

# OPEN/SHORT TESTER

## ESPIER-2001



### Applications

- Screening at Pre/Post burn-in
- Open/short test of TAB board
- Burn-in board test
- Cable and PC board test
- Screening to avoid following failures
  - Mixed shipment
  - Reverse print
  - Reverse bonding

The Model ESPIER 2001 Open/Short Tester is a 64, 128, 192, 256 pins or more DC Tester that contains an IF/VM(Current force and Voltage measure) unit and a set of 2 by 64n(n = 1, 2, 3, ···) in a compact bench-top instrument. Programming is done easily by a keyboard, by a preprogrammed EEPROM or by a host PC.

Every configured pin is assigned to a test pin, a common pin or no connection. DC constant current is forced between a test pin and all pins assigned to common. Then the voltage between them is tested by four analog comparators, comparison results of those decide jumping Test Number (Tnnn) or Bin Number (Bn). Any test pin is assigned to any Test Number so that test sequence may flow from higher priority pin to lower priority pin to increase through-put. Bin is used for sorting by handler.

The model ESPIER 2001 contains a handler interface that allows automated sorting. All control lines are optically isolated.

A RS-232C port is provided to interface with a host PC, which allows

- ✦ Programming ESPIER 2001 from host,
- ✦ Saving a test program to host,
- ✦ Down loading a test program from host,
- ✦ Data logging the measured voltage,
- ✦ Saving test summary to host
- ✦ Initializing ESPIER 2001 from host.

**tet** 東京電子交易株式会社  
TOKYO ELECTRONICS TRADING CO.,LTD.

4-8-26, Nishiki-cho, Tachikawa-shi,  
Tokyo, 190-0022 Japan  
Tel : +81-42-548-8011  
Fax:+81-42-548-8013  
Web-site:<http://www.tet.co.jp>

## Open/Short Tester, ESPIER 2001

### Features

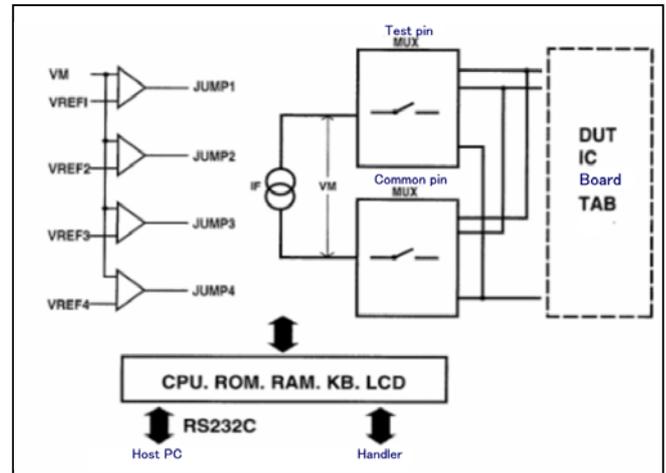
- ✧ Stand alone operation
- ✧ Long life, high reliability
- ✧ Easy connection with handler
- ✧ Easy programming and its storage
- ✧ Simultaneous comparison by 4 comparators
- ✧ Constant current force/test voltage
- ✧ Pin extension available
- ✧ Host PC controllable

### Description

ESPEIR 2001 tests open/short between terminals of integrated circuit, TAB board or burn-in board, etc.

Constant current is forced between a test pin and common pins then terminal voltage is detected by 4 comparators simultaneously. If its absolute value is low, terminal resistance is low and closer to short. If it is high, terminal voltage is high and closer to open. If  $V_{REF1}$  to  $V_{REF4}$  are properly programmed, terminal resistance can be sorted.

Test program can be made by the interaction between front panel keyboard and LCD display. Test program can be downloaded from the host PC. Test program can be saved in the EEPROM.



### Specifications

1. Pin count: 64, 128, 256, 512, 1024
2. IF/VM (Force constant current/Measure voltage)
- 2.1 Constant current (IF)
  - Current range:  $0 \mu A$  to  $\pm 255 \mu A$
  - Resolution:  $1 \mu A$
  - Accuracy:  $\pm 2\%$  of the value  $\pm 2 \mu A$
- 2.2 Voltage measurement (VM)
  - Voltage Range: 0 to  $\pm 10V$  in  $2.5mV$  resolution
  - Resolution:  $2.5mV$
  - Analog accuracy:  $\pm 2\%$  of comparison voltage  $\pm 15mV$
  - Digital accuracy:  $\pm 0.1mV \pm 10mV$
- 2.3 Reference voltage ( $V_{REF}$ )
  - Number of  $V_{REF}$ : 4
  - Voltage range: 0 to  $\pm 10V$
  - Accuracy:  $\pm 2\%$  of the value  $\pm 5mV$
  - Resolution:  $2.5mV$
  - (Note) Comparison voltage polarity is automatically selected depending on the force current polarity.

Current direction	Sink(-)	Source(+)
Voltage polarity	Negative	Positive
- 2.4 Clamp voltage
  - Range: 0 to  $\pm 10V$  in  $40mV$  resolution
  - Programming Accuracy:  $\pm 2\%$  of the value  $\pm 80mV$
  - Clamp accuracy
    - Positive: Programmed value  $+0V/-0.5V$
    - Negative: Programmed value  $+0.5V/-0V$
- 2.5 Digital Panel meter
  - Range:  $\pm 19.999V$
  - Accuracy:  $\pm 0.1\%$  of value  $\pm 10mV$
  - Measurement rate: 5 times /sec
3. Common pin
  - Set of common pins : 4 + a special set (CPS0)
  - Max pins/set: 15
  - (Note) CPS0 means all other pins except the test pin are assigned to common pin.
4. Test time per one test pin (test #) : About 3ms
5. Matrix: Photo MOS relay
  - On resistance :  $4\Omega$  (Typical)
  - Total resistance :  $12\Omega$  (Typical, excluding DUT cable)
6. Max test program number (Tnnn): 999
7. Sorting: 6 groups
8. DUT socket connector: Amphenol/DDK57-20640-D11
9. Handler Interface
  - SOT, EOT and 6 Bins : Optically isolated
10. Host PC interface: RS-232C
11. EEPROM: 64/256k bit
12. Physical dimension
  - Approx.  $430W \times 405D \times 222H$  (mm)
  - (Note) Low height model (150mm H) is available for less than 128 pin system.
  - Above 256 pin system, height is increased.
13. AC Power
  - AC 90 to  $253V/1A$ , 50/60Hz

Specifications subject to change without notice.

**For More information:**