

Multifunctional Integrated Circuit Tester User Manual

The TSH series multifunctional integrated circuit tester is a professional instrument designed for front-line microelectronics engineers and maintenance personnel. It supports various testing modes, including 5V mode, 3.3V mode, and AUTO mode, enabling testing of the 74HC series, 74LS series, CD4000 series, HEF400 series, 4500 series, operational amplifiers, interface chips, optocouplers, automatic transistor identification, and zener diode voltage identification, among others. It features over 1,300 built-in chip data models and over 420 transistor data models, covering most common general-purpose devices with 24 pins or fewer, significantly reducing workload and improving efficiency.

Instructions:

The panel features seven buttons: Up, Down, Left, Right, and Enter, as well as the shortcut keys O and P.

The Up and Down keys are used to adjust the menu and change the model number, while the Left and Right keys are used to move the cursor left or right to select the item to be modified. The Enter key is used to power on/off the device and execute test commands. Open the battery cover, insert two 1.5V AA batteries, then close the battery cover. Press and hold the Enter key for more than 2 seconds to power on the device. Upon startup, the current battery voltage will be displayed automatically. When the battery voltage is too low, please replace the batteries. A low voltage may affect the reliability of test results and trigger automatic shutdown for safety protection.

Power on: Press and hold the Enter key for more than 2 seconds to power on.

Power off: 1 Press and hold the Enter key in the OFF directory to power off immediately.

2 Press and hold the Enter key for more than 10 seconds in any directory to power off.

3 If no operation is performed for 60 seconds, the device will automatically power off.

Shortcut: 1 The O key is the quick power-off key (06 model).

2 The P key is the self-check and reset key.

The device placement method is as shown in the figure below:

1. Align the top of the chip and optocoupler, and align pin 1 with pin 1 of the IC socket.

2. Place the transistor in the bottom three slots on the left.

3. Place the zener diode between pins 13 and 14 of the IC socket.

Note: The pin order shown for the transistor corresponds to pins 10, 11, and 12 of the IC socket from left to right.

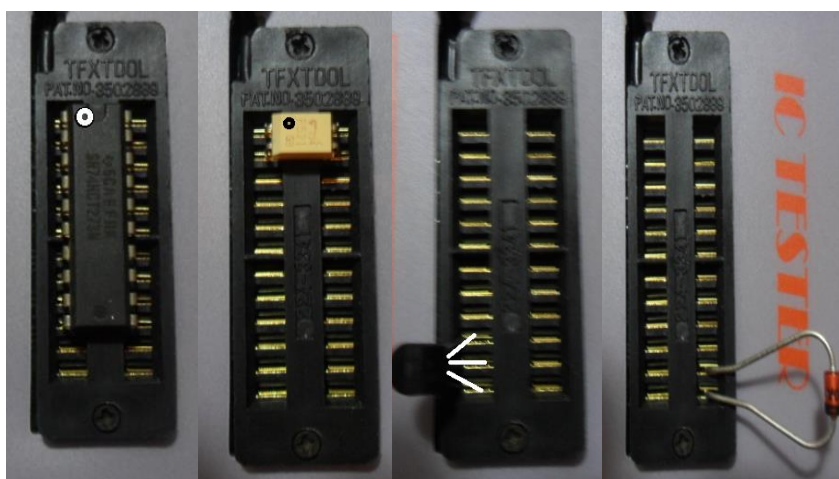


Table of Contents		function
Search	Auto pattern	Device search: Insert an unknown chip into the IC socket to automatically identify the device model and test its condition. (Automatic identification without input) Three voltage modes are available, with auto mode as the default.
	5.0v pattern	
	3.3v pattern	
74HC		74HC series logic device testing (same as 74LS series library, different drive levels) (model number must be entered manually)
74LS		74LS series logic device testing (same as 74HC series library, different drive levels) (model number must be entered manually)
CD40		CD4000 series logic device testing (different from the HEF40 series library, with the same drive level) (model number must be entered manually)
HEF40		HEF4000 series logic device testing (different from the CD40 series library, with the same drive level) (model number must be entered manually)
45/145		45 Series 145 Series Logic Device Testing (Manual Model Input Required)
OTHER		Interface driver device testing, such as: max232, max485, 75175, 75176, 75c11... (model must be selected manually)
AMP		Operational amplifier and comparator testing, such as: LM324, LM358, LM339, LM393, LM2902... (model numbers must be entered manually)
TR		Transistor identification, automatically determines the type of transistor and pin arrangement sequence. Can identify NPN, PNP, bipolar transistors, N-MOS, P-MOS, unidirectional thyristors, bidirectional thyristors, common anode/common cathode rectifier tubes, etc. (automatic identification without input required)
ZD		Regulator voltage test: Tests the regulator voltage within the range of 0V-50V with an accuracy of 0.01V (automatic recognition, no input required).
LIGHT		Optocouplers such as: TLP521_1, PC817, PC923, 4N25, HCNW4506, BRT11/12/13, HCPL_3101, ...
OFF		shut down

prompt message	Description
OK	Test normal
Batter	Battery voltage
Not found	Not found
Fault	Chip damaged or type mismatch
Open	Open circuit
Not supported	Not supported
NPN	Transistor
PNP	Transistor
N-MOS	Field effect transistor
P-MOS	Field effect transistor
1-SCR	Unidirectional thyristor
2-SCR	Bidirectional thyristor
2D	Common cathode, common anode rectifier tube
A, k, b, c, e, g,	Specific pin
Out of range	Regulator tube voltage out of range
ERR1, 2	Self-test failed
Self-check pass	Self-test passed