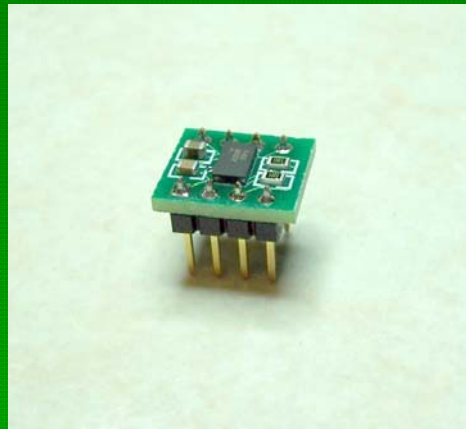# 3AD Usage Guide

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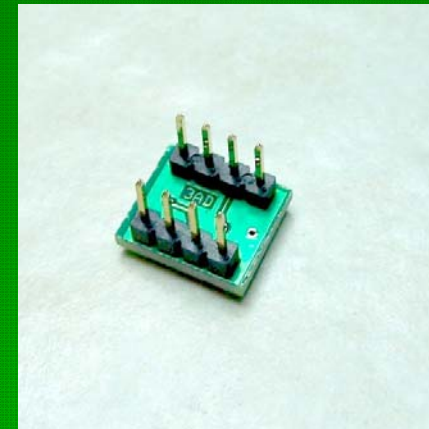
The 3AD is a low cost 3-axis digital accelerometer in a 8-pin DIP package

Top View:

Bottom View:
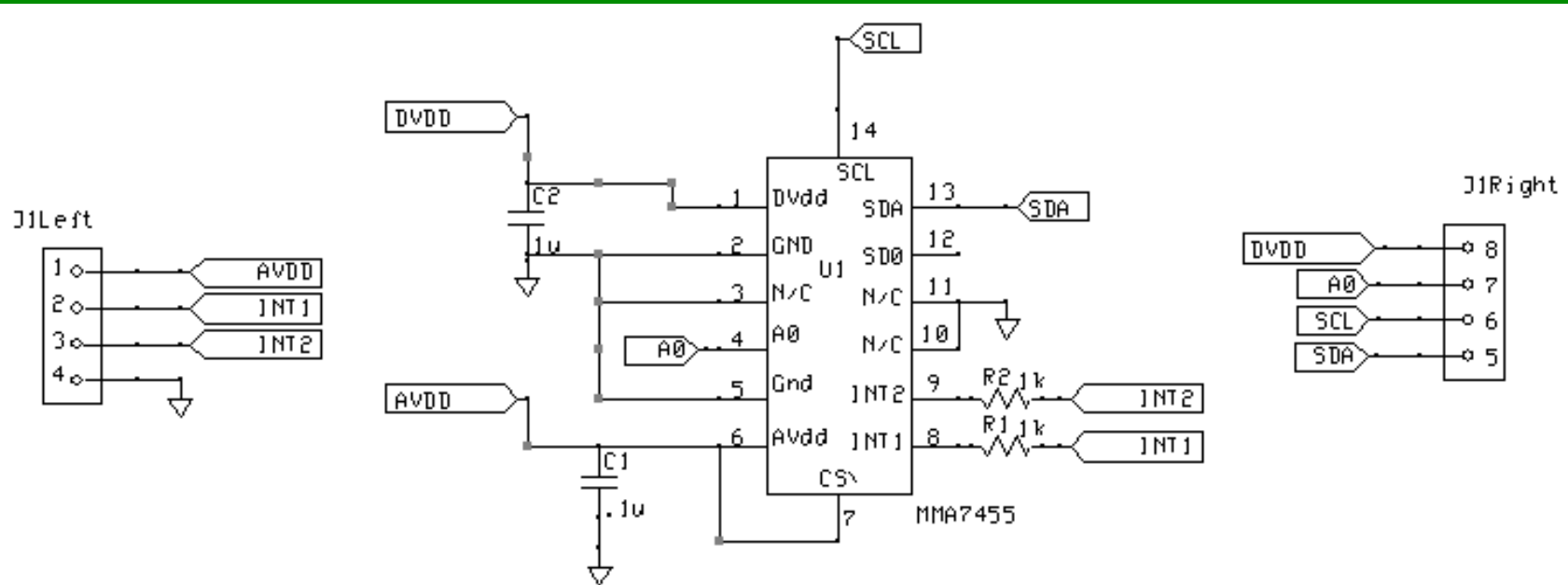

- **Key Features**
  - **Based on the Freescale™ MMA7455 accelerometer chip**
  - **I2C digital interface**
  - **8-Pin DIP package, 300-mil width**
  - **Compatible with the extra EEPROM socket of the Propeller Platform (available at GadgetGangster.com)**
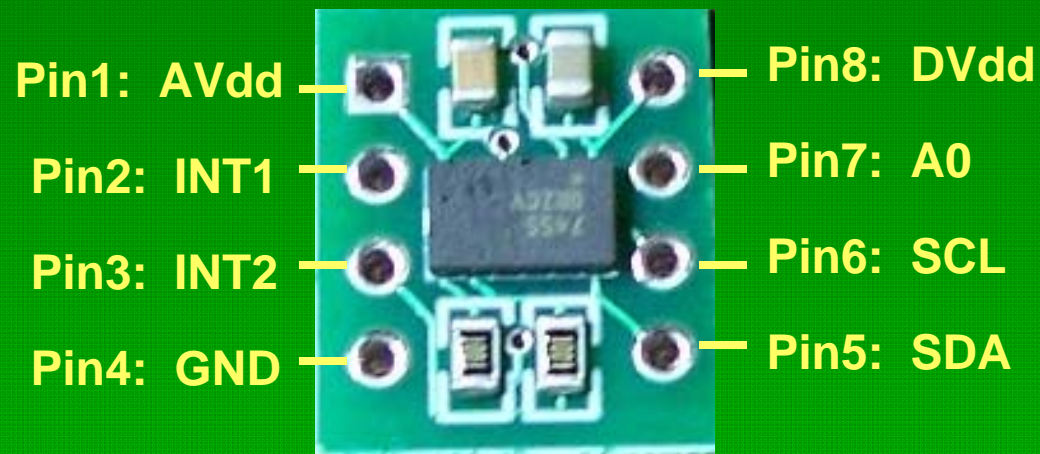 - **Low cost ($8 introductory price)**

3AD Circuit Schematic

- The 3AD comprises the MMA7455 chip, bypass capacitors for analog and digital supplies and protection resistors for the interrupt outputs

3AD Layout Overview

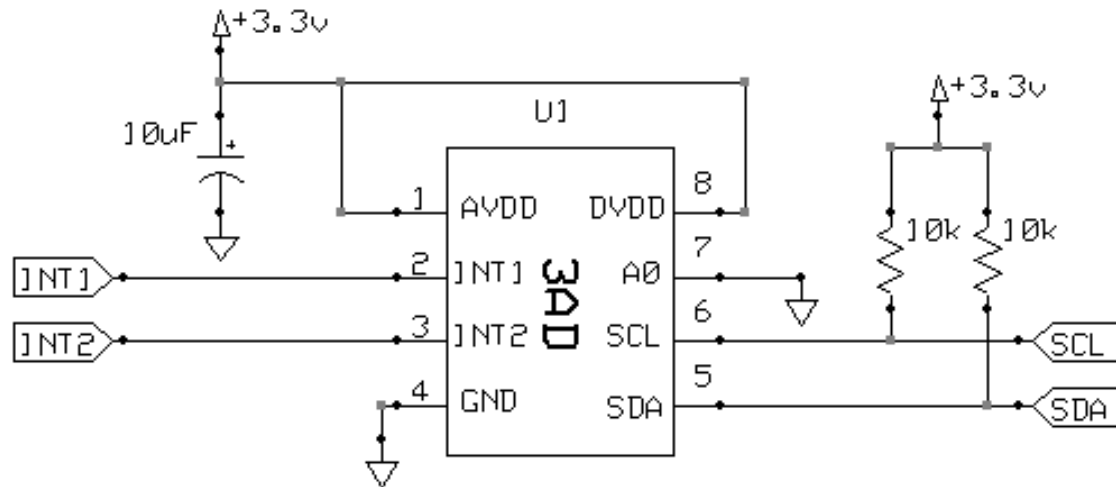Pin 1

MMA7455

0.3"

Supply bypass capacitors

0.1"

INT output protection resistors
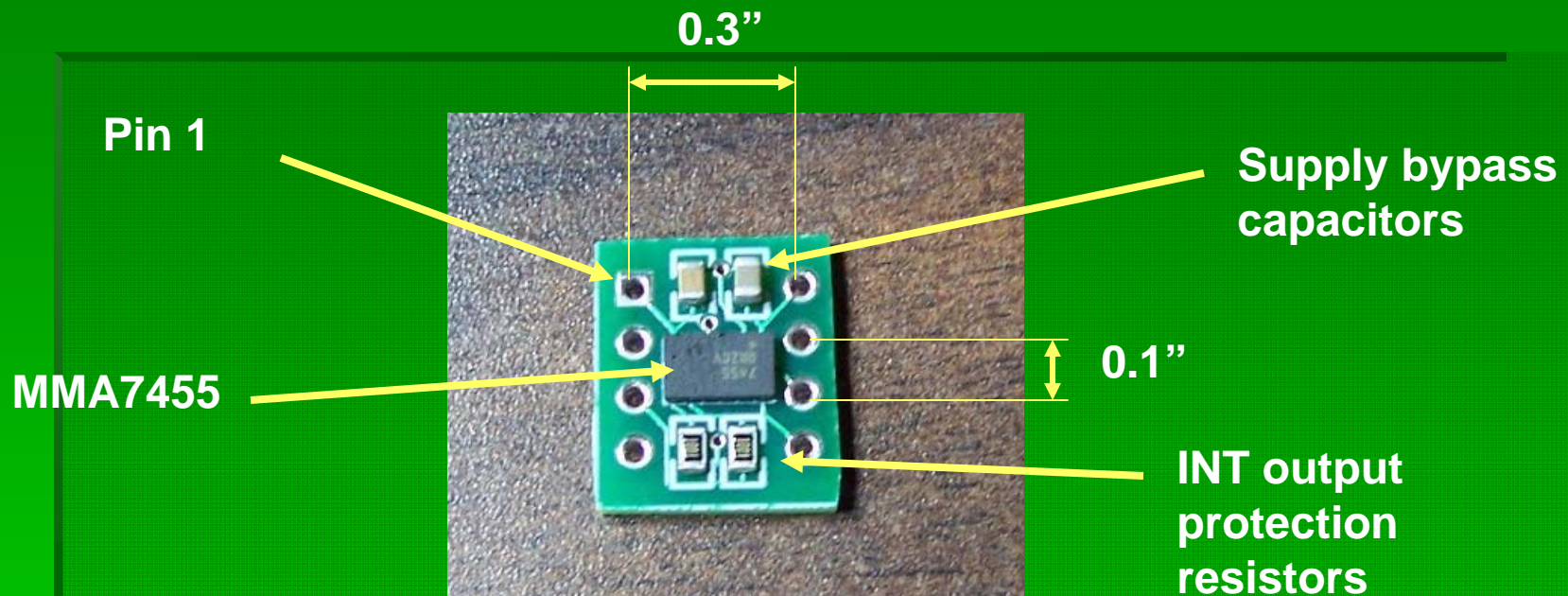
- Pin#1 can also be identified by it's square pad

3AD Pin Diagram

Pin1: AVdd

Pin2: INT1

Pin3: INT2

Pin4: GND

Pin8: DVdd

Pin7: A0

Pin6: SCL

Pin5: SDA

3AD Typical Usage Schematic

- An external 10uF tantalum capacitor located close to the 3AD is recommended.
- If connecting to an existing I2C bus, the 10 kΩ pull-up resistors may already be present. (The Propeller Protoboard already has the required pull-up resistor on the I2C bus of pins 28&29)
- If the two interrupt outputs are not required they can be left floating or grounded.
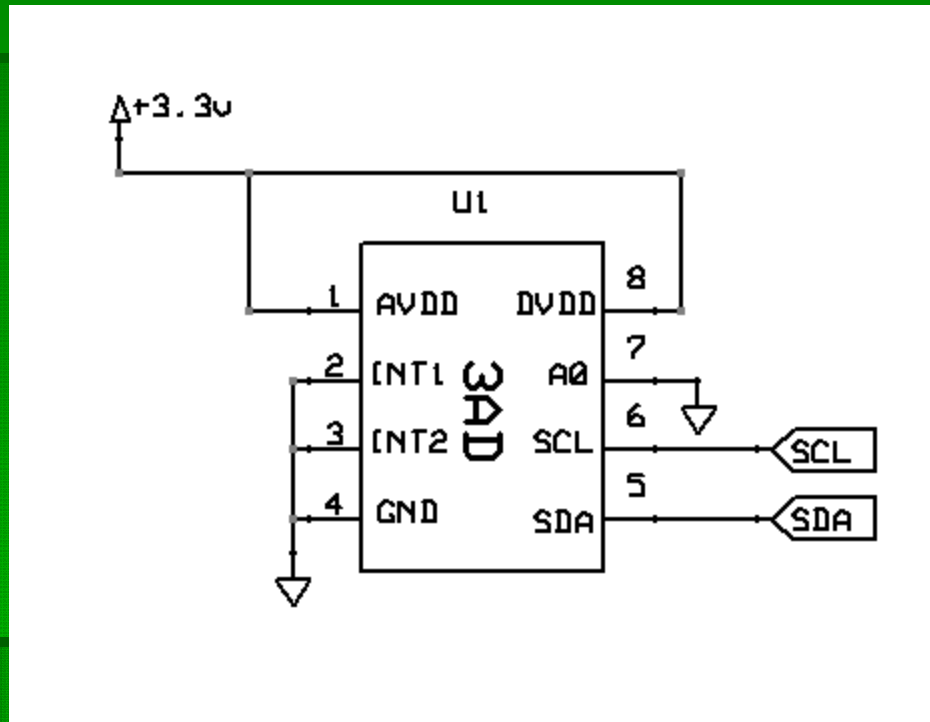
3AD is Compatible with spare EEPROM socket of the Propeller Platform
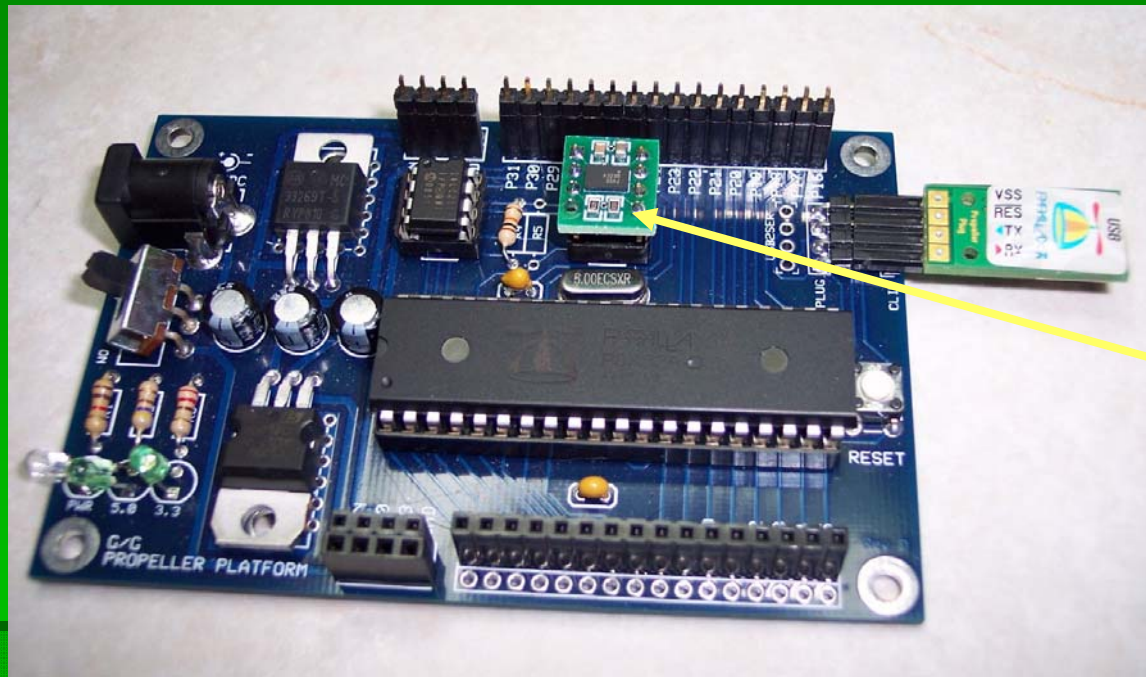
3AD

- The 3AD was specifically designed for compatibility with the spare EEPROM socket of the Propeller Platform.
- A DIP socket such as the Digikey A24794-ND allows for easy insertion and removal of the 3AD from the Propeller Platform

3AD on Propeller Platform Schematic

- This schematic shows the electrical connections when the 3AD is plugged into the Propeller Platform's spare EEPROM socket.
- The interrupt pins are connected to ground (and therefore not useable), but the onboard 1k resistors prevent any problems.

Example I2C Driver Provided

- The MMA7455 is also a component of the Rayslogic.com PSB and the PSB's I2C driver "PSB_I2CDriver" is provided for communicating with the MMA7455.
- The available "3AD_Test" project shows how to use the I2C driver to get X,Y&Z data from the 3AD.
- Before use, the 3AD must be initialized with this command to the I2C driver:
  - i2c.WriteAccelReg($16,%0101)
- Then, you can get accelerometer axis data with calls to the I2C driver like this:
  - x:=i2c.GetAccelX8