



U74HCT3G06

CMOS IC

INVERTER WITH OPEN-DRAIN OUTPUTS

■ DESCRIPTION

The **U74HCT3G06** provides three inverters with open-drain outputs, it is compatible with TTL.

■ FEATURES

- * Low power dissipation
- * High speed
- * High noise immunity



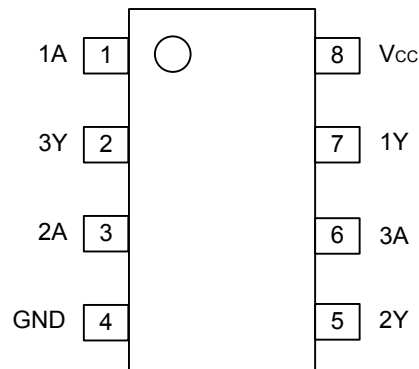
TSSOP-8

■ ORDERING INFORMATION

Ordering Number		Package	Packing
Lead Free	Halogen Free		
U74HCT3G06L-P08-R	U74HCT3G06G-P08-R	TSSOP-8	Tape Reel
U74HCT3G06L-P08-T	U74HCT3G06G-P08-T	TSSOP-8	Tube

U74HCT3G06L-P08-R	(1)Packing Type (2)Package Type (3)Lead Free	(1) R: Tape Reel, T: Tube (2) P08: TSSOP-8 (3) G: Halogen Free, L: Lead Free
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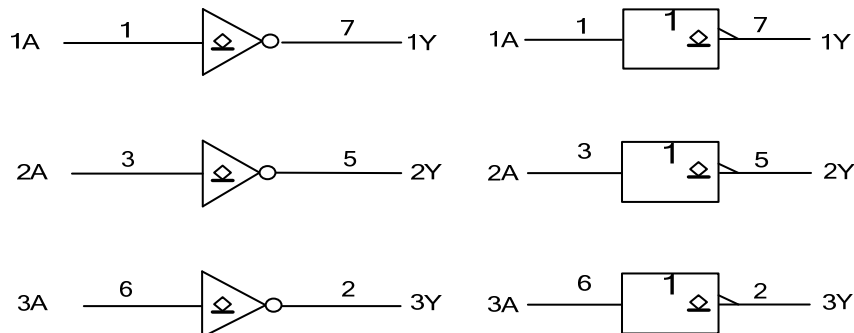
PIN CONFIGURATION



FUNCTION TABLE (each gate)

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

LOGIC DIAGRAM (positive logic)



■ ABSOLUTE MAXIMUM RATINGS (unless otherwise specified)

PARAMETER	SYMBOL	RATINGS	UNIT
Supply Voltage	V_{CC}	-0.5~7	V
Output Voltage	V_{OUT}	-0.5~ $V_{CC}+0.5$ (active mode) -0.5~7.0(high-impedance mode)	V
V_{CC} or GND Current	I_{CC}	50	mA
Input Clamp Current	I_{IK}	±20	mA
Output Clamp Current	I_{OK}	-20	mA
Output Current	I_{OUT}	25	mA
Power Dissipation	P_D	300	mW
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 and Fall Times	t_R, t_F	$V_{CC}=4.5V$		6.0	500	ns
Operating Temperature	T_A		-40	+25	+125	°C

■ STATIC CHARACTERISTICS ($T_A=25^{\circ}C$)

PARAMETER	SYMBOL	TEST CONDITIONS	MIN	TYP	MAX	UNIT
High-Level Input Voltage	V_{IH}	$V_{CC}=4.5V\sim5.5V$	2.0	1.6		V
Low-Level Input Voltage	V_{IL}	$V_{CC}=4.5V\sim5.5V$		1.2	0.8	V
Low-Level Output Voltage	V_{OL}	$V_{CC}=4.5V, I_{OL}=20\mu A$		0	0.1	V
		$V_{CC}=4.5V, I_{OL}=4.0mA$		0.15	0.33	V
Input Leakage Current	$I_{I(LEAK)}$	$V_{CC}=5.5V, V_{IN}=V_{CC}$ or GND			±1.0	μA
Output Leakage Current	$I_{O(LEAK)}$	$V_{CC}=5.5V, V_{IN}=V_{IH},$ $V_{OUT}=V_{CC}$ or GND			±5.0	μA
Quiescent Supply Current	I_Q	$V_{CC}=5.5V, V_{IN}=V_{CC}$ or GND, $I_{OUT}=0$			10	μA
Additional Quiescent Supply Current	ΔI_Q	$V_{CC}=4.5V$ to $5.5V, V_{IN}=V_{CC}-2.1V,$ $I_{OUT}=0$			375	μA
Input Capacitance	C_{IN}			1.5		pF

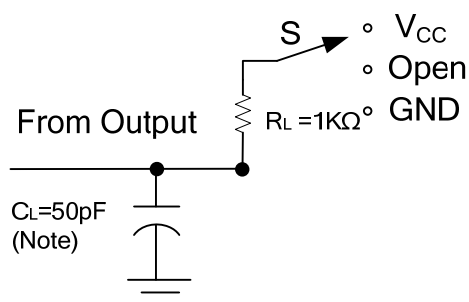
■ DYNAMIC CHARACTERISTICS ($T_A=25^{\circ}C, t_R, t_F\leq6.0ns$)

PARAMETER	SYMBOL	TEST CONDITIONS	MIN	TYP	MAX	UNIT
Propagation Delay From nA to nY	t_{PZL}	$V_{CC}=4.5V, C_L=50pF$		9	24	ns
	t_{PLZ}	$V_{CC}=4.5V, C_L=50pF$		12	27	
Output Transition Time	t_{THL}	$V_{CC}=4.5V, C_L=50pF$		6	19	ns

■ OPERATING CHARACTERISTICS

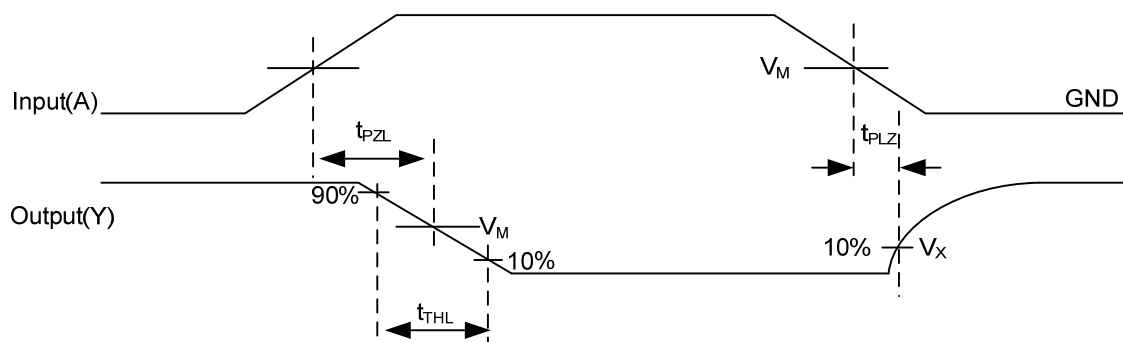
PARAMETER	SYMBOL	TEST CONDITIONS	MIN	TYP	MAX	UNIT
Power Dissipation Capacitance	C_{PD}			4		pF

■ TEST CIRCUIT AND WAVEFORMS



TEST	S
t_{PLH}/t_{PHL}	V_{CC}
t_{PLZ}/t_{PZL}	V_{CC}

Note : C_L includes probe and jig capacitance.



$V_M = 1.3V$, Input=GND to 3.0V, $V_X = 10\% \cdot V_{CC}$

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