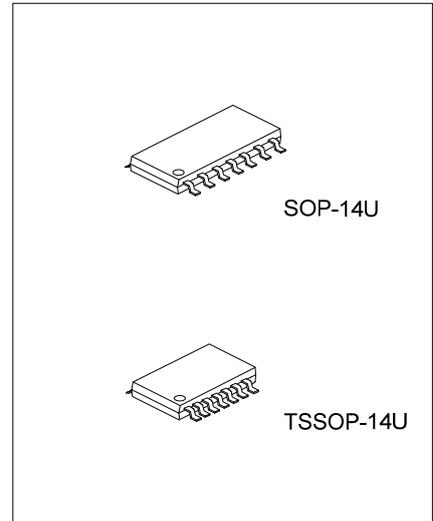




U74AHC126

CMOS IC

QUADRUPLE BUS BUFFER GATES WITH 3-STATE OUTPUTS



DESCRIPTION

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

FEATURES

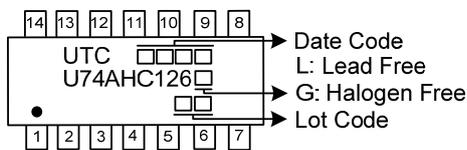
- * Operate from 2V to 5.5V
- * Max t_{pd} of 5.5ns at 5 V($CL=15pF$)
- * Typical $V_{IH} < 2.1V$ at $V_{CC}=3V, T_a=25^\circ C$
- * Typical $V_{IL} > 0.9V$ at $V_{CC}=3V, T_a=25^\circ C$

ORDERING INFORMATION

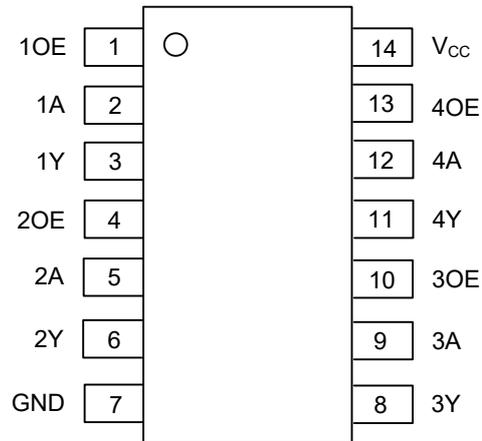
Ordering Number		Package	Packing
Lead Free	Halogen Free		
U74AHC126L-UEA-R	U74AHC126G-UEA-R	SOP-14U	Tape Reel
U74AHC126L-UEB-R	U74AHC126G-UEB-R	TSSOP-14U	Tape Reel

<p>U74AHC126G-UEA-R</p> <p>(1)Packing Type (2)Package Type (3)Green Package</p>	<p>(1) R: Tape Reel (2) UEA: SOP-14U, UEB: TSSOP-14U (3) G: Halogen Free and Lead Free, L: Lead Free</p>
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MARKING



■ PIN CONFIGURATION

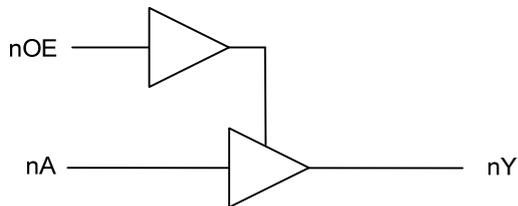


■ FUNCTION TABLE

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 (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
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
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 (Unless otherwise specified)

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
		$V_{CC}=5.5V$	3.85			V
Low-Level Input Voltage	V_{IL}	$V_{CC}=2V$			0.5	V
		$V_{CC}=3V$			0.9	V
		$V_{CC}=5.5V$			1.65	V
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	$\Delta t/\Delta V$	$V_{CC}=3.3V \pm 0.3V$			100	ns/V
		$V_{CC}=5V \pm 0.5V$			20	ns/V
Operating Temperature	T_A		-40		+125	°C

■ THERMAL DATA

PARAMETER	SYMBOL	RATINGS	UNIT
Junction to Ambient	SOP-14U	125	°C/W
	TSSOP-14U	150	°C/W

■ ELECTRICAL CHARACTERISTICS (Unless otherwise specified)

PARAMETER	SYMBOL	TEST CONDITIONS	MIN	TYP	MAX	UNIT
Output Voltage High-Level	V _{OH}	V _{CC} =2V, I _{OH} =-50μA	1.9	2		V
		V _{CC} =3V, I _{OH} =-50μA	2.9	3		V
		V _{CC} =4.5V, I _{OH} =-50μA	4.4	4.5		V
		V _{CC} =3V, I _{OH} =-4mA	2.58			V
		V _{CC} =4.5V, I _{OH} =-8mA	3.94			V
Output Voltage Low-Level	V _{OL}	V _{CC} =2V, I _{OL} =50μA			0.1	V
		V _{CC} =3V, I _{OL} =50μA			0.1	V
		V _{CC} =4.5V, I _{OL} =50μA			0.1	V
		V _{CC} =3V, I _{OL} =4mA			0.36	V
		V _{CC} =4.5V, I _{OL} =8mA			0.36	V
Input Leakage Current	I _{I(LEAK)}	V _{CC} =0V~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 (C_L=15pF, unless otherwise specified)

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

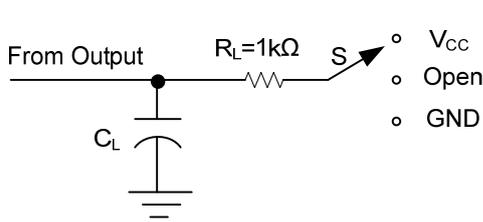
■ SWITCHING CHARACTERISTICS (C_L=50pF, unless otherwise specified)

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

■ OPERATING CHARACTERISTICS (Unless otherwise specified)

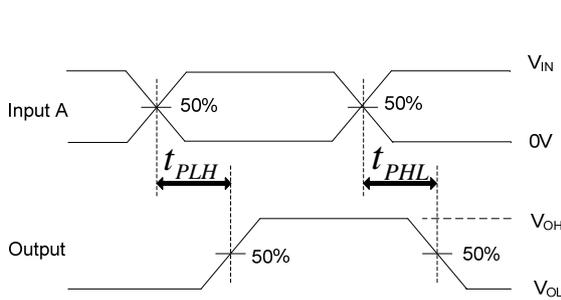
PARAMETER	SYMBOL	TEST CONDITIONS	MIN	TYP	MAX	UNIT
Power Dissipation Capacitance	C _{PD}	No Load, f=1MHz		14		pF

■ TEST CIRCUIT AND WAVEFORMS

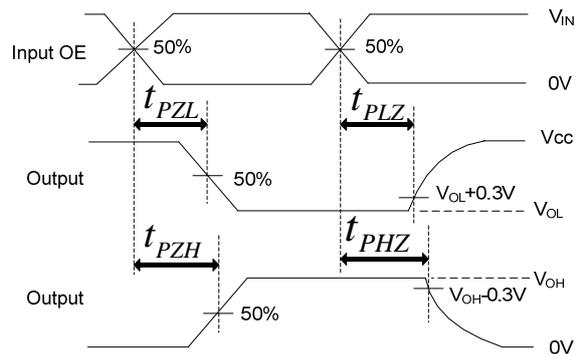


TEST CIRCUIT

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 ≤ 1 MHz, $Z_o = 50\Omega$, $t_r \leq 3$ ns, $t_f \leq 3$ ns.

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