

**U74LVC2G126****CMOS IC****DUAL BUS BUFFER GATE
WITH 3-STATE OUTPUTS****DESCRIPTION**

The **U74LVC2G126** consists of two bus buffers with 3-state outputs controlled by the output enable inputs (nOE), when nOE is low, the output is disabling.

Inputs can be driven from either 3.3V or 5V devices, so the device can be used in a mix 3.3V/5V system.

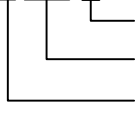
This device is full specified for partial power-down protective circuit, preventing the backflow current through the device when it is powered down.

FEATURES

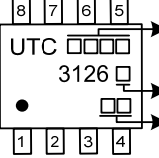
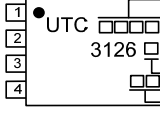
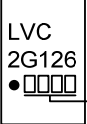
- * Operation voltage range: 1.65~5.5V
- * Support 5V V_{CC} operation
- * Low power dissipation
- * Input accept voltage to 5.5V

ORDERING INFORMATION

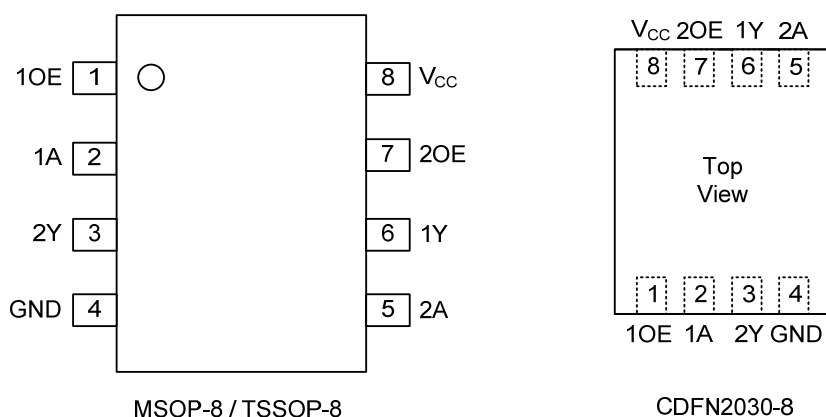
Ordering Number		Package	Packing
Lead Free	Halogen Free		
U74LVC2G126L-SM1-R	U74LVC2G126G-SM1-R	MSOP-8	Tape Reel
U74LVC2G126L-P08-R	U74LVC2G126G-P08-R	TSSOP-8	Tape Reel
U74LVC2G126L-CK08-2030-R	U74LVC2G126G-CK08-2030-R	CDFN2030-8	Tape Reel

U74LVC2G126G-SM1-R  (1) Packing Type (2) Package Type (3) Green Package	(1) R: Tape Reel (2) SM1: MSOP-8, P08: TSSOP-8 CK08-2030: CDFN2030-8 (3) G: Halogen Free and Lead Free, L: Lead Free
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MARKING

MSOP-8	TSSOP-8
 UTC □□□□ → Date Code L: Lead Free G: Halogen Free □□□□ → Lot Code	 UTC □□□□ → Date Code L: Lead Free G: Halogen Free □□□□ → Lot Code
CDFN2030-8	-
 LVC 2G126 ●□□□□ → Date Code	-

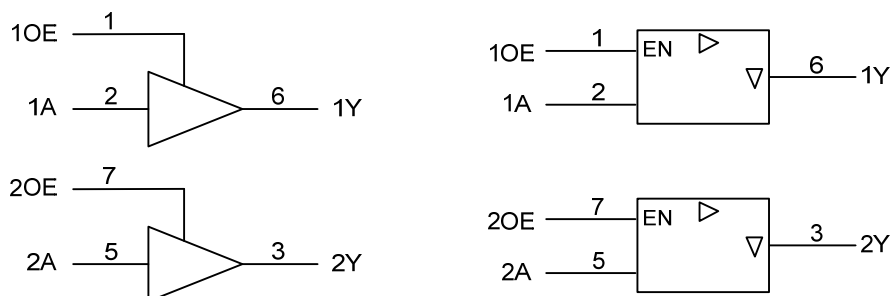
PIN CONFIGURATION



FUNCTION TABLE (each gate)

INPUT(nOE)	INPUT(A)	OUTPUT(Y)
H	L	L
H	H	H
L	X	Z

LOGIC DIAGRAM (positive logic)



■ ABSOLUTE MAXIMUM RATING (unless otherwise specified)

PARAMETER		SYMBOL	RATINGS	UNIT
Supply Voltage		V_{CC}	-0.5 ~ 6.5	V
Input Voltage		V_{IN}	-0.5 ~ 6.5	V
Output Voltage	Enable	V_{OUT}	-0.5 ~ $V_{CC}+0.5$	V
	Disable		-0.5 ~ 6.5	V
	Power-down		-0.5 ~ 6.5	V
V_{CC} or GND Current		I_{CC}	±100	mA
Input Clamp Current ($V_{IN}<0$)		I_{IK}	-50	mA
Output Clamp Current ($V_{OUT}<0$)		I_{OK}	-50	mA
Output Current		I_{OUT}	±50	mA
Power Dissipation	MSOP-8/TSSOP-8	P_D	300	mW
	CDFN2030-8		250	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}		1.65		5.5	V
Input Voltage		V_{IN}		0		5.5	V
Output Voltage	Enable	V_{OUT}	$V_{CC}=1.65\sim 5.5V$	0		V_{CC}	V
	Disable		$V_{CC}=1.65\sim 5.5V$	0		5.5	V
	Power-down		$V_{CC}=0V$	0		5.5	V
Input Transition Rise or Fall Rate		t_R, t_F	$V_{CC}=1.65\sim 2.7V$	0		20	ns/V
			$V_{CC}=2.7\sim 5.5V$	0		10	ns/V
Operating Temperature		T_A		-40		125	°C

■ STATIC CHARACTERISTICS (T_A=25°C, unless otherwise specified)

PARAMETER	SYMBOL	TEST CONDITIONS	MIN	TYP	MAX	UNIT
Positive-Going Input Threshold Voltage	V _{T+}	V _{CC} =1.65V~1.95V	0.65× V _{CC}			V
		V _{CC} =2.3V~2.7V	1.7			V
		V _{CC} =2.7V~3.6V	2			V
		V _{CC} =4.5V~5.5V	0.7× V _{CC}			V
Negative-Going Input Threshold Voltage	V _{T-}	V _{CC} =1.65V~1.95V			0.35× V _{CC}	V
		V _{CC} =2.3V~2.7V			0.7	V
		V _{CC} =2.7V~3.6V			0.8	V
		V _{CC} =4.5V~5.5V			0.3× V _{CC}	V
High-Level Output Voltage	V _{OH}	V _{CC} =1.65V~5.5V, I _{OH} =-100μA	V _{CC} -0.1			V
		V _{CC} =1.65V, I _{OH} =-4mA	1.2			V
		V _{CC} =2.3V, I _{OH} =-8mA	1.9			V
		V _{CC} =2.7V, I _{OH} =-12mA	2.2			V
		V _{CC} =3V, I _{OH} =-24mA	2.3			V
		V _{CC} =4.5V, I _{OH} =-32mA	3.8			V
Low-Level Output Voltage	V _{OL}	V _{CC} =1.65V~5.5V, I _{OL} =100μA			0.1	V
		V _{CC} =1.65V, I _{OL} =4mA			0.45	V
		V _{CC} =2.3V, I _{OL} =8mA			0.3	V
		V _{CC} =2.7V, I _{OL} =12mA			0.4	V
		V _{CC} =3V, I _{OL} =24mA			0.55	V
		V _{CC} =4.5V, I _{OL} =32mA			0.55	V
Input Leakage Current	I _{I(LEAK)}	V _{CC} =5.5V, V _{IN} =5.5V or GND		±0.1	±5	μA
Output OFF -State Current	I _{OZ}	V _{CC} =3.6V, V _{OUT} =V _{CC} or GND		±0.1	±10	μA
Power OFF Leakage Current	I _{OFF}	V _{CC} =0V, V _{IN} or V _{OUT} =5.5V		±0.1	±10	μA
Quiescent Supply Current	I _Q	V _{CC} =5.5V, V _{IN} =V _{CC} or GND I _{OUT} =0		0.1	10	μA
Additional Quiescent Supply Current	Δ I _Q	V _{CC} =2.3V~5.5V, One input at V _{CC} - 0.6V, other inputs at V _{CC} or GND		5	500	μA
Input Capacitance	C _{IN}	V _{CC} =3.3V, V _{IN} =V _{CC} or GND		4		pF

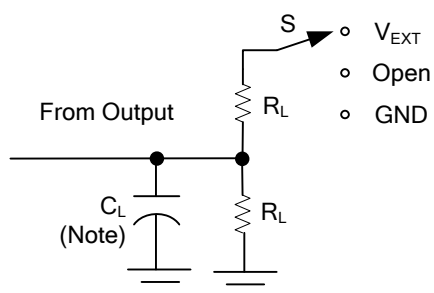
■ DYNAMIC CHARACTERISTICS (T_A=25°C, unless otherwise specified)

PARAMETER	SYMBOL	TEST CONDITIONS	MIN	TYP	MAX	UNIT
Propagation Delay From Input(A) to Output(Y)	t _{PHL} /t _{PLH}	V _{CC} =1.8V±0.15V	0.1		16.8	ns
		V _{CC} =2.5V±0.2V	0.1		14.9	ns
		V _{CC} =2.7V	0.1		14.7	ns
		V _{CC} =3.3V±0.3V	0.1		11.3	ns
		V _{CC} =5.0V±0.5V	0.1		8.2	ns
Propagation Delay From Input(nOE) to Output(Y)	t _{PZH} /t _{PZL}	V _{CC} =1.8V±0.15V	0.1		13.2	ns
		V _{CC} =2.5V±0.2V	0.1		11.1	ns
		V _{CC} =2.7V	0.1		10.7	ns
		V _{CC} =3.3V±0.3V	0.1		8.9	ns
		V _{CC} =5.0V±0.5V	0.1		7.1	ns
Propagation Delay From Input(nOE) to Output(Y)	t _{PLZ} /t _{PHZ}	V _{CC} =1.8V±0.15V	0.1		18.6	ns
		V _{CC} =2.5V±0.2V	0.1		15.7	ns
		V _{CC} =2.7V	0.1		15.5	ns
		V _{CC} =3.3V±0.3V	0.1		12.4	ns
		V _{CC} =5.0V±0.5V	0.1		8.9	ns

■ OPERATING CHARACTERISTICS (T_A=25°C, unless otherwise specified)

PARAMETER	SYMBOL	TEST CONDITIONS	MIN	TYP	MAX	UNIT
Power Dissipation Capacitance	C _{PD}	Output Enable		17		pF
		Output Disable		5		pF

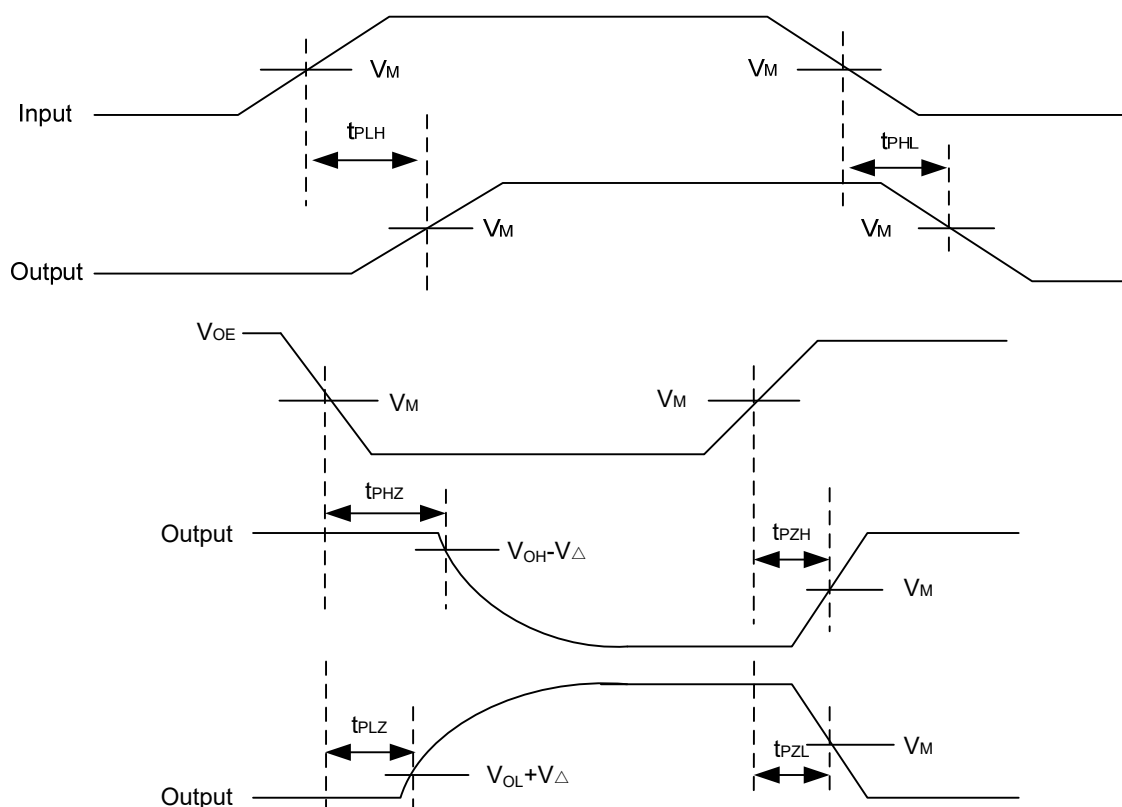
■ TEST CIRCUIT AND WAVEFORMS



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

Note : C_L includes probe and jig capacitance.

V_{CC}	V_{IN}	t_R, t_F	V_M	V_{EXT}	C_L	R_L	V_{Δ}
$1.8V \pm 0.15V$	V_{CC}	$\leq 2ns$	$V_{CC}/2$	$2 * V_{CC}$	30pF	1K Ω	0.15V
$2.5V \pm 0.2V$	V_{CC}	$\leq 2ns$	$V_{CC}/2$	$2 * V_{CC}$	30pF	500 Ω	0.15V
2.7V	2.7V	$\leq 2.5ns$	1.5V	6V	50pF	500 Ω	0.3V
$3.3V \pm 0.3V$	2.7V	$\leq 2.5ns$	1.5V	6V	50pF	500 Ω	0.3V
$5V \pm 0.5V$	V_{CC}	$\leq 2.5ns$	$V_{CC}/2$	$2 * V_{CC}$	50pF	500 Ω	0.3V



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