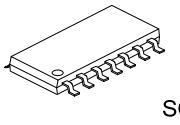
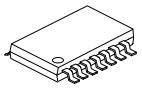
U74AHC126

CMOS IC

QUADRUPLE BUS BUFFER GATES WITH 3-STATE OUTPUTS



SOP-14U



TSSOP-14U

■ 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°C
* Typical V_{IL}> 0.9V at V_{CC}=3V, T_a=25°C

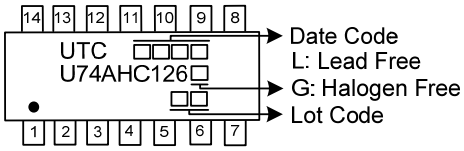
■ ORDERING INFORMATION

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

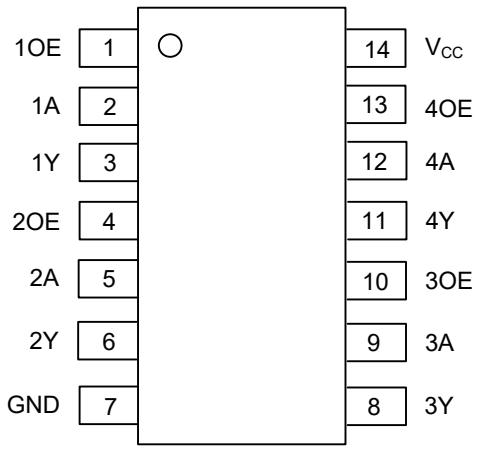
U74AHC126G-UEA-R
(1)Packing Type
(2)Package Type
(3)Green Package

(1) R: Tape Reel
(2) UEA: SOP-14U, UEB: TSSOP-14U
(3) G: Halogen Free and Lead Free, L: Lead Free

■ MARKING



■ PIN CONFIGURATION

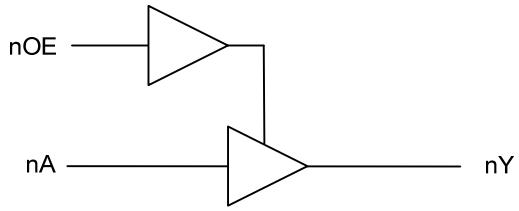


■ FUNCTION TABLE

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±0.3V			-4	mA
		V_{CC}=5V±0.5V			-8	mA
Low-Level Input Current	I_{OL}	V_{CC}=2V			50	μA
		V_{CC}=3.3V±0.3V			4	mA
		V_{CC}=5V±0.5V			8	mA
Input Transition Rise or Fall rate	$\Delta t/\Delta v$	V_{CC}=3.3V±0.3V			100	ns/V
		V_{CC}=5V±0.5V			20	ns/V
Operating Temperature	T_A		-40		+125	°C

■ THERMAL DATA

PARAMETER		SYMBOL	RATINGS	UNIT
Junction to Ambient	SOP-14U	θ_{JA}	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

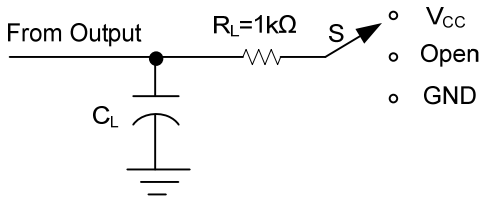
■ SWITCHING CHARACTERISTICS (C_L=50pF, unless otherwise specified)

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)

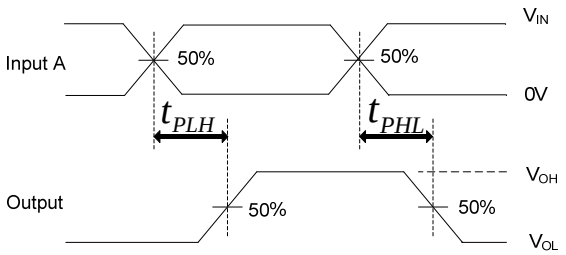
PARAMETER	SYMBOL	TEST CONDITIONS	MIN	TYP	MAX	UNIT
Power Dissipation Capacitance	C_{PD}	No Load, f=1MHz		14		pF

■ TEST CIRCUIT AND WAVEFORMS

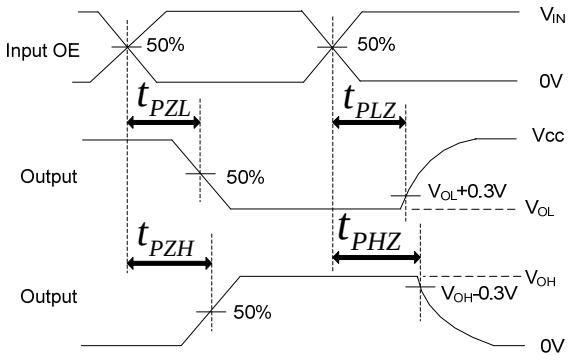


TEST CIRCUIT

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 ≤1MHz, Zo= 50Ω,tr≤3ns,tf≤3ns.