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## TEXAS INSTRUMENTS - SN74ACT14N - LOGIC, HEX SCHMITT-TRIG INV, 14DIP

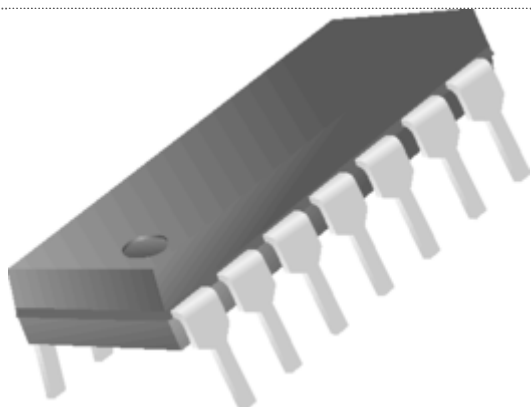


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Veuillez vous reporter au  
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**Fabricant:** TEXAS  
INSTRUMENTS

**Code commande:** 1749916

**Référence fabricant:**

SN74ACT14N

[Conformité RoHS](#) : ● Oui

### Description

- LOGIC, HEX SCHMITT-TRIG INV, 14DIP
- Nombre de broches: 14
- Température de fonctionnement: -40°C à +85°C
- Type de boîtier: PDIP
- Courant, sortie max.: 24mA
- Famille Circuit logique: ACT
- Fonction logique: Hex Schmitt-Trigger Inverter
- Numéro de base de la fonction logique: 7414
- Tension, alimentation maxi: 5.5V
- Tension, alimentation mini: 4.5V
- Type de terminaison: Traversant

### Disponibilité

**Disponibilité:** 2468

**Prix Pour:** 1 Pièce

**Quantité minimum:** 1

**Multiple de commande:** 1

**Prix Unitaire HT:** 0,28 €

Qté

1



### Prix

Qté	Prix Unitaire HT
1 - 9	0,28 €
10 - 99	0,23 €
100+	0,177 €

DESCRIPTION TECHNIQUE	ATTRIBUTS TECHNIQUES	EQUIVALENT
<a href="#">Certificat de conformité RoHS</a> <a href="#">Technical Data Sheet (3.63KB) EN</a> 	<b>poids (kg):</b> 0.001667 <b>Tarif Douanier:</b> 85423990 <b>Pays d'origine:</b> TW Taiwan <i>Pays dans lequel la dernière étape de production majeure est intervenue</i>	<input type="checkbox"/> Nombre de broches: 14 <input type="checkbox"/> Température de fonctionnement: -40°C à +85°C <a href="#">▶ Trouver un équivalent</a>

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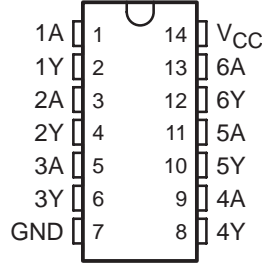
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# SN54ACT14, SN74ACT14 HEX SCHMITT-TRIGGER INVERTER

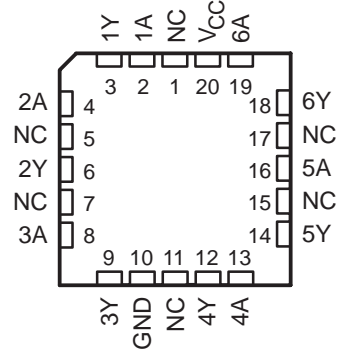
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- 4.5-V to 5.5-V  $V_{CC}$  Operation
- Inputs Accept Voltages to 5.5 V
- Max  $t_{pd}$  of 11 ns at 5 V
- Inputs Are TTL-Voltage Compatible

SN54ACT14 ... J OR W PACKAGE  
SN74ACT14 ... D, DB, N, NS, OR PW PACKAGE  
(TOP VIEW)



SN54ACT14 ... FK PACKAGE  
(TOP VIEW)



NC – No internal connection

## description/ordering information

These Schmitt-trigger devices contain six independent inverters. They perform the Boolean function  $Y = \bar{A}$ . Because of the Schmitt action, they have different input threshold levels for positive-going ( $V_{T+}$ ) and for negative-going ( $V_{T-}$ ) signals.

These circuits are temperature compensated and can be triggered from the slowest of input ramps and still give clean, jitter-free output signals. They also have a greater noise margin than conventional inverters.

## ORDERING INFORMATION

T <sub>A</sub>	PACKAGE†		ORDERABLE PART NUMBER	TOP-SIDE MARKING
–40°C to 85°C	PDIP – N	Tube	SN74ACT14N	SN74ACT14N
	SOIC – D	Tube	SN74ACT14D	ACT14
		Tape and reel	SN74ACT14DR	
	SOP – NS	Tape and reel	SN74ACT14NSR	ACT14
	SSOP – DB	Tape and reel	SN74ACT14DBR	AD14
	TSSOP – PW	Tube	SN74ACT14PW	AD14
Tape and reel		SN74ACT14PWR		
–55°C to 125°C	CDIP – J	Tube	SNJ54ACT14J	SNJ54ACT14J
	CFP – W	Tube	SNJ54ACT14W	SNJ54ACT14W
	LCCC – FK	Tube	SNJ54ACT14FK	SNJ54ACT14FK

† Package drawings, standard packing quantities, thermal data, symbolization, and PCB design guidelines are available at [www.ti.com/sc/package](http://www.ti.com/sc/package).

## FUNCTION TABLE (each inverter)

INPUT A	OUTPUT Y
H	L
L	H



Please be aware that an important notice concerning availability, standard warranty, and use in critical applications of Texas Instruments semiconductor products and disclaimers thereto appears at the end of this data sheet.

PRODUCTION DATA information is current as of publication date. Products conform to specifications per the terms of Texas Instruments standard warranty. Production processing does not necessarily include testing of all parameters.

**TEXAS  
INSTRUMENTS**

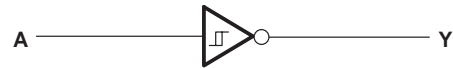
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On products compliant to MIL-PRF-38535, all parameters are tested unless otherwise noted. On all other products, production processing does not necessarily include testing of all parameters.

SN54ACT14, SN74ACT14  
HEX SCHMITT-TRIGGER INVERTER

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logic diagram, each inverter (positive logic)



absolute maximum ratings over operating free-air temperature range (unless otherwise noted)<sup>†</sup>

Supply voltage range, $V_{CC}$	–0.5 V to 7 V
Input voltage range, $V_I$ (see Note 1)	–0.5 V to $V_{CC} + 0.5$ V
Output voltage range, $V_O$ (see Note 1)	–0.5 V to $V_{CC} + 0.5$ V
Input clamp current, $I_{IK}$ ( $V_I < 0$ or $V_I > V_{CC}$ )	±20 mA
Output clamp current, $I_{OK}$ ( $V_O < 0$ or $V_O > V_{CC}$ )	±20 mA
Continuous output current, $I_O$ ( $V_O = 0$ to $V_{CC}$ )	±50 mA
Continuous current through $V_{CC}$ or GND	±200 mA
Package thermal impedance, $\theta_{JA}$ (see Note 2):	
D package	86°C/W
DB package	96°C/W
N package	80°C/W
NS package	76°C/W
PW package	113°C/W
Storage temperature range, $T_{stg}$	–65°C to 150°C

<sup>†</sup> Stresses beyond those listed under “absolute maximum ratings” may cause permanent damage to the device. These are stress ratings only, and functional operation of the device at these or any other conditions beyond those indicated under “recommended operating conditions” is not implied. Exposure to absolute-maximum-rated conditions for extended periods may affect device reliability.

NOTES: 1. The input and output voltage ratings may be exceeded if the input and output current ratings are observed.  
2. The package thermal impedance is calculated in accordance with JESD 51-7.

recommended operating conditions (see Note 3)

		SN54ACT14		SN74ACT14		UNIT
		MIN	MAX	MIN	MAX	
$V_{CC}$	Supply voltage	4.5	5.5	4.5	5.5	V
$V_I$	Input voltage	0	$V_{CC}$	0	$V_{CC}$	V
$V_O$	Output voltage	0	$V_{CC}$	0	$V_{CC}$	V
$I_{OH}$	High-level output current		–24		–24	mA
$I_{OL}$	Low-level output current		24		24	mA
$T_A$	Operating free-air temperature	–55	125	–40	85	°C

NOTE 3: All unused inputs of the device must be held at  $V_{CC}$  or GND to ensure proper device operation. Refer to the TI application report, *Implications of Slow or Floating CMOS Inputs*, literature number SCBA004.

# SN54ACT14, SN74ACT14 HEX SCHMITT-TRIGGER INVERTER

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**electrical characteristics over recommended operating free-air temperature range (unless otherwise noted)**

PARAMETER	TEST CONDITIONS	V <sub>CC</sub>	T <sub>A</sub> = 25°C			SN54ACT14		SN74ACT14		UNIT
			MIN	TYP	MAX	MIN	MAX	MIN	MAX	
V <sub>T+</sub> Positive-going threshold		4.5 V	1.2	1.5	1.9	1.2	1.9	1.2	1.9	V
		5.5 V	1.4	1.7	2.1	1.4	2.1	1.4	2.1	
V <sub>T-</sub> Negative-going threshold		4.5 V	0.5	0.9	1.2	0.5	1.2	0.5	1.2	V
		5.5 V	0.6	1	1.4	0.6	1.4	0.6	1.4	
$\Delta V_T$ Hysteresis (V <sub>T+</sub> – V <sub>T-</sub> )		4.5 V	0.4	0.6	1.4	0.4	1.4	0.4	1.4	V
		5.5 V	0.4	0.6	1.5	0.4	1.5	0.4	1.5	
V <sub>OH</sub>	I <sub>OH</sub> = –50 $\mu$ A	4.5 V	4.4	4.49		4.4		4.4		V
		5.5 V	5.4	5.49		5.4		5.4		
	I <sub>OH</sub> = –24 mA	4.5 V	3.86			3.7		3.76		
		5.5 V	4.86			4.7		4.76		
	I <sub>OH</sub> = –50 mA <sup>†</sup>	5.5 V				3.85				
	I <sub>OH</sub> = –75 mA <sup>†</sup>	5.5 V						3.85		
V <sub>OL</sub>	I <sub>OL</sub> = 50 $\mu$ A	4.5 V		0.001	0.1		0.1		0.1	V
		5.5 V		0.001	0.1		0.1		0.1	
	I <sub>OL</sub> = 24 mA	4.5 V			0.36		0.5		0.44	
		5.5 V			0.36		0.5		0.44	
	I <sub>OL</sub> = 50 mA <sup>†</sup>	5.5 V					1.65			
	I <sub>OL</sub> = 75 mA <sup>†</sup>	5.5 V							1.65	
I <sub>I</sub>	V <sub>I</sub> = V <sub>CC</sub> or GND	5.5 V			±0.1		±1		±1	$\mu$ A
I <sub>CC</sub>	V <sub>I</sub> = V <sub>CC</sub> or GND, I <sub>O</sub> = 0	5.5 V			2		40		20	$\mu$ A
$\Delta I_{CC}^{\ddagger}$	One input at 3.4 V, Other inputs at GND or V <sub>CC</sub>	5.5 V		0.6			1.6		1.5	mA
C <sub>i</sub>	V <sub>I</sub> = V <sub>CC</sub> or GND	5 V		4.5						pF

<sup>†</sup> Not more than one output should be tested at a time, and the duration of the test should not exceed 2 ms.

<sup>‡</sup> This is the increase in supply current for each input that is at one of the specified TTL voltage levels, rather than 0 V or V<sub>CC</sub>.

**switching characteristics over recommended operating free-air temperature range,  
V<sub>CC</sub> = 5 V ± 0.5 V (unless otherwise noted) (see Figure 1)**

PARAMETER	FROM (INPUT)	TO (OUTPUT)	T <sub>A</sub> = 25°C		SN54ACT14		SN74ACT14		UNIT
			MIN	MAX	MIN	MAX	MIN	MAX	
t <sub>PLH</sub>	A	Y	1.5	11.5	1	14	1	12.5	ns
t <sub>PHL</sub>			1.5	10	1	13	1	11	

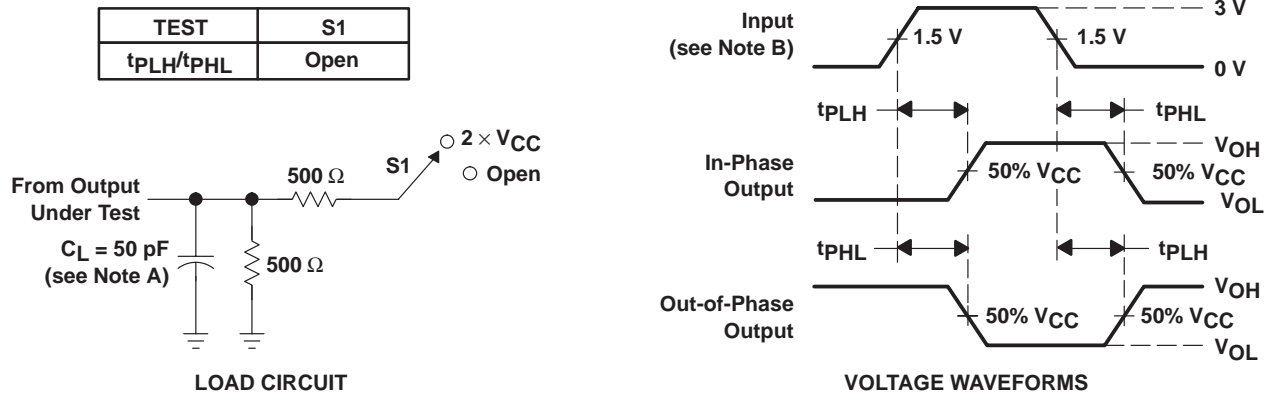
**operating characteristics, V<sub>CC</sub> = 5 V, T<sub>A</sub> = 25°C**

PARAMETER	TEST CONDITIONS	TYP	UNIT
C <sub>pd</sub> Power dissipation capacitance	C <sub>L</sub> = 50 pF, f = 1 MHz	20	pF

SN54ACT14, SN74ACT14  
HEX SCHMITT-TRIGGER INVERTER

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PARAMETER MEASUREMENT INFORMATION



- NOTES: A.  $C_L$  includes probe and jig capacitance.  
B. All input pulses are supplied by generators having the following characteristics:  $PRR \leq 1 \text{ MHz}$ ,  $Z_O = 50 \Omega$ ,  $t_r \leq 2.5 \text{ ns}$ ,  $t_f \leq 2.5 \text{ ns}$ .  
C. The outputs are measured one at a time, with one input transition per measurement.

Figure 1. Load Circuit and Voltage Waveforms