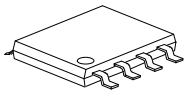
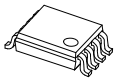
U74LVC2G126B **Preliminary** ***CMOS IC***

DUAL BUS BUFFER GATE WITH 3-STATE OUTPUTS



MSOP-8



VSSOP-8

■ DESCRIPTION

The **U74LVC2G126B** 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

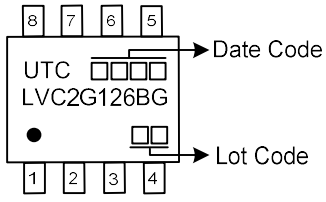
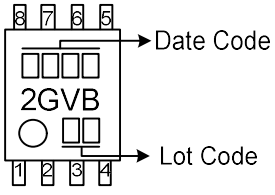
* Operation voltage range: 1.65 ~ 5.5V
* Support 5V V_{CC} operation
* Low power dissipation
* Input accept voltage to 5.5V
* Green & Pb free

■ ORDERING INFORMATION

Ordering Number	Package	Packing
U74LVC2G126BG-SM1-R	MSOP-8	Tape Reel
U74LVC2G126BG-V08-R	VSSOP-8	Tape Reel

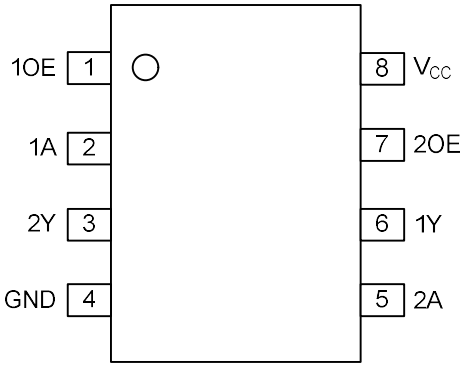
U74LVC2G126BG-SM1-R (1)Packing Type (2)Package Type (3)Green Package	(1) R: Tape Reel (2) SM1: MSOP-8, V08: VSSOP-8 (3) G: Halogen Free and Lead Free

■ MARKING

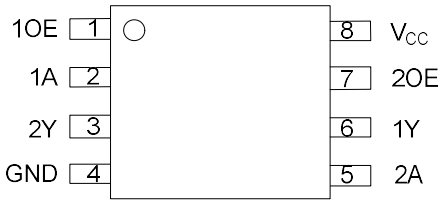
MSOP-8	VSSOP-8
	

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■ PIN CONFIGURATION



MSOP-8

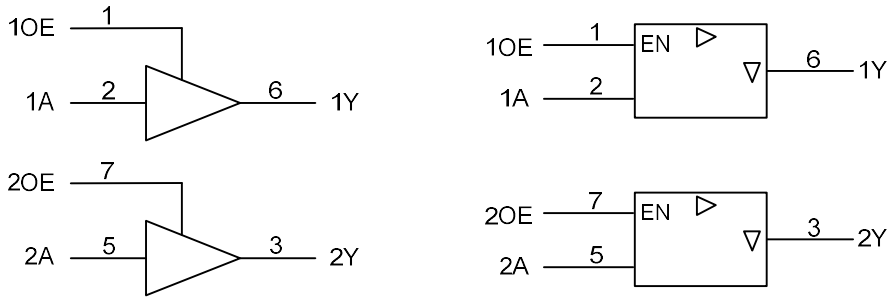


VSSOP-8

■ 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 RATINGS (NOTE)

PARAMETER		SYMBOL	CONDITIONS	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		I_{IK}	$V_{IN}<0$	-50	mA
Output Clamp Current		I_{OK}	$V_{OUT}<0$	-50	mA
Output Current		I_{OUT}		±50	mA
Power Dissipation	MSOP-8	P_D		300	mW
	VSSOP-8			250	mW
Storage Temperature		T_{STG}		-65 ~ +150	°C

Notes: 1. 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.
2. It's guarantee by design, the parameter is not production tested.

■ RECOMMENDED OPERATING CONDITIONS (NOTE)

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} =1.65~5.5V	0		V_{CC}	V
	Disable		V_{CC} =1.65~5.5V	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} =1.65~2.7V	0		20	ns/V
			V_{CC} =2.7~5.5V	0		10	ns/V
Operating Temperature		T_A		-40		125	°C

Note: It's guarantee by design, the parameter is not production tested.

■ STATIC CHARACTERISTICS (NOTE)

PARAMETER		SYMBOL	TEST CONDITIONS	T_A=25°C			T_A=-40~+125°C			UNIT
				MIN	TYP	MAX	MIN	TYP	MAX	
Positive-Going Input Threshold Voltage		V_{T+}	V_{CC}=1.65V~1.95V	0.65×V_{CC}			0.65×V_{CC}			V
			V_{CC}=2.3V~2.7V	1.7			1.7			V
			V_{CC}=2.7V~3.6V	2			2			V
			V_{CC}=4.5V~5.5V	0.7×V_{CC}			0.7×V_{CC}			V
Negative-Going Input Threshold Voltage		V_{T-}	V_{CC}=1.65V~1.95V			0.35×V_{CC}			0.35×V_{CC}	V
			V_{CC}=2.3V~2.7V			0.7			0.7	V
			V_{CC}=2.7V~3.6V			0.8			0.8	V
			V_{CC}=4.5V~5.5V			0.3×V_{CC}			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_{CC} -0.1			V
			V_{CC}=1.65V, I_{OH}=-4mA	1.2			0.95			V
			V_{CC}=2.3V, I_{OH}=-8mA	1.9			1.7			V
			V_{CC}=2.7V, I_{OH}=-12mA	2.2			1.9			V
			V_{CC}=3V, I_{OH}=-24mA	2.3			2.0			V
			V_{CC}=4.5V, I_{OH}=-32mA	3.8			3.4			V
Low-Level Output Voltage		V_{OL}	V_{CC}=1.65V~5.5V, I_{OL}=100μA			0.1			0.1	V
			V_{CC}=1.65V, I_{OL}=4mA			0.45			0.7	V
			V_{CC}=2.3V, I_{OL}=8mA			0.3			0.45	V
			V_{CC}=2.7V, I_{OL}=12mA			0.4			0.6	V
			V_{CC}=3V, I_{OL}=24mA			0.55			0.8	V
			V_{CC}=4.5V, I_{OL}=32mA			0.55			0.8	V
Input Leakage Current		$I_{I(LEAK)}$	V_{CC}=5.5V, V_{IN}=5.5V or GND		±0.1	±5			±5	μA
Output OFF -State Current		I_{OZ}	V_{CC}=3.6V, V_{OUT}=V_{CC} or GND		±0.1	±10			±10	μA
Power OFF Leakage Current		I_{OFF}	V_{CC}=0V, V_{IN} or V_{OUT} =5.5V		±0.1	±10			±10	μA
Quiescent Supply Current		I_Q	V_{CC}=5.5V, V_{IN}=V_{CC} or GND I_{OUT}=0		0.1	10			10	μA
Additional Quiescent Supply Current		ΔI_Q	V_{CC}=2.3V~5.5V, One input at V_{CC}- 0.6V, other inputs at V_{CC} or GND			500			500	μA
Input Capacitance	Data inputs	C_{IN}	V_{CC}=3.3V, V_{IN}=V_{CC} or GND		3					pF
	Control inputs				2					

Note: It's guarantee by design, the parameter is not production tested.

■ DYNAMIC CHARACTERISTICS (NOTE)

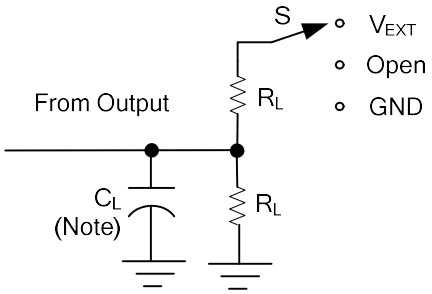
PARAMETER	SYMBOL	TEST CONDITIONS	T_A=25°C			T_A=-40~+125°C			UNIT
			MIN	TYP	MAX	MIN	TYP	MAX	
Propagation Delay From Input (A) to Output (Y)	t_{PD} (t_{PLH}/t_{PHL})	V_{CC}=1.8V±0.15V	0.1		12.5			15.6	ns
		V_{CC}=2.5V±0.2V	0.1		11.6			14.7	ns
		V_{CC}=2.7V	0.1		11.4			14.5	ns
		V_{CC}=3.3V±0.3V	0.1		8.9			11.9	ns
		V_{CC}=5.0V±0.5V	0.1		6.5			9.4	ns
Propagation Delay From Input (nOE) to Output (Y)	t_{en} (t_{PZL}/t_{PZH})	V_{CC}=1.8V±0.15V	0.1		14.5			17.6	ns
		V_{CC}=2.5V±0.2V	0.1		12.4			15.5	ns
		V_{CC}=2.7V	0.1		11.1			14.2	ns
		V_{CC}=3.3V±0.3V	0.1		8.9			11.9	ns
		V_{CC}=5.0V±0.5V	0.1		6.8			9.7	ns
Propagation Delay From Input (nOE) to Output (Y)	t_{dis} (t_{PLZ}/t_{PHZ})	V_{CC}=1.8V±0.15V	0.1		10.9			14.0	ns
		V_{CC}=2.5V±0.2V	0.1		9.7			12.8	ns
		V_{CC}=2.7V	0.1		9.4			12.5	ns
		V_{CC}=3.3V±0.3V	0.1		8.1			11.1	ns
		V_{CC}=5.0V±0.5V	0.1		6.8			9.7	ns

Note: It's guarantee by design, the parameter is not production tested.

■ 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

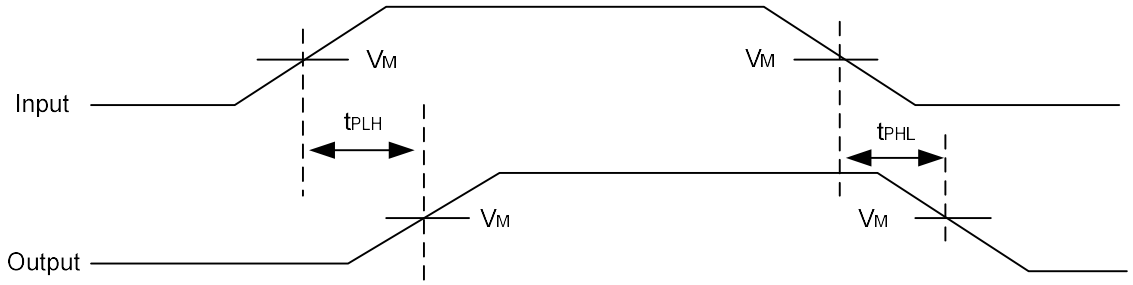
■ TEST CIRCUIT AND WAVEFORMS

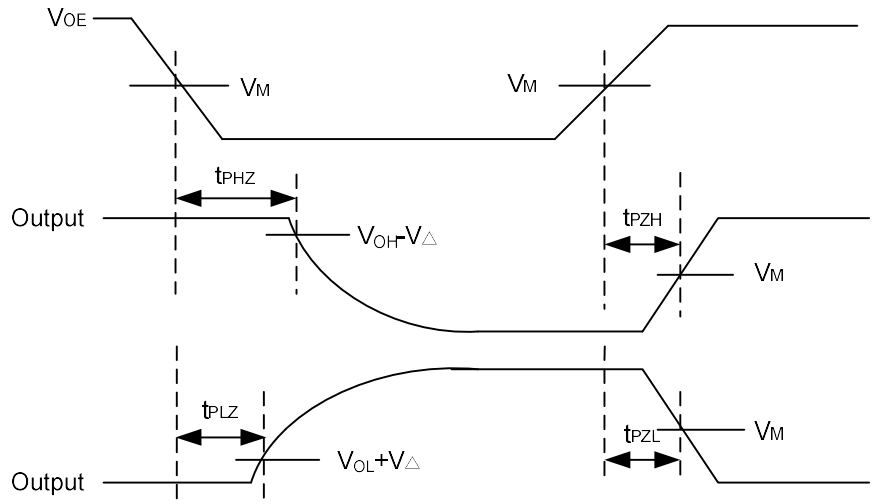


TEST	S
t_{PLH}/t_{PHL}	Open
t_{PHZ}/t_{PZH}	GND
t_{PLZ}/t_{PZL}	V_{EXT}

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±0.15V	V_{CC}	≤ 2ns	$V_{CC}/2$	2×V_{CC}	30pF	1KΩ	0.15V
2.5V±0.2V	V_{CC}	≤ 2ns	$V_{CC}/2$	2×V_{CC}	30pF	500Ω	0.15V
2.7V	2.7V	≤ 2.5ns	1.5V	6V	50pF	500Ω	0.3V
3.3V±0.3V	2.7 V	≤ 2.5ns	1.5V	6V	50pF	500Ω	0.3V
5V±0.5V	V_{CC}	≤ 2.5ns	$V_{CC}/2$	2×V_{CC}	50pF	500Ω	0.3V





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