



## U74ACT86

CMOS IC

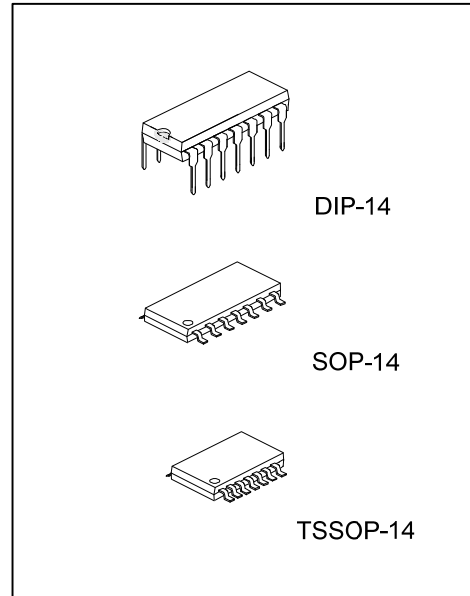
### QUAD EXCLUSIVE OR GATE

#### DESCRIPTION

The **U74ACT86** consists of four EXCLUSIVE OR GATE it provides the function  $Y=A\oplus B$ , the device is designed to interface directly High Speed CMOS systems with TTL, NMOS and CMOS output voltage levels.

#### FEATURES

- \* Operation voltage range: 4.5~5.5V
- \* Low power dissipation:  $I_{CC}=2\mu A(\text{Max})$
- \* High noise immunity
- \* Compatible with TTL output

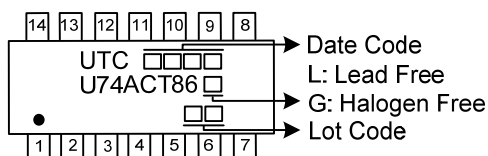


#### ORDERING INFORMATION

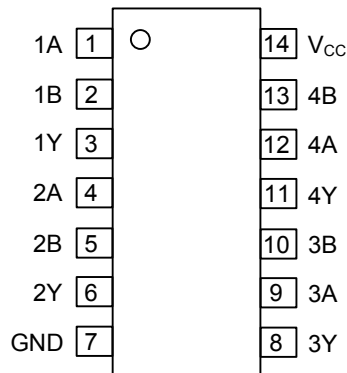
Ordering Number		Package	Packing
Lead Free	Halogen Free		
U74ACT86L-D14-T	U74ACT86G-D14-T	DIP-14	Tube
U74ACT86L-S14-R	U74ACT86G-S14-R	SOP-14	Tape Reel
U74ACT86L-P14-R	U74ACT86G-P14-R	TSSOP-14	Tape Reel

<p>U74ACT86G-D14-T</p> <p>(1)Packing Type</p> <p>(2)Package Type</p> <p>(3)Green Package</p>	<p>(1) T: Tube, R: Tape Reel</p> <p>(2) D14: DIP-14, S14: SOP-14, P14: TSSOP-14</p> <p>(3) G: Halogen Free and Lead Free, L: Lead Free</p>
--	--

#### MARKING



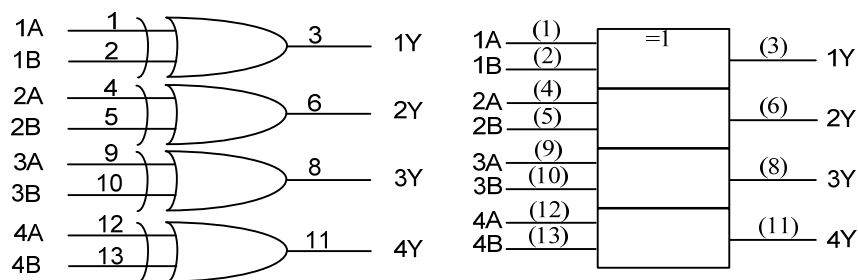
■ PIN CONFIGURATION



■ FUNCTION TABLE (each gate)

INPUT		OUTPUT
A	B	Y
L	L	L
L	H	H
H	L	H
H	H	L

■ LOGIC DIAGRAM (positive logic)



FLYING 汎翔國際有限公司  
[www.flying1688.com](http://www.flying1688.com)

## ■ 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
DC Output Voltage	$V_{OUT}$	-0.5 ~ $V_{CC}+0.5$	V
Input Clamp Current ( $V_{IN}<0$ )	$I_{IK}$	±20	mA
Output Clamp Current ( $V_{OUT}<0$ )	$I_{OK}$	±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.

## ■ RECOMMENDED OPERATING CONDITIONS

PARAMETER	SYMBOL	RATING	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
Input Transition Rise or Fall Rate	$t_R, t_F$	8	ns/V
Operating Temperature	$T_A$	-55 ~ +125	°C

## ■ STATIC CHARACTERISTICS

PARAMETER	SYMBOL	TEST CONDITIONS	MIN	TYP	MAX	UNIT
High-Level Input Voltage	$V_{IH}$	$V_{CC}=4.5V\sim 5.5V, V_{OUT}=0.1V$ or $V_{CC}-0.1V$	2.0	1.5		V
Low-Level Input Voltage	$V_{IL}$	$V_{CC}=4.5V\sim 5.5V, V_{OUT}=0.1V$ or $V_{CC}-0.1V$		1.5	0.8	V
High-Level Output Voltage	$V_{OH}$	$V_{CC}=4.5V, I_{OH}=-50\mu A$	4.4	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
Quiescent Supply Current	$I_Q$	$V_{CC}=5.5V, V_{IN}=V_{CC}$ or GND, $I_{OUT}=0$			2	μA
Additional Quiescent Supply Current	$\Delta I_Q$	$V_{CC}=5.5V, V_{IN}=3.4V$ ; other input at $V_{CC}$ or GND; $I_{OUT}=0$		0.6		mA
Input Capacitance	$C_{IN}$	$V_{CC}=5.0V, V_{IN}=V_{CC}$ or GND		5		pF

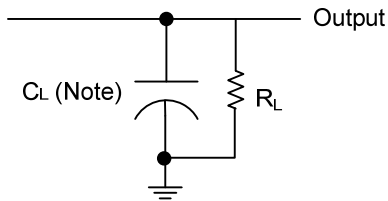
## ■ DYNAMIC CHARACTERISTIC (input $t_R = t_F = 3ns, T_A=25^\circ C$ )

PARAMETER	SYMBOL	TEST CONDITION	MIN	TYP	MAX	UNIT
Propagation Delay Time	$t_{PLH} t_{PHL}$	$V_{CC} = 5.0V \pm 0.5V, C_L = 50pF, R_L = 500\Omega$	1.5	5.0	9.5	ns

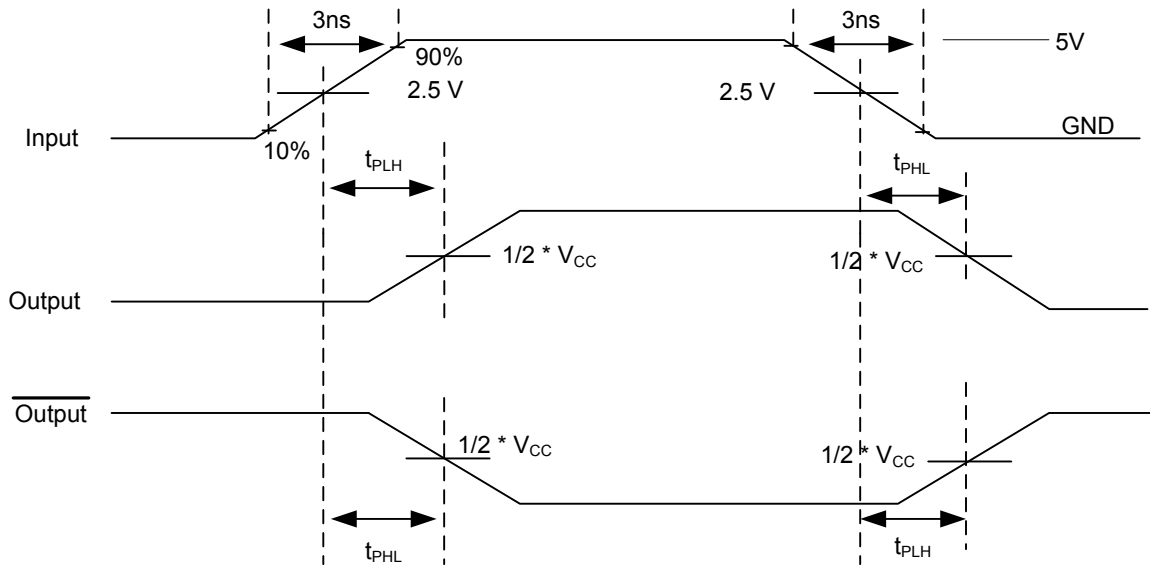
## ■ OPERATING CHARACTERISTIC

PARAMETER	SYMBOL	TEST CONDITION	MIN	TYP	MAX	UNIT
Power Dissipation Capacitance	Cpd	$V_{CC} = 5.0V$		30		pF

■ TEST CIRCUIT AND WAVEFORMS



Note:  $C_L$  includes probe and jig capacitance.



UTC assumes no responsibility for equipment failures that result from using products at values that exceed, even momentarily, rated values (such as maximum ratings, operating condition ranges, or other parameters) listed in products specifications of any and all UTC products described or contained herein. UTC products are not designed for use in life support appliances, devices or systems where malfunction of these products can be reasonably expected to result in personal injury. Reproduction in whole or in part is prohibited without the prior written consent of the copyright owner. UTC reserves the right to make changes to information published in this document, including without limitation specifications and product descriptions, at any time and without notice. This document supersedes and replaces all information supplied prior to the publication hereof.