



U74ACT14

CMOS IC

HEX SCHMITT-TRIGGER INVERTERS

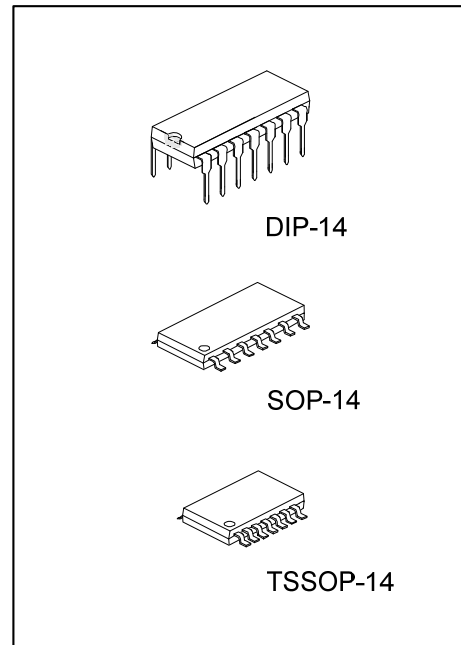
DESCRIPTION

The **U74ACT14** contains six inverters with Schmitt-trigger, provides the Function $Y = \bar{A}$.

The **U74ACT14** have hysteresis between the positive-going and negative-going and negative-going input thresholds.

FEATURES

- * Inputs are TTL-Voltage Compatible
- * Outputs source/sink 24mA
- * Pb-Free Packages are available

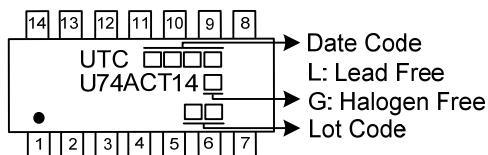


ORDERING INFORMATION

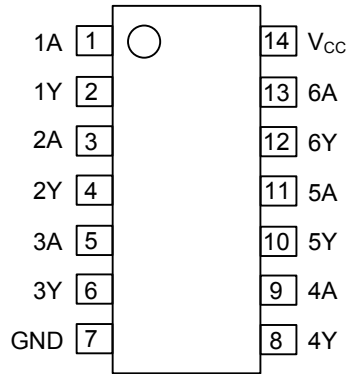
Ordering Number		Package	Packing
Lead Free	Halogen Free		
U74ACT14L-D14-T	U74ACT14G-D14-T	DIP-14	Tube
U74ACT14L-S14-R	U74ACT14G-S14-R	SOP-14	Tape Reel
U74ACT14L-P14-R	U74ACT14G-P14-R	TSSOP-14	Tape Reel

<p>U74ACT14G-D14-T</p> <p>(1) Packing Type (2) Package Type (3) Green Package</p>	<p>(1) T: Tube, R: Tape Reel (2) D14: DIP-14, S14: SOP-14, P14: TSSOP-14 (3) G: Halogen Free and Lead Free, L: Lead Free</p>
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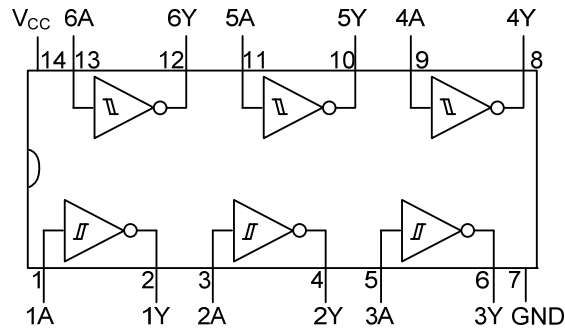
MARKING



■ PIN CONFIGURATION



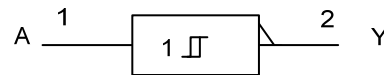
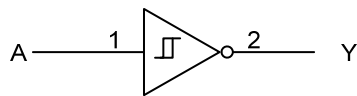
■ FUNCTIONAL DIAGRAM



■ FUNCTION TABLE

INPUT	OUTPUT
A	Y
L	H
H	L

■ LOGIC DIAGRAM (positive logic)



IEC logic symbol

■ ABSOLUTE MAXIMUM RATINGS (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}	±50	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.

■ RECOMMENDED OPERATING CONDITIONS

PARAMETER	SYMBOL	MIN	TYP	MAX	UNIT
Supply Voltage	V_{CC}	4.5		5.5	V
Input Voltage	V_{IN}	0		V_{CC}	V
Output Voltage	V_{OUT}	0		V_{CC}	V
Operating Temperature	T_A	-40		+85	°C

■ ELECTRICAL CHARACTERISTICS

PARAMETER	SYMBOL	TEST CONDITIONS	MIN	TYP	MAX	UNIT
High-Level Input Voltage	V_{IH}	$V_{CC}=4.5V$	2.0			V
		$V_{CC}=5.5V$	2.0			V
Low-Level Input Voltage	V_{IL}	$V_{CC}=4.5V$			0.8	V
		$V_{CC}=5.5V$			0.8	V
Hysteresis	V_{TH}	$V_{CC}=4.5V$	0.4		1.4	V
		$V_{CC}=5.5V$	0.5		1.6	V
High-Level Output Voltage	V_{OH}	$V_{CC}=4.5V, I_{OH}=-50\mu A$	4.34	4.49		V
		$V_{CC}=5.5V, I_{OH}=-50\mu A$	5.4	5.49		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}	$V_{CC}=4.5V, I_{OL}=50\mu A$		0.001	0.1	V
		$V_{CC}=5.5V, I_{OL}=50\mu A$		0.001	0.1	V
		$V_{CC}=4.5V, I_{OL}=24mA$			0.36	V
		$V_{CC}=5.5V, I_{OL}=24mA$			0.36	V
Input Leakage Current	$I_{I(LEAK)}$	$V_{CC}=5.5V, V_{IN}=5.5V$ or GND			±0.1	μA
Maximum I_{CC} /Input	I_{CCT}	$V_{CC}=5.5V, V_{IN}=V_{CC}-2.1V$		0.6		mA
Quiescent Supply Current	I_Q	$V_{CC}=5.5V, V_{IN}=V_{CC}$ or GND, $I_{OUT}=0$			2.0	μA
Input Capacitance	C_{IN}	$V_{CC}=OPEN$		4.5		pF

Note: Not more than one output should be tested at a time, and the duration of the test should not exceed 2 ms.

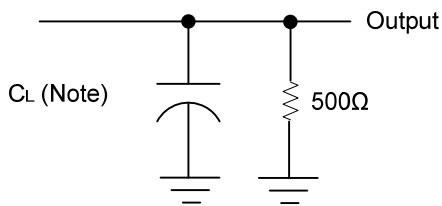
■ SWITCHING CHARACTERISTICS

PARAMETER	SYMBOL	TEST CONDITIONS	MIN	TYP	MAX	UNIT
Propagation delay from input (A) to output(Y)	t_{PLH}	$V_{CC}=5.0V\pm 0.5V, C_L=50pF$	3.0	8.0	10.0	ns
	t_{PHL}	$V_{CC}=5.0V\pm 0.5V, C_L=50pF$	3.0	8.0	10.0	ns

■ OPERATING CHARACTERISTIC

PARAMETER	SYMBOL	TEST CONDITIONS	MIN	TYP	MAX	UNIT
Power Dissipation Capacitance	C_{PD}	$V_{CC}=5$		80		pF

■ TEST CIRCUIT AND WAVEFORMS



Note: C_L includes probe and jig capacitance.

Fig-1 Load circuitry for switching times.

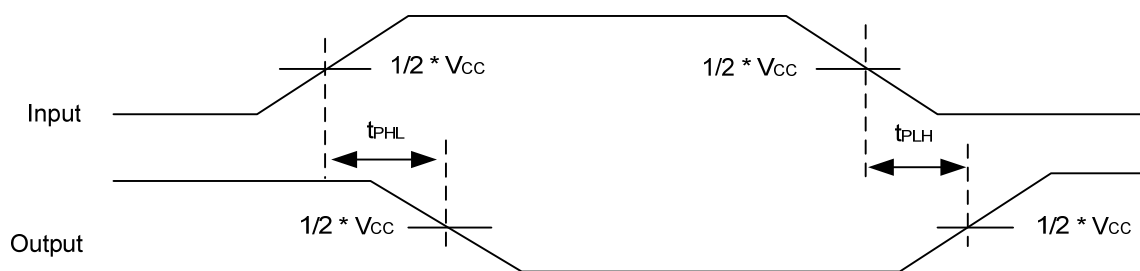


Fig-2 Propagation delay from input(A) to output(Y).

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