

LVTTL to Differential LVPECL Translator with Enable

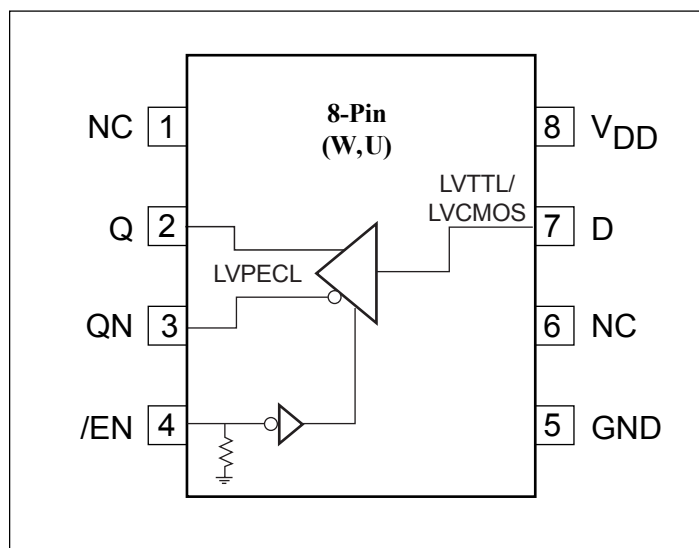
Features

- Differential LVPECL outputs
- Flow-through pinout
- -40°C to 85°C operating temperature range
- ESD rating: >2000V (Human body Model)
- Packaging (Pb-free & Green available):
 - 8-pin SOIC (W)
 - 8-pin MSOP (U)

Description

The PI90LVP10 is a general purpose LVTTL (CMOS) to differential LVPECL translator, with active-LOW enable. The device operates from a single 3.3V supply. When /EN is LOW, the device accepts LVTTL input and provides differential LVPECL outputs referenced to the positive supply rail. When /EN is HIGH, the Q output is set in LOW state and QN output is set in HIGH state.

Block Diagram



Pin Description

Name	Description	Type	Pin#
/EN	Active LOW enable input	I	4*
Q	PECL data output	O	2
QN	PECL complementary data output	O	3
VDD	Connect to 3.3V	P	8
D	LVTTL/LVCMOS	I	7
GND	Connect to ground	P	5

Notes:

I = Input

O = Output

P = Power Supply Connection

* = Internal 150K pull-down resistor

Absolute maximum Ratings

Symbol	Parameter	Conditions	Min.	Typ.	Max.	Units
V _{DD}	Supply Voltage	Referenced to GND			6	V
V _{IL}	Input Voltage	Referenced to GND	−0.5		6	V
I _{OUT}	Output current in LOW state				50	mA
T _{STG}	Storage temperature		−65		150	°C

Note:

Stresses above those listed under Absolute Maximum Ratings may cause permanent damage to the device. These ratings are stress specifications only and correct functional operation of the device at these or any other conditions above those listed in the operational sections of the specification is not implied. Exposure to absolute maximum rating conditions for extended periods may affect product reliability.

Recommended Operating Conditions

Symbol	Parameter	Conditions	Min.	Typ.	Max.	Units
V _{DD}	Power Supply Voltage		3.0		3.6	V
V	Ambient Temperature		−40		85	°C
V _{IH}	Input HIGH Voltage		2.0			V
V _{IL}	Input LOW Voltage				0.8	
t _{Rin}	Input slew rate	10% to 90% (L→H)	1			V/ns
t _{Fin}	Input slew rate	90% to 10% (H→L)	1			

DC Characteristics(TA = -40°C to +85°C, VDD = 3.0V to 3.6V unless otherwise)

Symbol	Parameters	Conditions		T _A = +25°C			Units
				Min.	Typ.	Max.	
I _{IH}	Input HIGH Current	V _{CC} = Max. V _{IN} = V _{CC}	D input	2.0		100	μA
			/EN Input			50	
I _{IL}	Input LOW Current	V _{CC} = Max. V _{IN} = 0V	D input	−100			
			/EN Input	−1			
V _{IK}	Input Clamp Diode Voltage	I _{IN} = −18mA				1.2	V
V _{OH}	Output HIGH Voltage ^(1,2)	−40°C	V _{DD} = 3.3V	2275	2375	2475	mV
		−25°C		2200	2300	2400	
		85°C		2125	2225	2325	
V _{OL}	OutputLOW Voltage ^(1,2)	−40°C	V _{DD} = 3.3V	1350	1450	1550	
		25°C		1400	1500	1600	
		85°C		1450	1550	1650	
I _{DD}	Power Supply Current				57		mA

Notes:

1. The PI90LVP10 is designed to meet these specifications after thermal equilibrium has been established. The circuit is in a test socket or mounted on a printed circuit board.
2. Q and QN outputs are loaded with 50 ohms to VDD-2volts.

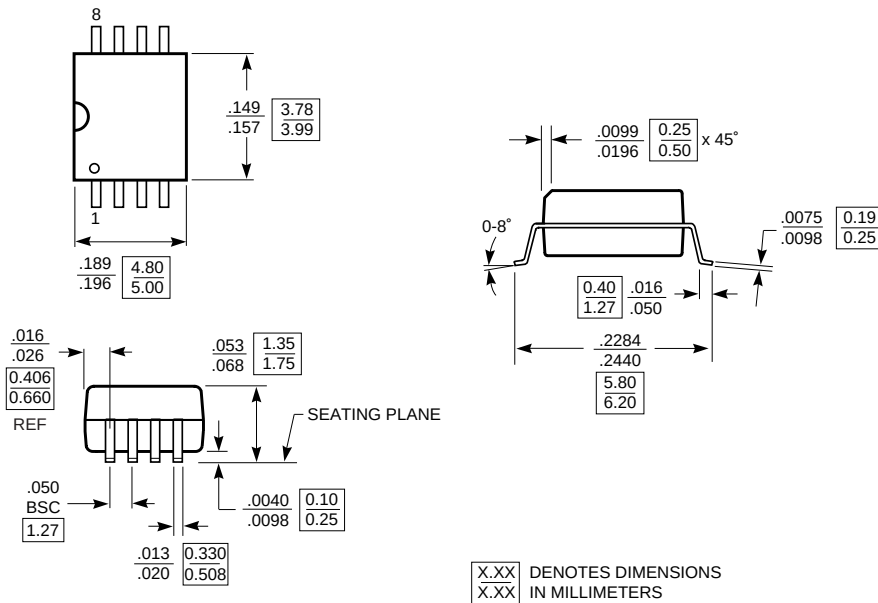
AC Characteristics

Symbol	Parameter	Conditions	Min.	Typ.	Max.	Units
t _{PLH}	Propagation Delay ⁽¹⁾			0.7	1.2	ns
t _{PHL}	Propagation Delay ⁽¹⁾			0.7	1.2	
t _{PLH}	Propagation Delay	/EN to Q, QN		1.0	1.5	
t _{PHL}	Propagation Delay	/EN to Q, QN		1.0	1.5	
t _{r/f}	Output Rise/Fall time	20% -80%	0.10		0.7	
f _{MAX}	Maximum Input Frequency	LVTTL or LVCMOS input	170			MHz
f _{MAX}	Maximum Input Frequency ⁽²⁾	750mV peak-to-peak sine wave (AC coupled)	400			

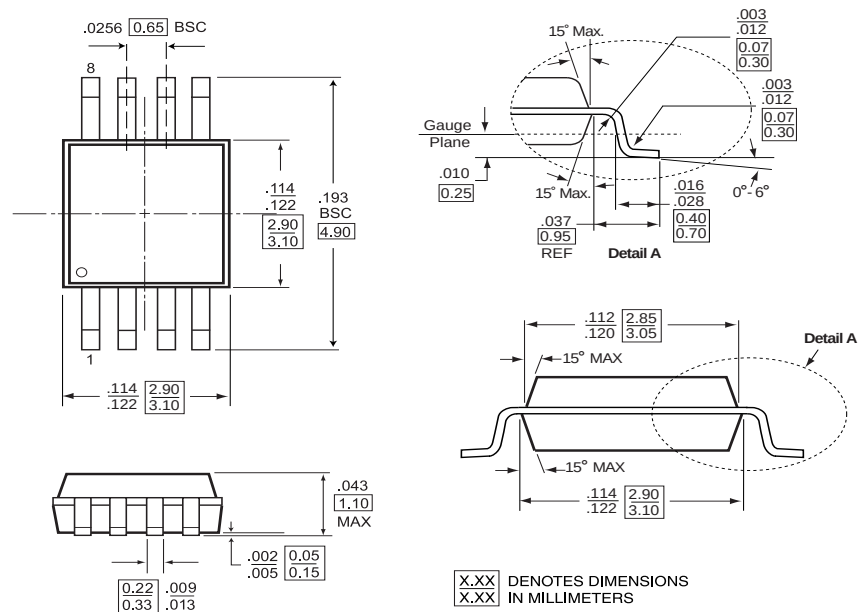
Notes:

1. Q and QN outputs are loaded with 50 ohms to VDD-2volts.
2. Measured using a 750mV peak-to-peak, 50% duty cycle clock source

Packaging Mechanical: 8-Pin SOIC (W)



Packaging Mechanical: 8-Pin MSOP (U)



Ordering Information

Ordering Code	Package Code	Package Type
PI90LVP10W	W	8-pin SOIC
PI90LVP10WE	W	Pb-free & Green, 8-pin SOIC
PI90LVP10U	U	8-pin MSOP
PI90LVP10UE	U	Pb-free & Green, 8-pin MSOP

Notes:

1. Thermal characteristics can be found on the company web site at www.pericom.com/packaging/