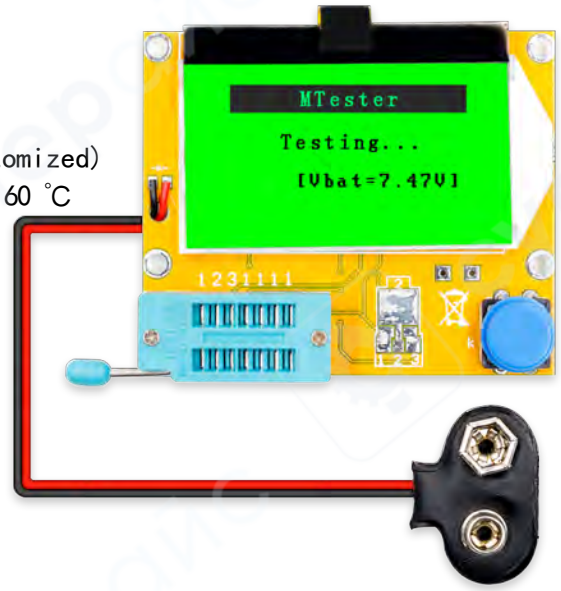
LCR-T4 tester description

Features: ① Use Atmega328 chip, more powerful, ② Use 12864LCD graphic display, intuitive information and large content ③ Use 6F229V battery power, easy to get cheaper; ④ Use mobile IC stand, test is convenient and fast; ⑤ LCD has backlight, dim Test in the same environment; ⑥ Self-identifying pin sequence, fool-type test; ⑦ Key components adopt high precision to ensure test accuracy; ⑧ Standby current is only 20nA, which can be used for long standby; ⑨ Support automatic calibration at the later stage to ensure the accuracy of the instrument; ⑩ Single button operation, fast and labor-saving.

The tester has stable performance, can read out accurate data automatically, and is easy to use. It is suitable for small instruments necessary for electronics enthusiasts, electronics developers, designers, and electronics maintainers. It can measure various resistances, capacitances, inductances, diodes, triodes, and thyristors; it can determine the type of device, the polarity of the pins, the output HFE, the valve voltage, and the junction capacitance of the field effect tube. Especially suitable for transistor pairing and hybrid surface-mount component identification, it is also the best partner for amateur DIYers.



General specifications:

Display: Digital 12864 LCD
Backlight color: green (default) or white backlight (customized)
Temperature: during operation: 0 ~ 40 ℃, during storage: -30 ~ 60 ℃
Operating altitude: 0 to 2000 meters
Relative humidity: non-condensing <10° C
Battery type: 6F22 type 9V
Size: (width x length) = 71 * 63
Weight: 48 g
Working power: DC 9V
Standby current: 0.02uA
Working current: typical working current 40mA

The main function:

1. One-button startup, one-button test, automatic identification of device type, automatic range switching, and automatic shutdown after testing.
2. The shutdown standby current is as small as 20na, and the standby time is very long.
3. Automatic detection of PNP and NPN bipolar transistors, N, P-channel MOSFETs, JFETs, diodes, dual diodes, thyristors (thyristors), triodes, resistors, capacitors (be sure to discharge before measuring capacitance), capacitance ESR value.
4. Automatically detect pin layouts and give labels in actual sequence.
5. Measure the current amplification factor β of the bipolar transistor, the threshold voltage of the emitter junction, and the ICE leakage current.
6. Darlington transistors can be identified by high threshold voltages and high current amplification factors.
7. For bipolar transistors, MOSFET protection diode detection and forward voltage drop Uf.
8. Measure the threshold voltage Vt and gate capacitance C of the MOSFET.
9. Detect and determine the amplification and base of the transistor and MOSFET protection diodes to determine the forward voltage of the emitter transistor.

10. Supports two resistors for simultaneous measurement and symbol display, with up to four digits displayed. The resistance symbol shown is at both ends of the connected tester probe number (1-3). So the adjustable potentiometer can also measure (if the potentiometer is adjusted to its one end, the tester cannot distinguish between the middle and two ends of the pins)

11. The resolution of resistance measurement is 0.1 ohm, and the highest measurement value is 50M ohm.

12. The maximum four digits of the capacitor display indicate that the capacitance value ranges from 25pf (8MHz clock, 50pF @ 1MHz clock) to 100mF. Resolution up to 1pF (@ 8MHz clock).

13. It can measure the equivalent series resistance (ESR) capacitance value of capacitors with a value greater than 2UF, with a resolution of 0.01 ohms and a two-digit value display.

14. You can display the correct direction symbol for both diodes and the forward voltage drop.

15. The LED is detected as a diode and flashes several times during the test. The dual light emitting diode is detected as a dual diode.

16. The Zener diode can be tested. If the reverse breakdown voltage is lower than 4.5V, it is displayed as two diodes, which can only be determined by the voltage. The sign of the probe around the diode is the same, in which case you can identify the true anode of the diode by a threshold voltage near 700mV!

17. Capacitance of a single diode can be measured in reverse. Bipolar transistors can also be measured, in which case the base and collector or emitter must be connected.

18. Only one measurement is needed to find the full bridge connection.

19. The maximum capacitance test is 1000000uf. The best test range is 0.2nF ~ 7000uF. If the test value is lower than 25pf capacitor, the method is to connect a diode in parallel or at least 25pf capacitor in parallel. After measuring the result, subtract the capacitance of the known parallel capacitor.

19. The inductance test range is: 0.01mH ~ 20H, more than 20H, and the resistance below 2100 ohms will be recognized as inductance. The measurement result only shows a single inductance, and the inductance value is displayed.

20. The test time is about two seconds. The measurement time of large-capacitance capacitors and inductors will increase with the actual value.

21. Automatic shut-down. After the test, the test result is displayed for about 3 seconds and then turned off,You can extend the fixture to test the SMD device. This fixture needs to be diyed or ordered by yourself.

LCD display instructions:

English name	Chinese name
Test is running.	测试中.
Test Failed! Defect Device	测试失败
Timeout!	时间超时
Battery Low! Empty!	电池电量低，请更换电池

Instructions:

First insert the device under test into the instrument, and then press the start test button, the meter automatically tests and displays the test results;

The test ports are labeled. When testing a 2-pin device, you can choose different numbers of pins to match freely, such as 1-2, 1-3, 2-3. If the device has polarity, the meter will automatically display the polarity.

Test 3 pin devices. The 3 pins of the device correspond to the 1, 2 and 3 test ports of the meter one by one. You can arrange and combine them, such as 1-2-3, 2-3-1, 3-2- 1st.

Instrument calibration:

1. When shutting down, short the three test ports with wires;
2. Press the test button to turn on, and the self-test mode will be displayed. The second line will display a question mark. Press the test button quickly and the calibration will start automatically;
3. The screen display keeps changing, showing: "T4 isolate Probe", disconnect the short wires of the three test ports, and the calibration continues;
4. When 1-II-3> 100nf is displayed, connect a non-polar capacitor of more than 100nf between test ports 1 and 3.Until the end of calibration

Precautions:

1. Fully automatic identification and measurement of triode, IGBT, diode, dual diode, resistor, dual resistor, capacitor, inductor, chip capacitor, etc. Capable of measuring ESR (offline measurement) and other functions.
2. The meter provides a test current of about 7mA, which is lower than this sustaining current. There is an inaccuracy or error in the test of the thyristor and the Traics. Below the (testing current 7mA) sustaining current, the MOSFET and transistor can be identified, but in most The test is always accurate.
3. Resistance measurement range is about 2 ohms to 50M ohms, covering most of the resistance values, its accuracy is not high, it can be qualitative but not quantitative.
4. Capacitor measurement is about: 0.2nF to 7000μF is good, the accuracy of the test will gradually deteriorate when it is above 4000μF. In principle, it takes a long time to measure large capacitance, and sometimes it is normal to measure for 1 minute.
5. Discharge before capacitance measurement to prevent damage to the tester with high voltage.
6. In order to ensure the accuracy of the test results, the instrument has added a power-on detection voltage. When the voltage is low, please replace the battery!
7. If the writing is not clear, please adjust the LCD contrast. The method is to press and hold the button during shutdown to enter the contrast adjustment interface, click the button until the adjustment is satisfactory, and then wait for restart.
8. If there is a deviation in the test value of the instrument, please refer to the calibration steps to perform the calibration.