T73LVP23

Dual LVPECL to TTL/CMOS Translator

GENERAL DESCRIPTION

The TLSI T73LVP23 is a general purpose dual differential LVPECL (Positive ECL) to TTL/CMOS translator operating from a single 3.3V supply. An 8-pin SOIC package makes it ideal for applications that require the translation of a clock and a data signal.

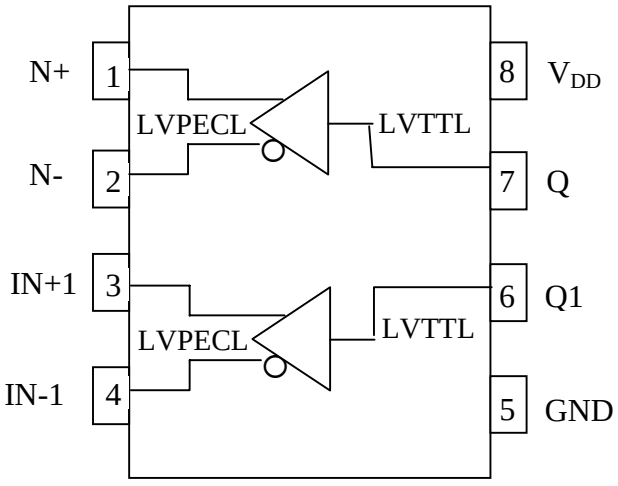
The T73LVP23 is available in only the ECL 100K standard. Since there are no LVPECL outputs or an external VBB reference, it does not require both ECL standard versions..

FEATURES

- 1.1 ns Typical Propagation Delay
- Maximum Operating Frequency > 500 MHz
- Operating Temperature -40°C to +85°C
- 24 mA LVTTL Outputs
- Operating Range: VCC = 3.0V to 3.6V
- Open Input Default State
- ESD rating > 2000V (Human Body Model)

FUNCTIONAL BLOCK DIAGRAM & PIN ASSIGNMENT

8 Pin SOIC



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PIN DESCRIPTION OF 8-LEAD PACKAGE

Name	Description	Pin #
N+	LVPECL data positive input	1
IN+	LVPECL data positive input	3
N-	LVPECL data negative input	2
IN-	LVPECL data negative input	4
V_{DD}	Connect to 3.3V	8
Q	TTL/CMOS data output	7
Q1	TTL/CMOS data output	6
GND	Connect to ground	5

ABSOLUTE MAXIMUM RATINGS

Symbol	Parameter	Condition	Min	Typ	Max	Units
V_{DD}	Supply voltage	Refer to GND	-0.5		3.8	V
V_{IN}	Input voltage	Refer to GND	-0.5		3.8	V
I_{OUT}	Output current	Continuous Surge			50 100	mA mA
T_{STG}	Storage Temperature Range		-60		+150	^{o}C
TA	Operating Temperature		-40		+85	^{o}C
T_{SOL}	Wave solder				+265	^{o}C

ATTRIBUTES

Characteristics		Value
ESD protection	Human Body Model	> 1.2 kV
	Machine Model	> 150 V
	Charged Device Model	> 2 kV

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OPERATING CONDITIONS

Symbol	Parameter	Condition	Min	Typ	Max	Units
V_{DD}	Power supply voltage		3.0		3.6	V
T_A	Ambient temperature		-40		85	^oC
V_{IH}	Input HIGH voltage	-40 ^oC to +85 ^oC	2.01		2.42	V
V_{IL}	Input LOW voltage	-40 ^oC to +85 ^oC	1.35		1.68	V

DC CHARACTERISTICS V_{DD} = 3.3V, GND = 0V, T_A = -40^{o}C to +85^{o}C

Symbol	Parameter	Condition	Min	Typ	Max	Units
I_{CCH}	Power supply current (Output set to HIGH)		8		15	mA
I_{CCL}	Power supply current (Output set to LOW)		15		25	mA
V_{CMR}	Common mode range		2.2		V_{DD}	V
I_{IH}	Input HIGH current		90		90	µA
I_{IL}	Input LOW current		0.5		0.5	µA
V_{PP}	Min. peak-to-peak input		200		200	mV
V_{OH}	Output HIGH voltage	I_{OH} = -3.0 mA				
V_{OL}	Output LOW voltage	I_{OL} = -24 mA				
I_{OS}	Output short circuit current		-200		-80	mA

AC CHARACTERISTICS V_{DD} = 3.3V, GND = 0V, T_A = -40^{o}C to +85^{o}C

Symbol	Parameter	Condition	Min	Typ	Max	Units
t_{PLH}	Propagation delay	C_L = 20 pF		1	1.2	ns
t_{PHL}	Propagation delay	C_L = 20 pF		1	1.2	ns
t_r	Output rise time	0.8 – 2.0 V		0.2		ns
t_f	Output fall time	2.0 – 0.8 V		0.2		ns
f_{MAX}	Max input frequency			500		MHz

NOTE 1 VBB

When single-ended cap coupled, VBB output is tied to the D input and D is driven for anon-inverting buffer, or VBB output is tied to the D input and D is driven for an inverting buffer. When cap coupled differentially, VBB output is connected through a resistor to each input pin. If used, the VBB pin should be bypassed to VCC via a 0.01 _F capacitor. For a single-ended direct connection use an external voltage reference source such as a resistor divider. Do not use VBB for a single-ended direct connection or port to another device

ORDERING INFORMATION

Part Number	Marking	Shipping/Packaging	No. of Pins	Package	Temperature
T73LVP23S1	T73P23S1	Tubes	8	SOIC	-40°C to +85°C
T73LVP23S1X	T73P23S1	Tape & Reel	8	SOIC	-40°C to +85°C
T73LVP23S2	T73P23S2	Tubes	6	SOT	-40°C to +85°C
T73LVP23S2X	T73P23S2	Tape & Reel	6	SOT	-40°C to +85°C
T73LVP23/D		Dice			-40°C to +85°C