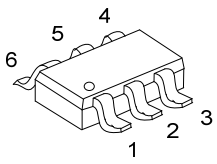
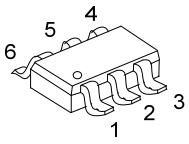
U74LVC2G34

CMOS IC

DUAL BUFFER GATE



SOT-26



SOT-363

X1DFN1010-6

X1DFN1410-6

■ 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
Lead Free	Halogen Free		
U74LVC2G34L-AG6-R	U74LVC2G34G-AG6-R	SOT-26	Tape Reel
U74LVC2G34L-AL6-R	U74LVC2G34G-AL6-R	SOT-363	Tape Reel
U74LVC2G34L-K06-1010X1-R	U74LVC2G34G-K06-1010X1-R	X1DFN1010-6	Tape Reel
U74LVC2G34L-K06-1410X1-R	U74LVC2G34G-K06-1410X1-R	X1DFN1410-6	Tape Reel

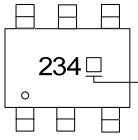
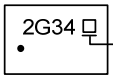
U74LVC2G34G-AG6-R
(1)Packing Type
(2)Package Type
(3)Green Package

(1) R: Tape Reel

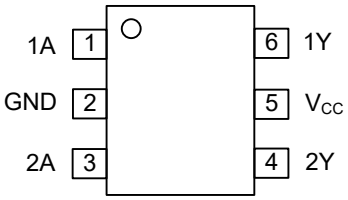
(2) AG6: SOT-26, AL6: SOT-363,
K06-1010X1: X1DFN1010-6
K06-1410X1: X1DFN1410-6

(3) G: Halogen Free and Lead Free, L: Lead Free

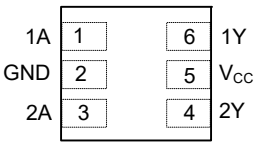
■ MARKING

SOT-26 / SOT-363	X1DFN1010-6	X1DFN1410-6
 L: Lead Free G: Halogen Free		 L: Lead Free G: Halogen Free

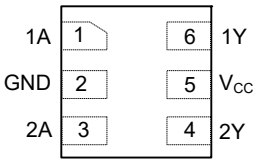
■ PIN CONFIGURATION



SOT-26 / SOT-363



X1DFN1010-6
(TOP VIEW)



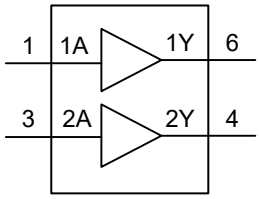
X1DFN1410-6
(TOP VIEW)

■ FUNCTION TABLE

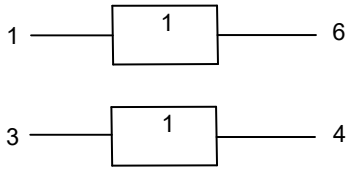
INPUT(nA)	OUTPUT(nY)
H	H
L	L

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°C to +125°C)	SOT-26	P_D	360	mW
	SOT-363		300	mW
	X1DFN1010-6		200	mW
Storage Temperature Range		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	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
Input Rise or Fall Times	t_R / t_F	V_{CC}=1.65V ~ 2.7V	0		20	ns/V
		V_{CC}=2.7V ~ 5. 5V	0		10	ns/V
Operating Temperature	T_A		-40		+125	°C

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

PARAMETER	SYMBOL	TEST CONDITIONS	MIN	TYP	MAX	UNIT
High-Level Input Voltage	V_{IH}	V_{CC}=1.65V ~ 1.95V	0.65× V_{CC}			V
		V_{CC}=2.3V ~ 2.7V	1.7			V
		V_{CC}=3V ~ 3.6V	2			V
		V_{CC}=4.5V ~ 5.5V	0.7×V_{CC}			V
Low-Level Input Voltage	V_{IL}	V_{CC}=1.65V ~ 1.95V			0.35× V_{CC}	V
		V_{CC}=2.3V ~ 2.7V			0.7	V
		V_{CC}=3V ~ 3.6V			0.8	V
		V_{CC}=4.5V ~ 5.5V			0.3×V_{CC}	V
High-Level Output Voltage	V_{OH}	V_{CC}=1.65 ~ 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}=3.0V, I_{OH}=-24mA	2.3			V
		V_{CC}=4.5V, I_{OH}=-32mA	3.8			V
Low-Level Output Voltage	V_{OL}	V_{CC}=1.65 ~ 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}=3.0V, I_{OL}=24mA			0.55	V
		V_{CC}=4.5V, I_{OL}=32mA			0.55	V

■ ELECTRICAL CHARACTERISTICS (Cont.)

PARAMETER	SYMBOL	TEST CONDITIONS	MIN	TYP	MAX	UNIT
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 ~ 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

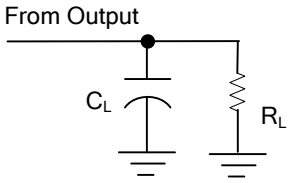
■ SWITCHING CHARACTERISTICS (T_A=25°C, unless otherwise specified)

PARAMETER	SYMBOL	TEST CONDITIONS		MIN	TYP	MAX	UNIT
Propagation delay from input (nA) to output(nY)	t_{PLH} / t_{PHL}	C_L=30pF	V_{CC}=1.65V~1.95V, R_L=1KΩ	1.0	3.8	8.6	ns
			V_{CC}=2.3V~2.7V, R_L=500Ω	0.5	2.4	4.4	ns
		C_L=50pF	V_{CC}=2.7V, R_L=500Ω	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, unless otherwise specified)

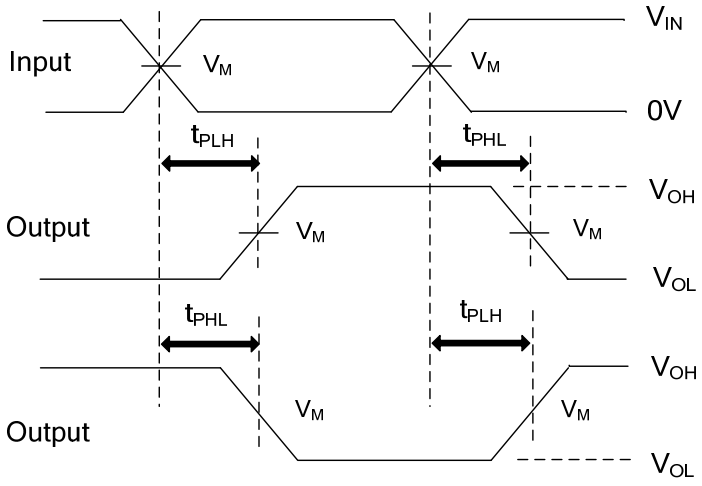
PARAMETER	SYMBOL	TEST CONDITIONS	MIN	TYP	MAX	UNIT
Power Dissipation Capacitance	C_{PD}	V_{CC}=3.3V, V_{IN}=GND to V_{CC}		20		pF

■ 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, Zo = 50Ω.