



U74HCT3G04

CMOS IC

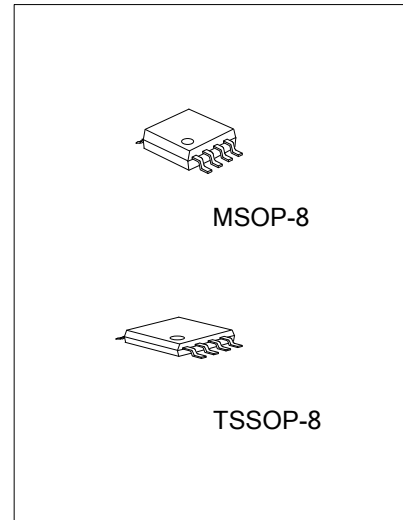
INVERTER

DESCRIPTION

The **U74HCT3G04** provides three inverters, it is compatible with TTL.

FEATURES

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



ORDERING INFORMATION

Ordering Number		Package	Packing
Lead Free	Halogen Free		
U74HCT3G04L-SM1-R	U74HCT3G04G-SM1-R	MSOP-8	Tape Reel
U74HCT3G04L-P08-R	U74HCT3G04G-P08-R	TSSOP-8	Tape Reel

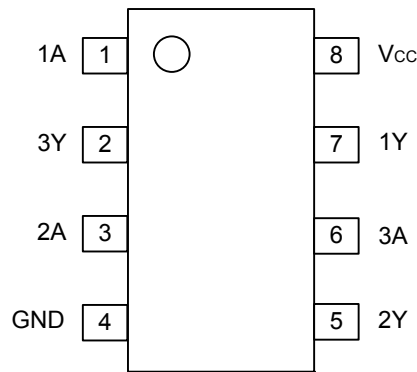
<p>U74HCT3G04G-SM1-R</p> <p>(1) Packing Type (2) Package Type (3) Green Package</p>	<p>(1) R: Tape Reel (2) SM1: MSOP-8, P08: TSSOP-8 (3) G: Halogen Free and Lead Free, L: Lead Free</p>
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MARKING

MSOP-8	TSSOP-8
<p>UTC □□□□ → Date Code HCT3G04 □ → L: Lead Free □ → G: Halogen Free □□ → Lot Code</p>	<p>UTC □□□□ → Date Code 3G04 □ → L: Lead Free □ → G: Halogen Free □□ → Lot Code</p>



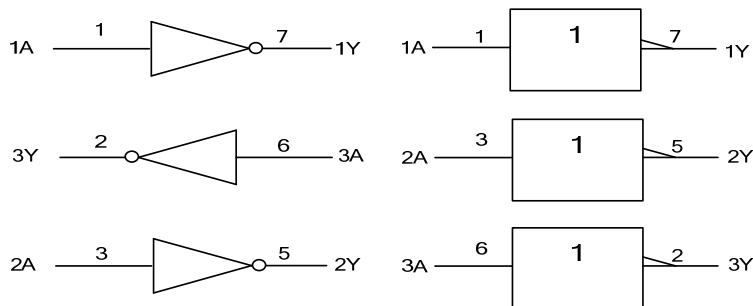
■ PIN CONFIGURATION



■ FUNCTION TABLE (each gate)

INPUT	OUTPUT
A	Y
L	H
H	L

■ LOGIC DIAGRAM (positive logic)



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■ ABSOLUTE MAXIMUM RATINGS (unless otherwise specified)

PARAMETER	SYMBOL	RATINGS	UNIT
Supply Voltage	V_{CC}	-0.5~ 7	V
Input Voltage	V_{IN}	-0.5~ 7	V
Output Voltage	V_{OUT}	-0.5 ~ $V_{CC}+0.5$	V
Output Current	I_{OUT}	25	mA
V_{CC} or GND Current	I_{CC}	50	mA
Input Clamp Current	I_{IK}	±20	mA
Output Clamp Current	I_{OK}	±20	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		V_{CC}	V
Output Voltage	V_{OUT}		0		V_{CC}	V
Input Transition Rise or Fall Rate	t_R, t_F	$V_{CC}=4.5V$		6.0	500	ns
Operating Temperature	T_A		-40		+125	°C

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

PARAMETER	SYMBOL	TEST CONDITIONS	MIN	TYP	MAX	UNIT
High-Level Input Voltage	V_{IH}	$V_{CC}=4.5V\sim 5.5V$	2.0	1.6		V
Low-Level Input Voltage	V_{IL}	$V_{CC}=4.5V\sim 5.5V$		1.2	0.8	V
High-Level Output Voltage	V_{OH}	$V_{CC}=4.5V, I_{OH}=-20\mu A$	4.4	4.5		V
		$V_{CC}=4.5V, I_{OH}=-4.0mA$	4.18	4.32		
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	0.26	
Input Leakage Current	$I_{I(LEAK)}$	$V_{CC}=5.5V, V_{IN}=V_{CC}$ or GND			±1.0	μA
Quiescent Supply Current	I_Q	$V_{CC}=5.5V, I_{OUT}=0, V_{IN}=V_{CC}$ or GND			10	μA
Additional Quiescent Supply Current	ΔI_Q	$V_{CC}=5.5V, I_{OUT}=0, V_{IN}=V_{CC}-2.1V$			300	μA
Input Capacitance	C_{IN}			1.5		pF

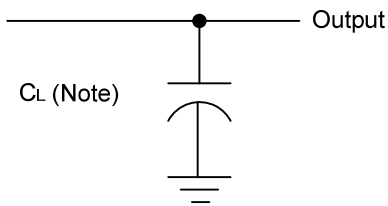
■ DYNAMIC CHARACTERISTICS ($t_R, t_F \leq 6.0ns$)

PARAMETER	SYMBOL	TEST CONDITIONS	MIN	TYP	MAX	UNIT
Propagation Delay From nA to nY	t_{PHL} / t_{PLH}	$V_{CC}=4.5V, C_L=50pF$		10	23	ns
Output Transition Time	t_{THL} / t_{TLH}	$V_{CC}=4.5V, C_L=50pF$		6	19	ns

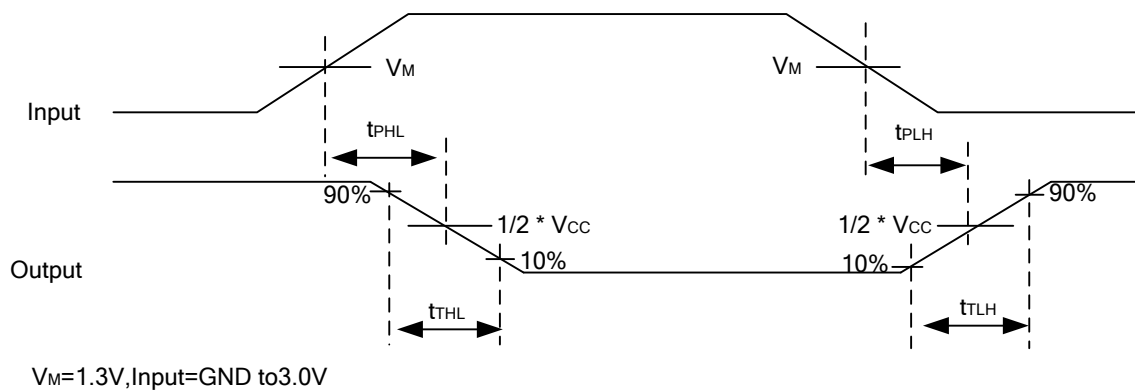
■ OPERATING CHARACTERISTIC

PARAMETER	SYMBOL	TEST CONDITIONS	MIN	TYP	MAX	UNIT
Power Dissipation Capacitance	C_{PD}			9		pF

■ TEST CIRCUIT AND WAVEFORMS



Note: C_L includes probe and jig capacitance.



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