



U74HCT3G07

CMOS IC

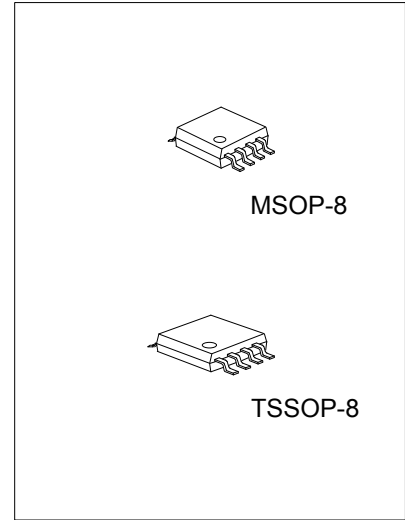
BUFFER WITH OPEN-DRAIN OUTPUTS

■ DESCRIPTION

The **U74HCT3G07** provides three buffers with open-drain outputs, it is compatible with TTL.

■ FEATURES

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



■ ORDERING INFORMATION

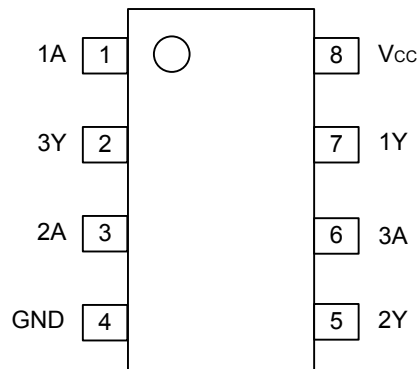
Ordering Number		Package	Packing
Lead Free	Halogen Free		
U74HCT3G07L-SM1-R	U74HCT3G07G-SM1-R	MSOP-8	Tape Reel
U74HCT3G07L-P08-R	U74HCT3G07G-P08-R	TSSOP-8	Tape Reel

<p>U74HCT3G07G-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>8 7 6 5 → Date Code UTC □ □ □ □ HCT3G07 □ □ □ → Lot Code 1 2 3 4</p> <p>L: Lead Free G: Halogen Free</p>	<p>8 → Date Code 1 UTC □ □ □ □ 2 3G07 □ 7 3 □ □ 6 4 □ □ 5 → Lot Code</p> <p>L: Lead Free G: Halogen Free</p>

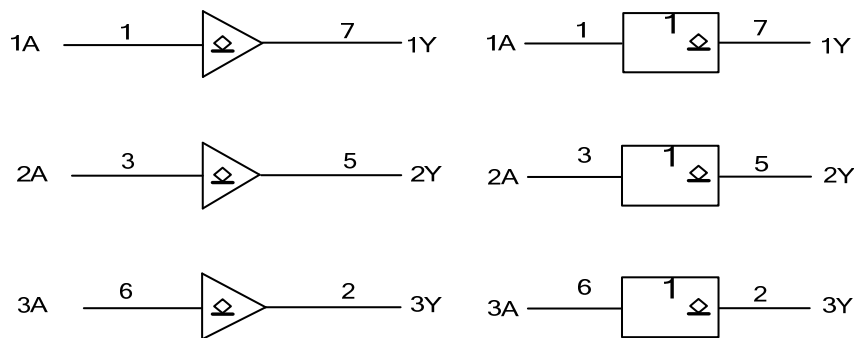
■ PIN CONFIGURATION



■ FUNCTION TABLE (each gate)

INPUT	OUTPUT
nA	nY
L	L
H	Z

■ LOGIC DIAGRAM (positive logic)



IEC logic symbol

■ 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)	V
		-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 OFF-State Current	I_{OZ}	$V_{CC}= 5.5V, V_{IN}=V_{IH}$ or V_{IL} ; $V_{OUT}=V_{CC}$ 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	$V_{CC}= 4.5V\sim 5.5V, V_{IN}=V_{CC}$ -2.1V; $I_{OUT}=0$			375	μA
Input Capacitance	C_{IN}			1.5		pF

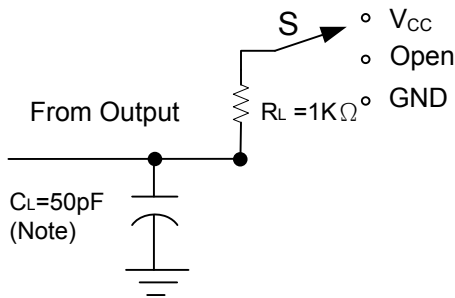
■ DYNAMIC CHARACTERISTICS ($T_A=25^\circ C, t_R, t_F\leq 6.0ns$)

PARAMETER	SYMBOL	TEST CONDITIONS	MIN	TYP	MAX	UNIT
Propagation Delay From nA to nY	t_{PZL}	$V_{CC}=4.5V, C_L= 50 pF$		11	27	ns
	t_{PLZ}	$V_{CC}=4.5V, C_L= 50 pF$		10	26	ns
Output Transition Time	t_{THL}	$V_{CC}=4.5V, C_L= 50 pF$		6	19	ns

■ OPERATING CHARACTERISTICS

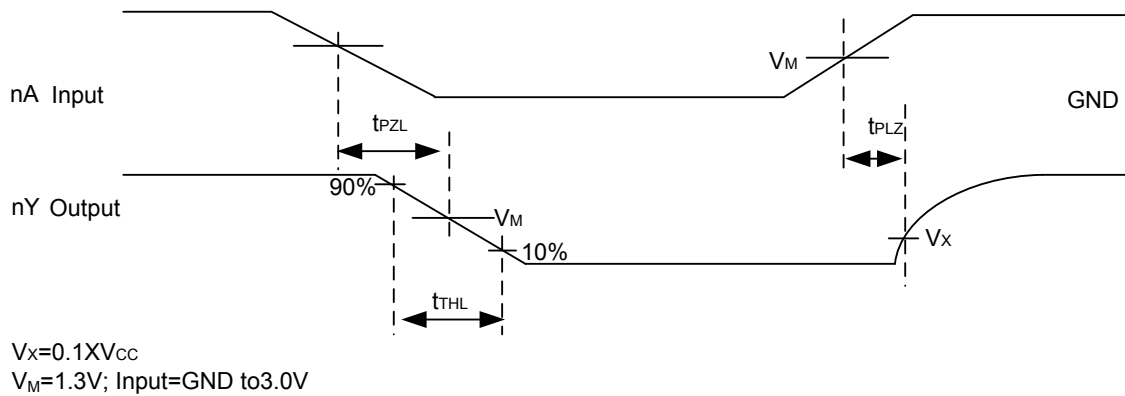
PARAMETER	SYMBOL	TEST CONDITIONS	MIN	TYP	MAX	UNIT
Power Dissipation Capacitance	C_{PD}			4		pF

■ TEST CIRCUIT AND WAVEFORMS



TEST	S
t_{PLH}/t_{PHL}	Open
t_{PHZ}/t_{PZH}	GND
t_{PLZ}/t_{PZL}	V_{CC}

Note: C_L includes probe and jig capacitance.



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