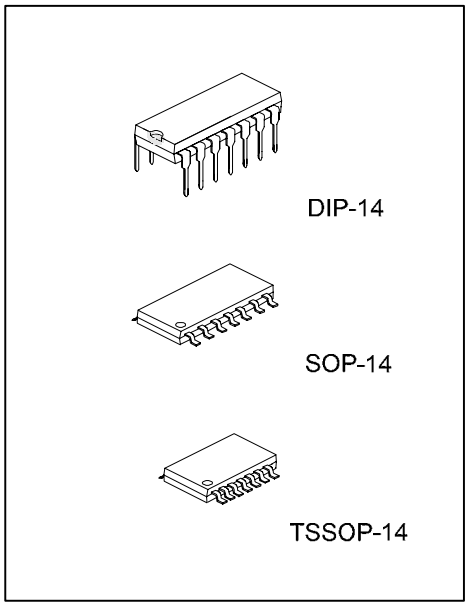
U74ACT86

CMOS IC

QUAD EXCLUSIVE OR GATE



*Pb-free plating product number:
U74ACT86L

■ DESCRIPTION

The **U74ACT86** consists of four EXCLUSIVE OR GATE it provides the function Y=A⊕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}=2μA(Max)
* High noise immunity
* Compatible with TTL output

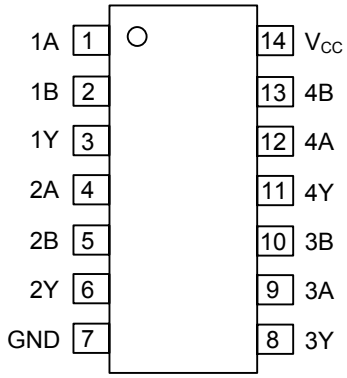
■ ORDERING INFORMATION

Ordering Number		Package	Packing
Normal	Lead Free Plating		
U74ACT86-D14-T	U74ACT86L-D14-T	DIP-14	Tube
U74ACT86-S14-T	U74ACT86L-S14-T	SOP-14	Tube
U74ACT86-S14-R	U74ACT86L-S14-R	SOP-14	Tape Reel
U74ACT86-P14-T	U74ACT86L-P14-T	TSSOP-14	Tube

U74ACT86L-D14-T
(1)Packing Type
(2)Package Type
(3)Lead Plating

(1) R: Tape Reel, T: Tube
(2) D14: DIP-14, S14: SOP-14, P14: TSSOP-14
(3) L: Lead Free Plating, Blank: Pb/Sn

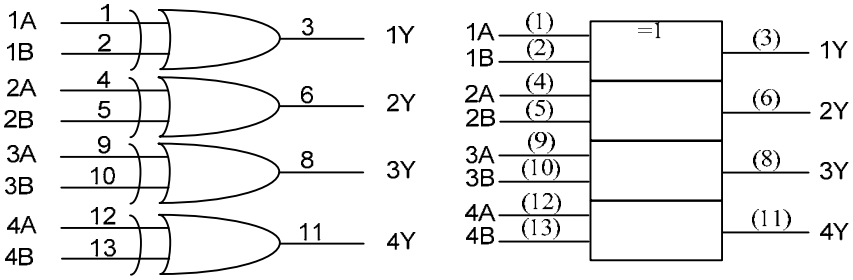
■ PIN CONFIGURATION



■ 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)



■ 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	℃

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	℃

■ STATIC CHARACTERISTICS

PARAMETER	SYMBOL	TEST CONDITIONS	MIN	TYP	MAX	UNIT
High-Level Input Voltage	V_{IH}	V_{CC}=4.5V~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~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}=-50μA	4.4	4.49		V
		V_{CC}=5.5V, I_{OH}=-50μA	5.4	5.49		
		V_{CC}=4.5V, I_{OH}=-24mA	3.86			
		V_{CC}=5.5V, I_{OH}=-24mA	4.86			
Low-Level Output Voltage	V_{OL}	V_{CC}=4.5V, I_{OL}=50μA		0.001	0.1	V
		V_{CC}=5.5V, I_{OL}=50μA		0.001	0.1	
		V_{CC}=4.5V, I_{OL}=24mA			0.36	
		V_{CC}=5.5V, I_{OL}=24mA			0.36	
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	ΔI_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

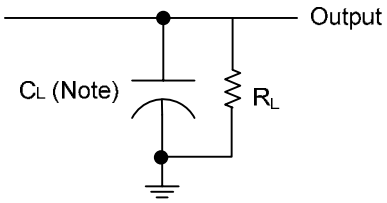
■ DYNAMIC CHARACTERISTIC (input t_R = t_F =3ns, T_A=25°C)

PARAMETER	SYMBOL	TEST CONDITION	MIN	TYP	MAX	UNIT
Propagation Delay Time	t_{PLH} t_{PHL}	V_{CC} =5.0V±0.5V, C_L =50pF, R_L =500Ω	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.