



## U74AHC34

Preliminary

CMOS IC

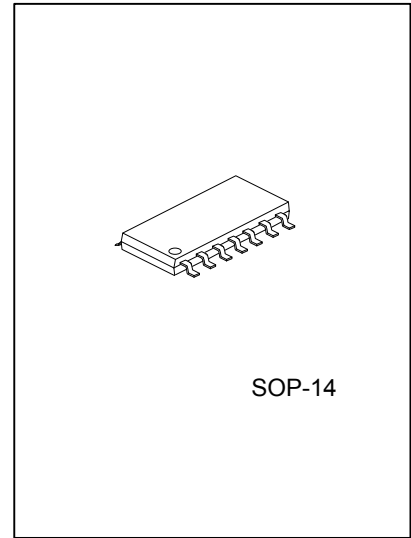
### NON-INVERT BUFFER

#### 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

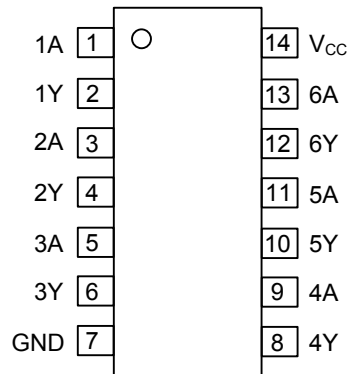


#### ORDERING INFORMATION

Ordering Number	Package	Packing
U74AHC34G-S14-R	SOP-14	Tape Reel

<p>U74AHC34G-S14-R</p> <p>(1) Packing Type (2) Package Type (3) Halogen Free</p>	<p>(1) R: Tape Reel, T: Tube (2) S14: SOP-14 (3) G: Halogen Free</p>
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■ PIN CONFIGURATION

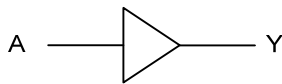


■ FUNCTION TABLE (each gate)

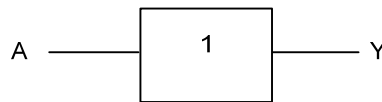
INPUT A	OUTPUT Y
L	L
H	H

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
Operating Temperature	$T_{OPR}$	-40 ~ + 85	°C
Storage Temperature	$T_{STG}$	-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.

■ THERMAL DATA

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

■ RECOMMENDED OPERATING CONDITIONS

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	$t_R / t_F$	$V_{CC}=3.3\pm 0.3V$			100	ns/V
		$V_{CC}=5.0\pm 0.5V$			20	

■ STATIC CHARACTERISTICS( $T_A=25^\circ C$ )

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			
		$V_{CC}=3.0V, I_{OH}=-4\text{ mA}$	2.58			
		$V_{CC}=4.5V, I_{OH}=-8\text{ mA}$	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	
		$V_{CC}=3.0V, I_{OL}=4\text{ mA}$			0.36	
		$V_{CC}=4.5V, I_{OL}=8\text{ mA}$			0.36	
Input Leakage Current	$I_{(LEAK)}$	$V_{IN}=5.5V$ 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	$C_I$			4	10	pF

■ SWITCHING CHARACTERISTICS( $T_A=25^\circ\text{C}$ )

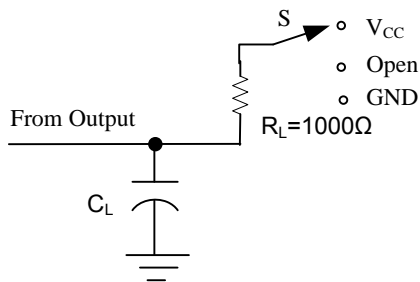
PARAMETER	SYMBOL	TEST CONDITIONS	MIN	TYP	MAX	UNIT	
Propagation Delay, From Input(A) To Output(Y)	$t_{PLH}/t_{PHL}$	$V_{CC} = 3.3 \pm 0.3 \text{ V}$	$C_L = 15 \text{ pF}$		5.0	7.1	ns
			$C_L = 50 \text{ pF}$		7.5	10.6	
	$t_{PLH}/t_{PHL}$	$V_{CC} = 5.0 \pm 0.5 \text{ V}$	$C_L = 15 \text{ pF}$		3.8	5.5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

■ OPERATING CHARACTERISTICS( $T_A=25^\circ\text{C}$ )

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

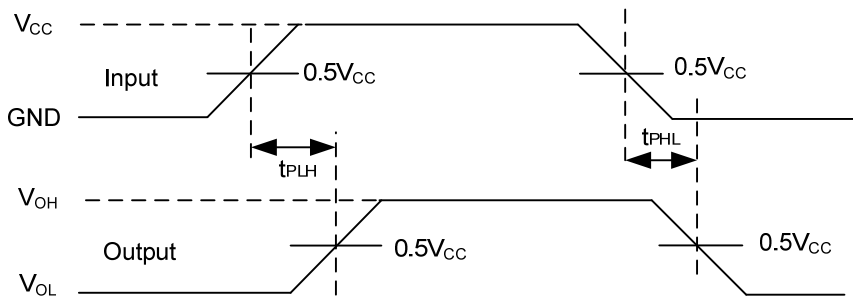
■ TEST CIRCUIT AND WAVEFORMS

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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