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LiebeWH TSH-06F

LiebeWH TSH-06F Integrated Circuit Tester User Manual

Model: TSH-06F | Brand: LiebeWH

1. Introduction

Thank you for choosing the LiebeWH TSH-06F Integrated Circuit Tester. This professional tool is designed for microelectronic engineers and maintenance personnel, offering efficient testing and identification of various electronic components. It features multiple test modes and a comprehensive database of integrated circuits and transistors to streamline your workflow.

2. Safety Information

Please read all safety instructions carefully before using the device. Failure to follow these instructions may result in electric shock, fire, or damage to the device or other equipment.

- Ensure the device is powered by the correct battery type and voltage (2 x 1.5V AA batteries).
- Do not attempt to test components that are still connected to a live circuit. Always disconnect power before testing.
- Avoid exposing the device to moisture, extreme temperatures, or direct sunlight.
- Do not open the device casing or attempt to repair it yourself. Refer all servicing to qualified personnel.
- Keep the device out of reach of children.

3. Package Contents

The package should contain the following items:

- LiebeWH TSH-06F Integrated Circuit Tester
- *Note: 2 x 1.5V AA batteries are not included and must be purchased separately.*

4. Product Overview

The LiebeWH TSH-06F is a compact and portable IC tester designed for ease of use. It features a clear LCD display, a Zero Insertion Force (ZIF) socket for component testing, and intuitive control buttons.



Figure 4.1: Front view of the TSH-06F IC Tester. This image displays the device's main interface, including the LCD screen for displaying test results, the ZIF socket for inserting components, and the navigation buttons.

Key Components:

- **LCD Display:** Shows test results, selected modes, and other operational information.
- **ZIF Socket:** Zero Insertion Force socket for easy and safe insertion/removal of ICs and transistors up to 24 pins.
- **Control Buttons:** Up, Down, Left, Right, Enter, O, and P buttons for navigation and mode selection.
- **Battery Compartment:** Located on the back for 2 x 1.5V AA batteries.

5. Specifications

Feature	Description

Feature	Description
Model	TSH-06F
Material	ABS
Power Supply	2 x 1.5V AA Batteries (not included)
Supported IC Series	74HC, 74LS, CD4000, HEF400, 4500 series, Operational Amplifiers, Interface Chips, Optocouplers
Supported Transistors	Automatic identification of various transistors and voltage regulator tubes
Integrated Data Models	Over 1,300 IC data models, over 420 transistor data models
Max Pin Count	24 pins
Test Modes	5V mode, 3.3V mode, Automatic mode, Logic Device Test, Interface Driver Test, OP Amplifier Test, Comparison Test, Transistor Identification, Voltage Regulator Voltage Value Test, Optocoupler Test
Automatic Shutdown	After 60 seconds of inactivity
Item Weight	155 g
Package Dimensions	15 x 10 x 4 cm

6. Setup

6.1 Battery Installation

The TSH-06F tester requires two 1.5V AA batteries for operation. Follow these steps to install the batteries:

1. Locate the battery compartment cover on the back of the device.
2. Slide the cover open in the direction indicated by the arrow.
3. Insert two 1.5V AA batteries, ensuring the correct polarity (+ and -) as marked inside the compartment.
4. Close the battery compartment cover securely.



Figure 6.1: Battery compartment. This image illustrates the open battery compartment, showing the terminals where two AA batteries should be inserted with correct polarity.

6.2 Powering On/Off

The device powers on automatically when batteries are inserted and powers off automatically after 60 seconds of inactivity to conserve battery life.

7. Operating Instructions

7.1 Control Buttons

The tester is operated using seven buttons on the front panel:

- **Up/Down Arrows:** Navigate through menus and options.
- **Left/Right Arrows:** Adjust parameters or move cursor.

- **Enter:** Confirm selection or start a test.
- **O (Option):** Access additional options or settings.
- **P (Program/Parameter):** Used for specific programming or parameter adjustments.



Figure 7.1: Control buttons and display. This image highlights the layout of the control buttons (Up, Down, Left, Right, Enter, O, P) and the LCD screen, which are central to operating the device.

7.2 Inserting Components into the ZIF Socket

The Zero Insertion Force (ZIF) socket allows for easy and safe placement of ICs and transistors. To insert a component:

1. Lift the lever next to the ZIF socket to open the pin clamps.
2. Carefully align the pins of the IC or transistor with the corresponding holes in the socket. Ensure the component's notch or dot (pin 1 indicator) is correctly oriented.
3. Gently press the component into the socket. Do not force it.
4. Lower the lever to secure the component in place.

To remove a component, simply lift the lever and carefully pull the component out.



Figure 7.2: ZIF socket. This image shows the side profile of the tester, highlighting the ZIF socket and its lever mechanism for securing and releasing components.

8. Test Modes and Functions

The TSH-06F offers a variety of test modes to accurately identify and evaluate different electronic components. Use the Up/Down arrow buttons to navigate through the available modes and 'Enter' to select.

8.1 Logic Device Test

This mode is used for testing common logic ICs from series such as 74HC, 74LS, CD4000, HEF400, and 4500. The tester will verify the logic gates' functionality and identify the specific IC model.

8.2 Interface Driver Device Test

Tests various interface chips, ensuring their proper operation and communication capabilities.

8.3 Operational Amplifier (OP Amp) Test

Evaluates the functionality of operational amplifiers, checking for common faults and verifying their performance characteristics.

8.4 Comparison Test

Allows comparison of a known good component with a suspect one to quickly identify discrepancies.

8.5 Transistor Identification

Automatically identifies the type of transistor (e.g., NPN, PNP, MOSFET) and its pinout. The tester has a database of over 420 transistor models.

8.6 Voltage Regulator Voltage Value Test

Measures and identifies the output voltage of voltage regulator ICs.

8.7 Optocoupler Test

Tests the functionality of optocouplers, verifying their isolation and signal transfer capabilities.

8.8 Voltage Modes (5V, 3.3V, Auto)

Select the appropriate voltage mode (5V, 3.3V, or Automatic) based on the operating voltage of the component being tested. Automatic mode attempts to detect the correct voltage.



Figure 8.1: Tester in use. This image shows the LiebeWH TSH-06F IC Tester being used by a technician in an electronics repair or testing environment, illustrating its practical application.

9. Maintenance

9.1 Cleaning

- Wipe the device with a soft, dry cloth. Do not use abrasive cleaners or solvents.
- Ensure no dust or debris accumulates in the ZIF socket. Use a soft brush or compressed air if necessary.

9.2 Storage

- Store the device in a cool, dry place away from direct sunlight and moisture.
- If storing for an extended period, remove the batteries to prevent leakage.

10. Troubleshooting

Problem	Possible Cause	Solution
Device does not power on.	Dead or incorrectly installed batteries.	Replace batteries with new 1.5V AA batteries. Ensure correct polarity.
Incorrect test results.	Component not properly seated in ZIF socket; incorrect test mode selected; faulty component.	Re-seat the component firmly. Verify the selected test mode matches the component type. Test with a known good component for comparison.
Display is blank or unreadable.	Low battery power; display malfunction.	Replace batteries. If the issue persists, contact customer support.
Buttons are unresponsive.	Device frozen; internal malfunction.	Remove and re-insert batteries to reset the device. If the problem continues, contact customer support.

11. Warranty and Support

LiebeWH products are manufactured to high-quality standards. For warranty information, technical support, or service inquiries, please refer to the documentation provided with your purchase or visit the official LiebeWH website.
You can also visit the LiebeWH Store on Amazon for more product information and support resources.

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