L	L
H	H

Note: H: HIGH voltage level; L: LOW voltage level.

■ LOGIC SYMBOL(each gate)



Logic symbol



IEC logic symbol

■ ABSOLUTE MAXIMUM RATING (Unless otherwise specified)

PARAMETER	SYMBOL	RATINGS	UNIT
Supply Voltage	V_{CC}	-0.5 ~ +7	V
Input Voltage	V_{IN}	-0.5 ~ +7	V
Output Voltage	V_{OUT}	-0.5 ~ $V_{CC} + 0.5$	V
V_{CC} or GND Current	I_{CC}	±50	mA
Output Sink Current	$V_{OUT} > -0.5V$ I_{OUT}	±25	mA
Input Clamp Current	$V_{IN} < -0.5V$ I_{IK}	-20	mA
Output Clamp Current	$V_{OUT} < -0.5V$ I_{OK}	±20	mA
Storage Temperature	T_{STG}	-65 ~ + 150	°C

Notes: 1. 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.

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

■ RECOMMENDED OPERATING CONDITIONS (Unless otherwise specified)

PARAMETER	SYMBOL	CONDITIONS	MIN	TYP	MAX	UNIT
Supply Voltage	V_{CC}		2.0		5.5	V
Input Voltage	V_{IN}		0		5.5	V
High-Level Input Voltage	V_{IH}	$V_{CC} = 2.0V$	1.5			V
		$V_{CC} = 3.0V$	2.1			
		$V_{CC} = 5.5V$	3.85			
Low-Level Input Voltage	V_{IL}	$V_{CC} = 2.0V$			0.5	V
		$V_{CC} = 3.0V$			0.9	
		$V_{CC} = 5.5V$			1.65	
Input Transition Rise or Fall Rate	$\Delta t / \Delta v$	$V_{CC} = 3.3 \pm 0.3V$			100	ns/V
		$V_{CC} = 5.0 \pm 0.5V$			20	
Operating Temperature	T_A		-40		+125	°C

■ THERMAL DATA

PARAMETER	SYMBOL	MIN	TYP	MAX	UNIT
Junction to Ambient	θ_{JA}			76	°C/W

■ STATIC CHARACTERISTICS (Unless otherwise specified)

PARAMETER	SYMBOL	TEST CONDITIONS	MIN	TYP	MAX	UNIT
High-Level Output Voltage	V_{OH}	$V_{CC} = 2.0V, I_{OH} = -50\mu A$	1.9			V
		$V_{CC} = 3.0V, I_{OH} = -50\mu A$	2.9			
		$V_{CC} = 4.5V, I_{OH} = -50\mu A$	4.4			
		$V_{CC} = 3.0V, I_{OH} = -4 mA$	2.58			
		$V_{CC} = 4.5V, I_{OH} = -8mA$	3.94			
Low-Level Output Voltage	V_{OL}	$V_{CC} = 2.0V, I_{OL} = 50\mu A$			0.1	V
		$V_{CC} = 3.0V, I_{OL} = 50\mu A$			0.1	
		$V_{CC} = 4.5V, I_{OL} = 50\mu A$			0.1	
		$V_{CC} = 3.0V, I_{OL} = 4 mA$			0.36	
		$V_{CC} = 4.5V, I_{OL} = 8mA$			0.36	
Input Leakage Current	$I_{I(LEAK)}$	$V_{IN} = 5.5V$ or GND, $V_{CC} = 0V$ to 5.5V			±0.1	μA
Quiescent Supply Current	I_Q	$V_{IN} = V_{CC}$ or GND, $I_{OUT} = 0$, $V_{CC} = 5.5V$			2	μA
Input Capacitance	C_{IN}			4	10	pF

■ SWITCHING CHARACTERISTICS (Unless otherwise specified)

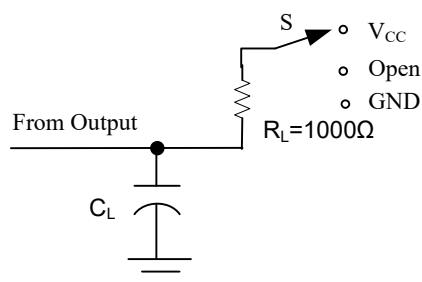
PARAMETER	SYMBOL	TEST CONDITIONS	MIN	TYP	MAX	UNIT
Propagation Delay, From Input (A) to Output (Y)	t_{PLH}/t_{PHL}	$V_{CC} = 3.3 \pm 0.3 \text{ V}$	$C_L = 15 \text{ pF}$	5.0	7.1	ns
			$C_L = 50 \text{ pF}$	7.5	10.6	
	t_{PLH}/t_{PHL}	$V_{CC} = 5.0 \pm 0.5 \text{ V}$	$C_L = 15 \text{ pF}$	3.8	5.5	
			$C_L = 50 \text{ pF}$	5.3	7.5	

■ OPERATING CHARACTERISTICS (Unless otherwise specified)

PARAMETER	SYMBOL	TEST CONDITIONS	MIN	TYP	MAX	UNIT
Power Dissipation Capacitance	C_{PD}			13		pF

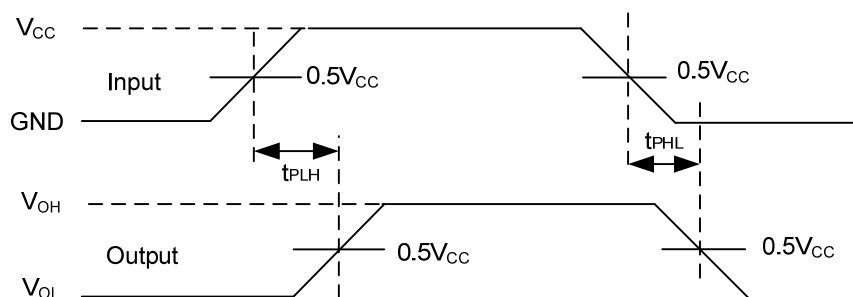
■ TEST CIRCUIT AND WAVEFORMS

Test circuit for measuring propagation delay



TEST	S
t_{PLH}/t_{PHL}	Open
t_{PHZ}/t_{PZH}	GND
t_{PLZ}/t_{PZL}	V_{CC}

Waveforms showing the Input(A) to Output(Y) propagation delays



Note: C_L includes probe and jig capacitance.

All input pulses are supplied by generators having the following characteristics: PRR $\leq 1\text{MHz}$, $Z_o = 50\Omega$, $t_R \leq 3\text{ns}$, $t_F \leq 3\text{ns}$.

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