



U74AHC1G34

CMOS IC

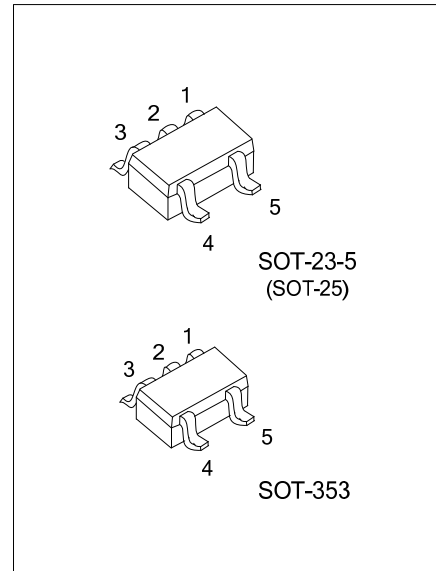
SINGLE NON-INVERTING GATE

DESCRIPTION

The **U74AHC1G34** are high-speed Si-gate CMOS devices. The U74AHC1G34 provide the non-inverting buffer with function Y=A.

FEATURES

- * Operation Voltage Range: 2V~5.5V
- * Low Power Dissipation: $I_{CC}=10\mu A(\text{Max})$
- * High Speed: $t_{pd}=3.8\text{ns}(\text{Typ})$
- * Balanced propagation delays
- * High noise immunity
- * Typical $V_{OL} < 0.36\text{V}$ at $V_{CC}=4.5\text{V}, I_o=8\text{mA}, T_A=25^\circ\text{C}$
- * Typical $V_{OH} > 3.94\text{V}$ at $V_{CC}=4.5\text{V}, I_o=-8\text{mA}, T_A=25^\circ\text{C}$

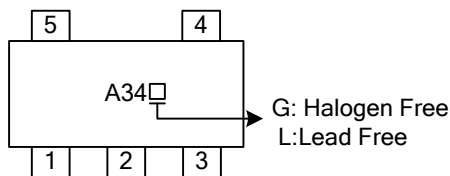


ORDERING INFORMATION

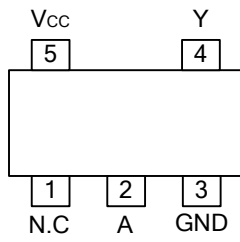
Order Number		Package	Packing
Lead Free	Halogen Free		
U74AHC1G34L-AE5-R	U74AHC1G34G-AE5-R	SOT-23-5	Tape Reel
U74AHC1G34L-AL5-R	U74AHC1G34G-AL5-R	SOT-353	Tape Reel

<p>U74AHC1G34L-AE5-R</p> <p>(1) Packing Type</p> <p>(2) Package Type</p> <p>(3) Lead Plating</p>	<p>(1) R: Tape Reel</p> <p>(2) AE5: SOT-23-5, AL5: SOT-353</p> <p>(3) L: Lead Free, G: Halogen Free, Blank: Pb/Sn</p>
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MARKING



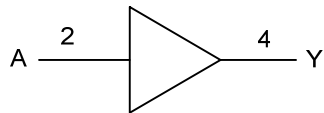
■ PIN CONFIGURATION



■ FUNCTION TABLE (each gate)

INPUT	OUTPUT
A	Y
H	H
L	L

■ LOGIC DIAGRAM (positive logic)



Logic symbol

■ ABSOLUTE MAXIMUM RATING (T_A=25°C, unless otherwise specified)(Note1)

PARAMETER	SYMBOL	RATINGS	UNIT
Supply Voltage	V _{CC}	-0.5~+7.0	V
Input Voltage	V _{IN}	-0.5~+7.0	V
Input Clamp Current	I _{IK}	-20	mA
Output Clamp Current	I _{OK}	±20	mA
Output Current	I _{OUT}	±25	mA
V _{CC} or GND Current	I _{CC}	±50	mA
Storage Temperature	T _{STG}	-65 ~ +150	°C

Note 1. The input and output voltage ratings may be exceeded if the input and output current ratings are observed.

2. 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 COMDITIONS

PARAMETER	SYMBOL	TEST CONDITIONS	MIN	TYP	MAX	UNIT
Supply Voltage	V _{CC}		2.0		5.5	V
Input Voltage	V _{IN}		0		5.5	V
Output Voltage	V _{OUT}		0		V _{CC}	V
High-level Output Current	I _{OH}	V _{CC} =2V			-50	mA
		V _{CC} =3.3V±0.3V			-4	mA
		V _{CC} =5V±0.5V			-8	mA
Low-level Output Current	I _{OL}	V _{CC} =2V			50	mA
		V _{CC} =3.3V±0.3V			4	mA
		V _{CC} =5V±0.5V			8	mA
Input Transition Rise or Fall Rate	Δt/ΔV	V _{CC} =3.3+0.3V			100	ns/V
		V _{CC} =5.0+0.5V			20	
Operating Temperature	T _A		-40	+25	+85	°C

■ STATIC CHARACTERISTICS

PARAMETER	SYMBOL	TEST CONDITIONS	MIN	TYP	MAX	UNIT
High-Level Input Voltage	V _{IH}	V _{CC} =2.0V	1.5			V
		V _{CC} =3.0V	2.1			
		V _{CC} =5.5V	3.85			
Low-Level Input Voltage	V _{IL}	V _{CC} =2.0V			0.5	V
		V _{CC} =3.0V			0.9	
		V _{CC} =5.5V			1.65	
High-Level Output Voltage	V _{OH}	I _{OH} =-50μA, V _{CC} =2.0V	1.9	2.0		V
		I _{OH} =-50μA, V _{CC} =3.0V	2.9	3.0		
		I _{OH} =-50μA, V _{CC} =5.5V	4.4	4.5		
		I _{OH} =-4mA, V _{CC} =3.0V	2.58			
		I _{OH} =-8mA, V _{CC} =4.5V	3.94			
Low-Level Output Voltage	V _{OL}	I _{OL} =50μA, V _{CC} =2.0V			0.1	V
		I _{OL} =50μA, V _{CC} =3.0V			0.1	
		I _{OL} =50μA, V _{CC} =4.5V			0.1	
		I _{OL} =4mA, V _{CC} =3.0V			0.36	
		I _{OL} =8mA, V _{CC} =4.5V			0.36	
Input Leakage Current	I _{I(LEAK)}	V _{IN} =V _{CC} or GND, V _{CC} =0V~5.5V			±0.1	μA
Quiescent Supply Current	I _Q	V _{IN} =V _{CC} or GND I _{OUT} =0, V _{CC} =5.5V			10	μA
Input Capacitance	C _{IN}	V _{IN} =V _{CC} or GND		2	10	pF

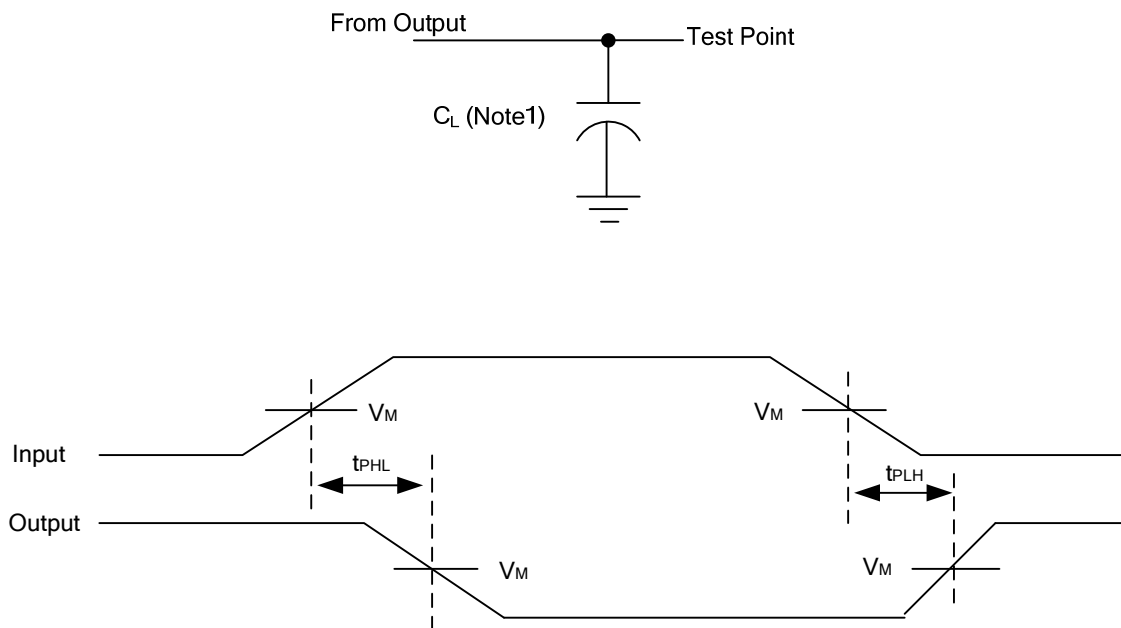
■ DYNAMIC CHARACTERISTICS (Input: $t_r, t_f \leq 3\text{ns}$; $\text{PRR} \leq 1\text{MHz}$)

PARAMETER	SYMBOL	TEST CONDITIONS	MIN	TYP	MAX	UNIT
From A to Y	t_{PHL}/t_{PLH}	$V_{CC}=3.3\pm 0.3\text{V}, C_L=15\text{pF}$		5	7.1	ns
	t_{PHL}/t_{PLH}	$V_{CC}=3.3\pm 0.3\text{V}, C_L=50\text{pF}$		7.5	10.6	
	t_{PHL}/t_{PLH}	$V_{CC}=5\pm 0.5\text{V}, C_L=15\text{pF}$		3.8	5.5	ns
	t_{PHL}/t_{PLH}	$V_{CC}=5\pm 0.5\text{V}, C_L=50\text{pF}$		5.3	7.5	

■ OPERATING CHARACTERISTICS ($V_{CC}=5\text{V}$; $T_A=25^\circ\text{C}$, unless otherwise specified)

PARAMETER	SYMBOL	TEST CONDITIONS	TYP	UNIT
Power Dissipation Capacitance	Cpd	No load, $f=1\text{MHz}$	12	pF

■ TEST CIRCUIT AND WAVEFORMS



Note: C_L includes probe and jig capacitance.

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