



KAmduino UNO



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Źródło: https://wiki.kamamilabs.com/index.php?title=KAmduino_UNO

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Description

[KAmduino UNO](#) is a development board with functionality and sizes typically for Arduino UNO. Thanks embedded ATmega328P microcontroller and FT231X chip, board can be programmed via USB connector with using Arduino software (IDE).



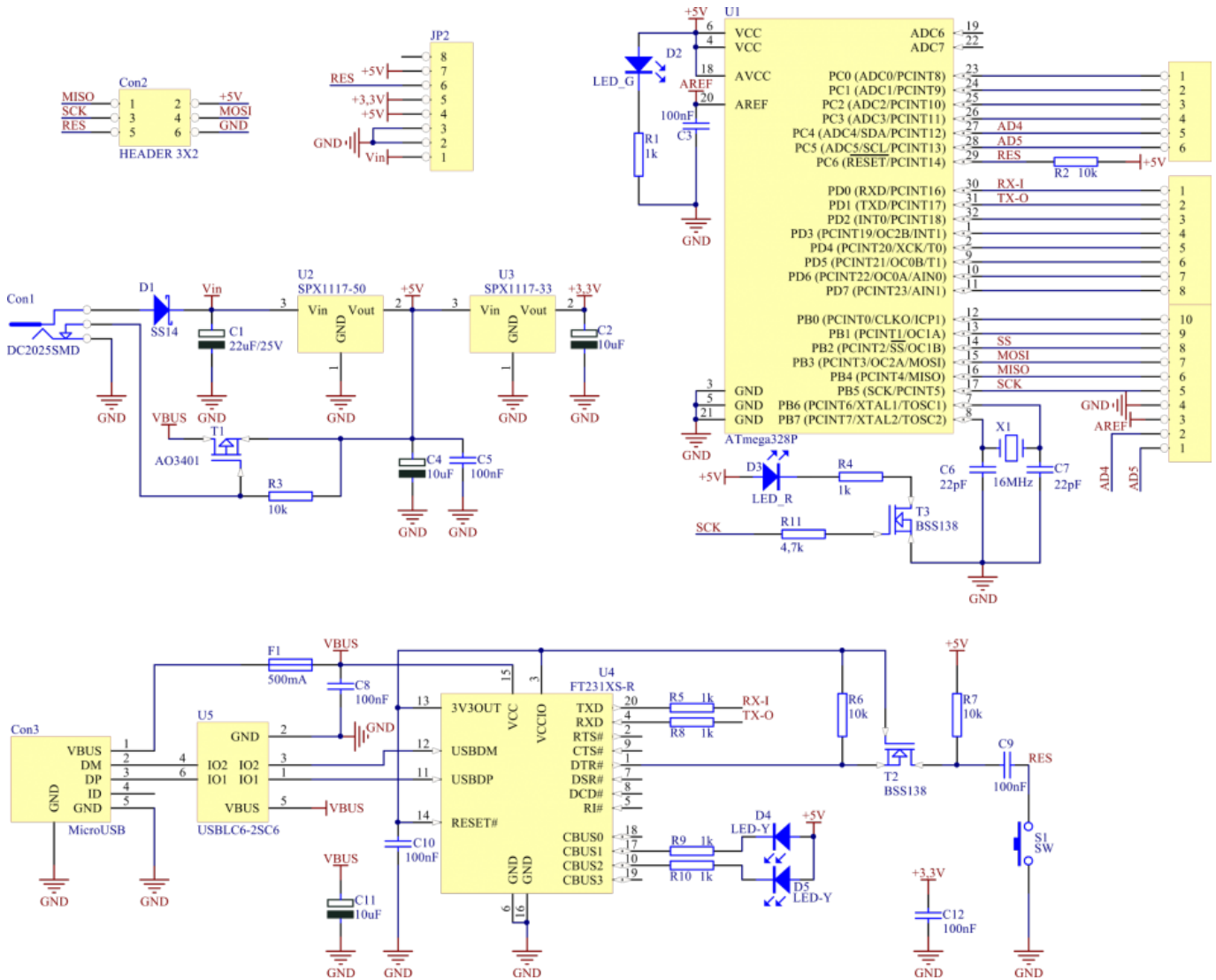
Basic features and parameters

- ATmega328P microcontroller from ATMEL
- 20 GPIO pins on connectors (including 6 lines with PWM mode)
- Uploaded Arduino bootloader
- MicroUSB-B connector for programming and data transfer
- Possibility of power via DC connector (5.5x2.1) by voltage in range 7 ... 15V
- Protection against reverse voltage polarity on DC connector
- Possibility of power via USB connector
- Connectors compatible with Arduino UNO standard
- On-board User LED and LEDs signalling transmission from/to computer
- On-board microcontroller reset-button
- USB connector protected against electrostatic discharge
- Possibility of expanding the functionality by using additional shields
- Mounting holes with diameter 3mm
- Module size: 69mm x 55mm x 14mm

Standard equipment

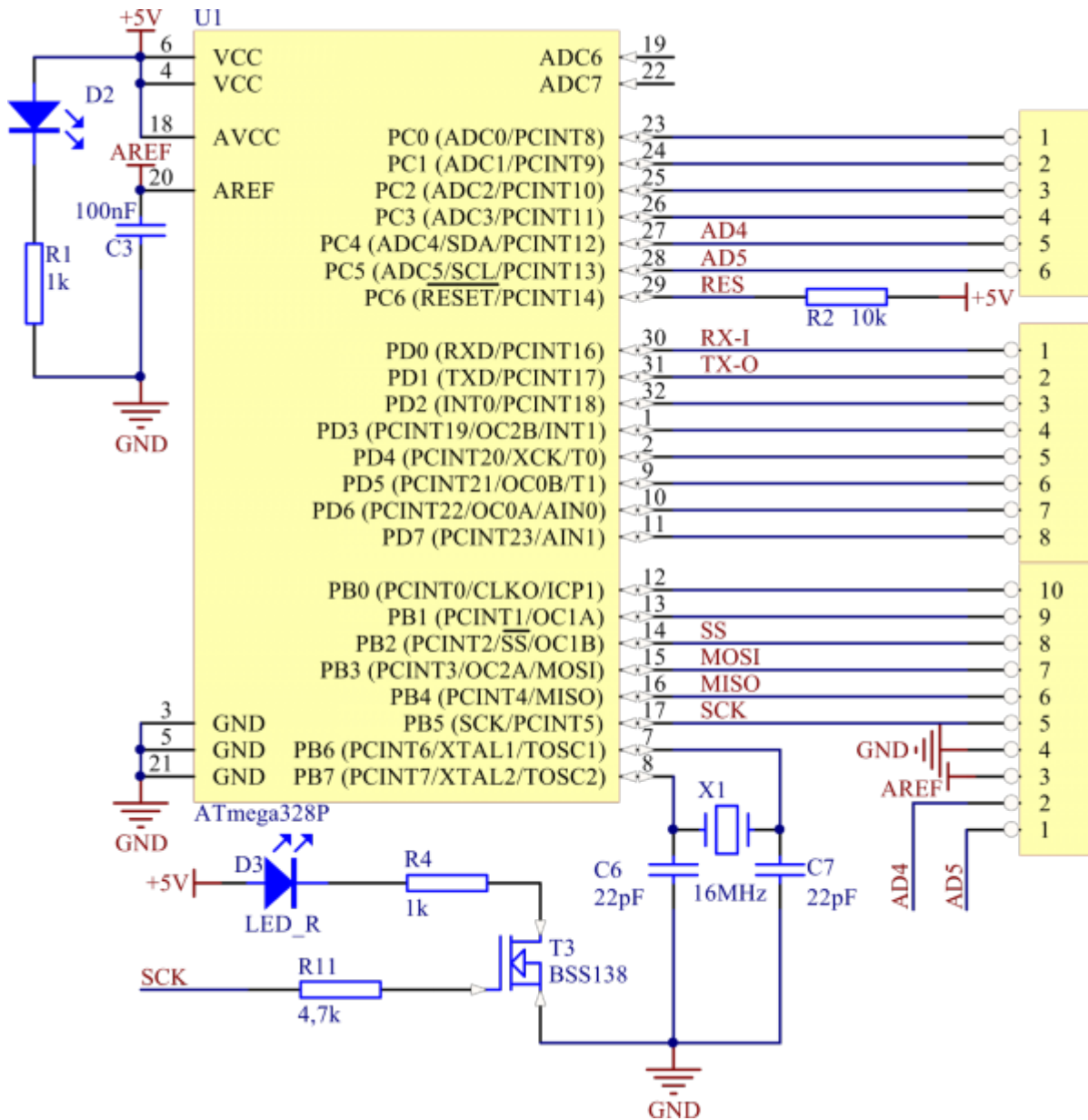
Code	Description
KAmduino UNO	• Assembled and launched module

Electrical schematics



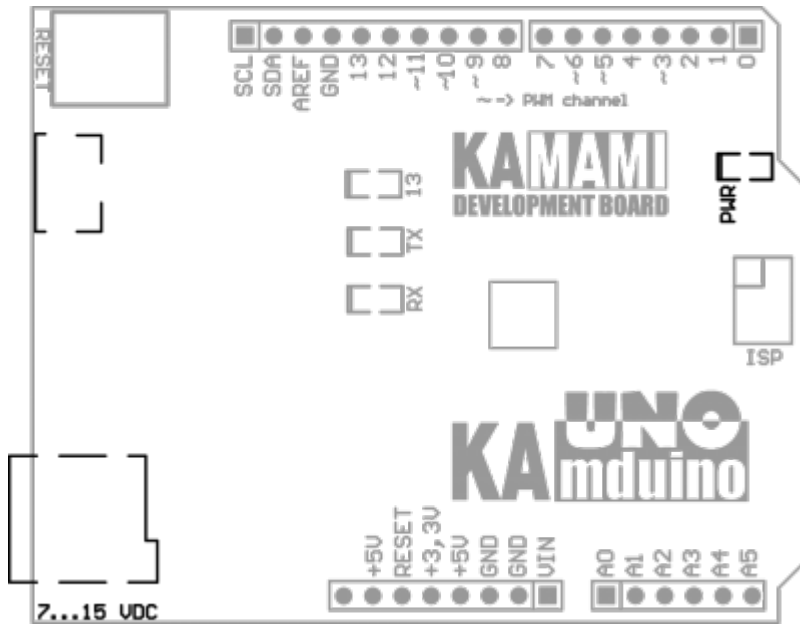
AVR ATmega328P microcontroller

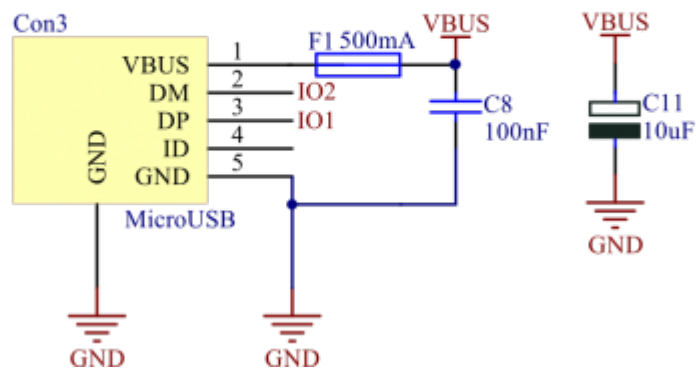
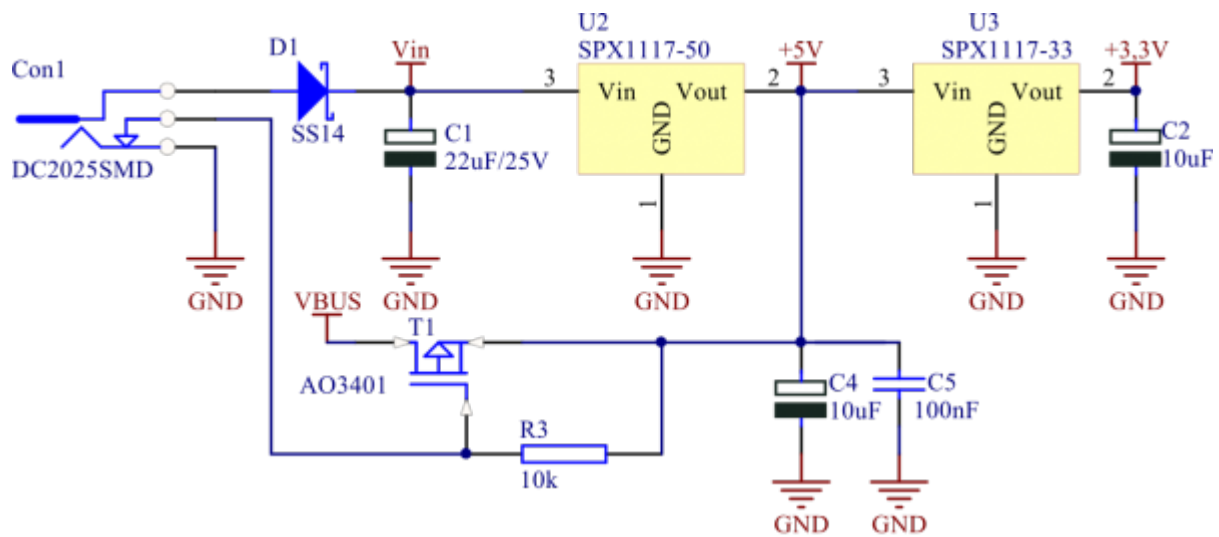
Embedded AVR ATmega328P microcontroller from ATMEL allow for using a board in development application, in which is required large Flash memory (32kB), RAM (2kB) or a large number of PWM signals (6 channels). Microcontroller can be running with frequency up to 16MHz. Uploaded Arduino bootloader make possible programming via USB connector with using Arduino IDE.



Power supply

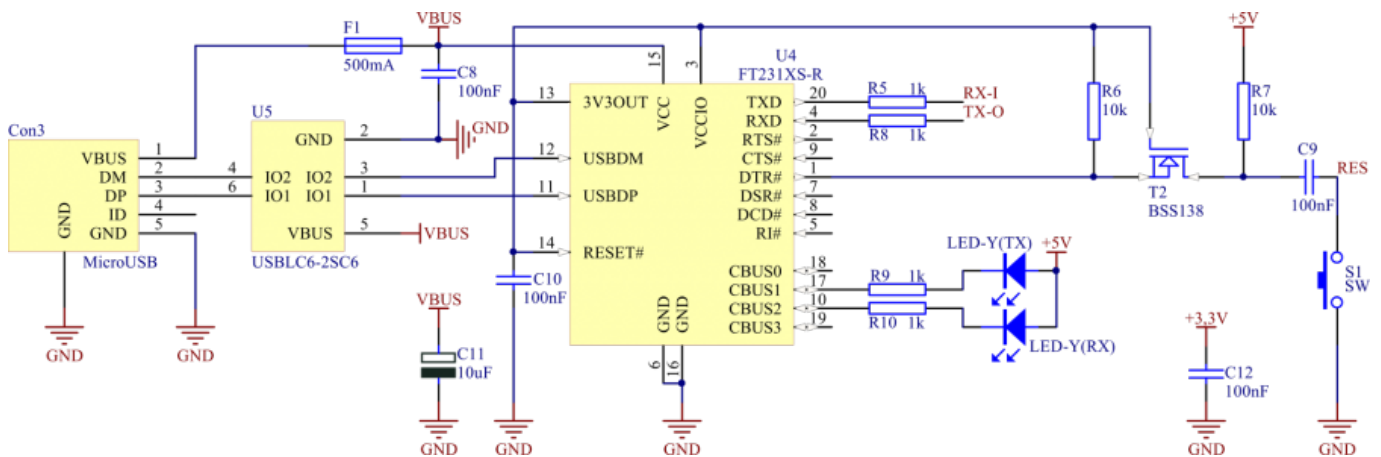
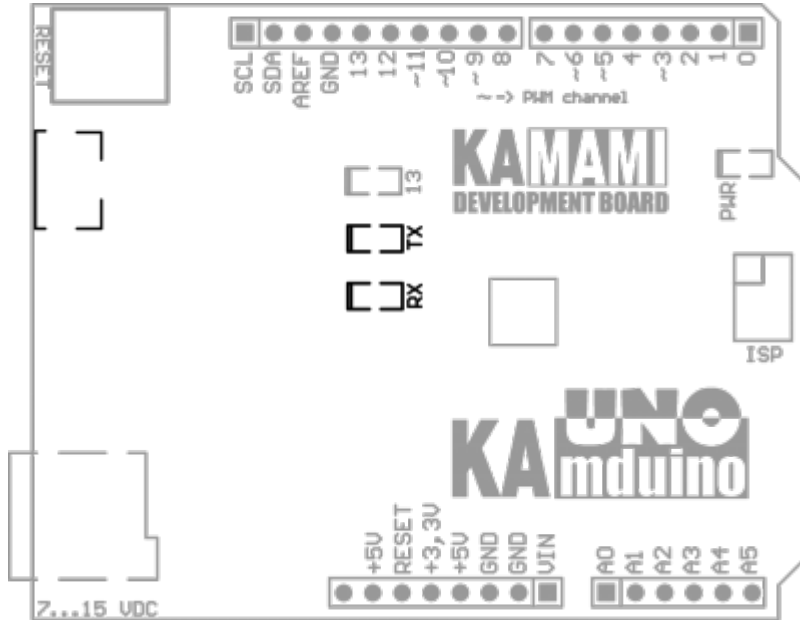
KAmduino UNO board can be supply via both USB connector and external power supplier with connector 5.5x2.1. The board has embedded protection circuit against reverse voltage polarity, as well as overcurrent protection of USB connector (polymer fuse). Correct power supply of development board is signalled by PWR green LED.





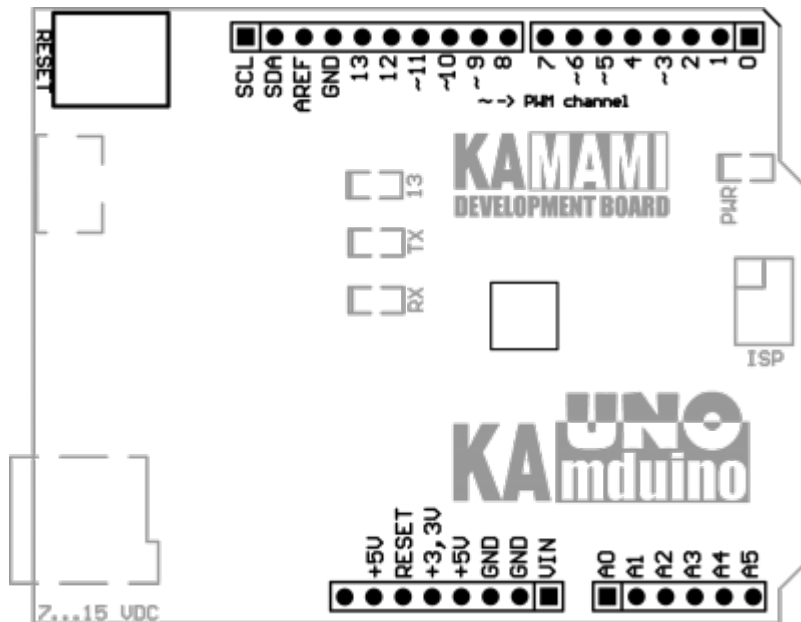
USB communication

KAmdunio UNO board has embedded USB connector. Connector can be used to communication with computer and board programming. USB connector is protected against electrostatic discharges. Thanks to this, board is resistant to the appearance of accidental electrostatic discharge and after-effects. Transmission both from and to computer is signalized by two yellow RX and TX LEDs. Board is installed on the computer as Serial Port (COM), thanks to cooperate with Arduino IDE, as well as with each terminal. Using of FT231X allow to reset of microcontroller from computer level in every moment.



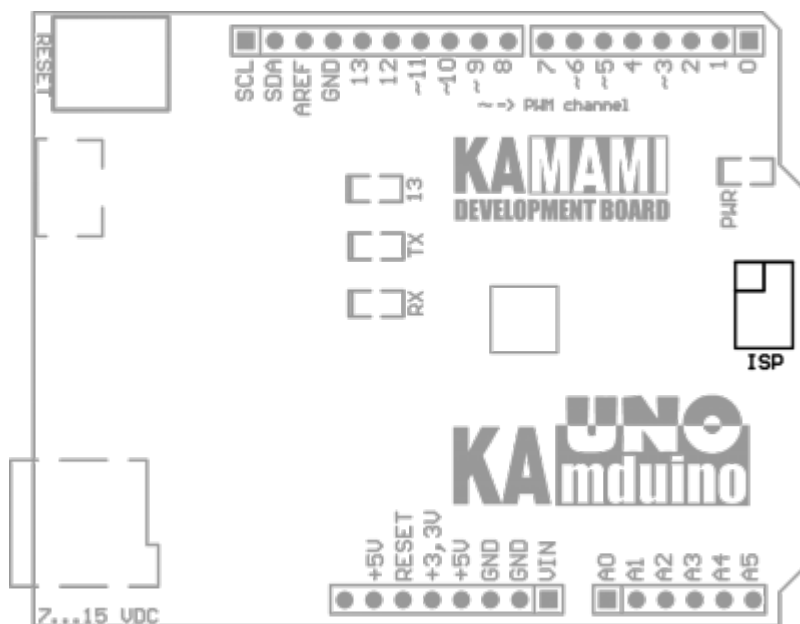
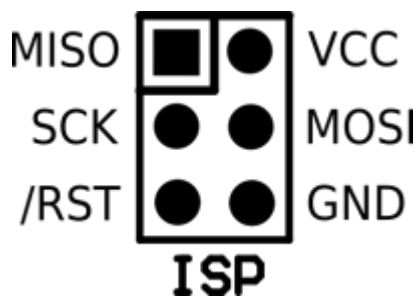
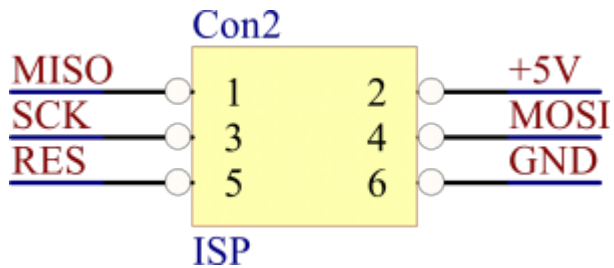
Connector compatible with Arduino UNO

Board is equipped with female connectors compatible with Arduino UNO standard. Thanks to this, it is possible to using additional modules (shields). On connectors, except all I/O microcontroller pins, are available power supply 5V and 3.3V, as well as RESET signal (connected parallel with button) and reference voltage of ADC converter.



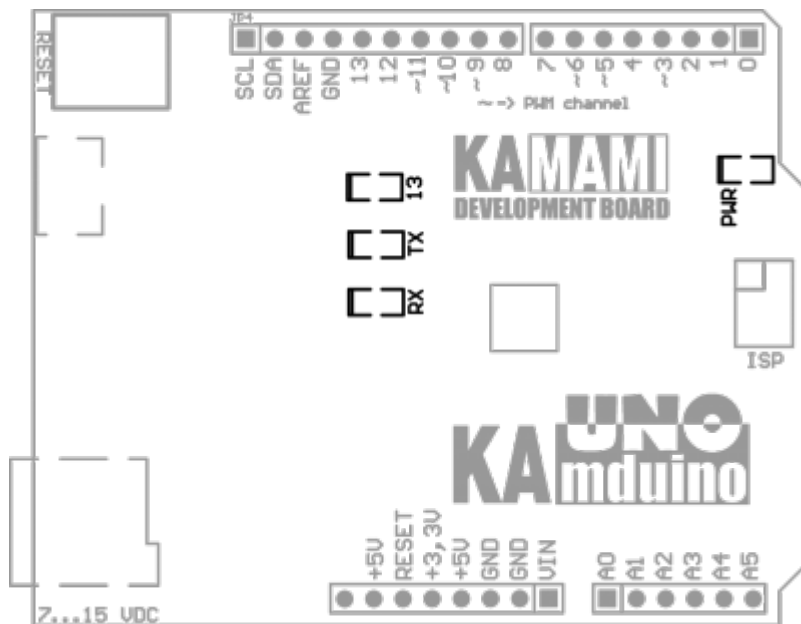
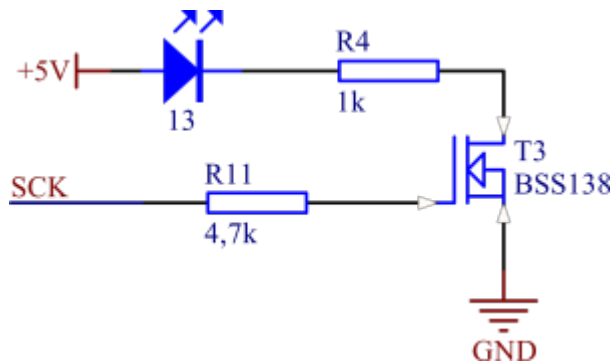
ISP connector

KAmduino UNO board has also connector for programming of ATmega328P microcontroller via ISP interface. By using programmer with ISP interface, microcontroller can be programmed without Arduino bootloader (bootloader will be deleted!).



User LED

On KAMduino UNO board is placed user LED (marked as "13"). It is controlled with MOSFET transistor with N-channel, connected to PB7 pin of microcontroller (output 13). Thanks of using the transistor, line is not loaded. It can be still using externally.

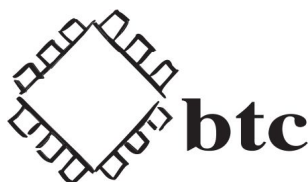


Multimedia

That's how it was created KAmduino UNO board:

External links

- [Atmel ATmega328P microcontroller datasheet](#)
- [<http://download.kamami.pl/p558601-CDM%20v2.12.24%20WHQL%20Certified.zip>] FTDI FT231XS controller (x86) - 2.12.24 version
- [FTDI FT231XS controller \(x64\) - 2.12.24 version](#)



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