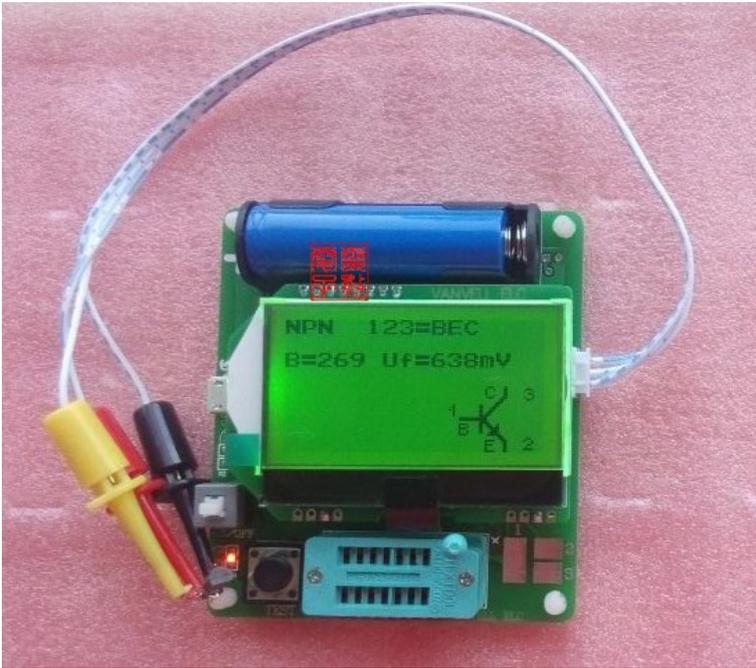


M328 version ESR inductance capacitance meter multifunctional tester DIY



About transistor Multifunction Tester:

The tester uses 3.7V rechargeable lithium battery (battery model: 14500) powered portable design, and can use the T-MINIUSB socket to recharge the battery and power supply systems, long-term use in the room is more economical and convenient, replacing always to be replaced battery economic input!

The tester stable, accurate data can be read out automatically, and easy to use for electronics enthusiasts, electronic developers, designers, and those necessary to small electronic maintenance instrument. Both can be tested in-line device to be tested patch element, which can be measured a variety of diodes, transistors, SCR, MOS FET; can determine the type of device, the pin polarity output HFE, valve voltage, junction capacitance, FET additional conditions can be measured capacitance and resistance. Particularly suitable transistor pair and hybrid surface-mount components identified.

Features:

- ◆ a key measurement operation, auto power off delay. Battery operated.
- ◆ automatic detection PNP and NPN bipolar transistor, N , P -channel MOSFET , JFET MOSFET, diodes, double diodes, thyristors, resistors, capacitors, inductors. Automatic detection pin definitions.
- ◆ measuring current amplification factor (bipolar transistor B) and conduction emitter junction voltage (Uf). Darlington transistor can be identified by the amplification factor of the high threshold voltage and high current.
- ◆ can detect bipolar transistors and MOSFET protection diode inside and displayed on the screen.

- ◆ measuring MOSFET threshold voltage and gate capacitance values.
- ◆ support two measuring resistors, potentiometers can also be measured. If the potentiometer is adjusted to its end, the tester can not distinguish between the middle and the ends of the pins.
- ◆ resistance measurement resolution is 0.1 ohms, the highest measured value of 50M ohms.
- ◆ capacitance measurement range from 25pf to 100 mF (10 Wan UF). Resolution up to 1 pF , inductance measurement range 0.01MH-20H , otherwise it will appear as resistance, if the inductor DC resistance higher than 2100 will be displayed as the European resistance.
- ◆ can detect 2uF above capacitor equivalent series resistance (ESR), a resolution of 0.01 ohms. This feature is very important for the detection of capacitance performance.
- ◆ can display symbols of the two diodes right direction, also shows the forward voltage drop.
- ◆ LED detection diode forward voltage drop higher than normal. Dual LEDs detected as a double diode. Simultaneous detection of light-emitting diode flashes.
- ◆ time each test is about two seconds, only large capacitance and inductance measurements will take a long time.

Calibration method:

Short three test side, into the test, the screen prompts correction step. When prompted to disconnect short time off will continue the calibration test terminal three, when prompted in the 1-3 foot access 100nF capacitor over time, access 100nF or more non-polar capacitor after the program will automatically enter the next step. Until the end of the correction reboot to complete the correction.

The main parameters and instructions for use:

- 1 using ATmega328 microcontroller.
- 2 12864 Large graphic LCD display test results.
- 3 one-button operation, automatic power off.
- 4 Exclusive to increase the power switch, to avoid storage and off battery power.
- 5 Automatic detection PNP and NPN bipolar transistor, N , P -channel MOSFET , JFET , diodes, double diode, thyristor , SCR.
- 6 automatically detects the pinout.
- 7 measuring bipolar transistor current amplification factor and the threshold voltage of the emitter.
- 8 Darlington transistor through a high threshold voltage and high current amplification factor identification.
- 9 of the bipolar transistor, MOSFET protection diode detection.
- 10 measuring MOSFET threshold voltage and gate capacitance values.

11 supports two resistance measurement and display symbols, numbers, and up to four units. Both ends of the resistor symbol is shown connected to the tester probes number (1-3). Therefore, the potential can also be measured.

12 resistance measurement resolution is 0.1 ohms, the highest measured value 50M ohms.

13 can detect and measure a capacitor. And the highest four-digit unit display. Values can be from 25pF (8MHz clock, 50pF @ 1MHz clock) to 100 mF . Resolution up to 1 pF (@ 8MHz clock).

14 can 2UF more capacitors equivalent series resistance (ESR) capacitance measurements. A resolution of 0.01 ohms.

15 can simultaneously measure 2 diodes, and display the correct pin layout and forward voltage drop.

16 LED detected as a diode forward voltage drop is much higher than normal. Dual LEDs detected as a double diode.

17 zener diode can be detected, if the reverse breakdown voltage is less than 4.5V . It will appear as two diodes.

18 only need to find one measuring connection full bridge.

19 can not detect less than 25pf capacitor, but may be a diode in parallel to or greater than 25pf capacitor in parallel. Subtract the measurement shunt capacitance value.

20 resistance below 2100 ohms will measure inductance range from 0.01mH - 20H , but the accuracy is not good.

21 test of time is approximately two seconds , capacitance and inductance measurements will increase as the value of the measurement time extension.

Resistor (100 ohms) test



Capacitor (1000uF) test: (Please test before discharge)



Inductance (0.01mH) test



Transistor (NPN transistor) test



Thyristor (one-way) test



Thyristor (bidirectional) test



Undetected or damaged components



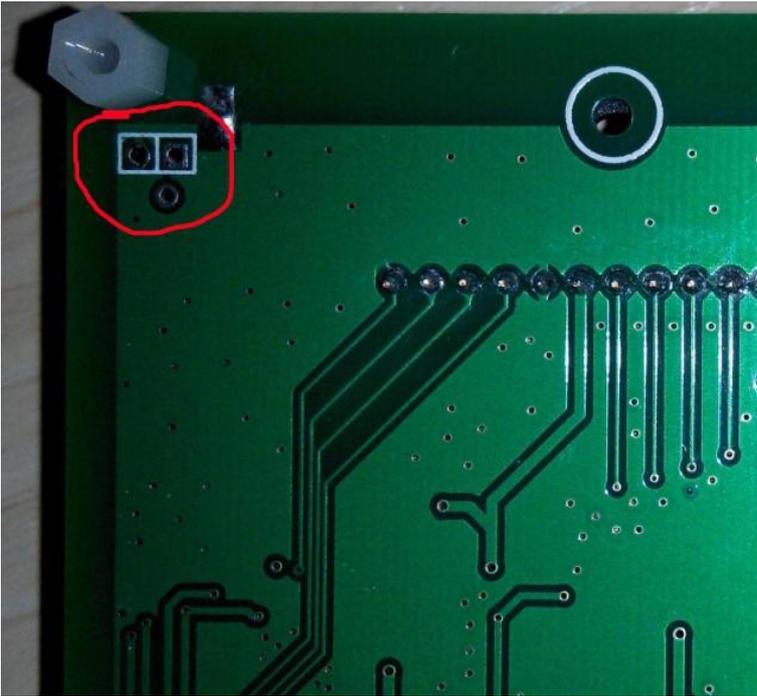
Precautions:

First install the battery, you need to click to activate the battery.

Method 1: Replace the battery after tweezers or shorting the two round holes in the figure below the red circle short click.

Method 2: After loading the battery, insert the charger can also be activated at.

As follows :



Shipping list:

- ◆ WZ _ M8 _03 host of a transistor tester