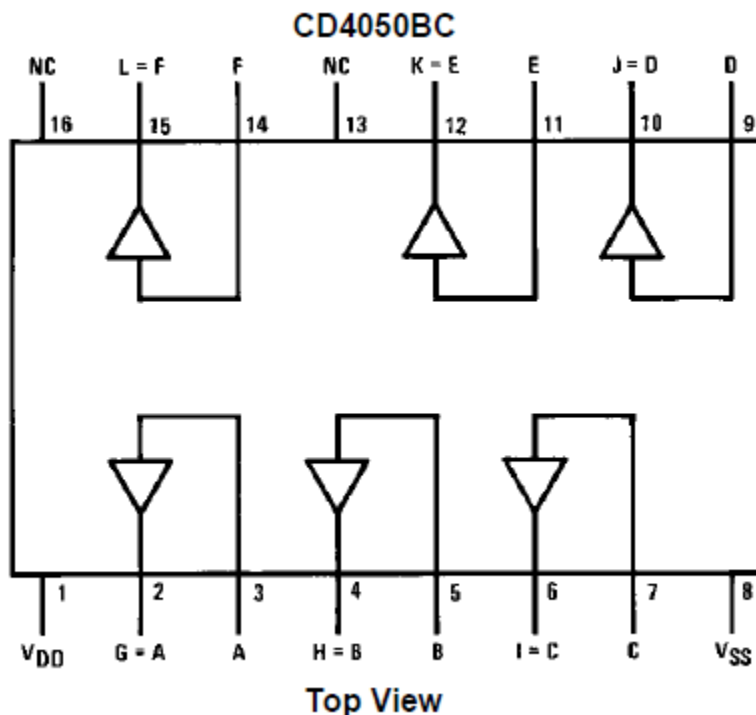


ADXL362 ACCELEROMETER WIRING

We now have a fully functional game using purely the Input Shield. Now we will replace the input shield with an accelerometer to control the player paddle by tilting the entire game console front or back. To wire our accelerometer we need to first step down the voltage. The Accelerometer (ADXL362) uses the SPI interface, which means pins 10, 13, and 11 send a signal to the ADXL362. These pins output signals at 5v, however this chip is rated at 3.3v, thus if you directly connected the chip to the Arduino, you could potentially damage the accelerometer. Thus, we will step down the voltage by using a Hex Non-Inverting Buffer which has the ability to step down from 5v to approximately 3.3v. Pin 12 does not need to be stepped down as this pin takes input from the ADXL362 chip itself at 3.3v (the schematic shows the signal being routed through the buffer anyways; the orientation it is connected simply still outputs the signal at 3.3v from the chip to the Arduino).

The following is the schematic for the NXP 4050BP chip we will be using:



To step down the voltage of a signal, you apply the target voltage to Vdd and ground to Vss. The input signals from the Arduino (pins 10, 11, 13) are applied to either input A,B,C,D,E, or F. Their corresponding outputs at G,H,I,J,K, or L are then connected to the appropriate pins on the ADXL362 (the pins are labeled on the chip: CS, MISO, MOSI, and SCK which correspond to pins 10, 12, 11, and 13 respectively on the Arduino). An example schematic for one way to hook up the accelerometer is provided for you as a reference.