



Hex Inverting Schmitt Trigger

CJ74ACT14 Logic

1 Introduction

The CJ74ACT14 is a hex schmitt-trigger inverter.

2 Available Packages

PART NUMBER	PACKAGE
CJ74ACT14	SOP14
	TSSOP14

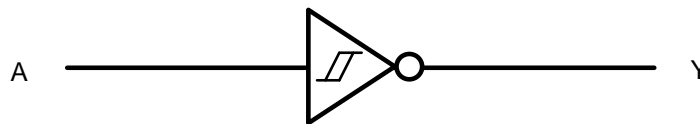
Note: For all available packages, please refer to the part Orderable Information.

3 Features

- Supply voltage range:4.5V to 5.5V
- Temperature range: -40°C to +125°C

4 Applications

- Synchronize inverted clock inputs
- Debounce a switch
- Invert a digital signal



Logic diagram

5 Orderable Information

DEVICE	PACKAGE	OP TEMP	ECO PLAN	MSL	PACKING OPTION	SORT
CJ74ACT14ADN	SOP14	-40~125°C	RoHS & Green	Level 3 168HR	Tape and Reel 4000 Units / Reel	Active
CJ74ACT14BDN	TSSOP14	-40~125°C	RoHS & Green	Level 3 168HR	Tape and Reel 5000 Units / Reel	Active

Note:

ECO PLAN: For the RoHS and Green certification standards of this product, please refer to the official report provided by JSCJ.

MSL: Moisture Sensitivity Level. Determined according to JEDEC industry standard classification.

SORT: Specifically defined as follows:

Active: Recommended for new products;

Customized: Products manufactured to meet the specific needs of customers;

Preview: The device has been released and has not been fully mass produced. The sample may or may not be available;

NoRD: It is not recommended to use the device for new design. The device is only produced for the needs of existing customers;

Obsolete: The device has been discontinued.

6 Pin Configuration and Marking Information

6.1 Pin Configuration

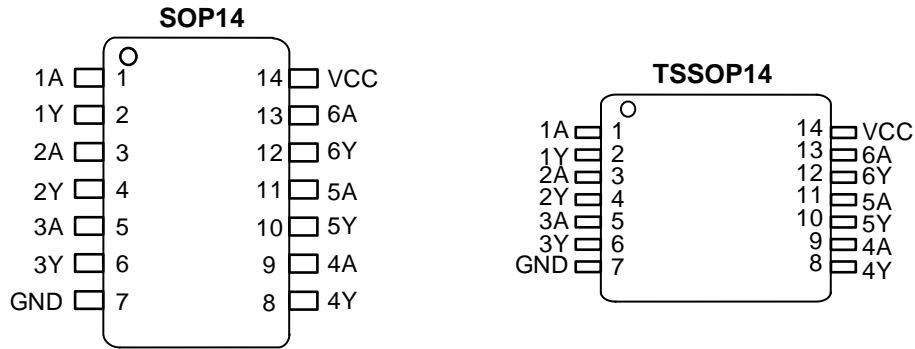


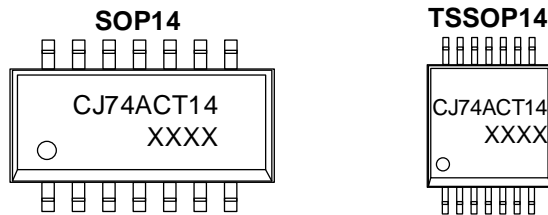
Figure 6-1 Pin configuration

6.2 Pin Function

PIN		I/O ⁽¹⁾	DESCRIPTION
No.	NAME		
1	1A	I	Data input
2	1Y	O	Data output
3	2A	I	Data input
4	2Y	O	Data output
5	3A	I	Data input
6	3Y	O	Data output
7	GND	G	Ground (0V)
8	4Y	O	Data output
9	4A	I	Data input
10	5Y	O	Data output
11	5A	I	Data input
12	6Y	O	Data output
13	6A	I	Data input
14	VCC	P	Supply voltage

(1) I-Input, O-Output, P-Power, G-Ground

6.3 Marking Information



XXXX: Code, indicates weekly record information.

7 Specifications

7.1 Absolute Maximum Ratings

Voltages are referenced to GND (ground=0V), unless otherwise specified.

SYMBOL	PARAMETER	CONDITIONS		MIN.	MAX.	UNIT
V _{CC}	Supply voltage	-		-0.5	+7	V
I _{CC}	Continuous supply current	-		-	200	mA
I _{GND}	Continuous ground current	-		-200	-	mA
I _{IK}	Input clamping current	V _I <0V or V _I >V _{CC}		-	±20	mA
I _{OK}	Output clamping current	V _O <0V or V _O >V _{CC}		-	±20	mA
I _O	Continuous output current	V _O =0 to V _{CC}		-	±50	mA
T _{stg}	Storage temperature	-		-65	+150	°C
T _L	Soldering temperature	10s	SOP/TSSOP	-	260	°C

Note: Absolute maximum ratings indicate sustained limits beyond which damage to the device may occur. All voltage parameters are absolute voltages referenced to GND. The thermal resistance and power dissipation ratings are measured under board mounted and still air conditions.

7.2 Recommended Operating Conditions

SYMBOL	PARAMETER	CONDITIONS	MIN.	TYP.	MAX.	UNIT
V _{CC}	Supply voltage	-	4.5	-	5.5	V
V _I	Input voltage	-	0	-	V _{CC}	V
V _O	Output voltage	-	0	-	V _{CC}	V
I _{OH}	High-level output current	-	-	-	-24	mA
I _{OL}	Low-level output current	-	-	-	24	mA
T _{amb}	Ambient temperature	-	-40	-	+125	°C

7.3 Electrical Characteristics

7.3.1 DC Characteristics

T_{amb}=-40°C to +125°C, voltages are referenced to GND (ground=0V), unless otherwise specified.

SYMBOL	PARAMETER	CONDITIONS	MIN.	TYP.	MAX.	UNIT
V _{T+}	Positive-going threshold voltage	V _{CC} =4.5V	1.6	1.9	2.3	V
		V _{CC} =5.5V	1.8	2.1	2.5	V
V _{T-}	Negative-going threshold voltage	V _{CC} =4.5V	0.7	1.1	1.4	V
		V _{CC} =5.5V	0.8	1.2	1.6	V
V _H	Hysteresis voltage	V _{CC} =4.5V	0.4	0.8	1.4	V
		V _{CC} =5.5V	0.4	0.9	1.5	V
V _{OH}	HIGH-level output voltage	I _O =-50uA; V _{CC} =4.5V	4.4	-	-	V
		I _O =-24mA; V _{CC} =4.5V	3.76	-	-	V
		I _O =-50uA; V _{CC} =5.5V	5.4	-	-	V
		I _O =-24mA; V _{CC} =5.5V	4.76	-	-	V
		I _O =-75mA; V _{CC} =5.5V	3.85	-	-	V
V _{OL}	LOW-level output voltage	I _O =50uA; V _{CC} =4.5V	-	-	0.1	V
		I _O =24mA; V _{CC} =4.5V	-	-	0.44	V
		I _O =50uA; V _{CC} =5.5V	-	-	0.1	V
		I _O =24mA; V _{CC} =5.5V	-	-	0.44	V
		I _O =75mA; V _{CC} =5.5V	-	-	1.65	V
I _I	Input leakage current	V _I =V _{CC} or GND; V _{CC} =5.5V	-	-	±1	uA
I _{CC}	Supply current	V _I =V _{CC} or GND; I _O =0A; V _{CC} =5.5V	-	-	20	uA
ΔI _{CC}	Additional supply current	One input at V _I =V _{CC} -2.1V; Other inputs at V _{CC} or GND; I _O =0A; V _{CC} =5.5V	-	-	1.5	mA

7.3.2 AC Characteristics

T_{amb}=-40°C to +125°C, voltages are referenced to GND (ground=0V), unless otherwise specified.

SYMBOL	PARAMETER	CONDITIONS		MIN.	TYP.	MAX.	UNIT
t _{PLH}	A to Y propagation delay	See Figure 8-3	C _L =50pF; R _L =500Ω; V _{CC} =5.5V	-	-	15	ns
t _{PHL}				-	-	13.2	ns

8 Detailed Description

8.1 Overview

The CJ74ACT14 is a hex schmitt-trigger inverter.

8.2 Functional Block Diagram

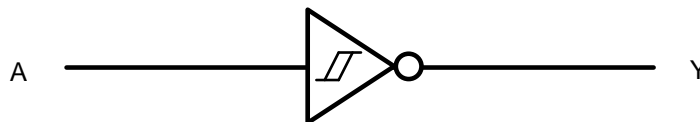


Figure 8-1 Logic symbol

8.3 Function Table⁽¹⁾

INPUT	OUTPUT
H	L
L	H

(1) H=HIGH voltage level; L=LOW voltage level.

8.4 Testing Circuit

8.4.1 AC Testing Circuit

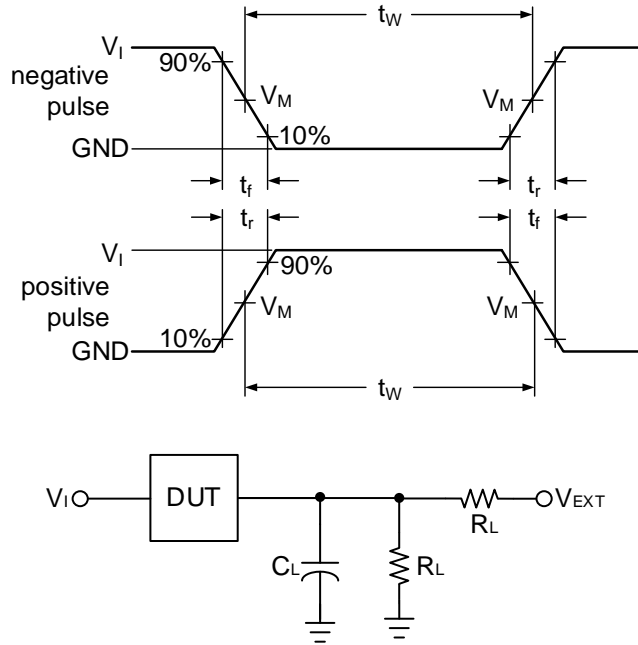


Figure 8-2 Test circuit for measuring switching times

Definitions for test circuit:

C_L includes probe and jig capacitance.

8.4.2 AC Testing Waveforms

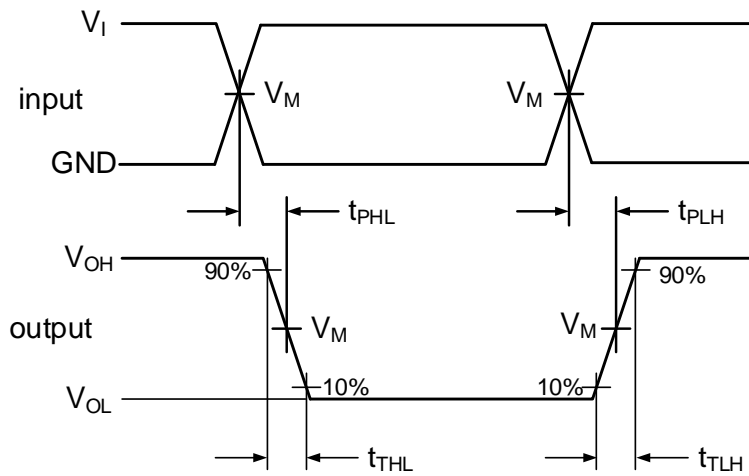


Figure 8-3 The data input (A) to output (Y) propagation delays

8.4.3 Measurement Points

SUPPLY VOLTAGE	INPUT	OUTPUT
V_{CC}	V_M	V_M
4.5V to 5.5V	$0.5 \times V_{CC}$	$0.5 \times V_{CC}$

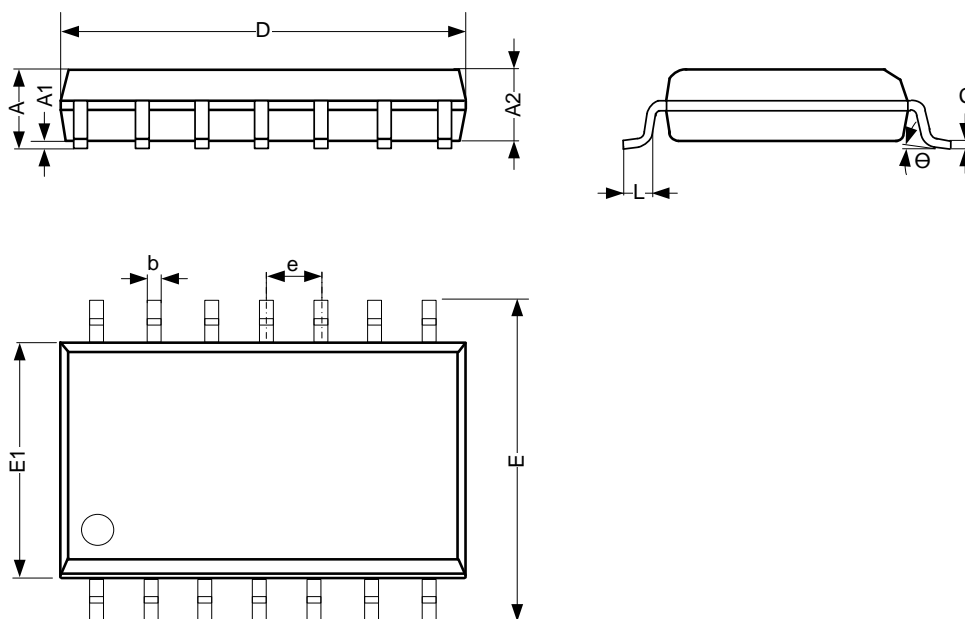
8.4.4 Test Data

SUPPLY VOLTAGE	INPUT		LOAD		V_{EXT}		
V_{CC}	V_I	$t_r = t_f$	C_L	R_L	t_{PLH}/t_{PHL}	t_{PLZ}/t_{PZL}	t_{PHZ}/t_{PZH}
4.5V to 5.5V	V_{CC}	3.0ns	50pF	500Ω	Open	$2 \times V_{CC}$	GND

9 Mechanical Information

9.1 SOP14 Mechanical Information

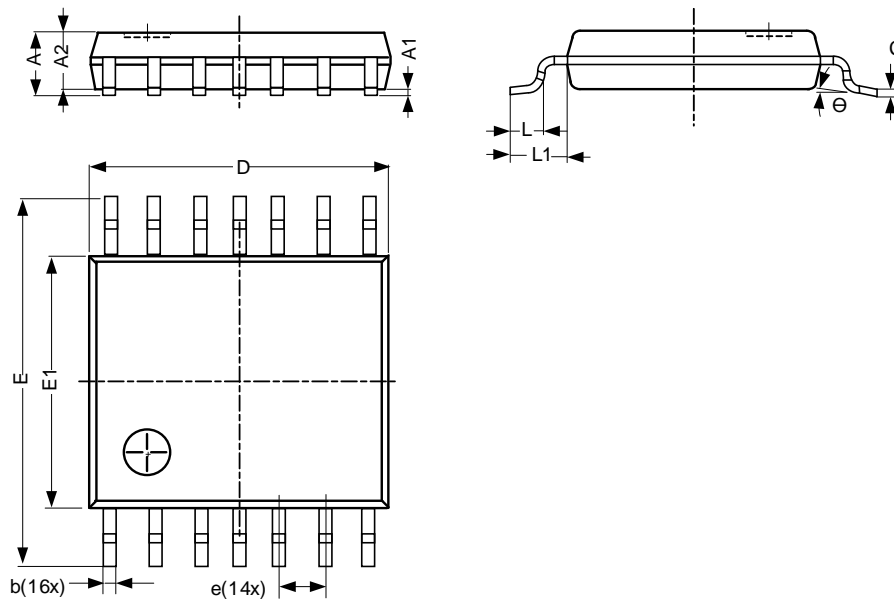
9.1.1 SOP14 Outline Dimensions



SYMBOL	Dimensions In Millimeters		
	Min.	Typ.	Max.
A	1.50	-	1.75
A1	0.05	-	0.25
A2	1.30	-	-
b	0.33	-	0.50
c	0.19	-	0.25
D	8.43	-	8.76
E	5.80	-	6.25
E1	3.75	-	4.00
e	1.27 BSC		
L	0.40	-	0.89
Θ	0°	-	8°
Unit: mm			

9.2 TSSOP14 Mechanical Information

9.2.1 TSSOP14 Outline Dimensions



SYMBOL	Dimensions In Millimeters		
	Min.	Typ.	Max.
A	-	-	1.20
A1	0.05	-	0.15
A2	0.80	-	1.05
b	0.19	-	0.30
c	0.09	-	0.20
D	4.90	-	5.10
E	6.20	-	6.60
E1	4.30	-	4.50
e	0.65 BSC		
L	0.45	-	0.75
L1	-	1.00	-
Θ	0°	-	8°
Unit: mm			

10 Notes and Revision History

10.1 Associated Product Family and Others

To view other products of the same type or IC products of other types, click the official website of JSCJ -- <https://www.jscj-elec.com> for more details.

10.2 Notes

Electrostatic Discharge Caution



This IC may be damaged by ESD. Relevant personnel shall comply with correct installation and use specifications to avoid ESD damage to the IC. If appropriate measures are not taken to prevent ESD damage, the hazards caused by ESD include but are not limited to degradation of integrated circuit performance or complete damage of integrated circuit. For some precision integrated circuits, a very small parameter change may cause the whole device to be inconsistent with its published specifications.

10.3 Revision History

December, 2025: rev - 1.1A, Correct parameter typo in 7.3.2 AC Characteristics.

DISCLAIMER

IMPORTANT NOTICE, PLEASE READ CAREFULLY

The information in this data sheet is intended to describe the operation and characteristics of our products. JSCJ has the right to make any modification, enhancement, improvement, correction or other changes to any content in this data sheet, including but not limited to specification parameters, circuit design and application information, without prior notice.

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