



U74AHCT1G02

CMOS IC

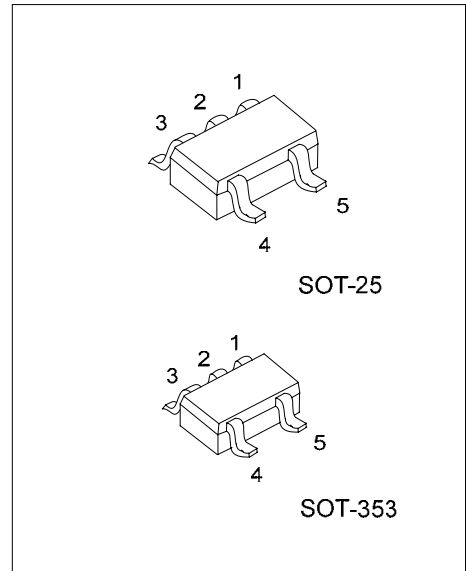
2-INPUT NOR GATE

DESCRIPTION

The U74AHCT1G02 is a single 2-input NOR gate which provides the Function.

FEATURES

- * Operation Voltage Range: 2.0~5.5V
- * Low Power Dissipation
- * High noise immunity
- *Balanced propagation delays
- *Specified from -40 to +125



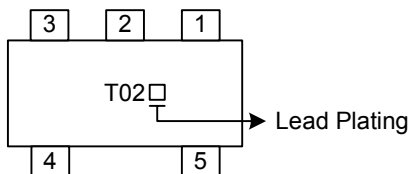
*Pb-free plating product number:
U74AHCT1G02L

ORDERING INFORMATION

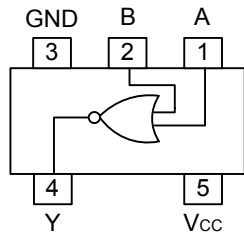
Ordering Number		Package	Packing
Normal	Lead Free Plating		
U74AHCT1G02-AF5-R	U74AHCT1G02L-AF5-R	SOT-25	Tape Reel
U74AHCT1G02-AL5-R	U74AHCT1G02L-AL5-R	SOT-353	Tape Reel

<p>U74AHCT1G02L-AF5-R</p> <p>(1)Packing Type (2)Package Type (3)Lead Plating</p>	<p>(1) R: Tape Reel (2) AF5: SOT-25, AL5: SOT-353 (3) L: Lead Free Plating, Blank: Pb/Sn</p>
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MARKING



■ PIN CONFIGURATION



■ FUNCTION TABLE

INPUT		OUTPUT
A	B	Y
L	L	H
L	H	L
H	L	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}	-0.5~7	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
Continuous Output Current	I _{OUT}	±25	mA
V _{CC} or GND Current	I _{CC}	±50	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	CONDITIONS	MIN	TYP	MAX	UNIT
Supply Voltage	V _{CC}		4.5	5.0	5.5	V
Input Voltage	V _{IN}		0		5.5	V
Output Voltage	V _{OUT}		0		V _{CC}	V
Input Transition Rise or Fall Times	t _R , t _F	V _{CC} =3.3V±0.3V				ns/V
		V _{CC} =5V±0.5V			20	
Operating Temperature	T _A		-40	25	125	

■ ELECTRICAL CHARACTERISTICS

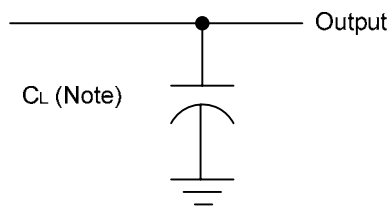
PARAMETER	SYMBOL	TEST CONDITIONS	MIN	TYP	MAX	UNIT
High-Level Input Voltage	V _{IH}	V _{CC} =4.5V~5.5V	2.0			V
Low-Level Input Voltage	V _{IL}	V _{CC} =4.5V~5.5V			0.8	V
High-Level Output Voltage	V _{OH}	V _{CC} =4.5V, V _{IN} =V _{IH} or V _{IL} , I _{OH} =-50μA	4.4	4.5		V
		V _{CC} =4.5V, V _{IN} =V _{IH} or V _{IL} , I _{OH} =-8mA	3.94			
Low-Level Output Voltage	V _{OL}	V _{CC} =4.5V, V _{IN} =V _{IH} or V _{IL} , I _{OL} =50μA		0	0.1	V
		V _{CC} =4.5V, V _{IN} =V _{IH} or V _{IL} , I _{OL} =8mA			0.36	V
Input Leakage Current	I _{I(LEAK)}	V _{CC} =5.5V, V _{IN} =V _{IH} or V _{IL}			±0.1	μA
Quiescent Supply Current	I _Q	V _{CC} =5.5V, V _{IN} =V _{CC} or GND, I _{OUT} =0			1	μA
Additional Quiescent Supply Current	I _Q	V _{CC} =5.5V, V _{IN} = 3.4 V; other inputs at V _{CC} or GND, I _{OUT} =0			1.35	mA
Input Capacitance	C _{IN}			1.5	10	pF

Note: All unused inputs of the device must be held at V_{CC} or GND to ensure proper device operation.

■ SWITCHING CHARACTERISTICS (Input signal: PRR≤1MHZ, Z₀=50Ω, t_R≤3ns, t_F≤3ns.)

PARAMETER	SYMBOL	TEST CONDITIONS	MIN	TYP	MAX	UNIT
Propagation Delay Times	t _{PLH} / t _{PHL}	V _{CC} =4.5V~5.5V, C _L =15 pF		3.5	5.5	ns
		V _{CC} =4.5V~5.5V, C _L =50 pF		4.9	7.5	ns

■ TEST CIRCUIT AND WAVEFORMS



Note: CL includes probe and jig capacitance.

Fig. 1 Load circuitry for switching times.

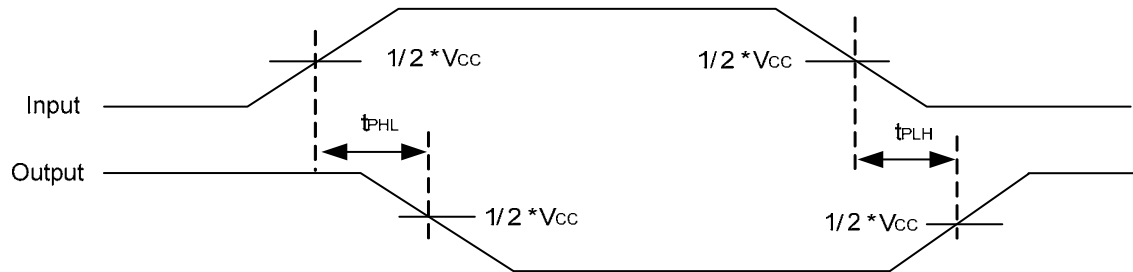


Fig. 2 Propagation delay from input(A and B) to output(Y)

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