TECH PUBLIC
台舟电子

TP74LVC2G34 Series
DUAL BUFFER GATE

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Features

- Wide Supply Voltage Range From 1.65V To 5.5V.
- Inputs Accept Voltages to 5.5V
- IOFF Supports Partial-Power-Down Mode
- Low Power Dissipation
- Max tPD of 4.1 ns at 3.3V
- ESD Protection Exceeds JESD 22
  -2000-V Human-Body Model (A114-A)
  - 200-V Machine Model (A115-A)
  -1000-V Charged-Device Model (C101)

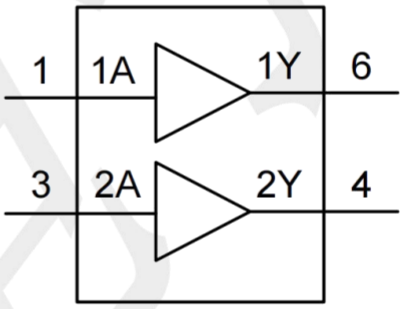
Applications

- AV Receiver
- Audio Dock:Portable
- Blu-ray Player and Home Theater
- Embedded PC
- Personal Digital Assistant(PDA)
- Power:Telecom/Server AC/DC Supply:Single Controller:Analog and Digital

General Description

The TP74LVC2G34 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.

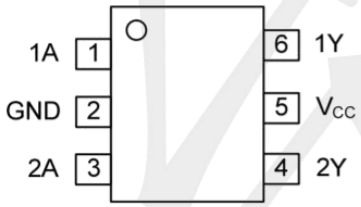
Logic Diagram



Ordering Information

ORDER NUMBER	PACKAGE DESCRIPTION	PACKAGE OPTION
TP74LVC2G34S6	SOT23-6	Tape and Reel,3000
TP74LVC2G34C6	SOT363	Tape and Reel,3000

Pin Configuratio



SOT23-6
SOT363

Function Table

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

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

Absolute Maximum Ratings (Unless otherwise specified)

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	V_{OUT}	High-Impedance & Power-Off State	-0.5 ~ +6.5	V
		Active mode	-0.5 ~ VCC+0.5	V
VCC or GND Current	I_{CC}		±100	mA
Continuous Output Current	I_{OUT}		±50	mA
Input Clamp Current	I_{IK}	V_{IN}<0	-50	mA
Output Clamp Current	I_{OK}	V_{OUT}<0	-50	mA
Storage Temperature Range	T_{STG}		-65 ~ +150	℃
Junction to Ambient	θ_{JA}	SOT-23-6	230	℃/W
		SOT363	280	℃/W
		DFN1X1-6	460	℃/W
		DFN1510-6	440	℃/W

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(Unless otherwise specified)

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 (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
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

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

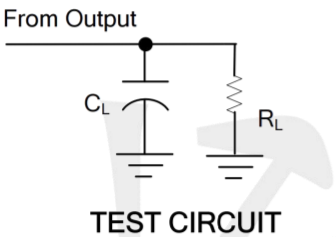
PARAMETER	SYMBOL	TEST CONDITIONS	MIN	TYP	MAX	UNIT
Power Dissipation Capacitance	C_{PD}	V_{CC}=3.3V, V_{IN}=GND to V_{CC}		20		pF

SWITCHING CHARACTERISTICS (see TEST CIRCUIT AND WAVEFORMS)

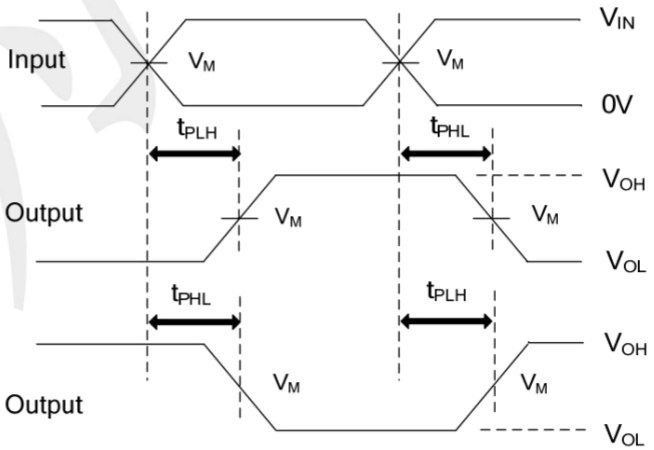
PARAMETER	SYMBOL	TEST CONDITIONS		MIN	TYP	MAX	UNIT
Propagation delay from input (nA) to output(nY)	t_{PLH} / t_{PHL}	C_L=30pF	V_{CC}=1.65V~1.95V,R_L=1KΩ	1.0	3.8	8.6	ns
			V_{CC}=2.3V~2.7V, R_L=500Ω	0.5	2.4	4.4	ns
		C_L=50pF	V_{CC}=2.7V, R_L=500Ω	0.5	2.5	5.0	ns
			V_{CC}=3.0V~3.6V, R_L=500Ω	0.5	2.2	4.1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

TEST CIRCUIT AND WAVEFORMS

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



TEST CIRCUIT



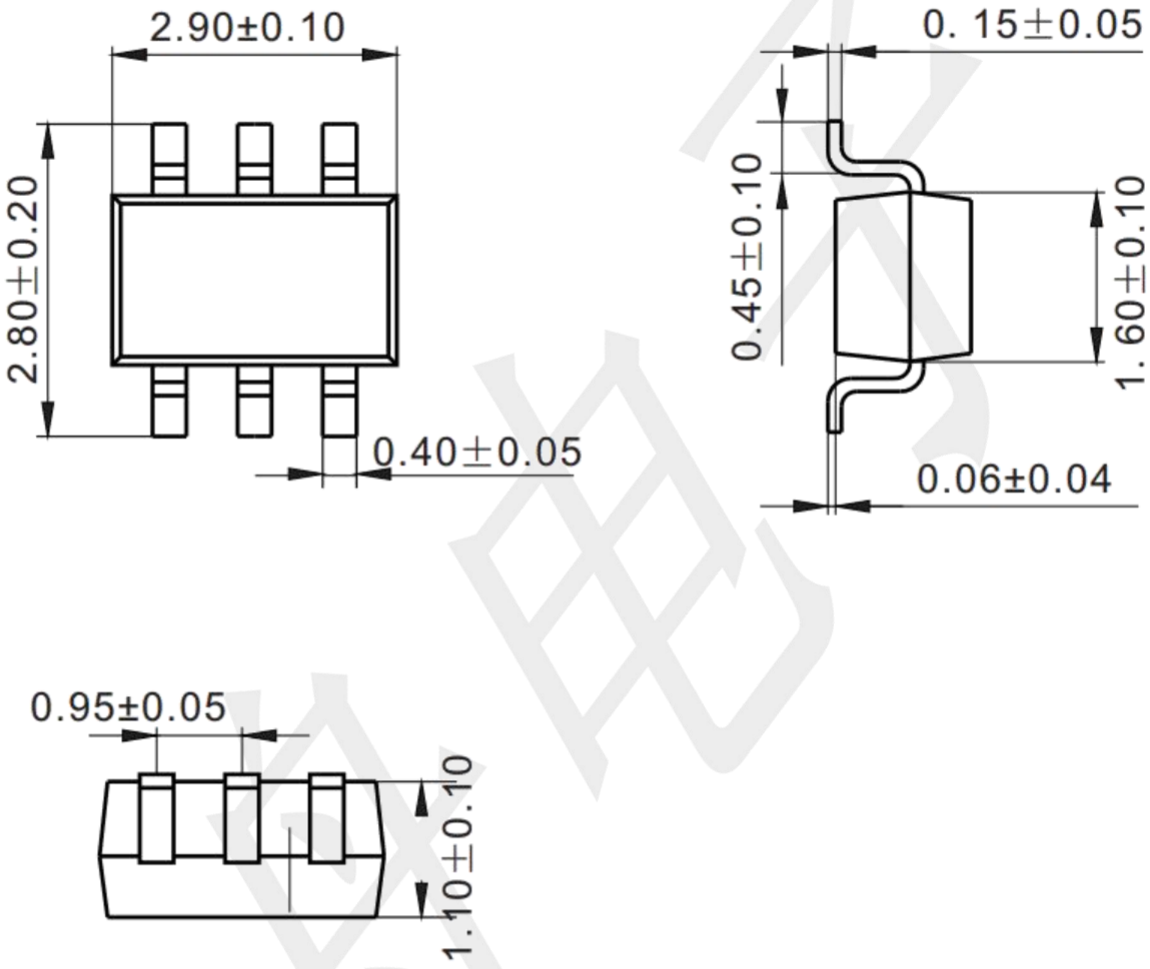
PROPAGATION DELAY TIMES

Note: C_L includes probe and jig capacitance.

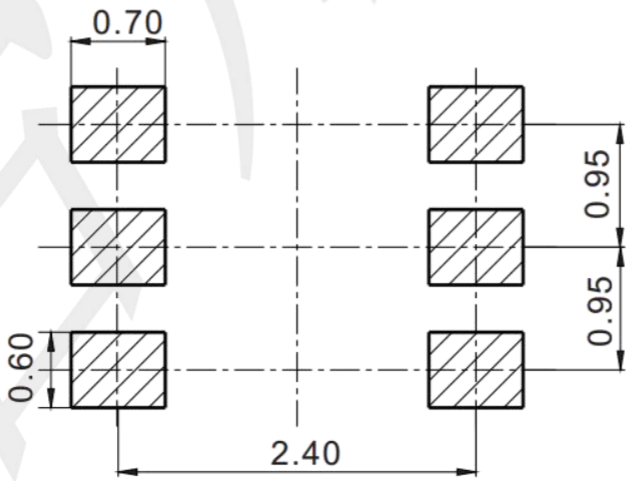
All input pulses are supplied by generators having the following characteristics: PRR ≤10MHz, Zo = 50Ω.

Package information

SOT23-6 (Unit: mm)

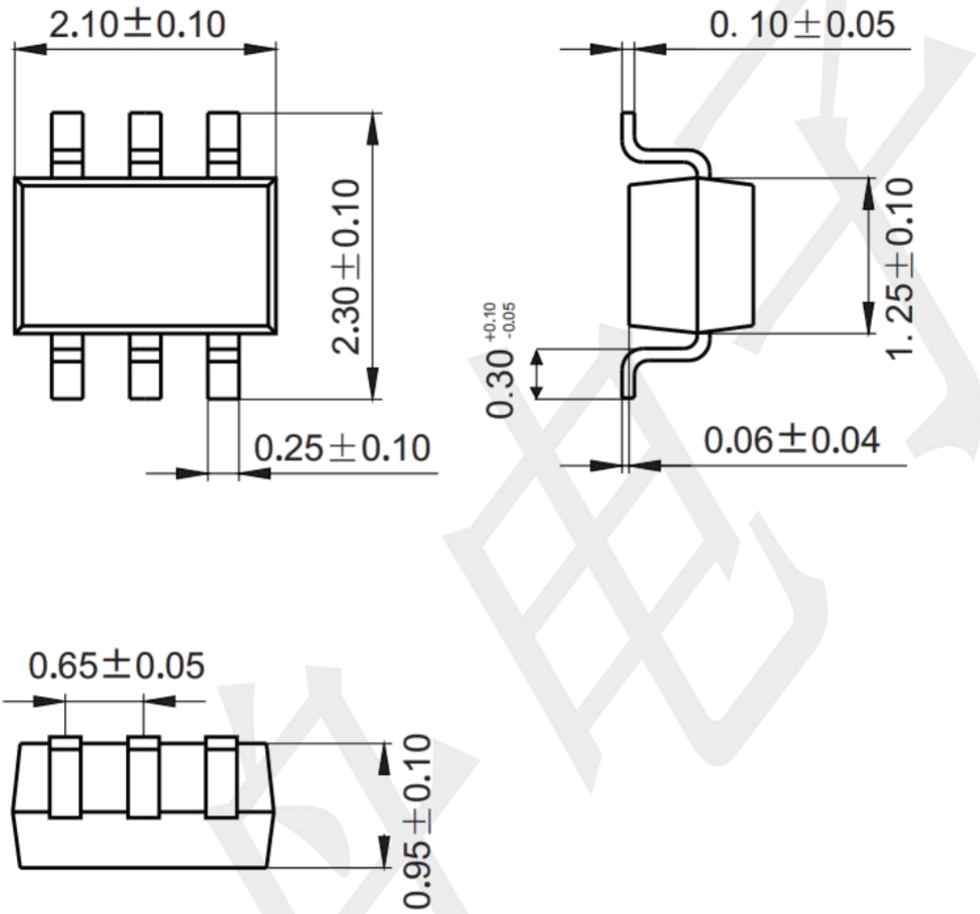


Mounting Pad Layout (unit: mm)



Package informantion

SOT363 (Unit: mm)



Mounting Pad Layout (unit: mm)