New Product Announcement

LOGIC

74LVC1T45 Single Bit Voltage Translator

The 74LVC1T45 is a single bit, dual supply transceiver with 3-state outputs suitable for transmitting a single logic bit across different voltage domains.

The A input/output pin is designed to track V_{CCA} while the B input/output tracks V_{CCB}. This arrangement allows for universal low-voltage translation between any voltages from 1.65 V to 5.5 V.

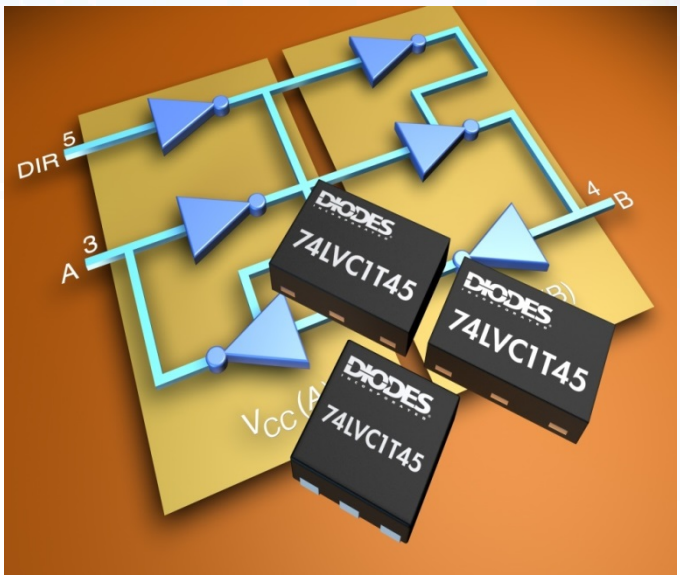
The direction of the transceiver is controlled by the Direction pin (DIR) that has logic threshold voltages related to V_{CCA}. When a high logic level is applied to DIR the A pin becomes an input and the B pin becomes the output. Conversely the roles of A and B are reversed when DIR is asserted low.

Features:

- 1.65 to 5.5 V operation.
- Power Down Isolation.
- Translation rate:
  >400 Mbits / Second 3.3V to 5.5V
  >75 Mbits / Second 1.8V to 5.5 V

Packages:

- X2-DFN1409-6
  Chip Scale Alternative
  1.4 X 0.9 X 0.4mm 0.5mm pitch
- X2-DFN-1010-6
  1.4 X 1.0 X 0.4mm 0.35mm pitch
- X2-DFN-1410-6
  1.4 X 1.0X 0.4mm 0.5mm pitch



The Diodes Advantage

- **New Package to replace Chip Scale**
  The X2-DFN1409-6 is a package designed to replace Chip Scale devices. The package is more mechanically robust and cost effective than chip scale.
- **Noise rejection circuitry**
  All of the devices in this release include a small amount of input hysteresis making less susceptible to problems from slow rising or falling signals.
- **Direct Replacement**
  Electrically the 74LVC1T45 is a pin to pin replacement of industry standard devices

New Product Announcement

LOGIC

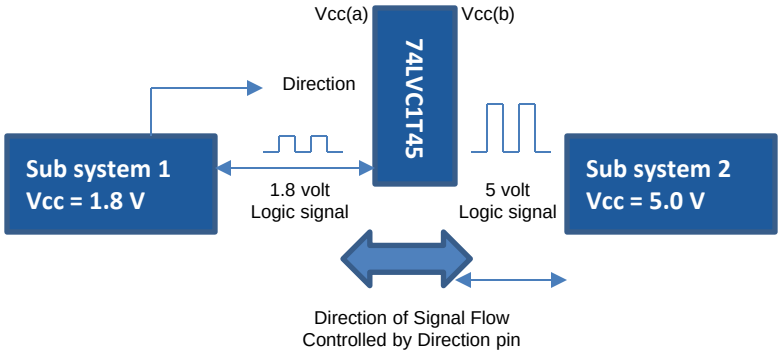
74LVC1T45 Cross Reference

Diodes Device	Package	Description	TI	NXP
74LVC1T45FW4-7	X2-DFN1010-6	Single Bit Dual Power Supply Translating Transceiver with 3 State Outputs	not available	74LVC1T45GF
74LVC1T45FZ4-7	X2-DFN1410-6		not available	74LVC1T45GM
74LVC1T45FX4-7	X2-DFN1409-6		74LVC1T45YZPR*	Not available
74LVC1T45W6-7**	SOT26		SN74LVC1T45DCKR	Not available
74LVC1T45DW-7**	SOT363		SN74LVC1T45DBVR	74LVC1T45GW
74LVC1T45Z6-7 **	SOT563		SN74LVC1T45DRLR	Not available

*DFN1409 is an alternative package for chip scale applications.

**Future Products

Applications



The 74LVC1T45 is used to translate logic signals between different voltage domains.

In this example V_{cc}(a) is set at 1.8 V and V_{cc}(b) to 5.0V. Logic signals can now be transferred accurately between subsystems.

The threshold of the direction pin is controlled by V_{cc}(a).

This configuration is capable of 70M bits per second.

Ordering Information

Device	Package	Reel Size	Tape Width	Quantity
74LVC1T45FW4-7	X2-DFN1010-6	7”	8mm	5000
74LVC1T45FZ4-7	X2-DFN1410-6	7”	8mm	5000
74LVC1T45FX4-7	X2-DFN1409-6	7”	8mm	5000

All devices are:

- Totally Lead-Free & Fully RoHS compliant
- Halogen and Antimony Free.“Green” Device

See http://www.diodes.com/quality/lead_free.html