

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)

General Description

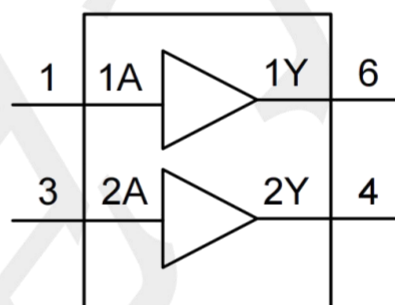
The TP74LVC2G34 is a dual buffer, it provides the function $Y = A$.

This device has power-down protective circuit, preventing device destruction when it is powered down.

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

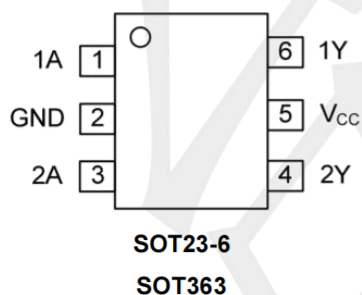
Logic Diagram



Ordering Information

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

Pin Configuratio



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 ~ V _{CC} +0.5	V
V _{CC} 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	°C
Junction to Ambient	θ_{JA}	SOT-23-6	230	°C/W
		SOT363	280	°C/W
		DFN1X1-6	460	°C/W
		DFN1510-6	440	°C/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 _{OU} T	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}	$V_{CC}=1.65V \sim 1.95V$	$0.65 \times V_{CC}$	--	--	V
		$V_{CC}=2.3V \sim 2.7V$	1.7	--	--	V
		$V_{CC}=3V \sim 3.6V$	2	--	--	V
		$V_{CC}=4.5V \sim 5.5V$	$0.7 \times V_{CC}$	--	--	V
Low-Level Input Voltage	V_{IL}	$V_{CC}=1.65V \sim 1.95V$	--	--	$0.35 \times V_{CC}$	V
		$V_{CC}=2.3V \sim 2.7V$	--	--	0.7	V
		$V_{CC}=3V \sim 3.6V$	--	--	0.8	V
		$V_{CC}=4.5V \sim 5.5V$	--	--	$0.3 \times V_{CC}$	V
High-Level Output Voltage	V_{OH}	$V_{CC}=1.65 \sim 5.5V, I_{OH}=-100\mu A$	$V_{CC}-0.1$	--	--	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}	$V_{CC}=1.65 \sim 5.5V, I_{OL}=100\mu A$	--	--	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	$V_{CC}=2.3 \sim 5.5V, I_{OUT}=0$ One input at $V_{CC}-0.6V$, Other inputs at V_{CC} or GND	--	--	500	μA
Input Capacitance	C_{IN}		--	2.5	--	pF

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

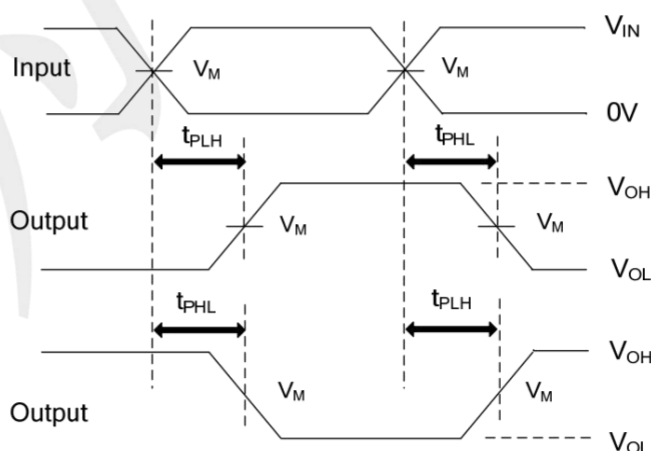
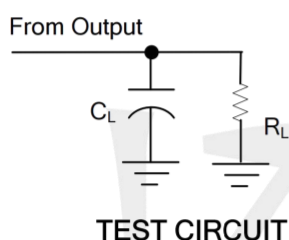
PARAMETER	SYMBOL	TEST CONDITIONS	MIN	TYP	MAX	UNIT
Power Dissipation Capacitance	CPD	VCC=3.3V, VIN=GND to VCC		20		pF

SWITCHING CHARACTERISTICS (see TEST CIRCUIT AND WAVEFORMS)

PARAMETER	SYMBOL	TEST CONDITIONS	MIN	TYP	MAX	UNIT
Propagation delay from input (nA) to output(nY)	tPLH / tPHL	CL=30pF, VCC=1.65V~1.95V, RL=1KΩ	1.0	3.8	8.6	ns
		VCC=2.3V~2.7V, RL=500Ω	0.5	2.4	4.4	ns
		CL=50pF, VCC=2.7V, RL=500Ω	0.5	2.5	5.0	ns
		VCC=3.0V~3.6V, RL=500Ω	0.5	2.2	4.1	ns
		VCC=4.5V~5.5V, RL=500Ω	0.5	1.9	3.2	ns

TEST CIRCUIT AND WAVEFORMS

VCC	INPUTS		VM	CL	RL
	VIN	tR, tF			
1.65V ~ 1.95V	VCC	≤2ns	VCC/2	30pF	1KΩ
2.3V ~ 2.7V	VCC	≤2ns	VCC/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	VCC	≤2.5ns	VCC/2	50pF	500Ω



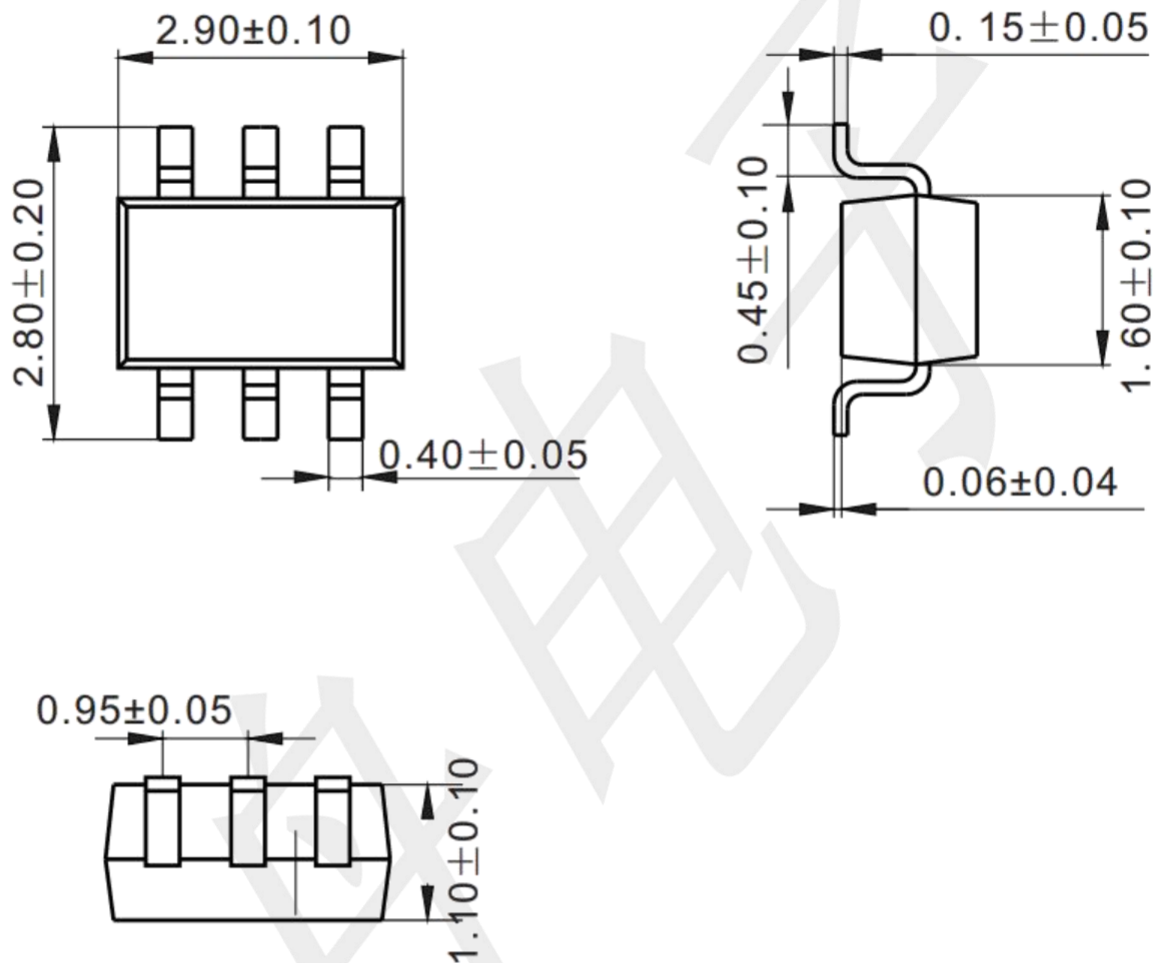
PROPAGATION DELAY TIMES

Note: CL includes probe and jig capacitance.

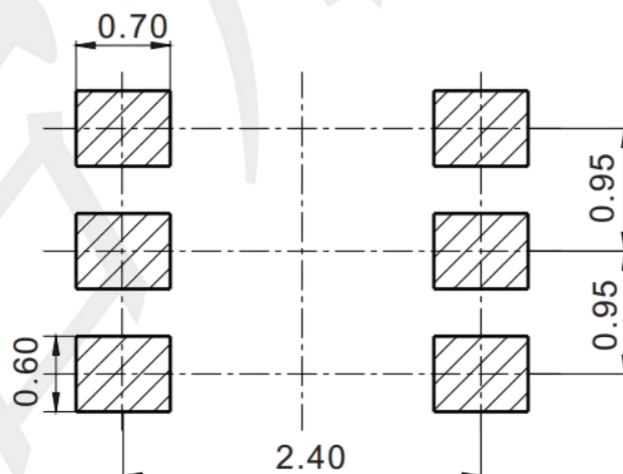
All input pulses are supplied by generators having the following characteristics: PRR ≤10MHz, Zo = 50Ω.

Package information

SOT23-6 (Unit: mm)

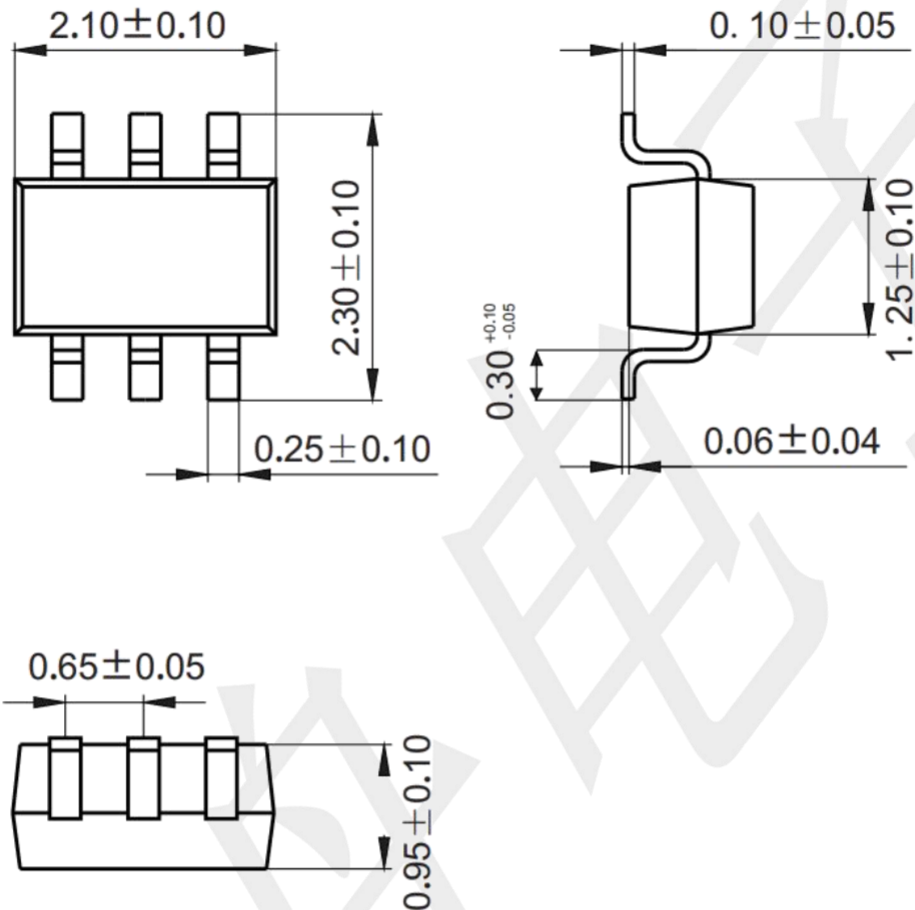


Mounting Pad Layout (unit: mm)



Package information

SOT363 (Unit: mm)



Mounting Pad Layout (unit: mm)

