NANO FUSE RESET Instruction Manual

Introduction

The NANO FUSE RESET uses the Arduino Nano Microcontroller to reset Fuse bytes and erase Flash and EEPROM for **ATMEGA 328/328P**. By using the Arduino Nano with a BJT, the device will reset the Flash Program memory, EEPROM Data memory, Memory Lock bits, and Fuse bits in the **ATMEGA 328/328P** using HIGH VOLTAGE PARALLEL PROGRAMMING.

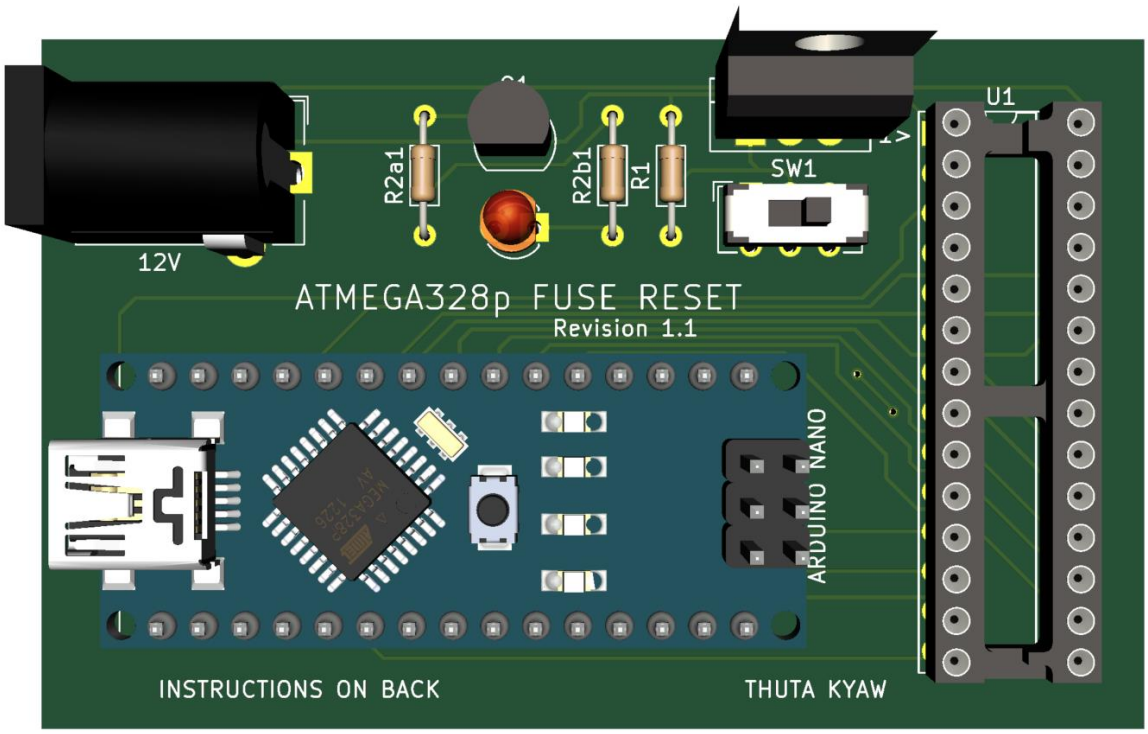


Figure 1: NANO FUSE RESET Rev. 1.1

Instructions

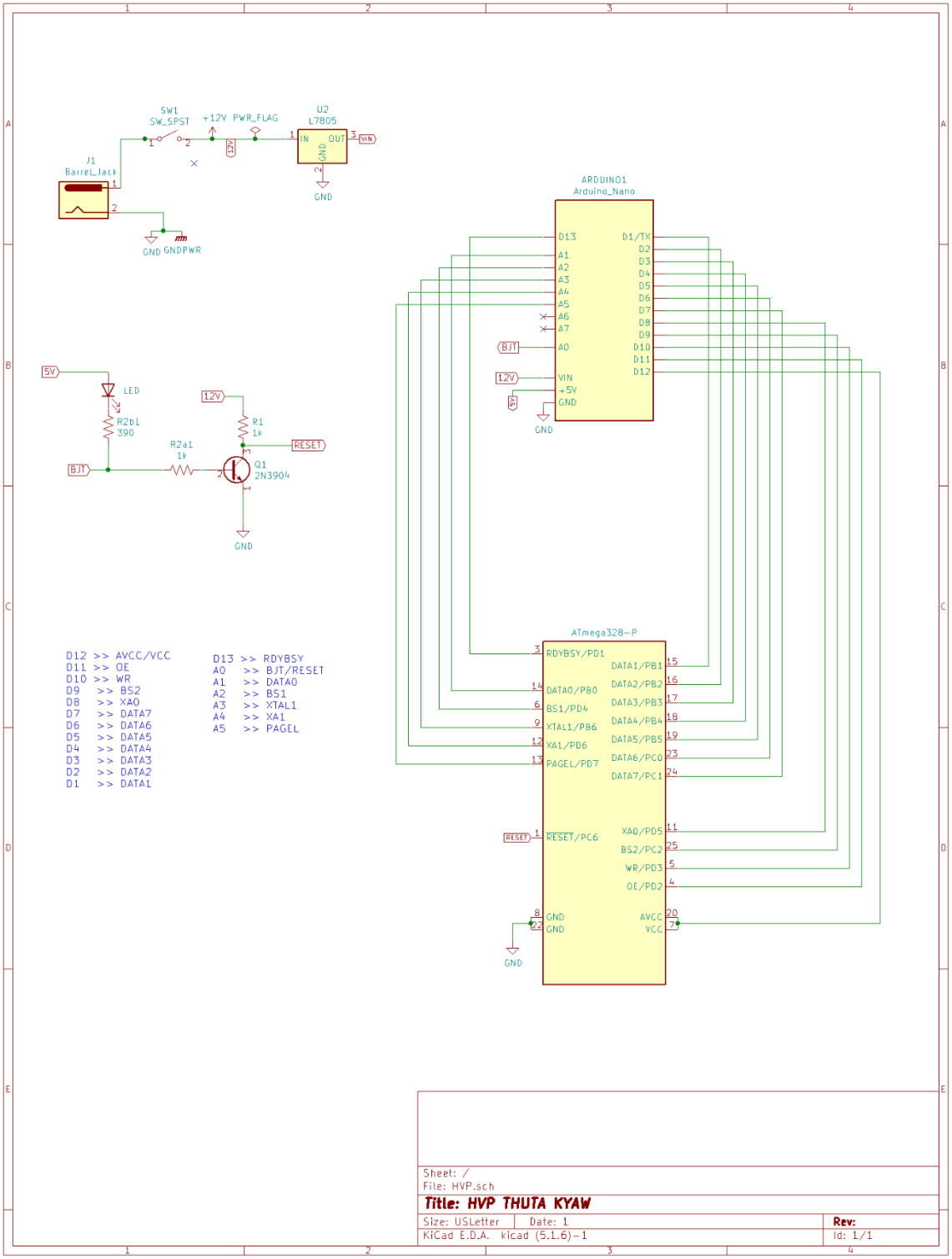
Insert **ATMEGA328/328P**

Connect 12V Power

Ready when RED LED stops flashing

DISCONNECT POWER *

SCHEMETIC


SW1
SW_SPST
+12V
PWR_FLAG
U2
L7805
IN
OUT
GND
VIN
J1
Barrel_Jack
GNDPWR
ARDUINO1
Arduino_Nano
D13
A1
A2
A3
A4
A5
A6
A7
A0
VIN
+5V
D1/TX
D2
D3
D4
D5
D6
D7
D8
D9
D10
D11
D12
BJT
12V
5V
LED
R2b1
390
R2a1
1k
R1
1k
RESET
Q1
2N3904
ATmega328-P
RDYBSY/PD1
DATA0/PB0
BS1/PD4
XTAL1/PB6
XA1/PD6
PAGEL/PD7
DATA1/PB1
DATA2/PB2
DATA3/PB3
DATA4/PB4
DATA5/PB5
DATA6/PC0
DATA7/PC1
RESET/PC6
XA0/PD5
BS2/PC2
WR/PD3
OE/PD2
GND
AVCC
VCC
D12 >> AVCC/VCC
D11 >> OE
D10 >> WR
D9 >> BS2
D8 >> XA0
D7 >> DATA7
D6 >> DATA6
D5 >> DATA5
D4 >> DATA4
D3 >> DATA3
D2 >> DATA2
D1 >> DATA1
D13 >> RDYBSY
A0 >> BJT/RESET
A1 >> DATA0
A2 >> BS1
A3 >> XTAL1
A4 >> XA1
A5 >> PAGEL
Sheet: /
File: HVP.sch
Title: HVP THUTA KYAW
Size: USLetter
Date: 1
Rev:
KiCad E.D.A. kicad (5.1.6)-1
Id: 1/1

Notes

*DISCONNECT POWER WHEN UNUSED. For unknown reasons, the voltage regulator on the Arduino Nano (even the original one) burns out even though it is rated for higher than 12V. Added a L7805 5V voltage regulator to avoid damaging the LMS1117 on the Arduino Nano

If there is no power to Arduino, plug in both the USB and 12V to operate the NANO FUSE RESET.

This project is targeted for students who are learning to program their ATMEGA chips. It provides an easy and cheap solution to reprogram misconfigured Fuse/Lock bits.

Learn more about HIGH VOLTAGE PARALLEL PROGRAMMING instructions from Section 28.6 in the ATmega48A/PA/88A/PA/168A/PA/328/P datasheet.

Hardware Revision History

Revision 1.1

Added Pin 1 label for ATMEGA 328/328P

Added Voltage Regulator

Connected GND to Pin 8 of ATMEGA328/328p

Document Revision History

NANO FUSE RESET Instruction Manual v2. Updated 9.28.2020

All webpages last accessed 5.31.2020