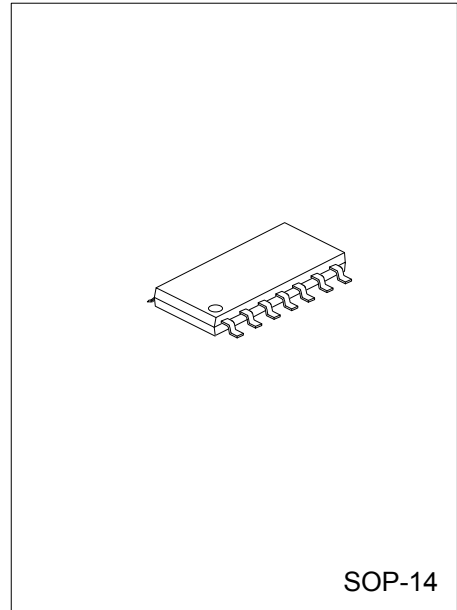




U74AHC126

CMOS IC

QUADRUPLE BUS BUFFER GATES WITH 3-STATE OUTPUTS



SOP-14

■ DESCRIPTION

The **U74HC126** is a quadruple bus buffer gate with 3-state outputs and 4 channels.

■ FEATURES

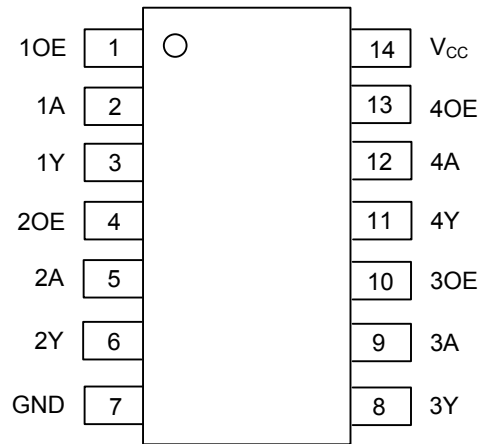
- * Operate from 2V to 5.5V
- * Max t_{pd} of 5.5ns at 5 V($CL=15pF$)
- * Typical $V_{IH} < 2.1V$ at $V_{CC}=3V, T_a=25^\circ C$
- * Typical $V_{IL} > 0.9V$ at $V_{CC}=3V, T_a=25^\circ C$

■ ORDERING INFORMATION

Ordering Number	Package	Packing
U74AHC126G-S14-R	SOP-14	Tape Reel

<p>U74AHC126G-S14-T</p> <p>(1)Packing Type (2)Package Type (3)Halogen Free</p>	<p>(1) R: Tape Reel (2) S14: SOP-14 (3) G: Halogen Free</p>
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■ PIN CONFIGURATION

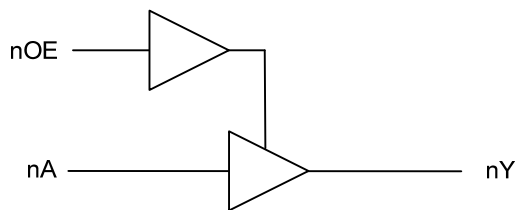


■ FUNCTION TABLE

INPUTS(OE)	INPUTS(A)	OUTPUT(Y)
H	L	L
H	H	H
L	X	Z

Note: H: HIGH voltage level L: LOW voltage level Z: high impedance X: don't care

■ LOGIC DIAGRAM



■ ABSOLUTE MAXIMUM RATING

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_{CC} or GND Current	I_{CC}	±50	mA
Output Current	I_{OUT}	±25	mA
Input Clamp Current	I_{IK}	-20	mA
Output Clamp Current	I_{OK}	±20	mA
Operating Temperature	T_{OPR}	-40 ~ + 85	°C
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.

■ THERMAL DATA

PARAMETER	SYMBOL	MIN	TYP	MAX	UNIT
Junction to Ambient	θ_{JA}			76	°C/W

■ RECOMMENDED OPERATING CONDITIONS

PARAMETER	SYMBOL	TEST CONDITIONS	MIN	TYP	MAX	UNIT
Supply Voltage	V_{CC}		2		5.5	V
High-Level Input Voltage	V_{IH}	$V_{CC}=2V$	1.5			V
		$V_{CC}=3V$	2.1			
		$V_{CC}=5.5V$	3.85			
Low-Level Input Voltage	V_{IL}	$V_{CC}=2V$			0.5	V
		$V_{CC}=3V$			0.9	
		$V_{CC}=5.5V$			1.65	
Input Voltage	V_{IN}		0		5.5	V
Output Voltage	V_{OUT}		0		V_{CC}	V
High-Level Input Current	I_{OH}	$V_{CC}=2V$			-50	μA
		$V_{CC}=3.3V \pm 0.3V$			-4	mA
		$V_{CC}=5V \pm 0.5V$			-8	mA
Low-Level Input Current	I_{OL}	$V_{CC}=2V$			50	μA
		$V_{CC}=3.3V \pm 0.3V$			4	mA
		$V_{CC}=5V \pm 0.5V$			8	mA
Input Transition Rise or Fall rate	t_r, t_f	$V_{CC}=3.3V \pm 0.3V$			100	ns/V
		$V_{CC}=5V \pm 0.5V$			20	

■ ELECTRICAL CHARACTERISTICS ($T_A=25^\circ C$)

PARAMETER	SYMBOL	TEST CONDITIONS	MIN	TYP	MAX	UNIT
Output Voltage High-Level	V_{OH}	$V_{CC}=2V, I_{OH}=-50\mu A$	1.9	2		V
		$V_{CC}=3V, I_{OH}=-50\mu A$	2.9	3		
		$V_{CC}=4.5V, I_{OH}=-50\mu A$	4.4	4.5		
		$V_{CC}=3V, I_{OH}=-4mA$	2.58			
		$V_{CC}=4.5V, I_{OH}=-8mA$	3.94			
Output Voltage Low-Level	V_{OL}	$V_{CC}=2V, I_{OL}=50\mu A$			0.1	V
		$V_{CC}=3V, I_{OL}=50\mu A$			0.1	
		$V_{CC}=4.5V, I_{OL}=50\mu A$			0.1	
		$V_{CC}=3V, I_{OL}=4mA$			0.36	
		$V_{CC}=4.5V, I_{OL}=8mA$			0.36	
Input Leakage Current	$I_{(LEAK)}$	$V_{CC}=0V \sim 5.5V, V_{IN}=V_{CC}$ or GND			±100	nA
Output Off-State Current	I_{OZ}	$V_{CC}=5.5V, V_{OUT}=V_{CC}$ or GND			±250	nA
Quiescent Supply Current	I_Q	$V_{CC}=5.5V, V_{IN}=V_{CC}$ or GND, $I_{OUT}=0$			4	μA
Input Capacitance	C_I	$V_{CC}=5V$		4	10	pF

■ SWITCHING CHARACTERISTICS($T_A=25^{\circ}\text{C}, C_L=15\text{pF}$)

PARAMETER	SYMBOL	TEST CONDITIONS	MIN	TYP	MAX	UNIT
Propagation Delay From Input A to Output Y	t_{PLH}/t_{PHL}	$V_{CC}=3.3\text{V}\pm 0.3\text{V}$	1		9.5	ns
		$V_{CC}=5\text{V}\pm 0.5\text{V}$	1		6.5	
Propagation Delay From Input OE to Output Y	t_{PZH}/t_{PZL}	$V_{CC}=3.3\text{V}\pm 0.3\text{V}$	1		9.5	ns
		$V_{CC}=5\text{V}\pm 0.5\text{V}$	1		6	
Propagation Delay From Input OE to Output Y	t_{PHZ}/t_{PLZ}	$V_{CC}=3.3\text{V}\pm 0.3\text{V}$	1		11.5	ns
		$V_{CC}=5\text{V}\pm 0.5\text{V}$	1		8	

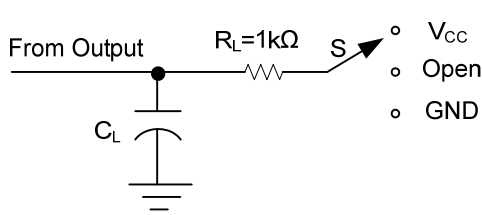
■ SWITCHING CHARACTERISTICS($T_A=25^{\circ}\text{C}, C_L=50\text{pF}$)

PARAMETER	SYMBOL	TEST CONDITIONS	MIN	TYP	MAX	UNIT
Propagation Delay From Input A to Output Y	t_{PLH}/t_{PHL}	$V_{CC}=3.3\text{V}\pm 0.3\text{V}$	1		13	ns
		$V_{CC}=5\text{V}\pm 0.5\text{V}$	1		8.5	
Propagation Delay From Input OE to Output Y	t_{PZH}/t_{PZL}	$V_{CC}=3.3\text{V}\pm 0.3\text{V}$	1		13	ns
		$V_{CC}=5\text{V}\pm 0.5\text{V}$	1		8	
Propagation Delay From Input OE to Output Y	t_{PHZ}/t_{PLZ}	$V_{CC}=3.3\text{V}\pm 0.3\text{V}$	1		15	ns
		$V_{CC}=5\text{V}\pm 0.5\text{V}$	1		10	

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

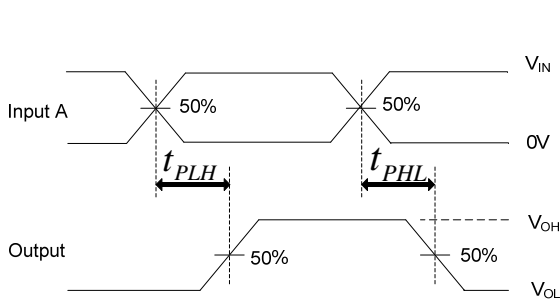
PARAMETER	SYMBOL	TEST CONDITIONS	MIN	TYP	MAX	UNIT
Power Dissipation Capacitance	Cpd	No Load, $f=1\text{MHz}$		14		pF

■ TEST CIRCUIT AND WAVEFORMS

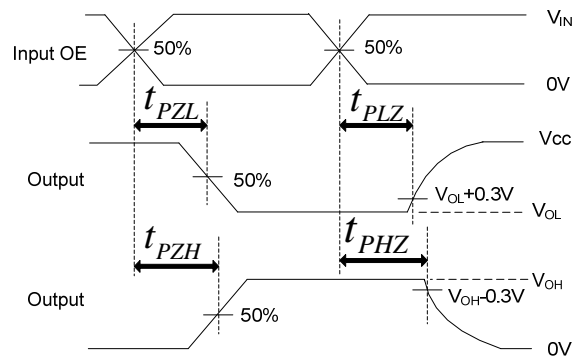


TEST CIRCUIT

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



PROPAGATION DELAY TIMES



ENABLE AND DISABLE TIMES

Note: C_L includes probe and jig capacitance.

All input pulses are supplied by generators having the following characteristics: PRR $\leq 1MHz$,
 $Z_o = 50\Omega$, $t_r \leq 3ns$, $t_f \leq 3ns$.

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