



U74AHC3G34

CMOS IC

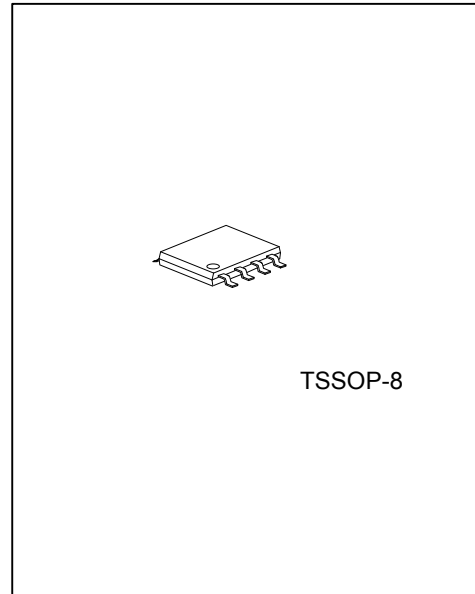
TRIPLE BUFFER GATE

DESCRIPTION

The **UTC U74AHC3G34** are high-speed Si-gate CMOS devices, which provide three buffers with the function $Y=A$.

FEATURES

- * Low Power Dissipation
- * Symmetrical Output Impedance
- * Balanced Propagation Delays
- * High Noise Immunity

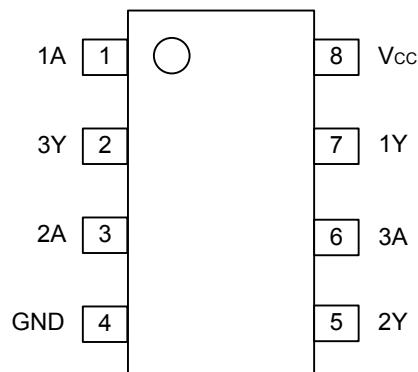


ORDERING INFORMATION

| Ordering Number | | Package | Packing |
|-------------------|-------------------|---------|-----------|
| Lead Free | Halogen Free | | |
| U74AHC3G34L-P08-R | U74AHC3G34G-P08-R | TSSOP-8 | Tape Reel |
| U74AHC3G34L-P08-T | U74AHC3G34G-P08-T | TSSOP-8 | Tube |

| | |
|---|---|
| <p>U74HCT3G34L-P08-R</p> <p>(1) Packing Type (2) Package Type (3) Lead Free</p> | <p>(1) R: Tape Reel, T: Tube (2) P08: TSSOP-8 (3) G: Halogen Free, L: Lead Free</p> |
|---|---|

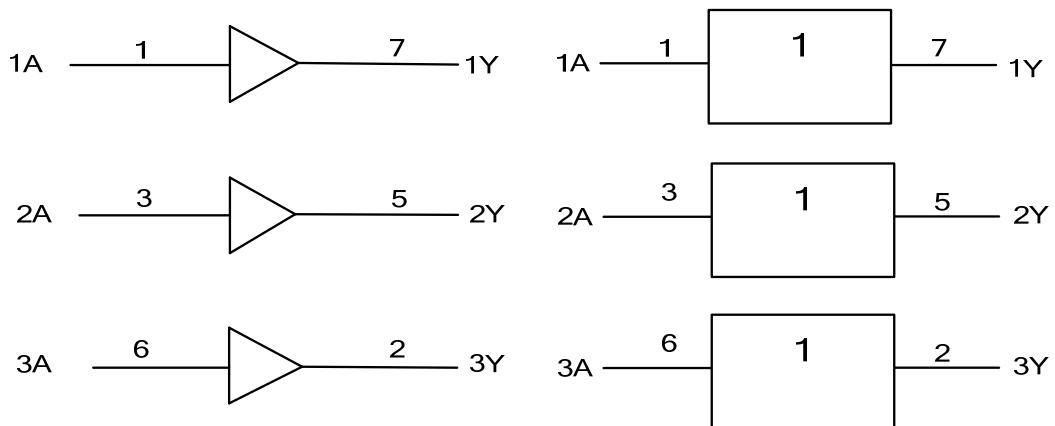
■ PIN CONFIGURATION



■ FUNCTION TABLE (each gate)

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

■ LOGIC DIAGRAM (positive logic)



■ 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 ~ + 85 | °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} | | 2.0 | 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 | $V_{CC} = 3.3 \pm 0.3V$ | | | 100 | ns/V |
| | | $V_{CC} = 5.0 \pm 0.5V$ | | | 20 | |

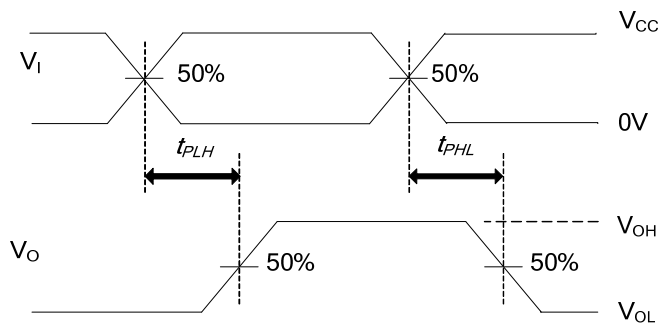
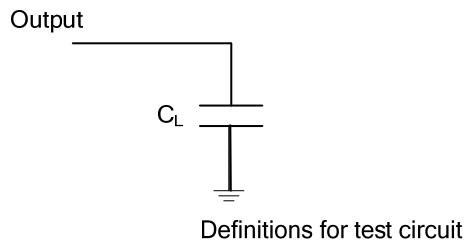
■ ELECTRICAL CHARACTERISTICS ($T_A=25^\circ C$, unless otherwise specified)

| PARAMETER | SYMBOL | TEST CONDITIONS | MIN | TYP | MAX | UNIT |
|---------------------------|---------------|--|------|-----|------|------|
| High-Level input voltage | V_{IH} | $V_{CC} = 2V$ | 1.5 | | | V |
| | | $V_{CC} = 3V$ | 2.1 | | | |
| | | $V_{CC} = 5.5V$ | 3.85 | | | |
| Low-Level input voltage | V_{IL} | $V_{CC} = 2V$ | | | 0.5 | V |
| | | $V_{CC} = 3V$ | | | 0.9 | |
| | | $V_{CC} = 5.5V$ | | | 1.65 | |
| High-Level Output Voltage | V_{OH} | $V_I = V_{IH}$ or $V_{IL}, I_{OH} = -50\mu A, V_{CC} = 2V$ | 1.9 | 2.0 | | V |
| | | $V_I = V_{IH}$ or $V_{IL}, I_{OH} = -50\mu A, V_{CC} = 3V$ | 2.9 | 3.0 | | |
| | | $V_I = V_{IH}$ or $V_{IL}, I_{OH} = -50\mu A, V_{CC} = 4.5V$ | 4.4 | 4.5 | | |
| | | $V_I = V_{IH}$ or $V_{IL}, I_{OH} = -4.0mA, V_{CC} = 3V$ | 2.58 | | | |
| | | $V_I = V_{IH}$ or $V_{IL}, I_{OH} = -8.0mA, V_{CC} = 4.5V$ | 3.94 | | | |
| Low-Level Output Voltage | V_{OL} | $V_I = V_{IH}$ or $V_{IL}, I_{OH} = 50\mu A, V_{CC} = 2V$ | | | 0.1 | V |
| | | $V_I = V_{IH}$ or $V_{IL}, I_{OH} = 50\mu A, V_{CC} = 3V$ | | | 0.1 | |
| | | $V_I = V_{IH}$ or $V_{IL}, I_{OH} = 50\mu A, V_{CC} = 4.5V$ | | | 0.1 | |
| | | $V_I = V_{IH}$ or $V_{IL}, I_{OH} = 4.0mA, V_{CC} = 3V$ | | | 0.36 | |
| | | $V_I = V_{IH}$ or $V_{IL}, I_{OH} = 8.0mA, V_{CC} = 4.5V$ | | | 0.36 | |
| Input Leakage Current | $I_{I(LEAK)}$ | $V_{IN} = V_{CC}$ or GND, $V_{CC} = 5.5V$ | | | 0.1 | μA |
| Quiescent Supply Current | I_{CC} | $V_{IN} = V_{CC}$ or GND, $I_{OUT} = 0, V_{CC} = 5.5V$ | | | 10 | μA |
| Input Capacitance | C_{IN} | $V_{IN} = V_{CC}$ or GND | | 1.5 | 10 | pF |

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

| PARAMETER | SYMBOL | TEST CONDITIONS | MIN | TYP | MAX | UNIT |
|---|-----------|-----------------|---------------------------|-----|------|------|
| Propagation delay from input (A) to output(Y) | t_{PLH} | $C_L = 15 pF$ | $V_{CC} = 3.0$ to $3.6 V$ | 4.3 | 7.1 | ns |
| | | | $V_{CC} = 4.5$ to $5.5 V$ | 3.1 | 5.5 | |
| | t_{PHL} | $C_L = 50 pF$ | $V_{CC} = 3.0$ to $3.6 V$ | 6.1 | 10.6 | ns |
| | | | $V_{CC} = 4.5$ to $5.5 V$ | 4.5 | 7.5 | |

■ TEST CIRCUIT AND WAVEFORMS



Propagation Delay Times

Note: C_L includes probe and jig capacitance.
 $P_{RR} \leq 1\text{MHz}$, $Z_O = 50\Omega$, $t_R \leq 3\text{ns}$, $t_F \leq 3\text{ns}$.

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