



# U74HCT3G06

CMOS IC

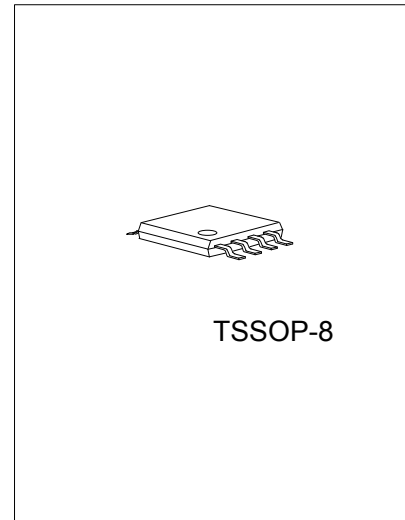
## INVERTER WITH OPEN-DRAIN OUTPUTS

### DESCRIPTION

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

### FEATURES

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

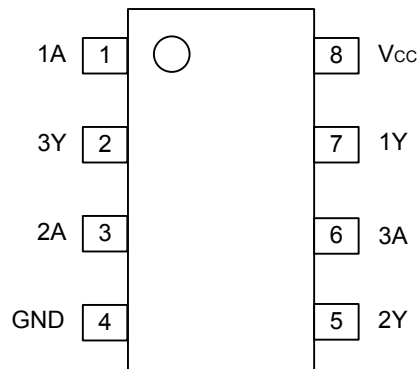


### ORDERING INFORMATION

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

<p>U74HCT3G06L-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>
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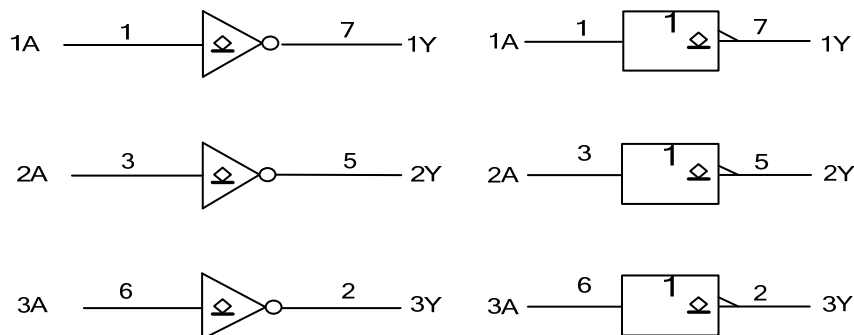
■ PIN CONFIGURATION



■ 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	$V_{IH}$	$V_{CC}=4.5V\sim 5.5V$	2.0	1.6		V
Low-Level Input Voltage	$V_{IL}$	$V_{CC}=4.5V\sim 5.5V$		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	$\Delta I_Q$	$V_{CC}=4.5V$ to $5.5V, V_{IN}=V_{CC}-2.1V,$ $I_{OUT}=0$			375	μA
Input Capacitance	$C_{IN}$			1.5		pF

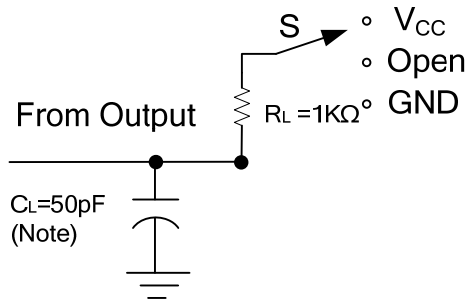
## ■ DYNAMIC CHARACTERISTICS ( $T_A=25^\circ C, t_R, t_F\leq 6.0ns$ )

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

## ■ OPERATING CHARACTERISTICS

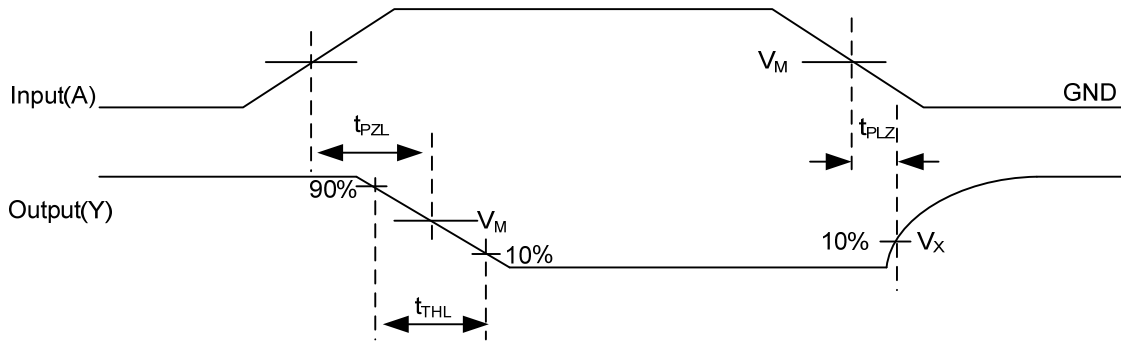
PARAMETER	SYMBOL	TEST CONDITIONS	MIN	TYP	MAX	UNIT
Power Dissipation Capacitance	$C_{PD}$			4		pF

■ 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,  $V_X=10\%*V_{CC}$

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