



U74LVC2G34

CMOS IC

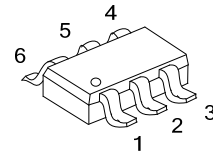
DUAL BUFFER GATE

DESCRIPTION

The **U74LVC2G34** is a dual buffer, it provides the function $Y = A$. This device has power-down protective circuit, preventing device destruction when it is powered down.

FEATURES

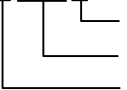
- * Operate From 1.65V to 5.5V
- * Inputs Accept Voltages to 5.5V
- * I_{OFF} Supports Partial-Power-Down Mode
- * Low Power Dissipation
- * Max t_{PD} of 4.1 ns at 3.3V



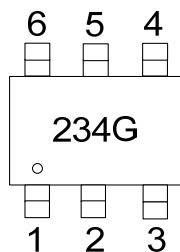
SOT-363

ORDERING INFORMATION

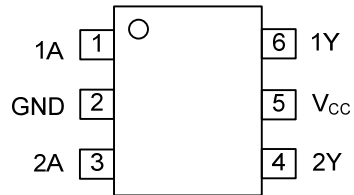
Ordering Number	Package	Packing
U74LVC2G34G-AL6-R	SOT-363	Tape Reel

U74LVC2G34G-AL6-R	
	(1) Packing Type (2) Package Type (3) Halogen Free
	(1) R: Tape Reel (2) AL6: SOT-363 (3) G: Halogen Free

MARKING



■ PIN CONFIGURATION

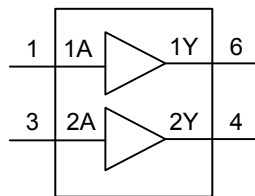


■ FUNCTION TABLE

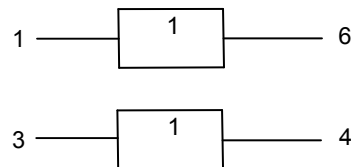
INPUT(nA)	OUTPUT(nY)
H	H
L	L

Note: H: HIGH voltage level; L: LOW voltage level.

■ LOGIC DIAGRAM (Positive Logic)



Logic Symbol



IEC Logic Symbol

■ ABSOLUTE MAXIMUM RATING

PARAMETER		SYMBOL	RATINGS	UNIT
Supply Voltage		V_{CC}	-0.5 ~ +6.5	V
Input Voltage		V_{IN}	-0.5 ~ +6.5	V
Output Voltage	Active mode	V_{OUT}	-0.5 ~ $V_{CC}+0.5$	V
	Power-down mode		-0.5 ~ +6.5	V
V_{CC} or GND Current		I_{CC}	±100	mA
Continuous Output Current ($V_{OUT}=0$ to V_{CC})		I_{OUT}	± 50	mA
Input Clamp Current ($V_{IN}<0$)		I_{IK}	- 50	mA
Output Clamp Current ($V_{OUT}<0$ or $V_{OUT}>V_{CC}$)		I_{OK}	± 50	mA
Power Dissipation ($T_A=-40^{\circ}\text{C}$ to $+125^{\circ}\text{C}$)		P_D	300	mW
Storage Temperature Range		T_{STG}	-65 ~ +150	$^{\circ}\text{C}$

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	TEST CONDITIONS	MIN	TYP	MAX	UNIT
Supply Voltage	V_{CC}	Operating	1.65		5.5	V
Input Voltage	V_{IN}		0		5.5	V
Output Voltage	V_{OUT}	Active mode	0		V_{CC}	V
		$V_{CC}=0\text{V}$, Power-down mode	0		5.5	V
Operating Temperature	T_A		-40		125	$^{\circ}\text{C}$
Input Rise or Fall Times	t_R / t_F	$V_{CC}=1.65\text{V} \sim 2.7\text{V}$	0		20	ns/V
		$V_{CC}=2.7\text{V} \sim 5.5\text{V}$	0		10	ns/V

■ ELECTRICAL CHARACTERISTICS ($T_A=25^{\circ}\text{C}$, unless otherwise specified)

PARAMETER	SYMBOL	TEST CONDITIONS	MIN	TYP	MAX	UNIT
High-Level Input Voltage	V_{IH}	$V_{CC}=1.65\text{V} \sim 1.95\text{V}$	$0.65 \cdot V_{CC}$			V
		$V_{CC}=2.3\text{V} \sim 2.7\text{V}$	1.7			V
		$V_{CC}=3\text{V} \sim 3.6\text{V}$	2			V
		$V_{CC}=4.5\text{V} \sim 5.5\text{V}$	$0.7 \cdot V_{CC}$			V
Low-Level Input Voltage	V_{IL}	$V_{CC}=1.65\text{V} \sim 1.95\text{V}$			$0.35 \cdot V_{CC}$	V
		$V_{CC}=2.3\text{V} \sim 2.7\text{V}$			0.7	V
		$V_{CC}=3\text{V} \sim 3.6\text{V}$			0.8	V
		$V_{CC}=4.5\text{V} \sim 5.5\text{V}$			$0.3 \cdot V_{CC}$	V
High-Level Output Voltage	V_{OH}	$I_{OH}=-100\mu\text{A}$ $V_{CC}=1.65 \sim 5.5\text{V}$	$V_{CC}-0.1$			V
		$I_{OH}=-4\text{mA}$ $V_{CC}=1.65\text{V}$	1.2			V
		$I_{OH}=-8\text{mA}$ $V_{CC}=2.3\text{V}$	1.9			V
		$I_{OH}=-12\text{mA}$ $V_{CC}=2.7\text{V}$	2.2			V
		$I_{OH}=-24\text{mA}$ $V_{CC}=3.0\text{V}$	2.3			V
		$I_{OH}=-32\text{mA}$ $V_{CC}=4.5\text{V}$	3.8			V
Low-Level Output Voltage	V_{OL}	$I_{OL}=100\mu\text{A}$ $V_{CC}=1.65 \sim 5.5\text{V}$			0.1	V
		$I_{OL}=4\text{mA}$ $V_{CC}=1.65\text{V}$			0.45	V
		$I_{OL}=8\text{mA}$ $V_{CC}=2.3\text{V}$			0.3	V
		$I_{OL}=12\text{mA}$ $V_{CC}=2.7\text{V}$			0.4	V
		$I_{OL}=24\text{mA}$ $V_{CC}=3.0\text{V}$			0.55	V
		$I_{OL}=32\text{mA}$ $V_{CC}=4.5\text{V}$			0.55	V
Input Leakage Current	$I_{I(LEAK)}$	$V_{IN}=5.5\text{V}$ or GND, $V_{CC}=5.5\text{V}$			± 5	μA
Power OFF Leakage Current	I_{OFF}	V_{IN} or $V_{OUT}=5.5\text{V}$, $V_{CC}=0\text{V}$			± 10	μA
Quiescent Supply Current	I_Q	$V_{IN}=5.5\text{V}$ or GND, $I_{OUT}=0$ $V_{CC}=5.5\text{V}$			10	μA
Additional Quiescent Supply Current Per Input Pin	ΔI_Q	$V_{CC}=2.3 \sim 5.5\text{V}$, $I_{OUT}=0$ One input at $V_{CC}-0.6\text{V}$, Other inputs at V_{CC} or GND			500	μA
Input Capacitance	C_{IN}			2.5		pF

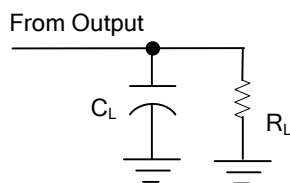
■ SWITCHING CHARACTERISTICS (T_A=25°C)

PARAMETER	SYMBOL	TEST CONDITIONS		MIN	TYP	MAX	UNIT
Propagation delay from input (nA) to output(nY)	t _{PLH} / t _{PHL}	V _{CC} =1.65V~1.95V, R _L =1KΩ	C _L =30pF	1.0	3.8	8.6	ns
		V _{CC} =2.3V~2.7V, R _L =500Ω		0.5	2.4	4.4	ns
		V _{CC} =2.7V, R _L =500Ω	C _L =50pF	0.5	2.5	5.0	ns
		V _{CC} =3.0V~3.6V, R _L =500Ω		0.5	2.2	4.1	ns
		V _{CC} =4.5V~5.5V, R _L =500Ω		0.5	1.9	3.2	ns

■ OPERATING CHARACTERISTICS (T_A=25°C)

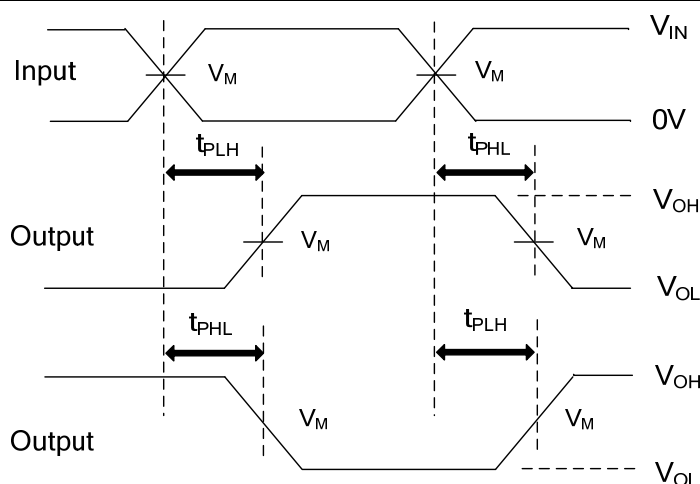
PARAMETER	SYMBOL	TEST CONDITIONS	MIN	TYP	MAX	UNIT
Power Dissipation Capacitance	C _{PD}	V _{CC} =3.3V, V _{IN} =GND to V _{CC}		20		pF

■ TEST CIRCUIT AND WAVEFORMS



TEST CIRCUIT

V_{CC}	INPUTS		V_M	C_L	R_L
	V_{IN}	t_R, t_F			
1.65V ~ 1.95V	V_{CC}	$\leq 2\text{ns}$	$V_{CC}/2$	30pF	1K Ω
2.3V ~ 2.7V	V_{CC}	$\leq 2\text{ns}$	$V_{CC}/2$	30pF	500 Ω
2.7V	2.7V	$\leq 2.5\text{ns}$	1.5V	50pF	500 Ω
3.0V ~ 3.6V	2.7V	$\leq 2.5\text{ns}$	1.5V	50pF	500 Ω
4.5V ~ 5.5V	V_{CC}	$\leq 2.5\text{ns}$	$V_{CC}/2$	50pF	500 Ω



PROPAGATION DELAY TIMES

Note: C_L includes probe and jig capacitance.

All input pulses are supplied by generators having the following characteristics: PRR $\leq 10\text{MHz}$, $Z_o = 50\Omega$.

UTC assumes no responsibility for equipment failures that result from using products at values that exceed, even momentarily, rated values (such as maximum ratings, operating condition ranges, or other parameters) listed in products specifications of any and all UTC products described or contained herein. UTC products are not designed for use in life support appliances, devices or systems where malfunction of these products can be reasonably expected to result in personal injury. Reproduction in whole or in part is prohibited without the prior written consent of the copyright owner. The information presented in this document does not form part of any quotation or contract, is believed to be accurate and reliable and may be changed without notice.