



U74LVC2G34

CMOS IC

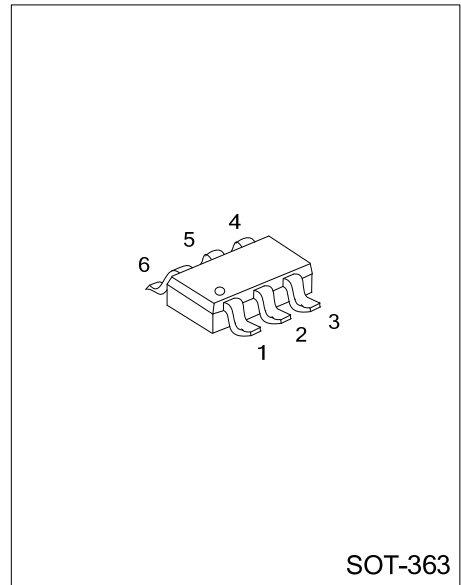
DUAL BUFFER GATE

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

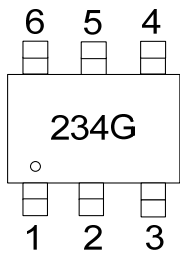


ORDERING INFORMATION

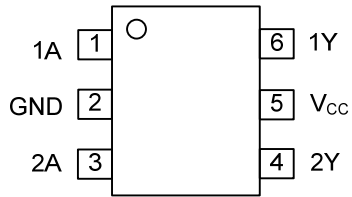
Ordering Number	Package	Packing
U74LVC2G34G-AL6-R	SOT-363	Tape Reel

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



■ PIN CONFIGURATION

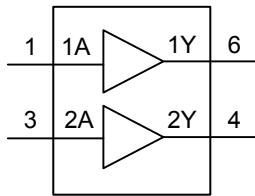


■ FUNCTION TABLE

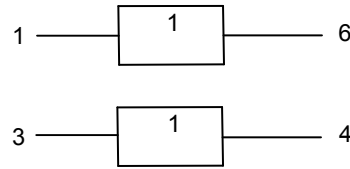
INPUT(nA)	OUTPUT(nY)
H	H
L	L

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 ($T_A=-40^{\circ}C$ to $+125^{\circ}C$)		P_D	300	mW
Storage Temperature Range		T_{STG}	-65 ~ +150	$^{\circ}C$

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
		$V_{CC}=0V$, Power-down mode	0		5.5	V
Operating Temperature	T_A		-40		125	$^{\circ}C$
Input Rise or Fall Times	t_R / t_F	$V_{CC}=1.65V \sim 2.7V$	0		20	ns/V
		$V_{CC}=2.7V \sim 5.5V$	0		10	ns/V

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

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

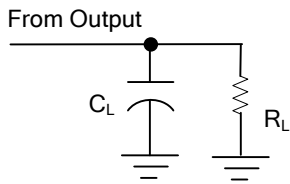
■ SWITCHING CHARACTERISTICS (T_A=25°C)

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)

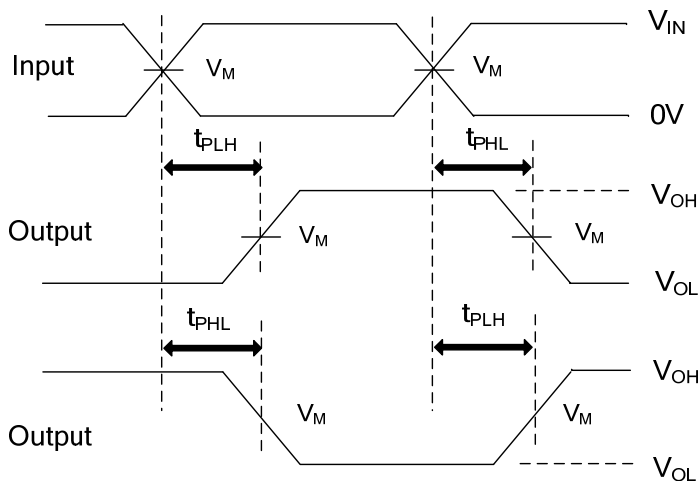
PARAMETER	SYMBOL	TEST CONDITIONS	MIN	TYP	MAX	UNIT
Power Dissipation Capacitance	C _{PD}	V _{CC} =3.3V, V _{IN} =GND to V _{CC}		20		pF

■ 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}	≤2ns	V _{CC} /2	30pF	1KΩ
2.3V ~ 2.7V	V _{CC}	≤2ns	V _{CC} /2	30pF	500Ω
2.7V	2.7V	≤2.5ns	1.5V	50pF	500Ω
3.0V ~ 3.6V	2.7V	≤2.5ns	1.5V	50pF	500Ω
4.5V ~ 5.5V	V _{CC}	≤2.5ns	V _{CC} /2	50pF	500Ω



PROPAGATION DELAY TIMES

Note: C_L includes probe and jig capacitance.

All input pulses are supplied by generators having the following characteristics: PRR ≤10MHz, Z_o = 50Ω.

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