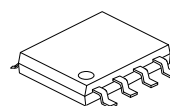
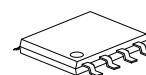
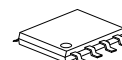


**U74AHC3G04****CMOS IC****INVERTER****DESCRIPTION**

The **U74AHC3G04** are high-speed Si-gate CMOS devices providing three inverting buffers with the function $Y = \bar{A}$.

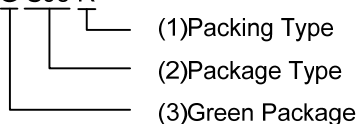
FEATURES

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

**SOP-8****TSSOP-8****MSOP-8****CDFN2030-8****ORDERING INFORMATION**

Ordering Number		Package	Packing
Lead Free	Halogen Free		
U74AHC3G04L-S08-R	U74AHC3G04G-S08-R	SOP-8	Tape Reel
U74AHC3G04L-SM1-R	U74AHC3G04G-SM1-R	MSOP-8	Tape Reel
U74AHC3G04L-P08-R	U74AHC3G04G-P08-R	TSSOP-8	Tape Reel
U74AHC3G04L-CK08-2030-R	U74AHC3G04G-CK08-2030-R	CDFN2030-8	Tape Reel

U74AHC3G04G-S08-R



(1) R: Tape Reel

(2) S08: SOP-8, SM1: MSOP-8, P08: TSSOP-8

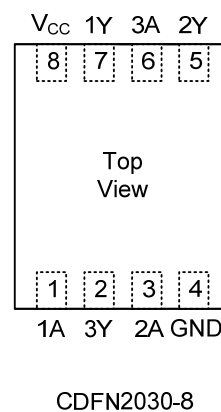
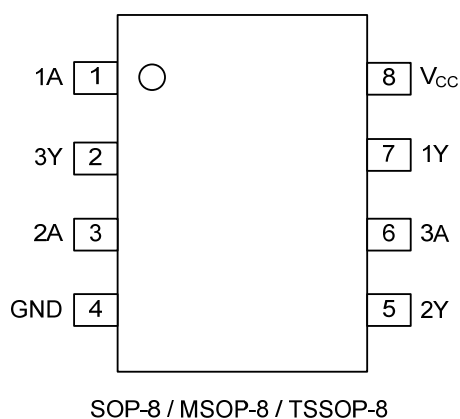
CK08-2030: CDFN2030-8

(3) G: Halogen Free and Lead Free, L: Lead Free

MARKING

SOP-8 / MSOP-8	TSSOP-8
UTC AHC3G04 ● 	UTC AHC3G04
CDFN2030-8	-
AHC 3G04 ●	-

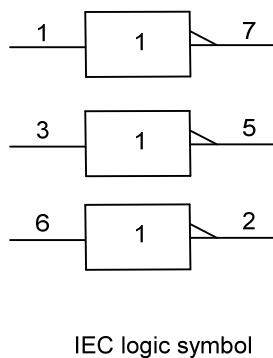
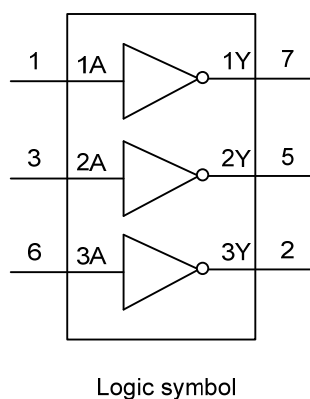
PIN CONFIGURATION



FUNCTION TABLE (each gate)

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

LOGIC DIAGRAM (each gate)



■ ABSOLUTE MAXIMUM RATING (Unless otherwise specified)

PARAMETER	SYMBOL	CONDITIONS	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}	$0V < V_{OUT} < V_{CC}$	± 25	mA
Input Clamp Current	I_{IK}	$V_{IN} < 0V$	-20	mA
Output Clamp Current	I_{OK}	$V_{OUT} < 0V$ or $V_{OUT} > V_{CC}$	± 20	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 (Unless otherwise specified)

PARAMETER	SYMBOL	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
Input Transition Rise or Fall Rate	$\Delta t / \Delta v$	$V_{CC} = 3.3 \pm 0.3V$			100	ns/V
		$V_{CC} = 5.0 \pm 0.5V$			20	ns/V
Operating Temperature	T_A		-40		+125	°C

■ ELECTRICAL CHARACTERISTICS (Unless otherwise specified)

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

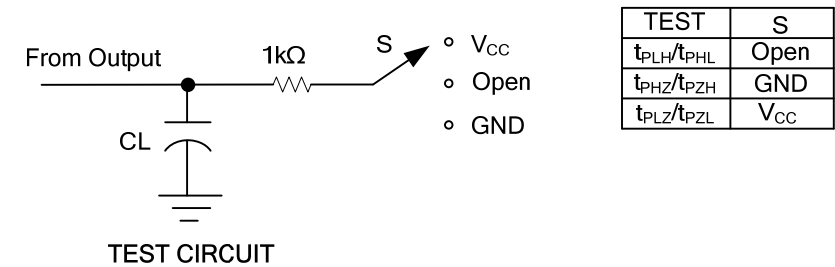
■ **SWITCHING CHARACTERISTICS** ($t_R = t_F \leq 3.0$ ns, unless otherwise specified)

PARAMETER	SYMBOL	TEST CONDITIONS		MIN	TYP	MAX	UNIT
Propagation delay from input (A) to output (Y)	t_{PLH} / t_{PHL}	$C_L = 15\text{pF}$	$V_{CC} = 3.0 \sim 3.6\text{V}$			9.0	ns
			$V_{CC} = 4.5 \sim 5.5\text{V}$			7.5	ns
		$C_L = 50\text{pF}$	$V_{CC} = 3.0 \sim 3.6\text{V}$			13.5	ns
			$V_{CC} = 4.5 \sim 5.5\text{V}$			11.5	ns

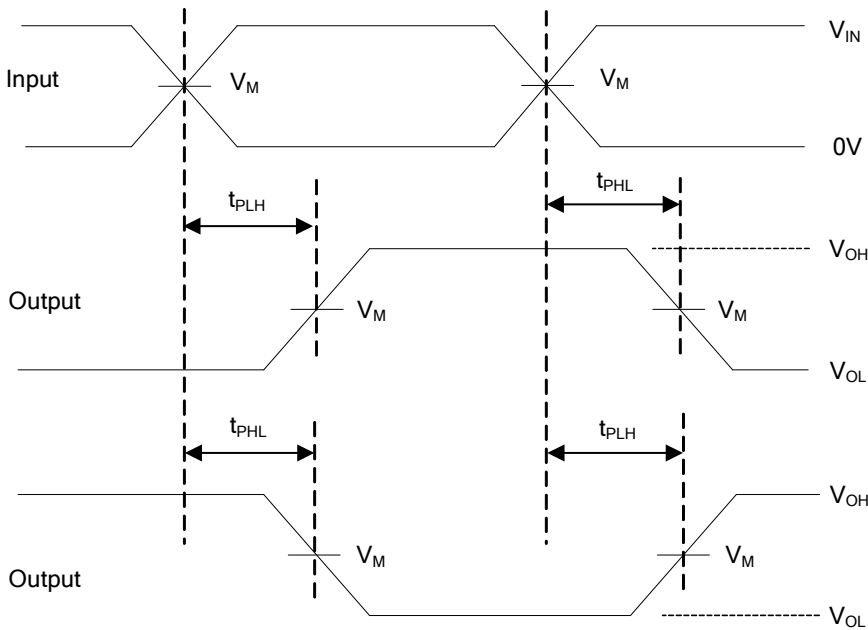
■ **OPERATING CHARACTERISTICS** (Unless otherwise specified)

PARAMETER	SYMBOL	TEST CONDITIONS	MIN	TYP	MAX	UNIT
Power Dissipation Capacitance	C_{PD}	$C_L = 50\text{pF}$, $V_{IN} = \text{GND}$ or V_{CC} , $f = 1\text{MHz}$		9		pF

■ TEST CIRCUIT AND WAVEFORMS



V _I INPUT REQUIREMENTS	V _M INPUT	V _M OUTPUT
GND to V _{CC}	50%V _{CC}	50%V _{CC}



Propagation delay times
Inverting and noninverting outputs

Note: C_L includes probe and jig capacitance.
P_{RR} ≤ 1MHz, Z_O = 50Ω, t_r ≤ 3ns, t_f ≤ 3ns.

UTC assumes no responsibility for equipment failures that result from using products at values that exceed, even momentarily, rated values (such as maximum ratings, operating condition ranges, or other parameters) listed in products specifications of any and all UTC products described or contained herein. UTC products are not designed for use in life support appliances, devices or systems where malfunction of these products can be reasonably expected to result in personal injury. Reproduction in whole or in part is prohibited without the prior written consent of the copyright owner. UTC reserves the right to make changes to information published in this document, including without limitation specifications and product descriptions, at any time and without notice. This document supersedes and replaces all information supplied prior to the publication hereof.