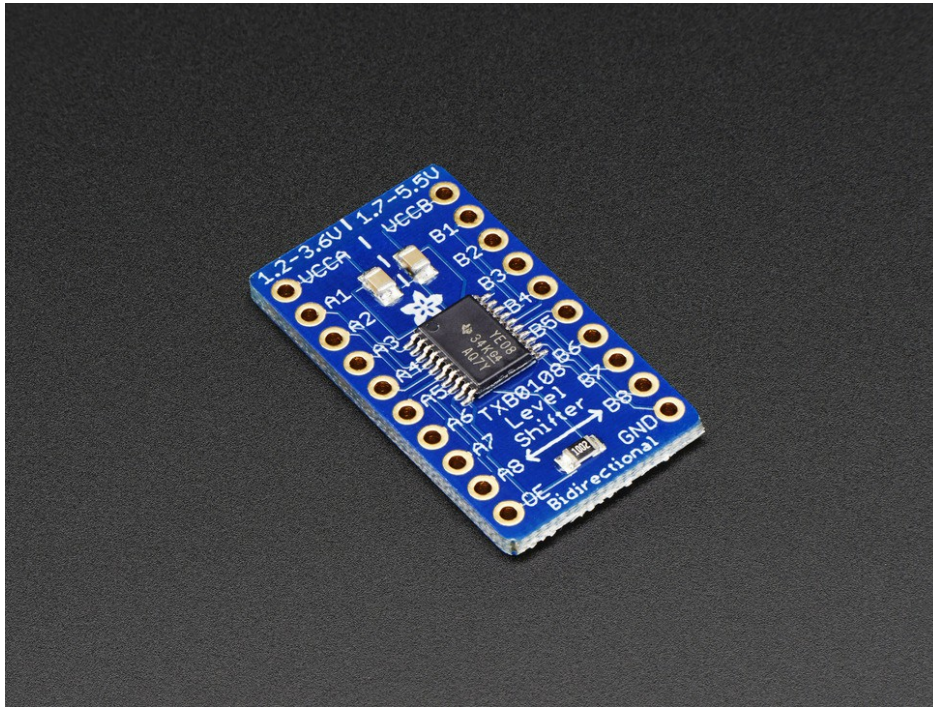


8-channel Bi-directional Logic Level Converter - TXB0108

PRODUCT ID: 395



DESCRIPTION

Because the Arduino (and Basic Stamp) are 5V devices, and most modern sensors, displays, flash cards and modes are 3.3V-only, many makers find that they need to perform level shifting/conversion to protect the 3.3V device from 5V.

Although one can use resistors to make a divider, for high speed transfers, the resistors can add a lot of slew and cause havoc that is tough to debug. For that reason, we like using 4050/74LVX245 series and similar logic to perform proper level shifting. Only problem is that they are only good in one direction which can be a problem for some specialty bi-directional interfaces and also makes wiring a little hairy.

That's where this lovely chip, the TXB0108 bi-directional level converter comes in! This chip perform bidirectional level shifting from pretty much any voltage to any voltage and will **auto-detect the direction**. Only thing that doesn't work well with this chip is i2c (because it uses strong pullups which confuse auto-direction sensor). If you need to use pullups, you can but they should be at least 50K ohm - the ones internal to AVR/Arduino are about 100K ohm so those are OK! Its a little more luxurious than a 74LVX245 but if you just don't want to worry about directional pins this is a life saver!

Since this chip is a special bi-directional level shifter it does not have strong output pins that can drive LEDs or long cables, it's meant to sit on a breadboard between two logic chips! If you do not

need instant bi-directional support, we suggest the 74LVX245 as below which has strong output drive.

This breakout saves you from having to solder the very fine pitch packages that this chip comes with. We also add 0.1uF caps onto both sides and a 10K pull-up resistor on the output enable pin so you can use it right out of the box!

• TECHNICAL DETAILS

Downloads:

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- ↗ [TXB0108 Datasheet](#)
 - ↗ [TXB0108 App note detailing how it works!](#)
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