



## U74AHCT3G34

CMOS IC

### TRIPLE BUFFER GATE

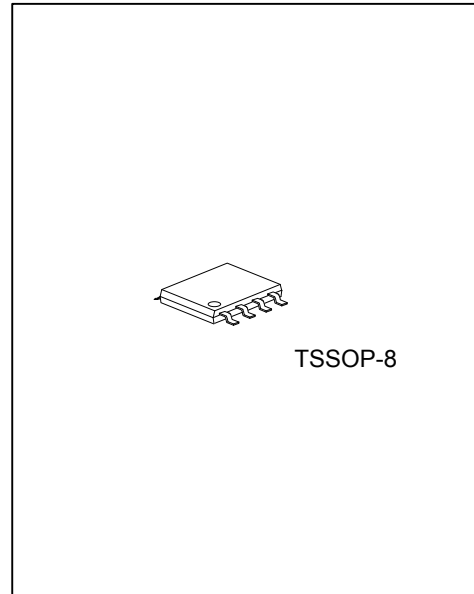
#### DESCRIPTION

The **U74AHCT3G34** is a high-speed Si-gate CMOS device which provides three buffers with the function  $Y=A$ .

The **U74AHCT3G34** is compatible of TTL input switching levels and has supply voltage range from 4.5V to 5.5V.

#### FEATURES

- \* Low power supply 1.0 $\mu$ A at 5.5 V
- \* Up to 5.5 V inputs accept voltages
- \* Typical  $t_{PD}$  of 3.4ns at  $V_{CC} = 5.0 V$ ,  $C_L = 15 pF$
- \* Low power dissipation
- \* Symmetrical output impedance
- \* Balanced propagation delays
- \* High noise immunity

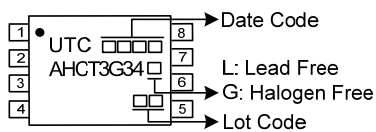


#### ORDERING INFORMATION

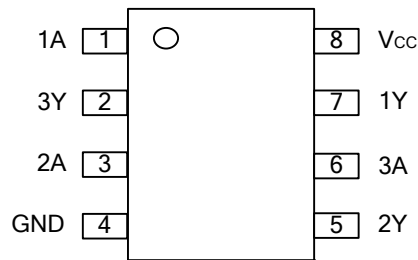
Ordering Number		Package	Packing
Lead Free	Halogen Free		
U74AHCT3G34L-P08-R	U74AHCT3G34G-P08-R	TSSOP-8	Tape Reel

<p>U74AHCT3G34G-P08-R</p> <p>(1) Packing Type (2) Package Type (3) Green Package</p>	<p>(1) R: Tape Reel (2) P08: TSSOP-8 (3) G: Halogen Free and Lead Free, L: Lead Free</p>
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#### MARKING



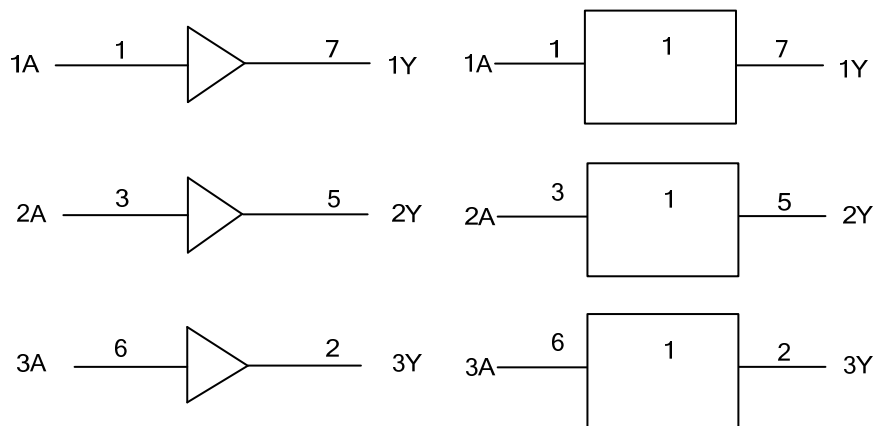
■ PIN CONFIGURATION



■ FUNCTION TABLE (each gate)

INPUT(A)	OUTPUT(Y)
L	L
H	H

■ LOGIC DIAGRAM (positive logic)



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■ ABSOLUTE MAXIMUM RATING (Unless otherwise specified)

PARAMETER	SYMBOL	RATINGS	UNIT
Supply Voltage	$V_{CC}$	-0.5 ~ 7.0	V
Input Voltage	$V_{IN}$	-0.5 ~ 7.0	V
Output Voltage	$V_{OUT}$	-0.5 ~ $V_{CC} + 0.5$	V
$V_{CC}$ or GND Current	$I_{CC}$	±75	mA
Output Current	$I_{OUT}$	±25	mA
Input Clamp Current	$I_{IK}$	-20	mA
Output Clamp Current	$I_{OK}$	±20	mA
Operating Temperature	$T_{OPR}$	-40 ~ + 125	°C
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	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 Rise or Fall Times	$t_R, t_F$	$V_{CC} = 5.0 \pm 0.5V$			20	ns/V

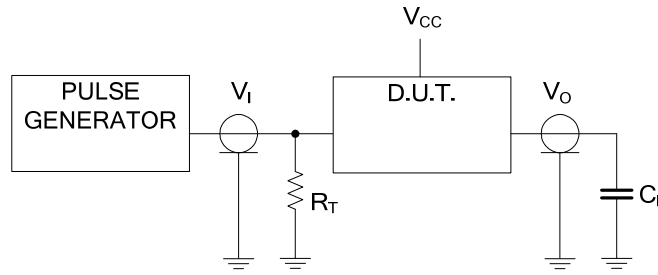
■ ELECTRICAL CHARACTERISTICS ( $T_A=25^\circ C$ , unless otherwise specified)

PARAMETER	SYMBOL	TEST CONDITIONS	MIN	TYP	MAX	UNIT
High-level input voltage	$V_{IH}$	$V_{CC} = 4.5$ to $5.5$ V	2.0			V
Low-level input voltage	$V_{IL}$	$V_{CC} = 4.5$ to $5.5$ V			0.8	V
High-Level Output Voltage	$V_{OH}$	$V_{CC} = 4.5V, V_I = V_{IH}$ or $V_{IL}, I_O = -50\mu A$	4.4	4.5		V
		$V_{CC} = 4.5V, V_I = V_{IH}$ or $V_{IL}, I_O = -8.0mA$	3.94	-		V
Low-Level Output Voltage	$V_{OL}$	$V_{CC} = 4.5V, V_I = V_{IH}$ or $V_{IL}, I_O = -50\mu A$		0	0.1	V
		$V_{CC} = 4.5V, V_I = V_{IH}$ or $V_{IL}, I_O = -8.0mA$			0.36	V
Input Leakage Current	$I_{I(LEAK)}$	$V_{CC} = 5.5V, V_I = V_{IH}$ or $V_{IL}$			0.1	$\mu A$
Quiescent Supply Current	$I_{CC}$	$V_{CC} = 5.5V, V_{IN} = V_{CC}$ or GND, $I_{OUT} = 0$			1.0	$\mu A$
Additional Quiescent Supply Current per input pin	$\Delta I_{CC}$	$V_{CC} = 5.5V$ , One input at 3.4V, $I_{OUT} = 0$ , Other inputs at $V_{CC}$ or GND			1.35	mA
Input Capacitance	$C_{IN}$	$V_{IN} = V_{CC}$ or GND		1.5	10	pF

■ SWITCHING CHARACTERISTICS ( $T_A=25^\circ C, t_R = t_F \leq 3$  ns, unless otherwise specified)

PARAMETER	SYMBOL	TEST CONDITIONS	MIN	TYP	MAX	UNIT
Propagation delay from input (A) to output (Y)	$t_{PLH}$	$C_L = 15pF$	$V_{CC} = 4.5$ to $5.5$ V		6.7	ns
			$V_{CC} = 5V$		3.4	ns
	$t_{PHL}$	$C_L = 50 pF$	$V_{CC} = 4.5$ to $5.5$ V		7.7	ns
			$V_{CC} = 5V$	4.9		ns

■ TEST CIRCUIT AND WAVEFORMS

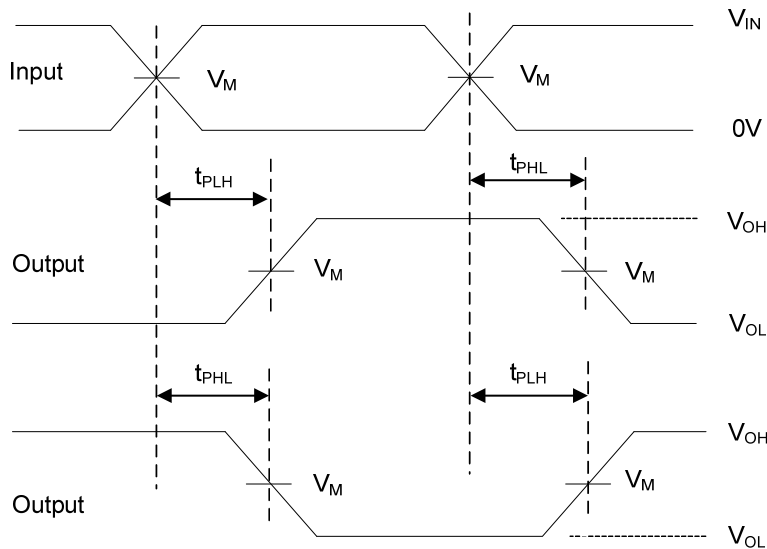


Definitions for test circuit:

$C_L$  = Load capacitance including jig and probe capacitance.

$R_T$  = Termination resistance should be equal to the output impedance  $Z_O$  of the pulse generator.

$V_{CC}$	Inputs		$V_M$	$C_L$
	$V_{IN}$	$t_R, t_F$		
4.5 to 5.5V	GND to 3.0 V	$\leq 3ns$	1.5 V	15 or 50 pF



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