

# **Rakstore LCR-T4 Transistor Tester User Manual**

Model: LCR-T4

## **1. Introduction**

This manual provides instructions for the safe and effective operation of the Rakstore LCR-T4 Transistor Tester. This device is designed for testing various electronic components including transistors, diodes, triodes, capacitors, ESR, and SCRs. Please read this manual thoroughly before use to ensure proper functionality and to prevent damage to the device or components being tested.

## **2. Safety Information**

Observe the following safety precautions to prevent injury or damage:

- Do not attempt to test components that are still connected to a live circuit. Ensure all power is disconnected before testing.
- Discharge capacitors before testing. Large capacitors can store significant charge and pose a shock hazard.
- Use only the specified power voltage (9V battery or 8.4V battery pack).
- Do not expose the device to moisture or extreme temperatures.
- Do not attempt to modify or disassemble the device. Refer all servicing to qualified personnel.

## **3. Package Contents**

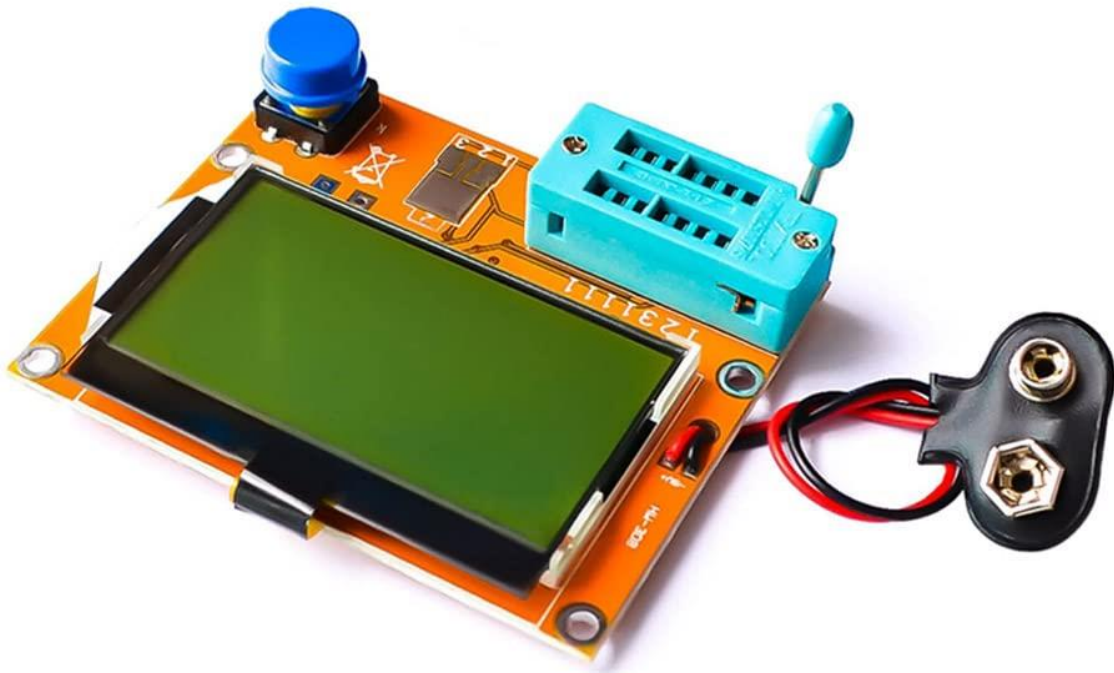
Verify that all items are present in your package:

- 1 x Rakstore LCR-T4 Transistor Tester unit
- *(Note: Batteries are typically not included and must be purchased separately.)*

## **4. Setup**

### **4.1 Power Supply Connection**

The LCR-T4 tester requires a 9V layer-built battery or an 8.4V battery pack (e.g., 2 li-ion batteries). Connect the battery to the designated battery connector on the device.



*Figure 1: Rear view of the LCR-T4 circuit board showing the battery connector and main components.*

## **4.2 Component Connection**

Components to be tested are connected to the ZIF (Zero Insertion Force) socket or test points on the device. Ensure proper pin alignment for accurate readings.

## **5. Operating Instructions**

### **5.1 Basic Operation**

1. **Power On:** Connect the battery. The device typically powers on automatically or via a dedicated button (if present).
2. **Insert Component:** Carefully insert the component into the ZIF socket, ensuring good contact.
3. **Initiate Test:** Press the test button. The device will automatically identify the component type and measure its parameters.
4. **Read Display:** The 128x64 LCD backlight display will show the test results. Testing speed is approximately 2 seconds, though large capacitors may take up to 1 minute.
5. **Power Off:** The device usually features an auto-shutdown function to conserve battery power.

## 5.2 Component Testing Details

- **Transistors (BJT, MOSFET, JFET):** Identifies type, pinout, gain (hFE), and threshold voltage.
- **Diodes:** Identifies type, forward voltage drop, and capacitance.
- **Capacitors:** Measures capacitance (25pF-100mF with 1pF resolution) and Equivalent Series Resistance (ESR).
- **Resistors:** Measures resistance (up to 50M ohms with 0.1 ohms resolution).
- **Inductors:** Measures inductance (0.01mH-20H).
- **SCRs/Triacs:** Identifies if the component is an SCR or Triac.

## 6. Maintenance

- **Cleaning:** Use a soft, dry cloth to clean the device. Do not use abrasive cleaners or solvents.
- **Battery Replacement:** Replace the battery when the display indicates low power or when the device fails to power on. Ensure correct polarity when inserting a new battery.
- **Storage:** Store the device in a dry, cool environment away from direct sunlight and extreme temperatures. Remove the battery if storing for extended periods to prevent leakage.

## 7. Troubleshooting

| Problem                           | Possible Cause                                                         | Solution                                                                                           |
|-----------------------------------|------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------|
| Device does not power on.         | Low or dead battery; incorrect battery connection.                     | Replace battery; check battery polarity.                                                           |
| Inaccurate readings.              | Poor component contact; component still in circuit; component damaged. | Ensure component is firmly seated; disconnect component from circuit; test a known good component. |
| Slow testing time for capacitors. | Normal for large capacitance values.                                   | Allow up to 1 minute for large capacitors to be tested.                                            |

## 8. Specifications

- **Display:** 128 x 64 LCD backlight
- **Testing Speed:** Approximately 2 seconds (up to 1 minute for large capacitors)
- **Shutdown Current:** 20nA
- **Power Voltage:** 9V layer-built battery / 2 li-ion batteries (8.4V pack)
- **Resistance Measurement:**
  - Range:  $\leq 2100\Omega$  (for specific internal resistance measurement)
  - Highest Measured Value: 50M ohms
  - Resolution: 0.1 ohms
- **Capacitance Measurement:**
  - Range: 25pF - 100mF
  - Resolution: 1pF
- **Inductance Measurement:**
  - Range: 0.01mH - 20H

**9. Features:** Powered by 9V layer-built battery, can use 2 li-ion batteries to form a 8.4V battery pack for long time power. Measuring bipolar transistor current amplification factor and base-emitter threshold voltage. Automatic test the pin of a component, and display on the 128 \* 64 LCD backlight. Measure the gate and gate capacitance of the MOSFET threshold voltage. One -

button operation, automatic shutdown, only 20nA shutdown current. Reverse breakdown voltage is less than 4.5V, Zener diode can be identified. 2uF more capacitors can simultaneously measure the equivalent series resistance ESR values. Via the base - emitter threshold voltage and high current amplification factor to identify Darlington transistors. Can simultaneously measure two resistors and resistor symbol is displayed. Displayed on the right with a decimal value of 4. Can detect the transistor, MOSFET protection diode amplification coefficient and the base to determine the emitter transistor forward biased voltage. Automatic detection of NPN and PNP transistors, n-channel and p-channel MOSFET, diode (including double diode), thyristor, transistor, resistor and capacitor and other components.

## **10. Warranty and Support**

For warranty information and technical support, please refer to the retailer or manufacturer's official website. Keep your purchase receipt as proof of purchase.

Manufacturer: Rakstore

ASIN: B09J5BLFMW

UPC: 799710920936