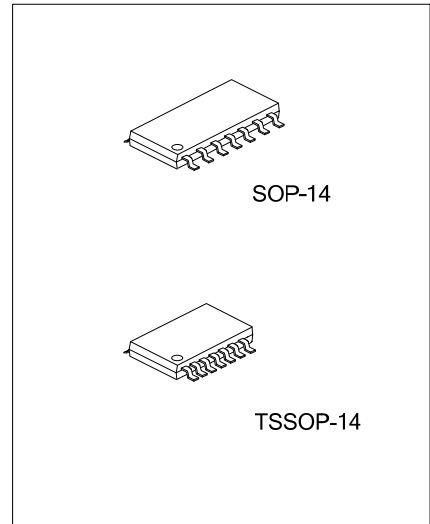




U74AC14

CMOS IC

HEX SCHMITT-TRIGGER INVERTER



■ DESCRIPTION

The **U74AC14** contains six independent inverter with Schmitt-trigger , provides the Function $Y = \bar{A}$

■ FEATURES

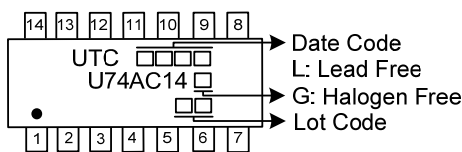
- * Operation voltage range: 2.0~6.0V
- * Low power dissipation: $I_{CC}=20\mu A(\text{Max})$

■ ORDERING INFORMATION

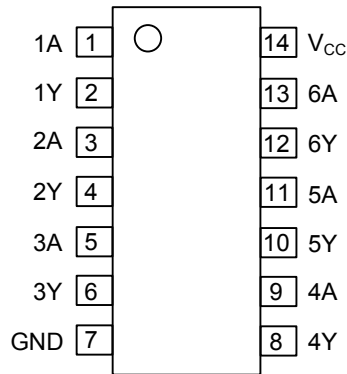
Ordering Number		Package	Packing
Lead Free	Halogen Free		
U74AC14L-S14-R	U74AC14G-S14-R	SOP-14	Tape Reel
U74AC14L-P14-R	U74AC14G-P14-R	TSSOP-14	Tape Reel

<p>U74AC14G-S14-R</p> <ul style="list-style-type: none"> (1) Packing Type (2) Package Type (3) Green Package 	<ul style="list-style-type: none"> (1) R: Tape Reel (2) S14: SOP-14, P14: TSSOP-14 (3) G: Halogen Free and Lead Free, L: Lead Free
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■ MARKING



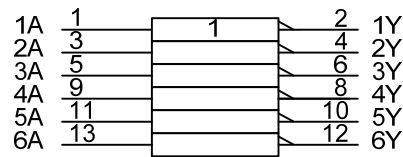
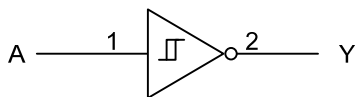
■ PIN CONFIGURATION



■ FUNCTION TABLE (each gate)

INPUT(A)	OUTPUT(Y)
L	H
H	L

■ LOGIC DIAGRAM (positive logic)



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~ $V_{CC}+0.5$	V
Output Voltage	V_{OUT}	-0.5~ $V_{CC}+0.5$	V
Input Clamp Current	I_{IK}	±20	mA
Output Clamp Current	I_{OK}	±20	mA
Output Current	I_{OUT}	±50	mA
V_{CC} or GND Current	I_{CC}	±200	mA
Storage Temperature	T_{STG}	-65 ~ +150	°C

Note: 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	RATINGS	UNIT
Junction to Ambient	θ_{JA}	86	°C/W
		113	°C/W

■ RECOMMENDED OPERATING CONDITIONS

PARAMETER	SYMBOL	MIN	TYP	MAX	UNIT
Supply Voltage	V_{CC}	2.0		6.0	V
Input Voltage	V_{IN}	0		V_{CC}	V
Output Voltage	V_{OUT}	0		V_{CC}	V
High-Level Output Current	I_{OH}			-12	mA
				-24	
				-24	
Low-Level Output Current	I_{OL}			12	
				24	
				24	
Operating Temperature	T_A	-40	25	85	°C

■ STATIC CHARACTERISTICS (T_A=25°C)

PARAMETER	SYMBOL	TEST CONDITIONS	MIN	TYP	MAX	UNIT
High-Level Input Voltage	V _{IH}	V _{CC} =3.0V	0.8	1.8	2.2	V
		V _{CC} =4.5V	1.5	2.6	3.2	V
		V _{CC} =5.5V	1.6	3.2	3.9	V
Low-Level Input Voltage	V _{IL}	V _{CC} =3.0V	0.5	0.8	1	V
		V _{CC} =4.5V	0.9	1.4	1.8	V
		V _{CC} =5.5V	1.1	1.8	2.3	V
Hysteresis	V _{TH}	V _{CC} =3.0V	0.3	1	1.2	V
		V _{CC} =4.5V	0.4	1.2	1.4	V
		V _{CC} =5.5V	0.5	1.4	1.6	V
High-Level Output Voltage	V _{OH}	V _{CC} =3.0V, I _{OH} =-50μA	2.9			V
		V _{CC} =4.5V, I _{OH} =-50μA	4.4			V
		V _{CC} =5.5V, I _{OH} =-50μA	5.4			V
		V _{CC} =3.0V, I _{OH} =-12mA	2.56			V
		V _{CC} =4.5V, I _{OH} =-24mA	3.86			V
		V _{CC} =5.5V, I _{OH} =-24mA	4.86			V
Low-Level Output Voltage	V _{OL}	V _{CC} =3.0V, I _{OL} =50μA		0.002	0.1	V
		V _{CC} =4.5V, I _{OL} =50μA		0.001	0.1	V
		V _{CC} =5.5V, I _{OL} =50μA		0.001	0.1	V
		V _{CC} =3.0V, I _{OL} =12mA			0.36	V
		V _{CC} =4.5V, I _{OL} =24mA			0.36	V
		V _{CC} =5.5V, I _{OL} =24mA			0.36	V
Input Leakage Current	I _{I(LEAK)}	V _{IN} =V _{CC} or GND, V _{CC} =5.5			±0.1	μA
Quiescent Supply Current	I _Q	V _{IN} =V _{CC} or GND, I _{OUT} =0, V _{CC} =5.5			2	μA
Input Capacitance	C _{IN}	V _{IN} =V _{CC} or GND		4.5		pF

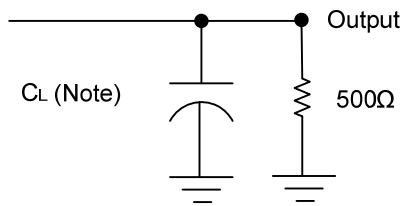
■ DYNAMIC CHARACTERISTICS (T_A=25°C, Input: t_R, t_F≤2.5ns; PRR≤1MHz)

PARAMETER	SYMBOL	TEST CONDITIONS	MIN	TYP	MAX	UNIT
Propagation delay from input (A) to output(Y)	t _{PLH}	V _{CC} =3.3V, C _L =50pF	1.5	6	13.5	ns
		V _{CC} =5.0V, C _L =50pF	1.5	5	10	ns
	t _{PHL}	V _{CC} =3.3V, C _L =50pF	1.5	6	11.5	ns
		V _{CC} =5.0V, C _L =50pF	1.5	5	8.5	ns

■ OPERATING CHARACTERISTICS

PARAMETER	SYMBOL	TEST CONDITIONS	MIN	TYP	MAX	UNIT
Power Dissipation Capacitance	C _{pd}	C _L =50 pF, f=1MHz, V _{CC} =5		25		pF

■ TEST CIRCUIT AND WAVEFORMS



Note: C_L includes probe and jig capacitance.

Fig.1 Load circuitry for switching times.

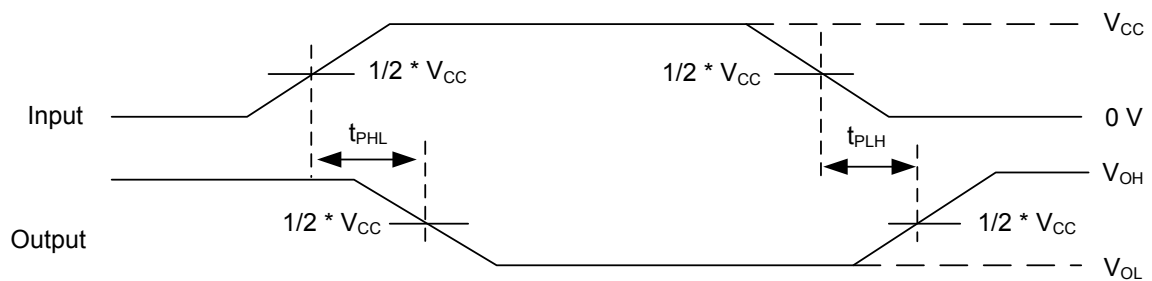


Fig.2 Propagation delay from input(A) to output(Y).

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