



U74AHCT1G02

CMOS IC

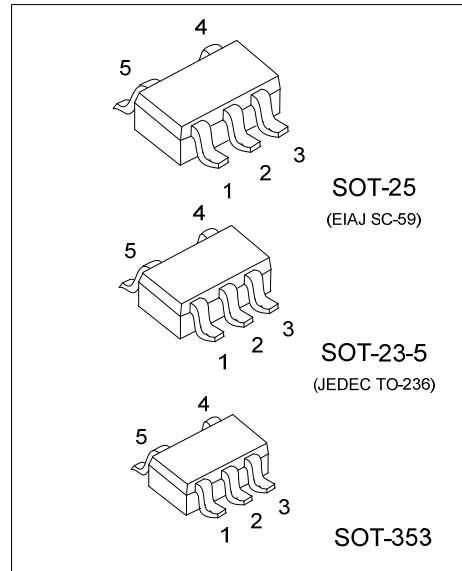
2-INPUT NOR GATE

DESCRIPTION

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

FEATURES

- * Operation Voltage Range: 4.5~5.5V
- * Low Power Dissipation
- * High noise immunity
- *Balanced propagation delays

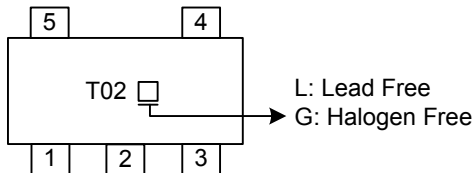


ORDERING INFORMATION

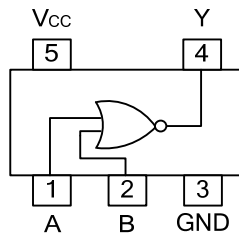
Ordering Number		Package	Packing
Lead Free	Halogen Free		
U74AHCT1G02L-AE5-R	U74AHCT1G02G-AE5-R	SOT-23-5	Tape Reel
U74AHCT1G02L-AF5-R	U74AHCT1G02G-AF5-R	SOT-25	Tape Reel
U74AHCT1G02L-AL5-R	U74AHCT1G02G-AL5-R	SOT-353	Tape Reel

<p>U74AHCT1G02G-AE5-R</p> <p>(1) Packing Type (2) Package Type (3) Green Package</p>	<p>(1) R: Tape Reel (2) AE5: SOT-23-5, AF5: SOT-25, AL5: SOT-353 (3) G: Halogen Free and Lead Free, L: Lead Free</p>
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MARKING



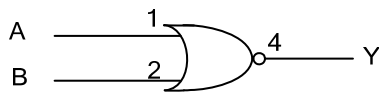
■ PIN CONFIGURATION



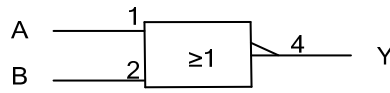
■ FUNCTION TABLE

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

■ LOGIC DIAGRAM (positive logic)



Logic symbol



IEC logic symbol

■ ABSOLUTE MAXIMUM RATINGS (T_A=25°C, 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	°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 (T_A=25°C, unless otherwise specified)

PARAMETER	SYMBOL	CONDITIONS	MIN	TYP	MAX	UNIT
Supply Voltage	V _{CC}		4.5		5.5	V
Input Voltage	V _{IN}		0		5.5	V
Output Voltage	V _{OUT}		0		V _{CC}	V
Operating Temperature	T _A		-40		+125	°C

■ ELECTRICAL CHARACTERISTICS (T_A=25°C, unless otherwise specified)

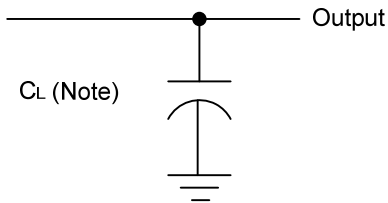
PARAMETER	SYMBOL	TEST CONDITIONS	MIN	TYP	MAX	UNIT
High-Level Input Voltage	V _{IH}	V _{CC} =4.5V~5.5V	2.0			V
Low-Level Input Voltage	V _{IL}	V _{CC} =4.5V~5.5V			0.8	V
High-Level Output Voltage	V _{OH}	V _{CC} =4.5V, V _{IN} =V _{IH} or V _{IL} , I _{OH} =-50μA	4.4	4.5		V
		V _{CC} =4.5V, V _{IN} =V _{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	ΔI _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: P_{RR} ≤ 1MHZ, Z_O=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 =15pF		3.5	5.5	ns
		V _{CC} =4.5V~5.5V, C _L =50pF		4.9	7.5	ns

■ TEST CIRCUIT AND WAVEFORMS



Note: C_L includes probe and jig capacitance.

Fig.1 Load circuitry for switching times.

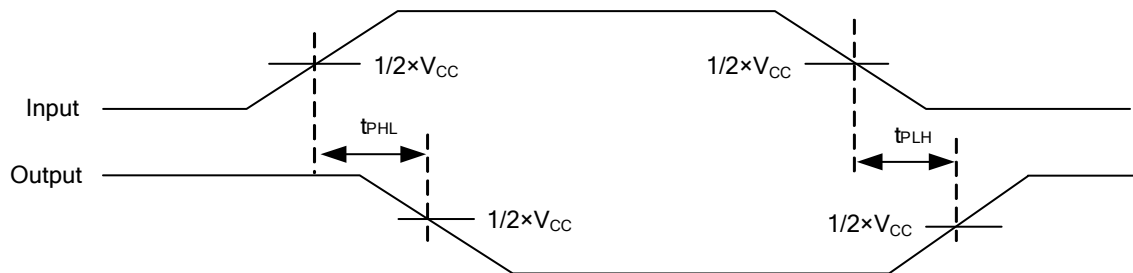


Fig. 2 Propagation delay from input(A and B) to output(Y)

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