ALVIDI

AVR-Development Module

Model: AL-AVREB

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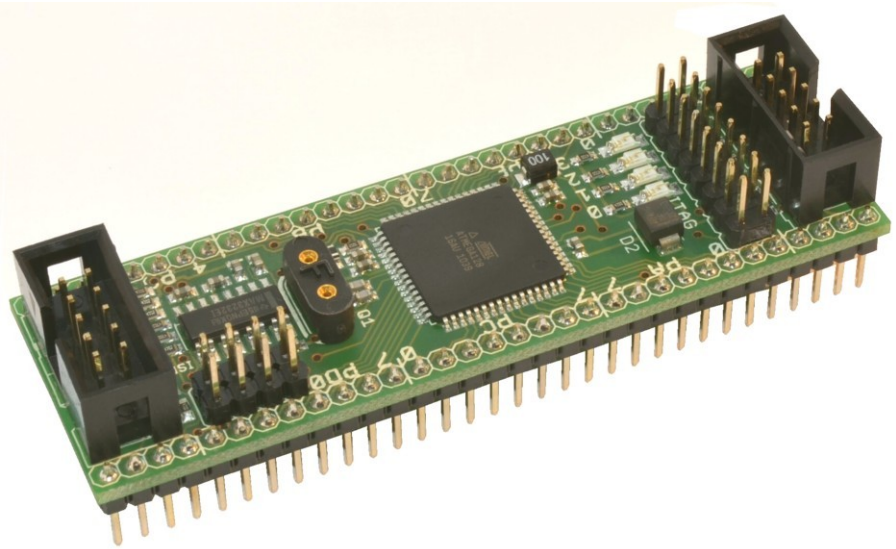


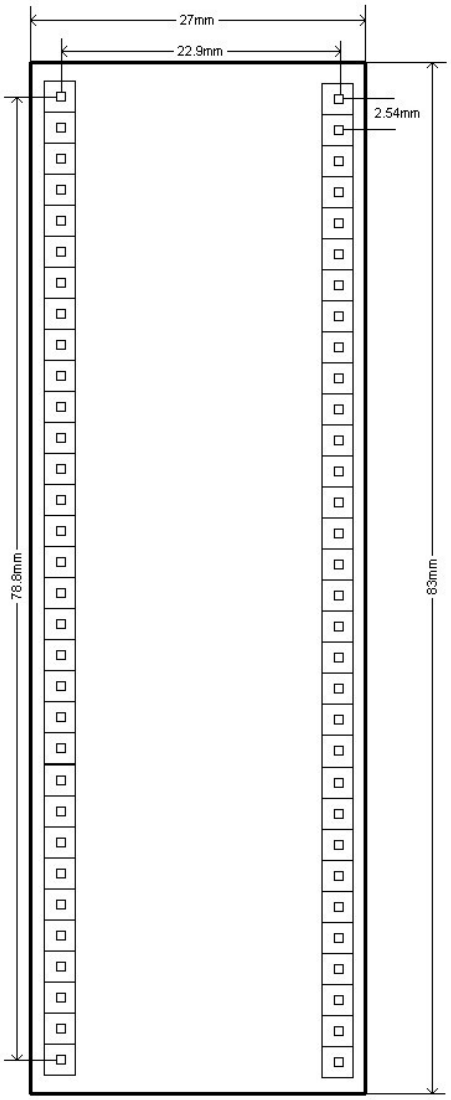
Summary

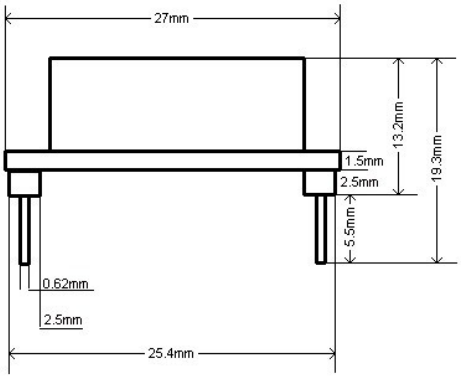
LED0/PF0		VCC
LED1/PF1		VCC
LED2/PF2		RESET
LED3/PF3		AREF
JTAG-TCK/PF4		PA0
JTAG-TMS/PF5		PA1
JTAG-TDO/PF6		PA2
JTAG-TDI/PF7		PA3
ISP MOSI/RS232 RXD0/PE0		PA4
ISP MISO/RS232 TXD0/PE1		PA5
PE2		PA6
PE3		PA7
PE4		PC7
PE5		PC6
PE6		PC5
PE7		PC4
PB0		PC3
ISP SCK/PB1		PC2
PB2		PC1
PB3		PC0
PB4		PD7
PB5		PD6
PB6		PD5
PB7		PD4
PEN		PD3/RS232 TXD1
BOOT-PIN/PG4		PD2/RS232 RXD1
PG3		PD1
PG2		PD0
PG1		OUT0
PG0		OUT1
GND		IN0
GND		IN1

All description in **BLUE** concern the internal connection

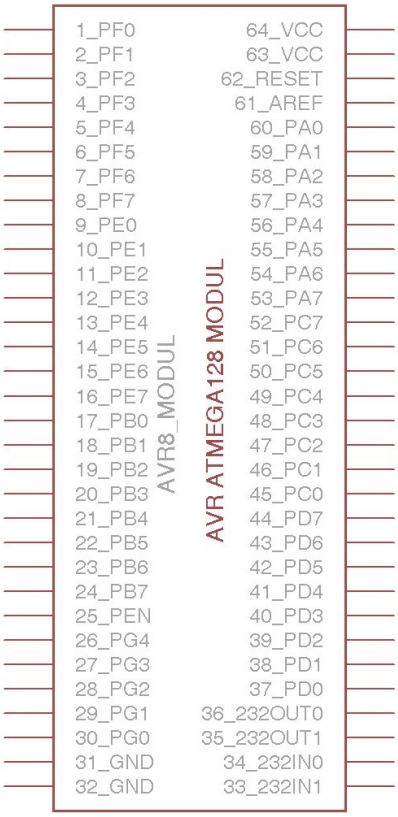
Attention! Polarity reversal and overvoltage may cause a destruction of the electronic components!!!

Measures





Description



- **Controller:** Atmel AVR ATmega128A-AU up to 16 MHz
- **Supply voltage:** 3-5V
- **Module size:** W x H x D 27mm x 83mm x 19.3mm
- **Quartz socket:** simple and fast quartz exchange
- **PC-Connection:** 2 x RS232, separable with jumpers
- **Compatibility:** compatible with IC-Socket 64-pin and hole matrix board
- **Pin-Distance**: 2.54 mm
- **LED:** 4 LEDs, separable with jumpers
- **Circuit:** built on the recommendation of the manufacturer
- **Programming:** ISP or JTAG connector
- **Pin configuration of AVR-Module:** shown at the left picture
- **Pin configuration ISP & JTAG connectors:** 10-pin, standard of Atmel
- **Functionality:** tested, ready for use
- **Conformity:** RoHS Compliance
- **Produced** in Germany
- **Description:**

We offer you more flexibility by the development. By means of quartz socket it is possible to choose another frequency easier and faster. IC-Socket makes possible the fast installation of AVR-Module and fits the hole matrix board with the hole distance 2.54 mm. All pins of micro controller are connected with the pins of module and positioned in the logical order, that makes the development work easier. The circuit of the module is built on the recommendation of the manufacturer: A/D converter, reset, ISP, JTAG, RS232, LEDs. Jumper configuration helps you to make the right settings. A suppressor diode is responsible for the security of AVR-Module. We offer you a very simple installation and use of AVR-Module for the beginner as well as for the advancer.

Electrical Characteristics

	Min	Typ	Max
for **all** modules with	**Operating Temperature**		
MAX3232EID (actual)	**- 40 °C**		**85 °C**
MAX3232IDR (actual)			
MAX202ECSE	**0 °C**		**70 °C**
MAX3232ECD			
	Operating Voltage		
• with ATmega128-16AU	4.5 V		5.5 V
• with ATmega128L-8AU	3.0 V		5.5 V
• with Atmega128A-AU (actual)	3.0 V		5.5 V
	Operating Frequency		
• with ATmega128-16AU	0 Hz		16 MHz
• with ATmega128L-8AU	0 Hz		8 MHz
• with Atmega128A-AU (actual)	0 Hz		16 MHz
	Maximum DC Current per I/O Pin		
• with ATmega128-16AU			20 mA
• with Atmega128L-8AU			10 mA
• with Atmega128A-AU at Vcc=5V			20 mA
• with Atmega128A-AU at Vcc=3V			10 mA

more electrical characteristics you will find on the page 320 in the data sheet ATmega128A.pdf

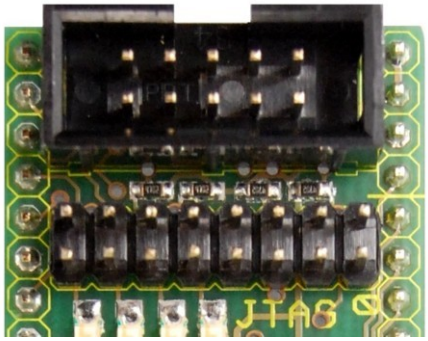
► Voltage Suppressor P6SMB6.8A
► 2-layer PCB DIN ISO 9001
► with UL-Approbation
► 4x LED yellow 2V 20 mA 140° 39 mcd

Possible Modifications

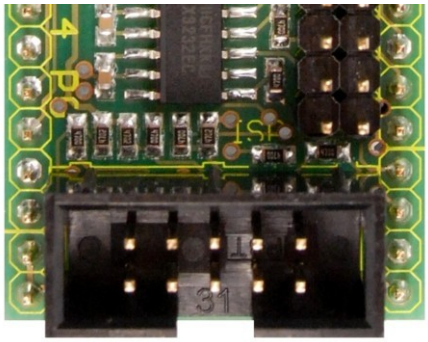
¤ pin compatible controller
¤ with mounted quartz (without quartz socket)
¤ without laterally pins

Programming

JTAG [1]



ISP [2]



Pin Configuration JTAG-Connector

(9) TDI	(7) VCC	(5) TMS	(3) TDO	(1) TCK
(10) GND	(8)	(6) Reset	(4) VCC	(2) GND

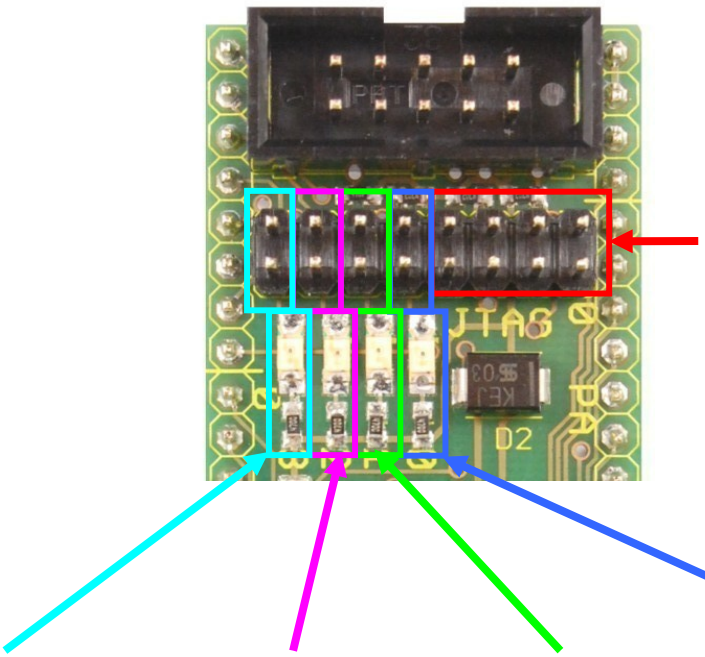
Pin Configuration ISP-Connector

(2) VCC	(4) GND	(6) GND	(8) GND	(10) GND
(1) MOSI	(3) GND	(5) Reset	(7) SCK	(9) MISO

1 When programming with JTAG the JPl-(1-4)-jumpers should be set.

2 When programming with ISP the UART-jumpers JP2-3 and JP2-1 should not be set.

Settings



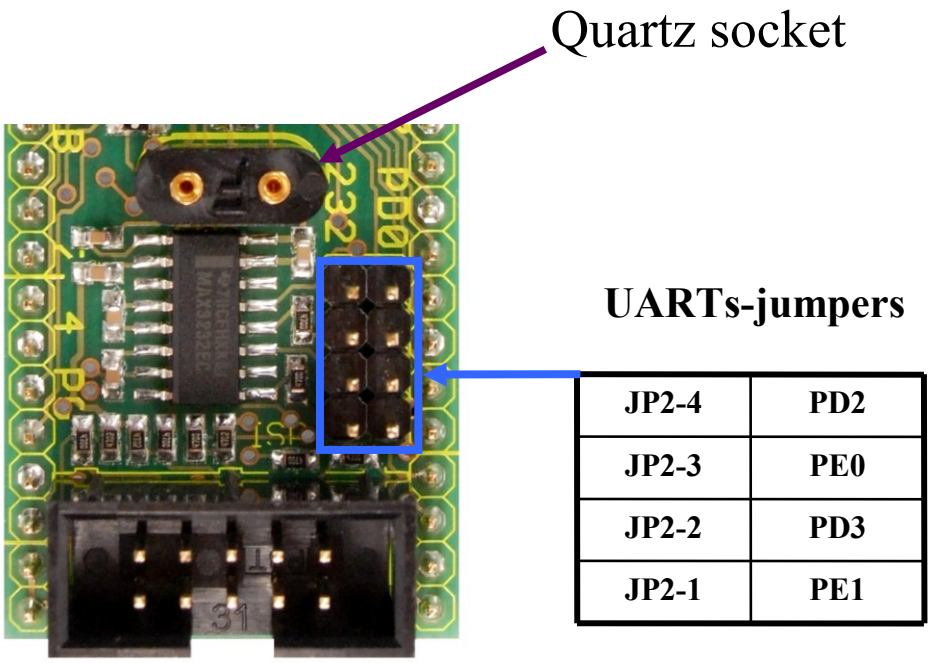
JTAG-jumpers JP1-(1-4)

When programming with JTAG the jumpers should be set in the red square.

LED-jumper 3 **+LED 3 (yellow)** **+resistor** Jumper is connected to the pin PF3	**LED-jumper 2** **+LED 2 (yellow)** **+resistor** Jumper is connected to the pin PF2	**LED-jumper 1** **+LED 1 (yellow)** **+resistor** Jumper is connected to the pin PF1	**LED-jumper 0** **+LED 0 (yellow)** **+resistor** Jumper is connected to the pin PF0

Jumpers set-up

JP1-8	**JP1-7**	**JP1-6**	**JP1-5**	**JP1-4**	**JP1-3**	**JP1-2**	**JP1-1**
LED 3 **Pin PF3**	**LED 2** **Pin PF2**	**LED 1** **Pin PF1**	**LED 0** **Pin PF0**	**TDI** **Pin PF7**	**TDO** **Pin PF6**	**TMS** **Pin PF5**	**TCK** **Pin PF4**

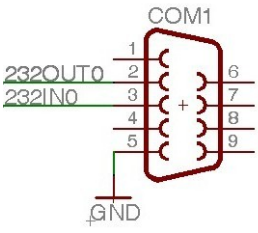


UARTs-jumpers

JP2-4	**PD2**
JP2-3	**PE0**
JP2-2	**PD3**
JP2-1	**PE1**

The UARTs-pins can be parted from RS232 transceivers with these jumpers.
When programming with ISP the UART-jumpers JP2-3 (PE0) and JP2-1 (PE1) should not be set.

Connection of D-SUB 9-pin female connector (serial port/COM1)



	D-SUB 9-p.	AL-AVREB
CH 0 example in the left picture	Pin 2	36_232OUT0
	Pin 3	34_232IN0
	GND	32_GND
CH 1	Pin 2	35_232OUT1
	Pin 3	33_232IN1
	GND	32_GND