# AVR-P28B PROTOTYPE BOARD WITH 10 PIN ICSP CONNECTOR FOR 28 PIN AVR MICROCONTROLLERS

Features:

AVR-P28B is prototype board for 28 pin AVR microcontrollers with following features:
- RS232 Tx, Rx interface with MAX232 IC
- ICSP 10 pin connector (STK compatible)
- RESET IC ZM33064C
- Status LED connected to PC5 via removable jumper
- 4MHz or 8MHz quartz oscillator
- extension slot on each microcontroller pin
- DIL28 microcontroller socket
- AGND-GND and AVCC-VCC jumpers
- power supply plug in jack connector
- +5V power supply voltage regulator
- 0.1" (2.54 mm) grid
- dimensions: 100x80 mm
- four mounting holes

AVR-P28B (C) 2002, HTTP://WWW.OLIMEX.COM/DEV
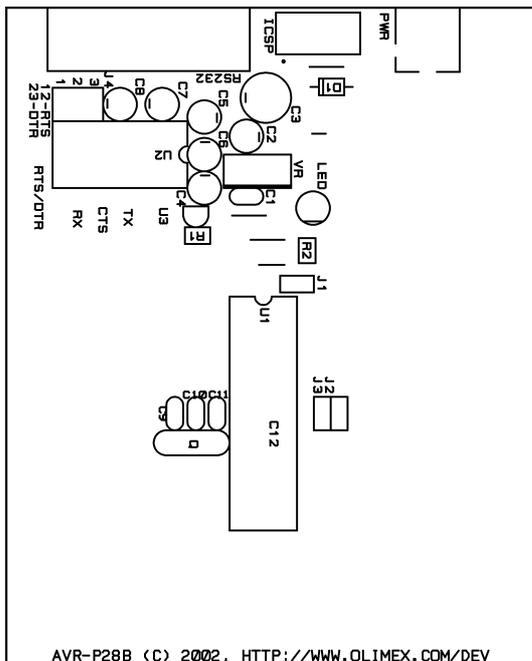
Programming:

To program AVR-P28B you need serial port or parallel port AVR-ICSP programmer dongle (Olimex part # AVR-PG1B or AVR-PG2B).
The serial port ICSP programmer (AVR-PG1B) works with PonyProg software by from Claudio Lanconelli and the latest release may be download for free from **http://www.lancos.com**

The parallel port ICSP programmer (AVR-PG2B) works with AVR ISP from Atmel and may be download for free from Atmel's web site.

ICSP interface:

The ICSP connector is 2x5 pin with 0,1" step and Atmel STKxxx compatible layout. The PIN.1 is marked with square pad on bottom and arrow on top. ICSP signals are: 1- MOSI, 2- VCC, 3- NC, 4- GND, 5- RST, 6- GND, 7- SCK, 8- GND, 9- MISO, 10- GND
TOP view PCB board layout:
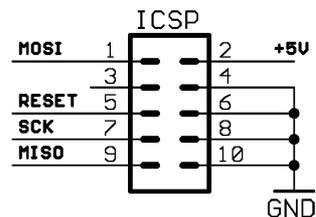
RS232 interface:

J4 removable jumper selects where RTS/DTR line to be connected. In position 12 the line is connected to RTS, in position 23 is connected to DTR.

Status LED:

Connected to PC5 via removable jumper J1.

Oscillator circuit:

Crystal resonator connected to XTAL1 and XTAL2.

RESET supervisor circuit:

IC ZM33064C with 4.6V threshold.

Analog Vcc and GND:

J2 connects AVCC to VCC.
J3 connects AGND to GND.

Supported devices:

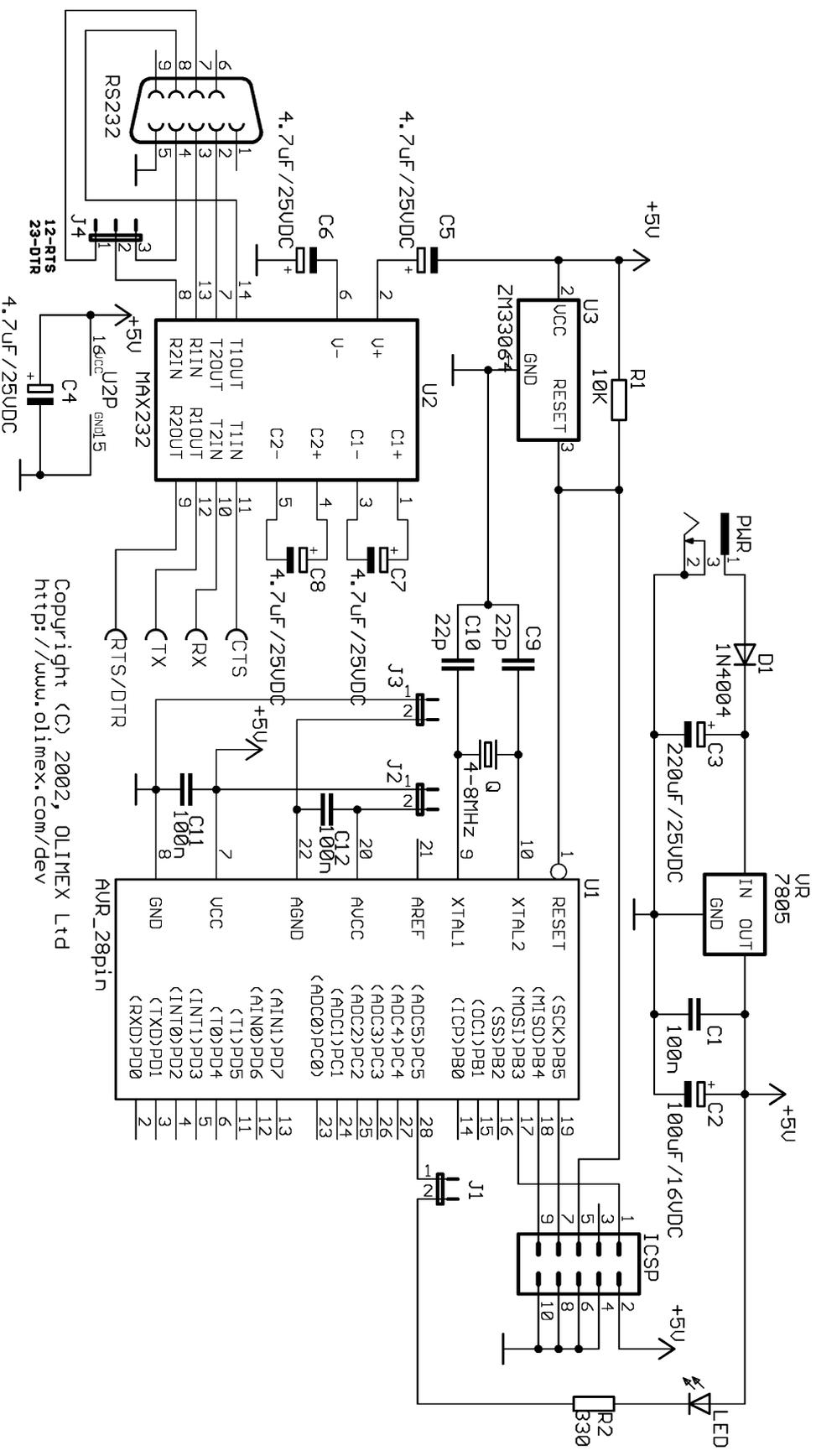AT90S2333, AT90LS2333, AT90S4433, AT90LS4433, ATtiny28L, ATtiny28V microcontrollers.

Ordering codes:

AVR-P28B-4MHz	- assembled and tested
AVR-P28B-8MHz	- assembled and tested
AVR-P28B/PCB	- only PCB

RS232

4.7uF/25VDC
C6

4.7uF/25VDC
C5

+5V

U3
ZM33064
VCC 2
GND
RESET 3

R1
10K

12-RTS
23-DTR
J4

4.7uF/25VDC
+5V
C4
U2P
16 VCC
GND 5

U2
MAX232
T1OUT
U+   C1+
U-   C1-
R1IN   C2+
T2OUT   C2-
R2IN
T1IN
T2IN
R1OUT
R2OUT

PWR

1N4004
D1

C3
220uF/25VDC

UR
7805
IN OUT
GND

C1
100n

C2
100uF/16VDC

+5V

4.7uF/25VDC
C8

4.7uF/25VDC
C7

C10
22p

C9
22p

RTS/DTR
TX
RX
CTS

J3

J2

+5V

C11
100n

C12
100n

Q
4-8MHz

U1
AVR_28pin
RESET
XTAL2
XTAL1
AREF
AVCC
AGND
VCC
GND

(SCK)PB5
(MISO)PB4
(MOSI)PB3
(SS)PB2
(OC1)PB1
(ICP)PB0
(ADC5)PC5
(ADC4)PC4
(ADC3)PC3
(ADC2)PC2
(ADC1)PC1
(ADC0)PC0
(AIN1)PD7
(AIN0)PD6
(T1)PD5
(T0)PD4
(INT1)PD3
(INT0)PD2
(TXD)PD1
(RXD)PD0

J1

ICSP

+5V

+5V

LED
R2
330

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